S	Spill Volume(Bbls) Calculator									
Inputs in blue, Outputs in red										
Length(Ft)	Width(Ft)	Depth(In)								
<u>100.000</u>	<u>50.000</u>	<u>2.750</u>								
Cubic Feet	Impacted	<u>1145.833</u>								
Barr	els	<u>204.07</u>								
Soil T	уре	Clay								
Bbls Assum	ing 100%	<u>20.41</u>								
Satura	tion									
Saturation	Fluid pr	esent with shovel/backhoe								
Estimated Barı	els Released	20.50000								

### Instructions

1.Input spill measurements below. Length and width need to be input in feet and depth in inches.

- 2. Select a soil type from the drop down menu. 3. Select a saturation level from the drop down menu.
  - (For data gathering instructions see appendix tab)

Measurements								
Length (ft)	100							
Width (ft)	50							
Depth (in)	2.750							











Attn: New Mexico Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505

### RE: Amended Closure Report

Osage Boyd Yeso Unit E, Section 15, Township 19 South, Range 25 East 32.66276°, -104.47901° Eddy County, New Mexico Terracon Project No. KH227019

To Whom it May Concern:

Terracon Consultants, Inc. (Terracon) is pleased to submit our Release Investigation and Closure Report for the site referenced above. The scope of services was developed in accordance with the New Mexico Oil Conservation Division (NMOCD) regulations concerning clean-up actions required for releases of crude oil and produced water. The response actions were taken as the result of a crude oil and produced water release from a corrosion of a circulating line. The below sections detail Terracon's assessment and remedial actions in response to the noted release.

#### Action Items

#### **NMOCD Identified Deficiencies**

- 1) Samples did not meet Table I Closure requirements for GRO+DRO (1,000 mg/kg)
- 2) Western Horizontal of the release was insufficient.
- 3) Photographic log show impacts outside of berm.
- 4) Samples listed in table 1 are not listed on maps

#### **Terracon Corrections**

- 1) Areas that previously exhibited elevated TPH concentrations, were resampled and subsequent analytical results were below Table I Closure criteria.
- 2) Additional delineation samples were collected to verify the western extent of the inferred release area.
- 3) The area that was seen in photo 1 was utilized as our access point to perform the remediation within the bermed area. Following the conclusion of our remediation activities that area was scrapped and sampled to identify if any elevated constituents of concerned were present. The results from the N-Entrance sample were below NMOCD RALs.
- 4) All samples that are listed in Table 1 have been properly identified on the attached sampling maps.

Spur Energy Partners, LLC



Osage Boyd Yeso 32.66276°, -104.47901° NMOCD Reference # nAPP2230731453 & nAPP2102253370 Terracon Project # KH227019

#### **Anticipated Actions**

1) Approval by the NMOCD.

We at Terracon are deeply grateful for the opportunity to offer our environmental services to Spur Energy Partners, LLC. We are committed to providing the highest level of service and support. Should you need further information or have any queries, we encourage you to reach out to our office at your earliest convenience.

Sincerely,



**Travis Casey** Senior Staff Scientist Carlsbad

John Grams, P.G. (TX) Environmental Department Manager Lubbock

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#### Attachments:

#### Appendix A – Exhibits

- Exhibit 1 Topographic Map
- Exhibit 2 Site Location Map
- Exhibit 3 USGS Groundwater Location Map
- Exhibit 4 Designated Wetland Area Map
- Exhibit 5 Cave Karst Public UCP Map
- Exhibit 6.1 Confirmation Map (Floor Samples)
- Exhibit 6.2 Confirmation Map (Wall Samples)

#### Appendix B – Tables and Well Data

- Table 1 Soil Sample Analytical Results Release Assessment
- Table 2 Soil Sample Analytical Results Confirmation Floors
- Table 3 Soil Sample Analytical Results Confirmation Walls
- Table 1 Closure Criteria for Soils Impacted by a release
- Appendix C Photographic Log
- Appendix D Analytical Report and Chain of Custody
- Appendix E Terracon Standard of Care, Limitation, and Reliance

**ierracon** 

Spur Energy Partners, LLC Osage Boyd Yeso 32.66276°, -104.47901° NMOCD Reference # nAPP2230731453 & nAPP2102253370 Terracon Project # KH227019

## Section 1 – Incident Information

The following table provides detailed information regarding the January 22, 2021 and November 02, 2022, crude oil and produced water release at the Osage Boyd Yeso site in Eddy County, New Mexico:

Required Information	Site and Release information						
Responsible party	The pipeline is operated by Spur Energy Partners, LLC.						
Local contact	Contact:	P: (575)441-8619					
	Ms. Katherine Purvis	E: <u>katherine.purvis@spurenergy.com</u>					
NMOCD Notification	Office by Ms. Katherin November 02, 2022.	provided to the NMOCD District 2 Artesia ne Purvis on January 22, 2021, and APP2230731453 & nAPP2102253370					
Facility Description	Osage Boyd Yeso is in Eddy County, New Mexico. It is an area located within Unit E, Section 15, Township 19 South, Range 25 East, approximately 4.62 miles southwest of Atoka, New Mexico. The site is developed as an oil and gas production pad surrounded by native pastureland owned by a private individual.						
Time of incident	January 22, 2021, discov	vered during daily operations.					
	November 02, 2022, dis	covered during daily operations.					
Discharge event	-	ed leading to a discharge of crude oil onto te is depicted in Appendix A's Exhibits 1					
Type of discharge		oil and produced water release occurred ad. Soils at the site are affected at the ontainment.					
Quantity of spilled	Total Fluids: 187 bbls	Produced Water: 21 bbls					
material		Crude Oil: 166 bbls					
Remediated Excavation Area	Excavation Area: 6,000 sq. ft. / 1,000 cu. yds	Depth 0 – 6 ft. bgs					
Site characteristics	Relatively flat with drain	age following the natural ground surface.					
Immediate corrective actions	The leaking line was rep	aired preventing further release.					

Responsive Resourceful Reliable

Facilities | Environmental | Geotechnical | Materials 1

Spur Energy Partners, LLC

Osage Boyd Yeso 32.66276°, -104.47901° NMOCD Reference # nAPP2230731453 & nAPP2102253370 Terracon Project # KH227019



Section 2 – Genera	al Site Characteristics
Physical Characteristic	Site Ranking Characteristics
<b>Groundwater</b> NMOSE POD Location Map – (Exhibit 4 in Appendix A)	POD Number: (324004104285801)Depth to Groundwater: 95 ft. bgsDistance to Well: 0.43 miles to the northwestNMOCD approved well (see Appendix B)Last Date Meter Reading: January 5, 2012Groundwater Quality: Groundwater at the site is predominately used for livestock production.
Surface Water NM Wetland Map – (Exhibit 5 in Appendix A)	Brantley Lake, approximately 7.47 miles to the southeast.
100-Year Flood Plain	This site is located outside of the 100-year flood plain of the Pecos River.
Soil Characteristics	Soils at the site are mapped as Reagan-Upton fine association series soils, 0 to 9 percent slopes, well-drained; few fine roots; fine tubular pores; clear smooth boundary. The formation is categorized with a negligible runoff classification.
Karst Characterization Cave Karst Public UCP Map – (Exhibit 6 in Appendix A)	Terracon evaluated data from the NMOCD Public FTP Site, Karst map designations in reference to the site location. The site appears to be within a mid-level Karst risk area. Based on on-site observations within the extent of the release margins the potential for Karst formations in this specific area are of low potential. Restrictive features were not encountered from surface to 48 inches below grade surface (bgs) within the release margins. The full extent of release quantities and excavation activities did not extend greater than 48 inches bgs.

## Section 3 – Regulatory Framework and Response Action Levels

Oil and gas exploration and production facilities in New Mexico are generally regulated by the New Mexico Oil Conservation Division (NMOCD). The NMOCD has issued the *Closure Criteria* for Soils Impacted by a Release, June 21, 2018, and Restoration, Reclamation, and Revegetation (19.15.29.13) NMAC – D (Reclamation of areas no longer in use) as guidance

Spur Energy Partners, LLC Osage Boyd Yeso 32.66276°, -104.47901° NMOCD Reference # nAPP2230731453 & nAPP2102253370 Terracon Project # KH227019



documents for the remediation and reclamation of sites impacted by releases from oil and gas exploration and production activities. Sections detailed below present sections of the guidance document that are relevant to the release.

#### Section 3.1 – Reclamation Levels (Surface to 4 ft. bgs on pad)

The below Reclamation Limits for chlorides, TPH (GRO+DRO+MRO), BTEX (includes benzene, toluene, ethylbenzene, and xylenes), and benzene are defined within New Mexico Administration Code (NMAC) *Restoration, Reclamation, and Re-vegetation* (19.15.29.13) *New Mexico Administration Code (NMAC) – D (Reclamation of areas no longer in use)* for soils extending to 4 ft. bgs.:

Constituent	Remediation Limits
Chloride	10,000 mg/kg
ТРН	2,500 mg/kg
(GRO+DRO+MRO)	
(GRO+DRO)	1,000 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

#### Section 3.2 – Remediation Levels (> 4 ft. bgs on pad)

Based on the site-specific characteristics, the applicable NMOCD remediation levels for Total BTEX, chloride, and TPH within soils, exclusive of the Reclamation Zone (surface to 4 ft. bgs), are as follows:

Constituent	Remediation Limit
Chloride	10,000 mg/kg
TPH (GRO+DRO+MRO)	2,500 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

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Spur Energy Partners, LLC Osage Boyd Yeso 32.66276°, -104.47901° NMOCD Reference # nAPP2230731453 & nAPP2102253370 Terracon Project # KH227019

## **Section 4 – Remediation Activities**

From November 09, through 11, 2022, Terracon conducted an initial release investigation and collected ten soil samples to delineate the extent of the release. The soil samples collected by Terracon were placed in laboratory-provided sample containers, preserved with ice, and transported under chain of custody to Eurofins Carlsbad located in Carlsbad, New Mexico. During excavation activities, an additional 39 confirmation samples were collected from November 10, 2022, through March 15, 2023. On February 08, 2024, mobilized to the site to collect further delineation samples. On February 08, 2024, mobilized to the site to collect release assessment sample W-1.2 and confirmation samples. Samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (collectively known as BTEX), total petroleum hydrocarbons (TPH), and chlorides. In total, 33 samples were collected from within the release margins.

## Section 5 – Remediation Confirmation Assessment

A total of ten soil samples (N, E, S, W, W01.2, BH02 3', BH02 4', BH01 4', BH01 5', and BH03 3') were collected from throughout and surrounding the release extent. Samples were analyzed for the presence of BTEX, chloride, and/or TPH. One of the nine samples exhibited concentrations of BTEX or TPH constituents above applicable laboratory sample detection limits (SDLs). Total TPH was detected in soil sample S (surface to 0.5 ft bgs) at 77.1 mg/kg, as summarized in Table 1.

Each of the ten samples collected were analyzed for the presence of chloride. The detected chloride concentrations ranged from 58.3 mg/kg in soil sample S (surface to 0.5 ft bgs) to 3,340 mg/kg in soil sample W (surface to 0.5 ft bgs), as summarized in Table 1.

## **Section 6 – Confirmation Assessment Data Evaluation**

A total of 33 soil samples were collected throughout the excavation extent. Samples were analyzed for BTEX, Benzene, chloride and/or TPH presence. None of the 33 confirmation samples exhibited Benzene concentrations above the NMOCD RALs of 10 mg/kg, as summarized in Table 1.

One of the 33 confirmation samples exhibited a concentration of BTEX above the NMOCD RAL of 50 mg/kg, SE-SW 01 (surface to 2 ft bgs) had a concentration of 53.9 mg/kg, subsequent remedial efforts resulted in a final confirmation sample listed as S-SW 01 that was below the NMOCD RALs for BTEX.

Eight of the 33 confirmation samples did exhibit concentrations of TPH above the NMOCD

Spur Energy Partners, LLC Osage Boyd Yeso 32.66276°, -104.47901° NMOCD Reference # nAPP2230731453 & nAPP2102253370 Terracon Project # KH227019



RALs. Concentrations ranged from 2,812 mg/kg in soil sample EM-FS 02 (2 ft bgs) to 8,592 mg/kg in soil sample SE-FS 01 (2 ft bgs). Following additional remediation efforts at those eight locations, the final confirmation samples did not exhibit concentrations of TPH above NMOCD RALs of 2,500 mg/kg, or a total of combined DRO and GRO of 1,000 mg/kg as summarized in Table 1.

Each of the 33 samples collected where analyzed for the presence of chloride. The detected chloride concentrations ranged from 34 mg/kg in soil sample W-FS 02 (2 ft bgs) to 9,900 in soil sample EN-SW 02 (surface to 2 ft bgs). Confirmation samples were below the NMOCD RALs of 10,000 mg/kg for chloride, as summarized in Table 1.

### **Section 7 – Closure Report**

Based on the review of the above release investigation analytical results, the presence of petroleum hydrocarbon constituents (BTEX/TPH) that was detected at concentrations above applicable NMOCD Reclamation and/or Remediation Action Limits was remediated as shown in the final confirmation samples.

Of the 33 soil samples analyzed, none of the soil samples analyzed for chlorides exceeded the NMOCD Remediation Action Limit of 10,000 mg/kg and the excavation confirmation samples did not exhibit chloride concentrations above an actionable limit.

This closure request is being submitted under Spur Energy Partners OGRID number (328947). Spur Energy Partners respectfully requests the closure of nAPP2230731453 & nAPP2102253370.



**APPENDIX A – EXHIBITS** 





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KH227019
Date:
Jun 21 2024
Drawn By:
JWL
Reviewed By:
TLC

Released to Imaging: 8/2/2024 11:28:39 AM



4526 W Pierce St Carlsbad, NM

terracon.com

PH. 806-300-0140

Osage Boyd Yeso 32.6625023° -104.4786280°

Eddy County, New Mexico





		Site Location	Project No.: KH227019		Designated Wetland Map	
V 🔺		Freshwater Emergent Wetland Freshwater Pond	Date: Jun 21 2024	<b>ierracon</b>	Osage Boyd Yeso	
c.	ansbad.	Riverine	Drawn By: JWL	4526 W Pierce St Carlsbad, NM	32.6625023° -104.4786280° Eddy County, New Mexico	
eleased	to Imaging	: 8/2/2024 11:28:39 AM	Reviewed By: TLC	PH. 806-300-0140 terracon.com		

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APPENDIX B – TABLES AND WELL DATA

Table 1 Soil Analytical Results Summary - Release Assessment														
	Project Code: KH227019													
NMOCD Reference No. nAPP2230731453 & nAPP2102253370														
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Type	Sample Status	Chloride (mg/Kg)	Benzene (mg/Kg)	Total BTEX <sup>1</sup> (mg/Kg)	Total TPH <sup>2</sup> (mg/Kg)	Gasoline Range Organics (C6-C10) (mg/Kg)	Diesel Range Organics (Over C10-C28) (mg/Kg)	Oil Range Organics (Over C28-C36) (mg/Kg)			
					EPA Method 300	EPA Method 8021B	EPA Method 8021B	EPA Method 8015M	EPA Method 8015M	EPA Method 8015M	EPA Method 8015M			
			-	-	Rel	ease Assess	ment							
N	11/9/2022	0'	0.5'	Grab	524	< 0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0			
E	11/9/2022	0'	0.5'	Grab	496	< 0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8			
S	11/9/2022	0'	0.5'	Grab	58	< 0.00199	<0.00398	77	77	<49.9	<49.9			
W	11/9/2022	0'	0.5'	Grab	3,340	< 0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0			
W - 1.2	2/9/2024	0'	0.5'	Grab	160	< 0.050	<0.300	<10.0	<10.0	<10.0	<10.0			
BH01	11/10/2022	4'	4.5'	Grab	329	0.00243	0.041	<49.9	<49.9	<49.9	<49.9			
BH01	11/10/2022	5'	5.5'	Grab	326	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0			
BH02	11/10/2022	3'	3.5'	Grab	207	<0.0502	0.378	<50.0	<50.0	<50.0	<50.0			
BH02	11/10/2022	4'	4.5'	Grab	850	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8			
BH03	11/10/2022	3'	3.5'	Grab	2,030	< 0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9			
NMOCD	Reclamation S	tandards <sup>3</sup> (Surfa	ce to 4 ft b	gs)	600	10	50	100		N/A				
NMOCD Reme	diation Standar	ds <sup>4</sup> (Greater tha	n Depths of	f 4 ft bgs)	10,000	10	50	2,500	1,0	00	N/A			
1. BTEX = Benze	ne, toluene, ethy	/lbenzene, and tot	al xylenes											

TPH = Total petroleum hydrocarbons
 TPH = Total petroleum hydrocarbons
 New Mexico Administration Code (NMAC) Restoration, Reclamation and Re-vegetation (19.15.29.13), NMAC-D (Reclamation of Areas No Longer in Use) for Soils Extending to 4 ft. bgs
 New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards (19.15.29.12) NMAC-N, 8/14/2018

< = Constituent was not detected above the indicated laboratory sample detection limit (SDL).

NA = Not Analyzed

Bold denotes concentrations above applicable laboratory SDLs. Bold and Highlighted denote concentrations that exceed the NMOCD Reclamation and/or Remediation and Delineation Standards.

In-situ = Sample is representative of material which remains in-place at the site.

Excavated = Sample is representative of materials which was excavated and disposed of at a permitted disposal facility.

	Table 2 Soil Analytical Results Summary - Confirmation Floors Project Code: KH227019 NMOCD Reference No. nAPP2230731453 & nAPP2102253370												
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Type	Sample Status	Chloride (mg/Kg)	Benzene (mg/Kg)	Total BTEX <sup>1</sup> (mg/Kg)	Total TPH <sup>2</sup> (mg/Kg)	Gasoline Range Organics (C6-C10) (mg/Kg)	Diesel Range Organics (Over C10-C28) (mg/Kg)	Oil Range Organics (Over C28-C36) (mg/Kg)		
					EPA Method 300	EPA Method 8021B	EPA Method 8021B	EPA Method 8015M	EPA Method 8015M	EPA Method 8015M	EPA Method 8015M		
	4				Co	nfirmation T	able	Į.	Į.	l.			
E-FS 01 11/10/2022 2' Composite In-situ 511 <0.00199 <0.00398 <50.0 <50.0 <50.0 <50.0 <50.0 <50.0													
SW-FS 01	11/10/2022	2'	Composite	Excavated	288	< 0.00199	5.18	4,001.0	3,420.0	145.0	436.0		
SW-FS 1.4	12/6/2022	4'	Composite	In-situ	875	<0.00200	< 0.00401	<49.8	<49.8	<49.8	<49.8		
SE-FS 01	11/16/2022	2'	Composite	Excavated	791	<0.199	19.2	8,592.0	7,140.0	569.0	883.0		
SE-FS 1.4	12/6/2022	4'	Composite	In-situ	2,940	< 0.00199	0.0161	<49.9	<49.9	<49.9	<49.9		
E-FS 1.1	11/11/2022	2'	Composite	In-situ	1,440	< 0.0401	1.29	943.8	546.0	90.8	307.0		
E-FS 3.1	11/11/2022	2'	Composite	In-situ	1,850	< 0.0399	<0.0798	683.0	431.0	62.5	252.0		
E-FS 4.1	11/11/2022	2'	Composite	Excavated	3,080	0.0444	7.4	3,253.0	1,900.0	303.0	1,050.0		
E-FS 4.2	5/31/2024	4.5'	Composite	In-situ	16	< 0.050	< 0.300	<10.0	<10.0	<10.0	<10.0		
ES-FS 01	11/11/2022	2'	Composite	In-situ	2,030	< 0.00201	< 0.00402	<49.9	<49.9	<49.9	<49.9		
ES-FS 2.2	12/6/2022	4'	Composite	In-situ	696	< 0.00199	<0.00398	62.3	62.3	<49.9	<49.9		
EM-FS 1.2	12/6/2022	4'	Composite	In-situ	1,150	0.00237	0.316	461.0	298.0	<50.0	163.0		
EM-FS 02	11/16/2022	2'	Composite	Excavated	1,110	<0.201	12.2	2,812.0	2,240.0	270.0	302.0		
EM-FS 02.2	4/25/2024	4'	Composite	In-situ	192	< 0.050	<0.300	<10.0	<10.0	<10.0	<10.0		
EN-FS 01	11/16/2022	3'	Composite	Excavated	1,210	<0.200	6.8	3,547.0	3,000.0	166.0	381.0		
EN-FS 01	11/30/2022	3'	Composite	In-situ	237	< 0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9		
EN-FS 02	11/30/2022	3'	Composite	In-situ	463	< 0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8		
N Entrance	12/7/2022	3'	Composite	In-situ	334	0.00625	0.0615	<50.0	<50.0	<50.0	<50.0		
NE-FS 1.3	12/7/2022	4'	Composite	In-situ	49	< 0.0019	<0.00398	<50.0	<50.0	<50.0	<50.0		
NW-FS 01	12/7/2022	4'	Composite	In-situ	493	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9		
WN-FS 01	11/16/2022	2'	Composite	Excavated	339	< 0.199	1.25	1,500.0	1,230.0	102.0	168.0		
WN-FS 01	4/25/2024	4'	Composite	In-situ	80	< 0.050	<0.300	<10.0	<10.0	<10.0	<10.0		
WN-FS 02	11/16/2022	2'	Composite	In-situ	523	<0.0398	<0.0795	998.0	861.0	<49.9	137.0		
WN-FS 02	3/15/2022	2'	Composite	In-situ	75	< 0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0		
W-FS 01	11/30/2022	2'	Composite	In-situ	291	<0.00200	<0.00401	69.1	69.1	<49.8	<49.8		
W-FS 02	11/30/2022	2'	Composite	Excavated	34	0.245	0.71	1,267.0	1,150.0	<50.0	117.0		
W-FS 02.2	4/25/2024	4'	Composite		96	< 0.050	<0.300	<10.0	<10.0	<10.0	<10.0		
C-FS 1.3	12/7/2022	3'	Composite		535	0.227	27.7	85.3	85.3	<50.0	<50.0		
C-FS 2.7	12/7/2022	6'	Composite	In-situ	288	0.0072	0.0127	<49.8	<49.8	<49.8	<49.8		
C-FS 3.3	12/7/2022	3'	Composite	In-situ	34	<0.00198	<0.00398	<49.8	<49.8	<49.8	<49.8		
NMOCD Rem	ediation Standa	rds <sup>4</sup> (Greater tha	n Depths o	f 4 ft bgs)	10,000	10	50	2,500	1,0	00	N/A		

I. BTEX = Benzene, toluene, ethylbenzene, and total xylenes
 Total petroleum hydrocarbons
 New Mexico Administration Code (NMAC) Restoration, Reclamation and Re-vegetation (19.15.29.13), NMAC-D (Reclamation of Areas No Longer in Use) for Soils Extending to 4 ft. bgs
 New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards (19.15.29.12) NMAC-N, 8/14/2018

< = Constituent was not detected above the indicated laboratory sample detection limit (SDL).</li>
 NA = Not Analyzed
 Bold denotes concentrations above applicable laboratory SDLs.
 Bold and Highlighted denote concentrations that exceed the NMOCD Reclamation and/or Remediation and Delineation Standards.

In-situ = Sample is representative of material which remains in-place at the site. Excavated = Sample is representative of materials which was excavated and disposed of at a permitted disposal facility.

Receive	d by OCD:	7/11/2024	8:37:02 AN	1								Page 24 o
					-	Project Code	mary - Confi : KH227019	rmation Walls	370			
Sample ID	Sample Date	Sample Start Depth	Sample End Depth	Sample Type	Sample Status	Chloride (mg/Kg)	Benzene (mg/Kg)	Total BTEX <sup>1</sup> (mg/Kg)	Total TPH <sup>2</sup> (mg/Kg)	Gasoline Range Organics (C6-C10) (mg/Kg)	Diesel Range Organics (Over C10-C28) (mg/Kg)	Oil Range Organics (Over C28-C36) (mg/Kg)
		(ft bgs)	(ft bgs)	.,,	5.0.00	EPA Method 300	EPA Method 8021B	EPA Method 8021B	EPA Method 8015M	EPA Method 8015M	EPA Method 8015M	EPA Method 8015M
						Confirmation V	Wall Sample:	5			•	
S-SW 01	11/16/2022	0'	2'	Composite	Excavated	159	<0.198	3.91	1,693.0	1,400.0	127.0	166.0
S-SW 01.2	2/8/2024	0'	2'	Composite	In-situ	592	< 0.050	< 0.300	<10.0	<10.0	<10.0	<10.0
S-SW 02	11/16/2022	0'	2'	Composite	Excavated	182	< 0.201	2.98	4,633.0	3,900.0	<50.0	733.0
S-SW 02	4/25/2024	0'	4'	Composite	In-situ	208	< 0.050	<0.300	<10.0			
SE-SW 01	11/15/2022	0'	2'	Composite	Excavated	345	< 0.996	53.9	8,292.0	7,010.0	513.0	769.0
SE-SW 01.2	5/7/2024	0'	4'	Composite	In-situ	16	< 0.050	<0.300	<10.0	<10.0	<10.0	<10.0
ES-SW 01	11/15/2022	0'	2'	Composite	In-situ	343	0.139	2.24	76.5	76.5	<49.9	<49.9
EM-SW 01	11/16/2022	0'	2'	Composite	Excavated	932	<0.200	5.08	1,616.0	1,270.0	172.0	174.0
EM-SW 01.2	4/25/2024	0'	4'	Composite	In-situ	320	< 0.050	<0.300	<10.0	<10.0	<10.0	<10.0
EN-SW 01	11/16/2022	0'	2'	Composite	In-situ	1,260	<0.0398	<0.0795	230.0	230.0	<49.9	<49.9
EN-SW 02	11/16/2022	0'	2'	Composite	Excavated	9,900	<0.199	6.59	3,825.0	3,150.0	192.0	483.0
EN-SW 02.2	4/25/2024	0'	4'	Composite	In-situ	336	< 0.050	<0.300	<10.0	<10.0	<10.0	<10.0
N-SW 01	11/16/2022	0'	2'	Composite	In-situ	1,640	< 0.0398	0.472	375.0	375.0	<49.9	<49.9
WN-SW 01	11/16/2022	0'	2'	Composite	In-situ	1,410	< 0.0402	<0.0803	857.0	747.0	<49.8	110.0
WN-SW 01	2/8/2024	0'	4'	Composite	In-situ	112	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0
WN-SW 02	11/16/2022	0'	2'	Composite	Excavated	2,860	<0.00202	0.00796	2,617.0	2,130.0	<50.0	487.0
WN-SW 02	4/25/2024	0'	4'	Composite	In-situ	640	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0
W-SW 01	11/30/2022	0'	2'	Composite	In-situ	2,950	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9
NMO	CD Romodiation	Standarde <sup>4</sup> (Gre	ater than Denth	s of 4 ft have	-)	10 000	10	50	2 500	1.0	000	N/A

11/30/2022 0' Composite MMOCD Remediation Standards<sup>4</sup> (Greater than Depths of 4 ft bgs)
 I. BTEX = Benzene, toluene, ethylbenzene, and total xylenes
 a TPU = Trainenet the standards and total xylenes

2. TPH = Total petroleum hydrocarbons 3. New Mexico Administration Code (NMAC) Restoration, Reclamation and Re-vegetation (19.15.29.13), NMAC-D (Reclamation of Areas No Longer in Use) for Soils Extending to 4 ft. bgs 4. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards (19.15.29.12) NMAC-N, 8/14/2018

2,950

10

50

< = Constituent was not detected above the indicated laboratory sample detection limit (SDL).

NA = Not Analyzed

Bold denotes concentrations above applicable laboratory SDLs. Bold and Highlighted denote concentrations that exceed the NMOCD Reclamation and/or Remediation and Delineation Standards.

In-situ = Sample is representative of material which remains in-place at the site. Excavated = Sample is representative of materials which was excavated and disposed of at a permitted disposal facility.

N/A

			ble 1 Is Impacted by a Release		
Excavation Depth	Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/L TDS		Method	Limit	Units
4	≤ 50 feet	Chloride	EPA 300 or SM4500 C1 B	600	mg/kg
		TPH (GRO + DRO + MRO)	EPA SW-846 Method 8015	100	mg/kg
		BTEX	EPA SW-846 Method 8021B 8260B	50	mg/kg
		Benzene	EPA SW-846 Method 8021B 8260B	10	mg/kg
> 4	51 - 100 feet	Chloride	EPA 300 or SM4500 C1 B	10,000	mg/kg
		TPH (GRO + DRO + MRO)	EPA SW-846 Method 8015	2,500	mg/kg
		(GRO + DRO)	EPA SW-846 Method 8015	1,000	mg/kg
		BTEX	EPA SW-846 Method 8021B 8260B	50	mg/kg
		Benzene	EPA SW-846 Method 8021B 8260B	10	mg/kg
>4	> 100 feet	Chloride	EPA 300 or SM4500 C1 B	20,000	mg/kg
		TPH (GRO + DRO + MRO)	EPA SW-846 Method 8015	2,500	mg/kg
		(GRO + DRO)	EPA SW-846 Method 8015	1,000	mg/kg
		BTEX	EPA SW-846 Method 8021B 8260B	50	mg/kg
		Benzene	EPA SW-846 Method 8021B 8260B	10	mg/kg



USGS Home Contact USGS Search USGS

## National Water Information System: Web Interface

IICCC	Wator	Resources
0303	vvalei	Resources

Data Category:		Geographic Area:		
Groundwater	~	United States	⋎	GO

## Click to hideNews Bulletins

• Explore the *NEW* <u>USGS National Water Dashboard</u> interactive map to access realtime water data from over 13,500 stations nationwide.

Groundwater levels for the Nation

Important: <u>Next Generation Monitoring Location Page</u>

## Search Results -- 1 sites found

site\_no list =

• 324004104285801

## Minimum number of levels = 1

Save file of selected sites to local disk for future upload

## USGS 324004104285801 19S.25E.16.22332

Available data for this site Groundwater: Field measurements V GO

Eddy County, New Mexico Hydrologic Unit Code 13060011 Latitude 32°40'04", Longitude 104°28'58" NAD27 Land-surface elevation 3,487 feet above NAVD88 This well is completed in the Roswell Basin aquifer system (S400RSWLBS) national aquifer. This well is completed in the Alluvium. Bolson Deposits and Other Surface Deposits

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

## **Output formats**

Tab-separated data

<u>Graph of data</u>

Reselect period



Breaks in the plot represent a gap of at least one year between field measurements. <u>Download a presentation-quality graph</u>

Questions or Comments Help Data Tips Explanation of terms Subscribe for system changes

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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/nwis/gwlevels? USA.gov

Page Contact Information: <u>USGS Water Data Support Team</u> Page Last Modified: 2024-06-19 16:17:10 EDT 0.52 0.48 nadww01

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**APPENDIX C – PHOTOGRAPHIC LOG** 





PHOTO 1: View of the area prior to excavation toward the north entrance



PHOTO 2: View of area prior to excavation toward the East.





PHOTO 3: View of the area prior to excavation toward the Northwest.



**PHOTO 4:** View of the center area prior to excavation.







**PHOTO 6:** View of the Northern sample area after excavation.











PHOTO 9: View of the Southern sample area after excavation.



PHOTO 10: View of the Western sample area after excavation.

**j**ierracon

Osage Boyd Yeso Battery 
Eddy County, New Mexico
June 20, 2024 
Terracon Project No. KH227019



**PHOTO 11:** View of the center sample area after excavation.



**PHOTO 12:** View of potholed Center area.





**PHOTO 13:** View of the North entrance sample area after excavation.

# **APPENDIX D – ANALYTICAL REPORT AND CHAIN OF CUSTODY**


**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Joseph Guesnier Terracon Consulting Eng & Scientists 5847 50th St Lubbock Texas 79424 Generated 11/21/2022 6:29:54 PM

# JOB DESCRIPTION

Osage Boyd Yasa SDG NUMBER KH227019

### **JOB NUMBER**

890-3422-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220



SDG: KH227019

Laboratory Job ID: 890-3422-1

# **Table of Contents**

Cover Page	1
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Eurofins Carlsbad 11/21/2022

### **Definitions/Glossary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yasa Job ID: 890-3422-1 SDG: KH227019

Filipect/Site. Os	age buyu rasa 500. Ki 227019	
Qualifiers		3
GC VOA		
Qualifier	Qualifier Description	
U	Indicates the analyte was analyzed for but not detected.	
GC Semi VOA		5
Qualifier	Qualifier Description	
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.	
		8
Glossary		
Abbreviation	These commonly used abbreviations may or may not be present in this report.	9
¤	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)	12
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	13
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 POS	Negative / Absent	
PQL	Positive / Present	
PQL PRES	Practical Quantitation Limit Presumptive	
	Quality Control	
QC RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
	Reporting Limit of Requested Limit (Radiochemistry)	

Toxicity Equivalent Factor (Dioxin)

Too Numerous To Count

Toxicity Equivalent Quotient (Dioxin)

RPD

TEF

TEQ

TNTC

Relative Percent Difference, a measure of the relative difference between two points

4

5

### Job ID: 890-3422-1

### Laboratory: Eurofins Carlsbad

#### Narrative

Job Narrative 890-3422-1

#### Receipt

The samples were received on 11/9/2022 2:00 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 5.6°C

#### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: N (890-3422-1), E (890-3422-2), S (890-3422-3) and W (890-3422-4).

### GC VOA

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

#### GC Semi VOA

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

#### HPLC/IC

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

### **Client Sample Results**

Page 41 of 268

Job ID: 890-3422-1 SDG: KH227019

### **Client Sample ID: N**

Date Collected: 11/09/22 12:30 Date Received: 11/09/22 14:00

Project/Site: Osage Boyd Yasa

Lab Sample ID: 890-3422-1

Matrix: Solid

5

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00201	U	0.00201		mg/Kg		11/14/22 14:45	11/19/22 18:51	
Toluene	<0.00201	U	0.00201		mg/Kg		11/14/22 14:45	11/19/22 18:51	
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/14/22 14:45	11/19/22 18:51	
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		11/14/22 14:45	11/19/22 18:51	
p-Xylene	<0.00201	U	0.00201		mg/Kg		11/14/22 14:45	11/19/22 18:51	
Xylenes, Total	<0.00402		0.00402		mg/Kg		11/14/22 14:45	11/19/22 18:51	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	97		70 - 130				11/14/22 14:45	11/19/22 18:51	
1,4-Difluorobenzene (Surr)	93		70 - 130				11/14/22 14:45	11/19/22 18:51	
Method: TAL SOP Total BTEX - To	otal BTEX Calo	ulation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00402	U	0.00402		mg/Kg			11/21/22 14:54	
Method: SW846 8015 NM - Diesel	Range Organ	ics (DRO) (	GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	<50.0	U	50.0		mg/Kg			11/14/22 13:38	
Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)	(GC)						
Analyte	• •	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/11/22 09:33	11/13/22 11:53	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/11/22 09:33	11/13/22 11:53	
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/11/22 09:33	11/13/22 11:53	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	89		70 - 130				11/11/22 09:33	11/13/22 11:53	
o-Terphenyl	95		70 - 130				11/11/22 09:33	11/13/22 11:53	
Method: MCAWW 300.0 - Anions,	Ion Chromato	graphy - S	oluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	524		24.9		mg/Kg	_		11/15/22 16:26	:
lient Sample ID: E							Lab San	nple ID: 890-	3422-2
ate Collected: 11/09/22 12:32								Matri	x: Soli
ate Received: 11/09/22 14:00									
ample Depth: 0.5'									
Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC	)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00201	U	0.00201		mg/Kg		11/14/22 14:45	11/19/22 19:12	

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		11/14/22 14:45	11/19/22 19:12	1
Toluene	<0.00201	U	0.00201	mg/Kg		11/14/22 14:45	11/19/22 19:12	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		11/14/22 14:45	11/19/22 19:12	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		11/14/22 14:45	11/19/22 19:12	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		11/14/22 14:45	11/19/22 19:12	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/14/22 14:45	11/19/22 19:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130			11/14/22 14:45	11/19/22 19:12	1

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Job ID: 890-3422-1 SDG: KH227019

Matrix: Solid

Lab Sample ID: 890-3422-2

Lab Sample ID: 890-3422-3

Matrix: Solid

### Client Sample ID: E

Date Collected: 11/09/22 12:32 Date Received: 11/09/22 14:00

Project/Site: Osage Boyd Yasa

Sample Depth: 0.5'

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

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	107		70 - 130				11/14/22 14:45	11/19/22 19:12	1
Method: TAL SOP Total BTEX - To	otal BTEX Calo	ulation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			11/21/22 14:54	1
Method: SW846 8015 NM - Diesel	Range Organ	ics (DRO) (	GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/14/22 13:38	1
Method: SW846 8015B NM - Diese	el Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.8	U	49.8		mg/Kg		11/11/22 09:33	11/13/22 12:56	1
(GRO)-C6-C10									
Diesel Range Organics (Over	<49.8	U	49.8		mg/Kg		11/11/22 09:33	11/13/22 12:56	1
C10-C28)									
Oll Range Organics (Over C28-C36)	<49.8		49.8		mg/Kg		11/11/22 09:33	11/13/22 12:56	

Surrogate	%Recovery	Qualifier Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	91	70 - 130	11/11/22 09:33	3 11/13/22 12:56	1
o-Terphenyl	99	70 - 130	11/11/22 09:33	3 11/13/22 12:56	1

#### Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac 4.95 11/15/22 16:33 Chloride 496 mg/Kg 1

### **Client Sample ID: S**

Date Collected: 11/09/22 12:34 Date Received: 11/09/22 14:00 Sample Depth: 0.5'

#### Method: SW846 8021B - Volatile Organic Compounds (GC) Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Benzene <0.00199 U 0.00199 mg/Kg 11/14/22 14:45 11/19/22 19:32 Toluene <0.00199 U 0.00199 11/14/22 14:45 11/19/22 19:32 mg/Kg 1 Ethylbenzene <0.00199 U 0.00199 mg/Kg 11/14/22 14:45 11/19/22 19:32 11/14/22 14:45 11/19/22 19:32 m-Xylene & p-Xylene <0.00398 U 0.00398 mg/Kg 1 o-Xylene <0.00199 U 0.00199 mg/Kg 11/14/22 14:45 11/19/22 19:32 1 Xylenes, Total <0.00398 U 0.00398 mg/Kg 11/14/22 14:45 11/19/22 19:32 1 %Recovery Qualifier Limits Dil Fac Surrogate Prepared Analvzed 70 - 130 4-Bromofluorobenzene (Surr) 121 11/14/22 14:45 11/19/22 19:32 1 1,4-Difluorobenzene (Surr) 103 70 - 130 11/14/22 14:45 11/19/22 19:32 1 Method: TAL SOP Total BTEX - Total BTEX Calculation Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Total BTEX <0.00398 Ū 0.00398 11/21/22 14:54 mg/Kg 1 Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC) Analyte

Analyte	Result 0	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	77.1		49.9		mg/Kg			11/14/22 13:38	1

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Job ID: 890-3422-1 SDG: KH227019

Lab Sample ID: 890-3422-4

Matrix: Solid

### Client Sample ID: S

Date Collected: 11/09/22 12:34 Date Received: 11/09/22 14:00

Project/Site: Osage Boyd Yasa

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		11/11/22 09:33	11/13/22 14:20
Diesel Range Organics (Over C10-C28)	77.1		49.9		mg/Kg		11/11/22 09:33	11/13/22 14:20
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/11/22 09:33	11/13/22 14:20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed
1-Chlorooctane	102		70 - 130				11/11/22 09:33	11/13/22 14:20
o-Terphenyl	109		70 - 130				11/11/22 09:33	11/13/22 14:20

### Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	58.3	4.96	mg/Kg			11/15/22 16:40	1

### **Client Sample ID: W**

### Date Collected: 11/09/22 12:36 Date Received: 11/09/22 14:00

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/14/22 14:45	11/19/22 19:53	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/14/22 14:45	11/19/22 19:53	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/14/22 14:45	11/19/22 19:53	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/14/22 14:45	11/19/22 19:53	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/14/22 14:45	11/19/22 19:53	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/14/22 14:45	11/19/22 19:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130				11/14/22 14:45	11/19/22 19:53	1
1,4-Difluorobenzene (Surr)	95		70 - 130				11/14/22 14:45	11/19/22 19:53	1
Method: TAL SOP Total BTEX - 1 Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte Total BTEX	<b>Result</b> <0.00398	Qualifier U	0.00398	MDL	Unit mg/Kg	<u> </u>	Prepared	Analyzed	Dil Fac
Analyte	Result <0.00398 Range Organ	Qualifier U	0.00398	MDL	mg/Kg	<u>D</u>	Prepared		Dil Fac
Analyte Total BTEX Method: SW846 8015 NM - Diese	Result <0.00398 Range Organ	Qualifier U ics (DRO) ( Qualifier	0.00398		mg/Kg			11/21/22 14:54	1
Analyte Total BTEX Method: SW846 8015 NM - Diese Analyte	el Range Organ Result Co.00398 Result Co.0	Qualifier U ics (DRO) ( Qualifier U	0.00398 GC) RL 50.0		mg/Kg Unit			11/21/22 14:54	1
Analyte Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH	el Range Organ Result Range Organ Contemporation Result Sel Range Orga	Qualifier U ics (DRO) ( Qualifier U	0.00398 GC) RL 50.0		mg/Kg Unit mg/Kg			11/21/22 14:54	1
Analyte Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics	el Range Organ Result Range Organ Contemporation Result Sel Range Orga	Qualifier U ics (DRO) ( Qualifier U nics (DRO) Qualifier	GC) <u>RL</u> 50.0 (GC)	MDL	mg/Kg Unit mg/Kg	<u>D</u>	Prepared	Analyzed           11/1/22           11/11/22	Dil Fac
Analyte Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Diese	el Range Organ Result <0.00398 el Range Organ <pre></pre>	Qualifier U ics (DRO) ( Qualifier U nics (DRO) Qualifier U	0.00398 GC) RL 50.0 (GC) RL	MDL	mg/Kg Unit mg/Kg Unit	<u>D</u>	Prepared	Analyzed           11/1/22         11:26           Analyzed         11/11/22	Dil Fac

