

Location:	James Ranch Unit DI 1A		
Spill Date:	10/26/2023		
Area 1			
Approximate Area =	5499.00	sq. ft.	
Average Saturation (or depth) of spill =	1.00	inches	
Average Porosity Factor =	0.03		
VOLUME OF LEAK			
Total Crude Oil =	0.00	bbls	
Total Produced Water =	9.45	bbls	
TOTAL VOLUME OF LEAK			
Total Crude Oil =	0.00	bbls	
Total Produced Water =	9.45	bbls	
TOTAL VOLUME RECOVERED			
Total Crude Oil =	0.00	bbls	
Total Produced Water =	7.00	bbls	

Attachment 4

Closure Criteria Worksheet			
Site Name: James Ranch Unit DI 1A CTB			
Spill Coordinates: 32.38001, -103.88664		X: 604730	Y: 3583103
Site Specific Conditions		Value	Unit
1	Depth to Groundwater	110	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	912	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	8,198	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	9,724	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or	1,221	feet
	ii) Within 1000 feet of any fresh water well or spring		feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	7,337	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	High	Critical High Medium Low
10	Within a 100-year Floodplain	500	year
11	Soil Type	Largo Loam, 1 to 5 percent slopes	
12	Ecological Classification	Loamy-R070BC007NM	
13	Geology	Qp	
NMAC 19.15.29.12 E (Table 1) Closure Criteria		<50'	<50' 51-100' >100'



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 03015	CUB	ED		1	4	3	22	22S	30E	606099	3582353*	1560	1316	262	1054
C 03679 POD1	C	ED		1	4	2	14	24S	33E	603567	3581547	1942	700	575	125
C 02724	CUB	ED		4	4	2	29	22S	30E	603860	3581329*	1975	503		
C 02723	CUB	ED		2	2	3	15	22S	30E	606282	3584363*	1999	651		
C 02111	CUB	ED		2	2	2	33	22S	30E	605505	3580336*	2873	248	155	93
C 03220 EXPLORE	CUB	ED		1	3	4	33	22S	30E	604911	3579127*	3980	224		
C 02950 EXPL	CUB	ED		4	2	4	23	22S	30E	608740	3582576*	4044	845		
C 02637	CUB	ED		1	3	3	24	22S	30E	608950	3582377*	4281	759		
C 03587 POD3	CUB	ED		2	4	1	07	22S	29E	601447	3586271	4562	80	47	33
C 04528 POD1	CUB	ED		1	3	3	12	22S	30E	608886	3585625	4861			

Average Depth to Water: **259 feet**

Minimum Depth: **47 feet**

Maximum Depth: **575 feet**

Record Count: 10

UTMNAD83 Radius Search (in meters):

Easting (X): 604730

Northing (Y): 3583103

Radius: 5000

*UTM location was derived from PLSS - see Help

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

8/3/23 12:39 PM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER



New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)										(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE) C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)									
WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q	q	q	Sec	Tws	Rng	X	Y	Distance
C 01916	C	PRO		0 PERRY R BASS	ED	C 01916					4	3	2	21	22S	30E	605068	3582947*	372
C 03015	CUB	MON		0 U.S. DEPT OF ENERGY - WIPP	ED	C 03015				Artesian	1	4	3	22	22S	30E	606099	3582353*	1560

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 604730

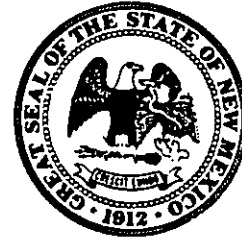
Northing (Y): 3583103

Radius: 1610

Sorted by: Distance



WELL PLUGGING PLAN OF OPERATIONS



NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP:

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: C 01916

Name of well owner: BOPCO L.P.

Mailing address: P.O. Box 2760

City: Midland State: Texas Zip code: 79702

Phone number: 432-556-8730 E-mail: TASavoie@Basspet.com

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: Straub Corporation – Raymond Straub

New Mexico Well Driller License No.: WD-1478 Expiration Date: June-2013

IV. WELL INFORMATION:

Note: A copy of the existing Well Record for the well to be plugged should be attached to this plan.

- 1) GPS Well Location: Latitude: 32 deg, 22 min, 54.42 sec
Longitude: -103 deg, 53 min, 00.57 sec, NAD83
- 2) Reason(s) for plugging well: Water well is in the path of new construction. Water quality is below useable quality.
- 3) Was well used for any type of monitoring program? NO If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.
- 4) Does the well tap brackish, saline, or otherwise poor quality water? YES If yes, provide additional detail, including analytical results and/or laboratory report(s): See Attachments
- 5) Static water level: ~ 110 feet below land surface / feet above land surface (circle one)
- 6) Depth of the well: 188 feet

Well Plugging Plan
Version: December, 2011
Page 1 of 5

C-1916
41057710

- 7) Inside diameter of innermost casing: 5 inches.
- 8) Casing material: Steel
- 9) The well was constructed with:
UNKWN an open-hole production interval, state the open interval: _____
UNKWN a well screen or perforated pipe, state the screened interval(s): _____
- 10) What annular interval surrounding the artesian casing of this well is cement-grouted? NA
- 11) Was the well built with surface casing? UNKWN If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? _____ If yes, please describe: _____
- 12) Has all pumping equipment and associated piping been removed from the well? yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal.

- 1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well: The casing will be cut off below ground surface. A tremie line will be install and a Portland Type II/ V Cement grout will be placed from the bottom to within 5' of the surface. A concrete cap will be placed from 5' to 1' and the remainder will be filled with soil.
- 2) Will well head be cut-off below land surface after plugging? yes

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant

- 1) For plugging intervals that employ cement grout, complete and attach Table A.
- 2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.
- 3) Theoretical volume of grout required to plug the well to land surface: 20 Sacks
- 4) Type of Cement proposed: See Attached Conditions of Approval C.6
5% Fullers Earth / Type II/V Cement
- 5) Proposed cement grout mix: See Attached Conditions of Approval C.6
8 gallons of water per 94 pound sack of Portland cement.
- 6) Will the grout be: _____ batch-mixed and delivered to the site
X mixed on site

- 7) Grout additives requested, and percent by dry weight relative to cement: Salt water gel – The use of Fuller's Earth is to help with leak-off to the formation. Since the formation water is high in chlorides, Volclay Sodium Bentonite will not be acceptable. 5 LBS. of Gel per 94 LBS. of cement

SEE Attached Conditions of Approval C.G.

- 8) Additional notes and calculations: $((\text{dia.}^2 * 0.005454) * \text{Depth}) / 1.25 \text{ cuft-bag}$

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

The Public Land Survey is Section 21, Township 22 South, Range 30 East.

VIII. SIGNATURE:

I, Raymond L. Straub Jr., P.G., say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

[Signature]
Signature of Applicant

03/28/2013

Date

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

- ☒ Approved subject to the attached conditions.
☐ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 17th day of April, 13

Scott A. Verhines, State Engineer

By: Tim Williams

Tim Williams

Carlsbad Basin Watermaster

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			5 feet
Bottom of proposed interval of grout placement (ft bgl)			188 feet
Theoretical volume of grout required per interval (gallons)			20 Sacks
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			8 gallons
Mixed on-site or batch-mixed and delivered?			On-site
Grout additive 1 requested			5% Saltwater Bentonite
Additive 1 percent by dry weight relative to cement			5 LBS.
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

STATE ENGINEER OFFICE
 RUSSELL
 2013 APR - 1 P 1:19

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant or grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

STATE ENGINEER OFFICE
ROSWELL DIVISION
2013 APR - 1 P 1:19



STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
ROSWELL

Scott A. Verhines, P.E.
State Engineer

DISTRICT II
1900 West Second St.
Roswell, New Mexico 88201
Phone: (575) 622-6521
Fax: (575) 623-8559

April 17, 2013

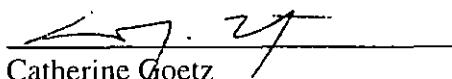
BOPCO, L.P.
P.O. Box 2760
Midland, Texas 79702

RE: *Well Plugging Plan of Operations* for C-1916

Greetings:

Enclosed is your copy of the Well Plugging Plan for the above referenced project. The attached Conditions of Approval modify your Plan in accordance with the Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells 19.27.4 NMAC adopted August 31, 2005 by the State Engineer. Should you have any questions about the Plan or Conditions of Approval please do not hesitate to contact our office.

Sincerely,


Catherine Goetz
Water Resource Specialist
District II Office of the State Engineer

Enclosures

cc: Office of the State Engineer Santa Fe
Straub Corporation

**Analytical Laboratory Report for:
BOPCO****Account Representative:
Willis Mossman**

Production Water Analysis**Listed below please find water analysis report from: Perry R Bass Wsw, WATER SUPPLY WELL**

Lab Test Number		Sample Date
201301003615		02/13/2013
Specific Gravity:	1.100	
TDS:	153402	
pH:	6.65	
Cations		mg/L
Calcium as Ca ⁺⁺		2669
Magnesium as Mg ⁺⁺		2188
Sodium as Na ⁺		52812
Iron as Fe ⁺⁺		9.49
Potassium as K ⁺		7466.0
Barium as Ba ⁺⁺		0.28
Strontium as Sr ⁺⁺		86.46
Manganese as Mn ⁺⁺		0.46
Anions		mg/L
Bicarbonate as HCO ₃ ⁻		171
Sulfate as SO ₄ ⁼		6500
Chloride as Cl ⁻		81500
Gases		mg/L
Carbon Dioxide as CO ₂		30
Hydrogen Sulfide as H ₂ S		0.0
Lab Comments:		
SURFACE TEMP.=65.7°F		

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2013 APR - 1 P 1:19

Analytical Laboratory Report for: BOPCO



Account Representative:
Willis Mossman

DownHole SATTM Scale Prediction @ 250 deg. F

Lab Test Number	Sample Date	Location
201301003615	02/13/2013	WATER SUPPLY WELL

Mineral Scale	Saturation Index	Momentary Excess (lbs/1000 bbls)
Calcite (CaCO ₃)	0.46	-0.05
Strontianite (SrCO ₃)	0.00	-25.80
Anhydrite (CaSO ₄)	6.85	1699.09
Gypsum (CaSO ₄ *2H ₂ O)	1.55	710.25
Barite (BaSO ₄)	0.07	-6.67
Celestite (SrSO ₄)	0.23	-487.80
Siderite (FeCO ₃)	3.44	0.04
Halite (NaCl)	0.04	-545840.63
Iron sulfide (FeS)	0.00	-1.34

Interpretation of DHSat Results:

The Saturation Index is calculated for each mineral species independently and is a measure of the degree of supersaturation (driving force for precipitation) under the conditions modeled. This value ranges from 0 to infinity with 1.0 representing a condition of equilibrium where scale will neither dissolve nor precipitate. Values less than 1.0 are undersaturated and values greater than 1.0 are supersaturated. The Momentary excess is a measure of how much scale would have to precipitate to bring the system back to a non-scaling condition. This value ranges from negative (dissolving) to positive (precipitating) values. The Momentary Excess represents the amount of scale possible while the Saturation Level represents the probability that scale will form.

STATE ENGINEER OFFICE
ROSWELL
2013 APR -1 P 1:19



New Mexico Office of the State Engineer Transaction Summary

72121 All Applications Under Statute 72-12-1

Transaction Number: 199433

Transaction Desc: C 01916

File Date: 07/31/1980

Primary Status: EXP Expired Permit

Secondary Status: EXP Expired

Person Assigned: mvigil

Applicant: PERRY R. BASS

Events

Date	Type	Description	Comment	Processed By
07/31/1980	APP	Application Received	*	mvigil
08/04/1980	FIN	Final Action on application		mvigil
08/04/1980	WAP	General Approval Letter		mvigil
09/01/1981	EXP	Expired Permit (well log late)		mvigil

Change To:

WR File Nbr	Acres	Diversion	Consumptive	Purpose of Use
C 01916		3		PRO 72-12-1 PROSPECTING OR DEVELOPMENT OF NATURAL RESOURCE
**Point of Diversion				
C 01916		605068	3582947*	

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

Remarks

WATER SUPPLY WELL FOR THE DRILLING OF JAMES RANCH UNIT #12.

Conditions

- 3 Appropriation and use of water under this permit shall not exceed a period of one year from the date of approval.
- 5A A totalizing meter shall be installed before the first branch of the discharge line from the well and the installation shall be acceptable to the State Engineer; the Engineer shall be advised of the make, model, serial number, date of installation, and initial reading of the meter prior to appropriation of water; pumping records shall be submitted to the District Supervisor for each calendar month on or before the 10th day of the following month.
- 6 The well shall be plugged upon completion of the permitted use, and a plugging report shall be filed with the State Engineer within 10 days.

Action of the State Engineer

Approval Code: A - Approved

Action Date: 08/04/1980

Log Due Date: 08/31/1981

State Engineer:

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

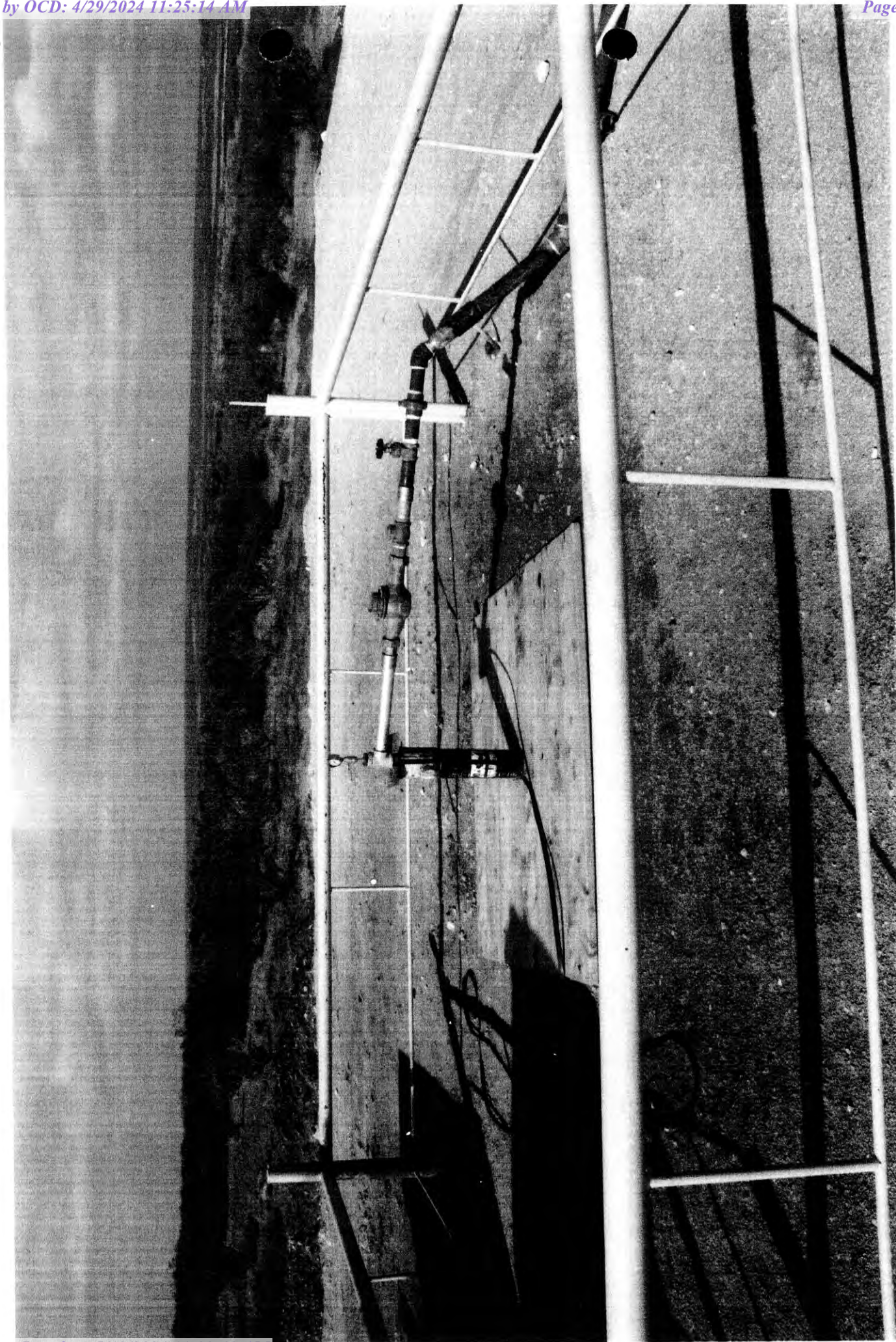
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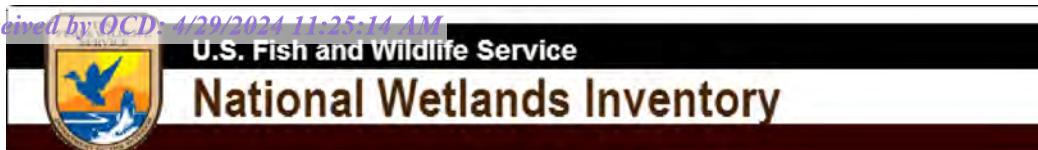
Page 1 of 1

TRANSACTION SUMMARY

Conditions of Approval for C-1916 abandonment:

- 1) Plugging operations will be conducted in accordance with NMED, NMOCD, or other State or Federal agency having oversight for the above described project.
- 2) The well shall be plugged using a cement slurry (5.2 gals water per 94lb bag of Portland cement). It is understood that due to the high sulfate content Type V cement will be used as the data provided on water quality indicates 6,500 ppm sulfates. The cement grout will be pumped via tremie line from bottom up.
- 3) By item 2 above, the plan meets OSE requirements for tremie/grout abandonment, however, well records are not available to confirm well design/annular seals.





JRU DI 1A CTB watercourse 912 ft



August 28, 2023

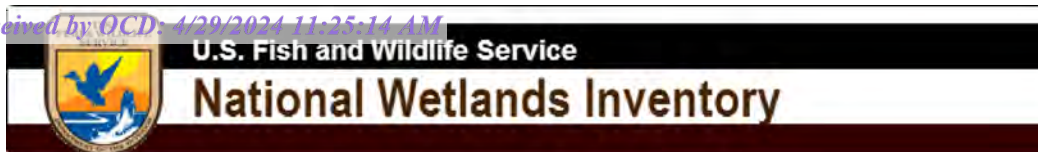
Wetlands

- 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.



James Ranch Unit DI 1A CTB Lake



August 3, 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.

James Ranch Unit DI 1A CTB

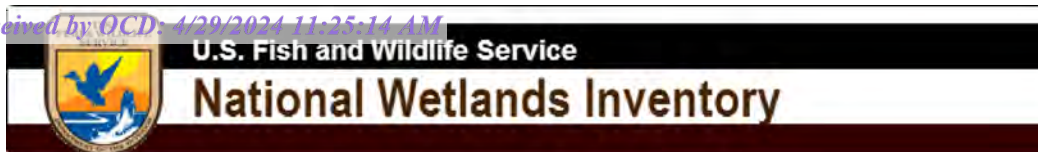
Nearest Occupied Residence: 1.84mi

Legend

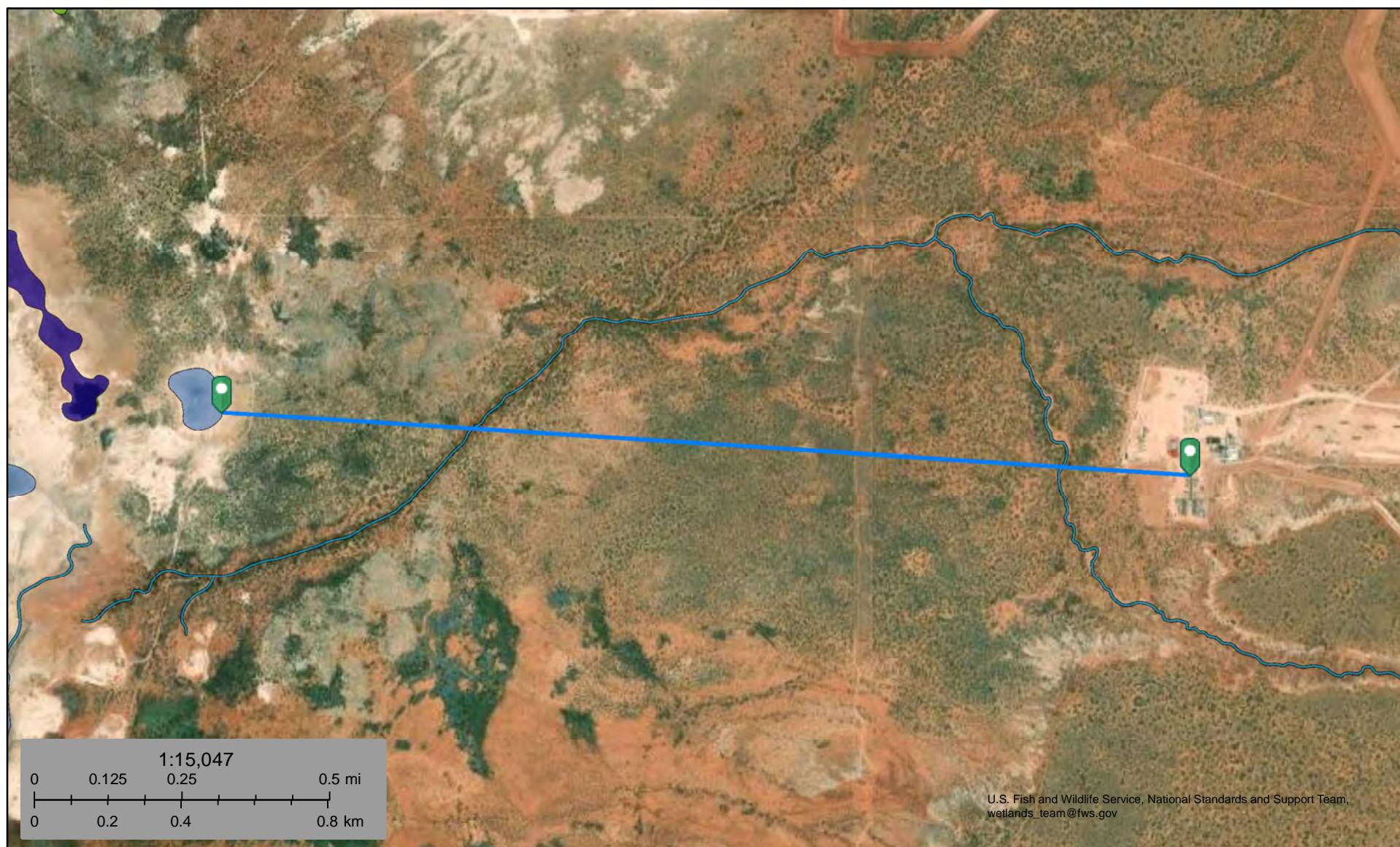
-  James Ranch Unit DI 1A CTB
-  Residence



Google Earth



James Ranch Unit DI 1A CTB Wetland



August 3, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

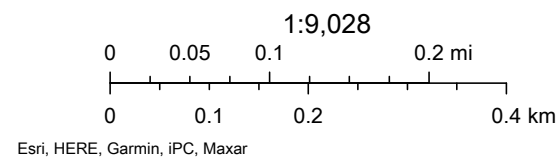
- Lake
- Other
- Riverine

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.

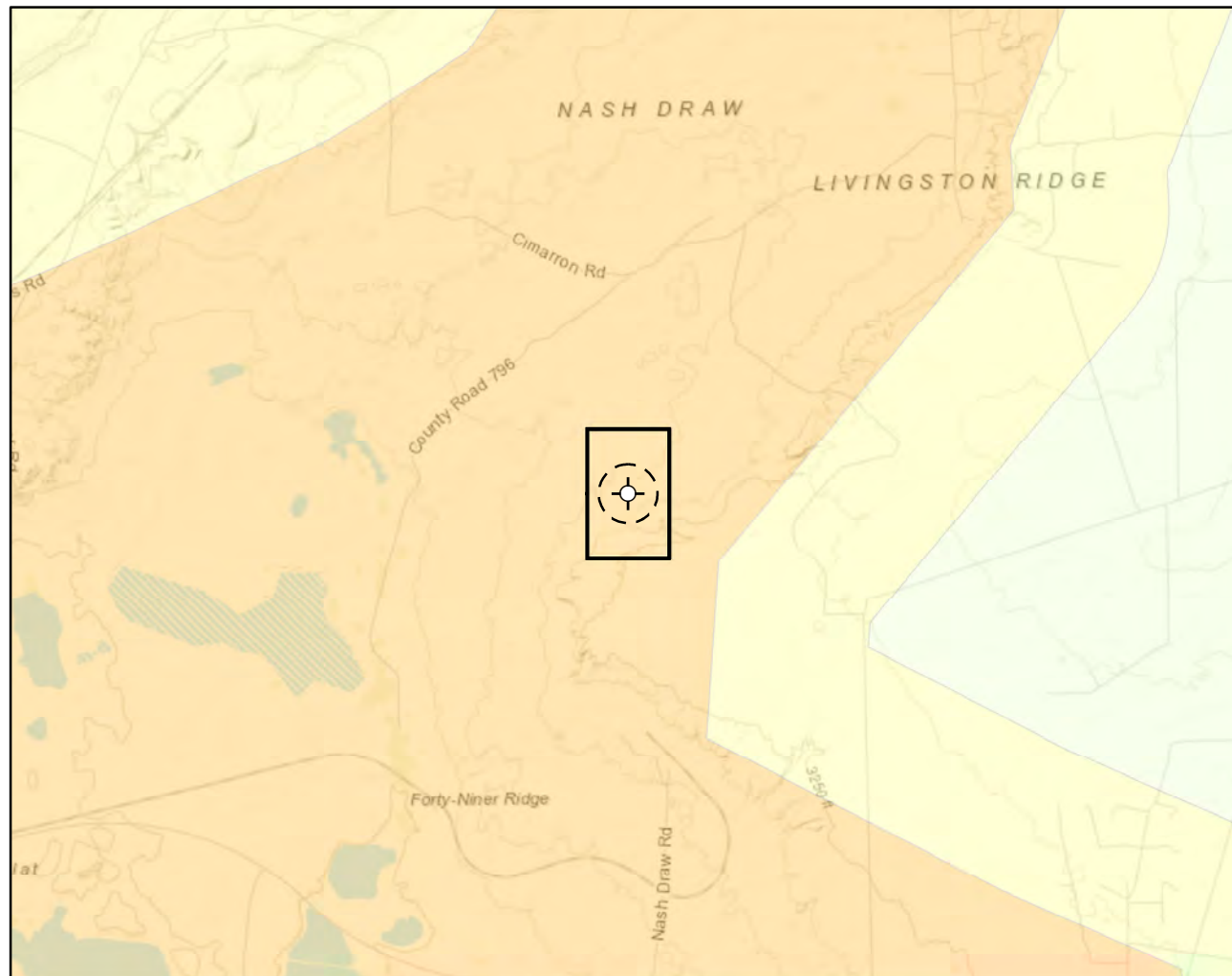
James Ranch Unit DI 1A CTB Mine



8/3/2023, 1:22:37 PM



Document Path: G:\Projects\US PROJECTS\XTO Energy\23E-04616 - JRU DI 1A CTB\Figure X Karst Potential Map (23E-04616).mxd



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



Map Center:
Lat/Long: 32.380010, -103.886640

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



**Karst Potential Map
James Ranch Unit DI 1A CTB**

FIGURE:

X



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

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

VERSATILITY. EXPERTISE.

National Flood Hazard Layer FIRMette



103°53'31"W 32°23'3"N



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

1:6,000

103°52'53"W 32°22'33"N

Released to Imaging: 5/10/2024 11:00:40 AM

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 Cross Sections with 1% Annual Chance Water Surface Elevation
		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
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



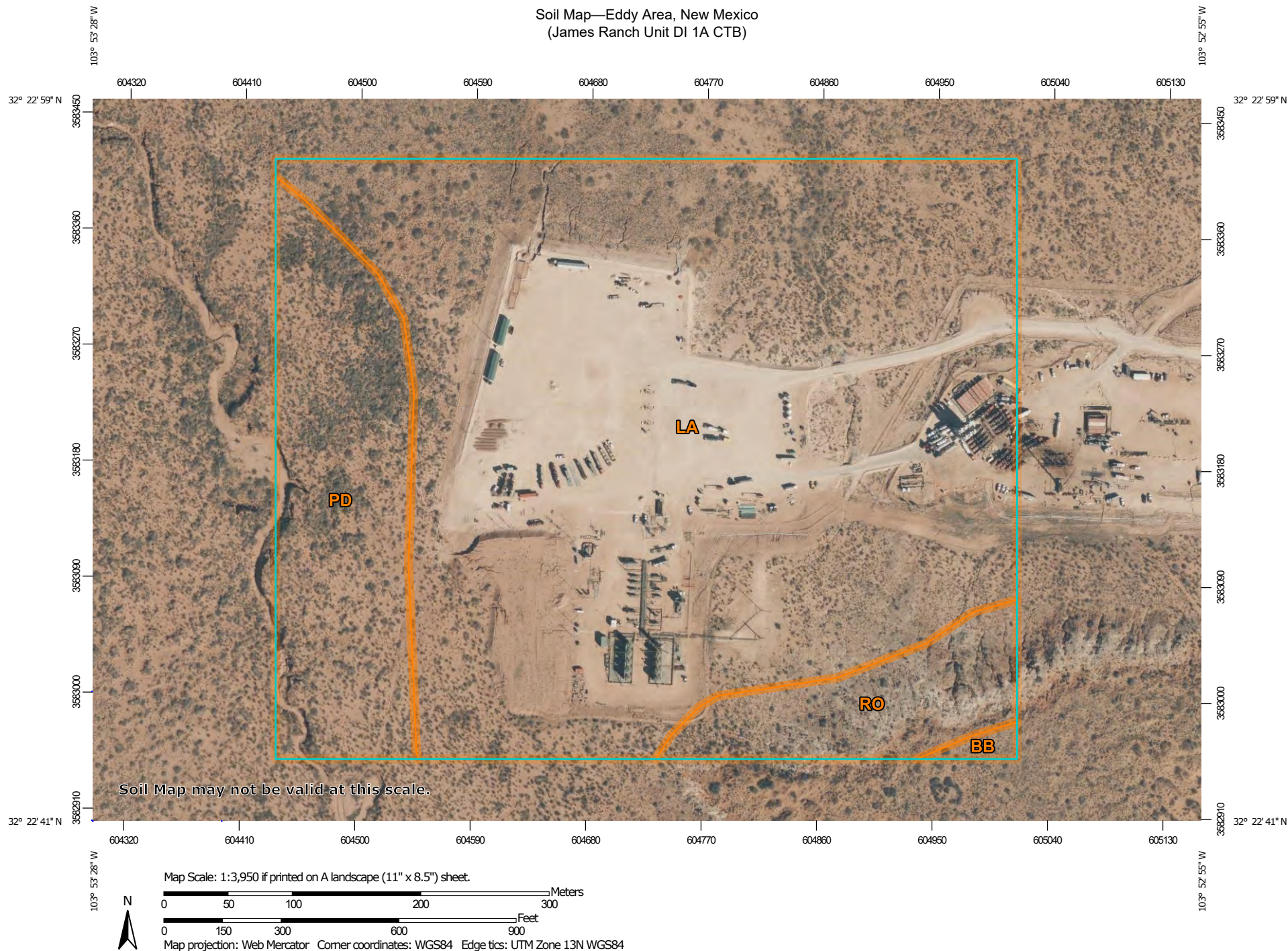
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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 8/3/2023 at 3:23 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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


Soil Map—Eddy Area, New Mexico
(James Ranch Unit DI 1A CTB)



Soil Map—Eddy Area, New Mexico
(James Ranch Unit DI 1A CTB)


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
BB	Berino complex, 0 to 3 percent slopes, eroded	0.3	0.4%
LA	Largo loam, 1 to 5 percent slopes	51.4	76.9%
PD	Pajarito-Dune land complex, 0 to 3 percent slopes	10.5	15.8%
RO	Rock land	4.6	6.9%
Totals for Area of Interest		66.8	100.0%



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

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Cooperative Soil Survey,
a joint effort of the United
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agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Eddy Area, New Mexico



August 3, 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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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

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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

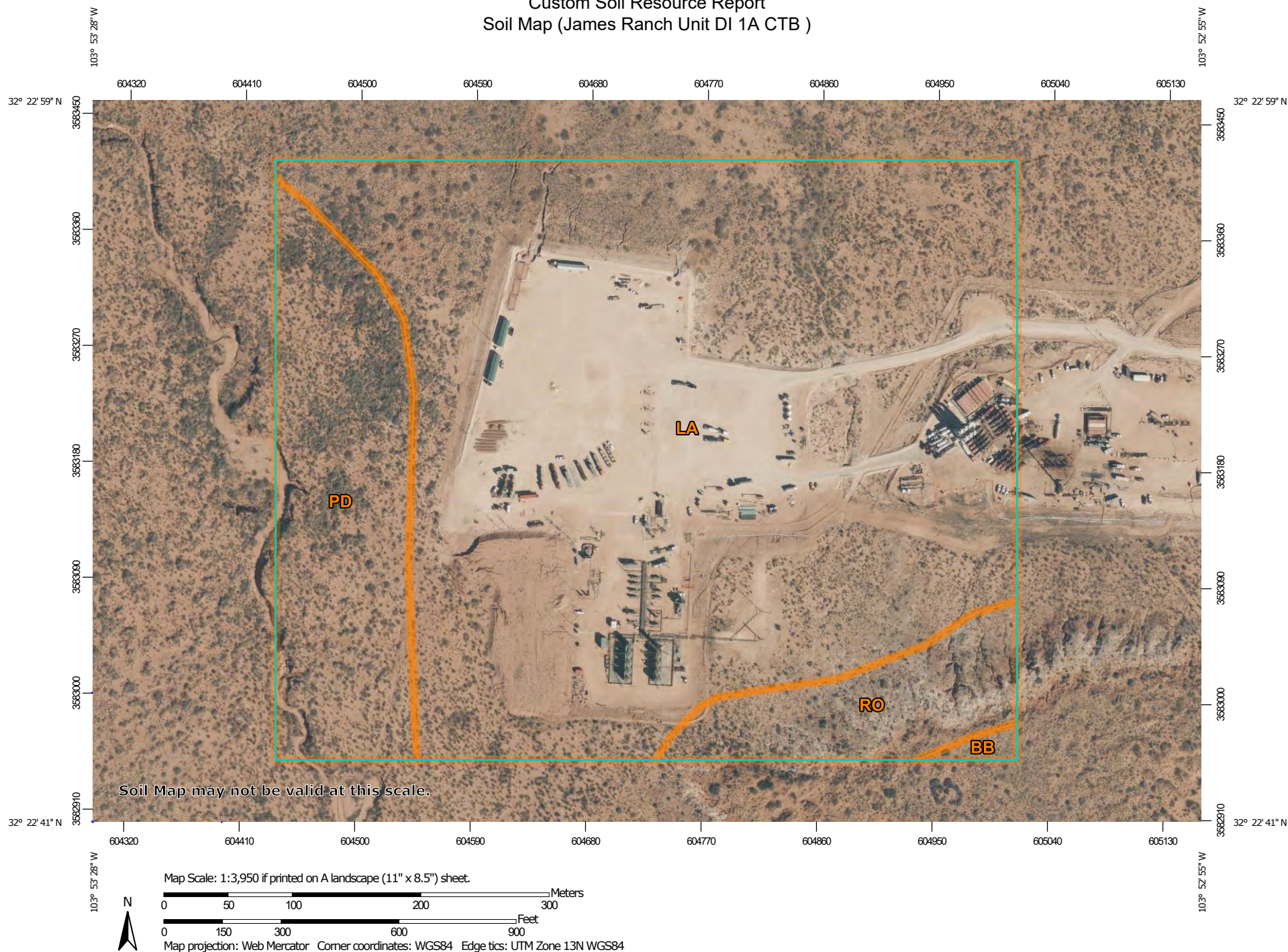
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

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.


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Soil Map (James Ranch Unit DI 1A CTB)



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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.

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

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

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Map Unit Legend (James Ranch Unit DI 1A CTB)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BB	Berino complex, 0 to 3 percent slopes, eroded	0.3	0.4%
LA	Largo loam, 1 to 5 percent slopes	51.4	76.9%
PD	Pajarito-Dune land complex, 0 to 3 percent slopes	10.5	15.8%
RO	Rock land	4.6	6.9%
Totals for Area of Interest		66.8	100.0%

Map Unit Descriptions (James Ranch Unit DI 1A CTB)

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

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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.

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Eddy Area, New Mexico**BB—Berino complex, 0 to 3 percent slopes, eroded****Map Unit Setting**

National map unit symbol: 1w43
Elevation: 2,000 to 5,700 feet
Mean annual precipitation: 5 to 15 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Berino and similar soils: 60 percent
Pajarito and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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 58 inches: sandy clay loam
H3 - 58 to 60 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 8.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

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Description of Pajarito**Setting**

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

Typical profile

H1 - 0 to 9 inches: loamy fine sand
H2 - 9 to 72 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Minor Components**Pajarito**

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

Wink

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

Cacique

Percent of map unit: 4 percent
Ecological site: R070BD004NM - Sandy
Hydric soil rating: No

Kermit

Percent of map unit: 3 percent
Ecological site: R070BD005NM - Deep Sand
Hydric soil rating: No

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LA—Largo loam, 1 to 5 percent slopes**Map Unit Setting**

National map unit symbol: 1w4y
Elevation: 2,000 to 5,700 feet
Mean annual precipitation: 6 to 14 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Largo**Setting**

Landform: Plains, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Calcareous alluvium

Typical profile

H1 - 0 to 4 inches: loam
H2 - 4 to 47 inches: silt loam
H3 - 47 to 65 inches: loam

Properties and qualities

Slope: 1 to 5 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 (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R070BC007NM - Loamy

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Hydric soil rating: No

Minor Components**Largo**

Percent of map unit: 1 percent

Ecological site: R070BC017NM - Bottomland

Hydric soil rating: No

Pajarito

Percent of map unit: 1 percent

Ecological site: R070BD003NM - Loamy Sand

Hydric soil rating: No

PD—Pajarito-Dune land complex, 0 to 3 percent slopes**Map Unit Setting**

National map unit symbol: 1w55

Elevation: 3,000 to 5,000 feet

Mean annual precipitation: 10 to 15 inches

Mean annual air temperature: 60 to 64 degrees F

Frost-free period: 190 to 220 days

Farmland classification: Not prime farmland

Map Unit Composition

Pajarito and similar soils: 46 percent

Dune land: 45 percent

Minor components: 9 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pajarito**Setting**

Landform: Plains, interdunes, dunes

Landform position (three-dimensional): Side slope

Down-slope shape: Convex, linear

Across-slope shape: Linear, convex

Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 9 inches: fine sandy loam

H2 - 9 to 36 inches: fine sandy loam

H3 - 36 to 72 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

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Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Description of Dune Land**Setting**

Landform: Dune fields
Landform position (two-dimensional): Shoulder, backslope, footslope
Landform position (three-dimensional): Talf
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 6 inches: sandy loam
H2 - 6 to 60 inches: sandy loam

Interpretive groups

Land capability classification (irrigated): None specified
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Minor Components**Rock outcrop**

Percent of map unit: 5 percent
Hydric soil rating: No

Largo

Percent of map unit: 4 percent
Ecological site: R070BC007NM - Loamy
Hydric soil rating: No

RO—Rock land**Map Unit Setting**

National map unit symbol: 1w5h
Elevation: 2,000 to 5,700 feet
Mean annual precipitation: 6 to 24 inches

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Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock land: 97 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Land

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Pajarito

Percent of map unit: 1 percent
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Simona

Percent of map unit: 1 percent
Ecological site: R070BD002NM - Shallow Sandy
Hydric soil rating: No

Potter

Percent of map unit: 1 percent
Ecological site: R070BC025NM - Shallow
Hydric soil rating: No

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- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

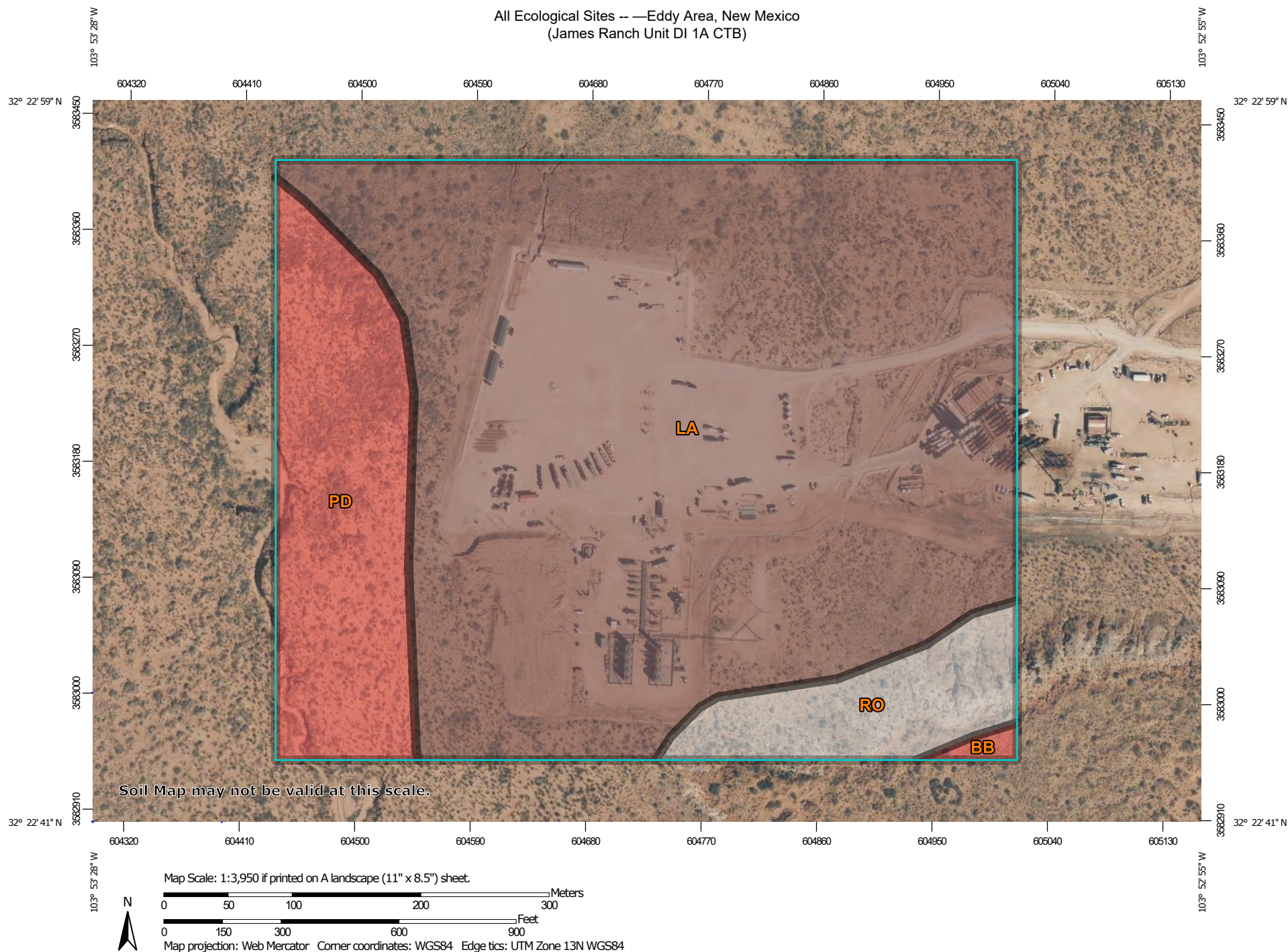
Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

All Ecological Sites -- Eddy Area, New Mexico
(James Ranch Unit DI 1A CTB)



Natural Resources
Conservation Service


Web Soil Survey
National Cooperative Soil Survey

8/3/2023
Page 1 of 3

All Ecological Sites -- Eddy Area, New Mexico
(James Ranch Unit DI 1A CTB)




MAP LEGEND

Area of Interest (AOI)




 Area of Interest (AOI)

Soils




Soil Rating Polygons

 R070BC007NM
 R070BD003NM
 Not rated or not available

Soil Rating Lines

 R070BC007NM
 R070BD003NM
 Not rated or not available






Soil Rating Points

 R070BC007NM
 R070BD003NM
 Not rated or not available


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.