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		Client	Sample R	esults	5					1
Client: Terracon Consulting Eng & S Project/Site: Osage Boyd Yasa	cientists							Job ID: 890 SDG: KH		2
Client Sample ID: W Date Collected: 11/09/22 12:36							Lab Sa	mple ID: 890- Matri	3422-4 ix: Solid	
Date Received: 11/09/22 14:00 Sample Depth: 0.5'										
Method: MCAWW 300.0 - Anions,	Ion Chromato	ography - Sol	uble							5
Analyte Chloride	Result 3340	Qualifier	<b>RL</b>	MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed	Dil Fac 5	6
					5 5					
										8
										9
										10
										13

Eurofins Carlsbad

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yasa

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

		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3422-1	N	97	93
890-3422-2	E	111	107
890-3422-3	S	121	103
890-3422-4	W	112	95
LCS 880-39525/1-A	Lab Control Sample	85	87
LCSD 880-39525/2-A	Lab Control Sample Dup	86	94
MB 880-39525/5-A	Method Blank	103	91

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

#### Matrix: Solid

		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3422-1	N	89	95
890-3422-1 MS	Ν	87	81
890-3422-1 MSD	Ν	78	72
890-3422-2	E	91	99
890-3422-3	S	102	109
890-3422-4	W	111	118
LCS 880-39026/2-A	Lab Control Sample	108	110
LCS 880-39298/2-A	Lab Control Sample	105	113
LCSD 880-39026/3-A	Lab Control Sample Dup	102	102
LCSD 880-39298/3-A	Lab Control Sample Dup	92	98
MB 880-39026/1-A	Method Blank	116	122
MB 880-39298/1-A	Method Blank	104	122

Surrogate Legend

1CO = 1-Chlorooctane OTPH = o-Terphenyl

Job ID: 890-3422-1

Prep Type: Total/NA

SDG: KH227019

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yasa

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

Lab Sample ID: MB 880-39525/5-A Matrix: Solid Analysis Batch: 39964							Client Sa	mple ID: Metho Prep Type: ⊺ Prep Batcl	Fotal/NA
	МВ	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/14/22 14:45	11/19/22 14:00	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/14/22 14:45	11/19/22 14:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/14/22 14:45	11/19/22 14:00	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/14/22 14:45	11/19/22 14:00	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/14/22 14:45	11/19/22 14:00	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/14/22 14:45	11/19/22 14:00	1
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130				11/14/22 14:45	11/19/22 14:00	1
1,4-Difluorobenzene (Surr)	91		70 - 130				11/14/22 14:45	11/19/22 14:00	1
 Lab Sample ID: LCS 880-39525/1-/	A					c	Client Sample I	D: Lab Control	Sample
Matrix: Solid								Prep Type: 1	Fotal/NA
Analysis Batch: 39964								Prep Batch	n: <b>39525</b>
-			Spike	LCS LCS	;			%Rec	

	Opine	200	200				/01100	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09188		mg/Kg		92	70 - 130	
Toluene	0.100	0.09514		mg/Kg		95	70 - 130	
Ethylbenzene	0.100	0.09248		mg/Kg		92	70 - 130	
m-Xylene & p-Xylene	0.200	0.1768		mg/Kg		88	70 - 130	
o-Xylene	0.100	0.09960		mg/Kg		100	70 - 130	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	85		70 - 130
1,4-Difluorobenzene (Surr)	87		70 - 130

### Lab Sample ID: LCSD 880-39525/2-A

### Matrix: Solid

Analysis Batch: 39964							Prep	Batch:	39525
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.09845		mg/Kg		98	70 - 130	7	35
Toluene	0.100	0.09905		mg/Kg		99	70 - 130	4	35
Ethylbenzene	0.100	0.09684		mg/Kg		97	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.1843		mg/Kg		92	70 - 130	4	35
o-Xylene	0.100	0.1036		mg/Kg		104	70 - 130	4	35

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	86		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yasa

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

Lab Sample ID: MB 880-39026 Matrix: Solid	/1-A	-			-							Client Sa	ample ID: M Prep Ty		d Blank otal/NA
Analysis Batch: 39159													Prep	Batch	: 39026
		MB	MB												
Analyte	Re	sult	Qualifier		RL		MDL	Unit		D	P	repared	Analyze	d	Dil Fac
Gasoline Range Organics	<	50.0	U		50.0			mg/K	9		11/0	8/22 16:10	11/10/22 0	9:11	1
(GRO)-C6-C10														~	
Diesel Range Organics (Over C10-C28)	<	50.0	U		50.0			mg/K	9		11/0	8/22 16:10	11/10/22 0	9:11	1
Oll Range Organics (Over C28-C36)	<	50.0	U		50.0			mg/K	g		11/0	8/22 16:10	11/10/22 0	9:11	1
		ΜВ	MB												
Surrogate	%Reco	very	Qualifier	Lin	nits						P	repared	Analyze	ed	Dil Fac
1-Chlorooctane		116		70	. 130							8/22 16:10	11/10/22 0		1
o-Terphenyl		122		70 -	130						11/0	8/22 16:10	11/10/22 0	9:11	1
Lab Sample ID: LCS 880-39020	5/2-A									С	lient	Sample	ID: Lab Co		
Matrix: Solid															otal/NA
Analysis Batch: 39159														Batch	: 39026
				Spike			LCS						%Rec		
Analyte				Added		Result	Qua	lifier	Unit		<u>D</u>	<u>%Rec</u>	Limits		
Gasoline Range Organics (GRO)-C6-C10				1000		998.3			mg/Kg			100	70 - 130		
Diesel Range Organics (Over				1000		968.7			mg/Kg			97	70 - 130		
C10-C28)															
	LCS	LCS	;												
Surrogate	%Recovery	Qua	lifier	Limits											
1-Chlorooctane	108			70 - 130	-										
o-Terphenyl	110			70 - 130											
_ _											_				
Lab Sample ID: LCSD 880-390	26/3-A								CI	ient	Sam	ple ID: L	ab Control	-	
Matrix: Solid															otal/NA
Analysis Batch: 39159				0		LCSD		-						Batch	: 39026
Amaluéa				Spike Added		Result		-	Unit		D	%Rec	%Rec Limits	RPD	RPD
Analyte Gasoline Range Organics				1000		903.6	Qua	inter	mg/Kg			90	70 - 130	10	Limit 20
(GRO)-C6-C10				1000		903.0			mg/rtg			90	70 - 150	10	20
Diesel Range Organics (Over				1000		887.7			mg/Kg			89	70 - 130	9	20
C10-C28)															
	LCSD	105	ח												
Surrogate	%Recovery			Limits											
1-Chlorooctane	102			70 - 130	-										
o-Terphenyl	102			70 - 130											
Lab Sample ID: MB 880-39298	/1-A											<b>Client Sa</b>	ample ID: N	/lethoo	d Blank
Matrix: Solid													Prep Ty	ype: T	otal/NA
Analysis Batch: 39373													Prep	Batch	: 39298
		MB	MB												
Analyte			Qualifier		RL		MDL	Unit		D		repared	Analyze		Dil Fac
Gasoline Range Organics	<	50.0	U		50.0			mg/K	g		11/1	1/22 09:33	11/13/22 0	9:25	1
(GRO)-C6-C10 Diesel Range Organics (Over	e	50.0	U.		50.0			mg/Kg	r		11/1	1/22 09:33	11/13/22 0	9.25	1
C10-C28)		50.0	5		00.0			ing/iX	3		11/1	., LL 03.00	11/10/22 0	0.20	
Oll Range Organics (Over C28-C36)	<	50.0	U		50.0			mg/K	9		11/1	1/22 09:33	11/13/22 0	9:25	1

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Job ID: 890-3422-1

SDG: KH227019

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yasa

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

	1-A							Client Sa	ample ID: N		
Matrix: Solid									Prep Ty	ype: To	tal/N
Analysis Batch: 39373									Prep	Batch:	3929
		MB MB									
Surrogate	%Reco	very Qualifier	Limits				Р	repared	Analyze	ed	Dil Fa
1-Chlorooctane		104	70 - 130				11/1	1/22 09:33	11/13/22 0	9:25	
p-Terphenyl		122	70 - 130				11/1	1/22 09:33	11/13/22 0	9:25	
Lab Sample ID: LCS 880-39298	/ <b>2-A</b>						Client	Sample	ID: Lab Co	ntrol S	amp
Matrix: Solid									Prep Ty	ype: To	tal/N
Analysis Batch: 39373										Batch:	
			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1126		mg/Kg		113	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1101		mg/Kg		110	70 - 130		
		LCS									
Surrogate	%Recovery	Qualifier	Limits								
I-Chlorooctane	105		70 - 130								
-Terphenyl	113		70 - 130								
			0	1.000	1.000					Batch:	
Analyte			Spike Added		LCSD Qualifier	Unif	D	%Rec	%Rec		R
			Spike Added 1000		LCSD Qualifier	_ <mark>Unit</mark> ma/Ka	D	<u>%Rec</u>		<b>RPD</b>	RI Lir
Gasoline Range Organics			Added	Result		_ <mark>Unit</mark> mg/Kg	D		%Rec Limits	RPD	R
Gasoline Range Organics GRO)-C6-C10			Added	Result			<u> </u>		%Rec Limits	RPD	RI Lir
Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over			Added	Result 927.9		mg/Kg	<u> </u>	93	%Rec Limits 70 - 130	<b>RPD</b> 19	RI Lir
Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over	LCSD		Added	Result 927.9		mg/Kg	<u> </u>	93	%Rec Limits 70 - 130	<b>RPD</b> 19	RI Lir
Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate	%Recovery		Added 1000 1000 <i>Limits</i>	Result 927.9		mg/Kg	<u> </u>	93	%Rec Limits 70 - 130	<b>RPD</b> 19	RI Lir
Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate I-Chlorooctane	%Recovery 92		Added           1000           1000           Limits           70 - 130	Result 927.9		mg/Kg	<u> </u>	93	%Rec Limits 70 - 130	<b>RPD</b> 19	RI Lir
Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate I-Chlorooctane	%Recovery		Added 1000 1000 <i>Limits</i>	Result 927.9		mg/Kg	<u> </u>	93	%Rec Limits 70 - 130	<b>RPD</b> 19	RI Lir
Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate I-Chlorooctane D-Terphenyl	%Recovery 92		Added           1000           1000           Limits           70 - 130	Result 927.9		mg/Kg	<u> </u>	93	%Rec           Limits           70 - 130           70 - 130	<b>RPD</b> 19	Ri 
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane D-Terphenyl Lab Sample ID: 890-3422-1 MS	%Recovery 92		Added           1000           1000           Limits           70 - 130	Result 927.9		mg/Kg	<u> </u>	93	%Rec Limits 70 - 130 70 - 130	<b>RPD</b> 19 14	RI Lir
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane p-Terphenyl Lab Sample ID: 890-3422-1 MS Matrix: Solid	%Recovery 92		Added           1000           1000           Limits           70 - 130	Result 927.9		mg/Kg	<u> </u>	93	%Rec Limits 70 - 130 70 - 130 Client Prep Ty	RPD 19 14 Sample	RI Lir PID: tal/N
Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate I-Chlorooctane D-Terphenyl Lab Sample ID: 890-3422-1 MS Matrix: Solid	%Recovery 92 98		Added           1000           1000           Limits           70 - 130	<b>Result</b> 927.9 959.4		mg/Kg	<u> </u>	93	%Rec Limits 70 - 130 70 - 130 Client Prep Ty	RPD 19 14 Sample ype: To	RI Lir PID: tal/N
Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate I-Chlorooctane D-Terphenyl Lab Sample ID: 890-3422-1 MS Matrix: Solid Analysis Batch: 39373	%Recovery 92 98 Sample	Qualifier	Added 1000 1000 <u>Limits</u> 70 - 130 70 - 130	<b>Result</b> 927.9 959.4 MS	Qualifier	mg/Kg	<u>D</u>	93	%Rec Limits 70 - 130 70 - 130 Client Prep Ty Prep	RPD 19 14 Sample ype: To	Ri Lir iD: tal/N
Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate I-Chlorooctane D-Terphenyl Lab Sample ID: 890-3422-1 MS Matrix: Solid Analysis Batch: 39373 Analyte Gasoline Range Organics	%Recovery 92 98 Sample	<i>Qualifier</i> Sample Qualifier	Added 1000 1000 <i>Limits</i> 70 - 130 70 - 130 Spike	<b>Result</b> 927.9 959.4 MS	Qualifier	mg/Kg		93 96	%Rec Limits 70 - 130 70 - 130 70 - 130 Client Prep Ty Prep %Rec	RPD 19 14 Sample ype: To	Ri Lir iD: tal/N
Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate I-Chlorooctane D-Terphenyl Lab Sample ID: 890-3422-1 MS Matrix: Solid Analysis Batch: 39373 Analyte GRO)-C6-C10 Diesel Range Organics (Over	%Recovery 92 98 Sample Result	Qualifier	Added 1000 1000 <i>Limits</i> 70 - 130 70 - 130 70 - 130	Result           927.9           959.4           MS           Result	Qualifier	mg/Kg mg/Kg		93 96 %Rec	%Rec Limits 70 - 130 70 - 130 70 - 130 70 - 130 70 - 130 70 - 190 70 - 190	RPD 19 14 Sample ype: To	Ri Lir iD: tal/N
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane p-Terphenyl Lab Sample ID: 890-3422-1 MS Matrix: Solid Analysis Batch: 39373 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	%Recovery 92 98 Sample Result <50.0 <50.0	Qualifier	Added           1000	Result           927.9           959.4           MS           Result           1006	Qualifier	mg/Kg mg/Kg <u>Unit</u> mg/Kg		93 96 96 <u>%Rec</u> 96	%Rec           Limits           70 - 130           70 - 130           70 - 130           Client           Prep Ty           Prep Ty           %Rec           Limits           70 - 130	RPD 19 14 Sample ype: To	RI Lir iD: tal/N
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane p-Terphenyl Lab Sample ID: 890-3422-1 MS Matrix: Solid Analysis Batch: 39373 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate	%Recovery 92 98 Sample Result <50.0 <50.0	Qualifier	Added           1000	Result           927.9           959.4           MS           Result           1006	Qualifier	mg/Kg mg/Kg <u>Unit</u> mg/Kg		93 96 96 <u>%Rec</u> 96	%Rec           Limits           70 - 130           70 - 130           70 - 130           Client           Prep Ty           Prep Ty           %Rec           Limits           70 - 130	RPD 19 14 Sample ype: To	RF Lin : : : : :
Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane p-Terphenyl Lab Sample ID: 890-3422-1 MS Matrix: Solid Analysis Batch: 39373 Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	%Recovery 92 98 Sample Result <50.0 <50.0	Qualifier	Added           1000           1000           1000           1000           1000           Limits           70 - 130           70 - 130           997           997           997	Result           927.9           959.4           MS           Result           1006	Qualifier	mg/Kg mg/Kg <u>Unit</u> mg/Kg		93 96 96 <u>%Rec</u> 96	%Rec           Limits           70 - 130           70 - 130           70 - 130           Client           Prep Ty           Prep Ty           %Rec           Limits           70 - 130	RPD 19 14 Sample ype: To	RI Lir PID: tal/N

### Job ID: 890-3422-1 SDG: KH227019

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

Lab Sample ID: 890-3422-1	W5D									t Sample	
Matrix: Solid										Гуре: То	
Analysis Batch: 39373										Batch:	
	•	Sample	Spike	MSD					%Rec		RP
Analyte		Qualifier	Added	Result	Qualifie	r Unit	D	%Rec	Limits	RPD	Limi
Gasoline Range Organics	<50.0	U	999	999.1		mg/Kg		95	70 - 130	1	2
(GRO)-C6-C10										_	
Diesel Range Organics (Over	<50.0	U	999	776.3		mg/Kg		76	70 - 130	5	2
C10-C28)											
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	78		70 - 130								
o-Terphenyl	72		70 - 130								
Matrix: Solid	57/1-A							Client S	Sample ID: Prep	Method Type: S	
Matrix: Solid	57/1-A	МВ МВ						Client S			
Matrix: Solid Analysis Batch: 39627		MB MB esult Qualifier		RL	MDL Un	nit	D	Client S		Type: S	Solubl
Matrix: Solid Analysis Batch: 39627 <sup>Analyte</sup>	R			<b>RL</b> 5.00		hit g/Kg	<u>D</u>		Prep	Type: S	Dil Fa
Matrix: Solid Analysis Batch: 39627 Analyte Chloride	R	esult Qualifier				-		Prepared	Prep Analyz	<b>Type: S</b> zed 13:13	Dil Fa
Matrix: Solid Analysis Batch: 39627 Analyte Chloride Lab Sample ID: LCS 880-39	R	esult Qualifier				-		Prepared	Prep 	<b>Type: S</b> zed 13:13	Dil Fa
Matrix: Solid Analysis Batch: 39627 Analyte Chloride Lab Sample ID: LCS 880-39 Matrix: Solid	R	esult Qualifier				-		Prepared	Prep 	<b>Type: S</b> <u>zed</u> 13:13 - ontrol S	Dil Fa
Matrix: Solid Analysis Batch: 39627 Analyte Chloride Lab Sample ID: LCS 880-39 Matrix: Solid	R	esult Qualifier	Spike	5.00		-		Prepared	Prep 	<b>Type: S</b> <u>zed</u> 13:13 - ontrol S	Dil Fa
Lab Sample ID: MB 880-393 Matrix: Solid Analysis Batch: 39627 Analyte Chloride Lab Sample ID: LCS 880-39 Matrix: Solid Analysis Batch: 39627 Analyte	R	esult Qualifier	Spike Added	5.00 LCS	mg	g/Kg		Prepared nt Sample	Prep 	<b>Type: S</b> <u>zed</u> 13:13 - ontrol S	Dil Fa
Matrix: Solid Analysis Batch: 39627 Analyte Chloride Lab Sample ID: LCS 880-39 Matrix: Solid Analysis Batch: 39627 Analyte	R	esult Qualifier		5.00 LCS	LCS	g/Kg	Clier	Prepared nt Sample	Prep <u>Analyz</u> 11/15/22 D: Lab Co Prep %Rec	<b>Type: S</b> <u>zed</u> 13:13 - ontrol S	Dil Fa
Matrix: Solid Analysis Batch: 39627 Analyte Chloride Lab Sample ID: LCS 880-39 Matrix: Solid Analysis Batch: 39627 Analyte Chloride	R 357/2-A 	esult Qualifier	Added	5.00 LCS Result	LCS	r Unit mg/Kg	Clier	Prepared Int Sample <u>%Rec</u> 106	Prep Analyz 11/15/22 Prep %Rec Limits	Type: S           zed           13:13           ontrol S           Type: S	Dil Fa Dil Fa Sampl Solubl
Matrix: Solid Analysis Batch: 39627 Analyte Chloride Lab Sample ID: LCS 880-39 Matrix: Solid Analysis Batch: 39627 Analyte Chloride Lab Sample ID: LCSD 880-3	R 357/2-A 	esult Qualifier	Added	5.00 LCS Result	LCS	r Unit mg/Kg	Clier	Prepared Int Sample <u>%Rec</u> 106	Prep Analyz 11/15/22 Prep %Rec Limits 90 - 110 Lab Contro	Type: S           zed           13:13           ontrol S           Type: S	Dil Fa Dil Fa Sampl Solubl
Matrix: Solid Analysis Batch: 39627 Analyte Chloride Lab Sample ID: LCS 880-39 Matrix: Solid Analysis Batch: 39627 Analyte Chloride Lab Sample ID: LCSD 880-3 Matrix: Solid	R 357/2-A 	esult Qualifier	Added	5.00 LCS Result	LCS	r Unit mg/Kg	Clier	Prepared Int Sample <u>%Rec</u> 106	Prep Analyz 11/15/22 Prep %Rec Limits 90 - 110 Lab Contro	Type: S red 13:13 - ontrol S Type: S ol Samp	Dil Fa Dil Fa Sampl Solubl
Matrix: Solid Analysis Batch: 39627 Analyte Chloride Lab Sample ID: LCS 880-39 Matrix: Solid Analysis Batch: 39627	R 357/2-A 	esult Qualifier	Added	5.00 LCS Result 265.7	LCS	r Unit mg/Kg	Clier	Prepared Int Sample <u>%Rec</u> 106	Prep Analyz 11/15/22 Prep %Rec Limits 90 - 110 Lab Contro	Type: S red 13:13 - ontrol S Type: S ol Samp	Dil Fa Dil Fa Sampl Solubl

250

265.4

mg/Kg

106

90 - 110

0

20

Chloride

### **QC Association Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yasa

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### Job ID: 890-3422-1 SDG: KH227019

### **GC VOA**

### Prep Batch: 39525

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3422-1	N	Total/NA	Solid	5035	
890-3422-2	E	Total/NA	Solid	5035	
890-3422-3	S	Total/NA	Solid	5035	
890-3422-4	W	Total/NA	Solid	5035	
MB 880-39525/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-39525/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-39525/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

### Analysis Batch: 39964

LC3D 880-39323/2-A		Total/INA	Solid	3035		Q
Analysis Batch: 39964						0
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch	9
890-3422-1	N	Total/NA	Solid	8021B	39525	
890-3422-2	E	Total/NA	Solid	8021B	39525	10
890-3422-3	S	Total/NA	Solid	8021B	39525	
890-3422-4	W	Total/NA	Solid	8021B	39525	44
MB 880-39525/5-A	Method Blank	Total/NA	Solid	8021B	39525	
LCS 880-39525/1-A	Lab Control Sample	Total/NA	Solid	8021B	39525	12
LCSD 880-39525/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	39525	
Analysis Batch: 40117						13
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch	
890-3422-1	N	Total/NA	Solid	Total BTEX		

### Analysis Batch: 40117

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3422-1	N	Total/NA	Solid	Total BTEX	
890-3422-2	E	Total/NA	Solid	Total BTEX	
890-3422-3	S	Total/NA	Solid	Total BTEX	
890-3422-4	W	Total/NA	Solid	Total BTEX	

### GC Semi VOA

### Prep Batch: 39026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Batch
890-3422-4	W	Total/NA	Solid	8015NM Prep
MB 880-39026/1-A	Method Blank	Total/NA	Solid	8015NM Prep
LCS 880-39026/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep
LCSD 880-39026/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep

### Analysis Batch: 39159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3422-4	W	Total/NA	Solid	8015B NM	39026
MB 880-39026/1-A	Method Blank	Total/NA	Solid	8015B NM	39026
LCS 880-39026/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	39026
LCSD 880-39026/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	39026

### Prep Batch: 39298

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3422-1	N	Total/NA	Solid	8015NM Prep	
890-3422-2	E	Total/NA	Solid	8015NM Prep	
890-3422-3	S	Total/NA	Solid	8015NM Prep	
MB 880-39298/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-39298/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-39298/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3422-1 MS	N	Total/NA	Solid	8015NM Prep	
890-3422-1 MSD	Ν	Total/NA	Solid	8015NM Prep	

Eurofins Carlsbad

### **QC** Association Summary

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yasa

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Job ID: 890-3422-1 SDG: KH227019

### GC Semi VOA

### Analysis Batch: 39321

Lab Sample ID 890-3422-1	Client Sample ID	Prep Type Total/NA	Matrix	Method 8015 NM	Prep Batch
890-3422-1	E	Total/NA	Solid	8015 NM	
890-3422-3	S	Total/NA	Solid	8015 NM	
890-3422-4	W	Total/NA	Solid	8015 NM	

### Analysis Batch: 39373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3422-1	N	Total/NA	Solid	8015B NM	39298
890-3422-2	E	Total/NA	Solid	8015B NM	39298
890-3422-3	S	Total/NA	Solid	8015B NM	39298
MB 880-39298/1-A	Method Blank	Total/NA	Solid	8015B NM	39298
LCS 880-39298/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	39298
LCSD 880-39298/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	39298
890-3422-1 MS	Ν	Total/NA	Solid	8015B NM	39298
890-3422-1 MSD	Ν	Total/NA	Solid	8015B NM	39298
PLC/IC					
each Batch: 39357					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3422-1	N	Soluble	Solid	DI Leach	
890-3422-2	E	Soluble	Solid	DI Leach	
890-3422-3	S	Soluble	Solid	DI Leach	

### HPLC/IC

### Leach Batch: 39357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3422-1	N	Soluble	Solid	DI Leach	
890-3422-2	E	Soluble	Solid	DI Leach	
890-3422-3	S	Soluble	Solid	DI Leach	
890-3422-4	W	Soluble	Solid	DI Leach	
MB 880-39357/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-39357/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-39357/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

### Analysis Batch: 39627

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3422-1	N	Soluble	Solid	300.0	39357
890-3422-2	E	Soluble	Solid	300.0	39357
890-3422-3	S	Soluble	Solid	300.0	39357
890-3422-4	W	Soluble	Solid	300.0	39357
MB 880-39357/1-A	Method Blank	Soluble	Solid	300.0	39357
LCS 880-39357/2-A	Lab Control Sample	Soluble	Solid	300.0	39357
LCSD 880-39357/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	39357

Initial

Amount

4.97 g

5 mL

10.01 g

1 uL

5.02 g

Final

Amount

5 mL

5 mL

10 mL

1 uL

50 mL

Batch

39525

39964

40117

39321

39298

39373

39357

39627

Number

Prepared

or Analyzed

11/14/22 14:45

11/19/22 18:51

11/21/22 14:54

11/14/22 13:38

11/11/22 09:33

11/13/22 11:53

11/11/22 17:26

11/15/22 16:26

Dil

1

1

1

1

5

Factor

Run

Batch

Туре

Prep

Analysis

Analysis

Analysis

Analysis

Analysis

Leach

Prep

Batch

Method

5035

8021B

Total BTEX

8015NM Prep

8015B NM

DI Leach

300.0

8015 NM

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Soluble

Soluble

Job ID: 890-3422-1 SDG: KH227019

### Lab Sample ID: 890-3422-1

Analyst

MNR

SM

SM

SM

DM

AJ

ĸs

СН

Matrix: Solid

Lab

EET MID

### Lab Sample ID: 890-3422-2

Lab Sample ID: 890-3422-3

Lab Sample ID: 890-3422-4

Matrix: Solid

Date Collected:	11/09/22	12:32
Date Received:	11/09/22	14:00

**Client Sample ID: E** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	39525	11/14/22 14:45	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	39964	11/19/22 19:12	SM	EET MID
Total/NA	Analysis	Total BTEX		1			40117	11/21/22 14:54	SM	EET MID
Total/NA	Analysis	8015 NM		1			39321	11/14/22 13:38	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	39298	11/11/22 09:33	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39373	11/13/22 12:56	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	39357	11/11/22 17:26	KS	EET MID
Soluble	Analysis	300.0		1			39627	11/15/22 16:33	СН	EET MID

### **Client Sample ID: S**

### Date Collected: 11/09/22 12:34 Date Received: 11/09/22 14:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	39525	11/14/22 14:45	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	39964	11/19/22 19:32	SM	EET MID
Total/NA	Analysis	Total BTEX		1			40117	11/21/22 14:54	SM	EET MID
Total/NA	Analysis	8015 NM		1			39321	11/14/22 13:38	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	39298	11/11/22 09:33	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39373	11/13/22 14:20	AJ	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	39357	11/11/22 17:26	KS	EET MID
Soluble	Analysis	300.0		1			39627	11/15/22 16:40	СН	EET MID

### **Client Sample ID: W** Date Collected: 11/09/22 12:36 Date Received: 11/09/22 14:00

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	39525	11/14/22 14:45	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	39964	11/19/22 19:53	SM	EET MID
Total/NA	Analysis	Total BTEX		1			40117	11/21/22 14:54	SM	EET MID

**Eurofins Carlsbad** 

EET MID Matrix: Solid

Matrix: Solid

### Client Sample ID: W Date Collected: 11/09/22 12:36 Date Received: 11/09/22 14:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			39321	11/11/22 11:26	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	39026	11/10/22 12:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39159	11/10/22 20:01	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	39357	11/11/22 17:26	KS	EET MID
Soluble	Analysis	300.0		5			39627	11/15/22 16:47	СН	EET MID

### Laboratory References:

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

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Job ID: 890-3422-1 SDG: KH227019

### Lab Sample ID: 890-3422-4

Matrix: Solid

Eurofins Carlsbad

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yasa

### Laboratory: Eurofins Midland

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

uthority	Program Identification Number		Identification Number	Expiration Date
exas	N	ELAP	T104704400-22-24	06-30-23
The following analytes	are included in this report, b	ut the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes fo
the agency does not of		Mathia	A	
the agency does not of Analysis Method	fer certification. Prep Method	Matrix	Analyte	
0,		Matrix Solid	Analyte Total TPH	

Eurofins Carlsbad

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Job ID: 890-3422-1 SDG: KH227019

### **Method Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yasa

Job ID: 890-3422-1 SDG: KH227019

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	B
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID	
300.0	Anions, Ion Chromatography	MCAWW	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 Refe	rences:			8
ASTM = A	STM International			
MCAWW :	= "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, Marcl	n 1983 And Subsequent Revisions.		9
SW846 = '	"Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition	on, November 1986 And Its Updates.		
TAL SOP :	= TestAmerica Laboratories, Standard Operating Procedure			

#### Protocol References:

#### Laboratory References:

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

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yasa Job ID: 890-3422-1 SDG: KH227019

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth	
890-3422-1	N	Solid	11/09/22 12:30	11/09/22 14:00	0.5'	
890-3422-2	E	Solid	11/09/22 12:32	11/09/22 14:00	0.5'	
890-3422-3	S	Solid	11/09/22 12:34	11/09/22 14:00	0.5'	
890-3422-4	W	Solid	11/09/22 12:36	11/09/22 14:00	0.5'	

Page: Mange:         The Cardinal Market         Base: Influence         State: Influence <th></th> <th></th> <th>4</th> <th></th> <th>l'and</th> <th></th> <th>Cont V Marca</th> <th></th> <th>3</th>			4		l'and		Cont V Marca		3
Work Order Co TVPST PRP Brow EDD ADaP EDD ADaP ADAP ADA	id by: (Signature)	iture) Received	Relinquished by: (Signa	Date/Time	tisk II	eceived by: (Signature)	e) Re	y: (Signatur	Relinquished b
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Imager:       Jack       Guillon:       Billon:       Gifferent       Work Order Comme         Viame:       Viame       Company Name:       Address:       Program:       UST/PST       PRP       Brownfield         ZIP:       Call Schward       MY       58.2 Gby, State ZIP:       Email:       Address:       Program:       UST/PST       PRP       Brownfield         ame:       Osaan       Tage:       Tum Around       Pres       Address:       Reporting:       Level III       Level III       PST/US         umber:       KH/PSZ ZO IQ       GRoutine       Due Date:       Due Date:       ADALYSIS REQUEST       ADALYSIS REQUEST       Non         Amme:       Back My       No       Tum Around       Pres       Back My       ADALYSIS REQUEST       Non         Amme:       Back My       Multiplic Tecewed by 430pm       Back My       Back My       Back My       Hill:       Hill:<	Zn Ace	of Custody	AD2 Chain		207	mperature Reading:	NO WA		Sample Custody Sea
Janager:       Jan.       Bill to: (if different)       Work Order Comme         /Name:       7       Campany Name:       Company Name:       Program:       UST/PST       PRP       Brownfield         e ZIP:       Cambary Markary       Address:       Address:       Program:       UST/PST       PRP       Brownfield         ame:       OS.a.a.       Tar.       Email:       Back Grys, State ZIP:       Program:       UST/PST       PRP       Brownfield         umber:       IKH 22 ZO IQ       Finail:       Back Gryses       Marker       Address:       Deliverables:       EDD       ADaPT       ADaPT       ADaPT       Ocouling:       Exporting:       Level III       Level III       PST/US         state of Project:       Reporting:       Exporting:       Exporting:       Exporting:       Exporting:       Exporting:       Cool:         ocation:       Orgonant:       Finail:       Back Gryses       ANALYSIS REQUEST       None       Cool:       Cool:         state:       Orgonant:       Finail:       Finail:       Finail:       Finail:       Finail:       Finail:       Horgonant       Program:       Cool:         state:       Orgonant:       Finail:       Finail:       Finail: <t< td=""><td>Na2S2</td><td></td><td></td><td></td><td>Para</td><td>arrection Factor:</td><td>NO MA</td><td>_</td><td>Cooler Custody Seal</td></t<>	Na2S2				Para	arrection Factor:	NO MA	_	Cooler Custody Seal
Ianager:       Jack       Gall No. (if different)       Work Order Comme         VName:       Program:       VST/PST       PRP       Brownfield         VName:       Program:       UST/PST       PRP       Brownfield         Vame:       Program:       UST/PST       PRP       Brownfield         Vame:       Program:       UST/PST       PRP       Brownfield         ame:       OSaaai       Rayd       Vamound       Prost       Reporting:       Level III       Level III       PST/US         vame:       OSaaai       Rayd       Vamound       Prost       ADaPT       ADaPT       ADaPT       ADaPT       ADaPT       Humber:       It is starts the day received by       Prost       ANALYSIS REQUEST       Hore       None         sName:       Back of treceived by       That starts the day received by       Prost       PS       Hore       Hore         sName:       Back of treceived by       the lab, if received by 4:30pm       None       PR       PR       Hore       Hore       Hore       Hore       Hore       Hore       Hore         start       Hore       Bay of the lab, if received by       Social       Social       Hore       Hore       Hore       Hore	-			80	No	es) No Wet Ice:			SAMPLE RECEIPT
Inager:       Jack Gallandiale (all formation)       Bill to: (if different)       Work Order Comme         Viame:       France (all formation)       Company Name:       Program:       UST/PST    PRP    Brownfield         Viame:       France (all formation)       Address:       Address:       Program:       UST/PST    PRP    Brownfield         EziP:       Callschard (all formation)       Email:       Bull to: (if different)       Address:       Reporting:       Level II    Level II    PST/US         ame:       Osaal Taud (all formation)       Call formation       Program:       UST/PST    PRP    Brownfield         umber:       Iteration (all formation)       Email:       Buck (all formation)       Pst/US       Reporting:       Level II    Level II    PST/US         umber:       Iteration (all formation)       Email:       Buck (all formation)       Program:       MALLYSIS REQUEST       ADaPT    (all formation)       None         umber:       Iteration       Due Date:       Due Date:       All formation       All formation       All formation       None				241	1			Buc	Sampler's Name: PO #:
Inager:       Jack Getter Getter Rush and etter Rush       Bill to: (if different)       Work Order Comme         VName:       Program:       Getter Rush and etter Rush       Company Name:       Program:       UST/PST       PRP       Brownfield         VName:       Program:       UST/PST       Address:       Address:       Program:       UST/PST       PRP       Brownfield         e ZIP:       Company Rum       State Of Project:       Reporting:       Level III       Level III       PST/US         ame:       Osaar       Reuf       Ground       Pres.       ANALYSIS REQUEST       ADaPT       ADaPT       ADaPT       Analysis       ADaPT       Analysis       Analysis       None         umber:       K/H 22 70 /G       Routine       Rush       Rush       Rush       Code       ANALYSIS REQUEST       None	Cool: C			30 3) )		Due Date:	4		Project Location:
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Ianager:     Jac.     Generative and a feet     Bill to: (if different)       Name:     Personance     Company Name:       VName:     Personance     Company Name:       Value:     Personance     Address:       e ZIP:     Carlsbard     NM 88 27 6519; State ZIP:       Email:     Berefly Sure.     Millur O. Lurracon	P	UEST	ANALYSIS REQ			Masar	on Band	Osa	Project Name:
Ianager:     Jac. Gettovatet     Bill to: (if different)       / Name:     Pettocacat     Company Name:       / Name:     Address:       e ZIP:     Cacl Shoad MM 88 27 69y, State ZIP:		Deliverables:	@ turace	re mille				-	Phone:
Ianager:     Jac.     Gallo Gal	Level III PST/UST		)		Sty, State ZIP:	NM	dshad	p .	City, State ZIP:
Jos         Galloria         Bill to: (If different)           Program:         Company Name:         Program:	1	State of Project:			Address:			-	Address:
Bill to: (if different)	PRP Brownfields				ompany Name:		race	29	Company Name:
	Work Order Commen				Sill to: (if different)	1		30	Project Manager:
			1 (A 1) JOT 0000	TTO I TO TTO I TO TTO I					

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### Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

### Login Number: 3422 List Number: 1 Creator: Stutzman, Amanda

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	

List Source: Eurofins Carlsbad

Job Number: 890-3422-1 SDG Number: KH227019

List Source: Eurofins Midland

List Creation: 11/10/22 10:49 AM

### Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Login Number: 3422 List Number: 2 Creator: Rodriguez, Leticia

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	N/A	

Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").

Received by OCD: 7/11/2024 8:37:02 AM

### **Eurofins Carlsbad**

**Job Notes** 

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

RAMER

Generated 11/21/2022 6:29:54 PM

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

Eurofins Carlsbad is a laboratory within Eurofins Environment Testing South Central, LLC, a company within Eurofins Environment Testing Group of Companies

## **Eurofins Carlsbad**

### **Compliance Statement**

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments. QC data that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result. Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

### Coliform MCLs

• Based on the EPA primary drinking water standard MCL for total coliforms, a water supply is considered bacteriologically "SAFE" if no coliform bacteria are detected. To be considered "SAFE" your report should indicate "<1 cfu/100mL" or "NEG" for the coliform test. If you report indicates a positive result "POS" or a value greater than or equal to one, then your supply is "UNSAFE FOR DRINKING" contact your local health department.

### Warranties, Terms, and Conditions

Analyses for Field Parameters are performed by Eurofins Philadelphia field staff. Locations and certifications are identified on the Chain of Custody as follows:

ERF = field staff performs tests under NJ State certification #02015

VL = field staff performs tests under NJ State certification #06005

WG = field staff performs tests under NJ State certification #PA001

H = field staff performs tests under NJ NELAP certification #PA093, PA NELAP certification # 46-05499

• Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.

· The report shall not be reproduced, except in full, without the written consent of the laboratory

· All samples are collected as "grab" samples unless otherwise identified.

• Reported results related only to the samples as tested. Eurofins Philadelphia is not responsible for sample integrity unless sampling has been performed by a member of our staff.

• Eurofins Philadelphia is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance.

• Eurofins' online data portal "TotalAccess" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.

• The following personnel or their deputies have approved the results of the tests performed by Eurofins Philadelphia : Nicki Smith (Environmental Chemistry) and Jacqueline Gartner (Water Microbiology).

MRAMER

Received by OCD: 7/11/2024 8:37:02 AM



**Environment Testing** 

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Joseph Guesnier Terracon Consulting Eng & Scientists 5847 50th St Lubbock Texas 79424 Generated 11/23/2022 2:51:09 PM

# JOB DESCRIPTION

Osage Boyd Yaso SDG NUMBER KH227019

### **JOB NUMBER**

890-3432-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220



SDG: KH227019

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### **Definitions/Glossary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso Job ID: 890-3432-1 SDG: KH227019

Qualifiers		3
GC VOA		
Qualifier	Qualifier Description	
U	Indicates the analyte was analyzed for but not detected.	
GC Semi VOA		5
Qualifier	Qualifier Description	
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		8
Abbreviation	These commonly used abbreviations may or may not be present in this report.	Q
¤	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)	10
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	I J
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 ML	Method Detection Limit	
MPN	Minimum Level (Dioxin) Most Probable Number	
MQL	Most Probable Number	
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	

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5

### Job ID: 890-3432-1

### Laboratory: Eurofins Carlsbad

#### Narrative

Job Narrative 890-3432-1

#### Receipt

The samples were received on 11/10/2022 4:14 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 10.0°C

### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: BH02 3' (890-3432-1), BH02 4' (890-3432-2), BH01 4' (890-3432-3), BH01 5' (890-3432-4) and EFS01 (890-3432-5).