All Ecological Sites —

Map unit symbol	Map unit name	Component name (percent)	Ecological site	Acres in AOI	Percent of AOI
BB	Berino complex, 0 to 3 percent slopes, eroded	Berino (60%)	R070BD003NM — Loamy Sand	0.3	0.4%
		Pajarito (25%)	R070BD003NM — Loamy Sand		
		Cacique (4%)	R070BD004NM — Sandy		
		Pajarito (4%)	R070BD003NM — Loamy Sand		
		Wink (4%)	R070BD003NM — Loamy Sand		
		Kermit (3%)	R070BD005NM — Deep Sand		
LA	Largo loam, 1 to 5 percent slopes	Largo (98%)	R070BC007NM — Loamy	51.4	76.9%
		Largo (1%)	R070BC017NM — Bottomland		
		Pajarito (1%)	R070BD003NM — Loamy Sand		
PD	Pajarito-Dune land complex, 0 to 3 percent slopes	Pajarito (46%)	R070BD003NM — Loamy Sand	10.5	15.8%
		Dune land (45%)	R070BD003NM — Loamy Sand		
		Rock outcrop (5%)			
		Largo (4%)	R070BC007NM — Loamy		
RO	Rock land	Rock land (97%)		4.6	6.9%
		Pajarito (1%)	R070BD003NM — Loamy Sand		
		Potter (1%)	R070BC025NM — Shallow		
		Simona (1%)	R070BD002NM — Shallow Sandy		
Totals for Area of Interest				66.8	100.0%



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USGS Water Resources

Data Category:


Groundwater

Geographic Area:

United States

GO

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- [Full News](#) 

Groundwater levels for the Nation

 Important: [Next Generation Monitoring Location Page](#)

Search Results -- 1 sites found

site_no list =

- 322252103541401

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 322252103541401 22S.30E.20.12310

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°22'52", Longitude 103°54'14" NAD27

Land-surface elevation 3,065 feet above NAVD88

The depth of the well is 129 feet below land surface.

This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

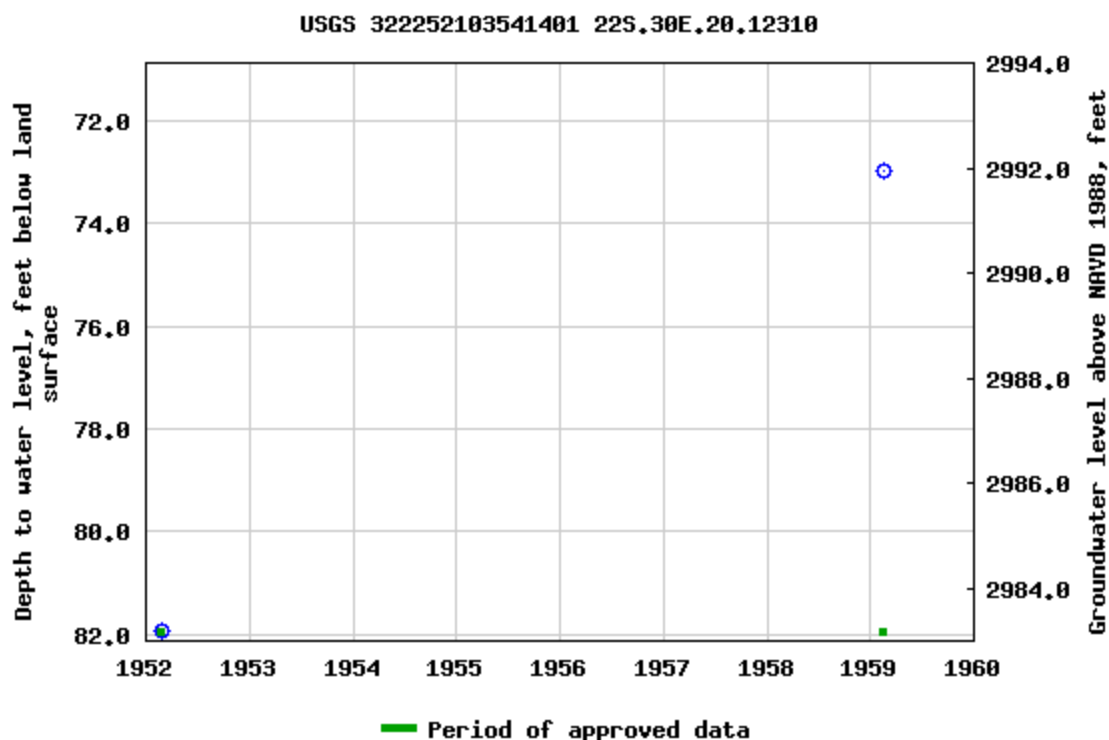
Output formats

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Breaks in the plot represent a gap of at least one year between field measurements.

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[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

Title: Groundwater for USA: Water Levels

URL: <https://nwis.waterdata.usgs.gov/usa/nwis/gwlevels?>

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

Page Last Modified: 2023-08-03 14:45:44 EDT

0.6 0.53 nadww02



Environmental Site Remediation Work Plan

General Information

NMOCD District:	District 2	Incident ID:	nAPP2331041267
Landowner:	Federal	RP Reference:	n/a
Client:	XTO Energy	Site Location:	James Ranch Unit DI 1A Tank Battery
Date:	April 26, 2024	Project #:	23E-04616
Client Contact:	Amy Ruth	Phone #:	432.661.0571
Vertex PM:	Chance Dixon	Phone #:	575.988.1472

Objective

The objective of the environmental remediation work plan is to identify exceedances found during the site assessment/characterization activity and propose an appropriate remediation technique to address these areas. Areas of environmental concern identified and delineated include: production equipment area and immediate surrounding open pad. The C-141 Report is included in Attachment 1. Closure criteria has been selected as per New Mexico Administrative Code 19.15.29. All applicable research as it pertains to closure criteria selection is presented in Attachment 4. The closure criteria for the site is presented below.

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
> 100 feet	Chloride	20,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

TDS – Total dissolved solids

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

BTEX – Benzene, toluene, ethylbenzene, and xylenes

Site Assessment/Characterization

Site characterization was completed on February 21, 2024. A total of 23 sample points including background locations were established and collected for field screening. Samples at the deepest vertical distance below closure criteria were submitted to the laboratory for analysis. In total, 62 samples were submitted to Eurofins/Hall Environmental Laboratory, Carlsbad, New Mexico, for analysis. The sample locations are presented in Attachment 2. Laboratory analysis results have been compared to the above noted closure criteria and the results from the characterization activity are presented in Attachment 3. Exceedances are identified in the table as bold with a grey background. The laboratory data reports and chain-of-custody forms are included in Attachment 5.

Remedial Activities

General

Areas identified with contaminant concentrations above closure criteria will be remediated through excavation. Laboratory results from the site assessment/characterization have been referenced to estimate both the vertical and horizontal limits of the impacts and the volume of soil to be removed. Soil will be excavated to the extents of the known contamination or in 1 foot increments, whichever is less. Field screening will be utilized to confirm removal of contaminated soil below the applicable closure criteria. Contaminated soils will be stored on a 30 mil liner prior to disposal at an approved facility. Once excavation is complete, confirmatory samples will be

Environmental Site Remediation Work Plan

collected and laboratory analysis completed to confirm closure criteria guidelines are met. Excavations will be backfilled with clean soil sourced locally.

Release Near Production Equipment – nAPP2331041267 (10-26-2023)

A total of 21 sample points were established in the release area around the production equipment, around all of the heater treaters and separators. A total of 62 samples were collected for analysis in the release area around the production equipment. Exceedances to closure criteria were identified at sample points BG24-01, BH24-01 to BH24-09, BH24-11 to BH24-13, BH24-17 and BH24-18. A 0.5 foot scrape will be conducted around BH24-02 to BH24-04, BH24-09 to BH24-15, and BH24-18 to BH24-20. A 1 foot excavation will be conducted around BH24-16 and BH24-17. A 1.5 foot excavation will be conducted around BH24-07. Lastly, soil will be excavated at a planned depth of 2 feet around BH24-01, BH24-05, BH24-06 and BH24-08. A hydrovac truck and hand digging will be utilized to remove contaminated soil in close proximity to the equipment and infrastructure. Heavy equipment will be used to complete excavation outside of the containment on open pad. Field screening will be utilized to find the horizontal and vertical extents of the spill area. Confirmatory samples will be collected as per New Mexico Oil Conservation Division guidance and submitted for laboratory analysis of all applicable parameters. The estimated volume to be excavated is **120 cubic yards**.

Sample Point	Excavation Depth	Remediation Method
BH24-01	0.5'	Backhoe/ Handcrew
BH24-02	2.5'	Backhoe/ Handcrew
BH24-03	0.5'	Backhoe/ Handcrew
BH24-04	2.5'	Backhoe/ Handcrew
BH24-05	0.5'	Backhoe/ Handcrew
BH24-06	2.5'	Backhoe/ Handcrew
BH24-07	0.5'	Backhoe/ Handcrew
BH24-08	0.5'	Backhoe/ Handcrew
BH24-09	2.5'	Backhoe/ Handcrew
BH24-10	0.5'	Backhoe/ Handcrew
BH24-11	2.5'	Backhoe/ Handcrew
BH24-12	2.5'	Backhoe/ Handcrew
BH24-13	2.5'	Backhoe/ Handcrew
BH24-14	0.5'	Backhoe/ Handcrew
BH24-15	0.5'	Backhoe/ Handcrew
BH24-16	0.5'	Backhoe/ Handcrew
BH24-17	0.5'	Backhoe/ Handcrew
BH24-18	2.5'	Backhoe/ Handcrew
BH24-19	0.5'	Backhoe/ Handcrew
BH24-20	0.5'	Backhoe/ Handcrew

Environmental Site Remediation Work Plan



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

Austin Harris

4/29/2024

Austin Harris, B.Sc.

Date

ENVIRONMENTAL SPECIALIST, REPORTING

Chance Dixon

4/29/2024

Chance Dixon, B.Sc.

Date

PROJECT MANAGER, REPORT REVIEW

Attachments

Attachment 1. C-141 Report

Attachment 2. Characterization Sampling Site Schematic

Attachment 3. Initial Characterization Sample Field Screen and Laboratory Results – Depth to Groundwater <50 feet bgs

Attachment 4. Closure Criteria Research

Attachment 5. Laboratory Data Reports and Chain-of-Custody Forms

Attachment 1

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	nAPP2331041267
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	XTO Energy	OGRID	5380
Contact Name	Garrett Green	Contact Telephone	575-200-0729
Contact email	garrett.green@exxonmobil.com	Incident #	(assigned by OCD)
Contact mailing address	3104 E. Greene Street, Carlsbad, New Mexico, 88220		

Location of Release Source

Latitude 32.37986 Longitude -103.88668
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	James Ranch Unit DI 1A Tank Battery	Site Type	Tank Battery
Date Release Discovered	10/26/2023	API#	(if applicable)

Unit Letter	Section	Township	Range	County
F	21	22S	30E	Eddy

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

Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 9.45	Volume Recovered (bbls) 7.00
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Internal corrosion caused a 8” CS main PW line to release fluids to pad. A vac truck recovered all free fluids. A third-party contractor has been retained for remediation purposes.

Incident ID	nAPP2331041267
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: NA	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: Garrett Green	Title: Environmental Coordinator
Signature: 	Date: 11/6/2023
email: garrett.green@exxonmobil.com	Telephone: 575-200-0729
<u>OCD Only</u> Received by: _____ Date: _____	

Location:	James Ranch Unit DI 1A		
Spill Date:	10/26/2023		
Area 1			
Approximate Area =	5499.00	sq. ft.	
Average Saturation (or depth) of spill =	1.00	inches	
Average Porosity Factor =	0.03		
VOLUME OF LEAK			
Total Crude Oil =	0.00	bbls	
Total Produced Water =	9.45	bbls	
TOTAL VOLUME OF LEAK			
Total Crude Oil =	0.00	bbls	
Total Produced Water =	9.45	bbls	
TOTAL VOLUME RECOVERED			
Total Crude Oil =	0.00	bbls	
Total Produced Water =	7.00	bbls	

Attachment 2



◆ Borehole (Prefixed by "BH24-") ■ Release Area (~ 3,955 sq. ft.) □ Separator 4-806H



0 5 10 20 ft
NAD 1983 UTM Zone 13N
Date: Feb 26/24

Map Center:
Lat: 32.379834,
Long:-103.886507



Characterization Sampling Site Schematic
JRU DI 1A CTB

FIGURE:
1



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

Note: Image from Google Earth Pro, 2023, georeferenced by Vertex Professional Services Ltd. (Vertex), 2023. Site features from GPS by Vertex, 2024.

VERSATILITY. EXPERTISE.

Attachment 3

Client Name: XTO Energy, Inc.
 Site Name: James Ranch Unit D1 1A CTB
 NMOCD Tracking #: nAPP2331041267
 Project #: 23E-04616

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

Table 2. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs													
Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH24-01	0	January 19, 2024	-	-	2,170	ND	ND	ND	1,250	ND	1,250	1,250	1,300
	2	January 19, 2024	-	-	730	ND	ND	ND	ND	ND	ND	ND	303
BH24-02	0	January 19, 2024	-	246	1,190	ND	ND	ND	55.4	ND	55.4	55.4	598
	2	January 19, 2024	-	85	1,740	ND	ND	ND	ND	ND	ND	ND	786
	3	February 13, 2024	-	34	548	ND	ND	ND	ND	ND	ND	ND	320
	4	February 13, 2024	-	31	500	-	-	-	-	-	-	-	-
	6	February 13, 2024	-	54	500	-	-	-	-	-	-	-	-
BH24-03	0	January 19, 2024	-	-	1,100	ND	ND	ND	ND	ND	ND	ND	390
	2	January 19, 2024	-	-	1,190	ND	ND	ND	ND	ND	ND	ND	431
BH24-04	0	January 19, 2024	-	-	17,840	ND	ND	ND	ND	ND	ND	ND	12,000
	2	January 19, 2024	-	-	3,340	ND	ND	ND	ND	ND	ND	ND	2,120
BH24-05	0	January 19, 2024	0	128	12,900	ND	ND	ND	ND	ND	ND	ND	12,700
	2	January 19, 2024	-	-	8,310	ND	ND	ND	ND	ND	ND	ND	348
BH24-06	0	January 19, 2024	-	-	800	ND	ND	ND	ND	ND	ND	ND	624
	2	January 19, 2024	-	-	2,160	ND	ND	ND	ND	ND	ND	ND	715
BH24-07	0	January 19, 2024	-	-	920	ND	ND	ND	ND	ND	ND	ND	449
	2	January 19, 2024	-	-	1,520	ND	ND	ND	ND	ND	ND	ND	265
BH24-08	0	January 19, 2024	-	-	480	ND	ND	ND	285	ND	285	285	ND
	2	January 19, 2024	-	-	2,520	ND	ND	ND	ND	ND	ND	ND	11.3
BH24-09	0	January 24, 2024	-	0	370	ND	ND	ND	ND	ND	ND	ND	537
	0	January 25, 2024	-	0	310	ND	ND	ND	ND	ND	ND	ND	311
	1	January 25, 2024	-	0	475	ND	ND	ND	ND	ND	ND	ND	606
	2	January 24, 2024	-	0	2,160	ND	ND	ND	ND	ND	ND	ND	821
BH24-10	0	January 24, 2024	-	0	450	ND	ND	ND	ND	ND	ND	ND	118
	2	January 24, 2024	-	0	350	ND	ND	ND	ND	ND	ND	ND	92
BH24-11	0	January 24, 2024	-	0	3,200	ND	ND	ND	ND	ND	ND	ND	624
	0	January 25, 2024	-	0	275	ND	ND	ND	ND	ND	ND	ND	413
	1	January 25, 2024	-	0	420	ND	ND	ND	80	ND	ND	80	465
	2	January 24, 2024	-	0	2,780	ND	ND	ND	ND	ND	ND	ND	624
BH24-12	0	January 24, 2024	-	0	320	ND	ND	ND	ND	ND	ND	ND	-
	0	January 25, 2024	-	0	360	ND	ND	ND	ND	ND	ND	ND	427
	1	January 25, 2024	-	0	512	ND	ND	ND	ND	ND	ND	ND	435
	2	January 24, 2024	-	0	2,300	ND	ND	ND	ND	ND	ND	ND	613
BH24-13	0	January 25, 2024	-	22	310	ND	ND	ND	ND	ND	ND	DN	347
	1	January 25, 2024	-	-	450	ND	ND	ND	ND	ND	ND	ND	439
	2	January 25, 2024	-	-	2,520	ND	ND	ND	ND	ND	ND	ND	812
BH24-14	0	January 25, 2024	-	32	305	ND	ND	ND	ND	ND	ND	ND	531
	1	January 25, 2024	-	-	282	ND	ND	ND	ND	ND	ND	ND	153
BH24-15	0	January 25, 2024	-	15	202	ND	ND	ND	ND	ND	ND	ND	319
	1	January 25, 2024	-	0	180	ND	ND	ND	ND	ND	ND	ND	150
BH24-16	0	January 26, 2024	-	52	188	ND	ND	ND	ND	ND	ND	ND	141
	1	January 26, 2024	-	7	310	ND	ND	ND	ND	ND	ND	ND	153

Table 2. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater <50 feet bgs													
Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic Chloride Concentration
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Volatile		Extractable					
						Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
BH24-17	0	January 30, 2024	-	25	820	ND	ND	ND	ND	ND	ND	ND	132
	2	January 30, 2024	-	10	1,300	ND	ND	ND	ND	ND	ND	ND	82.3
	3	January 30, 2024	-	0	1,500	ND	ND	ND	ND	ND	ND	ND	77.4
BH24-18	0	January 30, 2024	-	32	520	ND	ND	ND	ND	ND	ND	ND	255
	2	January 30, 2024	-	0	1,010	ND	ND	ND	ND	ND	ND	ND	706
	4	January 30, 2024	-	5	1,200	ND	ND	ND	ND	ND	ND	ND	499
BH24-19	0	February 21, 2024	0	45	380	-	-	-	-	-	-	-	-
	1	February 21, 2024	0	30	240	ND	ND	ND	ND	ND	ND	ND	112
BH24-20	0	February 21, 2024	0	80	575	ND	ND	ND	ND	ND	ND	ND	496
	2	February 21, 2024	0	42	267	ND	ND	ND	ND	ND	ND	ND	80
BH24-21	0	February 21, 2024	0	97	327	ND	ND	ND	ND	ND	ND	ND	368
	2	February 21, 2024	0	78	255	ND	ND	ND	ND	ND	ND	ND	96

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed

Bold and grey shaded indicates exceedance outside of NMOCD Remediation Closure Criteria

Attachment 5



Environment Testing

- 1
- 2
- 3
- 4
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- 8
- 9
- 10
- 11
- 12
- 13
- 14

ANALYTICAL REPORT

PREPARED FOR

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

Generated 2/2/2024 11:58:56 AM

JOB DESCRIPTION

JRU DI 1A CTB
23E-04616

JOB NUMBER

890-6016-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220



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Job Notes

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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: JRU DI 1A CTB

Laboratory Job ID: 890-6016-1
SDG: 23E-04616

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Definitions/Glossary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD 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
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.
α	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: JRU DI 1A CTB

Job ID: 890-6016-1

Job ID: 890-6016-1

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Job Narrative
890-6016-1

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 1/23/2024 8:23 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 5.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BH24-01 (890-6016-1), BH24-01 (890-6016-2), BH24-02 (890-6016-3), BH24-02 (890-6016-4), BH24-03 (890-6016-5), BH24-03 (890-6016-6), BH24-04 (890-6016-7), BH24-04 (890-6016-8), BH24-05 (890-6016-9), BH24-05 (890-6016-10), BH24-06 (890-6016-11), BH24-06 (890-6016-12), BH24-07 (890-6016-13), BH24-07 (890-6016-14), BH24-08 (890-6016-15) and BH24-08 (890-6016-16).

GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-71831 and analytical batch 880-72133 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.

Method 8021B: Surrogate recovery for the following samples were outside control limits: BH24-07 (890-6016-13), BH24-07 (890-6016-14), (CCV 880-72133/20) and (890-6016-A-1-C MSD). 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 880-71893 and analytical batch 880-71993 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: BH24-01 (890-6016-2), BH24-02 (890-6016-4) and (890-6039-A-1-D). 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 880-71588 and analytical batch 880-71742 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because 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.

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-01

Lab Sample ID: 890-6016-1

Date Collected: 01/19/24 10:25

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 0

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		01/29/24 13:41	02/01/24 15:17	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 15:17	1
Ethylbenzene	<0.00199	U F1	0.00199	mg/Kg		01/29/24 13:41	02/01/24 15:17	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 15:17	1
o-Xylene	<0.00199	U F2 F1	0.00199	mg/Kg		01/29/24 13:41	02/01/24 15:17	1
Xylenes, Total	<0.00398	U F2 F1	0.00398	mg/Kg		01/29/24 13:41	02/01/24 15:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		70 - 130	01/29/24 13:41	02/01/24 15:17	1
1,4-Difluorobenzene (Surr)	80		70 - 130	01/29/24 13:41	02/01/24 15:17	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			02/01/24 15:17	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	1250		50.4	mg/Kg			01/31/24 22:30	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		01/29/24 17:13	01/31/24 22:30	1
Diesel Range Organics (Over C10-C28)	1250		50.4	mg/Kg		01/29/24 17:13	01/31/24 22:30	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		01/29/24 17:13	01/31/24 22:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	123		70 - 130	01/29/24 17:13	01/31/24 22:30	1
o-Terphenyl	96		70 - 130	01/29/24 17:13	01/31/24 22:30	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1300		49.7	mg/Kg			01/29/24 04:19	10

Client Sample ID: BH24-01

Lab Sample ID: 890-6016-2

Date Collected: 01/19/24 10:30

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 2

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		01/29/24 13:41	02/01/24 15:43	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 15:43	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 15:43	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		01/29/24 13:41	02/01/24 15:43	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 15:43	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		01/29/24 13:41	02/01/24 15:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	01/29/24 13:41	02/01/24 15:43	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-01

Lab Sample ID: 890-6016-2

Date Collected: 01/19/24 10:30

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 2

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	96		70 - 130	01/29/24 13:41	02/01/24 15:43	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			02/01/24 15:43	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			01/31/24 22:51	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	<50.1	U	50.1	mg/Kg		01/29/24 17:13	01/31/24 22:51	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		01/29/24 17:13	01/31/24 22:51	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		01/29/24 17:13	01/31/24 22:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	135	S1+	70 - 130			01/29/24 17:13	01/31/24 22:51	1
o-Terphenyl	107		70 - 130			01/29/24 17:13	01/31/24 22:51	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	303		4.95	mg/Kg			01/29/24 04:40	1

Client Sample ID: BH24-02

Lab Sample ID: 890-6016-3

Date Collected: 01/19/24 10:35

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 0

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		01/29/24 13:41	02/01/24 16:09	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 16:09	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 16:09	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		01/29/24 13:41	02/01/24 16:09	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 16:09	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		01/29/24 13:41	02/01/24 16:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	126		70 - 130	01/29/24 13:41	02/01/24 16:09	1
1,4-Difluorobenzene (Surr)	126		70 - 130	01/29/24 13:41	02/01/24 16:09	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			02/01/24 16:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	55.4		49.9	mg/Kg			01/31/24 23:12	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-02

Lab Sample ID: 890-6016-3

Date Collected: 01/19/24 10:35

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 0

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		01/29/24 17:13	01/31/24 23:12	1
Diesel Range Organics (Over C10-C28)	55.4		49.9	mg/Kg		01/29/24 17:13	01/31/24 23:12	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/29/24 17:13	01/31/24 23:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	107		70 - 130			01/29/24 17:13	01/31/24 23:12	1
o-Terphenyl	85		70 - 130			01/29/24 17:13	01/31/24 23:12	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	598		4.97	mg/Kg			01/29/24 04:47	1

Client Sample ID: BH24-02

Lab Sample ID: 890-6016-4

Date Collected: 01/19/24 10:45

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 2

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		01/29/24 13:41	02/01/24 16:35	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 16:35	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 16:35	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 16:35	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 16:35	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 16:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		70 - 130			01/29/24 13:41	02/01/24 16:35	1
1,4-Difluorobenzene (Surr)	101		70 - 130			01/29/24 13:41	02/01/24 16:35	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			02/01/24 16:35	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			01/31/24 23:32	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		01/29/24 17:13	01/31/24 23:32	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		01/29/24 17:13	01/31/24 23:32	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		01/29/24 17:13	01/31/24 23:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	133	S1+	70 - 130			01/29/24 17:13	01/31/24 23:32	1
o-Terphenyl	111		70 - 130			01/29/24 17:13	01/31/24 23:32	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-02

Lab Sample ID: 890-6016-4

Date Collected: 01/19/24 10:45

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 2

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	786		5.00	mg/Kg			01/29/24 04:54	1

Client Sample ID: BH24-03

Lab Sample ID: 890-6016-5

Date Collected: 01/19/24 10:47

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 0

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		01/29/24 13:41	02/01/24 17:01	1
Toluene	<0.00198	U	0.00198	mg/Kg		01/29/24 13:41	02/01/24 17:01	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		01/29/24 13:41	02/01/24 17:01	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		01/29/24 13:41	02/01/24 17:01	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		01/29/24 13:41	02/01/24 17:01	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		01/29/24 13:41	02/01/24 17:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130			01/29/24 13:41	02/01/24 17:01	1
1,4-Difluorobenzene (Surr)	104		70 - 130			01/29/24 13:41	02/01/24 17:01	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			02/01/24 17:01	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			01/31/24 23:53	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		01/29/24 17:13	01/31/24 23:53	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		01/29/24 17:13	01/31/24 23:53	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		01/29/24 17:13	01/31/24 23:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	110		70 - 130			01/29/24 17:13	01/31/24 23:53	1
o-Terphenyl	87		70 - 130			01/29/24 17:13	01/31/24 23:53	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	390		5.00	mg/Kg			01/29/24 05:00	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-03

Lab Sample ID: 890-6016-6

Date Collected: 01/19/24 10:50

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 2

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		01/29/24 13:41	02/01/24 17:27	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 17:27	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 17:27	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 17:27	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 17:27	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 17:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130	01/29/24 13:41	02/01/24 17:27	1
1,4-Difluorobenzene (Surr)	84		70 - 130	01/29/24 13:41	02/01/24 17:27	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			02/01/24 17:27	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			02/01/24 00:14	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		01/29/24 17:13	02/01/24 00:14	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2	mg/Kg		01/29/24 17:13	02/01/24 00:14	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		01/29/24 17:13	02/01/24 00:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	110		70 - 130	01/29/24 17:13	02/01/24 00:14	1
o-Terphenyl	88		70 - 130	01/29/24 17:13	02/01/24 00:14	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	431		4.99	mg/Kg			01/29/24 05:07	1

Client Sample ID: BH24-04

Lab Sample ID: 890-6016-7

Date Collected: 01/19/24 11:00

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 0

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		01/29/24 13:41	02/01/24 17:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 17:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 17:53	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		01/29/24 13:41	02/01/24 17:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 17:53	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		01/29/24 13:41	02/01/24 17:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	130		70 - 130	01/29/24 13:41	02/01/24 17:53	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-04

Lab Sample ID: 890-6016-7

Date Collected: 01/19/24 11:00

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 0

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	116		70 - 130	01/29/24 13:41	02/01/24 17:53	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			02/01/24 17:53	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			02/01/24 00:55	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		01/29/24 17:13	02/01/24 00:55	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		01/29/24 17:13	02/01/24 00:55	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		01/29/24 17:13	02/01/24 00:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	120		70 - 130			01/29/24 17:13	02/01/24 00:55	1
o-Terphenyl	96		70 - 130			01/29/24 17:13	02/01/24 00:55	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12000		101	mg/Kg			01/29/24 05:14	20

Client Sample ID: BH24-04

Lab Sample ID: 890-6016-8

Date Collected: 01/19/24 11:10

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 2

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		01/29/24 13:41	02/01/24 18:19	1
Toluene	<0.00201	U	0.00201	mg/Kg		01/29/24 13:41	02/01/24 18:19	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		01/29/24 13:41	02/01/24 18:19	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		01/29/24 13:41	02/01/24 18:19	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		01/29/24 13:41	02/01/24 18:19	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		01/29/24 13:41	02/01/24 18:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130	01/29/24 13:41	02/01/24 18:19	1
1,4-Difluorobenzene (Surr)	81		70 - 130	01/29/24 13:41	02/01/24 18:19	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			02/01/24 18:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			02/01/24 01:16	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-04

Lab Sample ID: 890-6016-8

Date Collected: 01/19/24 11:10

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 2

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	<50.5	U	50.5	mg/Kg		01/29/24 17:13	02/01/24 01:16	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		01/29/24 17:13	02/01/24 01:16	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		01/29/24 17:13	02/01/24 01:16	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	120		70 - 130			01/29/24 17:13	02/01/24 01:16	1
o-Terphenyl	97		70 - 130			01/29/24 17:13	02/01/24 01:16	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2120		49.7	mg/Kg			01/29/24 05:21	10

Client Sample ID: BH24-05

Lab Sample ID: 890-6016-9

Date Collected: 01/19/24 11:20

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 0

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		01/29/24 13:41	02/01/24 18:45	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 18:45	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 18:45	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		01/29/24 13:41	02/01/24 18:45	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 18:45	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		01/29/24 13:41	02/01/24 18:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130			01/29/24 13:41	02/01/24 18:45	1
1,4-Difluorobenzene (Surr)	78		70 - 130			01/29/24 13:41	02/01/24 18:45	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			02/01/24 18:45	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			02/01/24 01:36	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		01/29/24 17:13	02/01/24 01:36	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		01/29/24 17:13	02/01/24 01:36	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		01/29/24 17:13	02/01/24 01:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	115		70 - 130			01/29/24 17:13	02/01/24 01:36	1
o-Terphenyl	90		70 - 130			01/29/24 17:13	02/01/24 01:36	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-05

Lab Sample ID: 890-6016-9

Date Collected: 01/19/24 11:20

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 0

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12700		250	mg/Kg			01/30/24 08:43	50

Client Sample ID: BH24-05

Lab Sample ID: 890-6016-10

Date Collected: 01/19/24 11:30

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 2

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		01/29/24 13:41	02/01/24 19:11	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 19:11	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 19:11	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 19:11	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 19:11	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 19:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130			01/29/24 13:41	02/01/24 19:11	1
1,4-Difluorobenzene (Surr)	110		70 - 130			01/29/24 13:41	02/01/24 19:11	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			02/01/24 19:11	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			02/01/24 01:57	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	<50.0	U	50.0	mg/Kg		01/29/24 17:13	02/01/24 01:57	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/29/24 17:13	02/01/24 01:57	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/29/24 17:13	02/01/24 01:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	103		70 - 130			01/29/24 17:13	02/01/24 01:57	1
o-Terphenyl	83		70 - 130			01/29/24 17:13	02/01/24 01:57	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	348		5.00	mg/Kg			01/30/24 09:16	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-06

Lab Sample ID: 890-6016-11

Date Collected: 01/19/24 11:40

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 0

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		01/29/24 13:41	02/01/24 20:55	1
Toluene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 20:55	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 20:55	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 20:55	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 20:55	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 20:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	01/29/24 13:41	02/01/24 20:55	1
1,4-Difluorobenzene (Surr)	78		70 - 130	01/29/24 13:41	02/01/24 20:55	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			02/01/24 20:55	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			02/01/24 02:18	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	<49.7	U	49.7	mg/Kg		01/29/24 17:13	02/01/24 02:18	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		01/29/24 17:13	02/01/24 02:18	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		01/29/24 17:13	02/01/24 02:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130	01/29/24 17:13	02/01/24 02:18	1
o-Terphenyl	89		70 - 130	01/29/24 17:13	02/01/24 02:18	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	624		4.99	mg/Kg			01/30/24 09:22	1

Client Sample ID: BH24-06

Lab Sample ID: 890-6016-12

Date Collected: 01/19/24 11:50

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 2

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		01/29/24 13:41	02/01/24 21:21	1
Toluene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 21:21	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 21:21	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		01/29/24 13:41	02/01/24 21:21	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 21:21	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		01/29/24 13:41	02/01/24 21:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130	01/29/24 13:41	02/01/24 21:21	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-06

Lab Sample ID: 890-6016-12

Date Collected: 01/19/24 11:50

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 2

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	74		70 - 130	01/29/24 13:41	02/01/24 21:21	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			02/01/24 21:21	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			02/01/24 02:38	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		01/29/24 17:13	02/01/24 02:38	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		01/29/24 17:13	02/01/24 02:38	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/29/24 17:13	02/01/24 02:38	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	121		70 - 130			01/29/24 17:13	02/01/24 02:38	1
o-Terphenyl	97		70 - 130			01/29/24 17:13	02/01/24 02:38	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	715		4.96	mg/Kg			01/30/24 09:57	1

Client Sample ID: BH24-07

Lab Sample ID: 890-6016-13

Date Collected: 01/19/24 12:00

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 0

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		01/29/24 13:41	02/01/24 21:48	1
Toluene	<0.00201	U	0.00201	mg/Kg		01/29/24 13:41	02/01/24 21:48	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		01/29/24 13:41	02/01/24 21:48	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		01/29/24 13:41	02/01/24 21:48	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		01/29/24 13:41	02/01/24 21:48	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		01/29/24 13:41	02/01/24 21:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	146	S1+	70 - 130	01/29/24 13:41	02/01/24 21:48	1
1,4-Difluorobenzene (Surr)	89		70 - 130	01/29/24 13:41	02/01/24 21:48	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			02/01/24 21:48	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			02/01/24 02:59	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-07
Date Collected: 01/19/24 12:00
Date Received: 01/23/24 08:23
Sample Depth: 0

Lab Sample ID: 890-6016-13
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	<49.9	U	49.9	mg/Kg		01/29/24 17:13	02/01/24 02:59	1	
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		01/29/24 17:13	02/01/24 02:59	1	
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/29/24 17:13	02/01/24 02:59	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	115		70 - 130			01/29/24 17:13	02/01/24 02:59	1	
o-Terphenyl	91		70 - 130			01/29/24 17:13	02/01/24 02:59	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	449		5.02	mg/Kg			01/30/24 09:33	1	

Client Sample ID: BH24-07
Date Collected: 01/19/24 12:10
Date Received: 01/23/24 08:23
Sample Depth: 2

Lab Sample ID: 890-6016-14
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		01/29/24 13:41	02/01/24 22:14	1	
Toluene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 22:14	1	
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 22:14	1	
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 22:14	1	
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 22:14	1	
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 22:14	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	159	S1+	70 - 130			01/29/24 13:41	02/01/24 22:14	1	
1,4-Difluorobenzene (Surr)	98		70 - 130			01/29/24 13:41	02/01/24 22:14	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			02/01/24 22:14	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			02/01/24 03:20	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	<49.6	U	49.6	mg/Kg		01/29/24 17:13	02/01/24 03:20	1	
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		01/29/24 17:13	02/01/24 03:20	1	
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		01/29/24 17:13	02/01/24 03:20	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	113		70 - 130			01/29/24 17:13	02/01/24 03:20	1	
o-Terphenyl	89		70 - 130			01/29/24 17:13	02/01/24 03:20	1	

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-07

Lab Sample ID: 890-6016-14

Date Collected: 01/19/24 12:10

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 2

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	265		4.97	mg/Kg			01/30/24 10:13	1

Client Sample ID: BH24-08

Lab Sample ID: 890-6016-15

Date Collected: 01/19/24 12:20

Matrix: Solid

Date Received: 01/23/24 08:23

Sample Depth: 0

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		01/29/24 13:41	02/01/24 22:40	1
Toluene	<0.00198	U	0.00198	mg/Kg		01/29/24 13:41	02/01/24 22:40	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		01/29/24 13:41	02/01/24 22:40	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		01/29/24 13:41	02/01/24 22:40	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		01/29/24 13:41	02/01/24 22:40	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		01/29/24 13:41	02/01/24 22:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130			01/29/24 13:41	02/01/24 22:40	1
1,4-Difluorobenzene (Surr)	110		70 - 130			01/29/24 13:41	02/01/24 22:40	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			02/01/24 22:40	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	285		50.1	mg/Kg			02/01/24 03:41	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	<50.1	U	50.1	mg/Kg		01/29/24 17:13	02/01/24 03:41	1
Diesel Range Organics (Over C10-C28)	285		50.1	mg/Kg		01/29/24 17:13	02/01/24 03:41	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		01/29/24 17:13	02/01/24 03:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	119		70 - 130			01/29/24 17:13	02/01/24 03:41	1
o-Terphenyl	94		70 - 130			01/29/24 17:13	02/01/24 03:41	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<4.98	U	4.98	mg/Kg			01/30/24 10:20	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-08
Date Collected: 01/19/24 12:30
Date Received: 01/23/24 08:23
Sample Depth: 2

Lab Sample ID: 890-6016-16
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		01/29/24 13:41	02/01/24 23:06	1	
Toluene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 23:06	1	
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 23:06	1	
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 23:06	1	
o-Xylene	<0.00199	U	0.00199	mg/Kg		01/29/24 13:41	02/01/24 23:06	1	
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		01/29/24 13:41	02/01/24 23:06	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	127		70 - 130			01/29/24 13:41	02/01/24 23:06	1	
1,4-Difluorobenzene (Surr)	77		70 - 130			01/29/24 13:41	02/01/24 23:06	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			02/01/24 23:06	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			02/01/24 04:02	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		01/29/24 17:13	02/01/24 04:02	1	
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		01/29/24 17:13	02/01/24 04:02	1	
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		01/29/24 17:13	02/01/24 04:02	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	120		70 - 130			01/29/24 17:13	02/01/24 04:02	1	
o-Terphenyl	96		70 - 130			01/29/24 17:13	02/01/24 04:02	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	11.3		4.98	mg/Kg			01/30/24 09:51	1	

Surrogate Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Method: 8021B - Volatile Organic Compounds (GC)
Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	BFB1	DFBZ1				
		(70-130)	(70-130)				
890-6016-1	BH24-01	116	80				
890-6016-1 MS	BH24-01	106	97				
890-6016-1 MSD	BH24-01	136 S1+	120				
890-6016-2	BH24-01	109	96				
890-6016-3	BH24-02	126	126				
890-6016-4	BH24-02	129	101				
890-6016-5	BH24-03	124	104				
890-6016-6	BH24-03	124	84				
890-6016-7	BH24-04	130	116				
890-6016-8	BH24-04	88	81				
890-6016-9	BH24-05	118	78				
890-6016-10	BH24-05	117	110				
890-6016-11	BH24-06	100	78				
890-6016-12	BH24-06	108	74				
890-6016-13	BH24-07	146 S1+	89				
890-6016-14	BH24-07	159 S1+	98				
890-6016-15	BH24-08	114	110				
890-6016-16	BH24-08	127	77				
LCS 880-71831/1-A	Lab Control Sample	85	77				
LCSD 880-71831/2-A	Lab Control Sample Dup	87	79				
MB 880-71831/5-A	Method Blank	72	122				
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)					
Lab Sample ID	Client Sample ID	1CO1	OTPH1				
		(70-130)	(70-130)				
890-6016-1	BH24-01	123	96				
890-6016-2	BH24-01	135 S1+	107				
890-6016-3	BH24-02	107	85				
890-6016-4	BH24-02	133 S1+	111				
890-6016-5	BH24-03	110	87				
890-6016-6	BH24-03	110	88				
890-6016-7	BH24-04	120	96				
890-6016-8	BH24-04	120	97				
890-6016-9	BH24-05	115	90				
890-6016-10	BH24-05	103	83				
890-6016-11	BH24-06	113	89				
890-6016-12	BH24-06	121	97				
890-6016-13	BH24-07	115	91				
890-6016-14	BH24-07	113	89				
890-6016-15	BH24-08	119	94				
890-6016-16	BH24-08	120	96				
890-6039-A-1-E MS	Matrix Spike	117	87				
890-6039-A-1-F MSD	Matrix Spike Duplicate	130	93				

Surrogate Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
LCS 880-71893/2-A	Lab Control Sample	96	83
LCSD 880-71893/3-A	Lab Control Sample Dup	94	90
MB 880-71893/1-A	Method Blank	138 S1+	113
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-71831/5-A					Client Sample ID: Method Blank				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 72133					Prep Batch: 71831				
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 14:51	1	
Toluene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 14:51	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 14:51	1	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		01/29/24 13:41	02/01/24 14:51	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		01/29/24 13:41	02/01/24 14:51	1	
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		01/29/24 13:41	02/01/24 14:51	1	
Surrogate	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	72		70 - 130			01/29/24 13:41	02/01/24 14:51	1	
1,4-Difluorobenzene (Surr)	122		70 - 130			01/29/24 13:41	02/01/24 14:51	1	

Lab Sample ID: LCS 880-71831/1-A					Client Sample ID: Lab Control Sample					
Matrix: Solid					Prep Type: Total/NA					
Analysis Batch: 72133					Prep Batch: 71831					
			Spike	LCS	LCS			%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene			0.100	0.08590		mg/Kg		86	70 - 130	
Toluene			0.100	0.08472		mg/Kg		85	70 - 130	
Ethylbenzene			0.100	0.1018		mg/Kg		102	70 - 130	
m-Xylene & p-Xylene			0.200	0.2207		mg/Kg		110	70 - 130	
o-Xylene			0.100	0.1008		mg/Kg		101	70 - 130	
			LCS	LCS						
Surrogate		%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)		85		70 - 130						
1,4-Difluorobenzene (Surr)		77		70 - 130						