### GC VOA

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

### GC Semi VOA

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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Job ID: 890-3432-1 SDG: KH227019

### Client Sample ID: BH02 3'

Project/Site: Osage Boyd Yaso

Date Received: 11/10/22 16:14

Lab Sample ID: 890-3432-1 Matrix: Solid

Date Collected: 11/10/22 09:45 Sample Depth: 3 \_

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0502	U	0.0502		mg/Kg		11/14/22 16:30	11/23/22 07:51	2
Foluene	<0.0502	U	0.0502		mg/Kg		11/14/22 16:30	11/23/22 07:51	2
Ethylbenzene	0.122		0.0502		mg/Kg		11/14/22 16:30	11/23/22 07:51	2
m-Xylene & p-Xylene	0.196		0.100		mg/Kg		11/14/22 16:30	11/23/22 07:51	2
o-Xylene	0.0598		0.0502		mg/Kg		11/14/22 16:30	11/23/22 07:51	2
Xylenes, Total	0.256		0.100		mg/Kg		11/14/22 16:30	11/23/22 07:51	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	75		70 - 130				11/14/22 16:30	11/23/22 07:51	2
1,4-Difluorobenzene (Surr)	81		70 - 130				11/14/22 16:30	11/23/22 07:51	2
Method: TAL SOP Total BTEX - To	otal BTEX Calo	culation							
Analyte	Result	Qualifier	RL	MDL	-	D	Prepared	Analyzed	Dil Fa
Fotal BTEX	0.378		0.100		mg/Kg			11/23/22 13:25	
Method: SW846 8015 NM - Diese									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	<50.0	U	50.0		mg/Kg			11/15/22 16:29	
Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)	(GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/14/22 14:27	11/15/22 11:08	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/14/22 14:27	11/15/22 11:08	
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/14/22 14:27	11/15/22 11:08	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	118		70 - 130				11/14/22 14:27	11/15/22 11:08	
p-Terphenyl	117		70 - 130				11/14/22 14:27	11/15/22 11:08	1
Method: MCAWW 300.0 - Anions									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Chloride	207		4.97		mg/Kg			11/16/22 01:43	
lient Sample ID: BH02 4'							Lab San	nple ID: 890-	3432-2
ate Collected: 11/10/22 10:05 ate Received: 11/10/22 16:14								Matri	x: Solic
ample Depth: 4									
Nethod: SW846 8021B - Volatile	Organic Comp	ounde (GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00198		0.00198		mg/Kg		11/14/22 16:30	11/23/22 06:29	
Toluene	<0.00198		0.00198		mg/Kg		11/14/22 16:30	11/23/22 06:29	
Ethylbenzene	<0.00198		0.00198		mg/Kg		11/14/22 16:30	11/23/22 06:29	
· ···	0.00100				ອ <sup></sup> ອ		0.00		
n-Xvlene & p-Xvlene	<0 00306	U	0.00396		ma/Ka		11/14/22 16:30	11/23/22 06.20	
m-Xylene & p-Xylene p-Xylene	<0.00396 <0.00198		0.00396 0.00198		mg/Kg mg/Kg		11/14/22 16:30 11/14/22 16:30	11/23/22 06:29 11/23/22 06:29	•

11/14/22 16:30 11/23/22 06:29 1 Prepared Analyzed Dil Fac 11/14/22 16:30 11/23/22 06:29 1

Eurofins Carlsbad

Analyte	Result	Qualifier	RL	MDL	Unit	D
Benzene	<0.00198	U	0.00198		mg/Kg	
Toluene	<0.00198	U	0.00198		mg/Kg	
Ethylbenzene	<0.00198	U	0.00198		mg/Kg	
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg	
o-Xylene	<0.00198	U	0.00198		mg/Kg	
Xylenes, Total	<0.00396	U	0.00396		mg/Kg	
Surrogate	%Recovery	Qualifier	Limits			
4-Bromofluorobenzene (Surr)	82		70 - 130			

Job ID: 890-3432-1 SDG: KH227019

Lab Sample ID: 890-3432-2

Lab Sample ID: 890-3432-3

Matrix: Solid

### Client Sample ID: BH02 4'

Project/Site: Osage Boyd Yaso

Date Collected: 11/10/22 10:05 Date Received: 11/10/22 16:14

Sample Depth: 4

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

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	107		70 - 130				11/14/22 16:30	11/23/22 06:29	1
Method: TAL SOP Total BTEX - 1	Total BTEX Cald	culation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			11/23/22 13:25	1
Method: SW846 8015 NM - Diese	el Range Organ	ics (DRO) (	GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
								11115100 10 00	
Total TPH	<49.8	U	49.8		mg/Kg			11/15/22 16:29	1
Total TPH Method: SW846 8015B NM - Dies Analyte	sel Range Orga			MDL	mg/Kg Unit	D	Prepared	11/15/22 16:29 Analyzed	1 Dil Fac
Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics	sel Range Orga	nics (DRO) Qualifier	(GC)	MDL		<u>D</u>	Prepared 11/14/22 14:27		1 1
Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	sel Range Orga Result	<b>Qualifier</b>	(GC)	MDL	Unit	<u> </u>	·	Analyzed	1 1 1
Method: SW846 8015B NM - Dies	sel Range Orga Result <49.8	nics (DRO) Qualifier U	(GC) 	MDL	Unit mg/Kg	<u> </u>	11/14/22 14:27	Analyzed	1 1 1 1
Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	sel Range Orga 	nics (DRO) Qualifier U U	(GC) <u>RL</u> 49.8 49.8	MDL	Unit mg/Kg mg/Kg	<u>D</u>	11/14/22 14:27 11/14/22 14:27	Analyzed 11/15/22 12:12 11/15/22 12:12	1 Dil Fac 1 1 Dil Fac
Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	sel Range Orga 	nics (DRO) Qualifier U U	(GC) <u>RL</u> 49.8 49.8 49.8	MDL	Unit mg/Kg mg/Kg	<u> </u>	11/14/22 14:27 11/14/22 14:27 11/14/22 14:27	Analyzed 11/15/22 12:12 11/15/22 12:12 11/15/22 12:12	1 1 1

### Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	850	4.96	mg/Kg			11/16/22 02:00	1

### Client Sample ID: BH01 4'

Date Collected: 11/10/22 10:10 Date Received: 11/10/22 16:14 Sample Depth: 4

#### Method: SW846 8021B - Volatile Organic Compounds (GC) Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Benzene 0.00243 0.00199 mg/Kg 11/14/22 16:30 11/23/22 06:49 1 0.00199 11/14/22 16:30 11/23/22 06:49 Toluene 0.0120 mg/Kg 1 0.00199 mg/Kg 11/14/22 16:30 11/23/22 06:49 Ethylbenzene 0.00934 1 0.00398 11/14/22 16:30 11/23/22 06:49 m-Xylene & p-Xylene 0.0120 mg/Kg 1 o-Xylene 0.00523 0.00199 mg/Kg 11/14/22 16:30 11/23/22 06:49 1 0.00398 mg/Kg 11/14/22 16:30 11/23/22 06:49 **Xylenes**, Total 0.0172 1 %Recovery Surrogate Qualifier Limits Analyzed Dil Fac Prepared 86 70 - 130 4-Bromofluorobenzene (Surr) 11/14/22 16:30 11/23/22 06:49 1 1,4-Difluorobenzene (Surr) 103 70 - 130 11/14/22 16:30 11/23/22 06:49 1 Method: TAL SOP Total BTEX - Total BTEX Calculation Analyte **Result Qualifier** RL MDL Unit D Dil Fac Prepared Analyzed 0.0410 0.00398 11/23/22 13:25 **Total BTEX** mg/Kg 1 Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/15/22 16:29	1

**Eurofins Carlsbad** 

Matrix: Solid

Job ID: 890-3432-1 SDG: KH227019

Lab Sample ID: 890-3432-3

### Client Sample ID: BH01 4'

Project/Site: Osage Boyd Yaso

Date Collected: 11/10/22 10:10 Date Received: 11/10/22 16:14

Sample Depth: 4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U	49.9		mg/Kg		11/14/22 14:27	11/15/22 13:57	1
(GRO)-C6-C10									
Diesel Range Organics (Over	<49.9	U	49.9		mg/Kg		11/14/22 14:27	11/15/22 13:57	1
C10-C28)									
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/14/22 14:27	11/15/22 13:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130				11/14/22 14:27	11/15/22 13:57	1
o-Terphenyl	92		70 - 130				11/14/22 14:27	11/15/22 13:57	1

### Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	329	5.00	mg/Kg			11/16/22 02:06	1

### Client Sample ID: BH01 5'

### Date Collected: 11/10/22 10:20 Date Received: 11/10/22 16:14

Sample Depth: 5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/14/22 16:30	11/23/22 07:10	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/14/22 16:30	11/23/22 07:10	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/14/22 16:30	11/23/22 07:10	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		11/14/22 16:30	11/23/22 07:10	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/14/22 16:30	11/23/22 07:10	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		11/14/22 16:30	11/23/22 07:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130				11/14/22 16:30	11/23/22 07:10	1
1,4-Difluorobenzene (Surr)	109		70 - 130				11/14/22 16:30	11/23/22 07:10	1
Total BTEX	<0.00399	0	0.00399		mg/Kg			11/23/22 13:25	1
					mg/Kg			11/23/22 13:25	1
Method: SW846 8015 NM - Diese Analyte	el Range Organ			MDL		D	Prepared	Analyzed	Dil Fac
Method: SW846 8015 NM - Diese Analyte	el Range Organ	<mark>ics (DRO) (</mark> Qualifier	GC)	MDL		<u>D</u>	Prepared		Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH	el Range Organ Result <50.0	<mark>ics (DRO) (</mark> Qualifier U	GC) 	MDL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Dies	el Range Organ 	<mark>ics (DRO) (</mark> Qualifier U	GC) 	MDL	Unit mg/Kg	<u>D</u>	Prepared Prepared	Analyzed	1
Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics	el Range Organ 	ics (DRO) ( Qualifier U nnics (DRO) Qualifier	GC) <u>RL</u> 50.0 —		Unit mg/Kg			Analyzed 11/15/22 16:29	1
Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10	el Range Organ Result								

11/15/22 14:17

11/14/22 14:27

o-Terphenyl

70 - 130

94

		Clier	nt Sample R	esults	5				
Client: Terracon Consulting Eng & S Project/Site: Osage Boyd Yaso	Scientists							Job ID: 890 SDG: KH	
Client Sample ID: BH01 5'							Lab Sar	nple ID: 890-	3432-4
Date Collected: 11/10/22 10:20 Date Received: 11/10/22 16:14 Sample Depth: 5									x: Solid
Method: MCAWW 300.0 - Anions				MD	11	-	Duranad	Angeland	D'' 5
Analyte Chloride		Qualifier		MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 11/16/22 02:11	Dil Fac
L 					0 0				
Client Sample ID: EFS01 Date Collected: 11/10/22 12:44 Date Received: 11/10/22 16:14 Sample Depth: 2							Lab Sar	nple ID: 890- Matri	3432-5 x: Solid
Method: SW846 8021B - Volatile						_			
Analyte		Qualifier		MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	< 0.00199		0.00199		mg/Kg		11/14/22 16:30	11/23/22 07:30	1
Toluene	< 0.00199		0.00199		mg/Kg		11/14/22 16:30	11/23/22 07:30	1
Ethylbenzene	< 0.00199		0.00199		mg/Kg		11/14/22 16:30	11/23/22 07:30	1
m-Xylene & p-Xylene	< 0.00398		0.00398		mg/Kg		11/14/22 16:30	11/23/22 07:30	1
o-Xylene Xylenes, Total	<0.00199 <0.00398	U	0.00199 0.00398		mg/Kg mg/Kg		11/14/22 16:30 11/14/22 16:30	11/23/22 07:30 11/23/22 07:30	1
Ayieries, Totai	<0.00390	0	0.00598		my/ky		11/14/22 10:30	11/23/22 07:30	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		70 - 130				11/14/22 16:30	11/23/22 07:30	1
1,4-Difluorobenzene (Surr)	101		70 - 130				11/14/22 16:30	11/23/22 07:30	1
— Method: TAL SOP Total BTEX - T	otal BTEX Calo	culation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/23/22 13:25	1
	I Range Organ	ics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/15/22 16:29	1
_ Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO	) (GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0		50.0		mg/Kg		11/14/22 14:27	11/15/22 14:38	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/14/22 14:27	11/15/22 14:38	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/14/22 14:27	11/15/22 14:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
			70 - 130				11/14/22 14:27	11/15/22 14:38	1
1-Chlorooctane	96		70 - 730						
1-Chlorooctane o-Terphenyl	96 96		70 - 130 70 - 130				11/14/22 14:27	11/15/22 14:38	1
o-Terphenyl	96	ography - 9	70 - 130				11/14/22 14:27	11/15/22 14:38	1
	96 , lon Chromato	ography - S Qualifier	70 - 130	MDL	Unit	D	11/14/22 14:27 Prepared	11/15/22 14:38 Analyzed	1 Dil Fac

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Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

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

Percent Surrogate Recovery (Acceptance Limits) BFB1 DFBZ1 Client Sample ID (70-130) (70-130) Lab Sample ID 890-3432-1 BH02 3' 75 81 890-3432-2 BH02 4' 82 107 890-3432-3 BH01 4' 86 103 BH01 5' 97 890-3432-4 109 890-3432-5 EFS01 87 101 LCS 880-39563/1-A Lab Control Sample 88 105

83

75

79

104

107

97

MB 880-39841/5-A	Method Blank
Surrogate Legend	

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Method Blank

Lab Control Sample Dup

Matrix: Solid

LCSD 880-39563/2-A

MB 880-39563/5-A

_			
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3432-1	BH02 3'	118	117
890-3432-1 MS	BH02 3'	88	75
890-3432-1 MSD	BH02 3'	87	74
890-3432-2	BH02 4'	100	100
890-3432-3	BH01 4'	90	92
890-3432-4	BH01 5'	93	94
890-3432-5	EFS01	96	96
LCS 880-39516/2-A	Lab Control Sample	84	81
LCSD 880-39516/3-A	Lab Control Sample Dup	84	81
MB 880-39516/1-A	Method Blank	107	110

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Prep Type: Total/NA

### Job ID: 890-3432-1 SDG: KH227019

Prep Type: Total/NA

o-Xylene

### **QC Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

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

<b>—</b>												
Lab Sample ID: MB 880-39563/5-A									Client Sa	ample ID: Metho	d Blank	
Matrix: Solid										Prep Type:	Total/NA	
Analysis Batch: 40174										Prep Batc	h: 39563	
	MB	MB										5
Analyte	Result	Qualifier	RL		MDL	Unit		<u>D</u>	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200			mg/Kg		11/	/14/22 16:30	11/22/22 23:45	1	
Toluene	<0.00200	U	0.00200			mg/Kg		11/	/14/22 16:30	11/22/22 23:45	1	-
Ethylbenzene	<0.00200	U	0.00200			mg/Kg		11/	/14/22 16:30	11/22/22 23:45	1	7
m-Xylene & p-Xylene	<0.00400	U	0.00400			mg/Kg		11/	14/22 16:30	11/22/22 23:45	1	
o-Xylene	<0.00200	U	0.00200			mg/Kg		11/	/14/22 16:30	11/22/22 23:45	1	8
Xylenes, Total	<0.00400	U	0.00400			mg/Kg		11/	/14/22 16:30	11/22/22 23:45	1	
	МВ	МВ										Q
0			1						<b>D</b>	A	D# 5	
Surrogate	%Recovery	Qualifier	Limits						Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	75		70 - 130						/14/22 16:30	11/22/22 23:45	1	
1,4-Difluorobenzene (Surr)	107		70 - 130					11,	/14/22 16:30	11/22/22 23:45	1	
Lab Sample ID: LCS 880-39563/1-A								Clier	nt Samnle	ID: Lab Control	Sample	
Matrix: Solid								oner	it oumpic	Prep Type:		
Analysis Batch: 40174										Prep Batcl		
Analysis Datch. 40174			Spike	LCS	LCS					%Rec	1. 33303	
Analyte			Added	Result		ifior	Unit	D	%Rec	Limits		13
Benzene			0.100	0.08599	Quan		mg/Kg		86	70 - 130		
Toluene			0.100	0.1010					101	70 - 130 70 - 130		
							mg/Kg					
Ethylbenzene			0.100	0.1006			mg/Kg		101	70 - 130		

0.1829

0.09030

mg/Kg

mg/Kg

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	88		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

### Lab Sample ID: LCSD 880-39563/2-A

### Matrix: Solid

m-Xylene & p-Xylene

Analysis Batch: 40174							Prep	Batch:	39563
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.07648		mg/Kg		76	70 - 130	12	35
Toluene	0.100	0.08875		mg/Kg		89	70 - 130	13	35
Ethylbenzene	0.100	0.09295		mg/Kg		93	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.1689		mg/Kg		84	70 - 130	8	35
o-Xylene	0.100	0.08440		mg/Kg		84	70 - 130	7	35

0.200

0.100

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

### Lab Sample ID: MB 880-39841/5-A Matrix: Solid

### Analysis Batch: 40174

	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/17/22 15:04	11/22/22 11:43	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/17/22 15:04	11/22/22 11:43	1

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Prep Type: Total/NA

Prep Batch: 39841

**Client Sample ID: Method Blank** 

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Job ID: 890-3432-1 SDG: KH227019

70 - 130

70 - 130

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

91

90

11/23/2022

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

Job ID: 890-3432-1 SDG: KH227019

Lab Sample ID: MB 880-39841/5-A											Client Sa	ample ID: Metho	d Blani
Matrix: Solid	-											Prep Type:	
Analysis Batch: 40174												Prep Batcl	
·····,····		ΜВ	МВ										
Analyte	Re		Qualifier	RL		MDL	Unit		D	Р	repared	Analyzed	Dil Fa
Ethylbenzene	<0.00	200	U	0.00200			mg/K	Kg	_		7/22 15:04	11/22/22 11:43	·
m-Xylene & p-Xylene	<0.00	400	U	0.00400			mg/K			11/1	7/22 15:04	11/22/22 11:43	
p-Xylene	<0.00	200	U	0.00200			mg/K	-		11/1	7/22 15:04	11/22/22 11:43	
Xylenes, Total	<0.00	400	U	0.00400			mg/K	٢g		11/1	7/22 15:04	11/22/22 11:43	
		ΜВ	МВ										
Surrogate	%Reco	very	Qualifier	Limits						P	repared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)		79		70 - 130						11/1	7/22 15:04	11/22/22 11:43	
1,4-Difluorobenzene (Surr)		97		70 - 130						11/1	7/22 15:04	11/22/22 11:43	
lethod: 8015B NM - Diesel R	ange Or	gar	ics (DR	O) (GC)									
Lab Sample ID: MB 880-39516/1-A											Client Sa	ample ID: Metho	d Blan
Matrix: Solid	-											Prep Type:	
Analysis Batch: 39567												Prep Batcl	
		мв	мв										
Analyte	Re		Qualifier	RL		MDL	Unit		D	Р	repared	Analyzed	Dil Fa
Gasoline Range Organics	<	50.0	U				mg/K		_		4/22 14:27	11/15/22 08:37	
(GRO)-C6-C10							0	5					
Diesel Range Organics (Over	<	50.0	U	50.0			mg/K	٢g		11/1	4/22 14:27	11/15/22 08:37	
C10-C28)													
Oll Range Organics (Over C28-C36)	<	50.0	U	50.0			mg/K	Kg		11/1	4/22 14:27	11/15/22 08:37	
		ΜВ	МВ										
Surrogate	%Reco	very	Qualifier	Limits						P	repared	Analyzed	Dil Fa
1-Chlorooctane		107		70 - 130						11/1	4/22 14:27	11/15/22 08:37	
o-Terphenyl		110		70 - 130						11/1	4/22 14:27	11/15/22 08:37	
Lab Sample ID: LCS 880-39516/2-	Α								С	lient	Sample	ID: Lab Control	Sample
Matrix: Solid												Prep Type: 7	Total/N/
Analysis Batch: 39567												Prep Batch	n: <b>3951</b>
-				Spike	LCS	LCS						%Rec	
Analyte				Added	Result	Qua	lifier	Unit		D	%Rec	Limits	
Gasoline Range Organics				1000	801.1			mg/Kg		_	80	70 - 130	
(GRO)-C6-C10													
Diesel Range Organics (Over C10-C28)				1000	802.2			mg/Kg			80	70 - 130	
- · · · · · · · · · · · · · · · · · · ·	LCS	LCS											
Surrogate	%Recovery			Limits									
1-Chlorooctane	84			70 - 130									

#### Lab Sample ID: LCSD 880-39516/3-A Client Sample ID: Lab Control Sample Dup Matrix: Solid Prep Type: Total/NA Analysis Batch: 39567 Prep Batch: 39516 LCSD LCSD RPD Spike %Rec Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Gasoline Range Organics 1000 805.9 mg/Kg 81 70 - 130 1 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 801.6 mg/Kg 80 70 - 130 0 20 C10-C28)

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# **QC Sample Results**

Limits

70 - 130

70 - 130

Spike

Added

997

997

Limits 70 120 MS MS

1121

818.0

Result Qualifier

Unit

mg/Kg

mg/Kg

D

%Rec

110

80

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

Lab Sample ID: LCSD 880-39516/3-A

Lab Sample ID: 890-3432-1 MS

Matrix: Solid

Surrogate

o-Terphenyl

Analyte

C10-C28)

Surrogate

1-Chlorooctane

Matrix: Solid

(GRO)-C6-C10

Analysis Batch: 39567

Analysis Batch: 39567

Gasoline Range Organics

Diesel Range Organics (Over

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

LCSD LCSD

%Recovery Qualifier

84

81

Sample Sample

<50.0 U

<50.0 U

%Recovery

MS MS

Qualifier

Result Qualifier

# Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA Prep Batch: 39516 7 Client Sample ID: BH02 3' Prep Type: Total/NA

70 - 130		

Prep Batch: 39516

%Rec

Limits

70 - 130

1-Chlorooctane	88		70 - 130								
o-Terphenyl	75		70 - 130								
Lab Sample ID: 890-3432-1 MSE	,							C	lient Samp	le ID: Bl	H02 3'
Matrix: Solid									-	ype: To	
Analysis Batch: 39567										Batch:	
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	<50.0	U	999	1119		mg/Kg		110	70 - 130	0	20
(GRO)-C6-C10											
Diesel Range Organics (Over C10-C28)	<50.0	U	999	826.5		mg/Kg		81	70 - 130	1	20
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	87		70 - 130								
o-Terphenyl	74		70 _ 130								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-39449/1-A Matrix: Solid Analysis Batch: 39642										(	Client S	ample ID: Metho Prep Type:	
	МВ	MB											
Analyte	Result	Qualifier		RL		MDL	Unit		D	Pre	epared	Analyzed	Dil Fac
Chloride	<5.00	U		5.00			mg/Kg					11/16/22 01:26	1
Lab Sample ID: LCS 880-39449/2-A									Clie	nt	Sample	ID: Lab Control	Sample
Matrix: Solid												Prep Type:	Soluble
Analysis Batch: 39642													
			Spike		LCS	LCS						%Rec	
Analyte			Added		Result	Qual	ifier	Unit	[	C	%Rec	Limits	
Chloride			250		274.3			mg/Kg			110	90 - 110	

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

Job ID: 890-3432-1 SDG: KH227019

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-39449/3	<b>-A</b>					Clie	nt Sam	ple ID:	Lab Contro	ol Sampl	le Dup
Matrix: Solid									Prep	Type: S	oluble
Analysis Batch: 39642											
			Spike	LCSD	LCSD				%Rec		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride			250	274.5		mg/Kg		110	90 - 110	0	20
- Lab Sample ID: 890-3432-1 MS								c	lient Samp	ole ID: B	H02 3'
Matrix: Solid									Prep	Type: S	oluble
Analysis Batch: 39642											
	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	207		249	451.3		mg/Kg		98	90 - 110		
Lab Sample ID: 890-3432-1 MSD								c	lient Samp	ole ID: B	H02 3'
Matrix: Solid									Prep	Type: S	oluble
Analysis Batch: 39642											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	207		249	467.6		mg/Kg		105	90 _ 110	4	20

# **QC** Association Summary

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

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Job ID: 890-3432-1 SDG: KH227019

# GC VOA

## Prep Batch: 39563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3432-1	BH02 3'	Total/NA	Solid	5035	
890-3432-2	BH02 4'	Total/NA	Solid	5035	
890-3432-3	BH01 4'	Total/NA	Solid	5035	
890-3432-4	BH01 5'	Total/NA	Solid	5035	
890-3432-5	EFS01	Total/NA	Solid	5035	
MB 880-39563/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-39563/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-39563/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
Prep Batch: 39841					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
MB 880-39841/5-A	Method Blank	Total/NA	Solid	5035	

#### Analysis Batch: 40174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3432-1	BH02 3'	Total/NA	Solid	8021B	39563
890-3432-2	BH02 4'	Total/NA	Solid	8021B	39563
890-3432-3	BH01 4'	Total/NA	Solid	8021B	39563
890-3432-4	BH01 5'	Total/NA	Solid	8021B	39563
890-3432-5	EFS01	Total/NA	Solid	8021B	39563
MB 880-39563/5-A	Method Blank	Total/NA	Solid	8021B	39563
MB 880-39841/5-A	Method Blank	Total/NA	Solid	8021B	39841
LCS 880-39563/1-A	Lab Control Sample	Total/NA	Solid	8021B	39563
LCSD 880-39563/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	39563

#### Analysis Batch: 40324

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3432-1	BH02 3'	Total/NA	Solid	Total BTEX	
890-3432-2	BH02 4'	Total/NA	Solid	Total BTEX	
890-3432-3	BH01 4'	Total/NA	Solid	Total BTEX	
890-3432-4	BH01 5'	Total/NA	Solid	Total BTEX	
890-3432-5	EFS01	Total/NA	Solid	Total BTEX	

## GC Semi VOA

### Prep Batch: 39516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
890-3432-1	BH02 3'	Total/NA	Solid	8015NM Prep	
890-3432-2	BH02 4'	Total/NA	Solid	8015NM Prep	
890-3432-3	BH01 4'	Total/NA	Solid	8015NM Prep	
390-3432-4	BH01 5'	Total/NA	Solid	8015NM Prep	
390-3432-5	EFS01	Total/NA	Solid	8015NM Prep	
MB 880-39516/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
CS 880-39516/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
.CSD 880-39516/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3432-1 MS	BH02 3'	Total/NA	Solid	8015NM Prep	
390-3432-1 MSD	BH02 3'	Total/NA	Solid	8015NM Prep	

# Lab Sample IDClient Sample IDPrep TypeMatrixMethodPrep Batch890-3432-1BH02 3'Total/NASolid8015B NM39516

# **QC** Association Summary

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

# GC Semi VOA (Continued)

# Analysis Batch: 39567 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3432-2	BH02 4'	Total/NA	Solid	8015B NM	39516
890-3432-3	BH01 4'	Total/NA	Solid	8015B NM	39516
890-3432-4	BH01 5'	Total/NA	Solid	8015B NM	39516
890-3432-5	EFS01	Total/NA	Solid	8015B NM	39516
MB 880-39516/1-A	Method Blank	Total/NA	Solid	8015B NM	39516
LCS 880-39516/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	39516
LCSD 880-39516/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	39516
890-3432-1 MS	BH02 3'	Total/NA	Solid	8015B NM	39516
890-3432-1 MSD	BH02 3'	Total/NA	Solid	8015B NM	39516

#### Analysis Batch: 39644

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3432-1	BH02 3'	Total/NA	Solid	8015 NM	
890-3432-2	BH02 4'	Total/NA	Solid	8015 NM	
890-3432-3	BH01 4'	Total/NA	Solid	8015 NM	
890-3432-4	BH01 5'	Total/NA	Solid	8015 NM	
890-3432-5	EFS01	Total/NA	Solid	8015 NM	

# HPLC/IC

### Leach Batch: 39449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3432-1	BH02 3'	Soluble	Solid	DI Leach	
890-3432-2	BH02 4'	Soluble	Solid	DI Leach	
890-3432-3	BH01 4'	Soluble	Solid	DI Leach	
890-3432-4	BH01 5'	Soluble	Solid	DI Leach	
890-3432-5	EFS01	Soluble	Solid	DI Leach	
MB 880-39449/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-39449/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-39449/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3432-1 MS	BH02 3'	Soluble	Solid	DI Leach	
890-3432-1 MSD	BH02 3'	Soluble	Solid	DI Leach	

#### Analysis Batch: 39642

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3432-1	BH02 3'	Soluble	Solid	300.0	39449
890-3432-2	BH02 4'	Soluble	Solid	300.0	39449
890-3432-3	BH01 4'	Soluble	Solid	300.0	39449
890-3432-4	BH01 5'	Soluble	Solid	300.0	39449
890-3432-5	EFS01	Soluble	Solid	300.0	39449
MB 880-39449/1-A	Method Blank	Soluble	Solid	300.0	39449
LCS 880-39449/2-A	Lab Control Sample	Soluble	Solid	300.0	39449
LCSD 880-39449/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	39449
890-3432-1 MS	BH02 3'	Soluble	Solid	300.0	39449
890-3432-1 MSD	BH02 3'	Soluble	Solid	300.0	39449

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Job ID: 890-3432-1 SDG: KH227019

Initial

Amount

4.98 g

5 mL

10.01 g

1 uL

5.03 g

Final

Amount

5 mL

5 mL

10 mL

1 uL

50 mL

Batch

39563

40174

40324

39644

39516

39567

39449

39642

Number

Prepared

or Analyzed

11/14/22 16:30

11/23/22 07:51

11/23/22 13:25

11/15/22 16:29

11/14/22 14:27

11/15/22 11:08

11/14/22 11:43

11/16/22 01:43

Dil

25

1

1

1

1

Factor

Run

Batch

Туре

Prep

Analysis

Analysis

Analysis

Analysis

Analysis

Leach

Prep

Batch

Method

5035

8021B

Total BTEX

8015NM Prep

8015B NM

DI Leach

300.0

8015 NM

## Client Sample ID: BH02 3' Date Collected: 11/10/22 09:45 Date Received: 11/10/22 16:14

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Soluble

Soluble

Job ID: 890-3432-1 SDG: KH227019

Lab

EET MID

# Lab Sample ID: 890-3432-1 Matrix: Solid

Analyst

MNR

SM

SM

AJ

DM

AJ

ĸs

СН

5

9

## Lab Sample ID: 890-3432-2 Matrix: Solid

Client Sample ID: BH02 4'
Date Collected: 11/10/22 10:05

Date Received: 11/10/22 16:14

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	39563	11/14/22 16:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40174	11/23/22 06:29	SM	EET MID
Total/NA	Analysis	Total BTEX		1			40324	11/23/22 13:25	SM	EET MID
Total/NA	Analysis	8015 NM		1			39644	11/15/22 16:29	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	39516	11/14/22 14:27	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39567	11/15/22 12:12	AJ	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	39449	11/14/22 11:43	KS	EET MID
Soluble	Analysis	300.0		1			39642	11/16/22 02:00	СН	EET MID

## Client Sample ID: BH01 4' Date Collected: 11/10/22 10:10

#### Date Received: 11/10/22 16:14

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	39563	11/14/22 16:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40174	11/23/22 06:49	SM	EET MID
Total/NA	Analysis	Total BTEX		1			40324	11/23/22 13:25	SM	EET MID
Total/NA	Analysis	8015 NM		1			39644	11/15/22 16:29	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	39516	11/14/22 14:27	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39567	11/15/22 13:57	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	39449	11/14/22 11:43	KS	EET MID
Soluble	Analysis	300.0		1			39642	11/16/22 02:06	CH	EET MID

### Client Sample ID: BH01 5' Date Collected: 11/10/22 10:20 Date Received: 11/10/22 16:14

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	39563	11/14/22 16:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40174	11/23/22 07:10	SM	EET MID
Total/NA	Analysis	Total BTEX		1			40324	11/23/22 13:25	SM	EET MID

**Eurofins Carlsbad** 

Matrix: Solid

Matrix: Solid

Lab Sample ID: 890-3432-4

Lab Sample ID: 890-3432-3

Initial

Amount

10.01 g

1 uL

4.97 g

Final

Amount

10 mL

1 uL

50 mL

Batch

39644

39516

39567

39449

39642

Number

Dil

1

1

1

Factor

Run

Batch

Туре

Prep

Analysis

Analysis

Analysis

Leach

Batch

Method

8015 NM

8015NM Prep

8015B NM

**DI Leach** 

300.0

Date Received: 11/10/22 16:14

Prep Type

Total/NA

Total/NA

Total/NA

Soluble

Soluble

Job ID: 890-3432-1 SDG: KH227019

Lab

EET MID

EET MID

EET MID

EET MID

EET MID

# Lab Sample ID: 890-3432-4 Matrix: Solid

Analyst

AJ

DM

AJ

KS

СН

Prepared

or Analyzed

11/15/22 16:29

11/14/22 14:27

11/15/22 14:17

11/14/22 11:43

11/16/22 02:11

# 9 10 11 12 13

Lab Sample ID: 890-3432-5 Matrix: Solid

Date Collected: 11/10/22 12:44	
Date Received: 11/10/22 16:14	

**Client Sample ID: EFS01** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	39563	11/14/22 16:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40174	11/23/22 07:30	SM	EET MID
Total/NA	Analysis	Total BTEX		1			40324	11/23/22 13:25	SM	EET MID
Total/NA	Analysis	8015 NM		1			39644	11/15/22 16:29	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	39516	11/14/22 14:27	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39567	11/15/22 14:38	AJ	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	39449	11/14/22 11:43	KS	EET MID
Soluble	Analysis	300.0		1			39642	11/16/22 02:17	СН	EET MID

#### Laboratory References:

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

Job ID: 890-3432-1

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Client: Terracon Consu	liting Eng & Scientist	S		JOD ID: 890-3432-1	
Project/Site: Osage Bo	oyd Yaso			SDG: KH227019	
Laboratory: Eurof	ins Midland				
Unless otherwise noted, all a	analytes for this laboratory	were covered under each acc	reditation/certification below.		
Authority		Program	Identification Number	Expiration Date	
Texas	are included in this report	NELAP	T104704400-22-24 fied by the governing authority. This list ma	06-30-23	5
the agency does not of	ffer certification.	· •	, , , , ,		
Analysis Method	Prep Method	Matrix	Analyte		
8015 NM		Solid	Total TPH		
Total BTEX		Solid	Total BTEX		
					8
					9
					10

Eurofins Carlsbad

.

# **Method Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

Job ID: 890-3432-1 SDG: KH227019

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	E
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID	
300.0	Anions, Ion Chromatography	MCAWW	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 Refe	rences:			8
ASTM = A	STM International			
MCAWW =	= "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, Marc	h 1983 And Subsequent Revisions.		9
SW846 = '	'Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Editi	on, November 1986 And Its Updates.		
TAL SOP =	<ul> <li>TestAmerica Laboratories, Standard Operating Procedure</li> </ul>			

#### Protocol References:

#### Laboratory References:

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

# **Sample Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso Job ID: 890-3432-1 SDG: KH227019

b Sample ID	Client Sample ID	Matrix	Collected	Received	Depth	
0-3432-1	BH02 3'	Solid	11/10/22 09:45	11/10/22 16:14	3	
0-3432-2	BH02 4'	Solid	11/10/22 10:05	11/10/22 16:14	4	
0-3432-3	BH01 4'	Solid	11/10/22 10:10	11/10/22 16:14	4	Ę
0-3432-4	BH01 5'	Solid	11/10/22 10:20	11/10/22 16:14	5	
0-3432-5	EFS01	Solid	11/10/22 12:44	11/10/22 16:14	2	

			(10,00101)		lae VH	rtilly	Suckley
ture) Date/Time	ure) Received by: (Signature)	Relinquished by: (Signature)	Date/Time	(Signature)	Received by: (Signature)	(Signature)	Relinquished by: (Signature)
	erms and conditions beyond the control less previously negotiated.	bcontractors. It assigns standard term ich losses are due to circumstances bey red. These terms will be enforced unless	Eurofins Xenco, Its affiliates and su openses incurred by the client if su to Eurofins Xenco, but not analyz	Notce: 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 nego	samples constitutes a valic samples and shall not assi plied to each project and a	ument and relinquishment of a second se	itice: Signature of this doc service. Eurofins Xenco w Eurofins Xenco. A minimu
Sr Tl Sn U V Zn 15.1 / 7470 / 7471	1g Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Tl Sn Se Ag Tl U Hg: 1631/245.1/7470	3 Cd Ca Cr Co Cu Fe Pb Mg Cd Cr Co Cu Pb Mn Mo Ni S	b As Ba Be f Sb As Ba Be	13PPM Texas 11 AI CLP / SPLP 6010 : 8RCR/	analyzed To	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010 ircle Method(s) ar
			x x x	2:44 2' C		S	EFSOI
			X X	10:20 5'G		E I	3HOI
			- XXX	10:10 41 6		Y/ S	3HOI
			N X X	10:05 4' G	S i I	41 3	3H 02
			- 88	9:45 3' G	01/11 0	31 5	3H 02
Sample Comments			cont Cl B	Time Depth Grab/ # Sampled Depth Comp C	Date Sampled	Ification Matrix	Sample Identification
NaOH+Ascorbic Acia: SAPC		-	TP	perature: 10.0	Corrected Temperature:		Total Containers:
Zn Acetate+NaOH: Zn	hain of Custody	890-3432 Cha	e E H	eading: 10.2	Temperature Reading:	: Yes No N/A	Sample Custody Seals:
Na2S2O3: NaSO 3			Pai CC	-2-2	M	Yes No	Cooler Custody Seals:
NaHSO 4: NABIS			amete (2 (8)	A W W AND	Thermometer	Temp Blank:	SAMPLE RECEIPT
			ers			(	T C #.
HCL: HC HNO ;: HN H <sub>2</sub> SO ;: H <sub>2</sub> NaOH: Na			EP. 300	TAT starts the day received by the lab, if received by	Maller 1	Becky	Sampler's Name:
Cool: Cool MeOH: Me			1.000	Due Date:	D		Project Location:
None: NO DI Water: H <sub>2</sub> O			Code	sh	0	202	Project Number:
Preservative Codes	EST	ANALYSIS REQUEST		Turn Around	Boyd yasp	Osaar Bo	Project Name:
ADaPT Other:	Deliverables: EDD			Email:			Phone:
PST/UST TRRP Level IV	Reporting: Level II Level III			8220 City, State ZIP:	& MM 8	Carlsbau	City, State ZIP:
]	State of Project:			Address:			Address:
Brownfields RRC Superfund	Program: UST/PST PRP Brownfields			Company Name:	CARA	Turras	Company Name:
Work Order Comments	Work Orde			Bill to: (if different)	mant	Jac G	Project Manager:
om Page of	www.xenco.com	M (575) 988-3199	Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	Hobbs, N			
_		( (806) 794-1296	EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296	EL Paso, T	0	Xenco	
0.	Work Order No:	( (214) 902-0300 TX (210) 509-3334	Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334		<b>Environment Testing</b>		eurorins

11/23/2022

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# Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

## Login Number: 3432 List Number: 1 Creator: Clifton, Cloe

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	

Job Number: 890-3432-1 SDG Number: KH227019

List Source: Eurofins Carlsbad

Job Number: 890-3432-1 SDG Number: KH227019

List Source: Eurofins Midland

List Creation: 11/14/22 08:39 AM

# Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Login Number: 3432 List Number: 2 Creator: Rodriguez, Leticia

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	N/A	

Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").

Received by OCD: 7/11/2024 8:37:02 AM

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# **Eurofins Carlsbad**

Job Notes

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

RAMER

Generated 11/23/2022 2:51:09 PM

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

Eurofins Carlsbad is a laboratory within Eurofins Environment Testing South Central, LLC, a company within Eurofins Environment Testing Group of Companies

# **Eurofins Carlsbad**

# **Compliance Statement**

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments. QC data that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result. Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

## Coliform MCLs

• Based on the EPA primary drinking water standard MCL for total coliforms, a water supply is considered bacteriologically "SAFE" if no coliform bacteria are detected. To be considered "SAFE" your report should indicate "<1 cfu/100mL" or "NEG" for the coliform test. If you report indicates a positive result "POS" or a value greater than or equal to one, then your supply is "UNSAFE FOR DRINKING" contact your local health department.

## Warranties, Terms, and Conditions

Analyses for Field Parameters are performed by Eurofins Philadelphia field staff. Locations and certifications are identified on the Chain of Custody as follows:

ERF = field staff performs tests under NJ State certification #02015

VL = field staff performs tests under NJ State certification #06005

WG = field staff performs tests under NJ State certification #PA001

H = field staff performs tests under NJ NELAP certification #PA093, PA NELAP certification # 46-05499

• Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.

· The report shall not be reproduced, except in full, without the written consent of the laboratory

· All samples are collected as "grab" samples unless otherwise identified.

• Reported results related only to the samples as tested. Eurofins Philadelphia is not responsible for sample integrity unless sampling has been performed by a member of our staff.

• Eurofins Philadelphia is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance.

• Eurofins' online data portal "TotalAccess" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.

• The following personnel or their deputies have approved the results of the tests performed by Eurofins Philadelphia : Nicki Smith (Environmental Chemistry) and Jacqueline Gartner (Water Microbiology).

MRAMER



**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Joseph Guesnier Terracon Consulting Eng & Scientists 5847 50th St Lubbock Texas 79424 Generated 11/21/2022 6:32:12 PM

# JOB DESCRIPTION

osage boyd yasa SDG NUMBER kh227019

# **JOB NUMBER**

890-3440-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220



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Eurofins Carlsbad 11/21/2022

# **Definitions/Glossary**

Client: Terracon	Consulting Eng & Scientists	Job ID: 890-3440-1	
Project/Site: osa		SDG: kh227019	
Qualifiers			
GC VOA			1
Qualifier	Qualifier Description		
S1-	Surrogate recovery exceeds control limits, low biased.		1
U	Indicates the analyte was analyzed for but not detected.		
GC Semi VOA			1
Qualifier	Qualifier Description		
J	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.		
2	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		
	Quality Control		
RER	Relative Error Ratio (Radiochemistry)		
RL	Reporting Limit or Requested Limit (Radiochemistry)		
RPD TEF	Relative Percent Difference, a measure of the relative difference between two points		
TEQ	Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin)		

## Job ID: 890-3440-1

### Laboratory: Eurofins Carlsbad

#### Narrative

Job Narrative 890-3440-1

#### Receipt

The samples were received on 11/11/2022 3:03 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 1.0°C

#### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: E-FS 1.1 (890-3440-1), E-FS 3.1 (890-3440-2), E-FS 4.1 (890-3440-3) and BH03 (890-3440-4).

#### GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: E-FS 4.1 (890-3440-3). 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 method blank for preparation batch 880-39620 and analytical batch 880-39567 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples 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.

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

Method: TAL SOP Total BTEX - Total BTEX Calculation

Result Qualifier

Qualifier

<0.0401 U

0.0489

0.500

0.455

0.291

0.746

85

77

1.29

Result Qualifier

%Recovery

RL

0.0401

0.0401

0.0401

0.0802

0.0401

0.0802

Limits

70 - 130

70 - 130

RL

0.0802

MDL

MDL Unit

Unit

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

D

D

Prepared

11/17/22 09:35

11/17/22 09:35

11/17/22 09:35

11/17/22 09:35

11/17/22 09:35

11/17/22 09:35

Prepared

11/17/22 09:35

11/17/22 09:35

Prepared

Dil Fac

20

20

20

20

20

20

20

20

1

Dil Fac

Dil Fac

Job ID: 890-3440-1 SDG: kh227019

# **Client Sample ID: E-FS 1.1**

Date	<b>Collected:</b>	11/11/22	11:14
Date	<b>Received:</b>	11/11/22	15:03

Project/Site: osage boyd yasa

Sample Depth: 2

Analyte

Benzene

Toluene

o-Xylene

Surrogate

Analyte

**Total BTEX** 

Ethylbenzene

**Xylenes**, Total

m-Xylene & p-Xylene

4-Bromofluorobenzene (Surr)

1,4-Difluorobenzene (Surr)

Analyzed

11/19/22 05:09

11/19/22 05:09

11/19/22 05:09

11/19/22 05:09

11/19/22 05:09

11/19/22 05:09

Analyzed

11/19/22 05:09

11/19/22 05:09

Analyzed

11/21/22 15:09

Lab Sample ID: 890-3440-2

Matrix: Solid

	3

Method: SW846 8015 NM - Diesel	Range Organ	ics (DRO) (	GC)							12				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	13				
Total TPH	944		49.9		mg/Kg			11/16/22 09:14	1	14				
Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)														
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	15				
Gasoline Range Organics	90.8		49.9		mg/Kg		11/15/22 13:35	11/16/22 02:19	1					
(GRO)-C6-C10														
Diesel Range Organics (Over	546		49.9		mg/Kg		11/15/22 13:35	11/16/22 02:19	1					
C10-C28)														
Oll Range Organics (Over	307		49.9		mg/Kg		11/15/22 13:35	11/16/22 02:19	1					
C28-C36)														
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac					
1-Chlorooctane	97		70 - 130				11/15/22 13:35	11/16/22 02:19	1					
o-Terphenyl	86		70 - 130				11/15/22 13:35	11/16/22 02:19	1					

Method: MCAWW 300.0 - Anions,	Ion Chromatography - Soluble
Analyta	Beault Qualifier

Analyte	Result	Quaimer	RL	NDL	Unit	U	Prepared	Analyzed	DIFac
Chloride	1440		25.0		mg/Kg			11/18/22 02:08	5

## Client Sample ID: E-FS 3.1

```
Date Collected: 11/11/22 11:19
```

Date Received: 11/11/22 15:03

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0399	U	0.0399		mg/Kg		11/17/22 09:35	11/19/22 05:29	20
Toluene	<0.0399	U	0.0399		mg/Kg		11/17/22 09:35	11/19/22 05:29	20
Ethylbenzene	0.0599		0.0399		mg/Kg		11/17/22 09:35	11/19/22 05:29	20
m-Xylene & p-Xylene	<0.0798	U	0.0798		mg/Kg		11/17/22 09:35	11/19/22 05:29	20
o-Xylene	<0.0399	U	0.0399		mg/Kg		11/17/22 09:35	11/19/22 05:29	20
Xylenes, Total	<0.0798	U	0.0798		mg/Kg		11/17/22 09:35	11/19/22 05:29	20

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**Released to Imaging: 8/2/2024 11:28:39 AM** 

Job ID: 890-3440-1 SDG: kh227019

# **Client Sample ID: E-FS 3.1**

Date Collected: 11/11/22 11:19 Date Received: 11/11/22 15:03

Project/Site: osage boyd yasa

Sample Depth: 2

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130				11/17/22 09:35	11/19/22 05:29	20
1,4-Difluorobenzene (Surr)	82		70 - 130				11/17/22 09:35	11/19/22 05:29	20
Method: TAL SOP Total BTEX -	Total BTEX Cald	culation							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0798	U	0.0798		mg/Kg		·	11/21/22 15:09	
Method: SW846 8015 NM - Dies	el Range Organ	ics (DRO) (	GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	746		50.0		mg/Kg			11/16/22 09:14	
Method: SW846 8015B NM - Die	esel Range Orga	nics (DRO)	(GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	62.5		50.0		mg/Kg		11/15/22 13:35	11/16/22 02:42	1
Diesel Range Organics (Over C10-C28)	431		50.0		mg/Kg		11/15/22 13:35	11/16/22 02:42	
Oll Range Organics (Over C28-C36)	252		50.0		mg/Kg		11/15/22 13:35	11/16/22 02:42	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	104		70 - 130				11/15/22 13:35	11/16/22 02:42	
o-Terphenyl	92		70 - 130				11/15/22 13:35	11/16/22 02:42	-
Method: MCAWW 300.0 - Anior	s, Ion Chromato	ography - S	oluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1850		24.8		mg/Kg			11/18/22 02:15	5
lient Sample ID: E-FS 4.1							Lab Sar	nple ID: 890-	3440-3
ate Collected: 11/11/22 11:21 ate Received: 11/11/22 15:03 ample Depth: 2								Matri	ix: Solic
Method: SW846 8021B - Volatil						_			
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0444		0.0402		mg/Kg		11/17/22 09:35	11/19/22 05:49	20
Toluene	1.11		0.0402		mg/Kg		11/17/22 09:35	11/19/22 05:49	20
Ethylbenzene	2.55		0.0402		mg/Kg		11/17/22 09:35	11/19/22 05:49	20
m-Xylene & p-Xylene	2.44		0.0805		mg/Kg		11/17/22 09:35	11/19/22 05:49	20
o-Xylene	1.26		0.0402		mg/Kg		11/17/22 09:35	11/19/22 05:49	20
Xylenes, Total	3.70		0.0805		mg/Kg		11/17/22 09:35	11/19/22 05:49	20
0	a/ <b>D</b>	0 ""					Durante	A	

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130				11/17/22 09:35	11/19/22 05:49	20
1,4-Difluorobenzene (Surr)	64	S1-	70 - 130				11/17/22 09:35	11/19/22 05:49	20
Method: TAL SOP Total BTEX - Tot	al BTEX Calo	culation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	7.40		0.0805		mg/Kg			11/21/22 15:09	1

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Lab Sample ID: 890-3440-2 Matrix: Solid 5

Job ID: 890-3440-1 SDG: kh227019

Matrix: Solid

5

Lab Sample ID: 890-3440-3

# **Client Sample ID: E-FS 4.1**

Date Collected: 11/11/22 11:21 Date Received: 11/11/22 15:03

Project/Site: osage boyd yasa

—									
Method: SW846 8015 NM - Diese				MDI	Unit		Drenerad	Amelymed	Dil Fac
Analyte		Qualifier		MDL		<u>D</u>	Prepared	Analyzed	
Total TPH	3250		49.9		mg/Kg			11/10/22 09.14	
Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	303		49.9		mg/Kg		11/15/22 13:35	11/16/22 01:58	
Diesel Range Organics (Over C10-C28)	1900		49.9		mg/Kg		11/15/22 13:35	11/16/22 01:58	
Oll Range Organics (Over C28-C36)	1050		49.9		mg/Kg		11/15/22 13:35	11/16/22 01:58	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	114		70 - 130				11/15/22 13:35	11/16/22 01:58	
o-Terphenyl	99		70 - 130				11/15/22 13:35	11/16/22 01:58	1
Method: MCAWW 300.0 - Anions	, Ion Chromato	ography - So	oluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3080		25.2		mg/Kg			11/18/22 02:36	Ę
Client Sample ID: BH03							Lab San	nple ID: 890-	3440-4
Date Collected: 11/11/22 01:32									ix: Solid
Date Received: 11/11/22 15:03									
Sample Depth: 2									
- Method: SW846 8021B - Volatile	Organic Comp	ounds (GC)	)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/17/22 09:35	11/19/22 04:48	

1,4-Difluorobenzene (Surr)	110		70 - 130		11/17/22 09:35	11/19/22 04:48	1
4-Bromofluorobenzene (Surr)	95		70 - 130		11/17/22 09:35	11/19/22 04:48	1
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.00402	U	0.00402	mg/Kg	11/17/22 09:35	11/19/22 04:48	1
o-Xylene	<0.00201	U	0.00201	mg/Kg	11/17/22 09:35	11/19/22 04:48	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg	11/17/22 09:35	11/19/22 04:48	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg	11/17/22 09:35	11/19/22 04:48	1
Toluene	<0.00201	U	0.00201	mg/Kg	11/17/22 09:35	11/19/22 04:48	1
Benzene	<0.00201	U	0.00201	mg/Kg	11/17/22 09:35	11/19/22 04:48	1

Method: TAL SOP Total BTEX	- Total BIEX Cald	culation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			11/21/22 15:09	1
	sel Range Organ	ics (DRO) (0	GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/16/22 09:14	1
	iesel Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U	49.9		mg/Kg		11/15/22 13:35	11/15/22 22:45	1
(GRO)-C6-C10									

49.9

49.9

mg/Kg

mg/Kg

11/15/22 13:35

11/15/22 13:35

<49.9 U

<49.9 U

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11/15/22 22:45

11/15/22 22:45

Diesel Range Organics (Over

Oll Range Organics (Over C28-C36)

C10-C28)

1

1

# **Client Sample Results**

Job ID: 890-3440-1 SDG: kh227019

## Client Sample ID: BH03 Date Collected: 11/11/22 01:32 Date Received: 11/11/22 15:03

Project/Site: osage boyd yasa

Sample Depth: 2

Surrogate 1-Chlorooctane o-Terphenyl	% <b>Recovery</b> 96 98	Qualifier	Limits 70 - 130 70 - 130				<b>Prepared</b> 11/15/22 13:35 11/15/22 13:35	Analyzed 11/15/22 22:45 11/15/22 22:45	Dil Fac
Method: MCAWW 300.0 - Anions, Analyte Chloride		graphy - Sol Qualifier	uble 	MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed	Dil Fac

6D6. MI227013									
Lab San	nple ID: 890- Matri	3440-4 x: Solid							
Prepared	Analyzed	Dil Fac	5						
15/22 13:35	11/15/22 22:45	1							
15/22 13:35	11/15/22 22:45	1							
Prepared	Analyzed	Dil Fac							
	11/18/22 02:43	5	ŏ						
			9						
			12						

Client: Terracon Consulting Eng & Scientists Project/Site: osage boyd yasa

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

-			
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3440-1	E-FS 1.1	85	77
890-3440-2	E-FS 3.1	92	82
890-3440-3	E-FS 4.1	88	64 S1-
890-3440-4	BH03	95	110
LCS 880-39778/1-A	Lab Control Sample	100	103
LCSD 880-39778/2-A	Lab Control Sample Dup	90	97
MB 880-39778/5-A	Method Blank	75	106
MB 880-39818/5-A	Method Blank	76	106
Surrogate Legend			

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

### Matrix: Solid

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
nple ID	Client Sample ID	(70-130)	(70-130)	
1	E-FS 1.1	97	86	
2	E-FS 3.1	104	92	
-3	E-FS 4.1	114	99	
-4	BH03	96	98	
39620/2-A	Lab Control Sample	86	84	
80-39620/3-A	Lab Control Sample Dup	89	85	
-39620/1-A	Method Blank	94	92	

#### Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Job ID: 890-3440-1 SDG: kh227019

Page 95 of 268

# **QC Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: osage boyd yasa

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

Lab Sample ID: MB 880-39778/5-A Matrix: Solid							Client Sa	mple ID: Metho Prep Type: <sup>-</sup>	
Analysis Batch: 39916		MD						Prep Batcl	
Analyte		MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200		0.00200		mg/Kg		11/17/22 09:35	11/19/22 02:17	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/17/22 09:35	11/19/22 02:17	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/17/22 09:35	11/19/22 02:17	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/17/22 09:35	11/19/22 02:17	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/17/22 09:35	11/19/22 02:17	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/17/22 09:35	11/19/22 02:17	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		70 - 130				11/17/22 09:35	11/19/22 02:17	1
1,4-Difluorobenzene (Surr)	106		70 - 130				11/17/22 09:35	11/19/22 02:17	1
Lab Sample ID: LCS 880-39778/1-A						С	lient Sample I	D: Lab Control	Sample
Matrix: Solid							-	Prep Type: <sup>-</sup>	Total/NA
Analysis Batch: 39916								Prep Batch	n: <b>39778</b>
-			Spike	LCS LCS	6			• %Rec	
Analyte			Added	Result Qua	alifier Unit		D %Rec	Limits	

Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.08007		mg/Kg		80	70 - 130	_
Toluene	0.100	0.1029		mg/Kg		103	70 - 130	
Ethylbenzene	0.100	0.1044		mg/Kg		104	70 - 130	
m-Xylene & p-Xylene	0.200	0.1912		mg/Kg		96	70 - 130	
o-Xylene	0.100	0.09534		mg/Kg		95	70 - 130	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

## Lab Sample ID: LCSD 880-39778/2-A

# Matrix: Solid

Analysis Batch: 39916							Prep	Batch:	39778
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08010		mg/Kg		80	70 - 130	0	35
Toluene	0.100	0.09753		mg/Kg		98	70 - 130	5	35
Ethylbenzene	0.100	0.09716		mg/Kg		97	70 - 130	7	35
m-Xylene & p-Xylene	0.200	0.1792		mg/Kg		90	70 - 130	6	35
o-Xylene	0.100	0.09015		mg/Kg		90	70 - 130	6	35

	LCSD LCSD	)
Surrogate	%Recovery Quali	ifier Limits
4-Bromofluorobenzene (Surr)	90	70 - 130
1,4-Difluorobenzene (Surr)	97	70 - 130

#### Lab Sample ID: MB 880-39818/5-A Matrix: Solid

## Analysis Batch: 39916

	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/17/22 13:46	11/18/22 14:42	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/17/22 13:46	11/18/22 14:42	1

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Prep Type: Total/NA Prep Batch: 39818

**Client Sample ID: Method Blank** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Job ID: 890-3440-1

SDG: kh227019

# **QC Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: osage boyd yasa

Job ID: 890-3440-1 SDG: kh227019

Lab Sample ID: MB 880-39818/	5-A								Client Sa	ample ID: Metho	od Blan
Matrix: Solid	<b>-</b>									Prep Type:	
Analysis Batch: 39916										Prep Batc	
		IB MB								Trop Dato	
Analyte		ult Qualifier	RL	м	DL Uni	t	D	Р	repared	Analyzed	Dil Fa
Ethylbenzene	<0.002	00 U	0.00200		mg/		—		7/22 13:46	11/18/22 14:42	
m-Xylene & p-Xylene	<0.004		0.00400		mg/			11/1	7/22 13:46	11/18/22 14:42	
o-Xylene	<0.002		0.00200		mg/				7/22 13:46	11/18/22 14:42	
Xylenes, Total	<0.004		0.00400		mg/	-			7/22 13:46	11/18/22 14:42	
					5	5					
		MB MB									
Surrogate	%Recove		Limits						repared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)		76	70 - 130						7/22 13:46	11/18/22 14:42	
1,4-Difluorobenzene (Surr)	1	06	70 - 130					11/1	7/22 13:46	11/18/22 14:42	
ethod: 8015B NM - Diesel	Range Org	anics (D	RO) (GC)								
Lab Sample ID: MB 880-39620/ <sup>,</sup>	1-A								Client Sa	ample ID: Metho	od Blan
Matrix: Solid										Prep Type:	
Analysis Batch: 39567										Prep Batc	
-	n	IB MB									
Analyte	Res	ult Qualifier	RL	М	DL Uni	t	D	Р	repared	Analyzed	Dil Fa
Gasoline Range Organics	<50	).0 U	50.0		mg/	′Kg	_	11/1	5/22 13:35	11/15/22 19:54	
(GRO)-C6-C10											
Diesel Range Organics (Over C10-C28)	<50	).0 U	50.0		mg/	κg		11/1	5/22 13:35	11/15/22 19:54	
Oll Range Organics (Over C28-C36)	<50	).0 U	50.0		mg/	′Kg		11/1	5/22 13:35	11/15/22 19:54	
	1	IB MB									
Surrogate	%Recove	ery Qualifier	Limits					Р	repared	Analyzed	Dil Fa
1-Chlorooctane		94	70 - 130					11/1	5/22 13:35	11/15/22 19:54	
o-Terphenyl		92	70 - 130					11/1	5/22 13:35	11/15/22 19:54	
Lab Sample ID: LCS 880-39620	/ <b>2-A</b>						С	lient	Sample	ID: Lab Control	Sampl
Matrix: Solid										Prep Type:	Total/N
Analysis Batch: 39567										Prep Batc	h: <mark>3962</mark>
			Spike	LCS L	CS					%Rec	
Analyte			Added	Result Q	ualifier	Unit		D	%Rec	Limits	_
Gasoline Range Organics			1000	953.5		mg/Kg			95	70 - 130	
(GRO)-C6-C10			100-	aac -					<i></i>	70 100	
Diesel Range Organics (Over C10-C28)			1000	838.5		mg/Kg			84	70 - 130	
	LCS L	cs									
	%Recovery G		Limits								
Surrogate											
Surrogate	86		70 - 130								

#### Lab Sample ID: LCSD 880-39620/3-A Client Sample ID: Lab Control Sample Dup Matrix: Solid Prep Type: Total/NA Analysis Batch: 39567 Prep Batch: 39620 LCSD LCSD RPD Spike %Rec Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Gasoline Range Organics 1000 1012 mg/Kg 101 70 - 130 6 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 888.8 mg/Kg 89 70 - 130 6 20 C10-C28)

**Eurofins Carlsbad** 

Released to Imaging: 8/2/2024 11:28:39 AM

# Job ID: 890-3440-1 SDG: kh227019

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

Lab Sample ID: LCSD 880-3962 Matrix: Solid	0/3-A							CI	ient S	ample	D: I		Type: T	otal/NA
Analysis Batch: 39567												Prep	Batch	: 39620
	LCSD LO	CSD												
Surrogate	%Recovery Q	ualifier	Limits											
1-Chlorooctane	89		70 - 130	-										
o-Terphenyl	85		70 - 130											
/lethod: 300.0 - Anions, Ion	Chromatog	graphy												
Lab Sample ID: MB 880-39692/1	-A									Cli	ent S	ample ID:	Method	d Blank
Matrix: Solid												Prep	Type: \$	Soluble
Analysis Batch: 39819														
	M	B MB												
Analyte	Resu	ılt Qualifier		RL		MDL (	Unit		D	Prepa	ared	Analy	zed	Dil Fac
Chloride	<5.0	00 U		5.00		r	ng/Kg					11/17/22	23:45	1
Lab Sample ID: LCS 880-39692/	2-A								Clie	ent Sa	mple	ID: Lab C	ontrol	Sample
Matrix: Solid											÷.,		Type: \$	
Analysis Batch: 39819														
-			Spike		LCS	LCS						%Rec		
Analyte			Added		Result	Qualif	ier l	Jnit		D %	Rec	Limits		
Chloride			250		255.6		r	ng/Kg			102	90 _ 110		
Lab Sample ID: LCSD 880-3969	2/3-A							CI	ient S	ample	D: I	Lab Contro	ol Samp	ole Dup
Matrix: Solid												Prep	Type: S	Soluble
Analysis Batch: 39819														
-			Spike		LCSD	LCSD						%Rec		RPD
Analyte			Added		Result	Qualif	ier l	Jnit		D %	Rec	Limits	RPD	Limit
Chloride			250		247.4		r	ng/Kg			99	90 - 110	3	20

# **QC Association Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: osage boyd yasa

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Job ID: 890-3440-1 SDG: kh227019

# **GC VOA**

## Prep Batch: 39778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3440-1	E-FS 1.1	Total/NA	Solid	5035	
890-3440-2	E-FS 3.1	Total/NA	Solid	5035	
890-3440-3	E-FS 4.1	Total/NA	Solid	5035	
890-3440-4	BH03	Total/NA	Solid	5035	
MB 880-39778/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-39778/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-39778/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
Prep Batch: 39818					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-39818/5-A	Method Blank	Total/NA	Solid	5035	

#### Analysis Batch: 39916

LC3D 880-39778/2-A		Total/NA	30110	5055		8
Prep Batch: 39818						
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch	9
MB 880-39818/5-A	Method Blank	Total/NA	Solid	5035		
Analysis Batch: 39916	j -					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch	
890-3440-1	E-FS 1.1	Total/NA	Solid	8021B	39778	
890-3440-2	E-FS 3.1	Total/NA	Solid	8021B	39778	
890-3440-3	E-FS 4.1	Total/NA	Solid	8021B	39778	
890-3440-4	BH03	Total/NA	Solid	8021B	39778	40
MB 880-39778/5-A	Method Blank	Total/NA	Solid	8021B	39778	13
MB 880-39818/5-A	Method Blank	Total/NA	Solid	8021B	39818	
LCS 880-39778/1-A	Lab Control Sample	Total/NA	Solid	8021B	39778	
LCSD 880-39778/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	39778	

#### Analysis Batch: 40123

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3440-1	E-FS 1.1	Total/NA	Solid	Total BTEX	
890-3440-2	E-FS 3.1	Total/NA	Solid	Total BTEX	
890-3440-3	E-FS 4.1	Total/NA	Solid	Total BTEX	
890-3440-4	BH03	Total/NA	Solid	Total BTEX	

# GC Semi VOA

### Analysis Batch: 39567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3440-1	E-FS 1.1	Total/NA	Solid	8015B NM	39620
890-3440-2	E-FS 3.1	Total/NA	Solid	8015B NM	39620
890-3440-3	E-FS 4.1	Total/NA	Solid	8015B NM	39620
890-3440-4	BH03	Total/NA	Solid	8015B NM	39620
MB 880-39620/1-A	Method Blank	Total/NA	Solid	8015B NM	39620
LCS 880-39620/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	39620
LCSD 880-39620/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	39620

#### Prep Batch: 39620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3440-1	E-FS 1.1	Total/NA	Solid	8015NM Prep	
890-3440-2	E-FS 3.1	Total/NA	Solid	8015NM Prep	
890-3440-3	E-FS 4.1	Total/NA	Solid	8015NM Prep	
890-3440-4	BH03	Total/NA	Solid	8015NM Prep	
MB 880-39620/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-39620/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-39620/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

# **QC** Association Summary

Client: Terracon Consulting Eng & Scientists Project/Site: osage boyd yasa

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Job ID: 890-3440-1 SDG: kh227019

# GC Semi VOA

## Analysis Batch: 39671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3440-1	E-FS 1.1	Total/NA	Solid	8015 NM	
890-3440-2	E-FS 3.1	Total/NA	Solid	8015 NM	
890-3440-3	E-FS 4.1	Total/NA	Solid	8015 NM	
890-3440-4	BH03	Total/NA	Solid	8015 NM	

# HPLC/IC

## Leach Batch: 39692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3440-1	E-FS 1.1	Soluble	Solid	DI Leach	
890-3440-2	E-FS 3.1	Soluble	Solid	DI Leach	
890-3440-3	E-FS 4.1	Soluble	Solid	DI Leach	
890-3440-4	BH03	Soluble	Solid	DI Leach	
MB 880-39692/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-39692/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-39692/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

### Analysis Batch: 39819

-					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
390-3440-1	E-FS 1.1	Soluble	Solid	DI Leach	
390-3440-2	E-FS 3.1	Soluble	Solid	DI Leach	
390-3440-3	E-FS 4.1	Soluble	Solid	DI Leach	
90-3440-4	BH03	Soluble	Solid	DI Leach	
/IB 880-39692/1-A	Method Blank	Soluble	Solid	DI Leach	
CS 880-39692/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
		<u> </u>	0-1:-1	DULarah	
LCSD 880-39692/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
_CSD 880-39692/3-A nalysis Batch: 39819 Lab Sample ID		Soluble Prep Type	Matrix	Method	Prep Batch
nalysis Batch: 39819 .ab Sample ID					Prep Batch 39692
nalysis Batch: 39819 Lab Sample ID 390-3440-1	Client Sample ID	Ргер Туре	Matrix	Method	_ <u> </u>
nalysis Batch: 39819 .ab Sample ID 390-3440-1 390-3440-2	Client Sample ID E-FS 1.1	Prep Type Soluble	Matrix Solid	<u>Method</u> 300.0	39692
nalysis Batch: 39819 Lab Sample ID 390-3440-1 390-3440-2 390-3440-3	Client Sample ID E-FS 1.1 E-FS 3.1	Prep Type Soluble Soluble	Matrix Solid Solid	Method 300.0 300.0	39692 39692
nalysis Batch: 39819 Lab Sample ID 390-3440-1 390-3440-2 390-3440-3 390-3440-4	Client Sample ID E-FS 1.1 E-FS 3.1 E-FS 4.1	Prep Type Soluble Soluble Soluble	Matrix Solid Solid Solid	Method 300.0 300.0 300.0	39692 39692 39692 39692
nalysis Batch: 39819	Client Sample ID           E-FS 1.1           E-FS 3.1           E-FS 4.1           BH03	Prep Type Soluble Soluble Soluble Soluble	Matrix Solid Solid Solid Solid	Method 300.0 300.0 300.0 300.0	39692 39692 39692 39692 39692

Job ID: 890-3440-1 SDG: kh227019

# Lab Sample ID: 890-3440-1 Matrix: Solid

Date Collected: 11/11/22 11:14 Date Received: 11/11/22 15:03

**Client Sample ID: E-FS 1.1** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	39778	11/17/22 09:35	MNR	EET MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	39916	11/19/22 05:09	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40123	11/21/22 15:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			39671	11/16/22 09:14	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	39620	11/15/22 13:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39567	11/16/22 02:19	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	39692	11/16/22 10:18	KS	EET MID
Soluble	Analysis	300.0		5			39819	11/18/22 02:08	СН	EET MID

# Lab Sample ID: 890-3440-2

Lab Sample ID: 890-3440-3

Lab Sample ID: 890-3440-4

Matrix: Solid

Matrix: Solid

5 6

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Date Collected: 11/11/22 11:19 Date Received: 11/11/22 15:03

**Client Sample ID: E-FS 3.1** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	39778	11/17/22 09:35	MNR	EET MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	39916	11/19/22 05:29	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40123	11/21/22 15:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			39671	11/16/22 09:14	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	39620	11/15/22 13:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39567	11/16/22 02:42	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	39692	11/16/22 10:18	KS	EET MID
Soluble	Analysis	300.0		5			39819	11/18/22 02:15	СН	EET MID

# **Client Sample ID: E-FS 4.1** Date Collected: 11/11/22 11:21

## Date Received: 11/11/22 15:03

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	39778	11/17/22 09:35	MNR	EET MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	39916	11/19/22 05:49	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40123	11/21/22 15:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			39671	11/16/22 09:14	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	39620	11/15/22 13:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39567	11/16/22 01:58	AJ	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	39692	11/16/22 10:18	KS	EET MID
Soluble	Analysis	300.0		5			39819	11/18/22 02:36	CH	EET MID

## **Client Sample ID: BH03** Date Collected: 11/11/22 01:32 Date Received: 11/11/22 15:03

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	39778	11/17/22 09:35	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	39916	11/19/22 04:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40123	11/21/22 15:09	SM	EET MID

**Eurofins Carlsbad** 

# Released to Imaging: 8/2/2024 11:28:39 AM

Matrix: Solid

# Date Collected: 11/11/22 01:32 Date Received: 11/11/22 15:03

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			39671	11/16/22 09:14	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	39620	11/15/22 13:35	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	39567	11/15/22 22:45	AJ	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	39692	11/16/22 10:18	KS	EET MID
Soluble	Analysis	300.0		5			39819	11/18/22 02:43	СН	EET MID

#### Laboratory References:

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

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Job ID: 890-3440-1 SDG: kh227019

# Lab Sample ID: 890-3440-4

Matrix: Solid

Eurofins Carlsbad

Released to Imaging: 8/2/2024 11:28:39 AM

Client: Terracon Consulting Eng & Scientists Project/Site: osage boyd yasa Job ID: 890-3440-1 SDG: kh227019

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## Laboratory: Eurofins Midland

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

uthority	P	rogram	Identification Number	Expiration Date	
exas	N	ELAP	T104704400-22-24	06-30-23	
The following analytes	are included in this report, b	ut the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes for	
the agency does not o Analysis Method		Matrix	Analvte		
the agency does not on Analysis Method 8015 NM	ffer certification . Prep Method	Matrix Solid	Analyte Total TPH		

# **Method Summary**

## Client: Terracon Consulting Eng & Scientists Project/Site: osage boyd yasa

Job ID: 890-3440-1 SDG: kh227019

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	MCAWW	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 Refe	rences:			8
ASTM = A	STM International			
MCAWW =	= "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 2	1983 And Subsequent Revisions.		9
SW846 = '	Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition	, November 1986 And Its Updates.		
TAL SOP =	<ul> <li>TestAmerica Laboratories, Standard Operating Procedure</li> </ul>			

#### Protocol References:

#### Laboratory References:

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

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# Job ID: 890-3440-1 SDG: kh227019

Client: Terracon Consulting Eng & Scientists Project/Site: osage boyd yasa

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3440-1	E-FS 1.1	Solid	11/11/22 11:14	11/11/22 15:03	2
890-3440-2	E-FS 3.1	Solid	11/11/22 11:19	11/11/22 15:03	2
890-3440-3	E-FS 4.1	Solid	11/11/22 11:21	11/11/22 15:03	2
890-3440-4	BH03	Solid	11/11/22 01:32	11/11/22 15:03	2

.

Buckey Mall	Relinquished by: (Signature)	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed Notce: Signature of this document and relinquishment of samples const of service. Eurofins Xenco will be liable only for the cost of samples and ; of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each j		BHOJ	E-FS 4.1	F-FS 3.1		Sample Identification	Total Containers:	Yes	Samples Received Intact:	SAMPLE RECEIPT Ter	PO #:		Project Number: KH22	Project Name:	S	City, State ZIP: Corlsb	Address: 4518		Project Manager:			eurofins
Way UV	A Received by: (Signator	8RCR thutes a valid p shall not assun		5 4 1:32	K		Sampled Sampled	Matrix Date Time		NO IN/A	es No	Temp Blank: Yes No Wet Ice:	1 611144	W=11.1	2,70/9 Moutine	Bayd Yasar Tu	4020	nod nm	8 w Parce St	ž	Guissian		Xenco	<b>Environment Testing</b>
11.	x(e) D	13PPM Texas 11 AI Sb As Ba LP/SPLP 6010 : 8RCRA Sb As B rase order from client company to Eurofins Xenco. I ry responsibility for any losses or expenses incurred ry responsibility for any losses or expenses incurred ge of \$5 for each sample submitted to Eurofins Xen		V G I	* C -		Comp Cont	Depth	1.0			Yes No	the lab, if received by 4:30pm	he day period by	Rush Code	Turn Around	Email bucky Sul.	88220 City, State ZIP:	Address:	Company Name:	Bill to: (if different)	Hobbs, NM (575)	EL Paso, TX (915)	Houston, TX (28 Midland. TX (432)
1.2 2 1505	Date/Time Relinquished by: (Signature)	A 13PPM Texas 11 AI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo f TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U unchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions ne any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control tharge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously nego		8	<u>x</u> x	1	8 7 8 7	211 371 PPF	EX		(• 80		el.3 1 B	)		ANALY	Willy Queracours					Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296	Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland. TX (432) 704-5440. San Antonio. TX (210) 509-3334
	y: (Signature) Received by: (Signature)	Se								890-3440 Chain of Custody						ANALYSIS REQUEST	Court Deliverables: EDD	Reporting: Level II Le	State of Project:	Program: UST/PST P	Wo	ćMMM		Work O
	: (Signature) Date/Time	Ag SiO <sub>2</sub> Na Sr Tl Sn U V Zn Hg: 1631 / 245.1 / 7470 / 7471						Sample Comments	NaOH+Ascorbic Acid: SAPC	Zn Acetate+NaOH: Zn	NaHSO 4: NABIS	H <sub>3</sub> PO <sub>4</sub> : HP	2	Cool: Cool MeOH: Me HCL: HC HNO ;; HN	None: NO DI Water: H <sub>2</sub> O	Preservative Codes	ADaPT Other:	Reporting: Level II Level III PST/UST TRRP Level IV		UST/PST PRP Brownfields RRC Superfund	Work Order Comments	www.xenco.com Page of		Work Order No:

11/21/2022

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Job Number: 890-3440-1 SDG Number: kh227019

List Source: Eurofins Carlsbad

# Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

# Login Number: 3440 List Number: 1

Creator: Clifton, Cloe

<6mm (1/4").

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	
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	N/A	

Job Number: 890-3440-1 SDG Number: kh227019

List Source: Eurofins Midland

List Creation: 11/15/22 11:14 AM

# Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Login Number: 3440 List Number: 2 Creator: Rodriguez, Leticia

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	N/A	

Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").
Received by OCD: 7/11/2024 8:37:02 AM

## **Eurofins Carlsbad**

**Job Notes** 

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

RAMER

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

Eurofins Carlsbad is a laboratory within Eurofins Environment Testing South Central, LLC, a company within Eurofins Environment Testing Group of Companies

## **Eurofins Carlsbad**

## **Compliance Statement**

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments. QC data that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result. Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Coliform MCLs

• Based on the EPA primary drinking water standard MCL for total coliforms, a water supply is considered bacteriologically "SAFE" if no coliform bacteria are detected. To be considered "SAFE" your report should indicate "<1 cfu/100mL" or "NEG" for the coliform test. If you report indicates a positive result "POS" or a value greater than or equal to one, then your supply is "UNSAFE FOR DRINKING" contact your local health department.

#### Warranties, Terms, and Conditions

Analyses for Field Parameters are performed by Eurofins Philadelphia field staff. Locations and certifications are identified on the Chain of Custody as follows:

ERF = field staff performs tests under NJ State certification #02015

VL = field staff performs tests under NJ State certification #06005

WG = field staff performs tests under NJ State certification #PA001

H = field staff performs tests under NJ NELAP certification #PA093, PA NELAP certification # 46-05499

• Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.

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· All samples are collected as "grab" samples unless otherwise identified.

• Reported results related only to the samples as tested. Eurofins Philadelphia is not responsible for sample integrity unless sampling has been performed by a member of our staff.

• Eurofins Philadelphia is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance.

• Eurofins' online data portal "TotalAccess" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.

• The following personnel or their deputies have approved the results of the tests performed by Eurofins Philadelphia : Nicki Smith (Environmental Chemistry) and Jacqueline Gartner (Water Microbiology).

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**Environment Testing** 

# **ANALYTICAL REPORT**

## PREPARED FOR

Attn: Joseph Guesnier Terracon Consulting Eng & Scientists 5847 50th St Lubbock, Texas 79424 Generated 11/29/2022 3:22:02 PM

## **JOB DESCRIPTION**

Osage Boyd yaser SDG NUMBER KH227019

## **JOB NUMBER**

890-3485-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220

See page two for job notes and contact information



Received by OCD: 7/11/2024 8:37:02 AM

## **Eurofins Carlsbad**

**Job Notes** 

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## Authorization

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

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## **Eurofins Carlsbad**

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VL = field staff performs tests under NJ State certification #06005

WG = field staff performs tests under NJ State certification #PA001

H = field staff performs tests under NJ NELAP certification #PA093, PA NELAP certification # 46-05499

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SDG: KH227019

Laboratory Job ID: 890-3485-1

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Detection Limit (DoD/DOE)

Estimated Detection Limit (Dioxin)

Limit of Detection (DoD/DOE)

Method Detection Limit

Minimum Level (Dioxin)

Most Probable Number

Not Calculated

Negative / Absent

Positive / Present Practical Quantitation Limit

Presumptive

Quality Control

Method Quantitation Limit

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Too Numerous To Count

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Limit of Quantitation (DoD/DOE)

Decision Level Concentration (Radiochemistry)

EPA recommended "Maximum Contaminant Level"

Minimum Detectable Concentration (Radiochemistry)

Not Detected at the reporting limit (or MDL or EDL if shown)

Minimum Detectable Activity (Radiochemistry)

DL

DLC

EDL

LOD

LOQ

MCL

MDA

MDC

MDL

ML

MPN

MQL

NC ND

NEG

POS

PQL PRES

QC

RER

RL RPD

TEF

TEQ

TNTC

DL, RA, RE, IN

ceived by OCL	D: 7/11/2024 8:37:02 AM Pag	ge 115 of 2	68
	Definitions/Glossary		
	n Consulting Eng & Scientists Job ID: 89		
Project/Site: Os	sage Boyd yaser SDG: K	H227019	
Qualifiers			3
GC VOA			
Qualifier	Qualifier Description		
U	Indicates the analyte was analyzed for but not detected.		_
GC Semi VOA			5
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		
U	Indicates the analyte was analyzed for but not detected.		8
Glossary			Q
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		4.9

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

4

5

#### Job ID: 890-3485-1

#### Laboratory: Eurofins Carlsbad

#### Narrative

Job Narrative 890-3485-1

#### Receipt

The samples were received on 11/15/2022 3:33 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 2.0°C

#### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: SE-WS01 (890-3485-1) and ES-WS01 (890-3485-2).

#### 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: Surrogate recovery for the following samples were outside control limits: (LCS 880-40185/2-A) and (LCSD 880-40185/3-A). Evidence of matrix interferences is not obvious.

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.