Lab Sample ID: LCSD 880-71831/2-A					Client Sample ID: Lab Control Sample Dup				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 72133					Prep Batch: 71831				
Analyte		Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD Limit
Benzene		0.100	0.08209		mg/Kg		82	70 - 130	5 35
Toluene		0.100	0.08170		mg/Kg		82	70 - 130	4 35
Ethylbenzene		0.100	0.08255		mg/Kg		83	70 - 130	21 35
m-Xylene & p-Xylene		0.200	0.1932		mg/Kg		97	70 - 130	13 35
o-Xylene		0.100	0.09310		mg/Kg		93	70 - 130	8 35
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	87		70 - 130						
1,4-Difluorobenzene (Surr)	79		70 - 130						

Lab Sample ID: 890-6016-1 MS					Client Sample ID: BH24-01				
Matrix: Solid					Prep Type: Total/NA				
Analysis Batch: 72133					Prep Batch: 71831				
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0996	0.08553		mg/Kg		86	70 - 130
Toluene	<0.00199	U	0.0996	0.08395		mg/Kg		84	70 - 130

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

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

Lab Sample ID: 890-6016-1 MS
Matrix: Solid
Analysis Batch: 72133

Client Sample ID: BH24-01
Prep Type: Total/NA
Prep Batch: 71831

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U F1	0.0996	0.06838	F1	mg/Kg		69	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1418		mg/Kg		71	70 - 130
o-Xylene	<0.00199	U F2 F1	0.0996	0.01126	F1	mg/Kg		11	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	106		70 - 130						
1,4-Difluorobenzene (Surr)	97		70 - 130						

Lab Sample ID: 890-6016-1 MSD
Matrix: Solid
Analysis Batch: 72133

Client Sample ID: BH24-01
Prep Type: Total/NA
Prep Batch: 71831

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0990	0.08356		mg/Kg		84	70 - 130	2	35
Toluene	<0.00199	U	0.0990	0.08553		mg/Kg		86	70 - 130	2	35
Ethylbenzene	<0.00199	U F1	0.0990	0.06985		mg/Kg		71	70 - 130	2	35
m-Xylene & p-Xylene	<0.00398	U	0.198	0.1506		mg/Kg		76	70 - 130	6	35
o-Xylene	<0.00199	U F2 F1	0.0990	0.08422	F2	mg/Kg		85	70 - 130	153	35
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	136	S1+	70 - 130								
1,4-Difluorobenzene (Surr)	120		70 - 130								

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

Lab Sample ID: MB 880-71893/1-A
Matrix: Solid
Analysis Batch: 71993

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 71893

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		01/29/24 17:13	01/31/24 19:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/29/24 17:13	01/31/24 19:25	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/29/24 17:13	01/31/24 19:25	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac		
1-Chlorooctane	138	S1+	70 - 130	01/29/24 17:13	01/31/24 19:25	1		
o-Terphenyl	113		70 - 130	01/29/24 17:13	01/31/24 19:25	1		

Lab Sample ID: LCS 880-71893/2-A
Matrix: Solid
Analysis Batch: 71993

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 71893

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	941.3		mg/Kg		94	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1001		mg/Kg		100	70 - 130

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

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

Lab Sample ID: LCS 880-71893/2-A
Matrix: Solid
Analysis Batch: 71993

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 71893

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	83		70 - 130

Lab Sample ID: LCSD 880-71893/3-A
Matrix: Solid
Analysis Batch: 71993

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 71893

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	840.8		mg/Kg		84	70 - 130	11	20
Diesel Range Organics (Over C10-C28)	1000	892.3		mg/Kg		89	70 - 130	11	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	90		70 - 130

Lab Sample ID: 890-6039-A-1-E MS
Matrix: Solid
Analysis Batch: 71993

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 71893

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	1010	944.4		mg/Kg		91	70 - 130
Diesel Range Organics (Over C10-C28)	<50.3	U	1010	1062		mg/Kg		103	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	117		70 - 130
o-Terphenyl	87		70 - 130

Lab Sample ID: 890-6039-A-1-F MSD
Matrix: Solid
Analysis Batch: 71993

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 71893

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	<50.3	U	1010	942.9		mg/Kg		91	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	<50.3	U	1010	1160		mg/Kg		113	70 - 130	9	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	130		70 - 130
o-Terphenyl	93		70 - 130

QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-71577/1-A

Matrix: Solid

Analysis Batch: 71737

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			01/29/24 01:55	1

Lab Sample ID: LCS 880-71577/2-A

Matrix: Solid

Analysis Batch: 71737

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	273.5		mg/Kg		109	90 - 110

Lab Sample ID: LCSD 880-71577/3-A

Matrix: Solid

Analysis Batch: 71737

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	272.7		mg/Kg		109	90 - 110	0	20

Lab Sample ID: 890-6008-A-2-B MS

Matrix: Solid

Analysis Batch: 71737

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	328		251	577.2		mg/Kg		100	90 - 110

Lab Sample ID: 890-6008-A-2-C MSD

Matrix: Solid

Analysis Batch: 71737

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	328		251	577.7		mg/Kg		100	90 - 110	0	20

Lab Sample ID: MB 880-71588/1-A

Matrix: Solid

Analysis Batch: 71742

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			01/29/24 20:06	1

Lab Sample ID: LCS 880-71588/2-A

Matrix: Solid

Analysis Batch: 71742

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	235.9		mg/Kg		94	90 - 110

Lab Sample ID: LCSD 880-71588/3-A

Matrix: Solid

Analysis Batch: 71742

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	235.5		mg/Kg		94	90 - 110	0	20

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 880-38383-A-4-B MS											Client Sample ID: Matrix Spike		
Matrix: Solid											Prep Type: Soluble		
Analysis Batch: 71742													
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits				
Chloride	34300	F1	12400	48510	F1	mg/Kg		115	90 - 110				

Lab Sample ID: 880-38383-A-4-C MSD											Client Sample ID: Matrix Spike Duplicate		
Matrix: Solid											Prep Type: Soluble		
Analysis Batch: 71742													
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit		
Chloride	34300	F1	12400	48320	F1	mg/Kg		113	90 - 110	0	20		

Lab Sample ID: 880-38394-A-10-C MS											Client Sample ID: Matrix Spike		
Matrix: Solid											Prep Type: Soluble		
Analysis Batch: 71742													
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits				
Chloride	622		249	884.0		mg/Kg		106	90 - 110				

Lab Sample ID: 880-38394-A-10-D MSD											Client Sample ID: Matrix Spike Duplicate		
Matrix: Solid											Prep Type: Soluble		
Analysis Batch: 71742													
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit		
Chloride	622		249	874.7		mg/Kg		102	90 - 110	1	20		

QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

GC VOA

Prep Batch: 71831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-1	BH24-01	Total/NA	Solid	5035	
890-6016-2	BH24-01	Total/NA	Solid	5035	
890-6016-3	BH24-02	Total/NA	Solid	5035	
890-6016-4	BH24-02	Total/NA	Solid	5035	
890-6016-5	BH24-03	Total/NA	Solid	5035	
890-6016-6	BH24-03	Total/NA	Solid	5035	
890-6016-7	BH24-04	Total/NA	Solid	5035	
890-6016-8	BH24-04	Total/NA	Solid	5035	
890-6016-9	BH24-05	Total/NA	Solid	5035	
890-6016-10	BH24-05	Total/NA	Solid	5035	
890-6016-11	BH24-06	Total/NA	Solid	5035	
890-6016-12	BH24-06	Total/NA	Solid	5035	
890-6016-13	BH24-07	Total/NA	Solid	5035	
890-6016-14	BH24-07	Total/NA	Solid	5035	
890-6016-15	BH24-08	Total/NA	Solid	5035	
890-6016-16	BH24-08	Total/NA	Solid	5035	
MB 880-71831/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-71831/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-71831/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-6016-1 MS	BH24-01	Total/NA	Solid	5035	
890-6016-1 MSD	BH24-01	Total/NA	Solid	5035	

Analysis Batch: 72133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-1	BH24-01	Total/NA	Solid	8021B	71831
890-6016-2	BH24-01	Total/NA	Solid	8021B	71831
890-6016-3	BH24-02	Total/NA	Solid	8021B	71831
890-6016-4	BH24-02	Total/NA	Solid	8021B	71831
890-6016-5	BH24-03	Total/NA	Solid	8021B	71831
890-6016-6	BH24-03	Total/NA	Solid	8021B	71831
890-6016-7	BH24-04	Total/NA	Solid	8021B	71831
890-6016-8	BH24-04	Total/NA	Solid	8021B	71831
890-6016-9	BH24-05	Total/NA	Solid	8021B	71831
890-6016-10	BH24-05	Total/NA	Solid	8021B	71831
890-6016-11	BH24-06	Total/NA	Solid	8021B	71831
890-6016-12	BH24-06	Total/NA	Solid	8021B	71831
890-6016-13	BH24-07	Total/NA	Solid	8021B	71831
890-6016-14	BH24-07	Total/NA	Solid	8021B	71831
890-6016-15	BH24-08	Total/NA	Solid	8021B	71831
890-6016-16	BH24-08	Total/NA	Solid	8021B	71831
MB 880-71831/5-A	Method Blank	Total/NA	Solid	8021B	71831
LCS 880-71831/1-A	Lab Control Sample	Total/NA	Solid	8021B	71831
LCSD 880-71831/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	71831
890-6016-1 MS	BH24-01	Total/NA	Solid	8021B	71831
890-6016-1 MSD	BH24-01	Total/NA	Solid	8021B	71831

Analysis Batch: 72222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-1	BH24-01	Total/NA	Solid	Total BTEX	
890-6016-2	BH24-01	Total/NA	Solid	Total BTEX	
890-6016-3	BH24-02	Total/NA	Solid	Total BTEX	

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QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

GC VOA (Continued)

Analysis Batch: 72222 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-4	BH24-02	Total/NA	Solid	Total BTEX	
890-6016-5	BH24-03	Total/NA	Solid	Total BTEX	
890-6016-6	BH24-03	Total/NA	Solid	Total BTEX	
890-6016-7	BH24-04	Total/NA	Solid	Total BTEX	
890-6016-8	BH24-04	Total/NA	Solid	Total BTEX	
890-6016-9	BH24-05	Total/NA	Solid	Total BTEX	
890-6016-10	BH24-05	Total/NA	Solid	Total BTEX	
890-6016-11	BH24-06	Total/NA	Solid	Total BTEX	
890-6016-12	BH24-06	Total/NA	Solid	Total BTEX	
890-6016-13	BH24-07	Total/NA	Solid	Total BTEX	
890-6016-14	BH24-07	Total/NA	Solid	Total BTEX	
890-6016-15	BH24-08	Total/NA	Solid	Total BTEX	
890-6016-16	BH24-08	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 71893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-1	BH24-01	Total/NA	Solid	8015NM Prep	
890-6016-2	BH24-01	Total/NA	Solid	8015NM Prep	
890-6016-3	BH24-02	Total/NA	Solid	8015NM Prep	
890-6016-4	BH24-02	Total/NA	Solid	8015NM Prep	
890-6016-5	BH24-03	Total/NA	Solid	8015NM Prep	
890-6016-6	BH24-03	Total/NA	Solid	8015NM Prep	
890-6016-7	BH24-04	Total/NA	Solid	8015NM Prep	
890-6016-8	BH24-04	Total/NA	Solid	8015NM Prep	
890-6016-9	BH24-05	Total/NA	Solid	8015NM Prep	
890-6016-10	BH24-05	Total/NA	Solid	8015NM Prep	
890-6016-11	BH24-06	Total/NA	Solid	8015NM Prep	
890-6016-12	BH24-06	Total/NA	Solid	8015NM Prep	
890-6016-13	BH24-07	Total/NA	Solid	8015NM Prep	
890-6016-14	BH24-07	Total/NA	Solid	8015NM Prep	
890-6016-15	BH24-08	Total/NA	Solid	8015NM Prep	
890-6016-16	BH24-08	Total/NA	Solid	8015NM Prep	
MB 880-71893/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-71893/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-71893/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6039-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-6039-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 71993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-1	BH24-01	Total/NA	Solid	8015B NM	71893
890-6016-2	BH24-01	Total/NA	Solid	8015B NM	71893
890-6016-3	BH24-02	Total/NA	Solid	8015B NM	71893
890-6016-4	BH24-02	Total/NA	Solid	8015B NM	71893
890-6016-5	BH24-03	Total/NA	Solid	8015B NM	71893
890-6016-6	BH24-03	Total/NA	Solid	8015B NM	71893
890-6016-7	BH24-04	Total/NA	Solid	8015B NM	71893
890-6016-8	BH24-04	Total/NA	Solid	8015B NM	71893
890-6016-9	BH24-05	Total/NA	Solid	8015B NM	71893

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QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

GC Semi VOA (Continued)

Analysis Batch: 71993 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-10	BH24-05	Total/NA	Solid	8015B NM	71893
890-6016-11	BH24-06	Total/NA	Solid	8015B NM	71893
890-6016-12	BH24-06	Total/NA	Solid	8015B NM	71893
890-6016-13	BH24-07	Total/NA	Solid	8015B NM	71893
890-6016-14	BH24-07	Total/NA	Solid	8015B NM	71893
890-6016-15	BH24-08	Total/NA	Solid	8015B NM	71893
890-6016-16	BH24-08	Total/NA	Solid	8015B NM	71893
MB 880-71893/1-A	Method Blank	Total/NA	Solid	8015B NM	71893
LCS 880-71893/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	71893
LCSD 880-71893/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	71893
890-6039-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	71893
890-6039-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	71893

Analysis Batch: 72149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-1	BH24-01	Total/NA	Solid	8015 NM	
890-6016-2	BH24-01	Total/NA	Solid	8015 NM	
890-6016-3	BH24-02	Total/NA	Solid	8015 NM	
890-6016-4	BH24-02	Total/NA	Solid	8015 NM	
890-6016-5	BH24-03	Total/NA	Solid	8015 NM	
890-6016-6	BH24-03	Total/NA	Solid	8015 NM	
890-6016-7	BH24-04	Total/NA	Solid	8015 NM	
890-6016-8	BH24-04	Total/NA	Solid	8015 NM	
890-6016-9	BH24-05	Total/NA	Solid	8015 NM	
890-6016-10	BH24-05	Total/NA	Solid	8015 NM	
890-6016-11	BH24-06	Total/NA	Solid	8015 NM	
890-6016-12	BH24-06	Total/NA	Solid	8015 NM	
890-6016-13	BH24-07	Total/NA	Solid	8015 NM	
890-6016-14	BH24-07	Total/NA	Solid	8015 NM	
890-6016-15	BH24-08	Total/NA	Solid	8015 NM	
890-6016-16	BH24-08	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 71577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-1	BH24-01	Soluble	Solid	DI Leach	
890-6016-2	BH24-01	Soluble	Solid	DI Leach	
890-6016-3	BH24-02	Soluble	Solid	DI Leach	
890-6016-4	BH24-02	Soluble	Solid	DI Leach	
890-6016-5	BH24-03	Soluble	Solid	DI Leach	
890-6016-6	BH24-03	Soluble	Solid	DI Leach	
890-6016-7	BH24-04	Soluble	Solid	DI Leach	
890-6016-8	BH24-04	Soluble	Solid	DI Leach	
MB 880-71577/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-71577/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-71577/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6008-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-6008-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

HPLC/IC

Leach Batch: 71588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-9	BH24-05	Soluble	Solid	DI Leach	
890-6016-10	BH24-05	Soluble	Solid	DI Leach	
890-6016-11	BH24-06	Soluble	Solid	DI Leach	
890-6016-12	BH24-06	Soluble	Solid	DI Leach	
890-6016-13	BH24-07	Soluble	Solid	DI Leach	
890-6016-14	BH24-07	Soluble	Solid	DI Leach	
890-6016-15	BH24-08	Soluble	Solid	DI Leach	
890-6016-16	BH24-08	Soluble	Solid	DI Leach	
MB 880-71588/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-71588/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-71588/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-38383-A-4-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-38383-A-4-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
880-38394-A-10-C MS	Matrix Spike	Soluble	Solid	DI Leach	
880-38394-A-10-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 71737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-1	BH24-01	Soluble	Solid	300.0	71577
890-6016-2	BH24-01	Soluble	Solid	300.0	71577
890-6016-3	BH24-02	Soluble	Solid	300.0	71577
890-6016-4	BH24-02	Soluble	Solid	300.0	71577
890-6016-5	BH24-03	Soluble	Solid	300.0	71577
890-6016-6	BH24-03	Soluble	Solid	300.0	71577
890-6016-7	BH24-04	Soluble	Solid	300.0	71577
890-6016-8	BH24-04	Soluble	Solid	300.0	71577
MB 880-71577/1-A	Method Blank	Soluble	Solid	300.0	71577
LCS 880-71577/2-A	Lab Control Sample	Soluble	Solid	300.0	71577
LCSD 880-71577/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	71577
890-6008-A-2-B MS	Matrix Spike	Soluble	Solid	300.0	71577
890-6008-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	71577

Analysis Batch: 71742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6016-9	BH24-05	Soluble	Solid	300.0	71588
890-6016-10	BH24-05	Soluble	Solid	300.0	71588
890-6016-11	BH24-06	Soluble	Solid	300.0	71588
890-6016-12	BH24-06	Soluble	Solid	300.0	71588
890-6016-13	BH24-07	Soluble	Solid	300.0	71588
890-6016-14	BH24-07	Soluble	Solid	300.0	71588
890-6016-15	BH24-08	Soluble	Solid	300.0	71588
890-6016-16	BH24-08	Soluble	Solid	300.0	71588
MB 880-71588/1-A	Method Blank	Soluble	Solid	300.0	71588
LCS 880-71588/2-A	Lab Control Sample	Soluble	Solid	300.0	71588
LCSD 880-71588/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	71588
880-38383-A-4-B MS	Matrix Spike	Soluble	Solid	300.0	71588
880-38383-A-4-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	71588
880-38394-A-10-C MS	Matrix Spike	Soluble	Solid	300.0	71588
880-38394-A-10-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	71588

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-01
Date Collected: 01/19/24 10:25
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-1
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			5.03 g	5 mL	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 15:17	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 15:17	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	01/31/24 22:30	SM	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	01/31/24 22:30	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	71577	01/25/24 10:14	SA	EET MID
Soluble	Analysis	300.0		10			71737	01/29/24 04:19	CH	EET MID

Client Sample ID: BH24-01
Date Collected: 01/19/24 10:30
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-2
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			5.01 g	5 mL	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 15:43	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 15:43	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	01/31/24 22:51	SM	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	01/31/24 22:51	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	71577	01/25/24 10:14	SA	EET MID
Soluble	Analysis	300.0		1			71737	01/29/24 04:40	CH	EET MID

Client Sample ID: BH24-02
Date Collected: 01/19/24 10:35
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-3
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			4.99 g	5 mL	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 16:09	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 16:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	01/31/24 23:12	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	01/31/24 23:12	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	71577	01/25/24 10:14	SA	EET MID
Soluble	Analysis	300.0		1			71737	01/29/24 04:47	CH	EET MID

Client Sample ID: BH24-02
Date Collected: 01/19/24 10:45
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-4
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			5.02 g	5 mL	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 16:35	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 16:35	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-02
Date Collected: 01/19/24 10:45
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-4
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			72149	01/31/24 23:32	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	01/31/24 23:32	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	71577	01/25/24 10:14	SA	EET MID
Soluble	Analysis	300.0		1			71737	01/29/24 04:54	CH	EET MID

Client Sample ID: BH24-03
Date Collected: 01/19/24 10:47
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-5
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	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 17:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 17:01	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	01/31/24 23:53	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	01/31/24 23:53	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	71577	01/25/24 10:14	SA	EET MID
Soluble	Analysis	300.0		1			71737	01/29/24 05:00	CH	EET MID

Client Sample ID: BH24-03
Date Collected: 01/19/24 10:50
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-6
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			5.03 g	5 mL	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 17:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 17:27	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	02/01/24 00:14	SM	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	02/01/24 00:14	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	71577	01/25/24 10:14	SA	EET MID
Soluble	Analysis	300.0		1			71737	01/29/24 05:07	CH	EET MID

Client Sample ID: BH24-04
Date Collected: 01/19/24 11:00
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-7
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			5.01 g	5 mL	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 17:53	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 17:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	02/01/24 00:55	SM	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	02/01/24 00:55	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-04
Date Collected: 01/19/24 11:00
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-7
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			4.96 g	50 mL	71577	01/25/24 10:14	SA	EET MID
Soluble	Analysis	300.0		20			71737	01/29/24 05:14	CH	EET MID

Client Sample ID: BH24-04
Date Collected: 01/19/24 11:10
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-8
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			4.97 g	5 mL	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 18:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 18:19	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	02/01/24 01:16	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	02/01/24 01:16	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	71577	01/25/24 10:14	SA	EET MID
Soluble	Analysis	300.0		10			71737	01/29/24 05:21	CH	EET MID

Client Sample ID: BH24-05
Date Collected: 01/19/24 11:20
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-9
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			4.99 g	5 mL	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 18:45	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 18:45	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	02/01/24 01:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	02/01/24 01:36	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	71588	01/25/24 11:20	SA	EET MID
Soluble	Analysis	300.0		50			71742	01/30/24 08:43	CH	EET MID

Client Sample ID: BH24-05
Date Collected: 01/19/24 11:30
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-10
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			5.02 g	5 mL	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 19:11	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 19:11	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	02/01/24 01:57	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	02/01/24 01:57	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	71588	01/25/24 11:20	SA	EET MID
Soluble	Analysis	300.0		1			71742	01/30/24 09:16	CH	EET MID

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-06
Date Collected: 01/19/24 11:40
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-11
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			5.03 g	5 mL	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 20:55	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 20:55	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	02/01/24 02:18	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	02/01/24 02:18	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	71588	01/25/24 11:20	SA	EET MID
Soluble	Analysis	300.0		1			71742	01/30/24 09:22	CH	EET MID

Client Sample ID: BH24-06
Date Collected: 01/19/24 11:50
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-12
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	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 21:21	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 21:21	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	02/01/24 02:38	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	02/01/24 02:38	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	71588	01/25/24 11:20	SA	EET MID
Soluble	Analysis	300.0		1			71742	01/30/24 09:57	CH	EET MID

Client Sample ID: BH24-07
Date Collected: 01/19/24 12:00
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-13
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	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 21:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 21:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	02/01/24 02:59	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	02/01/24 02:59	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	71588	01/25/24 11:20	SA	EET MID
Soluble	Analysis	300.0		1			71742	01/30/24 09:33	CH	EET MID

Client Sample ID: BH24-07
Date Collected: 01/19/24 12:10
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-14
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	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 22:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 22:14	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Client Sample ID: BH24-07
Date Collected: 01/19/24 12:10
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-14
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			72149	02/01/24 03:20	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	02/01/24 03:20	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	71588	01/25/24 11:20	SA	EET MID
Soluble	Analysis	300.0		1			71742	01/30/24 10:13	CH	EET MID

Client Sample ID: BH24-08
Date Collected: 01/19/24 12:20
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-15
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	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 22:40	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 22:40	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	02/01/24 03:41	SM	EET MID
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	02/01/24 03:41	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	71588	01/25/24 11:20	SA	EET MID
Soluble	Analysis	300.0		1			71742	01/30/24 10:20	CH	EET MID

Client Sample ID: BH24-08
Date Collected: 01/19/24 12:30
Date Received: 01/23/24 08:23

Lab Sample ID: 890-6016-16
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	71831	01/29/24 13:41	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72133	02/01/24 23:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72222	02/01/24 23:06	SM	EET MID
Total/NA	Analysis	8015 NM		1			72149	02/01/24 04:02	SM	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	71893	01/29/24 17:13	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	71993	02/01/24 04:02	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	71588	01/25/24 11:20	SA	EET MID
Soluble	Analysis	300.0		1			71742	01/30/24 09:51	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: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

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: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

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: JRU DI 1A CTB

Job ID: 890-6016-1
SDG: 23E-04616

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6016-1	BH24-01	Solid	01/19/24 10:25	01/23/24 08:23	0
890-6016-2	BH24-01	Solid	01/19/24 10:30	01/23/24 08:23	2
890-6016-3	BH24-02	Solid	01/19/24 10:35	01/23/24 08:23	0
890-6016-4	BH24-02	Solid	01/19/24 10:45	01/23/24 08:23	2
890-6016-5	BH24-03	Solid	01/19/24 10:47	01/23/24 08:23	0
890-6016-6	BH24-03	Solid	01/19/24 10:50	01/23/24 08:23	2
890-6016-7	BH24-04	Solid	01/19/24 11:00	01/23/24 08:23	0
890-6016-8	BH24-04	Solid	01/19/24 11:10	01/23/24 08:23	2
890-6016-9	BH24-05	Solid	01/19/24 11:20	01/23/24 08:23	0
890-6016-10	BH24-05	Solid	01/19/24 11:30	01/23/24 08:23	2
890-6016-11	BH24-06	Solid	01/19/24 11:40	01/23/24 08:23	0
890-6016-12	BH24-06	Solid	01/19/24 11:50	01/23/24 08:23	2
890-6016-13	BH24-07	Solid	01/19/24 12:00	01/23/24 08:23	0
890-6016-14	BH24-07	Solid	01/19/24 12:10	01/23/24 08:23	2
890-6016-15	BH24-08	Solid	01/19/24 12:20	01/23/24 08:23	0
890-6016-16	BH24-08	Solid	01/19/24 12:30	01/23/24 08:23	2

Loc: 890
6016



Environment Testing
Xenco

Chain of Custody

Houston, TX (281) 240-7200, 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



890-6016 Chain of Custody

6016

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Work Order Comments

Program: ☐ UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund

State of Project:

Reporting: Level II ☐ Level III ☐ PST/AUST ☐ TRRP ☐ Level IV ☐

Deliverables: EDD ☐ ADAPT ☐ Other:

Project Manager: Chance Dixon

Company Name: Vertex/XTO

Address: on file

City, State ZIP: on file

Phone: on file

Bill to: (if different) gamitl grom!

Company Name: XTO

Address: on file

City, State ZIP: on file

Email: on file

ANALYSIS REQUEST

Preservative Codes

None: NO DI Water: H₂O

Cool: Cool MeOH: Me

HCL: HC HNO₃: HN

H₂SO₄: H₂ NaOH: Na

H₃PO₄: HP

NaHSO₄: NABIS

Na₂S₂O₅: NaSO₃

Zn Acetate+NaOH: Zn

NaOH+Ascorbic Acid: SAPC

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti 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 Ti 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. 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 8:23 1/28

Relinquished by: (Signature) Received by: (Signature)

Date/Time 8:23 1/28

Revised Date: 08/22/2020 Rev. 2020.2



Environment Testing
Xenco

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: **1082151001**

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Work Order Comments

Program: ☐ UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund

State of Project:

Reporting: Level II ☐ Level III ☐ PST/UST ☐ TIRP ☐ Level IV ☐

Deliverables: EDD ☐ ADAPT ☐ Other:

Project Manager: **Chance Dixon**

Company Name: **Vortex TXO**

Address: **gn file**

City, State ZIP: **gn file**

Phone: **gn file**

Bill to: (if different)

Company Name: **garrett green**

Address: **on file**

City, State ZIP: **on file**

Email: **on file**

Project Name: **TAU DI 1A CTB**

Project Number: **236-04616**

Project Location: **TAU DI 1A CTB**

Sampler's Name: **Uphadon Costa**

PO #: **Uphadon Costa**

Turn Around: ☒ Routine ☐ Rush

Due Date: **01-06-24**

TAT starts the day received by the lab, if received by 4:30pm

Temp Blank: Yes No

Thermometer ID: Yes No

Correction Factor: Yes No

Temperature Reading: Yes No

Corrected Temperature: Yes No

Wet Ice: Yes No

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	Pres. Code
BA24-06	Sed	1.19.24	11:40					
BA24-06			11:50					
BA24-07			12:00					
BA24-07			12:10					
BA24-08			12:20					
BA24-08			12:30					

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 SiO₂ Na Sr Ti 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 Ti U Hg: 1631 / 245.1 / 7470 / 7471

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Relinquished by: (Signature) **cdixon** Received by: (Signature) **garrett green** Date/Time **8:23 1/98**

Relinquished by: (Signature) **garrett green** Received by: (Signature) **garrett green** Date/Time **8:23 1/98**

Revised Date: 08/25/2020 Rev. 2030.2

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



Environment Testing

Xenco

Work Order No: 1082151001

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Page 1 of 2

6016

Project Manager:	Chance Hixon	Bill to: (if different)	garrett guen
Company Name:	Vortex/XTO	Company Name:	XTO
Address:	on file	Address:	on file
City, State ZIP:	on file	City, State ZIP:	on file
Phone:		Email:	

Project Name:	JRU DI 1A CTB	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush
P Project Number:	23E-04616	Due Date:	01.20.24
Project Location:	JRU DI 1A CTB	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Alexander Carter	Wet Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
P.O. #:		Thermometer ID:	TH-207
Temp Blank:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Correction Factor:	-0.2
Samples Received Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Temperature Reading:	5.8
Cooler Custody Seals:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Corrected Temperature:	5.4
Sample Custody Seals:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Total Containers:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont
BH24-01	Soil	1.14.24	10:25	0'		42
BH24-01			10:30	2'		
BH24-02			10:35	0'		
BH24-02			10:45	2'		
BH24-03			10:47	0'		
BH24-03			10:50	2'		
BH24-04		11:22	10:00	0'		
BH24-04			11:10	2'		
BH24-05			11:20	0'		
BH24-05			11:30	2'		

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 SiO₂ Na Sr Ti 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 Ti U Hg: 1631 / 245.1 / 7470 / 7471

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>achm</i>	8.23 1/23			

Revised Date: 08/25/2020 Rev. 20242



Environment Testing
Xenco

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: 1082151001

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Page 2 of 2

Project Manager:	Chance Dixon	Bill to: (if different)	Garrett Green
Company Name:	Vortex IXTD	Company Name:	XTO
Address:	file	Address:	on file
City, State ZIP:	on file	City, State ZIP:	
Phone:	on file	Email:	

Work Order Comments	
Program:	UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:	
Reporting:	Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables:	EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other

ANALYSIS REQUEST										Preservative Codes		
Project Name:	Turn Around	Pres. Code										
Project Number:	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush									None	NO	
Project Location:	Due Date:									Cool, Cool	MeOH: Me	
Sampler's Name:	TAT starts the day received by the lab, if received by 4:30pm									HCL: HC	HNO ₃ : HN	
PO #:										H ₂ SO ₄ : H ₂	NaOH: Na	
SAMPLE RECEIPT												
Temp Blank:		Yes	No	Wet ICE:	Yes	No						H ₃ PO ₄ : HP
Samples Received Intact:		Yes	No	Thermometer ID:								NaHSO ₄ : NABIS
Cooler Custody Seals:		Yes	No	Correction Factor:								Na ₂ S ₂ O ₃ : NaSO ₃
Sample Custody Seals:		Yes	No	Temperature Reading:								Zn Acetate+NaOH: Zn
Total Containers:		Yes	No	Corrected Temperature:								NaOH+Ascorbic Acid: SACP
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont						Sample Comments
BH24-06	Soil	1.19.24	11:40									Loc: 890 6016
BH24-06			11:50									
BH24-07			12:00									
BH24-07			12:10									
BH24-08			12:20									
BH24-08			12:30									

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti 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 Ti 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
<i>[Signature]</i>	<i>[Signature]</i>	8.23 / 2022			

Revised Date: 08/23/2020 Rev: 20202

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-6016-1

SDG Number: 23E-04616

Login Number: 6016

List Source: Eurofins Carlsbad

List Number: 1

Creator: Lopez, Abraham

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: 890-6016-1
SDG Number: 23E-04616

Login Number: 6016
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 01/24/24 02:02 PM

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	



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chance Dixon
Vertex
3101 Boyd Dr
Carlsbad, New Mexico 88220
Generated 2/7/2024 3:20:19 PM

JOB DESCRIPTION

JRV DI 1A CTB
23E - 04616

JOB NUMBER

890-6025-1



Eurofins Carlsbad

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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2/7/2024 3:20:19 PM

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

Client: Vertex
Project/Site: JRV DI 1A CTB

Laboratory Job ID: 890-6025-1
SDG: 23E - 04616

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Definitions/Glossary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
S1-	Surrogate recovery exceeds control limits, low 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.
F2	MS/MSD RPD exceeds control limits
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.
α	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: JRV DI 1A CTB

Job ID: 890-6025-1

Job ID: 890-6025-1

Eurofins Carlsbad

Job Narrative
890-6025-1

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 1/24/2024 11:02 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 -5.0°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BG 24 - 01 (890-6025-1), BG 24 - 01 (890-6025-2) and BG 24 - 01 (890-6025-3).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: BG 24 - 01 (890-6025-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-72103 and analytical batch 880-72315 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 880-72315 recovered outside control limits for the following analytes: MTBE.

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 matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-71752 and analytical batch 880-72446 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because 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.

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-71672 and analytical batch 880-71748 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because 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.

Eurofins Carlsbad

Client Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

Client Sample ID: BG 24 - 01

Lab Sample ID: 890-6025-1

Date Collected: 01/23/24 12:00

Matrix: Solid

Date Received: 01/24/24 11:02

Sample Depth: 0'

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		02/01/24 10:19	02/05/24 17:32	1
Toluene	<0.00198	U	0.00198	mg/Kg		02/01/24 10:19	02/05/24 17:32	1
Ethylbenzene	<0.00198	U **	0.00198	mg/Kg		02/01/24 10:19	02/05/24 17:32	1
m-Xylene & p-Xylene	<0.00396	U **	0.00396	mg/Kg		02/01/24 10:19	02/05/24 17:32	1
o-Xylene	<0.00198	U **	0.00198	mg/Kg		02/01/24 10:19	02/05/24 17:32	1
Xylenes, Total	<0.00396	U **	0.00396	mg/Kg		02/01/24 10:19	02/05/24 17:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130	02/01/24 10:19	02/05/24 17:32	1
1,4-Difluorobenzene (Surr)	77		70 - 130	02/01/24 10:19	02/05/24 17:32	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			02/05/24 17:32	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			02/06/24 20:42	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	<50.3	U	50.3	mg/Kg		01/27/24 21:45	02/06/24 20:42	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		01/27/24 21:45	02/06/24 20:42	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		01/27/24 21:45	02/06/24 20:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	87		70 - 130	01/27/24 21:45	02/06/24 20:42	1
o-Terphenyl	88		70 - 130	01/27/24 21:45	02/06/24 20:42	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1770		24.9	mg/Kg			01/31/24 21:20	5

Client Sample ID: BG 24 - 01

Lab Sample ID: 890-6025-2

Date Collected: 01/23/24 12:10

Matrix: Solid

Date Received: 01/24/24 11:02

Sample Depth: 2'

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		02/01/24 10:19	02/05/24 17:52	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/01/24 10:19	02/05/24 17:52	1
Ethylbenzene	<0.00199	U **	0.00199	mg/Kg		02/01/24 10:19	02/05/24 17:52	1
m-Xylene & p-Xylene	<0.00398	U **	0.00398	mg/Kg		02/01/24 10:19	02/05/24 17:52	1
o-Xylene	<0.00199	U **	0.00199	mg/Kg		02/01/24 10:19	02/05/24 17:52	1
Xylenes, Total	<0.00398	U **	0.00398	mg/Kg		02/01/24 10:19	02/05/24 17:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130	02/01/24 10:19	02/05/24 17:52	1

Eurofins Carlsbad

Client Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

Client Sample ID: BG 24 - 01

Lab Sample ID: 890-6025-2

Date Collected: 01/23/24 12:10

Matrix: Solid

Date Received: 01/24/24 11:02

Sample Depth: 2'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	71		70 - 130	02/01/24 10:19	02/05/24 17:52	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			02/05/24 17:52	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			02/06/24 21:03	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	<50.1	U	50.1	mg/Kg		01/27/24 21:45	02/06/24 21:03	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		01/27/24 21:45	02/06/24 21:03	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		01/27/24 21:45	02/06/24 21:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			01/27/24 21:45	02/06/24 21:03	1
o-Terphenyl	97		70 - 130			01/27/24 21:45	02/06/24 21:03	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	159		4.98	mg/Kg			01/31/24 21:24	1

Client Sample ID: BG 24 - 01

Lab Sample ID: 890-6025-3

Date Collected: 01/23/24 12:20

Matrix: Solid

Date Received: 01/24/24 11:02

Sample Depth: 4'

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		02/01/24 10:19	02/05/24 18:12	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:19	02/05/24 18:12	1
Ethylbenzene	<0.00200	U **	0.00200	mg/Kg		02/01/24 10:19	02/05/24 18:12	1
m-Xylene & p-Xylene	<0.00401	U **	0.00401	mg/Kg		02/01/24 10:19	02/05/24 18:12	1
o-Xylene	<0.00200	U **	0.00200	mg/Kg		02/01/24 10:19	02/05/24 18:12	1
Xylenes, Total	<0.00401	U **	0.00401	mg/Kg		02/01/24 10:19	02/05/24 18:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130	02/01/24 10:19	02/05/24 18:12	1
1,4-Difluorobenzene (Surr)	67	S1-	70 - 130	02/01/24 10:19	02/05/24 18:12	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			02/05/24 18:12	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	50.4		50.0	mg/Kg			02/06/24 21:24	1

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Client Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

Client Sample ID: BG 24 - 01

Lab Sample ID: 890-6025-3

Date Collected: 01/23/24 12:20

Matrix: Solid

Date Received: 01/24/24 11:02

Sample Depth: 4'

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		50.0	mg/Kg		01/27/24 21:45	02/06/24 21:24	1	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/27/24 21:45	02/06/24 21:24	1	
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/27/24 21:45	02/06/24 21:24	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
1-Chlorooctane	92		70 - 130			01/27/24 21:45	02/06/24 21:24	1	
o-Terphenyl	93		70 - 130			01/27/24 21:45	02/06/24 21:24	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	27.2		4.96	mg/Kg			01/31/24 21:29	1	

Surrogate Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-38487-A-1-E MS	Matrix Spike	119	100
880-38487-A-1-F MSD	Matrix Spike Duplicate	120	98
890-6025-1	BG 24 - 01	88	77
890-6025-2	BG 24 - 01	104	71
890-6025-3	BG 24 - 01	92	67 S1-
LCS 880-72103/1-A	Lab Control Sample	130	97
LCSD 880-72103/2-A	Lab Control Sample Dup	120	98
MB 880-72103/5-A	Method Blank	76	77
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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-6014-A-1-E MS	Matrix Spike	95	90
890-6014-A-1-F MSD	Matrix Spike Duplicate	82	75
890-6025-1	BG 24 - 01	87	88
890-6025-2	BG 24 - 01	96	97
890-6025-3	BG 24 - 01	92	93
LCS 880-71752/2-A	Lab Control Sample	85	105
LCSD 880-71752/3-A	Lab Control Sample Dup	103	116
MB 880-71752/1-A	Method Blank	116	119
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72103/5-A

Matrix: Solid

Analysis Batch: 72315

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72103

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:19	02/05/24 11:23	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:19	02/05/24 11:23	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:19	02/05/24 11:23	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/01/24 10:19	02/05/24 11:23	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:19	02/05/24 11:23	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/01/24 10:19	02/05/24 11:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		70 - 130	02/01/24 10:19	02/05/24 11:23	1
1,4-Difluorobenzene (Surr)	77		70 - 130	02/01/24 10:19	02/05/24 11:23	1

Lab Sample ID: LCS 880-72103/1-A

Matrix: Solid

Analysis Batch: 72315

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 72103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1115		mg/Kg		112	70 - 130
Toluene	0.100	0.1061		mg/Kg		106	70 - 130
Ethylbenzene	0.100	0.1479	*+	mg/Kg		148	70 - 130
m-Xylene & p-Xylene	0.200	0.2897	*+	mg/Kg		145	70 - 130
o-Xylene	0.100	0.1391	*+	mg/Kg		139	70 - 130

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

Lab Sample ID: LCSD 880-72103/2-A

Matrix: Solid

Analysis Batch: 72315

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 72103

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1090		mg/Kg		109	70 - 130	2	35
Toluene	0.100	0.1188		mg/Kg		119	70 - 130	11	35
Ethylbenzene	0.100	0.1481	*+	mg/Kg		148	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2823	*+	mg/Kg		141	70 - 130	3	35
o-Xylene	0.100	0.1355	*+	mg/Kg		136	70 - 130	3	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	120		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 880-38487-A-1-E MS

Matrix: Solid

Analysis Batch: 72315

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 72103

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0996	0.09519		mg/Kg		96	70 - 130
Toluene	<0.00200	U	0.0996	0.1036		mg/Kg		104	70 - 130

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QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

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

Lab Sample ID: 880-38487-A-1-E MS

Matrix: Solid

Analysis Batch: 72315

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 72103

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U *	0.0996	0.1258		mg/Kg		126	70 - 130
m-Xylene & p-Xylene	<0.00401	U *	0.199	0.2439		mg/Kg		122	70 - 130
o-Xylene	<0.00200	U *	0.0996	0.1161		mg/Kg		117	70 - 130
Surrogate	%Recovery	MS Qualifier	MS Limits						
4-Bromofluorobenzene (Surr)	119		70 - 130						
1,4-Difluorobenzene (Surr)	100		70 - 130						

Lab Sample ID: 880-38487-A-1-F MSD

Matrix: Solid

Analysis Batch: 72315

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 72103

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0994	0.09331		mg/Kg		94	70 - 130	2	35
Toluene	<0.00200	U	0.0994	0.1018		mg/Kg		102	70 - 130	2	35
Ethylbenzene	<0.00200	U *	0.0994	0.1232		mg/Kg		124	70 - 130	2	35
m-Xylene & p-Xylene	<0.00401	U *	0.199	0.2377		mg/Kg		120	70 - 130	3	35
o-Xylene	<0.00200	U *	0.0994	0.1135		mg/Kg		114	70 - 130	2	35
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
4-Bromofluorobenzene (Surr)	120		70 - 130								
1,4-Difluorobenzene (Surr)	98		70 - 130								

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

Lab Sample ID: MB 880-71752/1-A

Matrix: Solid

Analysis Batch: 72446

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 71752

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		01/27/24 21:45	02/06/24 18:36	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/27/24 21:45	02/06/24 18:36	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/27/24 21:45	02/06/24 18:36	1
Surrogate	%Recovery	MB Qualifier	MB Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	116		70 - 130			01/27/24 21:45	02/06/24 18:36	1
o-Terphenyl	119		70 - 130			01/27/24 21:45	02/06/24 18:36	1