Job ID: 890-3485-1 SDG: KH227019

### **Client Sample ID: SE-WS01**

Date	Collected:	11/15/22	12:27
Date	Received:	11/15/22	15:33

Project/Site: Osage Boyd yaser

Lab Sample ID: 890-3485-1

Matrix: Soli

-1 lid	3
	4
	5
ac 600	6
00 00 00	7
i00 i00	8
ac	9
500 500	10
ac	11
1	12
ac	13
1	

Date Collected: 11/15/22 12:27
Date Received: 11/15/22 15:33
Sample Depth: 0.2'
Method: SW846 8021B - Volatile Organic Analyte

Client: Terracon Consulting Eng & Scientists

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.996	U	0.996		mg/Kg		11/28/22 14:35	11/29/22 13:13	50
Toluene	10.2		0.996		mg/Kg		11/28/22 14:35	11/29/22 13:13	50
Ethylbenzene	16.4		0.996		mg/Kg		11/28/22 14:35	11/29/22 13:13	50
m-Xylene & p-Xylene	19.8		1.99		mg/Kg		11/28/22 14:35	11/29/22 13:13	50
o-Xylene	7.47		0.996		mg/Kg		11/28/22 14:35	11/29/22 13:13	50
Xylenes, Total	27.3		1.99		mg/Kg		11/28/22 14:35	11/29/22 13:13	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	105		70 - 130				11/28/22 14:35	11/29/22 13:13	50
1,4-Difluorobenzene (Surr)	108		70 - 130				11/28/22 14:35	11/29/22 13:13	500
Method: TAL SOP Total BTEX -	Total BTEX Calc	ulation							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	53.9		1.99		mg/Kg			11/29/22 14:49	
Method: SW846 8015 NM - Dies	sel Range Organi	ics (DRO) (C	GC)						
Analyte		Qualifier		MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	8290		250		mg/Kg			11/23/22 12:17	
Method: SW846 8015B NM - Die	esel Range Orga	nics (DRO)	(GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	513		250		mg/Kg		11/22/22 09:47	11/22/22 18:21	
Diesel Range Organics (Over C10-C28)	7010		250		mg/Kg		11/22/22 09:47	11/22/22 18:21	Ę
Oll Range Organics (Over C28-C36)	769		250		mg/Kg		11/22/22 09:47	11/22/22 18:21	Ę
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130				11/22/22 09:47	11/22/22 18:21	5
o-Terphenyl	126		70 - 130				11/22/22 09:47	11/22/22 18:21	5
Method: MCAWW 300.0 - Anion	is, Ion Chromato	graphy - So	bluble						
Analyte		Qualifier		MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	345		4.99		mg/Kg			11/22/22 01:11	1
Client Sample ID: ES-WS01	1						Lab San	nple ID: 890-3	3485-
ate Collected: 11/15/22 12:32								-	ix: Soli
ate Received: 11/15/22 15:33									
ample Depth: 0.2'									
Method: SW846 8021B - Volatile	e Organic Comp	ounds (GC)	1						
Analyte	· ·	Qualifier	, RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.139		0.0398		mg/Kg		11/28/22 14:35	11/29/22 13:34	20
Foluene	0.406		0.0398		mg/Kg		11/28/22 14:35	11/29/22 13:34	20
Ethylbenzene	0.599		0.0398		mg/Kg		11/28/22 14:35	11/29/22 13:34	20
n-Xylene & p-Xylene	0.700		0.0795		mg/Kg		11/28/22 14:35	11/29/22 13:34	20
							11/20/22 11:00	11/20/22 10.01	2.1

Eurofins Carlsbad

11/29/22 13:34

11/29/22 13:34

o-Xylene

Xylenes, Total

0.0398

0.0795

mg/Kg

mg/Kg

11/28/22 14:35

11/28/22 14:35

0.392

1.09

20

20

Job ID: 890-3485-1 SDG: KH227019

Matrix: Solid

5

Lab Sample ID: 890-3485-2

### Client Sample ID: ES-WS01

Project/Site: Osage Boyd yaser

Date Collected: 11/15/22 12:32

Date Received: 11/15/22 15:33 Sample Depth: 0.2'

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	128		70 - 130				11/28/22 14:35	11/29/22 13:34	20
1,4-Difluorobenzene (Surr)	113		70 - 130				11/28/22 14:35	11/29/22 13:34	20
Method: TAL SOP Total BTEX - T	otal BTEX Calo	ulation							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	2.24		0.0795		mg/Kg			11/29/22 14:49	1
Method: SW846 8015 NM - Diese	l Range Organ	ics (DRO) (	GC)						
Analyte	•••	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	76.5		49.9		mg/Kg			11/23/22 12:17	1
Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)	(GC)						
Analyte	• •	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U	49.9		mg/Kg		11/22/22 09:47	11/22/22 17:37	1
(GRO)-C6-C10									
Diesel Range Organics (Over	76.5		49.9		mg/Kg		11/22/22 09:47	11/22/22 17:37	1
C10-C28)									
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/22 09:47	11/22/22 17:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	81		70 - 130				11/22/22 09:47	11/22/22 17:37	1
o-Terphenyl	96		70 - 130				11/22/22 09:47	11/22/22 17:37	1
Method: MCAWW 300.0 - Anions	. Ion Chromato	oraphy - So	oluble						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd yaser

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

#### Percent Surrogate Recovery (Acceptance Limits) BFB1 DFBZ1 **Client Sample ID** (70-130) (70-130) Lab Sample ID 890-3485-1 SE-WS01 105 108 890-3485-2 ES-WS01 128 113 LCS 880-40471/1-A Lab Control Sample 106 109 LCSD 880-40471/2-A Lab Control Sample Dup 93 113 MB 880-40471/5-A Method Blank 82 104 Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

#### Matrix: Solid

				Percent Surrogate Recovery (Acceptance Limits)
Lab Camala ID		1CO1 (70-130)	OTPH1 (70-130)	
Lab Sample ID 890-3485-1	Client Sample ID SE-WS01	113	126	
890-3485-2	ES-WS01	81	96	
LCS 880-40185/2-A	Lab Control Sample	163 S1+	190 S1+	
LCSD 880-40185/3-A	Lab Control Sample Dup	157 S1+	180 S1+	
MB 880-40185/1-A	Method Blank	108	126	

#### Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Job ID: 890-3485-1 SDG: KH227019

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## Prep Type: Total/NA

Prep Type: Total/NA

### **QC Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd yaser

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

Lab Sample ID: MB 880-40471/5-A							Client Sa	mple ID: Metho	
Matrix: Solid Analysis Batch: 40540								Prep Type: 1 Prep Batch	
Analysis Batch. 40040	МВ	МВ						Thep Bater	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/28/22 14:35	11/29/22 10:48	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/28/22 14:35	11/29/22 10:48	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/28/22 14:35	11/29/22 10:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/28/22 14:35	11/29/22 10:48	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/28/22 14:35	11/29/22 10:48	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/28/22 14:35	11/29/22 10:48	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		70 - 130				11/28/22 14:35	11/29/22 10:48	1
1,4-Difluorobenzene (Surr)	104		70 - 130				11/28/22 14:35	11/29/22 10:48	1

#### Lab Sample ID: LCS 880-40471/1-A Matrix: Solid

### Analysis Batch: 40540

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1088		mg/Kg		109	70 - 130	
Toluene	0.100	0.1011		mg/Kg		101	70 - 130	
Ethylbenzene	0.100	0.1035		mg/Kg		103	70 - 130	
m-Xylene & p-Xylene	0.200	0.2150		mg/Kg		108	70 - 130	
o-Xylene	0.100	0.1054		mg/Kg		105	70 - 130	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

#### Lab Sample ID: LCSD 880-40471/2-A

#### Matrix: Solid Local Destail

Analysis Batch: 40540							Prep	Batch:	40471
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1068		mg/Kg		107	70 - 130	2	35
Toluene	0.100	0.09285		mg/Kg		93	70 - 130	8	35
Ethylbenzene	0.100	0.08914		mg/Kg		89	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.1804		mg/Kg		90	70 - 130	18	35
o-Xylene	0.100	0.08869		mg/Kg		89	70 - 130	17	35

LCSD	LCSD	
%Recovery	Qualifier	Limits
93		70 - 130
113		70 - 130
	%Recovery 	

#### **Client Sample ID: Lab Control Sample**

Prep Type: Total/NA

Prep Type: Total/NA

### Prep Batch: 40471

			%Rec	
nit	D	%Rec	Limits	
g/Kg		109	70 - 130	
g/Kg		101	70 - 130	
g/Kg		103	70 - 130	
g/Kg		108	70 - 130	
g/Kg		105	70 - 130	

<b>Client Sample</b>	ID:	Lab	Control	Sample	Dup

5

7

Job ID: 890-3485-1

SDG: KH227019

## **QC Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd yaser

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

 Lab Sample ID: MB 880-40185/1-A												Client Sa	mple ID:	Methoo	l Blank
Matrix: Solid													-		otal/NA
Analysis Batch: 40170															40185
		мв	МВ												
Analyte	R	esult	Qualifier		RL		MDL	Unit		D	Р	repared	Analyz	ed	Dil Fac
Gasoline Range Organics		<50.0		5	0.0			mg/Kg	1	—		2/22 08:09	11/22/22		1
(GRO)-C6-C10								0.0							
Diesel Range Organics (Over	<	<50.0	U	5	0.0			mg/Kg	I		11/2	2/22 08:09	11/22/22	08:21	1
C10-C28)															
Oll Range Organics (Over C28-C36)	<	<50.0	U	5	0.0			mg/Kg	l		11/2	2/22 08:09	11/22/22	08:21	1
		ΜВ	МВ												
Surrogate	%Reco		Qualifier	Limits							D	repared	Analyz	od	Dil Fac
1-Chlorooctane	/onecc	108	Quanner	70 - 13								2/22 08:09	11/22/22		1
o-Terphenyl		126		70 - 13								2/22 00:09	11/22/22		1
		120		70 - 13	0						11/2	2/22 00.09	11/22/22	00.21	1
	۸									c	liont	Sample	D: Lab Co	ontrol S	Sample
Matrix: Solid										Ŭ	nem	Jampie			otal/NA
															: 40185
Analysis Batch: 40170				Spike		1.00	LCS						%Rec	Datch	40105
Amaluta				Added					11		D	0/ Dee			
Analyte						Result	Qua	Inter	Unit				Limits		
Gasoline Range Organics (GRO)-C6-C10				1000		816.2			mg/Kg			82	70 - 130		
Diesel Range Organics (Over				1000		988.2			mg/Kg			99	70 - 130		
C10-C28)				1000		300.2			iiig/itg			33	70 - 100		
010 020)															
	LCS	LCS													
Surrogate 9	&Recovery		ifier	Limits											
1-Chlorooctane	163	S1+		70 - 130											
o-Terphenyl	190	S1+		70 - 130											
_											_				
Lab Sample ID: LCSD 880-40185/3	3-A								Cli	ent	Sam	ple ID: L	ab Contro		
Matrix: Solid															otal/NA
Analysis Batch: 40170														Batch	40185
				Spike		LCSD	LCS	D					%Rec		RPD
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits	RPD	Limit
Gasoline Range Organics				1000		827.6			mg/Kg			83	70 - 130	1	20
(GRO)-C6-C10														_	
Diesel Range Organics (Over				1000		925.3			mg/Kg			93	70 - 130	7	20
C10-C28)															
	LCSD	LCSI	ס												
Surrogate	&Recovery	Qual	ifier	Limits											
1-Chlorooctane	157	S1+		70 - 130											
o-Terphenyl	180	S1+		70 - 130											
	N														
Method: 300.0 - Anions, Ion C	hromat	ogra	aphy												
- I ab Samplo ID: MP 990 20930/4 A												Client Se	mple ID:	Mother	Riank
Lab Sample ID: MB 880-39830/1-A												Chefit 38			
Matrix: Solid													Ргер	Type: S	Soluble
Analysis Batch: 40139			MD												
Analysis	-	MB						11		-	-				DH 5
		esult <5.00	Qualifier		RL		MDL	Unit mg/Kg		D	<u>Р</u>	repared	Analyz 11/21/22		Dil Fac
Chloride		5 11(1	11	5											

Job ID: 890-3485-1 SDG: KH227019

### **QC Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd yaser Job ID: 890-3485-1 SDG: KH227019

### Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-39830/2-A Matrix: Solid Analysis Batch: 40139					Client	t Sample	ID: Lab Co Prep	ontrol Sa Type: S		
Analysis Baton. 40100	Spike	LCS	LCS				%Rec			
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits			
Chloride	250	256.0		mg/Kg		102	90 - 110			
Lab Sample ID: LCSD 880-39830/3-A Matrix: Solid				Client Sample ID: Lab Control Sample Dup Prep Type: Soluble						
Analysis Batch: 40139	Spike		LCSD				%Rec		RPD	
Analyte	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	256.0		mg/Kg		102	90 - 110	0	20	

### **QC** Association Summary

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd yaser

Job ID: 890-3485-1 SDG: KH227019

### **GC VOA**

#### Prep Batch: 40471

ab Sample ID.	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
90-3485-1	SE-WS01	Total/NA	Solid	5035	
90-3485-2	ES-WS01	Total/NA	Solid	5035	
/IB 880-40471/5-A	Method Blank	Total/NA	Solid	5035	
.CS 880-40471/1-A	Lab Control Sample	Total/NA	Solid	5035	
.CSD 880-40471/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
nalysis Batch: 40540					
ab Sample ID.	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
90-3485-1	SE-WS01	Total/NA	Solid	8021B	4047
90-3485-2	ES-WS01	Total/NA	Solid	8021B	4047
/IB 880-40471/5-A	Method Blank	Total/NA	Solid	8021B	4047
.CS 880-40471/1-A	Lab Control Sample	Total/NA	Solid	8021B	4047
.CSD 880-40471/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	4047
nalysis Batch: 40619					
ab Sample ID.	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
90-3485-1	SE-WS01	Total/NA	Solid	Total BTEX	
		Total/NA	Solid	Total BTEX	

## Analysis Batch: 40170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3485-1	SE-WS01	Total/NA	Solid	8015B NM	40185
890-3485-2	ES-WS01	Total/NA	Solid	8015B NM	40185
MB 880-40185/1-A	Method Blank	Total/NA	Solid	8015B NM	40185
LCS 880-40185/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	40185
LCSD 880-40185/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	40185

#### Prep Batch: 40185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3485-1	SE-WS01	Total/NA	Solid	8015NM Prep	
890-3485-2	ES-WS01	Total/NA	Solid	8015NM Prep	
MB 880-40185/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-40185/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-40185/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

#### Analysis Batch: 40308

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3485-1	SE-WS01	Total/NA	Solid	8015 NM	
890-3485-2	ES-WS01	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 39830

Lab Sample ID 890-3485-1	Client Sample ID SE-WS01	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
890-3485-2	ES-WS01	Soluble	Solid	DI Leach	
MB 880-39830/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-39830/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-39830/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

### **QC** Association Summary

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd yaser

Job ID: 890-3485-1 SDG: KH227019

#### HPLC/IC

#### Analysis Batch: 40139

Lab Sample IDClient Sample IDPrep TypeMatrixMethod890-3485-1SE-WS01SolubleSolid300.0890-3485-2ES-WS01SolubleSolubleSolid300.0MB 880-39830/1-AMethod BlankSolubleSolubleSolid300.0LCS 880-39830/2-ALab Control Sample DupSolubleSolubleSolid300.0LCS 880-39830/3-ALab Control Sample DupSolubleSolubleSolid300.0	Prep Batch 39830 39830 39830 39830 39830 39830
90-3485-1         SE-WS01         Soluble         Solid         300.0           90-3485-2         ES-WS01         Soluble         Solid         300.0           18 880-39830/1-A         Method Blank         Soluble         Solid         300.0           CS 880-39830/2-A         Lab Control Sample         Soluble         Solid         300.0	39830 39830 39830
IB 880-39830/1-A         Method Blank         Soluble         Solid         300.0           CS 880-39830/2-A         Lab Control Sample         Soluble         Solid         300.0	39830 39830
CS 880-39830/2-A Lab Control Sample Soluble Solid 300.0	39830
CSD 880-39830/3-A Lab Control Sample Dup Soluble Solid 300.0	30830
	03030

Eurofins Carlsbad

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Initial

Amount

5.02 g

5 mL

10.01 g

1 uL

5.01 g

50 mL

Final

Amount

5 mL

5 mL

10 mL

1 uL

50 mL

50 mL

Batch

40471

40540

40619

40308

40185

40170

39830

40139

Number

Prepared

or Analyzed

11/28/22 14:35

11/29/22 13:13

11/29/22 14:49

11/23/22 12:17

11/22/22 09:47

11/22/22 18:21

11/17/22 14:36

11/22/22 01:11

Dil

500

1

1

5

1

Factor

Run

Batch

Туре

Prep

Analysis

Analysis

Analysis

Analysis

Analysis

Leach

Client Sample ID: ES-WS01

Prep

Batch

Method

5035

8021B

Total BTEX

8015NM Prep

8015B NM

DI Leach

300.0

8015 NM

#### Client Sample ID: SE-WS01 Date Collected: 11/15/22 12:27 Date Received: 11/15/22 15:33

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Soluble

Soluble

Job ID: 890-3485-1 SDG: KH227019

## Lab Sample ID: 890-3485-1

Analyst

MNR

MNR

SM

SM

AM

SM

СН

СН

Matrix: Solid

Lab

EET MID

## Lab Sample ID: 890-3485-2

Matrix: Solid

## Date Collected: 11/15/22 12:32 Date Received: 11/15/22 15:33 Batch Batch Dura

	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	5035			5.03 g	5 mL	40471	11/28/22 14:35	MNR	EET MID	
Total/NA	Analysis	8021B		20	5 mL	5 mL	40540	11/29/22 13:34	MNR	EET MID	
Total/NA	Analysis	Total BTEX		1			40619	11/29/22 14:49	SM	EET MID	
Total/NA	Analysis	8015 NM		1			40308	11/23/22 12:17	SM	EET MID	
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	40185	11/22/22 09:47	AM	EET MID	
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40170	11/22/22 17:37	SM	EET MID	
Soluble	Leach	DI Leach			4.99 g	50 mL	39830	11/17/22 14:36	СН	EET MID	
Soluble	Analysis	300.0		1	50 mL	50 mL	40139	11/22/22 01:17	СН	EET MID	

#### Laboratory References:

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

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd yaser Page 126 of 268

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Job ID: 890-3485-1
SDG: KH227019

#### Laboratory: Eurofins Midland

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

Authority	F	Program	Identification Number	Expiration Date	
Texas	Ν	IELAP	T104704400-22-24	06-30-23	
The following enclutes	and in all of a data was and the				
the agency does not o		but the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes for which	
• ,		Matrix	aed by the governing authority. This list ma	ay include analytes for whic	
the agency does not o	fer certification.	-	, , , , ,	ay include analytes for white	

### **Method Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd yaser

Job ID: 890-3485-1 SDG: KH227019

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	MCAWW	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

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. 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

5	
8	
9	
11	
13	

### **Sample Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd yaser Job ID: 890-3485-1 SDG: KH227019

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-3485-1	SE-WS01	Solid	11/15/22 12:27	11/15/22 15:33	0.2'
890-3485-2	ES-WS01	Solid	11/15/22 12:32	11/15/22 15:33	0.2'

Released to Imaging: 8/2/2024 11:28:39 AM

.

		x & "N	11-15-22 1583		weller	V Maller	Bicky
ture) Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	e)	A Received by: (Signature)	(Signature)	Relinquished by: (Signatu
	erms and conditions beyond the control nless previously negotiated.		rofins Xenco, its affiliates and si snses incurred by the client if su Eurofins Xenco, but not analyz	ser from client company to Eu shillity for any losses or exp for each sample submitted to	Kottce: 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 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 circumstance 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 u	ument and relinquishment of sam ill be liable only for the cost of sam m charge of \$85.00 will be applied	Notice: Signature of this doci of service. Eurofins Xenco w of Eurofins Xenco. A minimu
Ag SiO <sub>2</sub> Na Sr Tl Sn U V Zn Hg: 1631/245.1/7470/7471	4i K Se	A 13PPM Texas 11 AI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo N TCLP/SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U	b As Ba Be B Cd ( Sb As Ba Be Cd Cr	PM Texas 11 AI Sb 3PLP 6010 : 8RCRA SI	8RCR.	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010 Circle Method(s) ar
			8 8 8	* CI	+ 12:32	1002 0	ES - L
			8	10-2' C 1	11/15 12:20	SOIL S	SE - W
Sample Comments			ch	Depth Grab/ # of Comp Cont	Cate Time Sampled Sampled	lification Matrix	Sample Identification
NaOH+Ascorbic Acid: SAPC			lac TE Pf	D O	Corrected Temperature:		Total Containers:
Zn Acetate+NaOH: Zn	ain of Custody	890-3485 Chain of (	7.0 : X 	2	Temperature Reading:		Sample Custody Seals:
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>			le (2	Para	Thermometer ID: //	Act: Yes No NA	Samples Received Intact: Cooler Custody Seals:
H <sub>3</sub> PO 4: HP			(:	Yes No	- Yes No Wet Ice:	Temp Blank:	SAMPLE RECEIPT
2			EP 30 22 5	the lab, if received by 4:30pm	144		PO #:
HCI: HC HNO 3: HN			40	a day received by	Due Date:	Folcher	Project Location:
			)	Rush	0	NH22 2019	Project Number:
Preservative Codes	-	ANALYSIS REQUEST			0/44	Osage Boy	Project Name:
ADaPT  Other:	Deliverables: EDD A	kuracen	c.miller 6	beeky sell	4620	575 689	Phone:
PST/UST TRRP Level IV	Reporting: Level II Level III	Re		88 220 City, State ZIP:	d nr 8822	Carlsha	City, State ZIP:
	State of Project:	St		Address:	1 Parce	4518 W	Address:
Brownfields RRC Superfund	Program: UST/PST PRP Brownfields	Pr		Company Name:	en	Turcac	Company Name:
Work Order Comments	Work Order			Bill to: (if different)	usured	Jac Ge	Project Manager:
om Page of	www.xenco.com	NM (575) 988-3199	Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	Hobbs, NM	>	,	
•		TX (806) 794-1296	EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296	EL Paso, TX		Xenco	
2	Work Order No:	"X (214) 902-0300 5, TX (210) 509-3334	Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334	Houston, T Midland, TX (	<b>Environment Testing</b>		🔅 eurotins
		tody	hain of Custody	0		2	

11/29/2022

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### Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

#### Login Number: 3485 List Number: 1 Creator: Stutzman, Amanda

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	

List Source: Eurofins Carlsbad

### Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Login Number: 3485 List Number: 2 Creator: Rodriguez, Leticia

<6mm (1/4").

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	N/A	

Job Number: 890-3485-1 SDG Number: KH227019 List Source: Eurofins Midland List Creation: 11/17/22 02:07 PM Received by OCD: 7/11/2024 8:37:02 AM



**Environment Testing** 

# **ANALYTICAL REPORT**

## **PREPARED FOR**

Attn: Joseph Guesnier Terracon Consulting Eng & Scientists 5847 50th St Lubbock, Texas 79424 Generated 11/30/2022 11:11:20 AM

## JOB DESCRIPTION

Osage Boyd Yaso SDG NUMBER KH227019

## **JOB NUMBER**

890-3492-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220

See page two for job notes and contact information



Received by OCD: 7/11/2024 8:37:02 AM

1

## **Eurofins Carlsbad**

Job Notes

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

RAMER

Generated 11/30/2022 11:11:20 AM

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

Eurofins Carlsbad is a laboratory within Eurofins Environment Testing South Central, LLC, a company within Eurofins Environment Testing Group of Companies

## **Eurofins Carlsbad**

## **Compliance Statement**

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments. QC data that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result. Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Coliform MCLs

• Based on the EPA primary drinking water standard MCL for total coliforms, a water supply is considered bacteriologically "SAFE" if no coliform bacteria are detected. To be considered "SAFE" your report should indicate "<1 cfu/100mL" or "NEG" for the coliform test. If you report indicates a positive result "POS" or a value greater than or equal to one, then your supply is "UNSAFE FOR DRINKING" contact your local health department.

#### Warranties, Terms, and Conditions

Analyses for Field Parameters are performed by Eurofins Philadelphia field staff. Locations and certifications are identified on the Chain of Custody as follows:

ERF = field staff performs tests under NJ State certification #02015

VL = field staff performs tests under NJ State certification #06005

WG = field staff performs tests under NJ State certification #PA001

H = field staff performs tests under NJ NELAP certification #PA093, PA NELAP certification # 46-05499

• Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.

· The report shall not be reproduced, except in full, without the written consent of the laboratory

· All samples are collected as "grab" samples unless otherwise identified.

• Reported results related only to the samples as tested. Eurofins Philadelphia is not responsible for sample integrity unless sampling has been performed by a member of our staff.

• Eurofins Philadelphia is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance.

• Eurofins' online data portal "TotalAccess" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.

• The following personnel or their deputies have approved the results of the tests performed by Eurofins Philadelphia : Nicki Smith (Environmental Chemistry) and Jacqueline Gartner (Water Microbiology).

MRAMER

Laboratory Job ID: 890-3492-1 SDG: KH227019

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~		
	Definitions/Glossary	
Client: Terracon Project/Site: Os	Consulting Eng & ScientistsJob ID: 890-3492-1age Boyd YasoSDG: KH227019	2
Qualifiers		3
GC VOA Qualifier	Qualifier Description	4
S1-	Surrogate recovery exceeds control limits, low biased.	
U	Indicates the analyte was analyzed for but not detected.	_5
GC Semi VOA		
Qualifier S1+	Qualifier Description Surrogate recovery exceeds control limits, high biased.	
U	Surrogate recovery exceeds control limits, high blased. Indicates the analyte was analyzed for but not detected.	
HPLC/IC		o
Qualifier	Qualifier Description	0
U	Indicates the analyte was analyzed for but not detected.	6
Glossary		ð
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)	1
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	

Abbreviation	These commonly used abbreviations may or may not be present in this report.	
a	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** 

Job ID: 890-3492-1 SDG: KH227019

#### Job ID: 890-3492-1

#### Laboratory: Eurofins Carlsbad

#### Narrative

Job Narrative 890-3492-1

#### Receipt

The samples were received on 11/16/2022 2:32 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 2.6°C

#### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: S-WS03 (890-3492-1), S-WS04 (890-3492-2), SW-FS01 (890-3492-3), SE-FS01 (890-3492-4), EM-WS01 (890-3492-5), EM-FS02 (890-3492-6), EN-WS01 (890-3492-7), EN-WS02 (890-3492-8), EN-FS01 (890-3492-9), N-WS01 (890-3492-10), WN-WS01 (890-3492-11), WN-WS02 (890-3492-12), WN-FS01 (890-3492-13) and WN-FS02 (890-3492-14).

#### GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: N-WS01 (890-3492-10) and WN-WS01 (890-3492-11). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

#### GC Semi VOA

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-40177 and analytical batch 880-40170 was outside the upper control limits.

Method 8015MOD NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-40177/2-A) and (LCSD 880-40177/3-A). Evidence of matrix interferences is not obvious.

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.

Job ID: 890-3492-1 SDG: KH227019

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Project/Site: Osage Boyd Yaso

## D: 890-3492-1

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Client Sample ID: S-WS03 ate Collected: 11/16/22 10:57 ate Received: 11/16/22 14:32							Lab Sar	nple ID: 890- Matri	3492-' x: Solie
ample Depth: 0-2									
Method: SW846 8021B - Volatile			· · · · · · · · · · · · · · · · · · ·						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.198		0.198		mg/Kg		11/28/22 10:23	11/28/22 13:59	10
Toluene	<0.198	U	0.198		mg/Kg		11/28/22 10:23	11/28/22 13:59	10
Ethylbenzene	1.34		0.198		mg/Kg		11/28/22 10:23	11/28/22 13:59	10
m-Xylene & p-Xylene	1.72		0.396		mg/Kg		11/28/22 10:23	11/28/22 13:59	10
o-Xylene	0.848		0.198		mg/Kg		11/28/22 10:23	11/28/22 13:59	10
Xylenes, Total	2.57		0.396		mg/Kg		11/28/22 10:23	11/28/22 13:59	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	93		70 - 130				11/28/22 10:23	11/28/22 13:59	10
1,4-Difluorobenzene (Surr)	94		70 - 130				11/28/22 10:23	11/28/22 13:59	10
Method: TAL SOP Total BTEX -	Total BTEX Cal	culation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	3.91		0.396		mg/Kg			11/28/22 16:52	
Method: SW846 8015 NM - Dies	el Range Organ	ics (DRO) (	GC)						
Analyte	· · ·	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	1690		49.8		mg/Kg			11/23/22 12:17	
Method: SW846 8015B NM - Die	esel Range Orga	nics (DRO)	(GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics	127		49.8		mg/Kg		11/22/22 08:21	11/23/22 04:36	
(GRO)-C6-C10			10.0		117		11/00/00 00 01	44/00/00 04 00	
Diesel Range Organics (Over C10-C28)	1400		49.8		mg/Kg		11/22/22 08:21	11/23/22 04:36	
Oll Range Organics (Over	166		49.8		mg/Kg		11/22/22 08:21	11/23/22 04:36	
C28-C36)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	83		70 - 130				11/22/22 08:21	11/23/22 04:36	
o-Terphenyl	91		70 - 130				11/22/22 08:21	11/23/22 04:36	
	s, Ion Chromato	ography - S	oluble						
Method: MCAWW 300.0 - Anion		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Method: MCAWW 300.0 - Anion Analyte	Result	Quanner							
	Result 159	Quanner	4.97		mg/Kg			11/22/22 15:23	
Analyte					mg/Kg		Lab San	11/22/22 15:23	

Sample Depth: 0-2

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

Analyte	Result Q	Qualifier RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.201 U	J 0.201	mg/Kg		11/28/22 10:23	11/28/22 14:19	100
Toluene	0.429	0.201	mg/Kg		11/28/22 10:23	11/28/22 14:19	100
Ethylbenzene	0.992	0.201	mg/Kg		11/28/22 10:23	11/28/22 14:19	100
m-Xylene & p-Xylene	1.01	0.402	mg/Kg		11/28/22 10:23	11/28/22 14:19	100
o-Xylene	0.546	0.201	mg/Kg		11/28/22 10:23	11/28/22 14:19	100
Xylenes, Total	1.56	0.402	mg/Kg		11/28/22 10:23	11/28/22 14:19	100

Job ID: 890-3492-1 SDG: KH227019

Matrix: Solid

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Lab Sample ID: 890-3492-2

### Client Sample ID: S-WS04 Date Collected: 11/16/22 10:59

Date Received: 11/16/22 14:32

Project/Site: Osage Boyd Yaso

Samp	le Depth	: 0-2
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Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	85		70 - 130				11/28/22 10:23	11/28/22 14:19	10
1,4-Difluorobenzene (Surr)	88		70 - 130				11/28/22 10:23	11/28/22 14:19	10
Method: TAL SOP Total BTEX - To	tal BTEX Cal	culation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	2.98		0.402		mg/Kg			11/28/22 16:52	
Method: SW846 8015 NM - Diesel	Range Organ	ics (DRO) (0	GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	4630		250		mg/Kg			11/23/22 12:17	
Method: SW846 8015B NM - Diese	el Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	<250	U	250		mg/Kg		11/22/22 08:21	11/23/22 03:09	
Diesel Range Organics (Over C10-C28)	3900		250		mg/Kg		11/22/22 08:21	11/23/22 03:09	
Oll Range Organics (Over C28-C36)	733		250		mg/Kg		11/22/22 08:21	11/23/22 03:09	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	83		70 - 130				11/22/22 08:21	11/23/22 03:09	
o-Terphenyl	99		70 - 130				11/22/22 08:21	11/23/22 03:09	
Analyte Chloride	183	Qualifier	RL	MDL	mg/Kg	<u>D</u>	Prepared	Analyzed 11/22/22 15:40	Dil Fa
lient Sample ID: SW-FS01							Lab San	nple ID: 890-	3492-
ate Collected: 11/16/22 11:02 ate Received: 11/16/22 14:32									x: Soli
ample Depth: 2									
ample Depth: 2 Method: SW846 8021B - Volatile C	Organic Comp	ounds (GC)							
Method: SW846 8021B - Volatile C		<mark>ounds (GC)</mark> Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Method: SW846 8021B - Volatile C Analyte		Qualifier		MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed	
Method: SW846 8021B - Volatile C Analyte Benzene	Result	Qualifier	RL	MDL		<u>D</u>	· · · · · · · · · · · · · · · · · · ·		10
Method: SW846 8021B - Volatile C Analyte Benzene Toluene	<b>Result</b> <0.199	Qualifier	<b>RL</b> 0.199	MDL	mg/Kg	<u> </u>	11/28/22 10:23	11/28/22 14:40	10 10
Method: SW846 8021B - Volatile C Analyte Benzene Toluene Ethylbenzene	Result <0.199 0.983	Qualifier	RL 0.199 0.199	MDL	mg/Kg mg/Kg	<u> </u>	11/28/22 10:23 11/28/22 10:23	11/28/22 14:40 11/28/22 14:40	10 10 10
Method: SW846 8021B - Volatile C Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene	Result <0.199 0.983 1.65	Qualifier	RL 0.199 0.199 0.199	MDL	mg/Kg mg/Kg mg/Kg	<u>D</u>	11/28/22 10:23 11/28/22 10:23 11/28/22 10:23	11/28/22 14:40 11/28/22 14:40 11/28/22 14:40	10 10 10 10
Method: SW846 8021B - Volatile C Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene	Result <0.199 0.983 1.65 1.68	Qualifier	RL 0.199 0.199 0.199 0.398	MDL	mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	11/28/22 10:23 11/28/22 10:23 11/28/22 10:23 11/28/22 10:23	11/28/22 14:40 11/28/22 14:40 11/28/22 14:40 11/28/22 14:40 11/28/22 14:40	10 10 10 10 10
Method: SW846 8021B - Volatile C Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total	Result <0.199 0.983 1.65 1.68 0.864	Qualifier U	RL           0.199           0.199           0.199           0.398           0.199	MDL	mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	11/28/22 10:23           11/28/22 10:23           11/28/22 10:23           11/28/22 10:23           11/28/22 10:23           11/28/22 10:23	11/28/22         14:40           11/28/22         14:40           11/28/22         14:40           11/28/22         14:40           11/28/22         14:40           11/28/22         14:40	10 10 10 10 10 10
Method: SW846 8021B - Volatile C Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate	Result <0.199 0.983 1.65 1.68 0.864 2.54	Qualifier U	RL           0.199           0.199           0.199           0.398           0.199           0.398           0.398	MDL	mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u> </u>	11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23	11/28/22 14:40 11/28/22 14:40 11/28/22 14:40 11/28/22 14:40 11/28/22 14:40 11/28/22 14:40	10 10 10 10 10 10 10 <b>Dill Fa</b>
Method: SW846 8021B - Volatile C Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate 4-Bromofluorobenzene (Surr)	Result <0.199 0.983 1.65 1.68 0.864 2.54 %Recovery	Qualifier U	RL           0.199           0.199           0.199           0.199           0.398           0.199           0.398           0.398           Limits	MDL	mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	11/28/22 10:23 11/28/22 10:23 11/28/22 10:23 11/28/22 10:23 11/28/22 10:23 11/28/22 10:23 Prepared	11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40	10 10 10 10 10 10 10 <b>Dil F</b> a
Method: SW846 8021B - Volatile C Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate 4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr) Method: TAL SOP Total BTEX - To	Result           <0.199	Qualifier U Qualifier	RL           0.199           0.199           0.199           0.398           0.199           0.398           0.199           0.398           70 - 130           70 - 130		mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg		11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23	11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40	10 10 10 10 10 10 10 <b>Dil Fa</b> 10 10
Method: SW846 8021B - Volatile C Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate 4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr)	Result           <0.199	Qualifier	RL           0.199           0.199           0.199           0.398           0.199           0.398           0.199           0.398           70 - 130		mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23	11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40         11/28/22 14:40	Dil Fa 100 100 100 100 100 100 100 101 100 100 100 100 101 100 101 100

Job ID: 890-3492-1 SDG: KH227019

Matrix: Solid

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Lab Sample ID: 890-3492-3

## Client Sample ID: SW-FS01

Date Collected: 11/16/22 11:02 Date Received: 11/16/22 14:32

Project/Site: Osage Boyd Yaso

Sample Depth: 2

Method: SW846 8015 NM - Dies Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	4000		49.9		mg/Kg			11/23/22 12:17	
Method: SW846 8015B NM - Di	iesel Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	145		49.9		mg/Kg		11/22/22 08:21	11/23/22 02:03	
Diesel Range Organics (Over C10-C28)	3420		49.9		mg/Kg		11/22/22 08:21	11/23/22 02:03	
Oll Range Organics (Over C28-C36)	436		49.9		mg/Kg		11/22/22 08:21	11/23/22 02:03	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	93		70 - 130				11/22/22 08:21	11/23/22 02:03	
o-Terphenyl	101		70 - 130				11/22/22 08:21	11/23/22 02:03	
Method: MCAWW 300.0 - Anio	ns, Ion Chromato	ography - So	oluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	288		5.02		mg/Kg			11/22/22 15:46	
								Matri	x: Soli
lient Sample ID: SE-FS01 ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2								Matri	x: Soli
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil				MDI			Dessared		
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatii Analyte	Result	Qualifier	RL	MDL	-	<u>D</u>	Prepared	Analyzed	Dil Fa
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene	Result <0.199		<b>RL</b> 0.199	MDL	mg/Kg	<u>D</u>	11/28/22 10:23	Analyzed 11/28/22 15:00	<b>Dil F</b> a
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Toluene	Result <0.199 4.54	Qualifier	RL 0.199 0.199	MDL	mg/Kg mg/Kg	<u>D</u>	11/28/22 10:23 11/28/22 10:23	Analyzed 11/28/22 15:00 11/28/22 15:00	<b>Dil Fa</b> 10 10
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Foluene Ethylbenzene	Result <0.199 4.54 5.81	Qualifier	<b>RL</b> 0.199 0.199 0.199	MDL	mg/Kg mg/Kg mg/Kg	<u> </u>	11/28/22 10:23 11/28/22 10:23 11/28/22 10:23	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00	<b>Dil Fa</b> 10 10 10
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene	Result <0.199 4.54 5.81 6.16	Qualifier	RL 0.199 0.199 0.199 0.398	MDL	mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	11/28/22 10:23 11/28/22 10:23 11/28/22 10:23 11/28/22 10:23	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00	<b>Dil Fa</b> 10 10 10 10
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene p-Xylene	Result <0.199 4.54 5.81 6.16 2.69	Qualifier	RL 0.199 0.199 0.199 0.398 0.199	MDL	mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00	<b>Dil Fa</b> 10 10 10 10 10
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total	Result <0.199 4.54 5.81 6.16 2.69 8.85	Qualifier U	RL           0.199           0.199           0.199           0.398           0.199           0.398           0.398	MDL	mg/Kg mg/Kg mg/Kg mg/Kg	D	11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00	<b>Dil Fa</b> 10 10 10 10 10
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate	Result <0.199 4.54 5.81 6.16 2.69 8.85 %Recovery	Qualifier	RL 0.199 0.199 0.398 0.199 0.398 0.398 Limits	MDL	mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         Prepared	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 Analyzed	<b>Dil Fa</b> 10 10 10 10 10 10 <b>Dil Fa</b>
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate 4-Bromofluorobenzene (Surr)	Result           <0.199	Qualifier U	RL           0.199           0.199           0.199           0.398           0.199           0.398           0.199           0.398           70 - 130	MDL	mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u> </u>	11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 Analyzed 11/28/22 15:00	<b>Dil Fa</b> 10 10 10 10 10 10 <b>Dil Fa</b> 10
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene bo-Xylene Xylenes, Total Surrogate 4-Bromofluorobenzene (Surr)	Result <0.199 4.54 5.81 6.16 2.69 8.85 %Recovery	Qualifier U	RL 0.199 0.199 0.398 0.199 0.398 0.398 Limits	MDL	mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         Prepared	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 Analyzed	Dil Fa 10 10 10 10 10 10 10 10 10 10 10 10 10
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene p-Xylene Xylenes, Total Surrogate 4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr) Method: TAL SOP Total BTEX	Result <0.199 4.54 5.81 6.16 2.69 8.85 %Recovery 85 86 - Total BTEX Calo	Qualifier U Qualifier	RL           0.199           0.199           0.398           0.199           0.398           0.199           0.398           0.199           0.398           70 - 130           70 - 130		mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg		11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 Analyzed 11/28/22 15:00 11/28/22 15:00	Dil Fa 10 10 10 10 10 10 10 10 10 10
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene p-Xylene Xylenes, Total Surrogate 4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr) Method: TAL SOP Total BTEX - Analyte	Result <ul> <li>Result</li> <li>&lt;0.199</li> <li>4.54</li> <li>5.81</li> <li>6.16</li> <li>2.69</li> <li>8.85</li> <li>%Recovery</li> <li>85</li> <li>86</li> <li>Total BTEX Calc</li> <li>Result</li> </ul>	Qualifier U Qualifier	RL         0.199         0.199         0.398         0.199         0.398         0.199         0.398         0.199         0.398         70 - 130         70 - 130         RL		mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg Unit	D	11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23           11/28/22         10:23	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 Analyzed Analyzed	Dil Fa 10 10 10 10 10 10 10 10 10 10
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate 4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr) Method: TAL SOP Total BTEX - Analyte	Result <0.199 4.54 5.81 6.16 2.69 8.85 %Recovery 85 86 - Total BTEX Calo	Qualifier U Qualifier	RL           0.199           0.199           0.398           0.199           0.398           0.199           0.398           0.199           0.398           70 - 130           70 - 130		mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg		11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 Analyzed 11/28/22 15:00 11/28/22 15:00	Dil Fa 10 10 10 10 10 10 10 10 10 10
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32	Result           <0.199	Qualifier U Qualifier Culation Qualifier ics (DRO) (	RL           0.199           0.199           0.398           0.199           0.398           0.199           0.398           D.199           0.398           D.199           0.398           D.199           0.398           Limits           70 - 130           70 - 130           RL           0.398	MDL	mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg Unit mg/Kg		11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         Prepared         11/28/22 10:23         Prepared	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 Analyzed Analyzed	<b>Dil Fa</b> 10 10 10 10 10 10 10 10 10 10 10 10 10
ate Collected: 11/16/22 11:04 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Volatil Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate 4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr) Method: TAL SOP Total BTEX Analyte Total BTEX	Result           <0.199	Qualifier U Qualifier Qualifier Qualifier	RL           0.199           0.199           0.398           0.199           0.398           0.199           0.398           D.199           0.398           D.199           0.398           D.199           0.398           Limits           70 - 130           70 - 130           RL           0.398	MDL	mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg Unit		11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23         11/28/22 10:23	Analyzed 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 11/28/22 15:00 Analyzed Analyzed	Dil Fa 10 10 10 10 10 10 10 10 10 10 10 10 10

method. Offorto of tob tim - bies	ci italige orgai		·)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	569		249		mg/Kg		11/22/22 08:21	11/23/22 03:30	5
(GRO)-C6-C10									
Diesel Range Organics (Over	7140		249		mg/Kg		11/22/22 08:21	11/23/22 03:30	5
C10-C28)									

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

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Result Qualifier

Qualifier

883

97

129

791

Result Qualifier

%Recovery

RL

249

RL

25.0

Limits

70 - 130

70 - 130

MDL Unit

MDL Unit

mg/Kg

mg/Kg

D

D

Prepared

11/22/22 08:21

Prepared

11/22/22 08:21

11/22/22 08:21

Prepared

Job ID: 890-3492-1 SDG: KH227019

## Client Sample ID: SE-FS01

Date Collected: 11/16/22 11:04 Date Received: 11/16/22 14:32

**Oll Range Organics (Over** 

Sample Depth: 2

Analyte

C28-C36) Surrogate

1-Chlorooctane

o-Terphenyl

Analyte

Chloride

Project/Site: Osage Boyd Yaso

### Lab Sample ID: 890-3492-4 Matrix: Solid

Analyzed 11/23/22 03:30

Analyzed

11/23/22 03:30

11/23/22 03:30

Analyzed

11/22/22 15:51

Lab Sample ID: 890-3492-5

x: Solid

Dil Fac

Dil Fac

Dil Fac

Matrix: Solid

5

5

5

5

Client Sample ID: EM-WS01 Date Collected: 11/16/22 11:07

Date Received: 11/16/22 14:32

Sample Depth: 0-2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.200	U	0.200		mg/Kg		11/28/22 10:23	11/28/22 15:21	100
Toluene	<0.200	U	0.200		mg/Kg		11/28/22 10:23	11/28/22 15:21	100
Ethylbenzene	2.00		0.200		mg/Kg		11/28/22 10:23	11/28/22 15:21	100
m-Xylene & p-Xylene	1.93		0.399		mg/Kg		11/28/22 10:23	11/28/22 15:21	100
o-Xylene	1.15		0.200		mg/Kg		11/28/22 10:23	11/28/22 15:21	100
Xylenes, Total	3.08		0.399		mg/Kg		11/28/22 10:23	11/28/22 15:21	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	81		70 - 130				11/28/22 10:23	11/28/22 15:21	100
1,4-Difluorobenzene (Surr)	88		70 - 130				11/28/22 10:23	11/28/22 15:21	100
Method: TAL SOP Total BTEX -	Total BTEX Cal	culation							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	5.08		0.399		mg/Kg			11/28/22 16:52	
Method: SW846 8015 NM - Dies	sel Range Organ	ics (DRO) (	GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	1620		50.0		mg/Kg			11/23/22 12:17	
Method: SW846 8015B NM - Di	esel Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	172		50.0		mg/Kg		11/22/22 08:21	11/23/22 04:14	
Diesel Range Organics (Over C10-C28)	1270		50.0		mg/Kg		11/22/22 08:21	11/23/22 04:14	
Oll Range Organics (Over	174		50.0		mg/Kg		11/22/22 08:21	11/23/22 04:14	
C28-C36)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Surrogate 1-Chlorooctane	% <b>Recovery</b> 88	Qualifier	Limits 70 - 130				Prepared 11/22/22 08:21	Analyzed 11/23/22 04:14	Dil Fa