Lab Sample ID: LCS 880-71752/2-A

Matrix: Solid

Analysis Batch: 72446

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 71752

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	917.7		mg/Kg		92	70 - 130
Diesel Range Organics (Over C10-C28)	1000	932.5		mg/Kg		93	70 - 130

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QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

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

Lab Sample ID: LCS 880-71752/2-A
Matrix: Solid
Analysis Batch: 72446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 71752

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	85		70 - 130
o-Terphenyl	105		70 - 130

Lab Sample ID: LCSD 880-71752/3-A
Matrix: Solid
Analysis Batch: 72446

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 71752

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	961.9		mg/Kg		96	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	961.8		mg/Kg		96	70 - 130	3	20
Surrogate		LCSD	LCSD								
	%Recovery	Qualifier	Limits								
1-Chlorooctane	103		70 - 130								
o-Terphenyl	116		70 - 130								

Lab Sample ID: 890-6014-A-1-E MS
Matrix: Solid
Analysis Batch: 72446

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 71752

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.3	U F1 F2	1010	840.0		mg/Kg		79	70 - 130		
Diesel Range Organics (Over C10-C28)	115	F1	1010	864.2		mg/Kg		74	70 - 130		
Surrogate		MS	MS								
	%Recovery	Qualifier	Limits								
1-Chlorooctane	95		70 - 130								
o-Terphenyl	90		70 - 130								

Lab Sample ID: 890-6014-A-1-F MSD
Matrix: Solid
Analysis Batch: 72446

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 71752

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	<50.3	U F1 F2	1010	681.4	F1 F2	mg/Kg		63	70 - 130	21	20
Diesel Range Organics (Over C10-C28)	115	F1	1010	726.4	F1	mg/Kg		61	70 - 130	17	20
Surrogate		MSD	MSD								
	%Recovery	Qualifier	Limits								
1-Chlorooctane	82		70 - 130								
o-Terphenyl	75		70 - 130								

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QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-71672/1-A										Client Sample ID: Method Blank	
Matrix: Solid										Prep Type: Soluble	
Analysis Batch: 71748											
Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac			
Chloride	<5.00	U	5.00	mg/Kg			01/31/24 20:45	1			
Lab Sample ID: LCS 880-71672/2-A										Client Sample ID: Lab Control Sample	
Matrix: Solid										Prep Type: Soluble	
Analysis Batch: 71748											
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits				
Chloride	250	274.3		mg/Kg		110	90 - 110				
Lab Sample ID: LCSD 880-71672/3-A										Client Sample ID: Lab Control Sample Dup	
Matrix: Solid										Prep Type: Soluble	
Analysis Batch: 71748											
Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit		
Chloride	250	272.7		mg/Kg		109	90 - 110	1	20		
Lab Sample ID: 890-6024-A-1-B MS										Client Sample ID: Matrix Spike	
Matrix: Solid										Prep Type: Soluble	
Analysis Batch: 71748											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	181	F1	250	481.8	F1	mg/Kg		120	90 - 110		
Lab Sample ID: 890-6024-A-1-C MSD										Client Sample ID: Matrix Spike Duplicate	
Matrix: Solid										Prep Type: Soluble	
Analysis Batch: 71748											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	181	F1	250	483.9	F1	mg/Kg		121	90 - 110	0	20

QC Association Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

GC VOA

Prep Batch: 72103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6025-1	BG 24 - 01	Total/NA	Solid	5035	
890-6025-2	BG 24 - 01	Total/NA	Solid	5035	
890-6025-3	BG 24 - 01	Total/NA	Solid	5035	
MB 880-72103/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72103/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72103/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-38487-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-38487-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 72315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6025-1	BG 24 - 01	Total/NA	Solid	8021B	72103
890-6025-2	BG 24 - 01	Total/NA	Solid	8021B	72103
890-6025-3	BG 24 - 01	Total/NA	Solid	8021B	72103
MB 880-72103/5-A	Method Blank	Total/NA	Solid	8021B	72103
LCS 880-72103/1-A	Lab Control Sample	Total/NA	Solid	8021B	72103
LCSD 880-72103/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72103
880-38487-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	72103
880-38487-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	72103

Analysis Batch: 72437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6025-1	BG 24 - 01	Total/NA	Solid	Total BTEX	
890-6025-2	BG 24 - 01	Total/NA	Solid	Total BTEX	
890-6025-3	BG 24 - 01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 71752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6025-1	BG 24 - 01	Total/NA	Solid	8015NM Prep	
890-6025-2	BG 24 - 01	Total/NA	Solid	8015NM Prep	
890-6025-3	BG 24 - 01	Total/NA	Solid	8015NM Prep	
MB 880-71752/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-71752/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-71752/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6014-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-6014-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 72446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6025-1	BG 24 - 01	Total/NA	Solid	8015B NM	71752
890-6025-2	BG 24 - 01	Total/NA	Solid	8015B NM	71752
890-6025-3	BG 24 - 01	Total/NA	Solid	8015B NM	71752
MB 880-71752/1-A	Method Blank	Total/NA	Solid	8015B NM	71752
LCS 880-71752/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	71752
LCSD 880-71752/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	71752
890-6014-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	71752
890-6014-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	71752

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QC Association Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

GC Semi VOA

Analysis Batch: 72593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6025-1	BG 24 - 01	Total/NA	Solid	8015 NM	
890-6025-2	BG 24 - 01	Total/NA	Solid	8015 NM	
890-6025-3	BG 24 - 01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 71672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6025-1	BG 24 - 01	Soluble	Solid	DI Leach	
890-6025-2	BG 24 - 01	Soluble	Solid	DI Leach	
890-6025-3	BG 24 - 01	Soluble	Solid	DI Leach	
MB 880-71672/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-71672/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-71672/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6024-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-6024-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 71748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6025-1	BG 24 - 01	Soluble	Solid	300.0	71672
890-6025-2	BG 24 - 01	Soluble	Solid	300.0	71672
890-6025-3	BG 24 - 01	Soluble	Solid	300.0	71672
MB 880-71672/1-A	Method Blank	Soluble	Solid	300.0	71672
LCS 880-71672/2-A	Lab Control Sample	Soluble	Solid	300.0	71672
LCSD 880-71672/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	71672
890-6024-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	71672
890-6024-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	71672

Lab Chronicle

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

Client Sample ID: BG 24 - 01
Date Collected: 01/23/24 12:00
Date Received: 01/24/24 11:02

Lab Sample ID: 890-6025-1
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			5.05 g	5 mL	72103	02/01/24 10:19	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72315	02/05/24 17:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72437	02/05/24 17:32	SM	EET MID
Total/NA	Analysis	8015 NM		1			72593	02/06/24 20:42	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	71752	01/27/24 21:45	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72446	02/06/24 20:42	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	71672	01/26/24 09:00	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	71748	01/31/24 21:20	CH	EET MID

Client Sample ID: BG 24 - 01
Date Collected: 01/23/24 12:10
Date Received: 01/24/24 11:02

Lab Sample ID: 890-6025-2
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			5.02 g	5 mL	72103	02/01/24 10:19	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72315	02/05/24 17:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72437	02/05/24 17:52	SM	EET MID
Total/NA	Analysis	8015 NM		1			72593	02/06/24 21:03	SM	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	71752	01/27/24 21:45	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72446	02/06/24 21:03	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	71672	01/26/24 09:00	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	71748	01/31/24 21:24	CH	EET MID

Client Sample ID: BG 24 - 01
Date Collected: 01/23/24 12:20
Date Received: 01/24/24 11:02

Lab Sample ID: 890-6025-3
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			4.99 g	5 mL	72103	02/01/24 10:19	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72315	02/05/24 18:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72437	02/05/24 18:12	SM	EET MID
Total/NA	Analysis	8015 NM		1			72593	02/06/24 21:24	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	71752	01/27/24 21:45	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72446	02/06/24 21:24	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	71672	01/26/24 09:00	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	71748	01/31/24 21:29	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: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

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: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

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: JRV DI 1A CTB

Job ID: 890-6025-1
SDG: 23E - 04616

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6025-1	BG 24 - 01	Solid	01/23/24 12:00	01/24/24 11:02	0'
890-6025-2	BG 24 - 01	Solid	01/23/24 12:10	01/24/24 11:02	2'
890-6025-3	BG 24 - 01	Solid	01/23/24 12:20	01/24/24 11:02	4'

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Environment Testing
Xenco

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: 1082151001

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Program: ☐ UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project: ☐ Level II ☐ Level III ☐ PST/UST ☐ THRP ☐ Level IV ☐

Deliverables: ☐ EDD ☐ ADAPT ☐ Other:

Project Manager: Chance Ellison Bill to: (if different) gerritt gum

Company Name: Vertex / XTO Company Name: XTO

Address: on file Address: on file

City, State ZIP: on file City, State ZIP: on file

Phone: on file Email: on file

SAMPLE RECEIPT				ANALYSIS REQUEST				Preservative Codes	
Project Name:	Project Number:	Project Location:	Sampler's Name:	Turn Around	Due Date:	TAT starts the day received by the lab, if received by 4:30pm	Parameters	Pres. Code	Sample Comments
3RV D11A C1B	23E-04666	3RV D11A C1B	Albuquerque, NM	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush					None: NO
									DI Water: H ₂ O
									Cool: Cool
									MeOH: Me
									HCL: HC
									HNO ₃ : HN
									H ₂ SO ₄ : H ₂
									NaOH: Na
									H ₃ PO ₄ : HP
									NaHSO ₄ : NABIS
									Na ₂ S ₂ O ₅ : NaSO ₃
									Zn Acetate+NaOH: Zn
									NaOH+Ascorbic Acid: SAPC

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 SiO₂ Na Sr Ti 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 Ti 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)	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<u>[Signature]</u>	<u>[Signature]</u>	<u>[Signature]</u>	<u>11/24/11</u>

Revised Date: 08/25/2020 Rev. 2020.2



Environment Testing
Xenco

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

Chain of Custody

Work Order No: 1082151001

www.xenco.com Page 1 of 1

Project Manager:	Chanel Dixon	Bill to: (if different)	growth gym
Company Name:	Wortex / Xto	Company Name:	XTO
Address:		Address:	gymple
City, State Zip:	prk	City, State Zip:	gymple
Phone:	on	Email:	

Program: <input type="checkbox"/> UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>	
State of Project:	
Reporting Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>	Deliverables EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other

Project Name:	SRV 031A C1B	Tum Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pest Code	
Project Number:	238-04616	Due Date:			
Project Location:	SRV 031A C1B	TAT starts the day received by the lab, if received by 4:30pm			
Sample's Name:	flumadon cont				
P.O. #:					
SAMPLE RECEIPT					
Samples Received In tact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Thermometer ID:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Wet test:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Cooler Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Correction Factor:			
Sample Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Temperature Reading:	-5.2		
Total Containers:		Corrected Temperature:	-5.0		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Cont	# of Cont	Parameters	Preservative Codes	Sample Comments
BG-24-01	Soil	1-23-24	12:00	0	1	1	TPH (18015 D)		
BG-24-01			12:10	2	1	1			
BG-24-01			12:20	4	1	1	BTX (18021)		



890-6025 Chain of Custody

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Pb Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti 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 Ti 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
		1/24/24 11:00			

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-6025-1

SDG Number: 23E - 04616

Login Number: 6025

List Source: Eurofins Carlsbad

List Number: 1

Creator: Bruns, Shannon

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: 890-6025-1

SDG Number: 23E - 04616

Login Number: 6025
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 01/25/24 02:46 PM

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	



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 2/13/2024 3:59:52 PM

JOB DESCRIPTION

JRU DI 1A CTB
23E-04616

JOB NUMBER

890-6052-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220



Eurofins Carlsbad

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



Generated
2/13/2024 3:59:52 PM

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

Client: Vertex
Project/Site: JRU DI 1A CTB

Laboratory Job ID: 890-6052-1
SDG: 23E-04616

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Definitions/Glossary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
S1-	Surrogate recovery exceeds control limits, low 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.
F2	MS/MSD RPD 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.
α	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: JRU DI 1A CTB

Job ID: 890-6052-1

Job ID: 890-6052-1

Eurofins Carlsbad

Job Narrative 890-6052-1

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 1/29/2024 11:47 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 2.2°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BG24-02 (890-6052-1), BG24-02 (890-6052-2), BG24-02 (890-6052-3), BG24-02 (890-6052-4) and BG24-02 (890-6052-5).

GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: BG24-02 (890-6052-1) and BG24-02 (890-6052-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-72103 and analytical batch 880-72315 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 880-72315 recovered outside control limits for the following analytes: MTBE.

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: Surrogate recovery for the following samples were outside the upper control limit: BG24-02 (890-6052-2), BG24-02 (890-6052-3), BG24-02 (890-6052-4) and BG24-02 (890-6052-5). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside the upper control limit: BG24-02 (890-6052-1). This sample did not contain any target analytes; 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

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

Eurofins Carlsbad

Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Client Sample ID: BG24-02

Lab Sample ID: 890-6052-1

Date Collected: 01/23/24 12:30

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/01/24 10:19	02/05/24 18:33	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/01/24 10:19	02/05/24 18:33	1
Ethylbenzene	<0.00199	U **	0.00199	mg/Kg		02/01/24 10:19	02/05/24 18:33	1
m-Xylene & p-Xylene	<0.00398	U **	0.00398	mg/Kg		02/01/24 10:19	02/05/24 18:33	1
o-Xylene	<0.00199	U **	0.00199	mg/Kg		02/01/24 10:19	02/05/24 18:33	1
Xylenes, Total	<0.00398	U **	0.00398	mg/Kg		02/01/24 10:19	02/05/24 18:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	02/01/24 10:19	02/05/24 18:33	1
1,4-Difluorobenzene (Surr)	69	S1-	70 - 130	02/01/24 10:19	02/05/24 18:33	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			02/05/24 18:33	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			02/13/24 14:50	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<49.8	U	49.8	mg/Kg		01/30/24 14:46	02/13/24 14:50	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		01/30/24 14:46	02/13/24 14:50	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		01/30/24 14:46	02/13/24 14:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	173	S1+	70 - 130	01/30/24 14:46	02/13/24 14:50	1
1-Chlorooctane	157	S1+	70 - 130	01/30/24 14:46	02/13/24 14:50	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	71.3		4.98	mg/Kg			02/04/24 05:13	1

Client Sample ID: BG24-02

Lab Sample ID: 890-6052-2

Date Collected: 01/23/24 12:40

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/01/24 10:19	02/05/24 18:53	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/01/24 10:19	02/05/24 18:53	1
Ethylbenzene	<0.00199	U **	0.00199	mg/Kg		02/01/24 10:19	02/05/24 18:53	1
m-Xylene & p-Xylene	<0.00398	U **	0.00398	mg/Kg		02/01/24 10:19	02/05/24 18:53	1
o-Xylene	<0.00199	U **	0.00199	mg/Kg		02/01/24 10:19	02/05/24 18:53	1
Xylenes, Total	<0.00398	U **	0.00398	mg/Kg		02/01/24 10:19	02/05/24 18:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130	02/01/24 10:19	02/05/24 18:53	1
1,4-Difluorobenzene (Surr)	76		70 - 130	02/01/24 10:19	02/05/24 18:53	1

Eurofins Carlsbad

Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Client Sample ID: BG24-02

Lab Sample ID: 890-6052-2

Date Collected: 01/23/24 12:40

Matrix: Solid

Date Received: 01/29/24 11:47

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			02/05/24 18:53	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			02/13/24 00:17	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<49.6	U	49.6	mg/Kg		01/30/24 14:46	02/13/24 00:17	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		01/30/24 14:46	02/13/24 00:17	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		01/30/24 14:46	02/13/24 00:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	179	S1+	70 - 130	01/30/24 14:46	02/13/24 00:17	1
1-Chlorooctane	165	S1+	70 - 130	01/30/24 14:46	02/13/24 00:17	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	57.5		5.00	mg/Kg			02/04/24 05:20	1

Client Sample ID: BG24-02

Lab Sample ID: 890-6052-3

Date Collected: 01/23/24 12:50

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/01/24 10:19	02/05/24 19:14	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:19	02/05/24 19:14	1
Ethylbenzene	<0.00200	U *	0.00200	mg/Kg		02/01/24 10:19	02/05/24 19:14	1
m-Xylene & p-Xylene	<0.00399	U *	0.00399	mg/Kg		02/01/24 10:19	02/05/24 19:14	1
o-Xylene	<0.00200	U *	0.00200	mg/Kg		02/01/24 10:19	02/05/24 19:14	1
Xylenes, Total	<0.00399	U *	0.00399	mg/Kg		02/01/24 10:19	02/05/24 19:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130	02/01/24 10:19	02/05/24 19:14	1
1,4-Difluorobenzene (Surr)	71		70 - 130	02/01/24 10:19	02/05/24 19:14	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			02/05/24 19:14	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			02/13/24 00:38	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.2	U	50.2	mg/Kg		01/30/24 14:46	02/13/24 00:38	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2	mg/Kg		01/30/24 14:46	02/13/24 00:38	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		01/30/24 14:46	02/13/24 00:38	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Client Sample ID: BG24-02

Lab Sample ID: 890-6052-3

Date Collected: 01/23/24 12:50

Matrix: Solid

Date Received: 01/29/24 11:47

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	183	S1+	70 - 130	01/30/24 14:46	02/13/24 00:38	1
1-Chlorooctane	162	S1+	70 - 130	01/30/24 14:46	02/13/24 00:38	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	52.3		5.02	mg/Kg			02/04/24 05:27	1

Client Sample ID: BG24-02

Lab Sample ID: 890-6052-4

Date Collected: 01/23/24 13:00

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/01/24 10:19	02/05/24 19:34	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:19	02/05/24 19:34	1
Ethylbenzene	<0.00200	U *	0.00200	mg/Kg		02/01/24 10:19	02/05/24 19:34	1
m-Xylene & p-Xylene	<0.00401	U *	0.00401	mg/Kg		02/01/24 10:19	02/05/24 19:34	1
o-Xylene	<0.00200	U *	0.00200	mg/Kg		02/01/24 10:19	02/05/24 19:34	1
Xylenes, Total	<0.00401	U *	0.00401	mg/Kg		02/01/24 10:19	02/05/24 19:34	1
<hr/>								
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		70 - 130			02/01/24 10:19	02/05/24 19:34	1
1,4-Difluorobenzene (Surr)	69	S1-	70 - 130			02/01/24 10:19	02/05/24 19:34	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			02/05/24 19:34	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			02/13/24 00:59	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.4	U	50.4	mg/Kg		01/30/24 14:46	02/13/24 00:59	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		01/30/24 14:46	02/13/24 00:59	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		01/30/24 14:46	02/13/24 00:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	220	S1+	70 - 130			01/30/24 14:46	02/13/24 00:59	1
1-Chlorooctane	198	S1+	70 - 130			01/30/24 14:46	02/13/24 00:59	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	533		49.7	mg/Kg			02/04/24 05:47	10

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Client Sample ID: BG24-02

Lab Sample ID: 890-6052-5

Date Collected: 01/23/24 13:10

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/01/24 10:19	02/05/24 19:55	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/01/24 10:19	02/05/24 19:55	1
Ethylbenzene	<0.00199	U **	0.00199	mg/Kg		02/01/24 10:19	02/05/24 19:55	1
m-Xylene & p-Xylene	<0.00398	U **	0.00398	mg/Kg		02/01/24 10:19	02/05/24 19:55	1
o-Xylene	<0.00199	U **	0.00199	mg/Kg		02/01/24 10:19	02/05/24 19:55	1
Xylenes, Total	<0.00398	U **	0.00398	mg/Kg		02/01/24 10:19	02/05/24 19:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130	02/01/24 10:19	02/05/24 19:55	1
1,4-Difluorobenzene (Surr)	71		70 - 130	02/01/24 10:19	02/05/24 19:55	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			02/05/24 19:55	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			02/13/24 01:19	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.5	U	50.5	mg/Kg		01/30/24 14:46	02/13/24 01:19	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		01/30/24 14:46	02/13/24 01:19	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		01/30/24 14:46	02/13/24 01:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	193	S1+	70 - 130	01/30/24 14:46	02/13/24 01:19	1
1-Chlorooctane	172	S1+	70 - 130	01/30/24 14:46	02/13/24 01:19	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	729		49.5	mg/Kg			02/04/24 05:54	10

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Surrogate Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-38487-A-1-E MS	Matrix Spike	119	100
880-38487-A-1-F MSD	Matrix Spike Duplicate	120	98
890-6052-1	BG24-02	99	69 S1-
890-6052-2	BG24-02	86	76
890-6052-3	BG24-02	88	71
890-6052-4	BG24-02	83	69 S1-
890-6052-5	BG24-02	89	71
LCS 880-72103/1-A	Lab Control Sample	130	97
LCSD 880-72103/2-A	Lab Control Sample Dup	120	98
MB 880-72103/5-A	Method Blank	76	77

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)

Lab Sample ID	Client Sample ID	OTPH1 (70-130)	1CO1 (70-130)
890-6044-A-1-G MS	Matrix Spike	87	88
890-6044-A-1-H MSD	Matrix Spike Duplicate	70	71
890-6052-1	BG24-02	173 S1+	157 S1+
890-6052-2	BG24-02	179 S1+	165 S1+
890-6052-3	BG24-02	183 S1+	162 S1+
890-6052-4	BG24-02	220 S1+	198 S1+
890-6052-5	BG24-02	193 S1+	172 S1+
LCS 870-17960/1-A	Lab Control Sample	114	123
LCSD 870-17960/2-A	Lab Control Sample Dup	110	118
MB 870-17960/3-A	Method Blank	108	101

Surrogate Legend

OTPH = o-Terphenyl

1CO = 1-Chlorooctane

QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72103/5-A						Client Sample ID: Method Blank			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 72315						Prep Batch: 72103			
Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac	
	Result	Qualifier							
Benzene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:19	02/05/24 11:23	1	
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:19	02/05/24 11:23	1	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:19	02/05/24 11:23	1	
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/01/24 10:19	02/05/24 11:23	1	
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:19	02/05/24 11:23	1	
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/01/24 10:19	02/05/24 11:23	1	
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac	
	%Recovery	Qualifier							
4-Bromofluorobenzene (Surr)	76		70 - 130			02/01/24 10:19	02/05/24 11:23	1	
1,4-Difluorobenzene (Surr)	77		70 - 130			02/01/24 10:19	02/05/24 11:23	1	

Lab Sample ID: LCS 880-72103/1-A						Client Sample ID: Lab Control Sample			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 72315						Prep Batch: 72103			
Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Benzene		0.100	0.1115		mg/Kg		112	70 - 130	
Toluene		0.100	0.1061		mg/Kg		106	70 - 130	
Ethylbenzene		0.100	0.1479	*+	mg/Kg		148	70 - 130	
m-Xylene & p-Xylene		0.200	0.2897	*+	mg/Kg		145	70 - 130	
o-Xylene		0.100	0.1391	*+	mg/Kg		139	70 - 130	
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	130		70 - 130						
1,4-Difluorobenzene (Surr)	97		70 - 130						

Lab Sample ID: LCSD 880-72103/2-A						Client Sample ID: Lab Control Sample Dup				
Matrix: Solid						Prep Type: Total/NA				
Analysis Batch: 72315						Prep Batch: 72103				
Analyte		Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene		0.100	0.1090		mg/Kg		109	70 - 130	2	35
Toluene		0.100	0.1188		mg/Kg		119	70 - 130	11	35
Ethylbenzene		0.100	0.1481	*+	mg/Kg		148	70 - 130	0	35
m-Xylene & p-Xylene		0.200	0.2823	*+	mg/Kg		141	70 - 130	3	35
o-Xylene		0.100	0.1355	*+	mg/Kg		136	70 - 130	3	35
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits							
4-Bromofluorobenzene (Surr)	120		70 - 130							
1,4-Difluorobenzene (Surr)	98		70 - 130							

Lab Sample ID: 880-38487-A-1-E MS						Client Sample ID: Matrix Spike			
Matrix: Solid						Prep Type: Total/NA			
Analysis Batch: 72315						Prep Batch: 72103			
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0996	0.09519		mg/Kg		96	70 - 130
Toluene	<0.00200	U	0.0996	0.1036		mg/Kg		104	70 - 130

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

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

Lab Sample ID: 880-38487-A-1-E MS
Matrix: Solid
Analysis Batch: 72315

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 72103

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U *	0.0996	0.1258		mg/Kg		126	70 - 130
m-Xylene & p-Xylene	<0.00401	U *	0.199	0.2439		mg/Kg		122	70 - 130
o-Xylene	<0.00200	U *	0.0996	0.1161		mg/Kg		117	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	119		70 - 130						
1,4-Difluorobenzene (Surr)	100		70 - 130						

Lab Sample ID: 880-38487-A-1-F MSD
Matrix: Solid
Analysis Batch: 72315

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 72103

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0994	0.09331		mg/Kg		94	70 - 130	2	35
Toluene	<0.00200	U	0.0994	0.1018		mg/Kg		102	70 - 130	2	35
Ethylbenzene	<0.00200	U *	0.0994	0.1232		mg/Kg		124	70 - 130	2	35
m-Xylene & p-Xylene	<0.00401	U *	0.199	0.2377		mg/Kg		120	70 - 130	3	35
o-Xylene	<0.00200	U *	0.0994	0.1135		mg/Kg		114	70 - 130	2	35
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	120		70 - 130								
1,4-Difluorobenzene (Surr)	98		70 - 130								

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

Lab Sample ID: MB 870-17960/3-A
Matrix: Solid
Analysis Batch: 17706

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 17960

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.0	U	50.0	mg/Kg		01/30/24 14:46	02/03/24 17:12	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/30/24 14:46	02/03/24 17:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/30/24 14:46	02/03/24 17:12	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac		
o-Terphenyl	108		70 - 130	01/30/24 14:46	02/03/24 17:12	1		
1-Chlorooctane	101		70 - 130	01/30/24 14:46	02/03/24 17:12	1		

Lab Sample ID: LCS 870-17960/1-A
Matrix: Solid
Analysis Batch: 17988

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17960

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)	1020	1171		mg/Kg		115	70 - 130
Diesel Range Organics (Over C10-C28)	1010	1092		mg/Kg		108	70 - 130

QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

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

Lab Sample ID: LCS 870-17960/1-A
Matrix: Solid
Analysis Batch: 17988

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17960

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	114		70 - 130
1-Chlorooctane	123		70 - 130

Lab Sample ID: LCSD 870-17960/2-A
Matrix: Solid
Analysis Batch: 17988

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 17960

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)			1020	1106		mg/Kg		109	70 - 130	6	20
Diesel Range Organics (Over C10-C28)			1010	1163		mg/Kg		115	70 - 130	6	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	110		70 - 130
1-Chlorooctane	118		70 - 130

Lab Sample ID: 890-6044-A-1-G MS
Matrix: Solid
Analysis Batch: 17706

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 17960

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)	<49.8	U F1	1020	652.6	F1	mg/Kg		64	70 - 130
Diesel Range Organics (Over C10-C28)	104	F1 F2	1010	889.9		mg/Kg		78	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	87		70 - 130
1-Chlorooctane	88		70 - 130

Lab Sample ID: 890-6044-A-1-H MSD
Matrix: Solid
Analysis Batch: 17706

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 17960

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)	<49.8	U F1	1020	608.6	F1	mg/Kg		60	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	104	F1 F2	1010	720.1	F1 F2	mg/Kg		61	70 - 130	21	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	70		70 - 130
1-Chlorooctane	71		70 - 130

QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-71972/1-A Matrix: Solid Analysis Batch: 72255										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			02/04/24 03:31	1			

Lab Sample ID: LCS 880-71972/2-A Matrix: Solid Analysis Batch: 72255										Client Sample ID: Lab Control Sample Prep Type: Soluble	
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	259.7		mg/Kg		104	90 - 110		

Lab Sample ID: LCSD 880-71972/3-A Matrix: Solid Analysis Batch: 72255										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	258.3		mg/Kg		103	90 - 110	1	20

Lab Sample ID: 890-6052-3 MS Matrix: Solid Analysis Batch: 72255										Client Sample ID: BG24-02 Prep Type: Soluble	
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	52.3		251	316.9		mg/Kg		105	90 - 110		

Lab Sample ID: 890-6052-3 MSD Matrix: Solid Analysis Batch: 72255										Client Sample ID: BG24-02 Prep Type: Soluble	
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	52.3		251	315.8		mg/Kg		105	90 - 110	0	20

QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

GC VOA

Prep Batch: 72103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6052-1	BG24-02	Total/NA	Solid	5035	
890-6052-2	BG24-02	Total/NA	Solid	5035	
890-6052-3	BG24-02	Total/NA	Solid	5035	
890-6052-4	BG24-02	Total/NA	Solid	5035	
890-6052-5	BG24-02	Total/NA	Solid	5035	
MB 880-72103/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72103/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72103/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-38487-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-38487-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 72315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6052-1	BG24-02	Total/NA	Solid	8021B	72103
890-6052-2	BG24-02	Total/NA	Solid	8021B	72103
890-6052-3	BG24-02	Total/NA	Solid	8021B	72103
890-6052-4	BG24-02	Total/NA	Solid	8021B	72103
890-6052-5	BG24-02	Total/NA	Solid	8021B	72103
MB 880-72103/5-A	Method Blank	Total/NA	Solid	8021B	72103
LCS 880-72103/1-A	Lab Control Sample	Total/NA	Solid	8021B	72103
LCSD 880-72103/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72103
880-38487-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	72103
880-38487-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	72103

Analysis Batch: 72509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6052-1	BG24-02	Total/NA	Solid	Total BTEX	
890-6052-2	BG24-02	Total/NA	Solid	Total BTEX	
890-6052-3	BG24-02	Total/NA	Solid	Total BTEX	
890-6052-4	BG24-02	Total/NA	Solid	Total BTEX	
890-6052-5	BG24-02	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 17706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 870-17960/3-A	Method Blank	Total/NA	Solid	8015B NM	17960
890-6044-A-1-G MS	Matrix Spike	Total/NA	Solid	8015B NM	17960
890-6044-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	17960

Prep Batch: 17960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6052-1	BG24-02	Total/NA	Solid	8015NM Prep	
890-6052-2	BG24-02	Total/NA	Solid	8015NM Prep	
890-6052-3	BG24-02	Total/NA	Solid	8015NM Prep	
890-6052-4	BG24-02	Total/NA	Solid	8015NM Prep	
890-6052-5	BG24-02	Total/NA	Solid	8015NM Prep	
MB 870-17960/3-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 870-17960/1-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 870-17960/2-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6044-A-1-G MS	Matrix Spike	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

GC Semi VOA (Continued)

Prep Batch: 17960 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6044-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 17988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6052-1	BG24-02	Total/NA	Solid	8015B NM	17960
890-6052-2	BG24-02	Total/NA	Solid	8015B NM	17960
890-6052-3	BG24-02	Total/NA	Solid	8015B NM	17960
890-6052-4	BG24-02	Total/NA	Solid	8015B NM	17960
890-6052-5	BG24-02	Total/NA	Solid	8015B NM	17960
LCS 870-17960/1-A	Lab Control Sample	Total/NA	Solid	8015B NM	17960
LCSD 870-17960/2-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	17960

Analysis Batch: 18038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6052-1	BG24-02	Total/NA	Solid	8015 NM	
890-6052-2	BG24-02	Total/NA	Solid	8015 NM	
890-6052-3	BG24-02	Total/NA	Solid	8015 NM	
890-6052-4	BG24-02	Total/NA	Solid	8015 NM	
890-6052-5	BG24-02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 71972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6052-1	BG24-02	Soluble	Solid	DI Leach	
890-6052-2	BG24-02	Soluble	Solid	DI Leach	
890-6052-3	BG24-02	Soluble	Solid	DI Leach	
890-6052-4	BG24-02	Soluble	Solid	DI Leach	
890-6052-5	BG24-02	Soluble	Solid	DI Leach	
MB 880-71972/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-71972/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-71972/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6052-3 MS	BG24-02	Soluble	Solid	DI Leach	
890-6052-3 MSD	BG24-02	Soluble	Solid	DI Leach	

Analysis Batch: 72255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6052-1	BG24-02	Soluble	Solid	300.0	71972
890-6052-2	BG24-02	Soluble	Solid	300.0	71972
890-6052-3	BG24-02	Soluble	Solid	300.0	71972
890-6052-4	BG24-02	Soluble	Solid	300.0	71972
890-6052-5	BG24-02	Soluble	Solid	300.0	71972
MB 880-71972/1-A	Method Blank	Soluble	Solid	300.0	71972
LCS 880-71972/2-A	Lab Control Sample	Soluble	Solid	300.0	71972
LCSD 880-71972/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	71972
890-6052-3 MS	BG24-02	Soluble	Solid	300.0	71972
890-6052-3 MSD	BG24-02	Soluble	Solid	300.0	71972

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Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Client Sample ID: BG24-02

Lab Sample ID: 890-6052-1

Date Collected: 01/23/24 12:30

Matrix: Solid

Date Received: 01/29/24 11:47

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	72103	02/01/24 10:19	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72315	02/05/24 18:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72509	02/05/24 18:33	SM	EET MID
Total/NA	Analysis	8015 NM		1			18038	02/13/24 14:50	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	17960	01/30/24 14:46	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 14:50	WP	EET DAL
Soluble	Leach	DI Leach			5.02 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		1			72255	02/04/24 05:13	CH	EET MID

Client Sample ID: BG24-02

Lab Sample ID: 890-6052-2

Date Collected: 01/23/24 12:40

Matrix: Solid

Date Received: 01/29/24 11:47

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	72103	02/01/24 10:19	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72315	02/05/24 18:53	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72509	02/05/24 18:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			18038	02/13/24 00:17	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	17960	01/30/24 14:46	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 00:17	WP	EET DAL
Soluble	Leach	DI Leach			5.00 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		1			72255	02/04/24 05:20	CH	EET MID

Client Sample ID: BG24-02

Lab Sample ID: 890-6052-3

Date Collected: 01/23/24 12:50

Matrix: Solid

Date Received: 01/29/24 11:47

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	72103	02/01/24 10:19	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72315	02/05/24 19:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72509	02/05/24 19:14	SM	EET MID
Total/NA	Analysis	8015 NM		1			18038	02/13/24 00:38	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	17960	01/30/24 14:46	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 00:38	WP	EET DAL
Soluble	Leach	DI Leach			4.98 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		1			72255	02/04/24 05:27	CH	EET MID

Client Sample ID: BG24-02

Lab Sample ID: 890-6052-4

Date Collected: 01/23/24 13:00

Matrix: Solid

Date Received: 01/29/24 11:47

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	72103	02/01/24 10:19	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72315	02/05/24 19:34	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72509	02/05/24 19:34	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Client Sample ID: BG24-02
Date Collected: 01/23/24 13:00
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6052-4
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			18038	02/13/24 00:59	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	17960	01/30/24 14:46	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 00:59	WP	EET DAL
Soluble	Leach	DI Leach			5.03 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		10			72255	02/04/24 05:47	CH	EET MID

Client Sample ID: BG24-02
Date Collected: 01/23/24 13:10
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6052-5
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			5.02 g	5 mL	72103	02/01/24 10:19	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72315	02/05/24 19:55	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72509	02/05/24 19:55	SM	EET MID
Total/NA	Analysis	8015 NM		1			18038	02/13/24 01:19	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	17960	01/30/24 14:46	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 01:19	WP	EET DAL
Soluble	Leach	DI Leach			5.05 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		10			72255	02/04/24 05:54	CH	EET MID

Laboratory References:
EET DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Laboratory: Eurofins Dallas

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704295-23-34	06-30-24

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
Total BTEX		Solid	Total BTEX

Method Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

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 DAL
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET DAL
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET DAL
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 DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6052-1
SDG: 23E-04616

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
890-6052-1	BG24-02	Solid	01/23/24 12:30	01/29/24 11:47
890-6052-2	BG24-02	Solid	01/23/24 12:40	01/29/24 11:47
890-6052-3	BG24-02	Solid	01/23/24 12:50	01/29/24 11:47
890-6052-4	BG24-02	Solid	01/23/24 13:00	01/29/24 11:47
890-6052-5	BG24-02	Solid	01/23/24 13:10	01/29/24 11:47

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1.23.24


Environment Testing
Xenco

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: 1082151001

Project Manager: Chance Alexon
 Company Name: Vertex Lxto
 Address: onball
 City, State ZIP: San Jose
 Phone: 6052

Bill to: (if different)
 Company Name: Grants Green
 Address: XTO
 City, State ZIP: San Jose
 Email: onball

www.xenco.com Page 1 of 1

Program: ☐ UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
 State of Project: ☐ Level I ☐ Level II ☐ Level III ☐ Level IV ☐
 Reporting: ☐ Level I ☐ Level II ☐ Level III ☐ Level IV ☐
 Deliverables: ☐ EDD ☐ ADAPT ☐ Other: 1

SAMPLE RECEIPT				ANALYSIS REQUEST				
Project Name:	Project Number:	Project Location:	Sampler's Name:	Turn Around	Pres. Code	Parameters	Preservative Codes	
TRV DIARCIB	23E-04616	TRV DIARCIB	Chance Alexon	Boutline <input checked="" type="checkbox"/> Rush <input type="checkbox"/>			None: NO DI Water: H ₂ O Cool: Cool HCL: HC H ₂ SO ₄ : H ₂ H ₃ PO ₄ : HP NaHSO ₄ : NABIS Na ₂ S ₂ O ₃ : NaSO ₃ Zn Acetate+NaOH: Zn NaOH+Ascorbic-Acid-SAPC	
Samples Received Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Cooler Custody Seals: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Sample Custody Seals: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Total Containers: <u>4</u>				Due Date: <u>4-23-24</u> TAT starts the day received by the lab, if received by 4:30pm Wet Ice: <u>Yes</u> Thermometer ID: <u>1000</u> Correction Factor: <u>-0.2</u> Temperature Reading: <u>2.4</u> Corrected Temperature: <u>2.2</u>				
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Sub/Comp	# of Cont	Sample Comments	
BH24-02	Soil	1.31.24	12:30	0	1	1		
BH24-02			12:40	2	1	2		
BH24-02			12:50	4	1	3		
BH24-02			13:00	6	1	4		
BH24-02			13:10	8	1	5		

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 SiO₂ Na Sr Ti 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 Ti 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. 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.

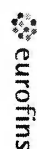
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<u>Chance Alexon</u>	<u>Grants Green</u>	<u>1.23.24</u>			

Revised Date: 08/25/2020 Rev. 2020.2

Eurofins Midland

1211 W. Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record



Environmental Testing

[illegible]

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-6052-1

SDG Number: 23E-04616

Login Number: 6052

List Number: 1

Creator: Lopez, Abraham

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	Did not receive all required containers.
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: 890-6052-1

SDG Number: 23E-04616

Login Number: 6052

List Number: 3

Creator: Dabinett, Ian

List Source: Eurofins Dallas

List Creation: 02/02/24 12:43 PM

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.	False	COC not relinquished.
Is the Field Sampler's name present on COC?	N/A	
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.	True	
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: 890-6052-1

SDG Number: 23E-04616

Login Number: 6052
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 01/30/24 10:34 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	



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 2/13/2024 12:20:07 PM

JOB DESCRIPTION

JRV DI 1A CTB
23E - 04616

JOB NUMBER

890-6050-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220



Eurofins Carlsbad

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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Authorized for release by
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Client: Vertex
Project/Site: JRV DI 1A CTB

Laboratory Job ID: 890-6050-1
SDG: 23E - 04616

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Definitions/Glossary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

Qualifiers

GC VOA

Qualifier	Qualifier Description
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: JRV DI 1A CTB

Job ID: 890-6050-1

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Job Narrative 890-6050-1

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 1/29/2024 11:47 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 2.0°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BH 24 - 09 (890-6050-1), BH 24 - 10 (890-6050-2), BH 24 - 10 (890-6050-3), BH 24 - 11 (890-6050-4) and BH 24 - 12 (890-6050-5).

GC VOA

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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 870-17961 and analytical batch 870-17988 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.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside the upper control limit: BH 24 - 09 (890-6050-1), BH 24 - 10 (890-6050-2), BH 24 - 10 (890-6050-3), BH 24 - 11 (890-6050-4), BH 24 - 12 (890-6050-5) and (890-6043-A-1-H). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (890-6043-A-1-I MS) and (890-6043-A-1-J MSD). 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

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

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Client Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

Client Sample ID: BH 24 - 09

Lab Sample ID: 890-6050-1

Date Collected: 01/24/24 12:10

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 2'

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		02/01/24 10:42	02/05/24 17:19	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/01/24 10:42	02/05/24 17:19	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/01/24 10:42	02/05/24 17:19	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/01/24 10:42	02/05/24 17:19	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/01/24 10:42	02/05/24 17:19	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/01/24 10:42	02/05/24 17:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	02/01/24 10:42	02/05/24 17:19	1
1,4-Difluorobenzene (Surr)	101		70 - 130	02/01/24 10:42	02/05/24 17:19	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			02/05/24 17:19	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			02/13/24 07:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.0	U	50.0	mg/Kg		01/30/24 14:51	02/13/24 07:09	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/30/24 14:51	02/13/24 07:09	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/30/24 14:51	02/13/24 07:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	211	S1+	70 - 130	01/30/24 14:51	02/13/24 07:09	1
1-Chlorooctane	181	S1+	70 - 130	01/30/24 14:51	02/13/24 07:09	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	821		50.3	mg/Kg			02/04/24 03:51	10

Client Sample ID: BH 24 - 10

Lab Sample ID: 890-6050-2

Date Collected: 01/24/24 12:20

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 0

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		02/01/24 10:42	02/05/24 17:40	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/01/24 10:42	02/05/24 17:40	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/01/24 10:42	02/05/24 17:40	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/01/24 10:42	02/05/24 17:40	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/01/24 10:42	02/05/24 17:40	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/01/24 10:42	02/05/24 17:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130	02/01/24 10:42	02/05/24 17:40	1
1,4-Difluorobenzene (Surr)	109		70 - 130	02/01/24 10:42	02/05/24 17:40	1

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Client Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

Client Sample ID: BH 24 - 10

Lab Sample ID: 890-6050-2

Date Collected: 01/24/24 12:20

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 0

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			02/05/24 17:40	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			02/13/24 07:29	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<49.9	U	49.9	mg/Kg		01/30/24 14:51	02/13/24 07:29	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		01/30/24 14:51	02/13/24 07:29	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/30/24 14:51	02/13/24 07:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	201	S1+	70 - 130	01/30/24 14:51	02/13/24 07:29	1
1-Chlorooctane	174	S1+	70 - 130	01/30/24 14:51	02/13/24 07:29	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	118		4.99	mg/Kg			02/04/24 04:12	1

Client Sample ID: BH 24 - 10

Lab Sample ID: 890-6050-3

Date Collected: 01/24/24 12:30

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 2'

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		02/01/24 10:42	02/05/24 18:00	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/01/24 10:42	02/05/24 18:00	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/01/24 10:42	02/05/24 18:00	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/01/24 10:42	02/05/24 18:00	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/01/24 10:42	02/05/24 18:00	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/01/24 10:42	02/05/24 18:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130	02/01/24 10:42	02/05/24 18:00	1
1,4-Difluorobenzene (Surr)	116		70 - 130	02/01/24 10:42	02/05/24 18:00	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			02/05/24 18:00	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			02/13/24 07:50	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.3	U	50.3	mg/Kg		01/30/24 14:51	02/13/24 07:50	1

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Client Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

Client Sample ID: BH 24 - 10

Lab Sample ID: 890-6050-3

Date Collected: 01/24/24 12:30

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 2'

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		01/30/24 14:51	02/13/24 07:50	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		01/30/24 14:51	02/13/24 07:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	228	S1+	70 - 130			01/30/24 14:51	02/13/24 07:50	1
1-Chlorooctane	201	S1+	70 - 130			01/30/24 14:51	02/13/24 07:50	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	92.4		4.96	mg/Kg			02/04/24 04:19	1

Client Sample ID: BH 24 - 11

Lab Sample ID: 890-6050-4

Date Collected: 01/24/24 12:50

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 2'

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		02/01/24 10:42	02/05/24 18:20	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:42	02/05/24 18:20	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:42	02/05/24 18:20	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		02/01/24 10:42	02/05/24 18:20	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:42	02/05/24 18:20	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		02/01/24 10:42	02/05/24 18:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130			02/01/24 10:42	02/05/24 18:20	1
1,4-Difluorobenzene (Surr)	112		70 - 130			02/01/24 10:42	02/05/24 18:20	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			02/05/24 18:20	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			02/13/24 08:10	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.3	U	50.3	mg/Kg		01/30/24 14:51	02/13/24 08:10	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		01/30/24 14:51	02/13/24 08:10	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		01/30/24 14:51	02/13/24 08:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	194	S1+	70 - 130			01/30/24 14:51	02/13/24 08:10	1
1-Chlorooctane	165	S1+	70 - 130			01/30/24 14:51	02/13/24 08:10	1

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Client Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

Client Sample ID: BH 24 - 11

Lab Sample ID: 890-6050-4

Date Collected: 01/24/24 12:50

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 2'

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	624		49.8	mg/Kg			02/04/24 04:25	10

Client Sample ID: BH 24 - 12

Lab Sample ID: 890-6050-5

Date Collected: 01/24/24 13:10

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 2'

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		02/01/24 10:42	02/05/24 18:41	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/01/24 10:42	02/05/24 18:41	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/01/24 10:42	02/05/24 18:41	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/01/24 10:42	02/05/24 18:41	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/01/24 10:42	02/05/24 18:41	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/01/24 10:42	02/05/24 18:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130			02/01/24 10:42	02/05/24 18:41	1
1,4-Difluorobenzene (Surr)	110		70 - 130			02/01/24 10:42	02/05/24 18:41	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			02/05/24 18:41	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			02/13/24 08:31	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.1	U	50.1	mg/Kg		01/30/24 14:51	02/13/24 08:31	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		01/30/24 14:51	02/13/24 08:31	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		01/30/24 14:51	02/13/24 08:31	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	201	S1+	70 - 130			01/30/24 14:51	02/13/24 08:31	1
1-Chlorooctane	171	S1+	70 - 130			01/30/24 14:51	02/13/24 08:31	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	633		50.5	mg/Kg			02/04/24 04:32	10

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Surrogate Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

Method: 8021B - Volatile Organic Compounds (GC)
Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-6042-A-1-C MS	Matrix Spike	99	97
890-6042-A-1-D MSD	Matrix Spike Duplicate	109	97
890-6050-1	BH 24 - 09	100	101
890-6050-2	BH 24 - 10	117	109
890-6050-3	BH 24 - 10	115	116
890-6050-4	BH 24 - 11	117	112
890-6050-5	BH 24 - 12	110	110
LCS 880-72114/1-A	Lab Control Sample	107	94
LCSD 880-72114/2-A	Lab Control Sample Dup	106	94
MB 880-72114/5-A	Method Blank	129	120
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)	
Lab Sample ID	Client Sample ID	OTPH1 (70-130)	1CO1 (70-130)
890-6043-A-1-I MS	Matrix Spike	157 S1+	154 S1+
890-6043-A-1-J MSD	Matrix Spike Duplicate	158 S1+	157 S1+
890-6050-1	BH 24 - 09	211 S1+	181 S1+
890-6050-2	BH 24 - 10	201 S1+	174 S1+
890-6050-3	BH 24 - 10	228 S1+	201 S1+
890-6050-4	BH 24 - 11	194 S1+	165 S1+
890-6050-5	BH 24 - 12	201 S1+	171 S1+
Surrogate Legend			
OTPH = o-Terphenyl			
1CO = 1-Chlorooctane			

QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72114/5-A

Matrix: Solid

Analysis Batch: 72316

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72114

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:42	02/05/24 11:58	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:42	02/05/24 11:58	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:42	02/05/24 11:58	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/01/24 10:42	02/05/24 11:58	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/01/24 10:42	02/05/24 11:58	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/01/24 10:42	02/05/24 11:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		70 - 130	02/01/24 10:42	02/05/24 11:58	1
1,4-Difluorobenzene (Surr)	120		70 - 130	02/01/24 10:42	02/05/24 11:58	1

Lab Sample ID: LCS 880-72114/1-A

Matrix: Solid

Analysis Batch: 72316

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 72114

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1004		mg/Kg		100	70 - 130
Toluene	0.100	0.1048		mg/Kg		105	70 - 130
Ethylbenzene	0.100	0.1151		mg/Kg		115	70 - 130
m-Xylene & p-Xylene	0.200	0.2201		mg/Kg		110	70 - 130
o-Xylene	0.100	0.1064		mg/Kg		106	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: LCSD 880-72114/2-A

Matrix: Solid

Analysis Batch: 72316

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 72114

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09665		mg/Kg		97	70 - 130	4	35
Toluene	0.100	0.1002		mg/Kg		100	70 - 130	4	35
Ethylbenzene	0.100	0.1084		mg/Kg		108	70 - 130	6	35
m-Xylene & p-Xylene	0.200	0.2192		mg/Kg		110	70 - 130	0	35
o-Xylene	0.100	0.1066		mg/Kg		107	70 - 130	0	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 890-6042-A-1-C MS

Matrix: Solid

Analysis Batch: 72316

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 72114

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0996	0.09142		mg/Kg		92	70 - 130
Toluene	<0.00200	U	0.0996	0.1006		mg/Kg		101	70 - 130

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QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

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

Lab Sample ID: 890-6042-A-1-C MS

Matrix: Solid

Analysis Batch: 72316

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 72114

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.0996	0.1052		mg/Kg		106	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.199	0.2076		mg/Kg		104	70 - 130
o-Xylene	<0.00200	U	0.0996	0.09916		mg/Kg		100	70 - 130
Surrogate	MS %Recovery	MS Qualifier	MS Limits						
4-Bromofluorobenzene (Surr)	99		70 - 130						
1,4-Difluorobenzene (Surr)	97		70 - 130						

Lab Sample ID: 890-6042-A-1-D MSD

Matrix: Solid

Analysis Batch: 72316

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 72114

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0990	0.09993		mg/Kg		101	70 - 130	9	35
Toluene	<0.00200	U	0.0990	0.09497		mg/Kg		96	70 - 130	6	35
Ethylbenzene	<0.00200	U	0.0990	0.1120		mg/Kg		113	70 - 130	6	35
m-Xylene & p-Xylene	<0.00401	U	0.198	0.2214		mg/Kg		112	70 - 130	6	35
o-Xylene	<0.00200	U	0.0990	0.1058		mg/Kg		107	70 - 130	7	35
Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits								
4-Bromofluorobenzene (Surr)	109		70 - 130								
1,4-Difluorobenzene (Surr)	97		70 - 130								

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

Lab Sample ID: 890-6043-A-1-I MS

Matrix: Solid

Analysis Batch: 17988

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 17961

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)	<49.9	U	1030	1084		mg/Kg		106	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U F1	1020	1658	F1	mg/Kg		160	70 - 130
Surrogate	MS %Recovery	MS Qualifier	MS Limits						
o-Terphenyl	157	S1+	70 - 130						
1-Chlorooctane	154	S1+	70 - 130						

Lab Sample ID: 890-6043-A-1-J MSD

Matrix: Solid

Analysis Batch: 17988

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 17961

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)	<49.9	U	1030	1151		mg/Kg		112	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	1020	1675	F1	mg/Kg		161	70 - 130	1	20

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QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

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

Lab Sample ID: 890-6043-A-1-J MSD

Matrix: Solid

Analysis Batch: 17988

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 17961

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
o-Terphenyl	158	S1+	70 - 130
1-Chlorooctane	157	S1+	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-71972/1-A

Matrix: Solid

Analysis Batch: 72255

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Chloride	<5.00	U	5.00	mg/Kg			02/04/24 03:31	1

Lab Sample ID: LCS 880-71972/2-A

Matrix: Solid

Analysis Batch: 72255

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD
Chloride	250	259.7		mg/Kg		104	90 - 110	

Lab Sample ID: LCSD 880-71972/3-A

Matrix: Solid

Analysis Batch: 72255

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	258.3		mg/Kg		103	90 - 110	1	20

Lab Sample ID: 890-6050-1 MS

Matrix: Solid

Analysis Batch: 72255

Client Sample ID: BH 24 - 09

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD
Chloride	821		2520	3445		mg/Kg		104	90 - 110	

Lab Sample ID: 890-6050-1 MSD

Matrix: Solid

Analysis Batch: 72255

Client Sample ID: BH 24 - 09

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	821		2520	3456		mg/Kg		105	90 - 110	0	20

QC Association Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

GC VOA

Prep Batch: 72114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6050-1	BH 24 - 09	Total/NA	Solid	5035	
890-6050-2	BH 24 - 10	Total/NA	Solid	5035	
890-6050-3	BH 24 - 10	Total/NA	Solid	5035	
890-6050-4	BH 24 - 11	Total/NA	Solid	5035	
890-6050-5	BH 24 - 12	Total/NA	Solid	5035	
MB 880-72114/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72114/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72114/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-6042-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
890-6042-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 72316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6050-1	BH 24 - 09	Total/NA	Solid	8021B	72114
890-6050-2	BH 24 - 10	Total/NA	Solid	8021B	72114
890-6050-3	BH 24 - 10	Total/NA	Solid	8021B	72114
890-6050-4	BH 24 - 11	Total/NA	Solid	8021B	72114
890-6050-5	BH 24 - 12	Total/NA	Solid	8021B	72114
MB 880-72114/5-A	Method Blank	Total/NA	Solid	8021B	72114
LCS 880-72114/1-A	Lab Control Sample	Total/NA	Solid	8021B	72114
LCSD 880-72114/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72114
890-6042-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	72114
890-6042-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	72114

Analysis Batch: 72519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6050-1	BH 24 - 09	Total/NA	Solid	Total BTEX	
890-6050-2	BH 24 - 10	Total/NA	Solid	Total BTEX	
890-6050-3	BH 24 - 10	Total/NA	Solid	Total BTEX	
890-6050-4	BH 24 - 11	Total/NA	Solid	Total BTEX	
890-6050-5	BH 24 - 12	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 17961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6050-1	BH 24 - 09	Total/NA	Solid	8015NM Prep	
890-6050-2	BH 24 - 10	Total/NA	Solid	8015NM Prep	
890-6050-3	BH 24 - 10	Total/NA	Solid	8015NM Prep	
890-6050-4	BH 24 - 11	Total/NA	Solid	8015NM Prep	
890-6050-5	BH 24 - 12	Total/NA	Solid	8015NM Prep	
890-6043-A-1-I MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-6043-A-1-J MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 17988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6050-1	BH 24 - 09	Total/NA	Solid	8015B NM	17961
890-6050-2	BH 24 - 10	Total/NA	Solid	8015B NM	17961
890-6050-3	BH 24 - 10	Total/NA	Solid	8015B NM	17961
890-6050-4	BH 24 - 11	Total/NA	Solid	8015B NM	17961
890-6050-5	BH 24 - 12	Total/NA	Solid	8015B NM	17961

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QC Association Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

GC Semi VOA (Continued)

Analysis Batch: 17988 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6043-A-1-I MS	Matrix Spike	Total/NA	Solid	8015B NM	17961
890-6043-A-1-J MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	17961

Analysis Batch: 18041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6050-1	BH 24 - 09	Total/NA	Solid	8015 NM	
890-6050-2	BH 24 - 10	Total/NA	Solid	8015 NM	
890-6050-3	BH 24 - 10	Total/NA	Solid	8015 NM	
890-6050-4	BH 24 - 11	Total/NA	Solid	8015 NM	
890-6050-5	BH 24 - 12	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 71972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6050-1	BH 24 - 09	Soluble	Solid	DI Leach	
890-6050-2	BH 24 - 10	Soluble	Solid	DI Leach	
890-6050-3	BH 24 - 10	Soluble	Solid	DI Leach	
890-6050-4	BH 24 - 11	Soluble	Solid	DI Leach	
890-6050-5	BH 24 - 12	Soluble	Solid	DI Leach	
MB 880-71972/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-71972/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-71972/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6050-1 MS	BH 24 - 09	Soluble	Solid	DI Leach	
890-6050-1 MSD	BH 24 - 09	Soluble	Solid	DI Leach	

Analysis Batch: 72255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6050-1	BH 24 - 09	Soluble	Solid	300.0	71972
890-6050-2	BH 24 - 10	Soluble	Solid	300.0	71972
890-6050-3	BH 24 - 10	Soluble	Solid	300.0	71972
890-6050-4	BH 24 - 11	Soluble	Solid	300.0	71972
890-6050-5	BH 24 - 12	Soluble	Solid	300.0	71972
MB 880-71972/1-A	Method Blank	Soluble	Solid	300.0	71972
LCS 880-71972/2-A	Lab Control Sample	Soluble	Solid	300.0	71972
LCSD 880-71972/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	71972
890-6050-1 MS	BH 24 - 09	Soluble	Solid	300.0	71972
890-6050-1 MSD	BH 24 - 09	Soluble	Solid	300.0	71972

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Lab Chronicle

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

Client Sample ID: BH 24 - 09

Lab Sample ID: 890-6050-1

Date Collected: 01/24/24 12:10

Matrix: Solid

Date Received: 01/29/24 11:47

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	72114	02/01/24 10:42	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72316	02/05/24 17:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72519	02/05/24 17:19	SM	EET MID
Total/NA	Analysis	8015 NM		1			18041	02/13/24 07:09	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	17961	01/30/24 14:51	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 07:09	WP	EET DAL
Soluble	Leach	DI Leach			4.97 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		10			72255	02/04/24 03:51	CH	EET MID

Client Sample ID: BH 24 - 10

Lab Sample ID: 890-6050-2

Date Collected: 01/24/24 12:20

Matrix: Solid

Date Received: 01/29/24 11:47

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	72114	02/01/24 10:42	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72316	02/05/24 17:40	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72519	02/05/24 17:40	SM	EET MID
Total/NA	Analysis	8015 NM		1			18041	02/13/24 07:29	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	17961	01/30/24 14:51	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 07:29	WP	EET DAL
Soluble	Leach	DI Leach			5.01 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		1			72255	02/04/24 04:12	CH	EET MID

Client Sample ID: BH 24 - 10

Lab Sample ID: 890-6050-3

Date Collected: 01/24/24 12:30

Matrix: Solid

Date Received: 01/29/24 11:47

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	72114	02/01/24 10:42	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72316	02/05/24 18:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72519	02/05/24 18:00	SM	EET MID
Total/NA	Analysis	8015 NM		1			18041	02/13/24 07:50	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	17961	01/30/24 14:51	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 07:50	WP	EET DAL
Soluble	Leach	DI Leach			5.04 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		1			72255	02/04/24 04:19	CH	EET MID

Client Sample ID: BH 24 - 11

Lab Sample ID: 890-6050-4

Date Collected: 01/24/24 12:50

Matrix: Solid

Date Received: 01/29/24 11:47

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	72114	02/01/24 10:42	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72316	02/05/24 18:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72519	02/05/24 18:20	SM	EET MID

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Lab Chronicle

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

Client Sample ID: BH 24 - 11
Date Collected: 01/24/24 12:50
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6050-4
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			18041	02/13/24 08:10	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	17961	01/30/24 14:51	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 08:10	WP	EET DAL
Soluble	Leach	DI Leach			5.02 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		10			72255	02/04/24 04:25	CH	EET MID

Client Sample ID: BH 24 - 12
Date Collected: 01/24/24 13:10
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6050-5
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			4.97 g	5 mL	72114	02/01/24 10:42	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72316	02/05/24 18:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72519	02/05/24 18:41	SM	EET MID
Total/NA	Analysis	8015 NM		1			18041	02/13/24 08:31	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	17961	01/30/24 14:51	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 08:31	WP	EET DAL
Soluble	Leach	DI Leach			4.95 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		10			72255	02/04/24 04:32	CH	EET MID

Laboratory References:

EET DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300

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

Accreditation/Certification Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

Laboratory: Eurofins Dallas

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704295-23-34	06-30-24

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
Total BTEX		Solid	Total BTEX

Method Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

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 DAL
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET DAL
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET DAL
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 DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
- EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6050-1
SDG: 23E - 04616

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6050-1	BH 24 - 09	Solid	01/24/24 12:10	01/29/24 11:47	2'
890-6050-2	BH 24 - 10	Solid	01/24/24 12:20	01/29/24 11:47	0
890-6050-3	BH 24 - 10	Solid	01/24/24 12:30	01/29/24 11:47	2'
890-6050-4	BH 24 - 11	Solid	01/24/24 12:50	01/29/24 11:47	2'
890-6050-5	BH 24 - 12	Solid	01/24/24 13:10	01/29/24 11:47	2'

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1.24.24

NAPP 2331041267

Work Order No: 1032151001

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

Environment Testing
Xenco



6050

www.xenco.com Page 1 of 1

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 Manager: Chonice Dixon

Company Name: Wutex/XTO

Address: on file

City, State ZIP: on file

Phone: on file

Bill to: (if different)

Company Name:

Address:

City, State ZIP:

Email:

ANALYSIS REQUEST

Pres. Code

Turn Around

Routine ☒ Rush ☐

Due Date:

TAT starts the day received by the lab, if received by 4:30pm

Temp Blank: Yes ☒ No ☐

Thermometer ID: 740007

Cooler Custody Seals: Yes ☒ No ☐

Correction Factor: 0.2

Temperature Reading: 8.4

Corrected Temperature: 8.2

Parameters

of Cont

Time Sampled

Date Sampled

Matrix

Sample Identification

Depth

Grab/Comb

Time

Date

Time

None: NO

DI Water: H₂O

Cool: Cool

MeOH: Me

HCL: HC

HNO₃: HN

H₂SO₄: H₂

NaOH: Na

H₃PO₄: HP

NaHSO₄: NABIS

Na₂S₂O₃: NaSO₃

Zn Acetate+NaOH: Zn

NaOH+Ascorbic Acid: SARC

Sample Comments

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Revised Date: 08/25/2020 Rev. 2020.2

Released to Imaging: 5/10/2024 11:00:40 AM

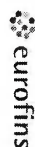
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2/13/2024

Eurofins Midland

**1211 W. Florida Ave
Midland, TX 79701
Phone: 432-704-5440**

Chain of Custody Record



Environment Testing

[illegible]

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-6050-1

SDG Number: 23E - 04616

Login Number: 6050

List Source: Eurofins Carlsbad

List Number: 1

Creator: Bruns, Shannon

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: 890-6050-1

SDG Number: 23E - 04616

Login Number: 6050

List Number: 3

Creator: Dabinett, Ian

List Source: Eurofins Dallas

List Creation: 02/02/24 12:43 PM

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.	False	COC not relinquished.
Is the Field Sampler's name present on COC?	N/A	
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.	True	
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: 890-6050-1

SDG Number: 23E - 04616

Login Number: 6050
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 01/30/24 01:43 PM

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	



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 2/12/2024 9:51:03 AM

JOB DESCRIPTION

JRV DI 1A CTB
23E - 04616

JOB NUMBER

890-6051-1



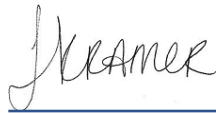
Eurofins Carlsbad

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



Generated
2/12/2024 9:51:03 AM

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

Client: Vertex
Project/Site: JRV DI 1A CTB

Laboratory Job ID: 890-6051-1
SDG: 23E - 04616

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Definitions/Glossary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high 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
*1	LCS/LCSD RPD exceeds control limits.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD 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.
α	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: JRV DI 1A CTB

Job ID: 890-6051-1

Job ID: 890-6051-1

Eurofins Carlsbad

Job Narrative
890-6051-1

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 1/29/2024 11:47 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 2.2°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BH - 09 (890-6051-1), BH - 09 (890-6051-2) and BH - 10 (890-6051-3).

GC VOA

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-72529 recovered above the upper control limit for Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 880-72529/20).

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-72529 recovered above the upper control limit for Ethylbenzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 880-72529/33).

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-72529 recovered above the upper control limit for Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 880-72529/51).

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-72529 recovered above the upper control limit for <AffectedAnalytes>. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 880-72529/64).

Method 8021B: Surrogate recovery for the following sample was outside control limits: (LCS 880-72388/1-A). Evidence of matrix interferences is not obvious.

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-72388 and analytical batch 880-72529 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

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 RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 870-17905 and analytical batch 870-17969 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO).

Method 8015MOD_NM: Spike compounds were inadvertently omitted during the extraction process for the matrix spike duplicate (MSD); therefore, matrix spike duplicate recoveries are unavailable for preparation batch 870-17905 and analytical batch 870-17969. The associated laboratory control sample (LCS/LCSD) met acceptance criteria.

Method 8015MOD_NM: An incorrect volume of spiking solution was inadvertently added the following samples: (CCV

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Case Narrative

Client: Vertex
Project: JRV DI 1A CTB

Job ID: 890-6051-1

Job ID: 890-6051-1 (Continued) Eurofins Carlsbad

870-17969/164) and (CCV 870-17969/165). Percent recoveries are based on the amount spiked.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (890-6038-A-1-K MS) and (890-6038-A-1-L 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 the upper control limit: BH - 09 (890-6051-1), BH - 09 (890-6051-2), BH - 10 (890-6051-3) and (890-6038-A-1-J). This sample did not contain any target analytes; 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

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

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Client Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

Client Sample ID: BH - 09

Lab Sample ID: 890-6051-1

Date Collected: 01/25/24 10:00

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 0

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		02/05/24 14:05	02/08/24 05:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/24 14:05	02/08/24 05:51	1
Ethylbenzene	<0.00200	U **	0.00200	mg/Kg		02/05/24 14:05	02/08/24 05:51	1
m-Xylene & p-Xylene	<0.00399	U **	0.00399	mg/Kg		02/05/24 14:05	02/08/24 05:51	1
o-Xylene	<0.00200	U **	0.00200	mg/Kg		02/05/24 14:05	02/08/24 05:51	1
Xylenes, Total	<0.00399	U **	0.00399	mg/Kg		02/05/24 14:05	02/08/24 05:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	02/05/24 14:05	02/08/24 05:51	1
1,4-Difluorobenzene (Surr)	77		70 - 130	02/05/24 14:05	02/08/24 05:51	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			02/08/24 05:51	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			02/05/24 22:58	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.0	U *1	50.0	mg/Kg		01/30/24 11:32	02/05/24 22:58	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/30/24 11:32	02/05/24 22:58	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/30/24 11:32	02/05/24 22:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	197	S1+	70 - 130	01/30/24 11:32	02/05/24 22:58	1
1-Chlorooctane	177	S1+	70 - 130	01/30/24 11:32	02/05/24 22:58	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	311		25.2	mg/Kg			02/04/24 04:53	5

Client Sample ID: BH - 09

Lab Sample ID: 890-6051-2

Date Collected: 01/25/24 10:10

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 1'

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		02/05/24 14:05	02/08/24 06:12	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/05/24 14:05	02/08/24 06:12	1
Ethylbenzene	<0.00201	U **	0.00201	mg/Kg		02/05/24 14:05	02/08/24 06:12	1
m-Xylene & p-Xylene	<0.00402	U **	0.00402	mg/Kg		02/05/24 14:05	02/08/24 06:12	1
o-Xylene	<0.00201	U **	0.00201	mg/Kg		02/05/24 14:05	02/08/24 06:12	1
Xylenes, Total	<0.00402	U **	0.00402	mg/Kg		02/05/24 14:05	02/08/24 06:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130	02/05/24 14:05	02/08/24 06:12	1
1,4-Difluorobenzene (Surr)	73		70 - 130	02/05/24 14:05	02/08/24 06:12	1

Eurofins Carlsbad

Client Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

Client Sample ID: BH - 09

Lab Sample ID: 890-6051-2

Date Collected: 01/25/24 10:10

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 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			02/08/24 06:12	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			02/05/24 23:18	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<49.5	U *1	49.5	mg/Kg		01/30/24 11:32	02/05/24 23:18	1
Diesel Range Organics (Over C10-C28)	<49.5	U	49.5	mg/Kg		01/30/24 11:32	02/05/24 23:18	1
Oil Range Organics (Over C28-C36)	<49.5	U	49.5	mg/Kg		01/30/24 11:32	02/05/24 23:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	144	S1+	70 - 130	01/30/24 11:32	02/05/24 23:18	1
1-Chlorooctane	128		70 - 130	01/30/24 11:32	02/05/24 23:18	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	606		50.2	mg/Kg			02/04/24 04:59	10

Client Sample ID: BH - 10

Lab Sample ID: 890-6051-3

Date Collected: 01/25/24 12:00

Matrix: Solid

Date Received: 01/29/24 11:47

Sample Depth: 1'

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		02/05/24 14:05	02/08/24 06:32	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/24 14:05	02/08/24 06:32	1
Ethylbenzene	<0.00200	U *	0.00200	mg/Kg		02/05/24 14:05	02/08/24 06:32	1
m-Xylene & p-Xylene	<0.00401	U *	0.00401	mg/Kg		02/05/24 14:05	02/08/24 06:32	1
o-Xylene	<0.00200	U *	0.00200	mg/Kg		02/05/24 14:05	02/08/24 06:32	1
Xylenes, Total	<0.00401	U *	0.00401	mg/Kg		02/05/24 14:05	02/08/24 06:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		70 - 130	02/05/24 14:05	02/08/24 06:32	1
1,4-Difluorobenzene (Surr)	73		70 - 130	02/05/24 14:05	02/08/24 06:32	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			02/08/24 06:32	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			02/05/24 23:39	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.2	U *1	50.2	mg/Kg		01/30/24 11:32	02/05/24 23:39	1

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Client Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

Client Sample ID: BH - 10
Date Collected: 01/25/24 12:00
Date Received: 01/29/24 11:47
Sample Depth: 1'

Lab Sample ID: 890-6051-3
Matrix: Solid

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2	mg/Kg		01/30/24 11:32	02/05/24 23:39	1	
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		01/30/24 11:32	02/05/24 23:39	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
o-Terphenyl	146	S1+	70 - 130			01/30/24 11:32	02/05/24 23:39	1	
1-Chlorooctane	131	S1+	70 - 130			01/30/24 11:32	02/05/24 23:39	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	150		5.01	mg/Kg			02/04/24 05:06	1	

Surrogate Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-6038-A-1-G MS	Matrix Spike	116	94
890-6038-A-1-H MSD	Matrix Spike Duplicate	119	90
890-6051-1	BH - 09	85	77
890-6051-2	BH - 09	89	73
890-6051-3	BH - 10	91	73
LCS 880-72388/1-A	Lab Control Sample	133 S1+	90
LCSD 880-72388/2-A	Lab Control Sample Dup	123	105
MB 880-72368/5-A	Method Blank	75	78
MB 880-72388/5-A	Method Blank	76	77
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)	
Lab Sample ID	Client Sample ID	OTPH1 (70-130)	1CO1 (70-130)
890-6038-A-1-K MS	Matrix Spike	139 S1+	127
890-6038-A-1-L MSD	Matrix Spike Duplicate	146 S1+	128
890-6051-1	BH - 09	197 S1+	177 S1+
890-6051-2	BH - 09	144 S1+	128
890-6051-3	BH - 10	146 S1+	131 S1+
LCS 870-17905/1-A	Lab Control Sample	125	108
LCSD 870-17905/2-A	Lab Control Sample Dup	126	112
MB 870-17905/3-A	Method Blank	128	122
Surrogate Legend			
OTPH = o-Terphenyl			
1CO = 1-Chlorooctane			

QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72368/5-A

Matrix: Solid

Analysis Batch: 72529

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72368

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/05/24 12:04	02/07/24 11:36	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/24 12:04	02/07/24 11:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/05/24 12:04	02/07/24 11:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/05/24 12:04	02/07/24 11:36	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/05/24 12:04	02/07/24 11:36	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/05/24 12:04	02/07/24 11:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		70 - 130	02/05/24 12:04	02/07/24 11:36	1
1,4-Difluorobenzene (Surr)	78		70 - 130	02/05/24 12:04	02/07/24 11:36	1

Lab Sample ID: MB 880-72388/5-A

Matrix: Solid

Analysis Batch: 72529

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72388

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/05/24 14:05	02/07/24 23:01	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/24 14:05	02/07/24 23:01	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/05/24 14:05	02/07/24 23:01	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/05/24 14:05	02/07/24 23:01	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/05/24 14:05	02/07/24 23:01	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/05/24 14:05	02/07/24 23:01	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		70 - 130	02/05/24 14:05	02/07/24 23:01	1
1,4-Difluorobenzene (Surr)	77		70 - 130	02/05/24 14:05	02/07/24 23:01	1

Lab Sample ID: LCS 880-72388/1-A

Matrix: Solid

Analysis Batch: 72529

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 72388

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1175		mg/Kg		117	70 - 130
Toluene	0.100	0.1154		mg/Kg		115	70 - 130
Ethylbenzene	0.100	0.1542	*+	mg/Kg		154	70 - 130
m-Xylene & p-Xylene	0.200	0.2975	*+	mg/Kg		149	70 - 130
o-Xylene	0.100	0.1450	*+	mg/Kg		145	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	133	S1+	70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: LCSD 880-72388/2-A

Matrix: Solid

Analysis Batch: 72529

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 72388

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1052		mg/Kg		105	70 - 130	11	35

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QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

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

Lab Sample ID: LCSD 880-72388/2-A

Matrix: Solid

Analysis Batch: 72529

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 72388

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits			
Toluene	0.100	0.1142		mg/Kg		114	70 - 130		1	35
Ethylbenzene	0.100	0.1353	*+	mg/Kg		135	70 - 130		13	35
m-Xylene & p-Xylene	0.200	0.2586		mg/Kg		129	70 - 130		14	35
o-Xylene	0.100	0.1265		mg/Kg		126	70 - 130		14	35

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	123		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: 890-6038-A-1-G MS

Matrix: Solid

Analysis Batch: 72529

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 72388

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	
Benzene	<0.00200	U	0.0996	0.08573		mg/Kg		86	70 - 130	
Toluene	<0.00200	U	0.0996	0.09654		mg/Kg		97	70 - 130	
Ethylbenzene	<0.00200	U *	0.0996	0.1129		mg/Kg		113	70 - 130	
m-Xylene & p-Xylene	<0.00401	U *	0.199	0.2151		mg/Kg		108	70 - 130	
o-Xylene	<0.00200	U *	0.0996	0.1044		mg/Kg		105	70 - 130	

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	116		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 890-6038-A-1-H MSD

Matrix: Solid

Analysis Batch: 72529

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 72388

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits			
Benzene	<0.00200	U	0.0990	0.08704		mg/Kg		88	70 - 130		2	35
Toluene	<0.00200	U	0.0990	0.09959		mg/Kg		101	70 - 130		3	35
Ethylbenzene	<0.00200	U *	0.0990	0.1186		mg/Kg		120	70 - 130		5	35
m-Xylene & p-Xylene	<0.00401	U *	0.198	0.2248		mg/Kg		114	70 - 130		4	35
o-Xylene	<0.00200	U *	0.0990	0.1095		mg/Kg		111	70 - 130		5	35

Surrogate	MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	119		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

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

Lab Sample ID: MB 870-17905/3-A

Matrix: Solid

Analysis Batch: 17969

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 17905

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)	<50.0	U	50.0	mg/Kg		01/30/24 11:32	02/05/24 15:43	1

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QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

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

Lab Sample ID: MB 870-17905/3-A

Matrix: Solid

Analysis Batch: 17969

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 17905

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/30/24 11:32	02/05/24 15:43	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/30/24 11:32	02/05/24 15:43	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
o-Terphenyl	128		70 - 130			01/30/24 11:32	02/05/24 15:43	1
1-Chlorooctane	122		70 - 130			01/30/24 11:32	02/05/24 15:43	1

Lab Sample ID: LCS 870-17905/1-A

Matrix: Solid

Analysis Batch: 17969

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 17905

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits	
		Result	Qualifier					
Gasoline Range Organics (GRO)	1020	1174		mg/Kg		115	70 - 130	
Diesel Range Organics (Over C10-C28)	1010	1217		mg/Kg		120	70 - 130	
Surrogate		LCS	LCS					
		%Recovery	Qualifier					
o-Terphenyl		125					70 - 130	
1-Chlorooctane		108					70 - 130	

Lab Sample ID: LCSD 870-17905/2-A

Matrix: Solid

Analysis Batch: 17969

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 17905

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
		Result	Qualifier						
Gasoline Range Organics (GRO)	1020	906.0	*1	mg/Kg		89	70 - 130	26	20
Diesel Range Organics (Over C10-C28)	1010	1213		mg/Kg		120	70 - 130	0	20
Surrogate		LCSD	LCSD						
		%Recovery	Qualifier						
o-Terphenyl		126					70 - 130		
1-Chlorooctane		112					70 - 130		

Lab Sample ID: 890-6038-A-1-K MS

Matrix: Solid

Analysis Batch: 17969

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 17905

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits	
	Result	Qualifier		Result	Qualifier					
Gasoline Range Organics (GRO)	<49.9	U *1 F1	1020	1169		mg/Kg		114	70 - 130	
Diesel Range Organics (Over C10-C28)	55.5	F1 F2	1010	1263		mg/Kg		119	70 - 130	
Surrogate	MS	MS								
	%Recovery	Qualifier								
o-Terphenyl	139	S1+							70 - 130	
1-Chlorooctane	127								70 - 130	

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QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

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

Lab Sample ID: 890-6038-A-1-L MSD

Matrix: Solid

Analysis Batch: 17969

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 17905

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
Gasoline Range Organics (GRO)	<49.9	U *1 F1	1020	<50.2	U F1	mg/Kg		0	70 - 130	NC	20
Diesel Range Organics (Over C10-C28)	55.5	F1 F2	1010	<50.2	U F1 F2	mg/Kg		-2	70 - 130	190	20

	<i>MSD</i>	<i>MSD</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>o</i> -Terphenyl	146	S1+	70 - 130
1-Chlorooctane	128		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-71972/1-A

Matrix: Solid

Analysis Batch: 72255

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Chloride	<5.00	U	5.00	mg/Kg			02/04/24 03:31	1

Lab Sample ID: LCS 880-71972/2-A

Matrix: Solid

Analysis Batch: 72255

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	259.7		mg/Kg		104	90 - 110

Lab Sample ID: LCSD 880-71972/3-A

Matrix: Solid

Analysis Batch: 72255

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCS D Result	LCS D Qualifier	Unit	D	%Rec	%Rec	RPD	RPD
							Limits		Limit
Chloride	250	258.3		mg/Ka		103	90 - 110	1	20

Lab Sample ID: 890-6050-A-1-B MS

Matrix: Solid

Analysis Batch: 72255

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	821		2520	3445		mg/Ka		104	90 - 110

Lab Sample ID: 890-6050-A-1-C MSD

Matrix: Solid

Analysis Batch: 72255

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	821		2520	3456		mg/Ka		105	90 - 110	0	20

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QC Sample Results

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-6052-A-3-C MS							Client Sample ID: Matrix Spike				
Matrix: Solid							Prep Type: Soluble				
Analysis Batch: 72255											
	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	52.3		251	316.9		mg/Kg		105	90 - 110		

Lab Sample ID: 890-6052-A-3-D MSD							Client Sample ID: Matrix Spike Duplicate				
Matrix: Solid							Prep Type: Soluble				
Analysis Batch: 72255											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	52.3		251	315.8		mg/Kg		105	90 - 110	0	20

QC Association Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

GC VOA

Prep Batch: 72368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-72368/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 72388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6051-1	BH - 09	Total/NA	Solid	5035	
890-6051-2	BH - 09	Total/NA	Solid	5035	
890-6051-3	BH - 10	Total/NA	Solid	5035	
MB 880-72388/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72388/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72388/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-6038-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
890-6038-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 72529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6051-1	BH - 09	Total/NA	Solid	8021B	72388
890-6051-2	BH - 09	Total/NA	Solid	8021B	72388
890-6051-3	BH - 10	Total/NA	Solid	8021B	72388
MB 880-72368/5-A	Method Blank	Total/NA	Solid	8021B	72368
MB 880-72388/5-A	Method Blank	Total/NA	Solid	8021B	72388
LCS 880-72388/1-A	Lab Control Sample	Total/NA	Solid	8021B	72388
LCSD 880-72388/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72388
890-6038-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	72388
890-6038-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	72388

Analysis Batch: 72684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6051-1	BH - 09	Total/NA	Solid	Total BTEX	
890-6051-2	BH - 09	Total/NA	Solid	Total BTEX	
890-6051-3	BH - 10	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 17905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6051-1	BH - 09	Total/NA	Solid	8015NM Prep	
890-6051-2	BH - 09	Total/NA	Solid	8015NM Prep	
890-6051-3	BH - 10	Total/NA	Solid	8015NM Prep	
MB 870-17905/3-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 870-17905/1-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 870-17905/2-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6038-A-1-K MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-6038-A-1-L MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 17969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6051-1	BH - 09	Total/NA	Solid	8015B NM	17905
890-6051-2	BH - 09	Total/NA	Solid	8015B NM	17905
890-6051-3	BH - 10	Total/NA	Solid	8015B NM	17905
MB 870-17905/3-A	Method Blank	Total/NA	Solid	8015B NM	17905
LCS 870-17905/1-A	Lab Control Sample	Total/NA	Solid	8015B NM	17905

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QC Association Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

GC Semi VOA (Continued)

Analysis Batch: 17969 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 870-17905/2-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	17905
890-6038-A-1-K MS	Matrix Spike	Total/NA	Solid	8015B NM	17905
890-6038-A-1-L MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	17905

Analysis Batch: 17984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6051-1	BH - 09	Total/NA	Solid	8015 NM	
890-6051-2	BH - 09	Total/NA	Solid	8015 NM	
890-6051-3	BH - 10	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 71972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6051-1	BH - 09	Soluble	Solid	DI Leach	
890-6051-2	BH - 09	Soluble	Solid	DI Leach	
890-6051-3	BH - 10	Soluble	Solid	DI Leach	
MB 880-71972/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-71972/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-71972/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6050-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-6050-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-6052-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-6052-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 72255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6051-1	BH - 09	Soluble	Solid	300.0	71972
890-6051-2	BH - 09	Soluble	Solid	300.0	71972
890-6051-3	BH - 10	Soluble	Solid	300.0	71972
MB 880-71972/1-A	Method Blank	Soluble	Solid	300.0	71972
LCS 880-71972/2-A	Lab Control Sample	Soluble	Solid	300.0	71972
LCSD 880-71972/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	71972
890-6050-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	71972
890-6050-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	71972
890-6052-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	71972
890-6052-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	71972

Lab Chronicle

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

Client Sample ID: BH - 09

Lab Sample ID: 890-6051-1

Date Collected: 01/25/24 10:00

Matrix: Solid

Date Received: 01/29/24 11:47

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	72388	02/05/24 14:05	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72529	02/08/24 05:51	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			72684	02/08/24 05:51	SM	EET MID
Total/NA	Analysis	8015 NM		1			17984	02/05/24 22:58	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	17905	01/30/24 11:32	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17969	02/05/24 22:58	WP	EET DAL
Soluble	Leach	DI Leach			4.96 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		5			72255	02/04/24 04:53	CH	EET MID

Client Sample ID: BH - 09

Lab Sample ID: 890-6051-2

Date Collected: 01/25/24 10:10

Matrix: Solid

Date Received: 01/29/24 11:47

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	72388	02/05/24 14:05	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72529	02/08/24 06:12	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			72684	02/08/24 06:12	SM	EET MID
Total/NA	Analysis	8015 NM		1			17984	02/05/24 23:18	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.10 g	10 mL	17905	01/30/24 11:32	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17969	02/05/24 23:18	WP	EET DAL
Soluble	Leach	DI Leach			4.98 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		10			72255	02/04/24 04:59	CH	EET MID

Client Sample ID: BH - 10

Lab Sample ID: 890-6051-3

Date Collected: 01/25/24 12:00

Matrix: Solid

Date Received: 01/29/24 11:47

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	72388	02/05/24 14:05	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72529	02/08/24 06:32	AJ	EET MID
Total/NA	Analysis	Total BTEX		1			72684	02/08/24 06:32	SM	EET MID
Total/NA	Analysis	8015 NM		1			17984	02/05/24 23:39	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	17905	01/30/24 11:32	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17969	02/05/24 23:39	WP	EET DAL
Soluble	Leach	DI Leach			4.99 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		1			72255	02/04/24 05:06	CH	EET MID

Laboratory References:

EET DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300

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

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

Laboratory: Eurofins Dallas

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704295-23-34	06-30-24

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
Total BTEX		Solid	Total BTEX

Method Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

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 DAL
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET DAL
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET DAL
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 DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
- EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Vertex
Project/Site: JRV DI 1A CTB

Job ID: 890-6051-1
SDG: 23E - 04616

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6051-1	BH - 09	Solid	01/25/24 10:00	01/29/24 11:47	0
890-6051-2	BH - 09	Solid	01/25/24 10:10	01/29/24 11:47	1'
890-6051-3	BH - 10	Solid	01/25/24 12:00	01/29/24 11:47	1'

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100.00

NARI 203 10412

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



Environment Testing
Xenco

Work Order No: 1082151001

6051 www.xenco.com Page 1 of 1

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 Manager: Chama Dixon

Company Name: Wintex/xtu

Address: on file

City, State ZIP: on file

Phone: on file

Bill to: (if different) Garrett Green

Company Name: xtu

Address: on file

City, State ZIP: on file

Email: on file

Project Name: TRV DI 1A CTB

Project Number: 23E-04616

Project Location: TRV DI 1A CTB

Sampler's Name: Ifusavon Costa

PO #: 1000

SAMPLE RECEIPT

Samples Received Intact: Yes ☒ No ☐

Cooler Custody Seals: Yes ☒ No ☐

Sample Custody Seals: Yes ☒ No ☐

Total Containers: 3.2

Wet Ice: Yes ☒ No ☐

Thermometer ID: 20.2

Correction Factor: 3.4

Temperature Reading: 3.2

Corrected Temperature: 3.2

Turn Around: Routine ☒ Rush ☐

Due Date: TAT starts the day received by the lab, if received by 4:30pm

Parameters: Pres. Code

ANALYSIS REQUEST

Preservative Codes

None: NO DI Water: H₂O

Cool: Cool MeOH: Me

HCL: HC HNO₃: HN

H₂SO₄: H₂ NaOH: Na

H₃PO₄: HP

NaHSO₄: NABIS

Na₂O₃: NaSO₃

Zn Acetate+NaOH: Zn

NaOH+Ascorbic Acid: SAPC

Sample Comments

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont
BA24-09	Soil	1-25-24	10:00	0	1	1
BA24-09	↓	↓	10:10	1'	2	2
BA24-15	↓	↓	12:00	1'	3	3

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti 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 Ti 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 services. 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)

1. [Signature] 1/29 1147

3. [Signature]

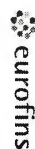
5. [Signature]

Revised Date: 08/23/2020 Rev. 2020.2

Eurofins Midland

1211 W. Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record



Environmental Testing

[illegible]

Chain of Custody Record



Record

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-6051-1

SDG Number: 23E - 04616

Login Number: 6051

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: 890-6051-1

SDG Number: 23E - 04616

Login Number: 6051

List Number: 3

Creator: Thompson, Christopher

List Source: Eurofins Dallas

List Creation: 02/03/24 01:45 PM

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?	N/A	
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.	True	
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").	True	

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-6051-1

SDG Number: 23E - 04616

Login Number: 6051

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 01/30/24 10:34 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	



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 2/13/2024 3:59:39 PM

JOB DESCRIPTION

JRU DI 1A CTB
23E-04616

JOB NUMBER

890-6053-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220



Eurofins Carlsbad

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



Generated
2/13/2024 3:59:39 PM

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

Client: Vertex
Project/Site: JRU DI 1A CTB

Laboratory Job ID: 890-6053-1
SDG: 23E-04616

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Definitions/Glossary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low 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, low biased.
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.
α	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: JRU DI 1A CTB

Job ID: 890-6053-1

Job ID: 890-6053-1

Eurofins Carlsbad

Job Narrative
890-6053-1

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 1/29/2024 11:47 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 2.2°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BH24-11 (890-6053-1), BH24-11 (890-6053-2), BH24-12 (890-6053-3), BH24-12 (890-6053-4), BH24-13 (890-6053-5), BH24-13 (890-6053-6), BH24-13 (890-6053-7), BH24-14 (890-6053-8), BH24-14 (890-6053-9) and BH24-15 (890-6053-10).