		Clie	nt Sample R	esults	5				
Client: Terracon Consulting Eng & So	cientists							Job ID: 890	-3492-1
Project/Site: Osage Boyd Yaso								SDG: KH	1227019
Client Sample ID: EM-WS01							Lab San	nple ID: 890-	3492-5
Date Collected: 11/16/22 11:07								Matri	x: Solid
Date Received: 11/16/22 14:32									
Sample Depth: 0-2									
Method: MCAWW 300.0 - Anions,	Ion Chromato	ography - S	Soluble						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	932		24.9		mg/Kg			11/22/22 15:57	5
Client Sample ID: EM-FS02							Lab Sar	nple ID: 890-	3492-6
Date Collected: 11/16/22 11:14									x: Solid
Date Received: 11/16/22 14:32									
Sample Depth: 2									
Method: SW846 8021B - Volatile O	rganic Comp	ounds (GC	;)						
Analyte		Qualifier	RL	MDL		<u>D</u>	Prepared	Analyzed	Dil Fac
Benzene	<0.201	U	0.201		mg/Kg		11/28/22 10:23	11/28/22 15:41	100
Toluene	1.76		0.201		mg/Kg		11/28/22 10:23	11/28/22 15:41	100
Ethylbenzene	4.41		0.201		mg/Kg		11/28/22 10:23	11/28/22 15:41	100
m-Xylene & p-Xylene	3.95		0.402		mg/Kg		11/28/22 10:23	11/28/22 15:41	100
o-Xylene	2.05		0.201		mg/Kg		11/28/22 10:23	11/28/22 15:41	100
Xylenes, Total	6.00		0.402		mg/Kg		11/28/22 10:23	11/28/22 15:41	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		70 - 130				11/28/22 10:23	11/28/22 15:41	100
1,4-Difluorobenzene (Surr)	91		70 - 130				11/28/22 10:23	11/28/22 15:41	100
Method: TAL SOP Total BTEX - To	tal BTEX Calo	culation							
Analyte	Result	Qualifier		MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	12.2		0.402		mg/Kg			11/28/22 16:52	1
Method: SW846 8015 NM - Diesel	Range Organ	ics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	2810		50.0		mg/Kg			11/23/22 12:17	1
Method: SW846 8015B NM - Diese	Range Orga	nics (DRO	) (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	270		50.0		mg/Kg		11/22/22 08:21	11/23/22 03:52	1
Diesel Range Organics (Over C10-C28)	2240		50.0		mg/Kg		11/22/22 08:21	11/23/22 03:52	1
Oll Range Organics (Over C28-C36)	302		50.0		mg/Kg		11/22/22 08:21	11/23/22 03:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	108		70 - 130				11/22/22 08:21	11/23/22 03:52	1
o-Terphenyl	114		70 - 130				11/22/22 08:21	11/23/22 03:52	1
Method: MCAWW 300.0 - Anions,	Ion Chromato	ography - S	Soluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1110		25.3		mg/Kg			11/22/22 16:03	5

Job ID: 890-3492-1 SDG: KH227019

### **Client Sample ID: EN-WS01**

Date	Collected:	11/16/22	11:16
Date	Received:	11/16/22	14:32

Lab Sample ID: 890-3492-7 Matrix: Solid

Method: SW846 8021B - Volatile ( Analyte	• •	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0398		0.0398		mg/Kg		11/28/22 14:18	11/29/22 14:44	2
Foluene	<0.0398		0.0398		mg/Kg		11/28/22 14:18	11/29/22 14:44	20
Ethylbenzene	<0.0398		0.0398		mg/Kg		11/28/22 14:18	11/29/22 14:44	20
n-Xylene & p-Xylene	<0.0795		0.0795		mg/Kg		11/28/22 14:18	11/29/22 14:44	20
p-Xylene	<0.0398		0.0398		mg/Kg		11/28/22 14:18	11/29/22 14:44	20
Kylenes, Total	<0.0795		0.0795		mg/Kg		11/28/22 14:18	11/29/22 14:44	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	88		70 - 130				11/28/22 14:18	11/29/22 14:44	2
1,4-Difluorobenzene (Surr)	71		70 - 130				11/28/22 14:18	11/29/22 14:44	2
Method: TAL SOP Total BTEX - To	otal BTEX Cal	culation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.0795	U	0.0795		mg/Kg			11/29/22 15:04	
Method: SW846 8015 NM - Diesel	I Range Organ	ics (DRO) (	GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	230		49.9		mg/Kg			11/23/22 12:17	
Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics GRO)-C6-C10	<49.9	U	49.9		mg/Kg		11/22/22 08:21	11/23/22 00:35	
Diesel Range Organics (Over C10-C28)	230		49.9		mg/Kg		11/22/22 08:21	11/23/22 00:35	
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/22 08:21	11/23/22 00:35	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	89		70 - 130				11/22/22 08:21	11/23/22 00:35	
p-Terphenyl	103		70 - 130				11/22/22 08:21	11/23/22 00:35	
Method: MCAWW 300.0 - Anions,	, Ion Chromato	ography - So	oluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	1260		24.8		mg/Kg			11/22/22 16:09	
lient Sample ID: EN-WS02							Lab Sar	nple ID: 890-	3492-8
ate Collected: 11/16/22 11:19 ate Received: 11/16/22 14:32								Matri	ix: Soli
ample Depth: 0-2									
Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.199	U	0.199		mg/Kg		11/28/22 10:23	11/28/22 19:14	10
Toluene	0.863		0.199		mg/Kg		11/28/22 10:23	11/28/22 19:14	10
Ethylbenzene	2.25		0.199		mg/Kg		11/28/22 10:23	11/28/22 19:14	10
n-Xylene & p-Xylene	2.37		0.398		mg/Kg		11/28/22 10:23	11/28/22 19:14	10
o-Xylene	1.11		0.199		mg/Kg		11/28/22 10:23	11/28/22 19:14	10
• · · · ·					0 0				

11/28/22 10:23 11/28/22 19:14 Xylenes, Total 3.48 mg/Kg Surrogate %Recovery Qualifier Limits Prepared Dil Fac Analyzed 4-Bromofluorobenzene (Surr) 90 70 - 130 11/28/22 10:23 11/28/22 19:14

0.398

Eurofins Carlsbad

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

Sample Depth: 0-2

Released to Imaging: 8/2/2024 11:28:39 AM

100

100

Job ID: 890-3492-1 SDG: KH227019

Matrix: Solid

5

Lab Sample ID: 890-3492-8

Lab Sample ID: 890-3492-9

Matrix: Solid

## Client Sample ID: EN-WS02

Date Collected: 11/16/22 11:19 Date Received: 11/16/22 14:32

Project/Site: Osage Boyd Yaso

Sample Depth: 0-2

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

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	87		70 - 130				11/28/22 10:23	11/28/22 19:14	100
Method: TAL SOP Total BTEX -	Total BTEX Calo	ulation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	6.59		0.398		mg/Kg			11/29/22 09:34	
Method: SW846 8015 NM - Dies	el Range Organ	ics (DRO) (	GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	3830		50.0		mg/Kg			11/23/22 12:17	
Method: SW846 8015B NM - Die	esel Range Orga	nics (DRO)	(GC)						
Method: SW846 8015B NM - Die Analyte	Result	nics (DRO) Qualifier		MDL		D	Prepared	Analyzed	Dil Fac
Analyte Gasoline Range Organics	• •		• •	MDL	<mark>Unit</mark> mg/Kg	<u>D</u>	Prepared 11/22/22 08:21	Analyzed	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10	Result 192		<b>RL</b> 50.0	MDL	mg/Kg	<u>D</u>	11/22/22 08:21	11/23/22 01:41	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result			MDL		<u> </u>			Dil Fac
	Result 192		<b>RL</b> 50.0	MDL	mg/Kg	<u> </u>	11/22/22 08:21	11/23/22 01:41	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result 192 3150		RL 50.0	MDL	mg/Kg mg/Kg	<u> </u>	11/22/22 08:21 11/22/22 08:21	11/23/22 01:41 11/23/22 01:41	1 1 1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over	Result 192 3150	Qualifier	RL 50.0	MDL	mg/Kg mg/Kg	<u> </u>	11/22/22 08:21 11/22/22 08:21	11/23/22 01:41 11/23/22 01:41	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<u>Result</u> 192 3150 483	Qualifier	RL	MDL	mg/Kg mg/Kg	<u> </u>	11/22/22 08:21 11/22/22 08:21 11/22/22 08:21	11/23/22 01:41 11/23/22 01:41 11/23/22 01:41	

#### Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qual	alifier RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9900	99.6	mg/Kg			11/22/22 16:14	20

#### **Client Sample ID: EN-FS01**

Date Collected: 11/16/22 11:23 Date Received: 11/16/22 14:32 Sample Depth: 2

#### Method: SW846 8021B - Volatile Organic Compounds (GC) Analyte Result Qualifier MDL Unit Dil Fac RL D Prepared Analyzed Benzene <0.200 U 0.200 11/28/22 10:23 11/28/22 19:34 100 mg/Kg Toluene 0.969 0.200 mg/Kg 11/28/22 10:23 11/28/22 19:34 100 0.200 11/28/22 10:23 11/28/22 19:34 100 Ethylbenzene 2.25 mg/Kg m-Xylene & p-Xylene 2.43 0.399 mg/Kg 11/28/22 10:23 11/28/22 19:34 100 1.15 0.200 mg/Kg 11/28/22 10:23 11/28/22 19:34 100 o-Xylene 0.399 11/28/22 10:23 11/28/22 19:34 **Xylenes**, Total 3.58 mg/Kg 100 Qualifier Limits Dil Fac Surrogate %Recovery Prepared Analyzed 4-Bromofluorobenzene (Surr) 97 70 - 130 11/28/22 10:23 11/28/22 19:34 100 1,4-Difluorobenzene (Surr) 94 70 - 130 11/28/22 10:23 11/28/22 19:34 100 Method: TAL SOP Total BTEX - Total BTEX Calculation Result Qualifier Analyte RL MDL Unit D Prepared Analyzed Dil Fac **Total BTEX** 0.399 11/29/22 09:34 6.80 mg/Kg

**Eurofins Carlsbad** 

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#### Page 13 of 40 **Released to Imaging: 8/2/2024 11:28:39 AM**
Client: Terracon Consulting Eng & Scientists

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

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

Result Qualifier

Result Qualifier

Qualifier

3550

166

3000

381

103 111

%Recovery

RL

50.0

RL

50.0

50.0

50.0

MDL Unit

MDL Unit

mg/Kg

mg/Kg

mg/Kg

mg/Kg

D

D

Prepared

Prepared

11/22/22 08:21

11/22/22 08:21

11/22/22 08:21

Prepared

11/22/22 08:21

11/22/22 08:21

Dil Fac

Dil Fac

1

Job ID: 890-3492-1 SDG: KH227019

# **Client Sample ID: EN-FS01**

Date Collected: 11/16/22 11:23 Date Received: 11/16/22 14:32

Gasoline Range Organics

**Oll Range Organics (Over** 

**Diesel Range Organics (Over** 

Sample Depth: 2

Analyte

Analyte

C10-C28)

C28-C36)

Surrogate

o-Terphenyl

1-Chlorooctane

(GRO)-C6-C10

**Total TPH** 

Project/Site: Osage Boyd Yaso

Lab Sample ID: 890-3492-9 Matrix: Solid

Analyzed

11/23/22 12:17

Analyzed

11/23/22 02:47

11/23/22 02:47

11/23/22 02:47

Analyzed

11/23/22 02:47

11/23/22 02:47

Lab Sample ID: 890-3492-10

5

8
9

1	C
1	
Dil Fac	
1	

Fac 5

Matrix: Solid

Method: MCAWW 300.0 - Anions, Io	on Chromato	graphy - So	oluble							
Analyte	Result	Qualifier	RL	MDL	Unit	D	)	Prepared	Analyzed	Dil F
Chloride	1210		25.1		mg/Kg				11/22/22 04:37	

Limits

70 - 130

70 - 130

## **Client Sample ID: N-WS01**

Date Collected: 11/16/22 11:27

Date Received: 11/16/22 14:32

Sample Depth: 0-2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	< 0.0398	U	0.0398		mg/Kg		11/28/22 14:18	11/29/22 19:59	20
Toluene	0.0426		0.0398		mg/Kg		11/28/22 14:18	11/29/22 19:59	20
Ethylbenzene	0.108		0.0398		mg/Kg		11/28/22 14:18	11/29/22 19:59	20
m-Xylene & p-Xylene	0.191		0.0795		mg/Kg		11/28/22 14:18	11/29/22 19:59	20
o-Xylene	0.130		0.0398		mg/Kg		11/28/22 14:18	11/29/22 19:59	20
Xylenes, Total	0.321		0.0795		mg/Kg		11/28/22 14:18	11/29/22 19:59	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130				11/28/22 14:18	11/29/22 19:59	20
1,4-Difluorobenzene (Surr)	69	S1-	70 - 130				11/28/22 14:18	11/29/22 19:59	20
Method: TAL SOP Total BTEX - 1 Analyte	Result	Qualifier	RL	MDL		<u>D</u>	Prepared	Analyzed	
		Qualifier	0.0795	MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 11/30/22 09:51	
Analyte Total BTEX	Result 0.472	Qualifier	0.0795			<u>D</u> 	Prepared Prepared		1
Analyte Total BTEX Method: SW846 8015 NM - Diese	Result 0.472	Qualifier	0.0795		mg/Kg			11/30/22 09:51	Dil Fac 1 Dil Fac 1
Analyte Total BTEX Method: SW846 8015 NM - Diese Analyte	Result 0.472 I Range Organ Result 375	Qualifier ics (DRO) (( Qualifier	0.0795 GC) RL 49.9		mg/Kg Unit			11/30/22 09:51	1 Dil Fac
Analyte Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH	Result 0.472 I Range Organ Result 375 sel Range Orga	Qualifier ics (DRO) (( Qualifier	0.0795 GC) RL 49.9		mg/Kg Unit mg/Kg			11/30/22 09:51	Dil Fac
Analyte Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Diese	Result 0.472 I Range Organ Result 375 sel Range Orga	Qualifier ics (DRO) ( Qualifier nics (DRO) Qualifier	0.0795 GC) <u>RL</u> 49.9	MDL	mg/Kg Unit mg/Kg	<u>D</u>	Prepared	11/30/22 09:51 Analyzed 11/23/22 12:17	Dil Fac
Analyte Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics	Result 0.472 I Range Organ Result 375 Sel Range Orga Result	Qualifier ics (DRO) ( Qualifier nics (DRO) Qualifier	0.0795 GC) RL 49.9 (GC) RL	MDL	mg/Kg Unit mg/Kg Unit	<u>D</u>	Prepared	Analyzed           11/23/22 12:17           Analyzed	1 Dil Fac

**Eurofins Carlsbad** 

Project/Site: Osage Boyd Yaso

Client: Terracon Consulting Eng & Scientists

Job ID: 890-3492-1 SDG: KH227019

Analyte Result Qualifier RL M Chloride 1410 24.8		ng/Kg			11/22/22 04:51	5
	MDL U	Init	D	Prepared	Analyzed	Dil Fac
Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble						
p-Terphenyl 97 70 - 130				11/22/22 08:21	11/22/22 23:50	1
1-Chlorooctane 85 70 - 130				11/22/22 08:21	11/22/22 23:50	1
Surrogate %Recovery Qualifier Limits				Prepared	Analyzed	Dil Fac
C28-C36)						
DII Range Organics (Over11049.8	r	ng/Kg		11/22/22 08:21	11/22/22 23:50	1
Diesel Range Organics (Over 747 49.8 C10-C28)	r	ng/Kg		11/22/22 08:21	11/22/22 23:50	1
GRO)-C6-C10	r	iig/r\g		11/22/22 08:21	11/22/22 23:50	1
Gasoline Range Organics <49.8 U 49.8		ng/Kg		11/22/22 08:21	11/22/22 23:50	
Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC) Analyte Result Qualifier RL M	MDL U	Init	D	Prepared	Analyzed	Dil Fac
	'	ng/ng			11/23/22 12.17	ľ
Analyte Result Qualifier RL M Total TPH 857 49.8		ng/Kg	<u>D</u>	Prepared	Analyzed 11/23/22 12:17	Dil Fac
Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC) Analyte Result Qualifier RL M	י וחוי	Init		Bronorod	Applyzed	
Total BTEX         <0.0803         U         0.0803	r	ng/Kg			11/30/22 09:51	1
	MDL U	Jnit	D	Prepared	Analyzed	Dil Fac
Method: TAL SOP Total BTEX - Total BTEX Calculation						
1,4-Difluorobenzene (Surr) 69 S1- 70 - 130				11/28/22 14:18	11/29/22 20:19	20
4-Bromofluorobenzene (Surr) 86 70 - 130				11/28/22 14:18	11/29/22 20:19	20
Surrogate %Recovery Qualifier Limits				Prepared	Analyzed	Dil Fac
Kylenes, Total         <0.0803         U         0.0803	r	ng/Kg		11/28/22 14:18	11/29/22 20:19	20
-Xylene <0.0402 U 0.0402	r	ng/Kg		11/28/22 14:18	11/29/22 20:19	20
n-Xylene & p-Xylene <0.0803 U 0.0803	r	ng/Kg		11/28/22 14:18	11/29/22 20:19	20
Ethylbenzene <0.0402 U 0.0402	r	ng/Kg		11/28/22 14:18	11/29/22 20:19	20
Toluene <0.0402 U 0.0402	r	ng/Kg		11/28/22 14:18	11/29/22 20:19	20
Benzene <0.0402 U 0.0402	r	ng/Kg		11/28/22 14:18	11/29/22 20:19	20
Method: SW846 8021B - Volatile Organic Compounds (GC) Analyte Result Qualifier RL M	WDL U	Jnit	D	Prepared	Analyzed	Dil Fa
ample Depth: 0-2						
ate Collected: 11/16/22 11:34 ate Received: 11/16/22 14:32					-	x: Solid
lient Sample ID: WN-WS01				Lah Sam	ple ID: 890-3	492-11
Chloride 1640 25.0	r	ng/Kg			11/22/22 04:44	5
Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble Analyte Result Qualifier RL M	WDL U	Jnit	D	Prepared	Analyzed	Dil Fac
- Telphenyi 114 70 - 130				11/22/22 00.21	11/23/22 00.57	,
p-Terphenyl 114 70 - 130				11/22/22 08:21	11/23/22 00:57	1
Surrogate <u>%Recovery</u> Qualifier Limits 1-Chlorooctane 98 70 - 130				Prepared 11/22/22 08:21	Analyzed 11/23/22 00:57	Dil Fac
ate Received: 11/16/22 14:32 ample Depth: 0-2						
ate Collected: 11/16/22 11:27					Matri	x: Solid
lient Sample ID: N-WS01				Lub Oum	ple ID: 890-3	
· · · · · · · · · · · · · · · · · · ·				Lub Oum	pie ib. 050-5	432-10

Eurofins Carlsbad

RL

0.00202

0.00202

0.00202

0.00404

0.00202

0.00404

Limits

70 - 130

70 - 130

RL

MDL Unit

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

MDL Unit D

D

Prepared

11/28/22 10:23

11/28/22 10:23

11/28/22 10:23

11/28/22 10:23

11/28/22 10:23

11/28/22 10:23

Prepared

11/28/22 10:23

11/28/22 10:23

Prepared

Job ID: 890-3492-1 SDG: KH227019

## **Client Sample ID: WN-WS02**

Date Collected: 11/16/22 1	1:36
Date Received: 11/16/22 14	1:32
Sample Depth: 0-2	

Analyte

Benzene

Toluene

o-Xylene

Surrogate

Analyte

Ethylbenzene

**Xylenes**, Total

m-Xylene & p-Xylene

4-Bromofluorobenzene (Surr)

1,4-Difluorobenzene (Surr)

Project/Site: Osage Boyd Yaso

Lab Sample ID: 890-3492-12 Matrix: Solid

Analyzed

11/28/22 17:52

11/28/22 17:52

11/28/22 17:52

11/28/22 17:52

11/28/22 17:52

11/28/22 17:52

Analyzed

11/28/22 17:52

11/28/22 17:52

Analyzed

5

Dil Fac

1

1

1

1

1

1

1

Dil Fac

Dil Fac

8				
ç				
	0	7 8 9	8	8 9 10

Total BTEX	0.00796		0.00404		mg/Kg			11/29/22 09:34	1
 Method: SW846 8015 NM - Diesel	Range Organ	ics (DRO) (	GC)						
Analyte		Qualifier	, RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	2620		50.0		mg/Kg			11/23/22 12:17	1
Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/22 08:21	11/23/22 02:25	1
Diesel Range Organics (Over C10-C28)	2130		50.0		mg/Kg		11/22/22 08:21	11/23/22 02:25	1
Oll Range Organics (Over C28-C36)	487		50.0		mg/Kg		11/22/22 08:21	11/23/22 02:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 130				11/22/22 08:21	11/23/22 02:25	1
o-Terphenyl	113		70 - 130				11/22/22 08:21	11/23/22 02:25	1
Method: MCAWW 300.0 - Anions,	Ion Chromato	ography - So	oluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2860		49.8		mg/Kg			11/22/22 04:58	10
Client Sample ID: WN-FS01							Lab Sam	ple ID: 890-3	492-13
Date Collected: 11/16/22 11:38								Matr	ix: Solid
Date Received: 11/16/22 14:32									
Sample Depth: 2									
_ Method: SW846 8021B - Volatile (	Organic Comp	ounds (GC)	)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.199	U	0.199		mg/Kg		11/28/22 10:23	11/28/22 20:36	100
Toluene	<0.199	U	0.199		ma/Ka		11/28/22 10:23	11/28/22 20:36	100

Benzene	<0.199 U	0.199	mg/Kg	11/28/22 10:23	11/28/22 20:36	100
Toluene	<0.199 U	0.199	mg/Kg	11/28/22 10:23	11/28/22 20:36	100
Ethylbenzene	0.388	0.199	mg/Kg	11/28/22 10:23	11/28/22 20:36	100
m-Xylene & p-Xylene	0.551	0.398	mg/Kg	11/28/22 10:23	11/28/22 20:36	100
o-Xylene	0.315	0.199	mg/Kg	11/28/22 10:23	11/28/22 20:36	100
Xylenes, Total	0.866	0.398	mg/Kg	11/28/22 10:23	11/28/22 20:36	100

**Eurofins Carlsbad** 

Client: Terracon Consulting Eng & Scientists

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

Method: TAL SOP Total BTEX - Total BTEX Calculation

Result Qualifier

Qualifier

<0.00202 U

<0.00202 U

0.00348

0.00448

0.00448

%Recovery

<0.00202 U

72

105

Result Qualifier

Released to Imaging: 8/2/2024 11:28:39 AM

Client: Terracon Consulting Eng & Scientists

5

Job ID: 890-3492-1 SDG: KH227019

4Bronofluorobenzene (Surr)       99       70.130       11/28/22 10.23       11/28/22 10.23       11/28/22 20.36       10         Method: TAL SOP Total BTEX - Total BTEX Calculation Analyte       Result Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       DIF Fa         Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)       Analyzed       MDL       Unit       D       Prepared       Analyzed       DIF Fa         Method: SW846 80155 NM - Diesel Range Organics (DRO) (GC)       Analyzed       MDL       Unit       D       Prepared       Analyzed       DIF Fa         Analyte       Result Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       DIF Fa         Method: SW846 80155 NM - Diesel Range Organics (DRO) (GC)       Analyzed       11/23/22 10:21       11/23/22 10:21       DIF Fa         Analyte       Result Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       DIF Fa         Gasoline Range Organics (Over       1230       49.9       mg/Kg       11/23/22 00:12       11/23/22 00:12       11/23/22 00:12       11/23/22 00:12       11/23/22 00:12       11/23/22 00:12       11/23/22 00:12       11/23/22 00:12       11/23/22 00:12       11/23/22 00:12       11/23/22 00:1	ate Collected: 11/16/22 11-29	501						Lab Sam	ple ID: 890-3	492-1:
ample Depth: 2         Surrogate         %Recovery         Qualifier         Limits         Prepared         Analyzed         DI F3           4-Bromohunobensene (Surry)         99         70 - 130         11/2822 10.23         11/2822 20.23         <									Matri	x: Solie
Surregate         %Recovery         Qualifier         Limits         Prepared         Analyzed         DIF / 17/2822 10:23         Analyzed         DIF / 17/2822 10:23         DIF / 17/2822 10:21         DIF / 17/2822 10:12	ate Received: 11/16/22 14:32	2								
4-decomploxebenzone (Surr)         99         70         130         11/28/22 10:33         11/28/22 10:34         11/28/22 10:32         11/28/22 10:32         11/28/22 10:32         11/28/22 10:32         11/28/22 10:32         11/28/22 10:32         11/28/22 10:32         11/28/22 10:32         11/28/22 10:32         11/28/22 10:32         11/28/22 10:32 <t< th=""><th>ample Depth: 2</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>	ample Depth: 2									
4-Bernordburdberzene (Surr)         99         70         190         11/28/22 10:23         11/28/22 10:24         DIF F           Total TFX         1.25         0.208         Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         DIF F           Method:         SW346 8015B NM - Diesel Range Organics (DRO) (GC)         Analyzed         MDL         MDL         MDL         MDL         11/28/22 00:12         II/28/22 00:12 <t< th=""><th>Surrogate</th><th>%Recovery</th><th>Qualifier</th><th>Limits</th><th></th><th></th><th></th><th>Prepared</th><th>Analyzed</th><th>Dil Fa</th></t<>	Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Method: TAL SOP Total BTEX - Total BTEX Calculation Analyte         Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         Dif Fa           Total BTEX         1.25         0.398         mg/kg         11/20/22 08:24         11/20/22 08:24         11/20/22 08:24         11/20/22 08:24         11/20/22 08:24         11/20/22 08:24         11/20/22 08:24         11/20/22 12:17         11/20/22 11/20         11/20/22 11/20         11/20/22 11/20         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12         11/20/22 10:12		<u> </u>		·						10
Analyse         Result Qualifier         Rt.         MDL         Unit         D         Prepared         Analyzed         Dil Fa           Total BTEX         1.25         0.398         mg/kg         11/29/22 08:34         11/29/22 08:34           Method:         SW846 8015 NM - Diesel Range Organics (DRO) (GC)         MDL         Unit         D         Prepared         Analyzed         Dil Fa           Total TPH         1500         49.9         mg/kg         11/22/22 08:24         11/23/22 12:17         11/23/22 12:17           Method:         SW846 8015B NM - Diesel Range Organics (DRO) (GC)         mg/kg         11/22/22 08:21         11/23/22 00:12         11/23/22 00	1,4-Difluorobenzene (Surr)	97		70 - 130				11/28/22 10:23	11/28/22 20:36	10
Total BTEX         1.25         0.398         mg/kg         11/29/22 09:34           Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)         Result Qualifier         RL         MDL Unit         D         Prepared         Analyzed         DI Fe           Total TPH         1500         49.9         mg/kg         11/23/22 12:17         DI Fe           Method: SW846 80155 NM - Diesel Range Organics (DRO) (GC)         Analyze         MDL         Unit         D         Prepared         Analyzed         DI Fe           Gasoline Range Organics (Over         1220         49.9         mg/kg         11/22/22 08:21         11/23/22 00:12         Ci C-230           Oll Range Organics (Over         1230         49.9         mg/kg         11/22/22 08:21         11/23/22 00:12         Ci C-230           Oll Range Organics (Over         168         49.9         mg/kg         11/22/22 08:21         11/23/22 00:12         Ci C-230           Surgate         %Recovery         Qualifier         Limits         Prepared         Analyzed         DI Fe           Ci-Coccasi         102         70.130         11/22/22 08:21         11/22/22 08:21         11/22/22 08:21         11/22/22 08:21         11/22/22 08:21         11/22/22 08:21         11/22/22 08:25         DI Fe	Method: TAL SOP Total BTE	X - Total BTEX Cald	ulation							
Method:         SW846 8015 NM - Diesel Range Organics (DRO) (GC) Analyte         MDL         Unit         D         Prepared         Analyzed 11/23/22 12:17         Dil Fa           Total TPH         1500         49.9         MDL         Dil M         D         Prepared         Analyzed 11/23/22 12:17         Dil Fa           Method:         SW846 8015B NM - Diesel Range Organics (DRO) (GC) Analyte         MDL         Unit         D         Prepared         Analyzed         Dil Fa           Gasciline Range Organics (Over C10-C28)         102         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12         Dil Fa           Oll Range Organics (Over C10-C28)         1188         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12         Dil Fa           Oll Range Organics (Over C10-C28)         168         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12         Dil Fa           Surrogate         5/Recovery         Qualifier         Limits         Prepared         Analyzed         Dil Fa           Choroctane         92         70.130         11/22/22 08:21         11/23/22 00:12         Dil Fa           Choroctane         92         70.130         mg/Kg         11/22/22 08:21         Dil Fa           Chorode         <	Analyte	Result	Qualifier	·	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Analyse         Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         Dil Fs           Total TPH         1500         49.9         mg/Kg         D         Prepared         Analyzed         Dil Fs           Mathod:         SW846 8015B NM - Diesel Range Organics (DRO) (GC)         Analyze         MDL         Unit         D         Prepared         Analyzed         Dil Fs           Grasoline Range Organics (Over         1220         49.9         mg/Kg         11/22/22 08.21	Total BTEX	1.25		0.398		mg/Kg			11/29/22 09:34	
Total TPH         1500         49.9         mg/Kg         11/23/22 12:17           Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)         Result Qualifier         RL         MDL         Unit         D         Propared         Analyzed         DI Fa           Secoline Range Organics         102         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12         DI Fa           GRO)-C6-C10         102         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12         DI Fa           Olice3E Range Organics (Over         1230         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12         DI Fa           Swrogate         %Recovery         Qualifier         Limits         Propared         Analyzed         DI Fa           1/-Chorooctane         92         70 - 130         11/22/22 08:21         11/23/22 00:12         11/23/22 00:12         11/23/22 00:12         DI Fa           0-reprineryi         102         70 - 130         mg/Kg         11/23/22 08:21         11/23/22 00:12         DI Fa           0-reprineryi         333         4.97         MDL         Unit         D         Propared         Analyzed         DI Fa           Chorde         333         4.97         MDL	Method: SW846 8015 NM - D	viesel Range Organ	ics (DRO) (	GC)						
Mathadi         Mathadi         Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         DI Fa           Gasoline Range Organics         102         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12         DI Fa           Gasoline Range Organics (Over         1220         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12         DI Fa           Oll Range Organics (Over         1280         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12         DI Fa           Oll Range Organics (Over         168         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12         DI Fa           Inchorotaine         32         70 - 130         11/22/22 08:21         11/23/22 00:12         DI Fa           Analyzed         Result         Qualifier         Limits         MDL         Unit         D         Prepared         Analyzed         DI Fa           Chorotae         339         4.97         mg/Kg         11/22/22 08:25         Lab Sample ID: 800-3492-4         Matrix: Soli           Icitent Sample ID: WN-FS02         Lab Sample ID: WN-FS02         Lab Sample ID: 800-3492-4         Matrix: Soli         Matrix: Soli         Matrix: Soli         Matrix: Soli	Analyte	Result	Qualifier		MDL	Unit	D	Prepared		Dil Fa
Analyte         Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         Dil Fa           Gasoline Range Organics (GRO): C6-C10         102         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12 <td>Fotal TPH</td> <td>1500</td> <td></td> <td>49.9</td> <td></td> <td>mg/Kg</td> <td></td> <td></td> <td>11/23/22 12:17</td> <td></td>	Fotal TPH	1500		49.9		mg/Kg			11/23/22 12:17	
Casoline Range Organics         102         49.9         mg/Kg         11/22/22 08:21         11/22/22 00:12           GR0, Oc6-C10         Diseal Range Organics (Over         1230         49.9         mg/Kg         11/22/22 08:21         11/22/22 00:12           C10-C28)         Dil Range Organics (Over         188         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12           C28-C36)         Surrogate         %Recovery         Qualifier         Limits         Prepared         Analyzed         Dil Fa          Terphenyl         102         70 - 130         11/22/22 08:21         11/23/22 00:12         Dil Fa           Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble         Analyte         Result Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         Dil Fa           Analyte         Result Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         Dil Fa           Analyte         Result Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         Dil Fa           Bonzene         <0.0398	Method: SW846 8015B NM -	Diesel Range Orga	nics (DRO)	(GC)						
GRO-C6-C10         Direction         Direction <thdirection< th=""> <thdirection< th=""> <th< td=""><td>-</td><td>Result</td><td>Qualifier</td><td></td><td>MDL</td><td>Unit</td><td> D</td><td></td><td>-</td><td>Dil Fa</td></th<></thdirection<></thdirection<>	-	Result	Qualifier		MDL	Unit	D		-	Dil Fa
C10-C29) OII Range Organics (Over       168       49.9       mg/Kg       11/22/22 08:21       11/23/22 00:12         Surrogate       %Recovery       Qualifier       Limits       Prepared       Analyzed       Dil Fa         1-Chlorooctane       92       70.130       11/22/22 08:21       11/23/22 00:12       11/23/22 00:12         0-Terphenyl       102       70.130       11/22/22 08:21       11/23/22 00:12       11/23/22 00:12         Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble       Analyzed       Null       D       Prepared       Analyzed       Dil Fa         Choirde       339       4.97       mg/Kg       11/22/22 08:21       11/22/22 05:05       Dil Fa         Choirde       339       4.97       mg/Kg       11/22/22 04:02       Lab Sample ID: 890-3492.41         ate Collected: 11/16/22 11:40       Lab Sample ID: 890-3492.41       Matrix: Soli       Matrix: Soli         ate Collected: 11/16/22 14:32       Matrix: Soli       Matrix: Soli       Matrix: Soli         Benzene       <0.0398		102		49.9		mg/Kg		11/22/22 08:21	11/23/22 00:12	
Dil Range Organics (Over         168         49.9         mg/Kg         11/22/22 08:21         11/23/22 00:12           Surogate         %Recovery         Qualifier         Limits         Prepared         Analyzed         Dil F.           1-Chlorooctane         92         70 - 130         11/22/22 08:21         11/23/22 00:12         11/23/22 00:12           Method: MCAWW 300.0 - Anions, ion Chromatography - Soluble         Analyzed         11/22/22 08:02         11/23/22 00:12         11/23/22 00:12           Method: MCAWW 300.0 - Anions, ion Chromatography - Soluble         Analyzed         11/23/22 00:12         11/23/22 00:12         11/23/22 00:12           Method: MCAWW 300.0 - Anions, ion Chromatography - Soluble         Analyzed         11/23/22 00:12         11/23/22 00:12         11/23/22 00:12           Method: Swaple ID: WN-FS02         Lab Sample ID: 890-3492-1         Matrix: Soli         Matrix: Soli           ate Received: 11/16/22 14:32         analyzed         11/28/22 14:18         Matrix: Soli           Analyze         Result         Qualifier         RL         MDL         Unit         11/28/22 14:18         11/29/22 20:40         2           Surogate         <0.0398		1230		49.9		mg/Kg		11/22/22 08:21	11/23/22 00:12	
1-Chiorooctane         92         70 - 130         11/22/2 08:21         11/23/2 00:12           o-Terphenyl         102         70 - 130         11/22/2 08:21         11/23/2 00:12           Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble Analyte         Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         Dil Fa           Chioride         339         4.97         mg/Kg         D         Prepared         Analyzed         Dil Fa           Chioride         339         4.97         mg/Kg         D         Prepared         Analyzed         Dil Fa           Ilient Sample ID: WN-FS02         Lab Sample ID: 890-3492-1         Matrix: Soli         Matrix: Soli         Matrix: Soli           ate Collected: 11/16/22 14:32         Method: SW846 8021B - Volatile Organic Compounds (GC)         Analyte         Matrix: Soli         Matrix: Soli           Benzene         <0.0398		168		49.9		mg/Kg		11/22/22 08:21	11/23/22 00:12	
o-Terphenyl       102       70.130       11/22/22 08:21       11/22/22 00:12         Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble Analyte       Result Qualifier       RL MDL       MDL       Unit       D       Prepared       Analyzed       Dil Fa         Chloride       339       4.97       mg/Kg       D       Prepared       Analyzed       Dil Fa         Chloride       339       4.97       mg/Kg       D       Prepared       Analyzed       Dil Fa         Chloride       339       4.97       mg/Kg       D       Prepared       Analyzed       Dil Fa         Chloride       339       4.97       MDL       Unit       D       Prepared       Analyzed       Dil Fa         Chloride       11/16/22 11:40       K       MDL       Unit       D       Prepared       Analyzed       Dil Fa         Method: SW846 8021B - Volatile Organic Compounds (GC)       MDL       Unit       D       Prepared       Analyzed       Dil Fa         Matrix: Solit       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Ethylbenzene       <0.0398       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         w:Xylene & p-Xylene </td <td>Surrogate</td> <td>%Recovery</td> <td>Qualifier</td> <td>Limits</td> <td></td> <td></td> <td></td> <td>Prepared</td> <td>Analyzed</td> <td>Dil Fa</td>	Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble Analyte       RL Qualifier       RL A.97       MDL mg/Kg       Unit       D       Prepared       Analyzed 11/22/22 05:05       Dil Fa         Chioride       339       4.97       mg/Kg       D       Prepared       Analyzed 11/22/22 05:05       Dil Fa         Chioride       339       4.97       mg/Kg       D       Prepared       Analyzed 11/22/22 05:05       Dil Fa         Chioride       11/16/22 11:40       Lab Sample ID: 890-3492-1.       Matrix: Soli         ate Cocliected: 11/16/22 11:40       Analyzed       Matrix: Soli       Matrix: Soli         ate Roceived: 11/16/22 11:40       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa         Method: SW846 8021B - Volatile Organic Compounds (GC)       Analyte       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa         Toluene       <0.0398	1-Chlorooctane	92		70 - 130				11/22/22 08:21	11/23/22 00:12	
AnalyteResultQualifierRLMDLUnitDPreparedAnalyzedDil FaChloride3394.97mg/KgDPreparedAnalyzedDil FaIlient Sample ID: WN-FS02 ate Collected: 11/16/22 11:40 ate Received: 11/16/22 14:32 ample Depth: 2Lab Sample ID: 890-3492-14 Matrix: SoliMethod: SW846 8021B - Volatile Organic Compounds (GC) AnalyteResult 0QualifierRLMDLUnitDPreparedAnalyzedDil FaBenzene<0.0398	o-Terphenyl	102		70 - 130				11/22/22 08:21	11/23/22 00:12	
Chloride         339         4.97         mg/Kg         11/22/22 05:05           Hient Sample ID: WN-FS02 ate Collected: 11/16/22 11:40 ate Received: 11/16/22 14:32 ample Depth: 2         Lab Sample ID: 890-3492-1 Matrix: Soli           Method: SW846 8021B - Volatile Organic Compounds (GC) Analyte         Result Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         Dil Fa           Benzene         <0.0398	Method: MCAWW 300.0 - An	ions, Ion Chromato	graphy - S	oluble						
Lab Sample ID: WN-FS02       Lab Sample ID: 890-3492-1.         ate Collected: 11/16/22 11:40       Matrix: Soli         ate Received: 11/16/22 14:32       Matrix: Soli         ample Depth: 2       Method: SW846 8021B - Volatile Organic Compounds (GC)         Analyte       Result       Qualifier         Benzene       <0.0398	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Matrix: Soli         Malyte       Prepared       Analyzed       Dil Fa         Benzene       O.0398       U       0.0398       mg/Kg       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18       11/28/22 14:18 <th action.org"="" colspa="6&lt;/td&gt;&lt;td&gt;-&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;ma/1/ a&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;11/00/00 05.05&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;ample Depth: 2           Method: SW846 8021B - Volatile Organic Compounds (GC)           Analyte         Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         Dil Fa           Benzene         &lt;0.0398&lt;/td&gt;         U         0.0398         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           Toluene         &lt;0.0398&lt;/td&gt;         U         0.0398         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           Ethylbenzene         &lt;0.0398&lt;/td&gt;         U         0.0398         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           m-Xylene &amp; p-Xylene         &lt;0.0795&lt;/td&gt;         U         0.0795         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           o-Xylene         &lt;0.0398&lt;/td&gt;         U         0.0398         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           Surrogate         &lt;0.0795&lt;/td&gt;         U         0.0795         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           Surrogate         &lt;0.0795&lt;/td&gt;         U         0.0795         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           4-Bromofluorobenzene (Surr)         84&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;339&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;4.97&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;mg/Kg&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;11/22/22 05:05&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Analyte         Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed         Dil Fa           Benzene         &lt;0.0398&lt;/td&gt;         U         0.0398         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           Toluene         &lt;0.0398&lt;/td&gt;         U         0.0398         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           Ethylbenzene         &lt;0.0398&lt;/td&gt;         U         0.0398         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           m-Xylene &amp; p-Xylene         &lt;0.0795&lt;/td&gt;         U         0.0795         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           o-Xylene &amp; p-Xylene         &lt;0.0398&lt;/td&gt;         U         0.0398         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           o-Xylene         &lt;0.0398&lt;/td&gt;         U         0.0398         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           Surrogate         &lt;0.0795&lt;/td&gt;         U         0.0795         mg/Kg         11/28/22 14:18         11/29/22 20:40         2           4-Bromofiluorobenzene (Surr)         72         70 - 130         11/28/22 14:18         11/29/22 20:40         2           Method: TAL SOP To&lt;/td&gt;&lt;td&gt;Chloride&lt;br&gt;lient Sample ID: WN-FS&lt;/td&gt;&lt;td&gt;602&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;4.97&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;mg/Kg&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;Lab Sam&lt;/td&gt;&lt;td&gt;ple ID: 890-34&lt;/td&gt;&lt;td&gt;492-1&lt;i&gt;-&lt;/i&gt;&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;th&gt;Benzene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Toluene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Ethylbenzene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         m-Xylene &amp; p-Xylene       &lt;0.0795&lt;/td&gt;       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         oXylene &amp; p-Xylene       &lt;0.0795&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         oXylene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Xylenes, Total       &lt;0.0795&lt;/td&gt;       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Surrogate       &lt;0.0795&lt;/td&gt;       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         4-Bromofluorobenzene (Surr)       84       70 - 130       11/28/22 14:18       11/29/22 20:40       2         1,4-Difluorobenzene (Surr)       72       70 - 130       11/28/22 14:18       11/29/22 20:40       2         &lt;&lt;/th&gt;&lt;th&gt;Chloride&lt;br&gt;lient Sample ID: WN-FS&lt;br&gt;ate Collected: 11/16/22 11:40&lt;br&gt;ate Received: 11/16/22 14:32&lt;/th&gt;&lt;th&gt;&lt;b&gt;602&lt;/b&gt;&lt;/th&gt;&lt;th&gt;&lt;/th&gt;&lt;th&gt;4.97&lt;/th&gt;&lt;th&gt;&lt;/th&gt;&lt;th&gt;ing/Kg&lt;/th&gt;&lt;th&gt;&lt;/th&gt;&lt;th&gt;Lab Sam&lt;/th&gt;&lt;th&gt;ple ID: 890-34&lt;/th&gt;&lt;th&gt;&lt;/th&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Toluene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Ethylbenzene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         m-Xylene &amp; p-Xylene       &lt;0.0795&lt;/td&gt;       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         p-Xylene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         p-Xylene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         xylenes, Total       &lt;0.0795&lt;/td&gt;       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Surrogate       %Recovery       Qualifier       Limits       Prepared       Analyzed       Dil Fa         4-Bromofluorobenzene (Surr)       84       70 - 130       11/28/22 14:18       11/29/22 20:40       2         1,4-Difluorobenzene (Surr)       72       70 - 130       11/28/22 14:18       11/29/22 20:40       2         Method: TAL SOP Total BTEX - Total BTEX Calculation       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed&lt;/td&gt;&lt;td&gt;Chloride&lt;br&gt;lient Sample ID: WN-FS&lt;br&gt;ate Collected: 11/16/22 11:40&lt;br&gt;ate Received: 11/16/22 14:32&lt;br&gt;ample Depth: 2&lt;/td&gt;&lt;td&gt;&lt;b&gt;602&lt;/b&gt;&lt;br&gt;0&lt;br&gt;2&lt;/td&gt;&lt;td&gt;ounds (GC&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;ing/Kg&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;Lab Sam&lt;/td&gt;&lt;td&gt;ple ID: 890-34&lt;/td&gt;&lt;td&gt;492-1&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Ethylbenzene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         m-Xylene &amp; p-Xylene       &lt;0.0795&lt;/td&gt;       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         o-Xylene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         o-Xylene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         xylenes, Total       &lt;0.0795&lt;/td&gt;       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Surrogate         &lt;0.0795&lt;/td&gt;       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         4-Bromofiluorobenzene (Surr)       84       70 - 130       11/28/22 14:18       11/29/22 20:40       2         1,4-Difluorobenzene (Surr)       72       70 - 130       11/28/22 14:18       11/29/22 20:40       2         Method: TAL SOP Total BTEX - Total BTEX Calculation        11/28/22 14:18       11/29/22 20:40       2         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa&lt;/td&lt;/td&gt;&lt;td&gt;Chloride&lt;br&gt;lient Sample ID: WN-FS&lt;br&gt;ate Collected: 11/16/22 11:40&lt;br&gt;ate Received: 11/16/22 14:32&lt;br&gt;ample Depth: 2&lt;br&gt;Method: SW846 8021B - Vola&lt;/td&gt;&lt;td&gt;602&lt;br&gt;2&lt;br&gt;atile Organic Comp&lt;br&gt;Result&lt;/td&gt;&lt;td&gt;Qualifier&lt;/td&gt;&lt;td&gt;)&lt;br&gt;RL&lt;/td&gt;&lt;td&gt;MDL&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;&lt;u&gt;D&lt;/u&gt;&lt;/td&gt;&lt;td&gt;&lt;/td&gt;&lt;td&gt;ple ID: 890-3&lt;br&gt;Matri&lt;/td&gt;&lt;td&gt;492-1&lt;br&gt;x: Soli&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;w-Xylene &amp; p-Xylene       &lt;0.0795&lt;/th&gt;       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         o-Xylene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Xylenes, Total       &lt;0.0795&lt;/td&gt;       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Surrogate       %Recovery       Qualifier       Limits       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         4-Bromofiluorobenzene (Surr)       84       70 - 130       11/28/22 14:18       11/29/22 20:40       2         1,4-Difluorobenzene (Surr)       72       70 - 130       11/28/22 14:18       11/29/22 20:40       2         Method: TAL SOP Total BTEX - Total BTEX Calculation       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa&lt;/td&gt;&lt;td&gt;Chloride&lt;br&gt;lient Sample ID: WN-FS&lt;br&gt;ate Collected: 11/16/22 11:40&lt;br&gt;ate Received: 11/16/22 14:32&lt;br&gt;ample Depth: 2&lt;br&gt;Method: SW846 8021B - Vola&lt;br&gt;Analyte&lt;/td&gt;&lt;td&gt;602&lt;br&gt;2&lt;br&gt;atile Organic Comp&lt;br&gt;Result&lt;/td&gt;&lt;td&gt;Qualifier&lt;/td&gt;&lt;td&gt;)&lt;br&gt;RL&lt;/td&gt;&lt;td&gt;MDL&lt;/td&gt;&lt;td&gt;Unit&lt;/td&gt;&lt;td&gt; &lt;u&gt;D&lt;/u&gt;&lt;/td&gt;&lt;td&gt;Prepared&lt;/td&gt;&lt;td&gt;ple ID: 890-34&lt;br&gt;Matri&lt;br&gt;Analyzed&lt;/td&gt;&lt;td&gt;492-1&lt;br&gt;x: Soli&lt;br&gt;Dil Fa&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;xylene       &lt;0.0398&lt;/td&gt;       U       0.0398       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         xylenes, Total       &lt;0.0795&lt;/td&gt;       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Surrogate       %Recovery       Qualifier       Limits       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         4-Bromofluorobenzene (Surr)       84       70 - 130       11/28/22 14:18       11/29/22 20:40       2         1,4-Difluorobenzene (Surr)       72       70 - 130       11/28/22 14:18       11/29/22 20:40       2         Method: TAL SOP Total BTEX - Total BTEX Calculation       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa&lt;/td&gt;&lt;td&gt;Chloride&lt;br&gt;lient Sample ID: WN-FS&lt;br&gt;ate Collected: 11/16/22 11:40&lt;br&gt;ate Received: 11/16/22 14:32&lt;br&gt;ample Depth: 2&lt;br&gt;Method: SW846 8021B - Vola&lt;br&gt;Analyte&lt;br&gt;Benzene&lt;/td&gt;&lt;td&gt;&lt;b&gt;302&lt;/b&gt;&lt;br&gt;2&lt;br&gt;atile Organic Comp&lt;br&gt;Result&lt;br&gt;&lt;ul&gt; &lt;li&gt;&lt;a href=" https:="" www.sci.ex="">www.sci.ex/action.org  <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a>  </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a>  </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li></th>	www.sci.ex/action.org <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a>  </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a>  </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li>	Qualifier U U	) RL	MDL	Unit mg/Kg	<u>D</u>	Prepared 11/28/22 14:18	ple ID: 890-3 Matri <u>Analyzed</u> 11/29/22 20:40	492-1 x: Soli	
Xylenes, Total       <0.0795       U       0.0795       mg/Kg       11/28/22 14:18       11/29/22 20:40       2         Surrogate       %Recovery       Qualifier       Limits       Prepared       Analyzed       Dil Fa         4-Bromofluorobenzene (Surr)       84       70 - 130       11/28/22 14:18       11/29/22 20:40       2         1,4-Difluorobenzene (Surr)       72       70 - 130       11/28/22 14:18       11/29/22 20:40       2         Method: TAL SOP Total BTEX - Total BTEX Calculation       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa	Chloride lient Sample ID: WN-FS ate Collected: 11/16/22 11:40 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Vola Analyte Benzene Toluene	<b>302</b> 2 atile Organic Comp Result <ul> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a>  </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a>  </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li> <li><a href="https://www.sci.ex/action.org">www.sci.ex/action.org</a> </li></ul>	Qualifier U U	) 	MDL	Unit mg/Kg mg/Kg	<u>D</u>	<b>Prepared</b> 11/28/22 14:18 11/28/22 14:18	ple ID: 890-3 Matri Analyzed 11/29/22 20:40 11/29/22 20:40	492-1 x: Soli Dil Fa
Surrogate       %Recovery       Qualifier       Limits       Prepared       Analyzed       Dil Fa         4-Bromofluorobenzene (Surr)       84       70 - 130       11/28/22 14:18       11/29/22 20:40       2         1,4-Difluorobenzene (Surr)       72       70 - 130       11/28/22 14:18       11/29/22 20:40       2         Method: TAL SOP Total BTEX - Total BTEX Calculation       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa	Chloride lient Sample ID: WN-FS ate Collected: 11/16/22 11:40 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Vola Analyte Benzene Toluene Ethylbenzene	2 atile Organic Comp 	Qualifier U U U	) 	MDL	Unit mg/Kg mg/Kg mg/Kg	<u>D</u>	Prepared 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18	Analyzed           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40	492-1 x: Soli Dil Fa 2 2
4-Bromofluorobenzene (Surr)       84       70 - 130       11/28/22 14:18       11/29/22 20:40       2         1,4-Difluorobenzene (Surr)       72       70 - 130       11/28/22 14:18       11/29/22 20:40       2         Method: TAL SOP Total BTEX - Total BTEX Calculation       Analyte       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa	Chloride lient Sample ID: WN-FS ate Collected: 11/16/22 11:40 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Vola Analyte Benzene Toluene Ethylbenzene n-Xylene & p-Xylene	atile Organic Comp Result <ul> <li></li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0795</li> </ul>	Qualifier U U U U U	) 	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	Prepared 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18	Analyzed 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40	<b>492-1</b> x: Soli Dil Fa 2 2 2 2
1,4-Difluorobenzene (Surr)       72       70 - 130       11/28/22 14:18       11/29/22 20:40       2         Method: TAL SOP Total BTEX - Total BTEX Calculation         Analyte       Result       Qualifier       RL       MDL       Unit       D       Prepared       Analyzed       Dil Fa	Chloride Chlori	atile Organic Comp Result <ul> <li></li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> </ul>	Qualifier U U U U U U U	) — RL — 0.0398 — 0.0398 — 0.0398 — 0.0795 — 0.0398	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u> </u>	Prepared 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18	Analyzed 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40	492-1 <i>-</i>
Method: TAL SOP Total BTEX - Total BTEX Calculation         Analyte       Result         Qualifier       RL         MDL       Unit         D       Prepared         Analyte       RL	Chloride Chloride Client Sample ID: WN-FS ate Collected: 11/16/22 11:40 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Vola Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate	atile Organic Comp Result <ul> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0795</li> <li>&lt;0.0398</li> <li>&lt;0.0795</li> <li>&lt;0.0398</li> <li>&lt;0.0795</li> <li>&lt;0.0398</li> <li>&lt;0.0795</li> </ul>	Qualifier U U U U U U U U	) RL 0.0398 0.0398 0.0398 0.0795 0.0398 0.0795 Limits	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	Prepared 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 Prepared	Analyzed 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 Analyzed	<b>492-1</b> x: Soli Dil Fa 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fa	Chloride Chloride Client Sample ID: WN-FS ate Collected: 11/16/22 11:40 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Vola Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate	atile Organic Comp Result <ul> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0398</li> <li>&lt;0.0795</li> <li>&lt;0.0398</li> <li>&lt;0.0795</li> <li>&lt;0.0398</li> <li>&lt;0.0795</li> <li>&lt;0.0398</li> <li>&lt;0.0795</li> </ul>	Qualifier U U U U U U U U	) RL 0.0398 0.0398 0.0398 0.0795 0.0398 0.0795 Limits	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	Prepared 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 Prepared	Analyzed 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 11/29/22 20:40 Analyzed	<b>492-1</b> x: Soli Dil Fa 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	Chloride Client Sample ID: WN-FS ate Collected: 11/16/22 11:40 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Vola Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate 4-Bromofluorobenzene (Surr)	BO2           atile Organic Comp           Result           <0.0398	Qualifier U U U U U U U U	) RL 0.0398 0.0398 0.0398 0.0795 0.0398 0.0795 Limits 70 - 130	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u>D</u>	Prepared 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 Prepared 11/28/22 14:18	Analyzed           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40	<b>492-1</b> x: Soli Dil Fa 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	Chloride Client Sample ID: WN-FS ate Collected: 11/16/22 11:40 ate Received: 11/16/22 14:32 ample Depth: 2 Method: SW846 8021B - Vola Analyte Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene Xylenes, Total Surrogate 4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr) Method: TAL SOP Total BTE	Result	Qualifier U U U U U U Qualifier	RL         0.0398         0.0398         0.0398         0.0398         0.0795         0.0398         0.0795         0.0795         Limits         70 - 130         70 - 130		Unit mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg		Prepared 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 11/28/22 14:18 Prepared 11/28/22 14:18 11/28/22 14:18	Analyzed           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40           11/29/22 20:40	492-1 x: Soli Dil Fa 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