GC VOA

Method 8021B: The matrix spike duplicate (MSD) recoveries for preparation batch 880-72417 and analytical batch 880-72621 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: BH24-11 (890-6053-1), BH24-11 (890-6053-2), BH24-12 (890-6053-4) and BH24-13 (890-6053-5). 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 870-17962 and analytical batch 870-17706 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.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (890-6046-A-1-N 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 the upper control limit: BH24-12 (890-6053-3), BH24-12 (890-6053-4), BH24-13 (890-6053-6) and BH24-14 (890-6053-9). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: BH24-11 (890-6053-2). 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 880-71959 and analytical batch 880-72175 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because 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.

Eurofins Carlsbad

Case Narrative

Client: Vertex
Project: JRU DI 1A CTB

Job ID: 890-6053-1

Job ID: 890-6053-1 (Continued) **Eurofins Carlsbad**

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Eurofins Carlsbad

Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Client Sample ID: BH24-11

Lab Sample ID: 890-6053-1

Date Collected: 01/25/24 10:20

Matrix: Solid

Date Received: 01/29/24 11:47

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U F1 F2	0.00200	mg/Kg		02/05/24 15:57	02/08/24 11:44	1
Toluene	<0.00200	U F1 F2	0.00200	mg/Kg		02/05/24 15:57	02/08/24 11:44	1
Ethylbenzene	<0.00200	U F1 F2	0.00200	mg/Kg		02/05/24 15:57	02/08/24 11:44	1
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.00401	mg/Kg		02/05/24 15:57	02/08/24 11:44	1
o-Xylene	<0.00200	U F1 F2	0.00200	mg/Kg		02/05/24 15:57	02/08/24 11:44	1
Xylenes, Total	<0.00401	U F1 F2	0.00401	mg/Kg		02/05/24 15:57	02/08/24 11:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	56	S1-	70 - 130	02/05/24 15:57	02/08/24 11:44	1
1,4-Difluorobenzene (Surr)	86		70 - 130	02/05/24 15:57	02/08/24 11:44	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			02/08/24 11:44	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			02/04/24 18:05	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<49.9	U	49.9	mg/Kg		01/30/24 14:56	02/04/24 18:05	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		01/30/24 14:56	02/04/24 18:05	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		01/30/24 14:56	02/04/24 18:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	90		70 - 130			01/30/24 14:56	02/04/24 18:05	1
1-Chlorooctane	81		70 - 130			01/30/24 14:56	02/04/24 18:05	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	413		24.9	mg/Kg			02/04/24 06:14	5

Client Sample ID: BH24-11

Lab Sample ID: 890-6053-2

Date Collected: 01/25/24 10:30

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/05/24 15:57	02/08/24 12:05	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 12:05	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 12:05	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/05/24 15:57	02/08/24 12:05	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 12:05	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/05/24 15:57	02/08/24 12:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		70 - 130	02/05/24 15:57	02/08/24 12:05	1
1,4-Difluorobenzene (Surr)	66	S1-	70 - 130	02/05/24 15:57	02/08/24 12:05	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Client Sample ID: BH24-11

Lab Sample ID: 890-6053-2

Date Collected: 01/25/24 10:30

Matrix: Solid

Date Received: 01/29/24 11:47

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			02/08/24 12:05	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	79.9		49.8	mg/Kg			02/13/24 12:23	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<49.8	U	49.8	mg/Kg		01/30/24 14:56	02/13/24 12:23	1
Diesel Range Organics (Over C10-C28)	79.9		49.8	mg/Kg		01/30/24 14:56	02/13/24 12:23	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		01/30/24 14:56	02/13/24 12:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	180	S1+	70 - 130			01/30/24 14:56	02/13/24 12:23	1
1-Chlorooctane	156	S1+	70 - 130			01/30/24 14:56	02/13/24 12:23	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	465		25.2	mg/Kg			02/04/24 06:21	5

Client Sample ID: BH24-12

Lab Sample ID: 890-6053-3

Date Collected: 01/25/24 10:40

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/05/24 15:57	02/08/24 12:25	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 12:25	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 12:25	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/05/24 15:57	02/08/24 12:25	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 12:25	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/05/24 15:57	02/08/24 12:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		70 - 130			02/05/24 15:57	02/08/24 12:25	1
1,4-Difluorobenzene (Surr)	78		70 - 130			02/05/24 15:57	02/08/24 12:25	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			02/08/24 12:25	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			02/13/24 12:44	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.1	U	50.1	mg/Kg		01/30/24 14:56	02/13/24 12:44	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		01/30/24 14:56	02/13/24 12:44	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		01/30/24 14:56	02/13/24 12:44	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Client Sample ID: BH24-12

Lab Sample ID: 890-6053-3

Date Collected: 01/25/24 10:40

Matrix: Solid

Date Received: 01/29/24 11:47

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	171	S1+	70 - 130	01/30/24 14:56	02/13/24 12:44	1
1-Chlorooctane	145	S1+	70 - 130	01/30/24 14:56	02/13/24 12:44	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	427		25.0	mg/Kg			02/04/24 06:28	5

Client Sample ID: BH24-12

Lab Sample ID: 890-6053-4

Date Collected: 01/25/24 10:50

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/05/24 15:57	02/08/24 12:46	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 12:46	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 12:46	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		02/05/24 15:57	02/08/24 12:46	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 12:46	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		02/05/24 15:57	02/08/24 12:46	1
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Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130			02/05/24 15:57	02/08/24 12:46	1
1,4-Difluorobenzene (Surr)	65	S1-	70 - 130			02/05/24 15:57	02/08/24 12:46	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			02/08/24 12:46	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			02/13/24 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)	<50.4	U	50.4	mg/Kg		01/30/24 14:56	02/13/24 13:05	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4	mg/Kg		01/30/24 14:56	02/13/24 13:05	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4	mg/Kg		01/30/24 14:56	02/13/24 13:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	137	S1+	70 - 130			01/30/24 14:56	02/13/24 13:05	1
1-Chlorooctane	114		70 - 130			01/30/24 14:56	02/13/24 13:05	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	435		24.8	mg/Kg			02/04/24 06:34	5

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Client Sample ID: BH24-13

Lab Sample ID: 890-6053-5

Date Collected: 01/25/24 11:00

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/05/24 15:57	02/08/24 13:07	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/05/24 15:57	02/08/24 13:07	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/05/24 15:57	02/08/24 13:07	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/05/24 15:57	02/08/24 13:07	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/05/24 15:57	02/08/24 13:07	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/05/24 15:57	02/08/24 13:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		70 - 130	02/05/24 15:57	02/08/24 13:07	1
1,4-Difluorobenzene (Surr)	63	S1-	70 - 130	02/05/24 15:57	02/08/24 13:07	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			02/08/24 13:07	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			02/04/24 19:28	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.1	U	50.1	mg/Kg		01/30/24 14:56	02/04/24 19:28	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		01/30/24 14:56	02/04/24 19:28	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		01/30/24 14:56	02/04/24 19:28	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	91		70 - 130			01/30/24 14:56	02/04/24 19:28	1
1-Chlorooctane	81		70 - 130			01/30/24 14:56	02/04/24 19:28	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	347		24.9	mg/Kg			02/04/24 06:41	5

Client Sample ID: BH24-13

Lab Sample ID: 890-6053-6

Date Collected: 01/25/24 11:10

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/05/24 15:57	02/08/24 13:27	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 13:27	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 13:27	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/05/24 15:57	02/08/24 13:27	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 13:27	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/05/24 15:57	02/08/24 13:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		70 - 130	02/05/24 15:57	02/08/24 13:27	1
1,4-Difluorobenzene (Surr)	83		70 - 130	02/05/24 15:57	02/08/24 13:27	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Client Sample ID: BH24-13

Lab Sample ID: 890-6053-6

Date Collected: 01/25/24 11:10

Matrix: Solid

Date Received: 01/29/24 11:47

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			02/08/24 13:27	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			02/13/24 13:25	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<49.6	U	49.6	mg/Kg		01/30/24 14:56	02/13/24 13:25	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		01/30/24 14:56	02/13/24 13:25	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		01/30/24 14:56	02/13/24 13:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	180	S1+	70 - 130			01/30/24 14:56	02/13/24 13:25	1
1-Chlorooctane	154	S1+	70 - 130			01/30/24 14:56	02/13/24 13:25	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	439		25.2	mg/Kg			02/04/24 06:48	5

Client Sample ID: BH24-13

Lab Sample ID: 890-6053-7

Date Collected: 01/25/24 11:20

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/05/24 15:57	02/08/24 13:48	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 13:48	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 13:48	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/05/24 15:57	02/08/24 13:48	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/05/24 15:57	02/08/24 13:48	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/05/24 15:57	02/08/24 13:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130			02/05/24 15:57	02/08/24 13:48	1
1,4-Difluorobenzene (Surr)	73		70 - 130			02/05/24 15:57	02/08/24 13:48	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			02/08/24 13:48	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			02/04/24 20:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.2	U	50.2	mg/Kg		01/30/24 14:56	02/04/24 20:09	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2	mg/Kg		01/30/24 14:56	02/04/24 20:09	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2	mg/Kg		01/30/24 14:56	02/04/24 20:09	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Client Sample ID: BH24-13

Lab Sample ID: 890-6053-7

Date Collected: 01/25/24 11:20

Matrix: Solid

Date Received: 01/29/24 11:47

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	91		70 - 130	01/30/24 14:56	02/04/24 20:09	1
1-Chlorooctane	80		70 - 130	01/30/24 14:56	02/04/24 20:09	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	812		50.5	mg/Kg			02/04/24 06:55	10

Client Sample ID: BH24-14

Lab Sample ID: 890-6053-8

Date Collected: 01/25/24 11:30

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/05/24 15:57	02/08/24 14:08	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 14:08	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 14:08	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		02/05/24 15:57	02/08/24 14:08	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 14:08	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		02/05/24 15:57	02/08/24 14:08	1
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Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		70 - 130			02/05/24 15:57	02/08/24 14:08	1
1,4-Difluorobenzene (Surr)	76		70 - 130			02/05/24 15:57	02/08/24 14:08	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			02/08/24 14:08	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7	mg/Kg			02/04/24 20:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<49.7	U	49.7	mg/Kg		01/30/24 14:56	02/04/24 20:30	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7	mg/Kg		01/30/24 14:56	02/04/24 20:30	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		01/30/24 14:56	02/04/24 20:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	86		70 - 130			01/30/24 14:56	02/04/24 20:30	1
1-Chlorooctane	78		70 - 130			01/30/24 14:56	02/04/24 20:30	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	531		25.0	mg/Kg			02/03/24 17:50	5

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Client Sample ID: BH24-14

Lab Sample ID: 890-6053-9

Date Collected: 01/25/24 11:40

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/05/24 15:57	02/08/24 14:29	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/05/24 15:57	02/08/24 14:29	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/05/24 15:57	02/08/24 14:29	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/05/24 15:57	02/08/24 14:29	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/05/24 15:57	02/08/24 14:29	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/05/24 15:57	02/08/24 14:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		70 - 130			02/05/24 15:57	02/08/24 14:29	1
1,4-Difluorobenzene (Surr)	71		70 - 130			02/05/24 15:57	02/08/24 14:29	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			02/08/24 14:29	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			02/13/24 13:46	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.0	U	50.0	mg/Kg		01/30/24 14:56	02/13/24 13:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/30/24 14:56	02/13/24 13:46	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/30/24 14:56	02/13/24 13:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	174	S1+	70 - 130			01/30/24 14:56	02/13/24 13:46	1
1-Chlorooctane	154	S1+	70 - 130			01/30/24 14:56	02/13/24 13:46	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	153		5.02	mg/Kg			02/03/24 17:55	1

Client Sample ID: BH24-15

Lab Sample ID: 890-6053-10

Date Collected: 01/25/24 11:50

Matrix: Solid

Date Received: 01/29/24 11:47

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		02/05/24 15:57	02/08/24 14:49	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 14:49	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 14:49	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/05/24 15:57	02/08/24 14:49	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 14:49	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/05/24 15:57	02/08/24 14:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		70 - 130			02/05/24 15:57	02/08/24 14:49	1
1,4-Difluorobenzene (Surr)	73		70 - 130			02/05/24 15:57	02/08/24 14:49	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Client Sample ID: BH24-15
Date Collected: 01/25/24 11:50
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-10
Matrix: Solid

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			02/08/24 14:49	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			02/04/24 21:11	1	
Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)	<50.3	U	50.3	mg/Kg		01/30/24 14:56	02/04/24 21:11	1	
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		01/30/24 14:56	02/04/24 21:11	1	
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		01/30/24 14:56	02/04/24 21:11	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
o-Terphenyl	94		70 - 130			01/30/24 14:56	02/04/24 21:11	1	
1-Chlorooctane	85		70 - 130			01/30/24 14:56	02/04/24 21:11	1	
Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	319		25.2	mg/Kg			02/03/24 18:00	5	

Surrogate Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-6053-1	BH24-11	56 S1-	86
890-6053-1 MS	BH24-11	120	95
890-6053-1 MSD	BH24-11	84	78
890-6053-2	BH24-11	90	66 S1-
890-6053-3	BH24-12	78	78
890-6053-4	BH24-12	89	65 S1-
890-6053-5	BH24-13	81	63 S1-
890-6053-6	BH24-13	86	83
890-6053-7	BH24-13	85	73
890-6053-8	BH24-14	84	76
890-6053-9	BH24-14	76	71
890-6053-10	BH24-15	90	73
LCS 880-72417/1-A	Lab Control Sample	122	97
LCSD 880-72417/2-A	Lab Control Sample Dup	114	100
MB 880-72417/5-A	Method Blank	74	85
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)	
Lab Sample ID	Client Sample ID	OTPH1 (70-130)	1CO1 (70-130)
890-6046-A-1-M MS	Matrix Spike	70	72
890-6046-A-1-N MSD	Matrix Spike Duplicate	64 S1-	66 S1-
890-6053-1	BH24-11	90	81
890-6053-2	BH24-11	180 S1+	156 S1+
890-6053-3	BH24-12	171 S1+	145 S1+
890-6053-4	BH24-12	137 S1+	114
890-6053-5	BH24-13	91	81
890-6053-6	BH24-13	180 S1+	154 S1+
890-6053-7	BH24-13	91	80
890-6053-8	BH24-14	86	78
890-6053-9	BH24-14	174 S1+	154 S1+
890-6053-10	BH24-15	94	85
LCS 870-17962/1-A	Lab Control Sample	99	104
LCSD 870-17962/2-A	Lab Control Sample Dup	100	105
MB 870-17962/3-A	Method Blank	125	105
Surrogate Legend			
OTPH = o-Terphenyl			
1CO = 1-Chlorooctane			

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72417/5-A

Matrix: Solid

Analysis Batch: 72621

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72417

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 11:23	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 11:23	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 11:23	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/05/24 15:57	02/08/24 11:23	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/05/24 15:57	02/08/24 11:23	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/05/24 15:57	02/08/24 11:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		70 - 130	02/05/24 15:57	02/08/24 11:23	1
1,4-Difluorobenzene (Surr)	85		70 - 130	02/05/24 15:57	02/08/24 11:23	1

Lab Sample ID: LCS 880-72417/1-A

Matrix: Solid

Analysis Batch: 72621

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 72417

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1062		mg/Kg		106	70 - 130
Toluene	0.100	0.1096		mg/Kg		110	70 - 130
Ethylbenzene	0.100	0.1268		mg/Kg		127	70 - 130
m-Xylene & p-Xylene	0.200	0.2592		mg/Kg		130	70 - 130
o-Xylene	0.100	0.1256		mg/Kg		126	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	122		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: LCSD 880-72417/2-A

Matrix: Solid

Analysis Batch: 72621

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 72417

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1042		mg/Kg		104	70 - 130	2	35
Toluene	0.100	0.1071		mg/Kg		107	70 - 130	2	35
Ethylbenzene	0.100	0.1207		mg/Kg		121	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.2482		mg/Kg		124	70 - 130	4	35
o-Xylene	0.100	0.1202		mg/Kg		120	70 - 130	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	114		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 890-6053-1 MS

Matrix: Solid

Analysis Batch: 72621

Client Sample ID: BH24-11

Prep Type: Total/NA

Prep Batch: 72417

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1 F2	0.0996	0.07830		mg/Kg		79	70 - 130
Toluene	<0.00200	U F1 F2	0.0996	0.08209		mg/Kg		82	70 - 130

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

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

Lab Sample ID: 890-6053-1 MS

Matrix: Solid

Analysis Batch: 72621

Client Sample ID: BH24-11

Prep Type: Total/NA

Prep Batch: 72417

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U F1 F2	0.0996	0.09746		mg/Kg		98	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.199	0.1910		mg/Kg		96	70 - 130
o-Xylene	<0.00200	U F1 F2	0.0996	0.09653		mg/Kg		97	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	120		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: 890-6053-1 MSD

Matrix: Solid

Analysis Batch: 72621

Client Sample ID: BH24-11

Prep Type: Total/NA

Prep Batch: 72417

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1 F2	0.0990	0.01214	F1 F2	mg/Kg		12	70 - 130	146	35
Toluene	<0.00200	U F1 F2	0.0990	0.01485	F1 F2	mg/Kg		15	70 - 130	139	35
Ethylbenzene	<0.00200	U F1 F2	0.0990	0.01437	F1 F2	mg/Kg		15	70 - 130	149	35
m-Xylene & p-Xylene	<0.00401	U F1 F2	0.198	0.02919	F1 F2	mg/Kg		15	70 - 130	147	35
o-Xylene	<0.00200	U F1 F2	0.0990	0.01774	F1 F2	mg/Kg		18	70 - 130	138	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	84		70 - 130
1,4-Difluorobenzene (Surr)	78		70 - 130

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

Lab Sample ID: MB 870-17962/3-A

Matrix: Solid

Analysis Batch: 17706

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 17962

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.0	U	50.0	mg/Kg		01/30/24 14:56	02/04/24 13:10	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		01/30/24 14:56	02/04/24 13:10	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		01/30/24 14:56	02/04/24 13:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	125		70 - 130	01/30/24 14:56	02/04/24 13:10	1
1-Chlorooctane	105		70 - 130	01/30/24 14:56	02/04/24 13:10	1

Lab Sample ID: LCS 870-17962/1-A

Matrix: Solid

Analysis Batch: 17706

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 17962

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)	1020	774.3		mg/Kg		76	70 - 130
Diesel Range Organics (Over C10-C28)	1010	944.5		mg/Kg		94	70 - 130

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

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

Lab Sample ID: LCS 870-17962/1-A
Matrix: Solid
Analysis Batch: 17706

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17962

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	99		70 - 130
1-Chlorooctane	104		70 - 130

Lab Sample ID: LCSD 870-17962/2-A
Matrix: Solid
Analysis Batch: 17706

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 17962

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)	1020	899.4		mg/Kg		88	70 - 130	15	20
Diesel Range Organics (Over C10-C28)	1010	956.3		mg/Kg		95	70 - 130	1	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	100		70 - 130
1-Chlorooctane	105		70 - 130

Lab Sample ID: 890-6046-A-1-M MS
Matrix: Solid
Analysis Batch: 17706

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 17962

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)	<50.3	U F1	1030	630.5	F1	mg/Kg		61	70 - 130
Diesel Range Organics (Over C10-C28)	<50.3	U F1	1020	724.7	F1	mg/Kg		68	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	70		70 - 130
1-Chlorooctane	72		70 - 130

Lab Sample ID: 890-6046-A-1-N MSD
Matrix: Solid
Analysis Batch: 17706

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 17962

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)	<50.3	U F1	1030	595.0	F1	mg/Kg		58	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<50.3	U F1	1020	671.1	F1	mg/Kg		63	70 - 130	8	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -Terphenyl	64	S1-	70 - 130
1-Chlorooctane	66	S1-	70 - 130

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-71959/1-A

Matrix: Solid

Analysis Batch: 72175

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			02/03/24 15:52	1

Lab Sample ID: LCS 880-71959/2-A

Matrix: Solid

Analysis Batch: 72175

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	249.3		mg/Kg		100	90 - 110

Lab Sample ID: LCSD 880-71959/3-A

Matrix: Solid

Analysis Batch: 72175

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	249.5		mg/Kg		100	90 - 110	0	20

Lab Sample ID: 880-38562-A-1-B MS

Matrix: Solid

Analysis Batch: 72175

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	1180	F1	1250	2629	F1	mg/Kg		116	90 - 110

Lab Sample ID: 880-38562-A-1-C MSD

Matrix: Solid

Analysis Batch: 72175

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	1180	F1	1250	2627	F1	mg/Kg		116	90 - 110	0	20

Lab Sample ID: 880-38610-A-9-B MS

Matrix: Solid

Analysis Batch: 72175

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	7220		2530	9833		mg/Kg		103	90 - 110

Lab Sample ID: 880-38610-A-9-C MSD

Matrix: Solid

Analysis Batch: 72175

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	7220		2530	9842		mg/Kg		104	90 - 110	0	20

Lab Sample ID: MB 880-71972/1-A

Matrix: Solid

Analysis Batch: 72255

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			02/04/24 03:31	1

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCS 880-71972/2-A				Client Sample ID: Lab Control Sample							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 72255											
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	259.7		mg/Kg		104	90 - 110		

Lab Sample ID: LCSD 880-71972/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 72255											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	258.3		mg/Kg		103	90 - 110	1	20

Lab Sample ID: 890-6050-A-1-B MS				Client Sample ID: Matrix Spike							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 72255											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	821		2520	3445		mg/Kg		104	90 - 110		

Lab Sample ID: 890-6050-A-1-C MSD				Client Sample ID: Matrix Spike Duplicate							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 72255											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	821		2520	3456		mg/Kg		105	90 - 110	0	20

Lab Sample ID: 890-6052-A-3-C MS				Client Sample ID: Matrix Spike							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 72255											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	52.3		251	316.9		mg/Kg		105	90 - 110		

Lab Sample ID: 890-6052-A-3-D MSD				Client Sample ID: Matrix Spike Duplicate							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 72255											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	52.3		251	315.8		mg/Kg		105	90 - 110	0	20

QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

GC VOA

Prep Batch: 72417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6053-1	BH24-11	Total/NA	Solid	5035	
890-6053-2	BH24-11	Total/NA	Solid	5035	
890-6053-3	BH24-12	Total/NA	Solid	5035	
890-6053-4	BH24-12	Total/NA	Solid	5035	
890-6053-5	BH24-13	Total/NA	Solid	5035	
890-6053-6	BH24-13	Total/NA	Solid	5035	
890-6053-7	BH24-13	Total/NA	Solid	5035	
890-6053-8	BH24-14	Total/NA	Solid	5035	
890-6053-9	BH24-14	Total/NA	Solid	5035	
890-6053-10	BH24-15	Total/NA	Solid	5035	
MB 880-72417/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72417/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72417/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-6053-1 MS	BH24-11	Total/NA	Solid	5035	
890-6053-1 MSD	BH24-11	Total/NA	Solid	5035	

Analysis Batch: 72621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6053-1	BH24-11	Total/NA	Solid	8021B	72417
890-6053-2	BH24-11	Total/NA	Solid	8021B	72417
890-6053-3	BH24-12	Total/NA	Solid	8021B	72417
890-6053-4	BH24-12	Total/NA	Solid	8021B	72417
890-6053-5	BH24-13	Total/NA	Solid	8021B	72417
890-6053-6	BH24-13	Total/NA	Solid	8021B	72417
890-6053-7	BH24-13	Total/NA	Solid	8021B	72417
890-6053-8	BH24-14	Total/NA	Solid	8021B	72417
890-6053-9	BH24-14	Total/NA	Solid	8021B	72417
890-6053-10	BH24-15	Total/NA	Solid	8021B	72417
MB 880-72417/5-A	Method Blank	Total/NA	Solid	8021B	72417
LCS 880-72417/1-A	Lab Control Sample	Total/NA	Solid	8021B	72417
LCSD 880-72417/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72417
890-6053-1 MS	BH24-11	Total/NA	Solid	8021B	72417
890-6053-1 MSD	BH24-11	Total/NA	Solid	8021B	72417

Analysis Batch: 72730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6053-1	BH24-11	Total/NA	Solid	Total BTEX	
890-6053-2	BH24-11	Total/NA	Solid	Total BTEX	
890-6053-3	BH24-12	Total/NA	Solid	Total BTEX	
890-6053-4	BH24-12	Total/NA	Solid	Total BTEX	
890-6053-5	BH24-13	Total/NA	Solid	Total BTEX	
890-6053-6	BH24-13	Total/NA	Solid	Total BTEX	
890-6053-7	BH24-13	Total/NA	Solid	Total BTEX	
890-6053-8	BH24-14	Total/NA	Solid	Total BTEX	
890-6053-9	BH24-14	Total/NA	Solid	Total BTEX	
890-6053-10	BH24-15	Total/NA	Solid	Total BTEX	

Eurofins Carlsbad

QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

GC Semi VOA

Analysis Batch: 17706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6053-1	BH24-11	Total/NA	Solid	8015B NM	17962
890-6053-5	BH24-13	Total/NA	Solid	8015B NM	17962
890-6053-7	BH24-13	Total/NA	Solid	8015B NM	17962
890-6053-8	BH24-14	Total/NA	Solid	8015B NM	17962
890-6053-10	BH24-15	Total/NA	Solid	8015B NM	17962
MB 870-17962/3-A	Method Blank	Total/NA	Solid	8015B NM	17962
LCS 870-17962/1-A	Lab Control Sample	Total/NA	Solid	8015B NM	17962
LCSD 870-17962/2-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	17962
890-6046-A-1-M MS	Matrix Spike	Total/NA	Solid	8015B NM	17962
890-6046-A-1-N MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	17962

Prep Batch: 17962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6053-1	BH24-11	Total/NA	Solid	8015NM Prep	
890-6053-2	BH24-11	Total/NA	Solid	8015NM Prep	
890-6053-3	BH24-12	Total/NA	Solid	8015NM Prep	
890-6053-4	BH24-12	Total/NA	Solid	8015NM Prep	
890-6053-5	BH24-13	Total/NA	Solid	8015NM Prep	
890-6053-6	BH24-13	Total/NA	Solid	8015NM Prep	
890-6053-7	BH24-13	Total/NA	Solid	8015NM Prep	
890-6053-8	BH24-14	Total/NA	Solid	8015NM Prep	
890-6053-9	BH24-14	Total/NA	Solid	8015NM Prep	
890-6053-10	BH24-15	Total/NA	Solid	8015NM Prep	
MB 870-17962/3-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 870-17962/1-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 870-17962/2-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6046-A-1-M MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-6046-A-1-N MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 17988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6053-2	BH24-11	Total/NA	Solid	8015B NM	17962
890-6053-3	BH24-12	Total/NA	Solid	8015B NM	17962
890-6053-4	BH24-12	Total/NA	Solid	8015B NM	17962
890-6053-6	BH24-13	Total/NA	Solid	8015B NM	17962
890-6053-9	BH24-14	Total/NA	Solid	8015B NM	17962

Analysis Batch: 17991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6053-1	BH24-11	Total/NA	Solid	8015 NM	
890-6053-2	BH24-11	Total/NA	Solid	8015 NM	
890-6053-3	BH24-12	Total/NA	Solid	8015 NM	
890-6053-4	BH24-12	Total/NA	Solid	8015 NM	
890-6053-5	BH24-13	Total/NA	Solid	8015 NM	
890-6053-6	BH24-13	Total/NA	Solid	8015 NM	
890-6053-7	BH24-13	Total/NA	Solid	8015 NM	
890-6053-8	BH24-14	Total/NA	Solid	8015 NM	
890-6053-9	BH24-14	Total/NA	Solid	8015 NM	
890-6053-10	BH24-15	Total/NA	Solid	8015 NM	

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QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

HPLC/IC

Leach Batch: 71959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6053-8	BH24-14	Soluble	Solid	DI Leach	
890-6053-9	BH24-14	Soluble	Solid	DI Leach	
890-6053-10	BH24-15	Soluble	Solid	DI Leach	
MB 880-71959/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-71959/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-71959/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-38562-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-38562-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
880-38610-A-9-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-38610-A-9-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Leach Batch: 71972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6053-1	BH24-11	Soluble	Solid	DI Leach	
890-6053-2	BH24-11	Soluble	Solid	DI Leach	
890-6053-3	BH24-12	Soluble	Solid	DI Leach	
890-6053-4	BH24-12	Soluble	Solid	DI Leach	
890-6053-5	BH24-13	Soluble	Solid	DI Leach	
890-6053-6	BH24-13	Soluble	Solid	DI Leach	
890-6053-7	BH24-13	Soluble	Solid	DI Leach	
MB 880-71972/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-71972/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-71972/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6050-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-6050-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-6052-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-6052-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 72175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6053-8	BH24-14	Soluble	Solid	300.0	71959
890-6053-9	BH24-14	Soluble	Solid	300.0	71959
890-6053-10	BH24-15	Soluble	Solid	300.0	71959
MB 880-71959/1-A	Method Blank	Soluble	Solid	300.0	71959
LCS 880-71959/2-A	Lab Control Sample	Soluble	Solid	300.0	71959
LCSD 880-71959/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	71959
880-38562-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	71959
880-38562-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	71959
880-38610-A-9-B MS	Matrix Spike	Soluble	Solid	300.0	71959
880-38610-A-9-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	71959

Analysis Batch: 72255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6053-1	BH24-11	Soluble	Solid	300.0	71972
890-6053-2	BH24-11	Soluble	Solid	300.0	71972
890-6053-3	BH24-12	Soluble	Solid	300.0	71972
890-6053-4	BH24-12	Soluble	Solid	300.0	71972
890-6053-5	BH24-13	Soluble	Solid	300.0	71972
890-6053-6	BH24-13	Soluble	Solid	300.0	71972
890-6053-7	BH24-13	Soluble	Solid	300.0	71972
MB 880-71972/1-A	Method Blank	Soluble	Solid	300.0	71972

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QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

HPLC/IC (Continued)

Analysis Batch: 72255 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-71972/2-A	Lab Control Sample	Soluble	Solid	300.0	71972
LCSD 880-71972/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	71972
890-6050-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	71972
890-6050-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	71972
890-6052-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	71972
890-6052-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	71972

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Client Sample ID: BH24-11
Date Collected: 01/25/24 10:20
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-1
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			4.99 g	5 mL	72417	02/05/24 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72621	02/08/24 11:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72730	02/08/24 11:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			17991	02/04/24 18:05	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	17962	01/30/24 14:56	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/04/24 18:05	WP	EET DAL
Soluble	Leach	DI Leach			5.02 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		5			72255	02/04/24 06:14	CH	EET MID

Client Sample ID: BH24-11
Date Collected: 01/25/24 10:30
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-2
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			5.02 g	5 mL	72417	02/05/24 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72621	02/08/24 12:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72730	02/08/24 12:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			17991	02/13/24 12:23	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	17962	01/30/24 14:56	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 12:23	WP	EET DAL
Soluble	Leach	DI Leach			4.96 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		5			72255	02/04/24 06:21	CH	EET MID

Client Sample ID: BH24-12
Date Collected: 01/25/24 10:40
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-3
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	72417	02/05/24 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72621	02/08/24 12:25	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72730	02/08/24 12:25	SM	EET MID
Total/NA	Analysis	8015 NM		1			17991	02/13/24 12:44	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	17962	01/30/24 14:56	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 12:44	WP	EET DAL
Soluble	Leach	DI Leach			5.00 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		5			72255	02/04/24 06:28	CH	EET MID

Client Sample ID: BH24-12
Date Collected: 01/25/24 10:50
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-4
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	72417	02/05/24 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72621	02/08/24 12:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72730	02/08/24 12:46	SM	EET MID

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Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Client Sample ID: BH24-12
Date Collected: 01/25/24 10:50
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-4
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			17991	02/13/24 13:05	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	17962	01/30/24 14:56	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 13:05	WP	EET DAL
Soluble	Leach	DI Leach			5.05 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		5			72255	02/04/24 06:34	CH	EET MID

Client Sample ID: BH24-13
Date Collected: 01/25/24 11:00
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-5
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			4.98 g	5 mL	72417	02/05/24 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72621	02/08/24 13:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72730	02/08/24 13:07	SM	EET MID
Total/NA	Analysis	8015 NM		1			17991	02/04/24 19:28	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	17962	01/30/24 14:56	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/04/24 19:28	WP	EET DAL
Soluble	Leach	DI Leach			5.03 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		5			72255	02/04/24 06:41	CH	EET MID

Client Sample ID: BH24-13
Date Collected: 01/25/24 11:10
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-6
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			5.02 g	5 mL	72417	02/05/24 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72621	02/08/24 13:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72730	02/08/24 13:27	SM	EET MID
Total/NA	Analysis	8015 NM		1			17991	02/13/24 13:25	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	17962	01/30/24 14:56	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 13:25	WP	EET DAL
Soluble	Leach	DI Leach			4.96 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		5			72255	02/04/24 06:48	CH	EET MID

Client Sample ID: BH24-13
Date Collected: 01/25/24 11:20
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-7
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			5.03 g	5 mL	72417	02/05/24 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72621	02/08/24 13:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72730	02/08/24 13:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			17991	02/04/24 20:09	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	17962	01/30/24 14:56	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/04/24 20:09	WP	EET DAL

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Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Client Sample ID: BH24-13
Date Collected: 01/25/24 11:20
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-7
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			4.95 g	50 mL	71972	01/30/24 15:01	SMC	EET MID
Soluble	Analysis	300.0		10			72255	02/04/24 06:55	CH	EET MID

Client Sample ID: BH24-14
Date Collected: 01/25/24 11:30
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-8
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			5.01 g	5 mL	72417	02/05/24 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72621	02/08/24 14:08	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72730	02/08/24 14:08	SM	EET MID
Total/NA	Analysis	8015 NM		1			17991	02/04/24 20:30	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	17962	01/30/24 14:56	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/04/24 20:30	WP	EET DAL
Soluble	Leach	DI Leach			5.00 g	50 mL	71959	01/30/24 14:29	SMC	EET MID
Soluble	Analysis	300.0		5			72175	02/03/24 17:50	CH	EET MID

Client Sample ID: BH24-14
Date Collected: 01/25/24 11:40
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-9
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			4.97 g	5 mL	72417	02/05/24 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72621	02/08/24 14:29	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72730	02/08/24 14:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			17991	02/13/24 13:46	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	17962	01/30/24 14:56	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17988	02/13/24 13:46	WP	EET DAL
Soluble	Leach	DI Leach			4.98 g	50 mL	71959	01/30/24 14:29	SMC	EET MID
Soluble	Analysis	300.0		1			72175	02/03/24 17:55	CH	EET MID

Client Sample ID: BH24-15
Date Collected: 01/25/24 11:50
Date Received: 01/29/24 11:47

Lab Sample ID: 890-6053-10
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	72417	02/05/24 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72621	02/08/24 14:49	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72730	02/08/24 14:49	SM	EET MID
Total/NA	Analysis	8015 NM		1			17991	02/04/24 21:11	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	17962	01/30/24 14:56	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/04/24 21:11	WP	EET DAL
Soluble	Leach	DI Leach			4.96 g	50 mL	71959	01/30/24 14:29	SMC	EET MID
Soluble	Analysis	300.0		5			72175	02/03/24 18:00	CH	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Laboratory References:
EET DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Laboratory: Eurofins Dallas

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704295-23-34	06-30-24

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
Total BTEX		Solid	Total BTEX

Method Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

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 DAL
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET DAL
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET DAL
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 DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
- EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6053-1
SDG: 23E-04616

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
890-6053-1	BH24-11	Solid	01/25/24 10:20	01/29/24 11:47
890-6053-2	BH24-11	Solid	01/25/24 10:30	01/29/24 11:47
890-6053-3	BH24-12	Solid	01/25/24 10:40	01/29/24 11:47
890-6053-4	BH24-12	Solid	01/25/24 10:50	01/29/24 11:47
890-6053-5	BH24-13	Solid	01/25/24 11:00	01/29/24 11:47
890-6053-6	BH24-13	Solid	01/25/24 11:10	01/29/24 11:47
890-6053-7	BH24-13	Solid	01/25/24 11:20	01/29/24 11:47
890-6053-8	BH24-14	Solid	01/25/24 11:30	01/29/24 11:47
890-6053-9	BH24-14	Solid	01/25/24 11:40	01/29/24 11:47
890-6053-10	BH24-15	Solid	01/25/24 11:50	01/29/24 11:47

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11:25:14 AM

NAPD 233104123

Work Order No: 1082151001

6053

www.xenco.com Page 1 of 1

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



Environment Testing
Xenco

Project Manager: Chondalifan
Company Name: Unitex
Address: on file
City, State ZIP: on file
Phone: on file
Email: on file

Bill to: (if different)
Company Name: Unitex
Address: on file
City, State ZIP: on file
Email: on file

Work Order Comments
Program: ☐ UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: ☐ Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: ☐ EDD ☐ ADAPT ☐ Other: on file

Project Name: TRV DT IA CTB
Project Number: 33E-04616
Project Location: TRV DT IA CTB
Sampler's Name: on file
PO #: on file

SAMPLE RECEIPT
Samples Received Intact: ☒ Yes ☐ No
Cooler Custody Seals: ☒ Yes ☐ No
Total Containers: 2.2

Temp Blank: ☒ Yes ☐ No
Wet Ice: ☒ Yes ☐ No
Thermometer ID: 11007
Correction Factor: 0.2
Temperature Reading: 2.4
Corrected Temperature: 2.2

Turn Around
Routine ☒ Rush ☐
Due Date: 11/29/24
TAT starts the day received by the lab, if received by 4:30pm

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	Pres. Code	Preservative Codes
BH24-1011	SL	11/25/24	10:20	0'	1	1	TPH (9015B)		None: NO DI Water: H ₂ O Cool: Cool MeOH: Me HCL: HC HNO ₃ : HN H ₂ SO ₄ : H ₂ NaOH: Na
BH24-1011			10:30	1'	2	2			
BH24-1012			10:40	0'	3	3			
BH24-1012			10:50	1'	4	4			
BH24-1013			11:00	0'	5	5			
BH24-1013			11:10	1'	6	6			
BH24-1014			11:20	2'	7	7			
BH24-1014			11:30	0'	8	8			
BH24-1014			11:40	1'	9	9			
BH24-1015			11:50	0'	10	10			

Sample Comments

Circle Method(s) and Metal(s) to be analyzed: 200.8 / 6020: ☒ 8RCRA ☒ 11 AL ☒ Ba ☒ Be ☒ B ☒ Ca ☒ Cd ☒ Cr ☒ Cu ☒ Fe ☒ Pb ☒ Mg ☒ Mn ☒ Mo ☒ Ni ☒ K ☒ Se ☒ Ag ☒ SiO₂ ☒ Na ☒ Sr ☒ Ti ☒ Sn ☒ U ☒ Zn
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)	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Date/Time
<u>Chondalifan</u>	<u>B. Bunn</u>			11/29 11:29	

Revised Date: 08/25/2020 Rev. 2020.2

Eurofins Midland

1211 W. Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record



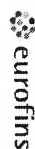
Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Lab Pmt:	Carrier Tracking No(s):	COC No:					
Client Contact:	Phone:	E-mail:	Jessica.Kramer@eurofins.com	State of Origin:	880-9089-1					
Shipping/Receiving		Accreditations Required (See note):	NE LAP - Texas	Page 1 of 2						
Company:	Eurofins Environment Testing South Cent	Due Date Requested:	2/2/2024	Job #:	890-6053-1					
Address:	9701 Harry Hines Blvd.	TAT Requested (days):		Preservation Codes:						
City:	Dallas			A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDTA Other:						
State Zip:	TX, 75220	PO #:		M - Hexane N - None O - AsNaO2 P - Na2CO3 Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - pH 4.5 Y - Trizma Z - other (specify)						
Phone:	214-902-0300(Tel)	WO #:								
Email:		Project #:	89000161							
Project Name:	JRU DI 1A CTB	SSOM#:								
Site:										
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastelol, BT=biotech, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Total Number of containers	Special Instructions/Note:
BH24-11 (890-6053-1)	1/25/24	10:20	Mountain	Solid		X	X		1	
BH24-11 (890-6053-2)	1/25/24	10:30	Mountain	Solid		X	X		1	
BH24-12 (890-6053-3)	1/25/24	10:40	Mountain	Solid		X	X		1	
BH24-12 (890-6053-4)	1/25/24	10:50	Mountain	Solid		X	X		1	
BH24-13 (890-6053-5)	1/25/24	11:00	Mountain	Solid		X	X		1	
BH24-13 (890-6053-6)	1/25/24	11:10	Mountain	Solid		X	X		1	
BH24-13 (890-6053-7)	1/25/24	11:20	Mountain	Solid		X	X		1	
BH24-14 (890-6053-8)	1/25/24	11:30	Mountain	Solid		X	X		1	
BH24-14 (890-6053-9)	1/25/24	11:40	Mountain	Solid		X	X		1	
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/assessments being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.										
Possible Hazard Identification										
Unconfirmed										
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2										
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)										
<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months										
Special Instructions/QC Requirements:										
Empty Kit Relinquished by: Date: Time: Method of Shipment:										
Relinquished by: Date/Time: Company: Received by: Date/Time: Company:										
Relinquished by: Date/Time: Company: Received by: Date/Time: Company:										
Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:										

Eurofins Midland

1211 W. Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record



Environmental Testing

[illegible]

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-6053-1

SDG Number: 23E-04616

Login Number: 6053

List Number: 1

Creator: Lopez, Abraham

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: 890-6053-1

SDG Number: 23E-04616

Login Number: 6053

List Number: 3

Creator: Dabinett, Ian

List Source: Eurofins Dallas

List Creation: 02/02/24 12:43 PM

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.	False	COC not relinquished.
Is the Field Sampler's name present on COC?	N/A	
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.	True	
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: 890-6053-1

SDG Number: 23E-04616

Login Number: 6053
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 01/30/24 10:34 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	



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 2/12/2024 12:33:43 PM

JOB DESCRIPTION

JRU DI 1A CTB 23E-04616

JOB NUMBER

890-6072-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220



Eurofins Carlsbad

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



Generated
2/12/2024 12:33:43 PM

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

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Laboratory Job ID: 890-6072-1

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Definitions/Glossary

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
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
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.
α	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: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Job ID: 890-6072-1

Eurofins Carlsbad

Job Narrative
890-6072-1

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 1/30/2024 3:46 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 1.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BH24-16 (890-6072-1), BH24-16 (890-6072-2), BH24-9 (890-6072-3), BH24-11 (890-6072-4) and BH24-12 (890-6072-5).

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (LCSD 880-72364/2-A). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-72364 and analytical batch 880-72580 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.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-72364 and analytical batch 880-72580 was outside the control limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (CCV 880-72580/20). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-72185 and analytical batch 880-72459 was outside the control limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (LCS 880-72184/1-A). Evidence of matrix interferences is not obvious.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (880-38450-A-1-F MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike duplicate (MSD) recoveries for preparation batch 880-72184 and analytical batch 880-72459 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.

GC Semi VOA

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 870-17917 and analytical batch 870-17989 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.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (880-38742-A-61-N MS) and

Eurofins Carlsbad

Case Narrative

Client: Vertex
Project: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Job ID: 890-6072-1 (Continued) Eurofins Carlsbad

(880-38742-A-61-O 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 the upper control limit: BH24-16 (890-6072-1), BH24-16 (890-6072-2), BH24-9 (890-6072-3), BH24-11 (890-6072-4), BH24-12 (890-6072-5), (MB 870-17917/3-A) and (880-38742-A-61-M). This sample did not contain any target analytes; 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

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

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Client Sample ID: BH24-16

Lab Sample ID: 890-6072-1

Date Collected: 01/26/24 12:00

Matrix: Solid

Date Received: 01/30/24 15:46

Sample Depth: 0

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		02/07/24 11:42	02/08/24 04:48	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/07/24 11:42	02/08/24 04:48	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/07/24 11:42	02/08/24 04:48	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/07/24 11:42	02/08/24 04:48	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/07/24 11:42	02/08/24 04:48	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/07/24 11:42	02/08/24 04:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		70 - 130	02/07/24 11:42	02/08/24 04:48	1
1,4-Difluorobenzene (Surr)	86		70 - 130	02/07/24 11:42	02/08/24 04:48	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			02/08/24 04:48	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			02/07/24 05:26	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<49.9	U	49.9	mg/Kg		02/02/24 09:58	02/07/24 05:26	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		02/02/24 09:58	02/07/24 05:26	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		02/02/24 09:58	02/07/24 05:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	190	S1+	70 - 130	02/02/24 09:58	02/07/24 05:26	1
1-Chlorooctane	165	S1+	70 - 130	02/02/24 09:58	02/07/24 05:26	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	141		4.99	mg/Kg			02/04/24 16:13	1

Client Sample ID: BH24-16

Lab Sample ID: 890-6072-2

Date Collected: 01/26/24 12:10

Matrix: Solid

Date Received: 01/30/24 15:46

Sample Depth: 1

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		02/07/24 11:42	02/08/24 05:14	1
Toluene	<0.00198	U	0.00198	mg/Kg		02/07/24 11:42	02/08/24 05:14	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		02/07/24 11:42	02/08/24 05:14	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		02/07/24 11:42	02/08/24 05:14	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		02/07/24 11:42	02/08/24 05:14	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		02/07/24 11:42	02/08/24 05:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130	02/07/24 11:42	02/08/24 05:14	1
1,4-Difluorobenzene (Surr)	99		70 - 130	02/07/24 11:42	02/08/24 05:14	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Client Sample ID: BH24-16

Lab Sample ID: 890-6072-2

Date Collected: 01/26/24 12:10

Matrix: Solid

Date Received: 01/30/24 15:46

Sample Depth: 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			02/08/24 05:14	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			02/07/24 05:47	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<49.6	U	49.6	mg/Kg		02/02/24 09:58	02/07/24 05:47	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		02/02/24 09:58	02/07/24 05:47	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		02/02/24 09:58	02/07/24 05:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	186	S1+	70 - 130	02/02/24 09:58	02/07/24 05:47	1
1-Chlorooctane	162	S1+	70 - 130	02/02/24 09:58	02/07/24 05:47	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	153		5.01	mg/Kg			02/04/24 16:28	1

Client Sample ID: BH24-9

Lab Sample ID: 890-6072-3

Date Collected: 01/24/24 12:00

Matrix: Solid

Date Received: 01/30/24 15:46

Sample Depth: 0

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		02/01/24 17:03	02/07/24 17:13	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 17:03	02/07/24 17:13	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/01/24 17:03	02/07/24 17:13	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/01/24 17:03	02/07/24 17:13	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/01/24 17:03	02/07/24 17:13	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/01/24 17:03	02/07/24 17:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130	02/01/24 17:03	02/07/24 17:13	1
1,4-Difluorobenzene (Surr)	102		70 - 130	02/01/24 17:03	02/07/24 17:13	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			02/07/24 17:13	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			02/07/24 06:07	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.3	U	50.3	mg/Kg		02/02/24 09:58	02/07/24 06:07	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Client Sample ID: BH24-9

Lab Sample ID: 890-6072-3

Date Collected: 01/24/24 12:00

Matrix: Solid

Date Received: 01/30/24 15:46

Sample Depth: 0

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		02/02/24 09:58	02/07/24 06:07	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		02/02/24 09:58	02/07/24 06:07	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	181	S1+	70 - 130			02/02/24 09:58	02/07/24 06:07	1
1-Chlorooctane	158	S1+	70 - 130			02/02/24 09:58	02/07/24 06:07	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	537		24.8	mg/Kg			02/04/24 16:33	5

Client Sample ID: BH24-11

Lab Sample ID: 890-6072-4

Date Collected: 01/24/24 12:40

Matrix: Solid

Date Received: 01/30/24 15:46

Sample Depth: 0

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		02/01/24 17:03	02/07/24 17:39	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/01/24 17:03	02/07/24 17:39	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/01/24 17:03	02/07/24 17:39	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/01/24 17:03	02/07/24 17:39	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/01/24 17:03	02/07/24 17:39	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/01/24 17:03	02/07/24 17:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130			02/01/24 17:03	02/07/24 17:39	1
1,4-Difluorobenzene (Surr)	111		70 - 130			02/01/24 17:03	02/07/24 17:39	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			02/07/24 17:39	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			02/07/24 06:28	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.5	U	50.5	mg/Kg		02/02/24 09:58	02/07/24 06:28	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		02/02/24 09:58	02/07/24 06:28	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		02/02/24 09:58	02/07/24 06:28	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	173	S1+	70 - 130			02/02/24 09:58	02/07/24 06:28	1
1-Chlorooctane	150	S1+	70 - 130			02/02/24 09:58	02/07/24 06:28	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Client Sample ID: BH24-11
Date Collected: 01/24/24 12:40
Date Received: 01/30/24 15:46
Sample Depth: 0

Lab Sample ID: 890-6072-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	712		50.0	mg/Kg			02/04/24 16:38	10	

Client Sample ID: BH24-12
Date Collected: 01/24/24 13:00
Date Received: 01/30/24 15:46
Sample Depth: 0

Lab Sample ID: 890-6072-5
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		02/01/24 17:03	02/07/24 18:05	1	
Toluene	<0.00199	U	0.00199	mg/Kg		02/01/24 17:03	02/07/24 18:05	1	
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/01/24 17:03	02/07/24 18:05	1	
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/01/24 17:03	02/07/24 18:05	1	
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/01/24 17:03	02/07/24 18:05	1	
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/01/24 17:03	02/07/24 18:05	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	103		70 - 130			02/01/24 17:03	02/07/24 18:05	1	
1,4-Difluorobenzene (Surr)	84		70 - 130			02/01/24 17:03	02/07/24 18:05	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			02/07/24 18:05	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			02/07/24 06:48	1	

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)	<49.6	U	49.6	mg/Kg		02/02/24 09:58	02/07/24 06:48	1	
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		02/02/24 09:58	02/07/24 06:48	1	
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		02/02/24 09:58	02/07/24 06:48	1	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
o-Terphenyl	159	S1+	70 - 130			02/02/24 09:58	02/07/24 06:48	1	
1-Chlorooctane	139	S1+	70 - 130			02/02/24 09:58	02/07/24 06:48	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	393		25.3	mg/Kg			02/04/24 16:43	5	

Surrogate Summary

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-38450-A-1-E MS	Matrix Spike	124	84
880-38450-A-1-F MSD	Matrix Spike Duplicate	166 S1+	110
890-6046-A-1-I MS	Matrix Spike	108	98
890-6046-A-1-J MSD	Matrix Spike Duplicate	119	68 S1-
890-6072-1	BH24-16	121	86
890-6072-2	BH24-16	120	99
890-6072-3	BH24-9	97	102
890-6072-4	BH24-11	117	111
890-6072-5	BH24-12	103	84
LCS 880-72184/1-A	Lab Control Sample	113	68 S1-
LCS 880-72364/1-A	Lab Control Sample	128	90
LCSD 880-72184/2-A	Lab Control Sample Dup	100	83
LCSD 880-72364/2-A	Lab Control Sample Dup	134 S1+	79
MB 880-72184/5-A	Method Blank	80	111
MB 880-72185/5-A	Method Blank	63 S1-	81
MB 880-72364/5-A	Method Blank	67 S1-	100
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)	
Lab Sample ID	Client Sample ID	OTPH1 (70-130)	1CO1 (70-130)
880-38742-A-61-N MS	Matrix Spike	159 S1+	145 S1+
880-38742-A-61-O MSD	Matrix Spike Duplicate	159 S1+	148 S1+
890-6072-1	BH24-16	190 S1+	165 S1+
890-6072-2	BH24-16	186 S1+	162 S1+
890-6072-3	BH24-9	181 S1+	158 S1+
890-6072-4	BH24-11	173 S1+	150 S1+
890-6072-5	BH24-12	159 S1+	139 S1+
LCS 870-17917/1-A	Lab Control Sample	124	123
LCSD 870-17917/2-A	Lab Control Sample Dup	122	120
MB 870-17917/3-A	Method Blank	136 S1+	129
Surrogate Legend			
OTPH = o-Terphenyl			
1CO = 1-Chlorooctane			

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QC Sample Results

Client: Vertex

Job ID: 890-6072-1

Project/Site: JRU DI 1A CTB 23E-04616

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72184/5-A

Matrix: Solid

Analysis Batch: 72459

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72184

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/01/24 17:03	02/07/24 09:18	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 17:03	02/07/24 09:18	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/01/24 17:03	02/07/24 09:18	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/01/24 17:03	02/07/24 09:18	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/01/24 17:03	02/07/24 09:18	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/01/24 17:03	02/07/24 09:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		70 - 130	02/01/24 17:03	02/07/24 09:18	1
1,4-Difluorobenzene (Surr)	111		70 - 130	02/01/24 17:03	02/07/24 09:18	1

Lab Sample ID: LCS 880-72184/1-A

Matrix: Solid

Analysis Batch: 72459

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 72184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08781		mg/Kg		88	70 - 130
Toluene	0.100	0.08899		mg/Kg		89	70 - 130
Ethylbenzene	0.100	0.08006		mg/Kg		80	70 - 130
m-Xylene & p-Xylene	0.200	0.2102		mg/Kg		105	70 - 130
o-Xylene	0.100	0.1097		mg/Kg		110	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	113		70 - 130
1,4-Difluorobenzene (Surr)	68	S1-	70 - 130

Lab Sample ID: LCSD 880-72184/2-A

Matrix: Solid

Analysis Batch: 72459

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 72184

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08092		mg/Kg		81	70 - 130	8	35
Toluene	0.100	0.08932		mg/Kg		89	70 - 130	0	35
Ethylbenzene	0.100	0.09202		mg/Kg		92	70 - 130	14	35
m-Xylene & p-Xylene	0.200	0.2104		mg/Kg		105	70 - 130	0	35
o-Xylene	0.100	0.09483		mg/Kg		95	70 - 130	15	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	83		70 - 130

Lab Sample ID: 880-38450-A-1-E MS

Matrix: Solid

Analysis Batch: 72459

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 72184

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0996	0.07462		mg/Kg		75	70 - 130
Toluene	<0.00200	U	0.0996	0.08512		mg/Kg		84	70 - 130

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QC Sample Results

Client: Vertex

Job ID: 890-6072-1

Project/Site: JRU DI 1A CTB 23E-04616

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

Lab Sample ID: 880-38450-A-1-E MS

Matrix: Solid

Analysis Batch: 72459

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 72184

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.0996	0.08234		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1	0.199	0.1872		mg/Kg		94	70 - 130
o-Xylene	<0.00200	U	0.0996	0.08993		mg/Kg		90	70 - 130
Surrogate	MS %Recovery	MS Qualifier	MS Limits						
4-Bromofluorobenzene (Surr)	124		70 - 130						
1,4-Difluorobenzene (Surr)	84		70 - 130						

Lab Sample ID: 880-38450-A-1-F MSD

Matrix: Solid

Analysis Batch: 72459

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 72184

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0990	0.1013		mg/Kg		102	70 - 130	30	35
Toluene	<0.00200	U	0.0990	0.1158		mg/Kg		116	70 - 130	31	35
Ethylbenzene	<0.00200	U	0.0990	0.1055		mg/Kg		107	70 - 130	25	35
m-Xylene & p-Xylene	<0.00401	U F1	0.198	0.2670	F1	mg/Kg		135	70 - 130	35	35
o-Xylene	<0.00200	U	0.0990	0.1182		mg/Kg		119	70 - 130	27	35
Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits								
4-Bromofluorobenzene (Surr)	166	S1+	70 - 130								
1,4-Difluorobenzene (Surr)	110		70 - 130								

Lab Sample ID: MB 880-72185/5-A

Matrix: Solid

Analysis Batch: 72459

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72185

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/01/24 17:08	02/06/24 19:40	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/01/24 17:08	02/06/24 19:40	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/01/24 17:08	02/06/24 19:40	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/01/24 17:08	02/06/24 19:40	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/01/24 17:08	02/06/24 19:40	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/01/24 17:08	02/06/24 19:40	1
Surrogate	MB %Recovery	MB Qualifier	MB Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	63	S1-	70 - 130			02/01/24 17:08	02/06/24 19:40	1
1,4-Difluorobenzene (Surr)	81		70 - 130			02/01/24 17:08	02/06/24 19:40	1

Lab Sample ID: MB 880-72364/5-A

Matrix: Solid

Analysis Batch: 72580

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72364

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/05/24 11:42	02/07/24 22:47	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/24 11:42	02/07/24 22:47	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/05/24 11:42	02/07/24 22:47	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/05/24 11:42	02/07/24 22:47	1

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QC Sample Results

Client: Vertex

Job ID: 890-6072-1

Project/Site: JRU DI 1A CTB 23E-04616

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

Lab Sample ID: MB 880-72364/5-A

Matrix: Solid

Analysis Batch: 72580

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72364

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/05/24 11:42	02/07/24 22:47	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/05/24 11:42	02/07/24 22:47	1
Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac		
	%Recovery	Qualifier						
4-Bromofluorobenzene (Surr)	67	S1-	70 - 130	02/05/24 11:42	02/07/24 22:47	1		
1,4-Difluorobenzene (Surr)	100		70 - 130	02/05/24 11:42	02/07/24 22:47	1		

Lab Sample ID: LCS 880-72364/1-A

Matrix: Solid

Analysis Batch: 72580

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 72364

Analyte			Spike	LCS	LCS	Unit	D	%Rec	%Rec		
			Added	Result	Qualifier			Limits			
Benzene			0.100	0.1047		mg/Kg		105		70 - 130	
Toluene			0.100	0.09944		mg/Kg		99		70 - 130	
Ethylbenzene			0.100	0.1187		mg/Kg		119		70 - 130	
m-Xylene & p-Xylene			0.200	0.2555		mg/Kg		128		70 - 130	
o-Xylene			0.100	0.1240		mg/Kg		124		70 - 130	
	</										

Lab Sample ID: LCSD 880-72364/2-A

Matrix: Solid

Analysis Batch: 72580

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 72364

			Spike	LCSD	LCSD				%Rec	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene			0.100	0.09592		mg/Kg		96	70 - 130	9	35
Toluene			0.100	0.08954		mg/Kg		90	70 - 130	10	35
Ethylbenzene			0.100	0.1145		mg/Kg		114	70 - 130	4	35
m-Xylene & p-Xylene			0.200	0.2583		mg/Kg		129	70 - 130	1	35
o-Xylene			0.100	0.1220		mg/Kg		122	70 - 130	2	35
			LCSD	LCSD							
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	134	S1+	70 - 130								
1,4-Difluorobenzene (Surr)	79		70 - 130								

Lab Sample ID: 890-6046-A-1-I MS

Matrix: Solid

Analysis Batch: 72580

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 72364

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Benzene	<0.00200	U F2 F1	0.0996	0.05143	F1	mg/Kg		52	70 - 130
Toluene	<0.00200	U F2 F1	0.0996	0.04714	F1	mg/Kg		47	70 - 130
Ethylbenzene	<0.00200	U	0.0996	0.07346		mg/Kg		74	70 - 130
m-Xylene & p-Xylene	<0.00401	U F2 F1	0.199	0.1050	F1	mg/Kg		53	70 - 130
o-Xylene	<0.00200	U	0.0996	0.08578		mg/Kg		86	70 - 130

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QC Sample Results

Client: Vertex

Job ID: 890-6072-1

Project/Site: JRU DI 1A CTB 23E-04616

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

Lab Sample ID: 890-6046-A-1-I MS

Matrix: Solid

Analysis Batch: 72580

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 72364

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 890-6046-A-1-J MSD

Matrix: Solid

Analysis Batch: 72580

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 72364

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F2 F1	0.0994	0.07897	F2	mg/Kg		79	70 - 130	42	35
Toluene	<0.00200	U F2 F1	0.0994	0.07673	F2	mg/Kg		77	70 - 130	48	35
Ethylbenzene	<0.00200	U	0.0994	0.07462		mg/Kg		75	70 - 130	2	35
m-Xylene & p-Xylene	<0.00401	U F2 F1	0.199	0.1823	F2	mg/Kg		92	70 - 130	54	35
o-Xylene	<0.00200	U	0.0994	0.09084		mg/Kg		91	70 - 130	6	35

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	119		70 - 130
1,4-Difluorobenzene (Surr)	68	S1-	70 - 130

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

Lab Sample ID: MB 870-17917/3-A

Matrix: Solid

Analysis Batch: 17989

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 17917

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.0	U	50.0	mg/Kg		02/02/24 09:58	02/06/24 22:55	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/02/24 09:58	02/06/24 22:55	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/02/24 09:58	02/06/24 22:55	1

	MB	MB						
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac		
o-Terphenyl	136	S1+	70 - 130	02/02/24 09:58	02/06/24 22:55	1		
1-Chlorooctane	129		70 - 130	02/02/24 09:58	02/06/24 22:55	1		

Lab Sample ID: LCS 870-17917/1-A

Matrix: Solid

Analysis Batch: 17989

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 17917

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)	1020	1010		mg/Kg		99	70 - 130
Diesel Range Organics (Over C10-C28)	1010	1182		mg/Kg		117	70 - 130

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
o-Terphenyl	124		70 - 130
1-Chlorooctane	123		70 - 130

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

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

Lab Sample ID: LCSD 870-17917/2-A

Matrix: Solid

Analysis Batch: 17989

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 17917

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)	1020	1003		mg/Kg		98	70 - 130	1	20
Diesel Range Organics (Over C10-C28)	1010	1132		mg/Kg		112	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	122		70 - 130
1-Chlorooctane	120		70 - 130

Lab Sample ID: 880-38742-A-61-N MS

Matrix: Solid

Analysis Batch: 17989

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 17917

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)	<49.6	U F1	1020	1232		mg/Kg		120	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.6	U F1	1020	1372	F1	mg/Kg		135	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	159	S1+	70 - 130
1-Chlorooctane	145	S1+	70 - 130

Lab Sample ID: 880-38742-A-61-O MSD

Matrix: Solid

Analysis Batch: 17989

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 17917

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)	<49.6	U F1	1020	1382	F1	mg/Kg		135	70 - 130	11	20
Diesel Range Organics (Over C10-C28)	<49.6	U F1	1020	1384	F1	mg/Kg		136	70 - 130	1	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	159	S1+	70 - 130
1-Chlorooctane	148	S1+	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-72013/1-A

Matrix: Solid

Analysis Batch: 72285

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			02/04/24 15:59	1

Lab Sample ID: LCS 880-72013/2-A

Matrix: Solid

Analysis Batch: 72285

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	248.0		mg/Kg		99	90 - 110		

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCSD 880-72013/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 72285											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	247.6		mg/Kg		99	90 - 110	0	20

Lab Sample ID: 890-6072-1 MS				Client Sample ID: BH24-16							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 72285											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	141		250	402.4		mg/Kg		105	90 - 110		

Lab Sample ID: 890-6072-1 MSD				Client Sample ID: BH24-16							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 72285											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	141		250	400.6		mg/Kg		104	90 - 110	0	20

QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

GC VOA

Prep Batch: 72184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6072-3	BH24-9	Total/NA	Solid	5035	
890-6072-4	BH24-11	Total/NA	Solid	5035	
890-6072-5	BH24-12	Total/NA	Solid	5035	
MB 880-72184/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72184/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72184/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-38450-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-38450-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 72185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-72185/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 72364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6072-1	BH24-16	Total/NA	Solid	5035	
890-6072-2	BH24-16	Total/NA	Solid	5035	
MB 880-72364/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72364/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72364/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-6046-A-1-I MS	Matrix Spike	Total/NA	Solid	5035	
890-6046-A-1-J MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 72459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6072-3	BH24-9	Total/NA	Solid	8021B	72184
890-6072-4	BH24-11	Total/NA	Solid	8021B	72184
890-6072-5	BH24-12	Total/NA	Solid	8021B	72184
MB 880-72184/5-A	Method Blank	Total/NA	Solid	8021B	72184
MB 880-72185/5-A	Method Blank	Total/NA	Solid	8021B	72185
LCS 880-72184/1-A	Lab Control Sample	Total/NA	Solid	8021B	72184
LCSD 880-72184/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72184
880-38450-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	72184
880-38450-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	72184

Analysis Batch: 72580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6072-1	BH24-16	Total/NA	Solid	8021B	72364
890-6072-2	BH24-16	Total/NA	Solid	8021B	72364
MB 880-72364/5-A	Method Blank	Total/NA	Solid	8021B	72364
LCS 880-72364/1-A	Lab Control Sample	Total/NA	Solid	8021B	72364
LCSD 880-72364/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72364
890-6046-A-1-I MS	Matrix Spike	Total/NA	Solid	8021B	72364
890-6046-A-1-J MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	72364

Analysis Batch: 72686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6072-1	BH24-16	Total/NA	Solid	Total BTEX	
890-6072-2	BH24-16	Total/NA	Solid	Total BTEX	
890-6072-3	BH24-9	Total/NA	Solid	Total BTEX	
890-6072-4	BH24-11	Total/NA	Solid	Total BTEX	

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QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

GC VOA (Continued)

Analysis Batch: 72686 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6072-5	BH24-12	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 17917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6072-1	BH24-16	Total/NA	Solid	8015NM Prep	
890-6072-2	BH24-16	Total/NA	Solid	8015NM Prep	
890-6072-3	BH24-9	Total/NA	Solid	8015NM Prep	
890-6072-4	BH24-11	Total/NA	Solid	8015NM Prep	
890-6072-5	BH24-12	Total/NA	Solid	8015NM Prep	
MB 870-17917/3-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 870-17917/1-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 870-17917/2-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-38742-A-61-N MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-38742-A-61-O MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 17989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6072-1	BH24-16	Total/NA	Solid	8015B NM	17917
890-6072-2	BH24-16	Total/NA	Solid	8015B NM	17917
890-6072-3	BH24-9	Total/NA	Solid	8015B NM	17917
890-6072-4	BH24-11	Total/NA	Solid	8015B NM	17917
890-6072-5	BH24-12	Total/NA	Solid	8015B NM	17917
MB 870-17917/3-A	Method Blank	Total/NA	Solid	8015B NM	17917
LCS 870-17917/1-A	Lab Control Sample	Total/NA	Solid	8015B NM	17917
LCSD 870-17917/2-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	17917
880-38742-A-61-N MS	Matrix Spike	Total/NA	Solid	8015B NM	17917
880-38742-A-61-O MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	17917

Analysis Batch: 17995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6072-1	BH24-16	Total/NA	Solid	8015 NM	
890-6072-2	BH24-16	Total/NA	Solid	8015 NM	
890-6072-3	BH24-9	Total/NA	Solid	8015 NM	
890-6072-4	BH24-11	Total/NA	Solid	8015 NM	
890-6072-5	BH24-12	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 72013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6072-1	BH24-16	Soluble	Solid	DI Leach	
890-6072-2	BH24-16	Soluble	Solid	DI Leach	
890-6072-3	BH24-9	Soluble	Solid	DI Leach	
890-6072-4	BH24-11	Soluble	Solid	DI Leach	
890-6072-5	BH24-12	Soluble	Solid	DI Leach	
MB 880-72013/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-72013/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-72013/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6072-1 MS	BH24-16	Soluble	Solid	DI Leach	
890-6072-1 MSD	BH24-16	Soluble	Solid	DI Leach	

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QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

HPLC/IC

Analysis Batch: 72285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6072-1	BH24-16	Soluble	Solid	300.0	72013
890-6072-2	BH24-16	Soluble	Solid	300.0	72013
890-6072-3	BH24-9	Soluble	Solid	300.0	72013
890-6072-4	BH24-11	Soluble	Solid	300.0	72013
890-6072-5	BH24-12	Soluble	Solid	300.0	72013
MB 880-72013/1-A	Method Blank	Soluble	Solid	300.0	72013
LCS 880-72013/2-A	Lab Control Sample	Soluble	Solid	300.0	72013
LCSD 880-72013/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	72013
890-6072-1 MS	BH24-16	Soluble	Solid	300.0	72013
890-6072-1 MSD	BH24-16	Soluble	Solid	300.0	72013

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Client Sample ID: BH24-16
Date Collected: 01/26/24 12:00
Date Received: 01/30/24 15:46

Lab Sample ID: 890-6072-1
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	72364	02/07/24 11:42	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72580	02/08/24 04:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72686	02/08/24 04:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			17995	02/07/24 05:26	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	17917	02/02/24 09:58	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17989	02/07/24 05:26	WP	EET DAL
Soluble	Leach	DI Leach			5.01 g	50 mL	72013	01/31/24 10:21	SMC	EET MID
Soluble	Analysis	300.0		1			72285	02/04/24 16:13	CH	EET MID

Client Sample ID: BH24-16
Date Collected: 01/26/24 12:10
Date Received: 01/30/24 15:46

Lab Sample ID: 890-6072-2
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	72364	02/07/24 11:42	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72580	02/08/24 05:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72686	02/08/24 05:14	SM	EET MID
Total/NA	Analysis	8015 NM		1			17995	02/07/24 05:47	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	17917	02/02/24 09:58	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17989	02/07/24 05:47	WP	EET DAL
Soluble	Leach	DI Leach			4.99 g	50 mL	72013	01/31/24 10:21	SMC	EET MID
Soluble	Analysis	300.0		1			72285	02/04/24 16:28	CH	EET MID

Client Sample ID: BH24-9
Date Collected: 01/24/24 12:00
Date Received: 01/30/24 15:46

Lab Sample ID: 890-6072-3
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			4.99 g	5 mL	72184	02/01/24 17:03	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72459	02/07/24 17:13	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72686	02/07/24 17:13	SM	EET MID
Total/NA	Analysis	8015 NM		1			17995	02/07/24 06:07	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	17917	02/02/24 09:58	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17989	02/07/24 06:07	WP	EET DAL
Soluble	Leach	DI Leach			5.04 g	50 mL	72013	01/31/24 10:21	SMC	EET MID
Soluble	Analysis	300.0		5			72285	02/04/24 16:33	CH	EET MID

Client Sample ID: BH24-11
Date Collected: 01/24/24 12:40
Date Received: 01/30/24 15:46

Lab Sample ID: 890-6072-4
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			5.02 g	5 mL	72184	02/01/24 17:03	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72459	02/07/24 17:39	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72686	02/07/24 17:39	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Client Sample ID: BH24-11
Date Collected: 01/24/24 12:40
Date Received: 01/30/24 15:46

Lab Sample ID: 890-6072-4
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			17995	02/07/24 06:28	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	17917	02/02/24 09:58	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17989	02/07/24 06:28	WP	EET DAL
Soluble	Leach	DI Leach			5.00 g	50 mL	72013	01/31/24 10:21	SMC	EET MID
Soluble	Analysis	300.0		10			72285	02/04/24 16:38	CH	EET MID

Client Sample ID: BH24-12
Date Collected: 01/24/24 13:00
Date Received: 01/30/24 15:46

Lab Sample ID: 890-6072-5
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			5.03 g	5 mL	72184	02/01/24 17:03	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72459	02/07/24 18:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72686	02/07/24 18:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			17995	02/07/24 06:48	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	17917	02/02/24 09:58	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17989	02/07/24 06:48	WP	EET DAL
Soluble	Leach	DI Leach			4.95 g	50 mL	72013	01/31/24 10:21	SMC	EET MID
Soluble	Analysis	300.0		5			72285	02/04/24 16:43	CH	EET MID

Laboratory References:
EET DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Laboratory: Eurofins Dallas

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704295-23-34	06-30-24

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
Total BTEX		Solid	Total BTEX

Method Summary

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

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 DAL
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET DAL
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET DAL
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 DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Vertex
Project/Site: JRU DI 1A CTB 23E-04616

Job ID: 890-6072-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6072-1	BH24-16	Solid	01/26/24 12:00	01/30/24 15:46	0
890-6072-2	BH24-16	Solid	01/26/24 12:10	01/30/24 15:46	1
890-6072-3	BH24-9	Solid	01/24/24 12:00	01/30/24 15:46	0
890-6072-4	BH24-11	Solid	01/24/24 12:40	01/30/24 15:46	0
890-6072-5	BH24-12	Solid	01/24/24 13:00	01/30/24 15:46	0

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- 12
- 13
- 14



Environmental Testing
Xenoco

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 706-5200, San Antonio, TX (210) 503-3333
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Chain of Custody

Work Order No: 108215100

Na pp233 1041267

6072

www.xenoco.com Page of

Project Manager:	Chance Dixon	Bill to: (if different)	Opert Oquern
Company Name:	Water ETO	Company Name:	XSO
Address:		Address:	
City/State/Zip:	575 988-1412	City/State/Zip:	on file
Phone:		Email:	cdixon@water.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:	380 DT 1A CTB	Turn Around	Blankline	Rush	Pre-Code
Project Number:	232-04616	Due Date:			
Project Location:	380 DT 1A CTB	TAT starts the day received by the lab, if received by 4:30pm			
Sampler's Name:	Quarantine Colton				
P.O. #:					
SAMPLE RECEIPT	Temp Blank: Yes No	Wet Ice: Yes No			
Samples Received Intact:	Yes No	Thermometer ID:			
Cooler Custody Seals:	Yes No N/A	Correction Factor:			
Sample Custody Seals:	Yes No N/A	Temperature Reading:			
Total Containers:		Corrected Temperature:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	ANALYSIS REQUEST	Preservative Codes	Sample Comments
0424-16	Soil	4-26-24	12:00	6'		1	(D51081 H 01		None: NO DI Water: H ₂ O	
0424-16		4-26-24	12:10	1'		2			Cool: Cool MeOH: Me	
0424-16		4-26-24	12:00	0'		3			HCL: HC HNO ₃ : HN	
0424-11		4-24-24	12:40	0'		4			H ₂ SO ₄ : H ₂	
0424-12		4-24-24	13:00	0'		3			H ₂ PO ₄ : HP	
									NaHSO ₄ : NABIS	
									Na ₂ S ₂ O ₃ : NaSO ₃	
									Zn Acetate+NaOH: Zn	
									NaOH+Ascorbic Acid: SAPC	

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 Ti 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 Ti 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 Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenoco 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 Xenoco. A minimum charge of \$450.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenoco that was 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
		1/30/24			1/5/26



Environment Testing

Xenoco

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
El Paso, TX (957) 565-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Chain of Custody

Work Order No: 1082151001

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Page 1 of 1

Project Manager: Chance Nixon
Company Name: United LTD
Address: on file
City, State ZIP: on file
Phone: on file
Email: on file
Bill to: (if different)
Company Name: quantum
Address: xco
City, State ZIP: on file

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

Project Name: SRV DI 14 CTB
Project Number: 336-04616
Project Location: SRV DI 14 CTB
Sample's Name: Quantum Costa
P.O. #: Quantum Costa
Turn Around: ☒ Routine ☐ Rush
Due Date: 10/10/2023
TAT starts the day received by the lab, if received by 4:30pm
SAMPLE RECEIPT
Temp Blank: ☒ Yes ☐ No
Thermometer ID: 10107
Cooler Custody Seals: ☒ Yes ☐ No
Correction Factor: -0.2
Sample Custody Seals: ☒ Yes ☐ No
Temperature Reading: 1.8
Total Containers: 1.6
Corrected Temperature: 1.6

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	# of Containers	ANALYSIS REQUEST										Preservative Codes	
						TPH (80150)	el	BTX (8021)								None: NO	DI Water: H ₂ O
10107-17	Soil	10-10-2023	10:00	0	1											Cool: Cool	MeOH: Me
10107-17	Soil	10-10-2023	10:10	2	2											HCL: HC	HNO ₃ : HN
10107-17	Soil	10-10-2023	10:20	3	3											H ₂ SO ₄ : H ₂	NaOH: Na
10107-18	Soil	10-10-2023	10:30	3	3											H ₃ PO ₄ : HP	
10107-18	Soil	10-10-2023	10:40	2	2											NaHSO ₄ : NABIS	
10107-18	Soil	10-10-2023	10:50	4	4											Na ₂ S ₂ O ₃ : NaSO ₃	
10107-18	Soil	10-10-2023	10:50	4	4											Zn Acetate+NaOH: Zn	
10107-18	Soil	10-10-2023	10:50	4	4											NaOH+Ascorbic Acid: SANC	

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 SiO₂ Na Sr Ti 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 Ti U Hg: 1631 / 245.1 / 7470 / 7471

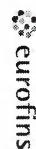
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenoco. A minimum charge of \$95.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenoco, 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
	<u>Alberta</u>	10/30/23			

Eurofins Midland

1211 W. Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record



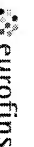
Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:						
Client Contact:	Phone:	Kramer, Jessica			880-9107.1						
Shipping/Receiving	E-Mail:	Jessica.Kramer@et.eurofins.com	State of Origin:		Page: 1 of 1						
Company:	Address:	NECLAP - Texas	Accreditations Required (See note):	Job #:	Page 1 of 1						
Eurofins Environment Testing South Cent	9701 Harry Hines Blvd.			890-6072-1							
City:	Due Date Requested:	Analysis Requested									
Dallas	2/5/2024										
State, Zip:	TAT Requested (days):										
TX, 75220											
Phone:	PO #:										
214-902-0300(Tel)											
Email:	WO #:										
Project Name:	Project #:										
JRU DI 1A CTB 23E-04616	89000161										
Site:	SSOW#:										
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=C-comp, G=grab)	Matrix (Water, Soil, Sewage, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep	Total Number of containers	Special Instructions/Note:
BH24-16 (890-6072-1)	1/26/24	Mountain	12:00	Solid		X	X			1	
BH24-16 (890-6072-2)	1/26/24	Mountain	12:10	Solid		X	X			1	
BH24-9 (890-6072-3)	1/24/24	Mountain	12:00	Solid		X	X			1	
BH24-11 (890-6072-4)	1/24/24	Mountain	12:40	Solid		X	X			1	
BH24-12 (890-6072-5)	1/24/24	Mountain	13:00	Solid		X	X			1	
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.											
Possible Hazard Identification											
Unconfirmed											
Deliverable Requested: I, II, III, IV, Other (Specify) Primary Deliverable Rank: 2											
Empty Kit Relinquished by: Date: Time: Method of Shipment:											
Relinquished by: Date/Time: Company:											
Relinquished by: Date/Time: Company:											
Relinquished by: Date/Time: Company:											
Custody Seals Intact: Custody Seal No.:											
Cooler Temperature(s) °C and Other Remarks:											
Special Instructions/Note: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Disposal By Lab Archive For Months											

Eurofins Midland

1211 W. Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s)	COC No:						
Client Contact:	Phone:	Kramer, Jessica	State of Origin:	880-9107-1							
Shipping/Receiving:	E-Mail:	Jessica.Kramer@et.eurofins.com	New Mexico	Page 1 of 1							
Company:		Accreditations Required (See note):		Job #:							
Eurofins Environment Testing South Cent		NELAP - Texas		890-6072-1							
Address:	Due Date Requested:	Analysis Requested									
9701 Henry Hines Blvd.	2/5/2024										
City:	TAT Requested (days):										
Dallas											
State zip:	PO #:										
TX, 75220											
Phone:	WQ #:										
214-902-0300(Tel)											
Email:	Project #:										
	89000161										
Project Name:	SSOM#:										
JRU DI 1A CTB 23E-04616											
Site:											
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=oil, B=biomass, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep	Total Number of containers	Special Instructions/Note:
BH24-16 (890-6072-1)	1/26/24	12:00	Mountain	Solid		X	X			1	
BH24-16 (890-6072-2)	1/26/24	12:10	Mountain	Solid		X	X			1	
BH24-9 (890-6072-3)	1/24/24	12:00	Mountain	Solid		X	X			1	
BH24-11 (890-6072-4)	1/24/24	12:40	Mountain	Solid		X	X			1	
BH24-12 (890-6072-5)	1/24/24	13:00	Mountain	Solid		X	X			1	
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.											
Possible Hazard Identification											
Unconfirmed											
Deliverable Requested: I, II, III, IV, Other (Specify)											
Primary Deliverable Rank: 2											
Special Instructions/QC Requirements:											
Empty Kit Relinquished by:											
Date/Time: 2/6/24 12:00											
Company:											
Relinquished by: <i>PA Feller</i>											
Date/Time: 2/3/24 11:25											
Company:											
Relinquished by:											
Date/Time:											
Company:											
Custody Seals Intact: A Yes A No											
Custody Seal No.:											
Cooler Temperature(s) °C and Other Remarks:											

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-6072-1

Login Number: 6072

List Source: Eurofins Carlsbad

List Number: 1

Creator: Lopez, Abraham

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: 890-6072-1

Login Number: 6072

List Number: 3

Creator: Thompson, Christopher

List Source: Eurofins Dallas

List Creation: 02/03/24 01:45 PM

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?	N/A	
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.	True	
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").	True	

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-6072-1

Login Number: 6072

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 02/01/24 11:02 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	



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chance Dixon
Vertex
3101 Boyd Dr
Carlsbad, New Mexico 88220
Generated 2/12/2024 10:14:06 AM

JOB DESCRIPTION

JRU DI 1A CTB
23E-04616

JOB NUMBER

890-6071-1



Eurofins Carlsbad

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



Generated
2/12/2024 10:14:06 AM

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

Client: Vertex
Project/Site: JRU DI 1A CTB

Laboratory Job ID: 890-6071-1
SDG: 23E-04616

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Definitions/Glossary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD 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, low 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.
α	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: JRU DI 1A CTB

Job ID: 890-6071-1

Job ID: 890-6071-1

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Job Narrative
890-6071-1

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 1/30/2024 3:35 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 1.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: BH24-17 (890-6071-1), BH24-17 (890-6071-2), BH24-17 (890-6071-3), BH24-18 (890-6071-4), BH24-18 (890-6071-5) and BH24-18 (890-6071-6).

GC VOA

Method 8021B: The matrix spike (MS) recoveries for preparation batch 880-72744 and 880-72744 and analytical batch 880-72754 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-72602 and analytical batch 880-72754 was outside the upper control limits.

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-72754 recovered under the lower control limit for o-Xylene. The samples associated with this CCV were ran within 12 hours of passing CCV; therefore, the data have been reported.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-72744 and analytical batch 880-72754 was outside the upper control 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 870-17830 and analytical batch 870-17833 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.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (890-6063-A-28-F MS) and (890-6063-A-28-G MSD). 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 880-72012 and analytical batch 880-72286 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because 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.