#### Eurofins Carlsbad

Released to Imaging: 8/2/2024 11:28:39 AM

Client: Terracon Consulting Eng & Scientists

Job ID: 890-3492-1 SDG: KH227019

Matrix: Solid

5

Lab Sample ID: 890-3492-14

## Client Sample ID: WN-FS02

Date Collected: 11/16/22 11:40 Date Received: 11/16/22 14:32

Project/Site: Osage Boyd Yaso

Sample Depth: 2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	998		49.9		mg/Kg			11/23/22 12:17	1
Method: SW846 8015B NM - Di	esel Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		11/22/22 08:21	11/23/22 04:58	1
Diesel Range Organics (Over	861		49.9		mg/Kg		11/22/22 08:21	11/23/22 04:58	1
C10-C28)									
Oll Range Organics (Over	137		49.9		mg/Kg		11/22/22 08:21	11/23/22 04:58	1
C28-C36)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130				11/22/22 08:21	11/23/22 04:58	1
o-Terphenyl	112		70 - 130				11/22/22 08:21	11/23/22 04:58	1
Method: MCAWW 300.0 - Anior	ns, Ion Chromato	ography - So	oluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	523		4.95		mg/Kg			11/22/22 05:13	1

## **Surrogate Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

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

_				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-3492-1	S-WS03	93	94	
890-3492-2	S-WS04	85	88	
890-3492-3	SW-FS01	87	96	
890-3492-4	SE-FS01	85	86	
890-3492-5	EM-WS01	81	88	
890-3492-6	EM-FS02	91	91	
890-3492-7	EN-WS01	88	71	
890-3492-8	EN-WS02	90	87	
890-3492-9	EN-FS01	97	94	
890-3492-10	N-WS01	95	69 S1-	
890-3492-11	WN-WS01	86	69 S1-	
890-3492-12	WN-WS02	72	105	
890-3492-13	WN-FS01	89	97	
890-3492-14	WN-FS02	84	72	
LCS 880-40412/1-A	Lab Control Sample	86	107	
LCS 880-40470/1-A	Lab Control Sample	87	111	
LCSD 880-40412/2-A	Lab Control Sample Dup	88	101	
LCSD 880-40470/2-A	Lab Control Sample Dup	83	107	
MB 880-40412/5-A	Method Blank	74	110	
MB 880-40470/5-A	Method Blank	72	109	

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

_			
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-3492-1	S-WS03	83	91
890-3492-2	S-WS04	83	99
890-3492-3	SW-FS01	93	101
890-3492-4	SE-FS01	97	129
890-3492-5	EM-WS01	88	96
890-3492-6	EM-FS02	108	114
890-3492-7	EN-WS01	89	103
890-3492-8	EN-WS02	106	117
890-3492-9	EN-FS01	103	111
890-3492-10	N-WS01	98	114
890-3492-11	WN-WS01	85	97
890-3492-12	WN-WS02	101	113
890-3492-13	WN-FS01	92	102
890-3492-14	WN-FS02	100	112
LCS 880-40177/2-A	Lab Control Sample	165 S1+	192 S1+
LCSD 880-40177/3-A	Lab Control Sample Dup	161 S1+	188 S1+
MB 880-40177/1-A	Method Blank	112	135 S1+
Surrogate Legend			

1CO = 1-Chlorooctane

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Prep Type: Total/NA

Job ID: 890-3492-1 SDG: KH227019

Prep Type: Total/NA

## **Surrogate Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso OTPH = o-Terphenyl Job ID: 890-3492-1 SDG: KH227019

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## **QC Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

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

Lab Sample ID: MB 880-40412/5-A Matrix: Solid Analysis Batch: 40361	мв	МВ					Client Sa	mple ID: Metho Prep Type: 1 Prep Batch	Total/NA	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	<0.00200	U	0.00200		mg/Kg		11/28/22 10:23	11/28/22 12:29	1	
Toluene	<0.00200	U	0.00200		mg/Kg		11/28/22 10:23	11/28/22 12:29	1	-
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/28/22 10:23	11/28/22 12:29	1	
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/28/22 10:23	11/28/22 12:29	1	
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/28/22 10:23	11/28/22 12:29	1	
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/28/22 10:23	11/28/22 12:29	1	
	МВ	МВ								
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene (Surr)	74		70 - 130				11/28/22 10:23	11/28/22 12:29	1	
1,4-Difluorobenzene (Surr)	110		70 - 130				11/28/22 10:23	11/28/22 12:29	1	

#### Lab Sample ID: LCS 880-40412/1-A Matrix: Solid

## Analysis Batch: 40361

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09831		mg/Kg		98	70 - 130	·
Toluene	0.100	0.1061		mg/Kg		106	70 - 130	
Ethylbenzene	0.100	0.09887		mg/Kg		99	70 - 130	
m-Xylene & p-Xylene	0.200	0.1767		mg/Kg		88	70 - 130	
o-Xylene	0.100	0.08535		mg/Kg		85	70 - 130	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	86		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

### Lab Sample ID: LCSD 880-40412/2-A

#### Matrix: Solid

Analysis Batch: 40361							Prep	p Batch: 40412			
	Spike	LCSD	LCSD				%Rec		RPD		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
Benzene	0.100	0.1104		mg/Kg		110	70 - 130	12	35		
Toluene	0.100	0.1243		mg/Kg		124	70 - 130	16	35		
Ethylbenzene	0.100	0.1190		mg/Kg		119	70 - 130	18	35		
m-Xylene & p-Xylene	0.200	0.2122		mg/Kg		106	70 - 130	18	35		
o-Xylene	0.100	0.1020		mg/Kg		102	70 - 130	18	35		

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	88		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

#### Lab Sample ID: MB 880-40470/5-A Matrix: Solid

## Analysis Batch: 40541

	МВ	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/28/22 14:18	11/29/22 12:12	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/28/22 14:18	11/29/22 12:12	1

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Prep Type: Total/NA

Prep Batch: 40470

Job ID: 890-3492-1

SDG: KH227019

## Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 40412

:18	11/29/22 12:12	

**Client Sample ID: Method Blank** 

## **QC Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso Page 153 of 268

Job ID: 890-3492-1 SDG: KH227019

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

Lab Sample ID: MB 880-40470/5-A Matrix: Solid Analysis Batch: 40541										Client Sa	mple ID: Metho Prep Type: <sup>-</sup> Prep Batcl	Fotal/NA
		MB										
Analyte		Qualifier	RL			Unit		D		repared	Analyzed	Dil Fac
Ethylbenzene	<0.00200		0.00200			mg/Kg	1		11/28	8/22 14:18	11/29/22 12:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400			mg/Kg	1		11/28	8/22 14:18	11/29/22 12:12	1
o-Xylene	<0.00200	U	0.00200			mg/Kg	1		11/28	8/22 14:18	11/29/22 12:12	1
Xylenes, Total	<0.00400	U	0.00400			mg/Kg	1		11/28	8/22 14:18	11/29/22 12:12	1
	MB	МВ										
Surrogate	%Recovery	Qualifier	Limits						Pi	repared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		70 - 130						11/28	8/22 14:18	11/29/22 12:12	
1,4-Difluorobenzene (Surr)	109		70 - 130						11/28	8/22 14:18	11/29/22 12:12	1
Lab Sample ID: LCS 880-40470/1-A								C	lient	Sample I	D: Lab Control	Sample
Matrix: Solid											Prep Type: 7	Total/NA
Analysis Batch: 40541											Prep Batch	n: <b>4047(</b>
			Spike	LCS	LCS						%Rec	
Analyte			Added	Result	Qualit	fier	Unit		D	%Rec	Limits	
Benzene			0.100	0.09656			mg/Kg		_	97	70 - 130	
Toluene			0.100	0.1057			mg/Kg			106	70 - 130	
Ethylbenzene			0.100	0.09986			mg/Kg			100	70 - 130	
m-Xylene & p-Xylene			0.200	0.1780			mg/Kg			89	70 _ 130	
o-Xylene			0.100	0.08731			mg/Kg			87	70 - 130	

	LCS		
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	87		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

## Lab Sample ID: LCSD 880-40470/2-A Matrix: Solid

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

Analysis Batch: 40541							Prep	Batch:	40470
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.09346		mg/Kg		93	70 - 130	3	35
Toluene	0.100	0.1020		mg/Kg		102	70 - 130	4	35
Ethylbenzene	0.100	0.09994		mg/Kg		100	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.1782		mg/Kg		89	70 - 130	0	35
o-Xylene	0.100	0.08553		mg/Kg		86	70 - 130	2	35

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

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

Lab Sample ID: MB 880-40177/1-A Matrix: Solid Analysis Batch: 40170	МВ	МВ					Client Sa	mple ID: Metho Prep Type: ٦ Prep Batch	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0		mg/Kg		11/22/22 08:21	11/22/22 19:48	1
(GRO)-C6-C10									

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## **QC Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

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

									Clien	t Sa	mple ID: M		
											Prep T		
											Prep	Batch:	40177
Be	MB I	MB Qualifier		ы	мп	L Unit		D	Prepare	4	Analyza		
				RL	WD			<u> </u>			Analyze		Dil Fac
<;	50.0 l	U		50.0		mg/Kg			11/22/22 08	3:21	11/22/22 1	9:48	
<	50.0	U		50.0		ma/Ka			11/22/22 08	3.21	11/22/22 1	9.48	
	00.0	0		00.0		ing/itg			11/22/22 00		11/22/22 1	0.10	
	MB I	MB											
%Reco	very	Qualifier	Limit	ts					Prepare	d	Analyze	ed	Dil Fa
	112		70 - 1	130					11/22/22 08	3:21	11/22/22 1	9:48	
	135	S1+	70 - 1	130					11/22/22 08	3:21	11/22/22 1	9:48	
2-A								C	lient Sam	ple I	D: Lab Co	ontrol S	ample
											Prep T	ype: To	otal/NA
											Prep	Batch:	40177
			Spike	LC	S LC	s					%Rec		
			Added	Res	ılt Qu	ualifier	Unit		D %Re	с	Limits		
	_		1000	830	.0		mg/Kg		8	3	70 - 130		
			1000	958	.2		mg/Kg		90	6	70 - 130		
LCS	LCS												
%Recovery	Qualif	fier	Limits										
165	S1+		70 - 130										
192	S1+		70 - 130										
// <b>3-A</b>							Cli	ent	Sample II	D: La	ab Control	-	
7/ <b>3-A</b>							Cli	ent	Sample II	D: La	Prep T	ype: To	otal/N/
7/ <b>3-A</b>							Cli	ent	Sample II	D: La	Prep Ty Prep	-	otal/N/ 4017
'/ <b>3-A</b>			Spike		D LC			ent	-		Prep Ty Prep %Rec	ype: To Batch:	otal/NA 40177 RPI
'/3-A			Added	Res	lt Qu	SD Jalifier	Unit	ent	D %Re	c	Prep Ty Prep %Rec Limits	ype: To Batch: 	otal/NA 40177 RPC Limi
// <b>3-A</b>			-		lt Qu			ent	-	c	Prep Ty Prep %Rec	ype: To Batch:	otal/N/ 40177 RPI Limi
// <b>3-A</b>			<b>Added</b> 1000	<b>Res</b> 842	<b>ilt Qu</b> .6		Unit mg/Kg	ent	<u>D</u> %Rea	<mark>c</mark>	Prep Ty Prep %Rec Limits 70 - 130	ype: To Batch: <u>RPD</u> 2	<b>40177</b> <b>40177</b> <b>RPI</b> <u>Limi</u> 20
// <b>3-A</b>			Added	Res	<b>ilt Qu</b> .6		Unit	ent	D %Re	<mark>c</mark>	Prep Ty Prep %Rec Limits	ype: To Batch: 	otal/NA 40177 RPE
//3-A	LCSD		<b>Added</b> 1000	<b>Res</b> 842	<b>ilt Qu</b> .6		Unit mg/Kg	ent	<u>D</u> %Rea	<mark>c</mark>	Prep Ty Prep %Rec Limits 70 - 130	ype: To Batch: <u>RPD</u> 2	<b>4017</b> <b>4017</b> <b>RPI</b> Limi
LCSD			<b>Added</b> 1000	<b>Res</b> 842	<b>ilt Qu</b> .6		Unit mg/Kg	ent	<u>D</u> %Rea	<mark>c</mark>	Prep Ty Prep %Rec Limits 70 - 130	ype: To Batch: <u>RPD</u> 2	<b>4017</b> <b>4017</b> <b>RPI</b> Limi
	Qualif		Added 1000 1000	<b>Res</b> 842	<b>ilt Qu</b> .6		Unit mg/Kg	ent	<u>D</u> %Rea	<mark>c</mark>	Prep Ty Prep %Rec Limits 70 - 130	ype: To Batch: <u>RPD</u> 2	<b>4017</b> <b>4017</b> <b>RPI</b> Limi
LCSD %Recovery	<b>Qualif</b> S1+		Added 1000 1000 <i>Limits</i>	<b>Res</b> 842	<b>ilt Qu</b> .6		Unit mg/Kg	ent	<u>D</u> %Rea	<mark>c</mark>	Prep Ty Prep %Rec Limits 70 - 130	ype: To Batch: <u>RPD</u> 2	<b>40177</b> <b>40177</b> <b>RPI</b> <u>Limi</u> 20
-	%Reco2-ALCS%Recovery165	<50.0 MB <u>%Recovery</u> 112 135 2-A LCS LCS	<50.0 U MB MB %Recovery Qualifier 112 135 S1+ 2-A LCS LCS %Recovery Qualifier 165 S1+	<50.0 U <u>MB</u> <u>MB</u> <u>%Recovery</u> <u>Qualifier</u> <u>Limi</u> <u>112</u> 70 - : <u>135</u> S1+ 70 - : <b>Spike</b> <u>Added</u> 1000 <u>LCS LCS</u> <u>%Recovery</u> <u>Qualifier</u> <u>Limits</u> <u>165 S1+</u> 70 - 130	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c} < 50.0 \text{ U} \\ \hline \textbf{MB} & \textbf{MB} \\ \hline \textbf{112} & \textbf{Comparison} \\ \hline \textbf{112} & \textbf{T0 - 130} \\ \hline \textbf{135} & \textbf{S1 + } & \textbf{70 - 130} \\ \hline \textbf{CS} & \textbf{LCS} \\ \hline \textbf{Added} & \textbf{Result} \\ \hline \textbf{Result} & \textbf{Qualifier} \\ \hline \textbf{1000} & \textbf{958.2} \\ \hline \textbf{MB} & \textbf{MB} \\ \hline \textbf{M} & \textbf{MB} \\ \hline \textbf{M} & \textbf{MB} \\ \hline \textbf{M} & \textbf{M} \\ \hline \textbf{M} $	$ \begin{array}{c} <50.0 \ U \\ \hline MB \ MB \\ \hline \hline MB \\ \hline MB \\ \hline MB \\ \hline \hline MB \\ \hline \hline MB \\ \hline MB \\ \hline \hline \ MB \\ \hline \hline \ MB \\ \hline \hline \hline \ MB \\ \hline \hline \hline \ MB \\ \hline \hline \hline \ MC \\ \hline \hline \hline \ MC \\ \hline \hline \hline \ MC \\ \hline \hline \hline \hline \ MC \\ \hline \hline \hline \hline \ MC \\ \hline \hline \hline \hline \hline \hline \hline \hline \ MC \\ \hline $	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		<50.0 U       <50.0 U

11/22/22 01:46

**Released to Imaging: 8/2/2024 11:28:39 AM** 

Chloride

5.00

mg/Kg

<5.00 U

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

Job ID: 890-3492-1 SDG: KH227019

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-39832/2-A								Clie	ent	Sample	ID: Lab C	ontrol S	ample
Matrix: Solid											Prep	Type: S	oluble
Analysis Batch: 40153													
			Spike		LCS	LCS					%Rec		
Analyte			Added	F	Result	Qualifier	Unit		D	%Rec	Limits		
Chloride			250		245.8		mg/Kg			98	90 - 110		
Lab Sample ID: LCSD 880-39832/3-A							Cl	ient Sa	am	ple ID: I	Lab Contro	ol Samp	le Dup
Matrix: Solid											Prep	Type: S	oluble
Analysis Batch: 40153													
			Spike	I	LCSD	LCSD					%Rec		RPD
Analyte			Added	F	Result	Qualifier	Unit		D	%Rec	Limits	RPD	Limit
Chloride			250		241.8		mg/Kg			97	90 - 110	2	20
Lab Sample ID: MB 880-40003/1-A										Client S	ample ID:	Method	Blank
Matrix: Solid												Type: S	
Analysis Batch: 40155													
	МВ	MB											
Analyte	Result	Qualifier		RL		MDL Unit		D	P	repared	Analy	zed	Dil Fac
Chloride	<5.00	U		5.00		mg/ł	ζg				11/22/22	13:24	1
Lab Sample ID: LCS 880-40003/2-A								Clie	ent	Sample	ID: Lab C	ontrol S	ample
Matrix: Solid												Type: S	
Analysis Batch: 40155													
			Spike		LCS	LCS					%Rec		
Analyte			Added	F	Result	Qualifier	Unit		D	%Rec	Limits		
Chloride			250		257.5		mg/Kg			103	90 - 110		
Lab Sample ID: LCSD 880-40003/3-A							Cli	ient S	am	ple ID: I	Lab Contro	ol Samp	le Dup
Matrix: Solid										-		Type: S	
Analysis Batch: 40155													
			Spike	I	LCSD	LCSD					%Rec		RPD
Analyte			Added	F	Result	Qualifier	Unit		D	%Rec	Limits	RPD	Limit
Chloride			250		257.7		mg/Kg		-	103	90 - 110	0	20

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Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

5 6

Job ID: 890-3492-1 SDG: KH227019

## **GC VOA**

#### Analysis Batch: 40361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3492-1	S-WS03	Total/NA	Solid	8021B	40412
890-3492-2	S-WS04	Total/NA	Solid	8021B	40412
890-3492-3	SW-FS01	Total/NA	Solid	8021B	40412
890-3492-4	SE-FS01	Total/NA	Solid	8021B	40412
890-3492-5	EM-WS01	Total/NA	Solid	8021B	40412
890-3492-6	EM-FS02	Total/NA	Solid	8021B	40412
890-3492-8	EN-WS02	Total/NA	Solid	8021B	40412
890-3492-9	EN-FS01	Total/NA	Solid	8021B	40412
890-3492-12	WN-WS02	Total/NA	Solid	8021B	40412
890-3492-13	WN-FS01	Total/NA	Solid	8021B	40412
MB 880-40412/5-A	Method Blank	Total/NA	Solid	8021B	40412
LCS 880-40412/1-A	Lab Control Sample	Total/NA	Solid	8021B	40412
LCSD 880-40412/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	40412

#### Prep Batch: 40412

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3492-1	S-WS03	Total/NA	Solid	5035	
890-3492-2	S-WS04	Total/NA	Solid	5035	
890-3492-3	SW-FS01	Total/NA	Solid	5035	
890-3492-4	SE-FS01	Total/NA	Solid	5035	
890-3492-5	EM-WS01	Total/NA	Solid	5035	
890-3492-6	EM-FS02	Total/NA	Solid	5035	
890-3492-8	EN-WS02	Total/NA	Solid	5035	
890-3492-9	EN-FS01	Total/NA	Solid	5035	
890-3492-12	WN-WS02	Total/NA	Solid	5035	
890-3492-13	WN-FS01	Total/NA	Solid	5035	
MB 880-40412/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-40412/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-40412/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

#### Prep Batch: 40470

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3492-7	EN-WS01	Total/NA	Solid	5035	
890-3492-10	N-WS01	Total/NA	Solid	5035	
890-3492-11	WN-WS01	Total/NA	Solid	5035	
890-3492-14	WN-FS02	Total/NA	Solid	5035	
MB 880-40470/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-40470/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-40470/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

#### Analysis Batch: 40520

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3492-1	S-WS03	Total/NA	Solid	Total BTEX	
890-3492-2	S-WS04	Total/NA	Solid	Total BTEX	
890-3492-3	SW-FS01	Total/NA	Solid	Total BTEX	
890-3492-4	SE-FS01	Total/NA	Solid	Total BTEX	
890-3492-5	EM-WS01	Total/NA	Solid	Total BTEX	
890-3492-6	EM-FS02	Total/NA	Solid	Total BTEX	
890-3492-7	EN-WS01	Total/NA	Solid	Total BTEX	
890-3492-8	EN-WS02	Total/NA	Solid	Total BTEX	
890-3492-9	EN-FS01	Total/NA	Solid	Total BTEX	

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Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

## GC VOA (Continued)

### Analysis Batch: 40520 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3492-10	N-WS01	Total/NA	Solid	Total BTEX	
890-3492-11	WN-WS01	Total/NA	Solid	Total BTEX	
890-3492-12	WN-WS02	Total/NA	Solid	Total BTEX	
890-3492-13	WN-FS01	Total/NA	Solid	Total BTEX	
890-3492-14	WN-FS02	Total/NA	Solid	Total BTEX	
Analysis Batch: 405	41				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3492-7	EN-WS01	Total/NA	Solid	8021B	40470
890-3492-10	N-WS01	Total/NA	Solid	8021B	40470
890-3492-11	WN-WS01	Total/NA	Solid	8021B	40470

Total/NA

Total/NA

Total/NA

Total/NA

Solid

Solid

Solid

Solid

8021B

8021B

8021B

8021B

Method Blank
Lab Control Sample
Lab Control Sample Dup

WN-FS02

### GC Semi VOA

MB 880-40470/5-A

LCS 880-40470/1-A

LCSD 880-40470/2-A

890-3492-14

#### Analysis Batch: 40170

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3492-1	S-WS03	Total/NA	Solid	8015B NM	40177
890-3492-2	S-WS04	Total/NA	Solid	8015B NM	40177
890-3492-3	SW-FS01	Total/NA	Solid	8015B NM	40177
890-3492-4	SE-FS01	Total/NA	Solid	8015B NM	40177
890-3492-5	EM-WS01	Total/NA	Solid	8015B NM	40177
890-3492-6	EM-FS02	Total/NA	Solid	8015B NM	40177
890-3492-7	EN-WS01	Total/NA	Solid	8015B NM	40177
890-3492-8	EN-WS02	Total/NA	Solid	8015B NM	40177
890-3492-9	EN-FS01	Total/NA	Solid	8015B NM	40177
890-3492-10	N-WS01	Total/NA	Solid	8015B NM	40177
890-3492-11	WN-WS01	Total/NA	Solid	8015B NM	40177
890-3492-12	WN-WS02	Total/NA	Solid	8015B NM	40177
890-3492-13	WN-FS01	Total/NA	Solid	8015B NM	40177
890-3492-14	WN-FS02	Total/NA	Solid	8015B NM	40177
MB 880-40177/1-A	Method Blank	Total/NA	Solid	8015B NM	40177
LCS 880-40177/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	40177
LCSD 880-40177/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	40177

#### Prep Batch: 40177

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3492-1	S-WS03	Total/NA	Solid	8015NM Prep	
890-3492-2	S-WS04	Total/NA	Solid	8015NM Prep	
890-3492-3	SW-FS01	Total/NA	Solid	8015NM Prep	
890-3492-4	SE-FS01	Total/NA	Solid	8015NM Prep	
890-3492-5	EM-WS01	Total/NA	Solid	8015NM Prep	
890-3492-6	EM-FS02	Total/NA	Solid	8015NM Prep	
890-3492-7	EN-WS01	Total/NA	Solid	8015NM Prep	
890-3492-8	EN-WS02	Total/NA	Solid	8015NM Prep	
890-3492-9	EN-FS01	Total/NA	Solid	8015NM Prep	
890-3492-10	N-WS01	Total/NA	Solid	8015NM Prep	
890-3492-11	WN-WS01	Total/NA	Solid	8015NM Prep	

#### Eurofins Carlsbad

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## Job ID: 890-3492-1 SDG: KH227019

40470

40470

40470

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

## GC Semi VOA (Continued)

#### Prep Batch: 40177 (Continued)

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3492-12	WN-WS02	Total/NA	Solid	8015NM Prep	
890-3492-13	WN-FS01	Total/NA	Solid	8015NM Prep	
890-3492-14	WN-FS02	Total/NA	Solid	8015NM Prep	
MB 880-40177/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-40177/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-40177/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

#### Analysis Batch: 40315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3492-1	S-WS03	Total/NA	Solid	8015 NM	
890-3492-2	S-WS04	Total/NA	Solid	8015 NM	
390-3492-3	SW-FS01	Total/NA	Solid	8015 NM	
390-3492-4	SE-FS01	Total/NA	Solid	8015 NM	
390-3492-5	EM-WS01	Total/NA	Solid	8015 NM	
390-3492-6	EM-FS02	Total/NA	Solid	8015 NM	
90-3492-7	EN-WS01	Total/NA	Solid	8015 NM	
390-3492-8	EN-WS02	Total/NA	Solid	8015 NM	
90-3492-9	EN-FS01	Total/NA	Solid	8015 NM	
90-3492-10	N-WS01	Total/NA	Solid	8015 NM	
390-3492-11	WN-WS01	Total/NA	Solid	8015 NM	
390-3492-12	WN-WS02	Total/NA	Solid	8015 NM	
90-3492-13	WN-FS01	Total/NA	Solid	8015 NM	
390-3492-14	WN-FS02	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 39832

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3492-9	EN-FS01	Soluble	Solid	DI Leach	
890-3492-10	N-WS01	Soluble	Solid	DI Leach	
890-3492-11	WN-WS01	Soluble	Solid	DI Leach	
890-3492-12	WN-WS02	Soluble	Solid	DI Leach	
890-3492-13	WN-FS01	Soluble	Solid	DI Leach	
890-3492-14	WN-FS02	Soluble	Solid	DI Leach	
MB 880-39832/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-39832/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-39832/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

#### Leach Batch: 40003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3492-1	S-WS03	Soluble	Solid	DI Leach	
890-3492-2	S-WS04	Soluble	Solid	DI Leach	
890-3492-3	SW-FS01	Soluble	Solid	DI Leach	
890-3492-4	SE-FS01	Soluble	Solid	DI Leach	
890-3492-5	EM-WS01	Soluble	Solid	DI Leach	
890-3492-6	EM-FS02	Soluble	Solid	DI Leach	
890-3492-7	EN-WS01	Soluble	Solid	DI Leach	
890-3492-8	EN-WS02	Soluble	Solid	DI Leach	
MB 880-40003/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-40003/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-40003/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

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### Job ID: 890-3492-1 SDG: KH227019

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

EN-WS02

Method Blank

Lab Control Sample

Lab Control Sample Dup

40003

40003

40003

40003

Job ID: 890-3492-1 SDG: KH227019

## HPLC/IC

890-3492-8

MB 880-40003/1-A

LCS 880-40003/2-A

LCSD 880-40003/3-A

### Analysis Batch: 40153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch	
890-3492-9	EN-FS01	Soluble	Solid	300.0	39832	E
890-3492-10	N-WS01	Soluble	Solid	300.0	39832	J
890-3492-11	WN-WS01	Soluble	Solid	300.0	39832	
390-3492-12	WN-WS02	Soluble	Solid	300.0	39832	
390-3492-13	WN-FS01	Soluble	Solid	300.0	39832	
390-3492-14	WN-FS02	Soluble	Solid	300.0	39832	
/IB 880-39832/1-A	Method Blank	Soluble	Solid	300.0	39832	
CS 880-39832/2-A	Lab Control Sample	Soluble	Solid	300.0	39832	8
CSD 880-39832/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	39832	
nalysis Batch: 40155	i de la companya de l					9
· ·	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch	9 1(
ab Sample ID		Prep Type Soluble	Matrix Solid	<u>Method</u> 300.0	Prep Batch 40003	9 1(
ab Sample ID 90-3492-1	Client Sample ID					9 1( 1
ab Sample ID 990-3492-1 990-3492-2	Client Sample ID S-WS03	Soluble	Solid	300.0	40003	9 1( 11
ab Sample ID 990-3492-1 990-3492-2 990-3492-3	Client Sample ID S-WS03 S-WS04	Soluble	Solid	300.0 300.0	40003	9 1( 11
ab Sample ID 390-3492-1 390-3492-2 390-3492-3 390-3492-4	Client Sample ID S-WS03 S-WS04 SW-FS01	Soluble Soluble Soluble	Solid Solid Solid	300.0 300.0 300.0	40003 40003 40003	9 1( 11 12
nalysis Batch: 40155 Lab Sample ID 390-3492-1 390-3492-2 390-3492-3 390-3492-3 390-3492-4 390-3492-5 390-3492-6	Client Sample ID S-WS03 S-WS04 SW-FS01 SE-FS01	Soluble Soluble Soluble Soluble	Solid Solid Solid Solid	300.0 300.0 300.0 300.0	40003 40003 40003 40003	9 1( 11 12