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

Client Sample ID: BH24-17

Lab Sample ID: 890-6071-1

Date Collected: 01/30/24 10:00

Matrix: Solid

Date Received: 01/30/24 15:35

Sample Depth: 0

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		02/09/24 11:55	02/11/24 00:24	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/09/24 11:55	02/11/24 00:24	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/09/24 11:55	02/11/24 00:24	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/09/24 11:55	02/11/24 00:24	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/09/24 11:55	02/11/24 00:24	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/09/24 11:55	02/11/24 00:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	02/09/24 11:55	02/11/24 00:24	1
1,4-Difluorobenzene (Surr)	102		70 - 130	02/09/24 11:55	02/11/24 00:24	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			02/11/24 00:24	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			02/08/24 00:49	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.1	U	50.1	mg/Kg		02/02/24 16:33	02/08/24 00:49	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		02/02/24 16:33	02/08/24 00:49	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		02/02/24 16:33	02/08/24 00:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	84		70 - 130	02/02/24 16:33	02/08/24 00:49	1
1-Chlorooctane	78		70 - 130	02/02/24 16:33	02/08/24 00:49	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	132	F1	5.02	mg/Kg			02/05/24 02:00	1

Client Sample ID: BH24-17

Lab Sample ID: 890-6071-2

Date Collected: 01/30/24 10:10

Matrix: Solid

Date Received: 01/30/24 15:35

Sample Depth: 2

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		02/09/24 11:55	02/11/24 00:44	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/09/24 11:55	02/11/24 00:44	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/09/24 11:55	02/11/24 00:44	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/09/24 11:55	02/11/24 00:44	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/09/24 11:55	02/11/24 00:44	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/09/24 11:55	02/11/24 00:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130	02/09/24 11:55	02/11/24 00:44	1
1,4-Difluorobenzene (Surr)	102		70 - 130	02/09/24 11:55	02/11/24 00:44	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

Client Sample ID: BH24-17

Lab Sample ID: 890-6071-2

Date Collected: 01/30/24 10:10

Matrix: Solid

Date Received: 01/30/24 15:35

Sample Depth: 2

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			02/11/24 00:44	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			02/08/24 01:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.1	U	50.1	mg/Kg		02/02/24 16:33	02/08/24 01:09	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1	mg/Kg		02/02/24 16:33	02/08/24 01:09	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1	mg/Kg		02/02/24 16:33	02/08/24 01:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	105		70 - 130	02/02/24 16:33	02/08/24 01:09	1
1-Chlorooctane	94		70 - 130	02/02/24 16:33	02/08/24 01:09	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	82.3		5.04	mg/Kg			02/05/24 08:36	1

Client Sample ID: BH24-17

Lab Sample ID: 890-6071-3

Date Collected: 01/30/24 10:20

Matrix: Solid

Date Received: 01/30/24 15:35

Sample Depth: 3

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		02/09/24 11:55	02/11/24 01:04	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/09/24 11:55	02/11/24 01:04	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/09/24 11:55	02/11/24 01:04	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/09/24 11:55	02/11/24 01:04	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/09/24 11:55	02/11/24 01:04	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/09/24 11:55	02/11/24 01:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	02/09/24 11:55	02/11/24 01:04	1
1,4-Difluorobenzene (Surr)	106		70 - 130	02/09/24 11:55	02/11/24 01:04	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			02/11/24 01:04	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5	mg/Kg			02/08/24 01:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.5	U	50.5	mg/Kg		02/02/24 16:33	02/08/24 01:30	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

Client Sample ID: BH24-17

Lab Sample ID: 890-6071-3

Date Collected: 01/30/24 10:20

Matrix: Solid

Date Received: 01/30/24 15:35

Sample Depth: 3

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5	mg/Kg		02/02/24 16:33	02/08/24 01:30	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5	mg/Kg		02/02/24 16:33	02/08/24 01:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	97		70 - 130			02/02/24 16:33	02/08/24 01:30	1
1-Chlorooctane	88		70 - 130			02/02/24 16:33	02/08/24 01:30	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	77.4		5.03	mg/Kg			02/05/24 08:41	1

Client Sample ID: BH24-18

Lab Sample ID: 890-6071-4

Date Collected: 01/30/24 10:30

Matrix: Solid

Date Received: 01/30/24 15:35

Sample Depth: 0

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		02/09/24 11:55	02/11/24 01:25	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/09/24 11:55	02/11/24 01:25	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		02/09/24 11:55	02/11/24 01:25	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/09/24 11:55	02/11/24 01:25	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/09/24 11:55	02/11/24 01:25	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/09/24 11:55	02/11/24 01:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130			02/09/24 11:55	02/11/24 01:25	1
1,4-Difluorobenzene (Surr)	103		70 - 130			02/09/24 11:55	02/11/24 01:25	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			02/11/24 01:25	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			02/08/24 01:51	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.0	U	50.0	mg/Kg		02/02/24 16:33	02/08/24 01:51	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/02/24 16:33	02/08/24 01:51	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/02/24 16:33	02/08/24 01:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	93		70 - 130			02/02/24 16:33	02/08/24 01:51	1
1-Chlorooctane	84		70 - 130			02/02/24 16:33	02/08/24 01:51	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

Client Sample ID: BH24-18

Lab Sample ID: 890-6071-4

Date Collected: 01/30/24 10:30

Matrix: Solid

Date Received: 01/30/24 15:35

Sample Depth: 0

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	255		24.9	mg/Kg			02/05/24 02:35	5

Client Sample ID: BH24-18

Lab Sample ID: 890-6071-5

Date Collected: 01/30/24 10:40

Matrix: Solid

Date Received: 01/30/24 15:35

Sample Depth: 2

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		02/09/24 11:55	02/11/24 01:45	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/09/24 11:55	02/11/24 01:45	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/09/24 11:55	02/11/24 01:45	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		02/09/24 11:55	02/11/24 01:45	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/09/24 11:55	02/11/24 01:45	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		02/09/24 11:55	02/11/24 01:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130			02/09/24 11:55	02/11/24 01:45	1
1,4-Difluorobenzene (Surr)	106		70 - 130			02/09/24 11:55	02/11/24 01:45	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			02/11/24 01:45	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			02/08/24 02:12	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<50.0	U	50.0	mg/Kg		02/02/24 16:33	02/08/24 02:12	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/02/24 16:33	02/08/24 02:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/02/24 16:33	02/08/24 02:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	98		70 - 130			02/02/24 16:33	02/08/24 02:12	1
1-Chlorooctane	89		70 - 130			02/02/24 16:33	02/08/24 02:12	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	706		49.7	mg/Kg			02/05/24 02:40	10

Client Sample ID: BH24-18

Lab Sample ID: 890-6071-6

Date Collected: 01/30/24 10:50

Matrix: Solid

Date Received: 01/30/24 15:35

Sample Depth: 4

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		02/09/24 11:55	02/11/24 02:06	1

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Client Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

Client Sample ID: BH24-18

Lab Sample ID: 890-6071-6

Date Collected: 01/30/24 10:50

Matrix: Solid

Date Received: 01/30/24 15:35

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<0.00201	U	0.00201	mg/Kg		02/09/24 11:55	02/11/24 02:06	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/09/24 11:55	02/11/24 02:06	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/09/24 11:55	02/11/24 02:06	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/09/24 11:55	02/11/24 02:06	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/09/24 11:55	02/11/24 02:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	02/09/24 11:55	02/11/24 02:06	1
1,4-Difluorobenzene (Surr)	100		70 - 130	02/09/24 11:55	02/11/24 02:06	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			02/11/24 02:06	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			02/08/24 02:32	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	<49.6	U	49.6	mg/Kg		02/02/24 16:33	02/08/24 02:32	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6	mg/Kg		02/02/24 16:33	02/08/24 02:32	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6	mg/Kg		02/02/24 16:33	02/08/24 02:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
o-Terphenyl	98		70 - 130			02/02/24 16:33	02/08/24 02:32	1
1-Chlorooctane	87		70 - 130			02/02/24 16:33	02/08/24 02:32	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	499		49.5	mg/Kg			02/05/24 02:45	10

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Surrogate Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-6070-A-1-E MS	Matrix Spike	102	107
890-6070-A-1-F MSD	Matrix Spike Duplicate	98	107
890-6071-1	BH24-17	101	102
890-6071-2	BH24-17	104	102
890-6071-3	BH24-17	105	106
890-6071-4	BH24-18	101	103
890-6071-5	BH24-18	103	106
890-6071-6	BH24-18	101	100
LCS 880-72744/1-A	Lab Control Sample	91	104
LCSD 880-72744/2-A	Lab Control Sample Dup	91	104
MB 880-72602/5-A	Method Blank	131 S1+	135 S1+
MB 880-72744/5-A	Method Blank	129	147 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)	
Lab Sample ID	Client Sample ID	OTPH1 (70-130)	1CO1 (70-130)
890-6063-A-28-F MS	Matrix Spike	0 S1-	107
890-6063-A-28-G MSD	Matrix Spike Duplicate	0 S1-	104
890-6071-1	BH24-17	84	78
890-6071-2	BH24-17	105	94
890-6071-3	BH24-17	97	88
890-6071-4	BH24-18	93	84
890-6071-5	BH24-18	98	89
890-6071-6	BH24-18	98	87
LCS 870-17830/1-A	Lab Control Sample	96	102
LCSD 870-17830/2-A	Lab Control Sample Dup	97	104
MB 870-17830/3-A	Method Blank	120	115
Surrogate Legend			
OTPH = o-Terphenyl			
1CO = 1-Chlorooctane			

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72602/5-A

Matrix: Solid

Analysis Batch: 72754

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72602

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/07/24 16:55	02/10/24 04:16	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/07/24 16:55	02/10/24 04:16	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/07/24 16:55	02/10/24 04:16	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/07/24 16:55	02/10/24 04:16	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/07/24 16:55	02/10/24 04:16	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/07/24 16:55	02/10/24 04:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	131	S1+	70 - 130	02/07/24 16:55	02/10/24 04:16	1
1,4-Difluorobenzene (Surr)	135	S1+	70 - 130	02/07/24 16:55	02/10/24 04:16	1

Lab Sample ID: MB 880-72744/5-A

Matrix: Solid

Analysis Batch: 72754

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72744

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/09/24 11:55	02/10/24 15:52	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/09/24 11:55	02/10/24 15:52	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/09/24 11:55	02/10/24 15:52	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/09/24 11:55	02/10/24 15:52	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/09/24 11:55	02/10/24 15:52	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/09/24 11:55	02/10/24 15:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		70 - 130	02/09/24 11:55	02/10/24 15:52	1
1,4-Difluorobenzene (Surr)	147	S1+	70 - 130	02/09/24 11:55	02/10/24 15:52	1

Lab Sample ID: LCS 880-72744/1-A

Matrix: Solid

Analysis Batch: 72754

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 72744

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09301		mg/Kg		93	70 - 130
Toluene	0.100	0.09073		mg/Kg		91	70 - 130
Ethylbenzene	0.100	0.07919		mg/Kg		79	70 - 130
m-Xylene & p-Xylene	0.200	0.1829		mg/Kg		91	70 - 130
o-Xylene	0.100	0.08163		mg/Kg		82	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: LCSD 880-72744/2-A

Matrix: Solid

Analysis Batch: 72754

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 72744

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09990		mg/Kg		100	70 - 130	7	35

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

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

Lab Sample ID: LCSD 880-72744/2-A

Matrix: Solid

Analysis Batch: 72754

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 72744

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits			
Toluene	0.100	0.09304		mg/Kg		93	70 - 130		3	35
Ethylbenzene	0.100	0.07982		mg/Kg		80	70 - 130		1	35
m-Xylene & p-Xylene	0.200	0.1903		mg/Kg		95	70 - 130		4	35
o-Xylene	0.100	0.08694		mg/Kg		87	70 - 130		6	35

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	91		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 890-6070-A-1-E MS

Matrix: Solid

Analysis Batch: 72754

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 72744

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	
Benzene	<0.00200	U F1	0.0996	0.05147	F1	mg/Kg		52	70 - 130	
Toluene	<0.00200	U F2 F1	0.0996	0.03423	F1	mg/Kg		34	70 - 130	
Ethylbenzene	<0.00200	U F1	0.0996	0.02831	F1	mg/Kg		28	70 - 130	
m-Xylene & p-Xylene	<0.00399	U F1	0.199	0.07212	F1	mg/Kg		36	70 - 130	
o-Xylene	<0.00200	U F1	0.0996	0.03375	F1	mg/Kg		34	70 - 130	

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: 890-6070-A-1-F MSD

Matrix: Solid

Analysis Batch: 72754

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 72744

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
									Limits			
Benzene	<0.00200	U F1	0.0990	0.06780	F1	mg/Kg		68	70 - 130		27	35
Toluene	<0.00200	U F2 F1	0.0990	0.05148	F2 F1	mg/Kg		52	70 - 130		40	35
Ethylbenzene	<0.00200	U F1	0.0990	0.03587	F1	mg/Kg		36	70 - 130		24	35
m-Xylene & p-Xylene	<0.00399	U F1	0.198	0.08732	F1	mg/Kg		44	70 - 130		19	35
o-Xylene	<0.00200	U F1	0.0990	0.03805	F1	mg/Kg		38	70 - 130		12	35

Surrogate	MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

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

Lab Sample ID: MB 870-17830/3-A

Matrix: Solid

Analysis Batch: 17833

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 17830

Analyte	MB		RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Gasoline Range Organics (GRO)	<50.0	U	50.0	mg/Kg		02/02/24 16:33	02/07/24 18:25	1

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

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

Lab Sample ID: MB 870-17830/3-A

Matrix: Solid

Analysis Batch: 17833

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 17830

Analyte	MB	MB	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier						
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/02/24 16:33	02/07/24 18:25	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/02/24 16:33	02/07/24 18:25	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier						
o-Terphenyl	120		70 - 130			02/02/24 16:33	02/07/24 18:25	1
1-Chlorooctane	115		70 - 130			02/02/24 16:33	02/07/24 18:25	1

Lab Sample ID: LCS 870-17830/1-A

Matrix: Solid

Analysis Batch: 17833

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 17830

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits	
		Result	Qualifier					
Gasoline Range Organics (GRO)	1020	833.0		mg/Kg		82	70 - 130	
Diesel Range Organics (Over C10-C28)	1010	906.3		mg/Kg		90	70 - 130	
Surrogate		LCS	LCS					
		%Recovery	Qualifier					
o-Terphenyl		96					70 - 130	
1-Chlorooctane		102					70 - 130	

Lab Sample ID: LCSD 870-17830/2-A

Matrix: Solid

Analysis Batch: 17833

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 17830

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
		Result	Qualifier						
Gasoline Range Organics (GRO)	1020	791.3		mg/Kg		78	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	1010	944.6		mg/Kg		94	70 - 130	4	20
Surrogate		LCSD	LCSD						
		%Recovery	Qualifier						
o-Terphenyl		97					70 - 130		
1-Chlorooctane		104					70 - 130		

Lab Sample ID: 890-6063-A-28-F MS

Matrix: Solid

Analysis Batch: 17833

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 17830

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits	
	Result	Qualifier		Result	Qualifier					
Gasoline Range Organics (GRO)	<49.8	U F1	1020	653.1	F1	mg/Kg		64	70 - 130	
Diesel Range Organics (Over C10-C28)	<49.8	U	1010	896.6		mg/Kg		89	70 - 130	
Surrogate	MS	MS	Limits							
	%Recovery	Qualifier								
o-Terphenyl	0	S1-	70 - 130							
1-Chlorooctane	107		70 - 130							

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QC Sample Results

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

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

Lab Sample ID: 890-6063-A-28-G MSD
Matrix: Solid
Analysis Batch: 17833

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 17833

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)	<49.8	U F1	1020	675.8	F1	mg/Kg		66	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.8	U	1010	876.0		mg/Kg		87	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	0	S1-	70 - 130
1-Chlorooctane	104		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-72012/1-A
Matrix: Solid
Analysis Batch: 72286

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			02/05/24 00:36	1

Lab Sample ID: LCS 880-72012/2-A
Matrix: Solid
Analysis Batch: 72286

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	244.5		mg/Kg		98	90 - 110

Lab Sample ID: LCSD 880-72012/3-A
Matrix: Solid
Analysis Batch: 72286

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	245.1		mg/Kg		98	90 - 110	0	20

Lab Sample ID: 890-6071-1 MS
Matrix: Solid
Analysis Batch: 72286

Client Sample ID: BH24-17
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	132	F1	251	420.3	F1	mg/Kg		115	90 - 110

Lab Sample ID: 890-6071-1 MSD
Matrix: Solid
Analysis Batch: 72286

Client Sample ID: BH24-17
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	132	F1	251	420.5	F1	mg/Kg		115	90 - 110	0	20

QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

GC VOA

Prep Batch: 72602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-72602/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 72744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6071-1	BH24-17	Total/NA	Solid	5035	
890-6071-2	BH24-17	Total/NA	Solid	5035	
890-6071-3	BH24-17	Total/NA	Solid	5035	
890-6071-4	BH24-18	Total/NA	Solid	5035	
890-6071-5	BH24-18	Total/NA	Solid	5035	
890-6071-6	BH24-18	Total/NA	Solid	5035	
MB 880-72744/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72744/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72744/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-6070-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-6070-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 72754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6071-1	BH24-17	Total/NA	Solid	8021B	72744
890-6071-2	BH24-17	Total/NA	Solid	8021B	72744
890-6071-3	BH24-17	Total/NA	Solid	8021B	72744
890-6071-4	BH24-18	Total/NA	Solid	8021B	72744
890-6071-5	BH24-18	Total/NA	Solid	8021B	72744
890-6071-6	BH24-18	Total/NA	Solid	8021B	72744
MB 880-72602/5-A	Method Blank	Total/NA	Solid	8021B	72602
MB 880-72744/5-A	Method Blank	Total/NA	Solid	8021B	72744
LCS 880-72744/1-A	Lab Control Sample	Total/NA	Solid	8021B	72744
LCSD 880-72744/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72744
890-6070-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	72744
890-6070-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	72744

Analysis Batch: 72866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6071-1	BH24-17	Total/NA	Solid	Total BTEX	
890-6071-2	BH24-17	Total/NA	Solid	Total BTEX	
890-6071-3	BH24-17	Total/NA	Solid	Total BTEX	
890-6071-4	BH24-18	Total/NA	Solid	Total BTEX	
890-6071-5	BH24-18	Total/NA	Solid	Total BTEX	
890-6071-6	BH24-18	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 17830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6071-1	BH24-17	Total/NA	Solid	8015NM Prep	
890-6071-2	BH24-17	Total/NA	Solid	8015NM Prep	
890-6071-3	BH24-17	Total/NA	Solid	8015NM Prep	
890-6071-4	BH24-18	Total/NA	Solid	8015NM Prep	
890-6071-5	BH24-18	Total/NA	Solid	8015NM Prep	
890-6071-6	BH24-18	Total/NA	Solid	8015NM Prep	
MB 870-17830/3-A	Method Blank	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

GC Semi VOA (Continued)

Prep Batch: 17830 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 870-17830/1-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 870-17830/2-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6063-A-28-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-6063-A-28-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 17833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6071-1	BH24-17	Total/NA	Solid	8015B NM	17830
890-6071-2	BH24-17	Total/NA	Solid	8015B NM	17830
890-6071-3	BH24-17	Total/NA	Solid	8015B NM	17830
890-6071-4	BH24-18	Total/NA	Solid	8015B NM	17830
890-6071-5	BH24-18	Total/NA	Solid	8015B NM	17830
890-6071-6	BH24-18	Total/NA	Solid	8015B NM	17830
MB 870-17830/3-A	Method Blank	Total/NA	Solid	8015B NM	17830
LCS 870-17830/1-A	Lab Control Sample	Total/NA	Solid	8015B NM	17830
LCSD 870-17830/2-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	17830
890-6063-A-28-F MS	Matrix Spike	Total/NA	Solid	8015B NM	17830
890-6063-A-28-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	17830

Analysis Batch: 17890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6071-1	BH24-17	Total/NA	Solid	8015 NM	
890-6071-2	BH24-17	Total/NA	Solid	8015 NM	
890-6071-3	BH24-17	Total/NA	Solid	8015 NM	
890-6071-4	BH24-18	Total/NA	Solid	8015 NM	
890-6071-5	BH24-18	Total/NA	Solid	8015 NM	
890-6071-6	BH24-18	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 72012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6071-1	BH24-17	Soluble	Solid	DI Leach	
890-6071-2	BH24-17	Soluble	Solid	DI Leach	
890-6071-3	BH24-17	Soluble	Solid	DI Leach	
890-6071-4	BH24-18	Soluble	Solid	DI Leach	
890-6071-5	BH24-18	Soluble	Solid	DI Leach	
890-6071-6	BH24-18	Soluble	Solid	DI Leach	
MB 880-72012/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-72012/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-72012/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-6071-1 MS	BH24-17	Soluble	Solid	DI Leach	
890-6071-1 MSD	BH24-17	Soluble	Solid	DI Leach	

Analysis Batch: 72286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6071-1	BH24-17	Soluble	Solid	300.0	72012
890-6071-2	BH24-17	Soluble	Solid	300.0	72012
890-6071-3	BH24-17	Soluble	Solid	300.0	72012
890-6071-4	BH24-18	Soluble	Solid	300.0	72012
890-6071-5	BH24-18	Soluble	Solid	300.0	72012

Eurofins Carlsbad

QC Association Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

HPLC/IC (Continued)

Analysis Batch: 72286 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6071-6	BH24-18	Soluble	Solid	300.0	72012
MB 880-72012/1-A	Method Blank	Soluble	Solid	300.0	72012
LCS 880-72012/2-A	Lab Control Sample	Soluble	Solid	300.0	72012
LCSD 880-72012/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	72012
890-6071-1 MS	BH24-17	Soluble	Solid	300.0	72012
890-6071-1 MSD	BH24-17	Soluble	Solid	300.0	72012

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

Client Sample ID: BH24-17
Date Collected: 01/30/24 10:00
Date Received: 01/30/24 15:35

Lab Sample ID: 890-6071-1
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			4.97 g	5 mL	72744	02/09/24 11:55	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/11/24 00:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72866	02/11/24 00:24	SM	EET MID
Total/NA	Analysis	8015 NM		1			17890	02/08/24 00:49	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	17830	02/02/24 16:33	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17833	02/08/24 00:49	WP	EET DAL
Soluble	Leach	DI Leach			4.98 g	50 mL	72012	01/31/24 10:17	SMC	EET MID
Soluble	Analysis	300.0		1			72286	02/05/24 02:00	CH	EET MID

Client Sample ID: BH24-17
Date Collected: 01/30/24 10:10
Date Received: 01/30/24 15:35

Lab Sample ID: 890-6071-2
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			4.99 g	5 mL	72744	02/09/24 11:55	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/11/24 00:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72866	02/11/24 00:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			17890	02/08/24 01:09	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	17830	02/02/24 16:33	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17833	02/08/24 01:09	WP	EET DAL
Soluble	Leach	DI Leach			4.96 g	50 mL	72012	01/31/24 10:17	SMC	EET MID
Soluble	Analysis	300.0		1			72286	02/05/24 08:36	CH	EET MID

Client Sample ID: BH24-17
Date Collected: 01/30/24 10:20
Date Received: 01/30/24 15:35

Lab Sample ID: 890-6071-3
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			5.02 g	5 mL	72744	02/09/24 11:55	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/11/24 01:04	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72866	02/11/24 01:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			17890	02/08/24 01:30	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	17830	02/02/24 16:33	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17833	02/08/24 01:30	WP	EET DAL
Soluble	Leach	DI Leach			4.97 g	50 mL	72012	01/31/24 10:17	SMC	EET MID
Soluble	Analysis	300.0		1			72286	02/05/24 08:41	CH	EET MID

Client Sample ID: BH24-18
Date Collected: 01/30/24 10:30
Date Received: 01/30/24 15:35

Lab Sample ID: 890-6071-4
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			5.03 g	5 mL	72744	02/09/24 11:55	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/11/24 01:25	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72866	02/11/24 01:25	SM	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

Client Sample ID: BH24-18
Date Collected: 01/30/24 10:30
Date Received: 01/30/24 15:35

Lab Sample ID: 890-6071-4
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			17890	02/08/24 01:51	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	17830	02/02/24 16:33	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17833	02/08/24 01:51	WP	EET DAL
Soluble	Leach	DI Leach			5.02 g	50 mL	72012	01/31/24 10:17	SMC	EET MID
Soluble	Analysis	300.0		5			72286	02/05/24 02:35	CH	EET MID

Client Sample ID: BH24-18
Date Collected: 01/30/24 10:40
Date Received: 01/30/24 15:35

Lab Sample ID: 890-6071-5
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			5.01 g	5 mL	72744	02/09/24 11:55	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/11/24 01:45	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72866	02/11/24 01:45	SM	EET MID
Total/NA	Analysis	8015 NM		1			17890	02/08/24 02:12	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	17830	02/02/24 16:33	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17833	02/08/24 02:12	WP	EET DAL
Soluble	Leach	DI Leach			5.03 g	50 mL	72012	01/31/24 10:17	SMC	EET MID
Soluble	Analysis	300.0		10			72286	02/05/24 02:40	CH	EET MID

Client Sample ID: BH24-18
Date Collected: 01/30/24 10:50
Date Received: 01/30/24 15:35

Lab Sample ID: 890-6071-6
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			4.97 g	5 mL	72744	02/09/24 11:55	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/11/24 02:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72866	02/11/24 02:06	SM	EET MID
Total/NA	Analysis	8015 NM		1			17890	02/08/24 02:32	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	17830	02/02/24 16:33	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17833	02/08/24 02:32	WP	EET DAL
Soluble	Leach	DI Leach			5.05 g	50 mL	72012	01/31/24 10:17	SMC	EET MID
Soluble	Analysis	300.0		10			72286	02/05/24 02:45	CH	EET MID

Laboratory References:
EET DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

Laboratory: Eurofins Dallas

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704295-23-34	06-30-24

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
Total BTEX		Solid	Total BTEX

Method Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

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 DAL
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET DAL
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET DAL
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 DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Vertex
Project/Site: JRU DI 1A CTB

Job ID: 890-6071-1
SDG: 23E-04616

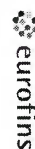
Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6071-1	BH24-17	Solid	01/30/24 10:00	01/30/24 15:35	0
890-6071-2	BH24-17	Solid	01/30/24 10:10	01/30/24 15:35	2
890-6071-3	BH24-17	Solid	01/30/24 10:20	01/30/24 15:35	3
890-6071-4	BH24-18	Solid	01/30/24 10:30	01/30/24 15:35	0
890-6071-5	BH24-18	Solid	01/30/24 10:40	01/30/24 15:35	2
890-6071-6	BH24-18	Solid	01/30/24 10:50	01/30/24 15:35	4

- 1
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- 14

Eurofins Midland

1211 W. Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record



Editorial Board

[illegible]

Login Sample Receipt Checklist

Client: Vertex

Job Number: 890-6071-1

SDG Number: 23E-04616

Login Number: 6071

List Number: 1

Creator: Lopez, Abraham

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: 890-6071-1

SDG Number: 23E-04616

Login Number: 6071

List Number: 3

Creator: Sharp, Michael

List Source: Eurofins Dallas

List Creation: 02/06/24 10:35 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?	N/A	
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.	True	
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: 890-6071-1

SDG Number: 23E-04616

Login Number: 6071

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 02/01/24 11:02 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	



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

February 20, 2024

CHANCE DIXON

VERTEX RESOURCE GROUP

420 SOUTH MAIN, SUITE 202

TULSA, OK 74103

RE: JRU DI 1A CTB

Enclosed are the results of analyses for samples received by the laboratory on 02/15/24 14:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

VERTEX RESOURCE GROUP
 CHANCE DIXON
 420 SOUTH MAIN, SUITE 202
 TULSA OK, 74103
 Fax To: NA

Received: 02/15/2024
 Reported: 02/20/2024
 Project Name: JRU DI 1A CTB
 Project Number: 23E-04616
 Project Location: XTO

Sampling Date: 02/13/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH23 - 02 3' (H240727-01)

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/16/2024	ND	2.24	112	2.00	7.58	
Toluene*	<0.050	0.050	02/16/2024	ND	2.23	112	2.00	7.46	
Ethylbenzene*	<0.050	0.050	02/16/2024	ND	2.21	110	2.00	7.30	
Total Xylenes*	<0.150	0.150	02/16/2024	ND	6.64	111	6.00	6.70	
Total BTEx	<0.300	0.300	02/16/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	02/16/2024	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/16/2024	ND	189	94.5	200	0.957	
DRO >C10-C28*	<10.0	10.0	02/16/2024	ND	193	96.6	200	0.463	
EXT DRO >C28-C36	<10.0	10.0	02/16/2024	ND					

Surrogate: 1-Chlorooctane 86.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.3 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Caley D. Keene".

Caley D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Vertex Resource Services (Direct Bill to XTO Energy, Inc.)

BILL TO

ANALYSIS REQUEST

Project Manager: Chance Dixon

Address: 3101 Boyd Drive

City: Carlsbad

State: NM

Zip: 88220

Phone #: 575.725.5001

Fax #:

Project #: 23E-04616

Project Owner: Garret Green

Project Name: JRU DI 1A CTB

Project Location:

Sample Name: L. Pullman

P.O. #:

Company: XTO Energy, Inc.

Attn: Garret Green

Address: 3104 E. Greene St

City: Carlsbad

State: NM

Zip: 88220

Phone #: 575-200-0729

Fax #:

BTEX (8021)

TPH:8015D(GRO / DRO / MRO)

Chloride

Lab I.D.

Sample I.D.

H240787

BH23-023'

(G)RAB OR (C)OMP
CONTAINERS
GROUNDWATER
WASTEWATER
SOIL
OIL
SLUDGE
OTHER :
ACID/BASE:
ICE / COOL
OTHER :

DATE

TIME

X

X

X

IN CASE OF A DISCREPANCY, CARDINAL'S LIABILITY AND THAT OF ITS EMPLOYEES, AGENTS, AND SUBCONTRACTORS, SHALL BE LIMITED TO THE AMOUNT PAID BY THE CLIENT TO THE EMPLOYER. ALL CLAIMS, INCLUDING THOSE FOR NEGLIGENCE AND ANY OTHER CAUSE OF ACTION, SHALL BE BARRED UNLESS MADE IN WRITING AND RECEIVED BY CARDINAL WITHIN 30 DAYS AFTER COMPLETION OF THE ANALYSIS SERVICE. NO OTHER REMEDY SHALL BE AVAILABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOSS OF USE, LOSS OF PROFITS, OR LOSS OF DATA. THE USER OF THIS SERVICE SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL INFORMATION CONTAINED HEREIN, INCLUDING WITHOUT LIMITATION, TRADE SECRETS, CONFIDENTIAL INFORMATION, AND OTHER PROPRIETARY INFORMATION. THE USER SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL INFORMATION CONTAINED HEREIN, INCLUDING WITHOUT LIMITATION, TRADE SECRETS, CONFIDENTIAL INFORMATION, AND OTHER PROPRIETARY INFORMATION.

Relinquished By:

Date: 2-16-24

Received By:

Relinquished By:

Date: 2-15-24

Received By:

Delivered By: (Circle One)

Observed Temp. °C

Corrected Temp. °C

Sampler - UPS - Bus - Other:

Time: 1405

Sample Condition Cool

Intact

Checked By:

Thermometer ID

Correction Factor

Standard

Coil Inlet

Observed Temp. °C

Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



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

February 28, 2024

CHANCE DIXON

VERTEX RESOURCE GROUP

420 SOUTH MAIN, SUITE 202

TULSA, OK 74103

RE: JRU DI 1A CTB

Enclosed are the results of analyses for samples received by the laboratory on 02/22/24 13:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-23-16. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

VERTEX RESOURCE GROUP
 CHANCE DIXON
 420 SOUTH MAIN, SUITE 202
 TULSA OK, 74103
 Fax To: NA

Received: 02/22/2024
 Reported: 02/28/2024
 Project Name: JRU DI 1A CTB
 Project Number: 23E-04616
 Project Location: XTO

Sampling Date: 02/21/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH 24 - 19 0' (H240888-01)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/24/2024	ND	1.96	98.1	2.00	3.72	
Toluene*	<0.050	0.050	02/24/2024	ND	2.05	103	2.00	4.41	
Ethylbenzene*	<0.050	0.050	02/24/2024	ND	2.04	102	2.00	4.48	
Total Xylenes*	<0.150	0.150	02/24/2024	ND	6.22	104	6.00	4.32	
Total BTEX	<0.300	0.300	02/24/2024	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	02/27/2024	ND	464	116	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/26/2024	ND	208	104	200	2.24	
DRO >C10-C28*	<10.0	10.0	02/26/2024	ND	203	102	200	0.642	
EXT DRO >C28-C36	<10.0	10.0	02/26/2024	ND					

Surrogate: 1-Chlorooctane 65.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 59.7 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

VERTEX RESOURCE GROUP
 CHANCE DIXON
 420 SOUTH MAIN, SUITE 202
 TULSA OK, 74103
 Fax To: NA

Received: 02/22/2024
 Reported: 02/28/2024
 Project Name: JRU DI 1A CTB
 Project Number: 23E-04616
 Project Location: XTO

Sampling Date: 02/21/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH 24 - 19 1' (H240888-02)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/24/2024	ND	1.96	98.1	2.00	3.72		
Toluene*	<0.050	0.050	02/24/2024	ND	2.05	103	2.00	4.41		
Ethylbenzene*	<0.050	0.050	02/24/2024	ND	2.04	102	2.00	4.48		
Total Xylenes*	<0.150	0.150	02/24/2024	ND	6.22	104	6.00	4.32		
Total BTEX	<0.300	0.300	02/24/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	02/27/2024	ND	464	116	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/26/2024	ND	208	104	200	2.24	
DRO >C10-C28*	<10.0	10.0	02/26/2024	ND	203	102	200	0.642	
EXT DRO >C28-C36	<10.0	10.0	02/26/2024	ND					

Surrogate: 1-Chlorooctane 54.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 50.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

VERTEX RESOURCE GROUP
 CHANCE DIXON
 420 SOUTH MAIN, SUITE 202
 TULSA OK, 74103
 Fax To: NA

Received: 02/22/2024
 Reported: 02/28/2024
 Project Name: JRU DI 1A CTB
 Project Number: 23E-04616
 Project Location: XTO

Sampling Date: 02/21/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH 24 - 20 0' (H240888-03)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/24/2024	ND	1.96	98.1	2.00	3.72		
Toluene*	<0.050	0.050	02/24/2024	ND	2.05	103	2.00	4.41		
Ethylbenzene*	<0.050	0.050	02/24/2024	ND	2.04	102	2.00	4.48		
Total Xylenes*	<0.150	0.150	02/24/2024	ND	6.22	104	6.00	4.32		
Total BTEx	<0.300	0.300	02/24/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	496	16.0	02/27/2024	ND	464	116	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/26/2024	ND	208	104	200	2.24	
DRO >C10-C28*	<10.0	10.0	02/26/2024	ND	203	102	200	0.642	
EXT DRO >C28-C36	<10.0	10.0	02/26/2024	ND					

Surrogate: 1-Chlorooctane 67.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 60.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE GROUP
 CHANCE DIXON
 420 SOUTH MAIN, SUITE 202
 TULSA OK, 74103
 Fax To: NA

Received: 02/22/2024
 Reported: 02/28/2024
 Project Name: JRU DI 1A CTB
 Project Number: 23E-04616
 Project Location: XTO

Sampling Date: 02/21/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH 24 - 20 2' (H240888-04)

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/24/2024	ND	1.96	98.1	2.00	3.72		
Toluene*	<0.050	0.050	02/24/2024	ND	2.05	103	2.00	4.41		
Ethylbenzene*	<0.050	0.050	02/24/2024	ND	2.04	102	2.00	4.48		
Total Xylenes*	<0.150	0.150	02/24/2024	ND	6.22	104	6.00	4.32		
Total BTEX	<0.300	0.300	02/24/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	02/27/2024	ND	464	116	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/26/2024	ND	208	104	200	2.24	
DRO >C10-C28*	<10.0	10.0	02/26/2024	ND	203	102	200	0.642	
EXT DRO >C28-C36	<10.0	10.0	02/26/2024	ND					

Surrogate: 1-Chlorooctane 70.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 63.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

VERTEX RESOURCE GROUP
 CHANCE DIXON
 420 SOUTH MAIN, SUITE 202
 TULSA OK, 74103
 Fax To: NA

Received: 02/22/2024
 Reported: 02/28/2024
 Project Name: JRU DI 1A CTB
 Project Number: 23E-04616
 Project Location: XTO

Sampling Date: 02/21/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH 24 - 21 0' (H240888-05)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/26/2024	ND	2.14	107	2.00	2.70		
Toluene*	<0.050	0.050	02/26/2024	ND	2.12	106	2.00	2.90		
Ethylbenzene*	<0.050	0.050	02/26/2024	ND	2.07	103	2.00	3.32		
Total Xylenes*	<0.150	0.150	02/26/2024	ND	6.07	101	6.00	3.10		
Total BTEX	<0.300	0.300	02/26/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	368	16.0	02/27/2024	ND	464	116	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/26/2024	ND	208	104	200	2.24	
DRO >C10-C28*	<10.0	10.0	02/26/2024	ND	203	102	200	0.642	
EXT DRO >C28-C36	<10.0	10.0	02/26/2024	ND					

Surrogate: 1-Chlorooctane 77.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 69.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

VERTEX RESOURCE GROUP
 CHANCE DIXON
 420 SOUTH MAIN, SUITE 202
 TULSA OK, 74103
 Fax To: NA

Received: 02/22/2024
 Reported: 02/28/2024
 Project Name: JRU DI 1A CTB
 Project Number: 23E-04616
 Project Location: XTO

Sampling Date: 02/21/2024
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BH 24 - 21 2' (H240888-06)

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/26/2024	ND	2.14	107	2.00	2.70		
Toluene*	<0.050	0.050	02/26/2024	ND	2.12	106	2.00	2.90		
Ethylbenzene*	<0.050	0.050	02/26/2024	ND	2.07	103	2.00	3.32		
Total Xylenes*	<0.150	0.150	02/26/2024	ND	6.07	101	6.00	3.10		
Total BTEX	<0.300	0.300	02/26/2024	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.7 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	02/27/2024	ND	464	116	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/26/2024	ND	208	104	200	2.24	
DRO >C10-C28*	<10.0	10.0	02/26/2024	ND	203	102	200	0.642	
EXT DRO >C28-C36	<10.0	10.0	02/26/2024	ND					

Surrogate: 1-Chlorooctane 68.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 61.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Vertex Resource Services (Direct Bill to XTO Energy, Inc.)

BILL TO

ANALYSIS REQUEST

Project Manager: Chance Dixon
Address: 3101 Boyd Drive
City: Carlsbad State: NM Zip:
Phone #: 575.725.5001 Fax #:
Project #: 23E-04616 Project Owner: Garrett Green
Project Name: JRU DI 1A CTB
Project Location:
Sampler Name: L. Pullman
P.O. #:
Company: XTO Energy, Inc.
Attn: Garrett Green
Address: 3104 E. Greene St
City: Carlsbad
State: NM Zip: 88220
Phone #: 575-200-0729 Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX						PRESERV.	SAMPLING	BTEX	TPH:8015D(G)	C																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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PLEASE NOTE: Sampling and Analysis: Cardinal's liability and custody terminates when the sample is received by the client. All claims, including those for negligence and any other cause of action, shall be deemed waived unless in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of data or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: *[Signature]* Date: 2-22-24 Time: 07:00 Received By: *[Signature]* Date: 2-22-24 Time: 07:00
Relinquished By: *[Signature]* Date: 2-22-24 Time: 07:00 Received By: *[Signature]* Date: 2-22-24 Time: 07:00
Delivered By: (Circle One) Sampler - UPS - Bus - Other: Observed Temp. C: 33 Corrected Temp. C: 33
Sample Condition: Cool Intact ☒ Yes ☐ No
CHECKED BY: *[Signature]* (Initials): *[Signature]*
Thermometer Time: Standard ☒ Observed Temp. C: *[Signature]*
Thermometer ID: *[Signature]* Correction Factor: *[Signature]*
Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
Chance Dixon (CDixon@vertex.ca), Garrett Green (garrett.green@exxonmobil.com)
REMARKS: Direct Bill to XTO Energy, Inc., Cost Center #: 1082151001, Incident #: nAPP2331041287
CC: Chance Dixon (CDixon@vertex.ca) for Final Report.

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QUESTIONS

Action 338493

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:
	5380
	Action Number:
	338493
Action Type:	
[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2331041267
Incident Name	NAPP2331041267 JAMES RANCH UNIT DI 1A TANK BATTERY @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Plan Received

Location of Release Source	
Please answer all the questions in this group.	
Site Name	JAMES RANCH UNIT DI 1A TANK BATTERY
Date Release Discovered	10/26/2023
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
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	Not answered.
Produced Water Released (bbls) Details	Cause: Corrosion Other (Specify) Produced Water Released: 9 BBL Recovered: 7 BBL Lost: 2 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
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)	Internal corrosion caused a 8" CS main PW line to release fluids to pad. A vac truck recovered all free fluids. A third-party contractor has been retained for remediation purposes.

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QUESTIONS, Page 2

Action 338493

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	338493
	Action Type:	[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	No
Reasons why this would be considered a submission for a notification of a major release	<i>Unavailable.</i>
<i>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.</i>	

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	<i>Not answered.</i>

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: Alan Romero Title: Regulatory Analyst Email: alan.romero1@exxonmobil.com Date: 04/29/2024
--	--

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QUESTIONS, Page 3

Action 338493

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	338493
	Action Type:	[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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	NM OSE iWaters Database Search
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 500 and 1000 (ft.)
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	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between ½ and 1 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Between ½ and 1 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Zero feet, overlying, or within area
Categorize the risk of this well / site being in a karst geology	High
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)	12700
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	1250
GRO+DRO	(EPA SW-846 Method 8015M)	1250
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	03/08/2024
On what date will (or did) the final sampling or liner inspection occur	04/24/2024
On what date will (or was) the remediation complete(d)	04/24/2024
What is the estimated surface area (in square feet) that will be reclaimed	4200
What is the estimated volume (in cubic yards) that will be reclaimed	120
What is the estimated surface area (in square feet) that will be remediated	4200
What is the estimated volume (in cubic yards) that will be remediated	120

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, Page 4

Action 338493

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	338493
	Action Type:	[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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: Alan Romero Title: Regulatory Analyst Email: alan.romero1@exxonmobil.com Date: 04/29/2024
--	--

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, Page 5

Action 338493

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	338493
	Action Type:	
	[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)	

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, Page 6

Action 338493

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID:	5380
	Action Number:	338493
	Action Type:	[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	340405
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	05/08/2024
What was the (estimated) number of samples that were to be gathered	3
What was the sampling surface area in square feet	600

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	No
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CONDITIONS

Action 338493

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 338493
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
scwells	Remediation plan approved with conditions. A discrepancy exists on pg. 1 of report where it states the closure criteria for the site is >100 feet Table 1 standards, whereas in Table 2, you say depth to groundwater <50 feet bgs. Pursuant to 19.15.29.12C(4) NMAC, "If a release occurs within the following areas, the responsible party must treat the release as if it occurred less than 50 feet to ground water in Table I of 19.15.29.12 NMAC." This release is within an unstable area therefore the most stringent Table I standards apply for remediation. Ensure vertical delineation is achieved for samples BH24-04, 06, 09, 11, 12 and 13. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. All sidewall samples should be taken from the sidewall of the excavation. Please make sure that the edge of the release extent is accurately defined. Remediation closure report due to OCD by 8/8/2024.	5/10/2024