Soluble

Soluble

Soluble

Soluble

Solid

Solid

Solid

Solid

300.0

300.0

300.0

300.0

Initial

Amount

5.05 g

5 mL

10.04 g

1 uL

5.03 g

50 mL

Final

Amount

5 mL

5 mL

10 mL

1 uL

50 mL

50 mL

Batch

40412

40361

40520

40315

40177

40170

40003

40155

Number

Prepared

or Analyzed

11/28/22 10:23

11/28/22 13:59

11/28/22 16:52

11/23/22 12:17

11/22/22 08:21

11/23/22 04:36

11/20/22 12:10

11/22/22 15:23

Dil

100

1

1

1

1

Factor

Run

Batch

Туре

Prep

Analysis

Analysis

Analysis

Analysis

Analysis

Leach

Prep

Batch

Method

5035

8021B

Total BTEX

8015NM Prep

8015B NM

DI Leach

300.0

8015 NM

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Soluble

Soluble

Job ID: 890-3492-1 SDG: KH227019

# Lab Sample ID: 890-3492-1

Analyst

MNR

MNR

SM

SM

AM

SM

СН

SMC

Matrix: Solid

Lab

EET MID

Matrix: Solid

#### Lab Sample ID: 890-3492-2 Matrix: Solid

## Client Sample ID: S-WS04 Date Collected: 11/16/22 10:59

Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	40412	11/28/22 10:23	MNR	EET MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	40361	11/28/22 14:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/28/22 16:52	SM	EET MID
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		5	1 uL	1 uL	40170	11/23/22 03:09	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	40003	11/20/22 12:10	СН	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	40155	11/22/22 15:40	SMC	EET MID

#### **Client Sample ID: SW-FS01** Date Collected: 11/16/22 11:02

## Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	40412	11/28/22 10:23	MNR	EET MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	40361	11/28/22 14:40	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/28/22 16:52	SM	EET MID
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40170	11/23/22 02:03	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	40003	11/20/22 12:10	СН	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	40155	11/22/22 15:46	SMC	EET MID

#### **Client Sample ID: SE-FS01** Date Collected: 11/16/22 11:04 Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	40412	11/28/22 10:23	MNR	EET MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	40361	11/28/22 15:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/28/22 16:52	SM	EET MID

**Eurofins Carlsbad** 

Lab Sample ID: 890-3492-4

Lab Sample ID: 890-3492-3

Matrix: Solid

## **Client Sample ID: SE-FS01** Date Collected: 11/16/22 11:04

Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		5	1 uL	1 uL	40170	11/23/22 03:30	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	40003	11/20/22 12:10	СН	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	40155	11/22/22 15:51	SMC	EET MID

# Client Sample ID: EM-WS01

#### Date Collected: 11/16/22 11:07 Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	40412	11/28/22 10:23	MNR	EET MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	40361	11/28/22 15:21	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/28/22 16:52	SM	EET MID
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40170	11/23/22 04:14	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	40003	11/20/22 12:10	СН	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	40155	11/22/22 15:57	SMC	EET MID

### **Client Sample ID: EM-FS02**

Date Collected: 11/16/22 11:14 Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	40412	11/28/22 10:23	MNR	EET MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	40361	11/28/22 15:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/28/22 16:52	SM	EET MID
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40170	11/23/22 03:52	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	40003	11/20/22 12:10	СН	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	40155	11/22/22 16:03	SMC	EET MID

### **Client Sample ID: EN-WS01**

#### Date Collected: 11/16/22 11:16 Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	40470	11/28/22 14:18	MNR	EET MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	40541	11/29/22 14:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/29/22 15:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40170	11/23/22 00:35	SM	EET MID

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Job ID: 890-3492-1 SDG: KH227019

## Lab Sample ID: 890-3492-4 Matrix: Solid

5 9

# Lab Sample ID: 890-3492-6

Lab Sample ID: 890-3492-7

Matrix: Solid

Matrix: Solid

## Lab Sample ID: 890-3492-5 Matrix: Solid

Client: Terracon Consulting Eng & Scientists

## **Client Sample ID: EN-WS01** Date Collected: 11/16/22 11:16 Date Received: 11/16/22 14:32

Project/Site: Osage Boyd Yaso

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.05 g	50 mL	40003	11/20/22 12:10	СН	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	40155	11/22/22 16:09	SMC	EET MID

## **Client Sample ID: EN-WS02**

#### Date Collected: 11/16/22 11:19 Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	40412	11/28/22 10:23	MNR	EET MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	40361	11/28/22 19:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/29/22 09:34	SM	EET MID
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40170	11/23/22 01:41	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	40003	11/20/22 12:10	СН	EET MID
Soluble	Analysis	300.0		20	50 mL	50 mL	40155	11/22/22 16:14	SMC	EET MID

#### **Client Sample ID: EN-FS01** Date Collected: 11/16/22 11:23 Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	40412	11/28/22 10:23	MNR	EET MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	40361	11/28/22 19:34	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/29/22 09:34	SM	EET MID
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40170	11/23/22 02:47	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	39832	11/17/22 14:46	СН	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	40153	11/22/22 04:37	CH	EET MID

### **Client Sample ID: N-WS01** Date Collected: 11/16/22 11:27 Date Received: 11/16/22 14:32

Lab Sample ID: 890-3492-10 Matrix: Solid

СН

11/22/22 04:44

ate Received	: 11/16/22 14:32	2								
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	40470	11/28/22 14:18	MNR	EET MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	40541	11/29/22 19:59	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/30/22 09:51	SM	EET MID
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40170	11/23/22 00:57	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	39832	11/17/22 14:46	СН	EET MID

50 mL

5

50 mL

40153

#### **Eurofins Carlsbad**

EET MID

Job ID: 890-3492-1 SDG: KH227019

# Lab Sample ID: 890-3492-7

Lab Sample ID: 890-3492-8

Lab Sample ID: 890-3492-9

Matrix: Solid

Matrix: Solid

Matrix: Solid

## Released to Imaging: 8/2/2024 11:28:39 AM

Analysis

Soluble

300.0

Initial

Amount

4.98 g

5 mL

10.04 g

1 uL

5.04 g

50 mL

Final

Amount

5 mL

5 mL

10 mL

1 uL

50 mL

50 mL

Batch

40470

40541

40520

40315

40177

40170

39832

40153

Number

Dil

20

1

1

1

5

Factor

Run

Batch

Туре

Prep

Analysis

Analysis

Analysis

Analysis

Analysis

Leach

Prep

Batch

Method

5035

8021B

Total BTEX

8015NM Prep

8015B NM

DI Leach

300.0

8015 NM

### **Client Sample ID: WN-WS01** Date Collected: 11/16/22 11:34 Date Received: 11/16/22 14:32

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Soluble

Soluble

Job ID: 890-3492-1 SDG: KH227019

# Lab Sample ID: 890-3492-11

Analyst

MNR

MNR

SM

SM

AM

SM

СН

СН

Lab Sample ID: 890-3492-13

Lab Sample ID: 890-3492-14

Matrix: Solid

Prepared

or Analyzed

11/28/22 14:18

11/29/22 20:19

11/30/22 09:51

11/23/22 12:17

11/22/22 08:21

11/22/22 23:50

11/17/22 14:46

11/22/22 04:51

Matrix: Solid

Lab

EET MID

EET MID

EET MID

EET MID

EET MID

EET MID

# Lab Sample ID: 890-3492-12

Matrix: Solid

3

## **Client Sample ID: WN-WS02**

#### Date Collected: 11/16/22 11:36 Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	40412	11/28/22 10:23	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	40361	11/28/22 17:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/29/22 09:34	SM	EET MID
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40170	11/23/22 02:25	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	39832	11/17/22 14:46	СН	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	40153	11/22/22 04:58	СН	EET MID

#### **Client Sample ID: WN-FS01** Date Collected: 11/16/22 11:38

## Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	40412	11/28/22 10:23	MNR	EET MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	40361	11/28/22 20:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/29/22 09:34	SM	EET MID
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40170	11/23/22 00:12	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	39832	11/17/22 14:46	СН	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	40153	11/22/22 05:05	СН	EET MID

#### **Client Sample ID: WN-FS02** Date Collected: 11/16/22 11:40 Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	40470	11/28/22 14:18	MNR	EET MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	40541	11/29/22 20:40	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			40520	11/30/22 09:51	SM	EET MID

**Eurofins Carlsbad** 

FFT MID EET MID

Matrix: Solid

### Client Sample ID: WN-FS02 Date Collected: 11/16/22 11:40 Date Received: 11/16/22 14:32

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			40315	11/23/22 12:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	40177	11/22/22 08:21	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	40170	11/23/22 04:58	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	39832	11/17/22 14:46	СН	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	40153	11/22/22 05:13	СН	EET MID

Laboratory References:

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

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Job ID: 890-3492-1 SDG: KH227019

# Lab Sample ID: 890-3492-14

Matrix: Solid

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Eurofins Carlsbad

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

Job ID: 890-3492-1

## Laboratory: Eurofins Midland

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

thority	Pi	rogram	Identification Number	Expiration Date
as	N	ELAP	T104704400-22-24	06-30-23
The following analytes	are included in this report, be	ut the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes for v
the agency does not of Analysis Method		Matrix	Analyte	
the agency does not of Analysis Method 8015 NM	ffer certification . Prep Method	Matrix	Analyte Total TPH	

Eurofins Carlsbad

Released to Imaging: 8/2/2024 11:28:39 AM

SDG: KH227019

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## **Method Summary**

### Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

Job ID: 890-3492-1

Method	Method Description	Protocol	Laboratory
3021B	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	MCAWW	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

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. 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

SDG: KH227019

Eurofins Carlsbad

## **Sample Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

### Job ID: 890-3492-1 SDG: KH227019

ab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
90-3492-1	S-WS03	Solid	11/16/22 10:57	11/16/22 14:32	0-2
90-3492-2	S-WS04	Solid	11/16/22 10:59	11/16/22 14:32	0-2
90-3492-3	SW-FS01	Solid	11/16/22 11:02	11/16/22 14:32	2
90-3492-4	SE-FS01	Solid	11/16/22 11:04	11/16/22 14:32	2
90-3492-5	EM-WS01	Solid	11/16/22 11:07	11/16/22 14:32	0-2
90-3492-6	EM-FS02	Solid	11/16/22 11:14	11/16/22 14:32	2
90-3492-7	EN-WS01	Solid	11/16/22 11:16	11/16/22 14:32	0-2
90-3492-8	EN-WS02	Solid	11/16/22 11:19	11/16/22 14:32	0-2
90-3492-9	EN-FS01	Solid	11/16/22 11:23	11/16/22 14:32	2
90-3492-10	N-WS01	Solid	11/16/22 11:27	11/16/22 14:32	0-2
90-3492-11	WN-WS01	Solid	11/16/22 11:34	11/16/22 14:32	0-2
90-3492-12	WN-WS02	Solid	11/16/22 11:36	11/16/22 14:32	0-2
0-3492-13	WN-FS01	Solid	11/16/22 11:38	11/16/22 14:32	2
0-3492-14	WN-FS02	Solid	11/16/22 11:40	11/16/22 14:32	2

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5	Bucky M	Relinquished by: (Signature)	Notce: 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 nego	Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010	N-WSO	EN- ES	EN-WS	EN-WS	EM-FSC	EM-WSO	SE - FSO	SW-FSO	5-2304	S-WSO3	Sample Identification	Total Containers:	Sample Custody Seals:	Cooler Custody Seals:	Samples Received Intact:	SAMPLE RECEIPT	PO #:	Sampler's Name:	Project Location:	ver:	Project Name:	Phone: 5	City, State ZIP:	2	Company Name:	Project Manager:		🔅 eurofins
	Miller An	nature) R	and relinquishment of samples lble only for the cost of samples ge of \$85.00 will be applied to a	Metal(s) to be analy	200.8 / 6020:	1	21 2	02 S		2	2		s s	S	S	Matrix	~	Yes NO (N/A) T	Yes NO WA C	(Yes )No TI	Temp Blank:	c	ucky Mit	doler .	1042	r. Bord	575 689 40	artshood n	1518 V P	lectacon	Joseph G	Xenco	
	en ela S	Received by: (Signature)	constitutes a valid purchase ord and shall not assume any respo each project and a charge of \$5		8RCRA 13PPM	1 11:27	1 11.23	1 11:19	1 11:16	11:14	20:11	11:04	11:02	10:59	11/16 10:57	Date Time Sampled Sampled	Corrected Temperature:	Temperature Reading:	Correction Factor:	Thermometer ID:	Yes No Wet Ice:	the lab, if rec	TAT starts the	Due Date:	Anout	the so Turn	OZO Email:	NM 88220	unce st		usatus	Xenco	sont Torting
	lif II	ē)	er from client company to Euro nsibility for any losses or expen for each sample submitted to E	PLP 6010 : 8RCRA 5	Texas 11	0-211	2	0-2 1 1	1 2-0	2 1	0-2 1	2 1	2 1	0-2 1	0-2 C 1	Depth Grab/ # of Comp Cont	3.6	8.0	\$	1.00-	No No		TAT starts the day received by		Rush Code	Turn Around	buckles	City, State ZIP:	Address:	Company Name:	Bill to: (if different)	Midland, TX (43 EL Paso, TX (9 Hobbs, NM (5	Houston, TX
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	G	Relinquished by: (Signature)	bcontractors. It assigns standard ch losses are due to circumstance ed. These terms will be enforced u	o Cu Pb Mn M	Ca Cr Co Cu Fe Pb I													890-3492 Chain of								ANALYSIS REQUEST	turracan.co					TX (210) 509-3334 ( (806) 794-1296 M (575) 988-3199	(214) 902-0300
		iture)	terms and conditions s beyond the control nless previously negotlated.	i Se Ag TI U	Pb Mg Mn Mo Ni K Se												e mesou j					-				QUEST	Deliverables:	Reporting: Level	State of Project:	Program: UST/P			
		Received by: (Signature)		Hg: 1631 / 245.1 / 7470 / 7471	Ag SiO <sub>2</sub> Na Sr TI													Zr	N		H	H <sub>1</sub>	H	Co	Z		EDD ADaPT	I Level III PST/	]	UST/PST PRP Brownfields	Work Order Comments	work Order No:	
Revised Date: 08/25/2020 Rev. 2020.2		Date/Time		470 / 7471	TI Sn U V Zn											Sample Comments	NaOH+Ascorbic Acid: SAPC	Zn Acetate+NaOH: Zn	Na 25 20 3: NaSO 3	NaHSO 4: NABIS	H <sub>3</sub> PO <sub>4</sub> : HP	H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> NaOH: Na		Cool: Cool MeOH: Me	None: NO DI Water: H <sub>2</sub> O	Preservative Codes	Other:	ST		ields RRC Superfund		Page of A	

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Work Order No:       Page       2of         Work Order Comments       Work Order Comments       RRC         ustr/PST       PRP       Brownfields       RRC         oject:       Level III       PST/UST       TRRP			Relinquished by: (Signature)	Date/Time	e)	Received by: (Signatur	: (Signature)	Relinquished by
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Eurorofins       Environment Testing       Houston, TX (201) 304-300, Data, TX (214) 509-300       Mork Order No:         Manager:       Soc. Al. Comment Testing       E. Pao, TX (915) 585-343, Lubbock, TX (905) 598-393       E. Pao, TX (915) 585-343, Lubbock, TX (905) 598-393       Work Order Comments         myName:       Group any Name:       Company Name:       Company Name:       Work Order Comments         se.       VS. 6.89 4/0.20       Email:       Company Name:       Work Order Comments         se.       VS. 6.89 4/0.20       Email:       Company Name:       State of Project:         Number:       VS. 6.89 4/0.20       Email:       Company Name:       State of Project:         Number:       VS. 6.89 4/0.20       Email:       Persentative Comments       Other:         Number:       VS. 6.89 4/0.20       Email:       Presentative Comments       Poliverables: EDD       ADPT       Other:         Number:       VS. No       Weik Order Scont       Presentative Comments       Presentative Comments       Poliverables: EDD       None: NO       Dil         Streeweld httree// Streeweld by 4:30pn       No. 11 starts the day received by       No. 14, 14, 14, 14, 14, 14, 14, 14, 14, 14,	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>			ĩa (		Correction Earlor &	Yes No N/A	Cooler Custody Seals
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Fofins       Environment Testing       Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300       Work Order No:         Midland, TX (321) 704-5440, San Antonio, TX (210) 509-3334       EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296       Work Order No:         So. oh       Guidand, TX (432) 704-5440, San Antonio, TX (210) 509-3334       Bill to: (If different)       Work Order No:         Work Order No:       EL Paso, TX (915) 392-7550, Carlsbad, NM (575) 988-3199       www.xenco.com       Page 2 of         Work Order Comments       Company Name:       Work Order Comments       Work Order Comments         VS/18       Program:       UST/PST    PRP    Brownfields    RRC          Program:       UST/PST    PRP    Brownfields    RRC            VS/18       NM & & 220       City, State ZIP:       Reporting:       Level III    Level III    PST/UST    TRP		11				20	575 689 40	Phone:
Fofins       Environment Testing       Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300       Work Order No:         Midland, TX (432) 744-5440, San Antonio, TX (210) 509-3334       EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296       Work Order No:         Sosud       Guidand, TX (432) 744-5440, San Antonio, TX (210) 509-3334       Bill to: (If different)       www.xenco.com         Program:       UST/PST       PRP       Brownfields       RRC         4/5/8       Address:       company Name:       vstae of Project:		Reporting: Level II Level II			City, State ZIP:		Carisbold	City, State ZIP:
Fofins         Environment Testing         Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300         Work Order No:           Kenco         Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334         Work Order No:		itate of Project:	8		_	ince	4518 W	Address:
Fofins         Environment Testing         Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300         Work Order No:           Xenco         EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296         Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199         Work Order Comments           Socurad         Bill to: (if different)         Bill to: (if different)         Work Order Comments		rogram: UST/PST PRP	P		Company Name:	2		Company Name:
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Environment Testing         Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300           Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334           Kenco         EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296	Page 2	www.xenc	, NM (575) 988-3199	A (575) 392-7550, Carlsbad	Hobbs, N			
Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334			, TX (806) 794-1296	X (915) 585-3443, Lubbock	EL Paso, T		Xenco	
	r No:	Work Orde	nio, TX (210) 509-3334	(432) 704-5440, San Antor	Midland, T)	ment Testing		
			TY /3141 603-0300	TV /2011 240 0200 Dallas	Laura		ofine	PIIP

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4 5 6

## Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

#### Login Number: 3492 List Number: 1 Creator: Stutzman, Amanda

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	

List Source: Eurofins Carlsbad

Eurofins Carlsbad Released to Imaging: 8/2/2024 11:28:39 AM

Job Number: 890-3492-1 SDG Number: KH227019

List Source: Eurofins Midland

List Creation: 11/18/22 11:02 AM

## Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Login Number: 3492 List Number: 2 Creator: Rodriguez, Leticia

<6mm (1/4").

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	N/A	

Received by OCD: 7/11/2024 8:37:02 AM



**Environment Testing** 

# **ANALYTICAL REPORT**

# **PREPARED FOR**

Attn: Joseph Guesnier Terracon Consulting Eng & Scientists 5847 50th St Lubbock, Texas 79424 Generated 12/14/2022 1:27:53 PM

# **JOB DESCRIPTION**

Osage Boyd Yaso SDG NUMBER Eddy

# **JOB NUMBER**

880-22198-1

Eurofins Midland 1211 W. Florida Ave Midland TX 79701

See page two for job notes and contact information



Received by OCD: 7/11/2024 8:37:02 AM

# **Eurofins Midland**

Job Notes

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

RAMER

Generated 12/14/2022 1:27:53 PM

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

Eurofins Midland is a laboratory within Eurofins Environment Testing South Central, LLC, a company within Eurofins Environment Testing Group of Companies

# **Eurofins Midland**

# **Compliance Statement**

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments. QC data that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result. Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

#### Coliform MCLs

• Based on the EPA primary drinking water standard MCL for total coliforms, a water supply is considered bacteriologically "SAFE" if no coliform bacteria are detected. To be considered "SAFE" your report should indicate "<1 cfu/100mL" or "NEG" for the coliform test. If you report indicates a positive result "POS" or a value greater than or equal to one, then your supply is "UNSAFE FOR DRINKING" contact your local health department.

#### Warranties, Terms, and Conditions

Analyses for Field Parameters are performed by Eurofins Philadelphia field staff. Locations and certifications are identified on the Chain of Custody as follows:

ERF = field staff performs tests under NJ State certification #02015

VL = field staff performs tests under NJ State certification #06005

WG = field staff performs tests under NJ State certification #PA001

H = field staff performs tests under NJ NELAP certification #PA093, PA NELAP certification # 46-05499

• Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.

· The report shall not be reproduced, except in full, without the written consent of the laboratory

· All samples are collected as "grab" samples unless otherwise identified.

• Reported results related only to the samples as tested. Eurofins Philadelphia is not responsible for sample integrity unless sampling has been performed by a member of our staff.

• Eurofins Philadelphia is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance.

• Eurofins' online data portal "TotalAccess" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.

• The following personnel or their deputies have approved the results of the tests performed by Eurofins Philadelphia : Nicki Smith (Environmental Chemistry) and Jacqueline Gartner (Water Microbiology).

MRAMER

SDG: Eddy

Laboratory Job ID: 880-22198-1

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## Definitions/Glossary

	Definitions/Glossary		
	n Consulting Eng & Scientists sage Boyd Yaso	Job ID: 880-22198-1 SDG: Eddy	2
Qualifiers			3
GC VOA			ు
Qualifier	Qualifier Description		
<u>S1+</u>	Surrogate recovery exceeds control limits, high biased.		
U	Indicates the analyte was analyzed for but not detected.		5
GC Semi VOA			J
Qualifier	Qualifier Description		
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			ð
Qualifier	Qualifier Description		
U	Indicates the analyte was analyzed for but not detected.		9
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		40
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		

TNTC Too Numerous To Count

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#### Job ID: 880-22198-1

#### Laboratory: Eurofins Midland

#### Narrative

Job Narrative 880-22198-1

#### Receipt

The samples were received on 12/1/2022 1:02 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

#### GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: EN-FS02 (880-22198-2), WN-FS02 (880-22198-3), W-FS01 (880-22198-4), W-FS03 (880-22198-6) and (880-22122-A-50-E). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: (LCS 880-41400/1-A). Evidence of matrix interferences is not obvious.

Method 8021B: Surrogate recovery for the following samples were outside control limits: (880-22122-A-50-C MS) and (880-22122-A-50-D 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 matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 880-41259 and analytical batch 880-41213 was outside control limits. Sample non-homogeneity is suspected.

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-41226 and analytical batch 880-41315 was outside the upper control limits.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-41226/2-A) and (LCSD 880-41226/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: (880-22177-A-1-E). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: EN-FS01 (880-22198-1), EN-FS02 (880-22198-2) and WN-FS02 (880-22198-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-41225 and analytical batch 880-41315 was outside the upper control limits.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-41225/2-A) and (LCSD 880-41225/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (880-22199-A-41-D), (880-22199-A-41-E MS) and (880-22199-A-41-F MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: W-FS01 (880-22198-4). 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.

## **Case Narrative**

Job ID: 880-2219	98-1
SDG: E	ddy

### Job ID: 880-22198-1 (Continued)

Project/Site: Osage Boyd Yaso

#### Laboratory: Eurofins Midland (Continued)

Client: Terracon Consulting Eng & Scientists

#### HPLC/IC

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

Client: Terracon Consulting Eng & Scientists

RL

Job ID: 880-22198-1 SDG: Eddy

## **Client Sample ID: EN-FS01**

Date Collected: 11/30/22 09:44 Date Received: 12/01/22 13:02

Sample Depth: 3'

Analyte

Project/Site: Osage Boyd Yaso

Lab Sample ID: 880-22198-1 Matrix: Solid

Analyzed

5

Dil Fac

1

1

1	
1	
1	8
1	
Dil Fac	9
1 1	
Dil Fac	
1	

Benzene	< 0.00199	U	0.00199		mg/Kg		12/08/22 16:23	12/14/22 05:19
Toluene	<0.00199	U	0.00199		mg/Kg		12/08/22 16:23	12/14/22 05:19
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		12/08/22 16:23	12/14/22 05:19
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		12/08/22 16:23	12/14/22 05:19
o-Xylene	<0.00199	U	0.00199		mg/Kg		12/08/22 16:23	12/14/22 05:19
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		12/08/22 16:23	12/14/22 05:19
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed
Surrogate 4-Bromofluorobenzene (Surr)	97	Qualifier	Limits				Prepared 12/08/22 16:23	Analyzed 12/14/22 05:19
		Qualifier					· · · · · · · · · · · · · · · · · · ·	
4-Bromofluorobenzene (Surr)	97 106	<u>.</u>	70 - 130				12/08/22 16:23	12/14/22 05:19
4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr)	97 106 - Total BTEX Calo	<u>.</u>	70 - 130	MDL	Unit	D	12/08/22 16:23	12/14/22 05:19
4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr) Method: TAL SOP Total BTEX	97 106 - Total BTEX Calo	culation Qualifier	70 - 130 70 - 130	MDL	Unit mg/Kg	D	12/08/22 16:23 12/08/22 16:23	12/14/22 05:19 12/14/22 05:19

MDL Unit

D

Prepared

Method: SW846 80	015 NM - Diesel	<b>Range Organics</b>	(DRO) (GC)

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

Result Qualifier

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			12/09/22 09:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U	49.9		mg/Kg		12/07/22 09:28	12/08/22 20:17	1
(GRO)-C6-C10									
Diesel Range Organics (Over	<49.9	U	49.9		mg/Kg		12/07/22 09:28	12/08/22 20:17	1
C10-C28)									
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		12/07/22 09:28	12/08/22 20:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	128		70 - 130				12/07/22 09:28	12/08/22 20:17	1
o-Terphenyl	149	S1+	70 - 130				12/07/22 09:28	12/08/22 20:17	1

Method: MCAWW 300.0 - Anions, I	on Chromato	graphy - So	oluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	237		4.99		mg/Kg			12/08/22 22:22	1

## **Client Sample ID: EN-FS02** Date Collected: 11/30/22 09:47 Date Received: 12/01/22 13:02

Sample Depth: 3'

Method: SW846 8021B - Volatile Organic Compounds (GC)												
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
Benzene	<0.00199	U	0.00199		mg/Kg		12/08/22 16:23	12/14/22 05:40	1			
Toluene	<0.00199	U	0.00199		mg/Kg		12/08/22 16:23	12/14/22 05:40	1			
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		12/08/22 16:23	12/14/22 05:40	1			
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		12/08/22 16:23	12/14/22 05:40	1			
o-Xylene	<0.00199	U	0.00199		mg/Kg		12/08/22 16:23	12/14/22 05:40	1			
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		12/08/22 16:23	12/14/22 05:40	1			
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	142	S1+	70 - 130				12/08/22 16:23	12/14/22 05:40	1			

**Eurofins Midland** 

Matrix: Solid

Lab Sample ID: 880-22198-2

Released to Imaging: 8/2/2024 11:28:39 AM

Client: Terracon Consulting Eng & Scientists

Job ID: 880-22198-1 SDG: Eddy

# **Client Sample ID: EN-FS02**

Date Collected: 11/30/22 09:47 Date Received: 12/01/22 13:02

Project/Site: Osage Boyd Yaso

# Sample Depth: 3'

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	106		70 - 130				12/08/22 16:23	12/14/22 05:40	
Method: TAL SOP Total BTE	X - Total BTEX Calo	culation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			12/14/22 10:47	1
Method: SW846 8015 NM - D	iesel Range Organ	ics (DRO) (	GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	<49.8		49.8		mg/Kg			12/09/22 09:57	

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.8	U	49.8		mg/Kg		12/07/22 09:28	12/08/22 20:38	1
(GRO)-C6-C10									
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		12/07/22 09:28	12/08/22 20:38	1
Oll Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		12/07/22 09:28	12/08/22 20:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane			70 - 130				12/07/22 09:28	12/08/22 20:38	1
o-Terphenyl	140	S1+	70 - 130				12/07/22 09:28	12/08/22 20:38	1

Method: MCAWW 300.0 - Anions, lo	on Chromatogi	raphy - Soluble						
Analyte	Result Q	Qualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	463	4.96		mg/Kg			12/08/22 22:42	1

#### **Client Sample ID: WN-FS02**

Date Collected: 11/30/22 09:57 Date Received: 12/01/22 13:02 Sample Depth: 2'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		12/08/22 16:23	12/14/22 06:00	1
Toluene	<0.00201	U	0.00201		mg/Kg		12/08/22 16:23	12/14/22 06:00	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		12/08/22 16:23	12/14/22 06:00	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		12/08/22 16:23	12/14/22 06:00	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		12/08/22 16:23	12/14/22 06:00	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		12/08/22 16:23	12/14/22 06:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	162	S1+	70 - 130				12/08/22 16:23	12/14/22 06:00	1
1,4-Difluorobenzene (Surr)	95		70 - 130				12/08/22 16:23	12/14/22 06:00	1
- Method: TAL SOP Total BTEX -	Total BTEX Calo	culation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			12/14/22 10:47	1
- Method: SW846 8015 NM - Dies	sel Range Organ	ics (DRO) (	GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Eurofins Midland

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# Lab Sample ID: 880-22198-2

Matrix: Solid

Matrix: Solid

Lab Sample ID: 880-22198-3
Client: Terracon Consulting Eng & Scientists

Job ID: 880-22198-1 SDG: Eddy

Lab Sample ID: 880-22198-3

Analyzed

12/08/22 21:00

12/08/22 21:00

12/08/22 21:00

Analyzed

12/08/22 21:00

12/08/22 21:00

Lab Sample ID: 880-22198-4

Prepared

12/07/22 09:28

12/07/22 09:28

12/07/22 09:25

### **Client Sample ID: WN-FS02**

Date Collected: 11/30/22 09:57 Date Received: 12/01/22 13:02

Project/Site: Osage Boyd Yaso

Sample Depth: 2'

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/07/22 09:28		
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/07/22 09:28		
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/07/22 09:28		

%Recovery Qualifier Limits Surrogate 1-Chlorooctane 70 - 130 114 o-Terphenyl 133 S1+ 70 - 130

### Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	75.3	5.02	mg/Kg			12/08/22 22:49	1

### **Client Sample ID: W-FS01**

### Date Collected: 11/30/22 09:59 Date Received: 12/01/22 13:02

_				
Samp	le C	)ep	th:	2'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/08/22 16:23	12/14/22 06:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/08/22 16:23	12/14/22 06:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/08/22 16:23	12/14/22 06:21	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		12/08/22 16:23	12/14/22 06:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/08/22 16:23	12/14/22 06:21	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		12/08/22 16:23	12/14/22 06:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	150	S1+	70 - 130				12/08/22 16:23	12/14/22 06:21	1
1,4-Difluorobenzene (Surr)	106		70 - 130				12/08/22 16:23	12/14/22 06:21	1
	<0.00401	U	0.00401		mg/Kg		Prepared	Analyzed 12/14/22 10:47	1
Total BTEX					mg/Kg		<u>.</u>		1
Total BTEX Method: SW846 8015 NM - Diese	el Range Organ			MDL	mg/Kg Unit	 D	Prepared		·
Total BTEX Method: SW846 8015 NM - Diese Analyte	el Range Organ	ics (DRO) (	GC)	MDL		D	<u>.</u>	12/14/22 10:47	·
Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH	el Range Organ Result 69.1	ics (DRO) ( Qualifier	GC)	MDL	Unit	D	<u>.</u>	12/14/22 10:47 Analyzed	
Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Dies	el Range Organ Result 69.1 sel Range Orga	ics (DRO) ( Qualifier	GC)		Unit	D	<u>.</u>	12/14/22 10:47 Analyzed	Dil Fac
Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics	el Range Organ Result 69.1 sel Range Orga	ics (DRO) ( Qualifier nics (DRO) Qualifier	GC) <u> RL</u> 49.8 (GC)		Unit mg/Kg		Prepared	12/14/22 10:47 Analyzed 12/09/22 09:57	Dil Fac
Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10	el Range Organ Result 69.1 sel Range Orga Result <49.8	ics (DRO) ( Qualifier nics (DRO) Qualifier	GC) <u>RL</u> 49.8 (GC) <u>RL</u> 49.8		Unit mg/Kg Unit mg/Kg		Prepared Prepared 12/07/22 09:25	Analyzed           12/09/22 09:57           Analyzed           12/09/22 06:20	Dil Fac 1 Dil Fac
Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	el Range Organ Result 69.1 sel Range Orga Result	ics (DRO) ( Qualifier nics (DRO) Qualifier	GC) <u>RL</u> 49.8 (GC) <u>RL</u>		Unit mg/Kg Unit		Prepared	12/14/22 10:47 Analyzed 12/09/22 09:57 Analyzed	Dil Fac 1 Dil Fac
Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	el Range Organ Result 69.1 sel Range Orga Result <49.8	ics (DRO) ( Qualifier nics (DRO) Qualifier U	GC) <u>RL</u> 49.8 (GC) <u>RL</u> 49.8		Unit mg/Kg Unit mg/Kg		Prepared Prepared 12/07/22 09:25	Analyzed           12/09/22 09:57           Analyzed           12/09/22 06:20	Dil Fac
Analyte Total BTEX Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	el Range Organ Result 69.1 sel Range Orga Result <49.8 69.1	ics (DRO) ( Qualifier nics (DRO) Qualifier U	GC) <u>RL</u> 49.8 (GC) <u>RL</u> 49.8 49.8		Unit mg/Kg Unit mg/Kg mg/Kg		Prepared Prepared 12/07/22 09:25 12/07/22 09:25	Analyzed           12/09/22 09:57           Analyzed           12/09/22 06:20           12/09/22 06:20	Dil Fac 1 Dil Fac 1 1 1 Dil Fac

**Eurofins Midland** 

12/09/22 06:20

1

1

1

1

1

o-Terphenyl

70 - 130

158 S1+

1

		Clien	t Sample R	lesults	;				
Client: Terracon Consulting Eng & S Project/Site: Osage Boyd Yaso	Scientists							Job ID: 880-/ SD	22198-1 G: Eddy
Client Sample ID: W-FS01							Lah Sam	ple ID: 880-2	2198-4
Date Collected: 11/30/22 09:59							Lub Oum	-	x: Solic
Date Received: 12/01/22 13:02									
Sample Depth: 2'									
Method: MCAWW 300.0 - Anions Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	291		5.03		mg/Kg			12/08/22 22:55	
							Lab Oam		0400 5
Client Sample ID: W-FS02							Lab Sam	ple ID: 880-2	
Date Collected: 11/30/22 10:02								Matri	x: Solid
Date Received: 12/01/22 13:02 Sample Depth: 2'									
Method: SW846 8021B - Volatile									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Benzene	0.245		0.0401		mg/Kg		12/12/22 15:50	12/13/22 19:43	20
Toluene	<0.0401	U	0.0401		mg/Kg		12/12/22 15:50	12/13/22 19:43	20
Ethylbenzene	0.144		0.0401		mg/Kg		12/12/22 15:50	12/13/22 19:43	2
m-Xylene & p-Xylene	0.116		0.0802		mg/Kg		12/12/22 15:50	12/13/22 19:43	20
o-Xylene	0.205		0.0401		mg/Kg		12/12/22 15:50	12/13/22 19:43	20
Xylenes, Total	0.321		0.0802		mg/Kg		12/12/22 15:50	12/13/22 19:43	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130				12/12/22 15:50	12/13/22 19:43	20
1,4-Difluorobenzene (Surr)	108		70 - 130				12/12/22 15:50	12/13/22 19:43	20
Method: TAL SOP Total BTEX - 1	Total BTEX Calo	culation							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.710		0.0802		mg/Kg			12/14/22 11:05	1
Method: SW846 8015 NM - Diese Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	1270		50.0		mg/Kg			12/09/22 09:57	1
Ξ					5 5				
Method: SW846 8015B NM - Dies									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/07/22 09:25	12/09/22 06:42	1
Diesel Range Organics (Over	1150		50.0		mg/Kg		12/07/22 09:25	12/09/22 06:42	1
C10-C28)	1100		00.0		inging		12/01/22 00.20	12/00/22 00.12	
Oll Range Organics (Over	117		50.0		mg/Kg		12/07/22 09:25	12/09/22 06:42	
C28-C36)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	109		70 - 130				12/07/22 09:25	12/09/22 06:42	1
o-Terphenyl	123		70 - 130				12/07/22 09:25	12/09/22 06:42	1
_ Method: MCAWW 300.0 - Anions	lon Chromete	aranhy - So	lublo						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

AnalyteResultQualifierRLMDLUnitDPreparedAnalyzedDil FacChloride34.04.984.98mg/Kg12/08/22 23:021

Eurofins Midland

Client: Terracon Consulting Eng & Scientists

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

Result Qualifier

<0.00199 U

<0.00199 U

<0.00199 U

<0.00398 U

<0.00199 U

127

RL

0.00199

0.00199

0.00199

0.00398

0.00199

Job ID: 880-22198-1 SDG: Eddy

### **Client Sample ID: W-FS03**

Date Collected: 11/30/22 12:04 Date Received: 12/01/22 13:02

Sample Depth: 0 - 2'

Analyte

Benzene

Toluene

o-Xylene

o-Terphenyl

Ethylbenzene

m-Xylene & p-Xylene

Project/Site: Osage Boyd Yaso

Lab Sample ID: 880-22198-6 Matrix: Solid

Analyzed

12/14/22 06:41

12/14/22 06:41

12/14/22 06:41

12/14/22 06:41

12/14/22 06:41

12/07/22 20:49

5

Dil Fac

1

1

1

1

1

1

Xylenes, Total	<0.00398	U	0.00398		mg/Kg		12/08/22 16:23	12/14/22 06:41	1	•
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	9
4-Bromofluorobenzene (Surr)	147	S1+	70 - 130				12/08/22 16:23	12/14/22 06:41	1	
1,4-Difluorobenzene (Surr)	107		70 - 130				12/08/22 16:23	12/14/22 06:41	1	
Method: TAL SOP Total BTEX - Tot	tal BTEX Calc	culation								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Total BTEX	<0.00398	U	0.00398		mg/Kg			12/14/22 10:47	1	
Method: SW846 8015 NM - Diesel F Analyte		i <mark>ics (DRO) ((</mark> Qualifier	GC) RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	13
Total TPH	<49.9	U	49.9		mg/Kg			12/08/22 10:05	1	4.4
Method: SW846 8015B NM - Diesel	I Range Orga	inics (DRO)	(GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics	<49.9	U F2	49.9		mg/Kg		12/07/22 10:37	12/07/22 20:49	1	
(GRO)-C6-C10										
Diesel Range Organics (Over	<49.9	U	49.9		mg/Kg		12/07/22 10:37	12/07/22 20:49	1	
C10-C28)			10.0		114		10/07/00 10 07	10/07/00 00 10		
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		12/07/22 10:37	12/07/22 20:49	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1-Chlorooctane	122		70 - 130				12/07/22 10:37	12/07/22 20:49	1	

MDL Unit

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

D

Prepared

12/08/22 16:23

12/08/22 16:23

12/08/22 16:23

12/08/22 16:23

12/08/22 16:23

12/07/22 10:37

Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	2950		25.1		mg/Kg			12/08/22 23:22	5	

70 - 130

**Eurofins Midland** 

Released to Imaging: 8/2/2024 11:28:39 AM

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

-				
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	)
880-22122-A-50-C MS	Matrix Spike	145 S1+	93	_
880-22122-A-50-D MSD	Matrix Spike Duplicate	134 S1+	85	
880-22198-1	EN-FS01	97	106	
880-22198-2	EN-FS02	142 S1+	106	
880-22198-3	WN-FS02	162 S1+	95	
880-22198-4	W-FS01	150 S1+	106	
880-22198-5	W-FS02	114	108	
880-22198-6	W-FS03	147 S1+	107	
890-3613-A-1-G MS	Matrix Spike	104	98	
890-3613-A-1-H MSD	Matrix Spike Duplicate	105	99	
LCS 880-41400/1-A	Lab Control Sample	141 S1+	93	
LCS 880-41668/1-A	Lab Control Sample	96	92	
LCSD 880-41400/2-A	Lab Control Sample Dup	127	91	
LCSD 880-41668/2-A	Lab Control Sample Dup	95	97	
MB 880-41400/5-A	Method Blank	78	103	
MB 880-41401/5-A	Method Blank	78	103	
MB 880-41668/5-A	Method Blank	106	87	
Surrogate Legend				
BFB = 4-Bromofluoroben	zene (Surr)			

DFBZ = 1,4-Difluorobenzene (Surr)

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

### Matrix: Solid

				Percent Surrogate
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-22177-A-1-F MS	Matrix Spike	109	112	
880-22177-A-1-G MSD	Matrix Spike Duplicate	124	128	
880-22198-1	EN-FS01	128	149 S1+	
880-22198-2	EN-FS02	119	140 S1+	
880-22198-3	WN-FS02	114	133 S1+	
880-22198-4	W-FS01	132 S1+	158 S1+	
880-22198-5	W-FS02	109	123	
880-22198-6	W-FS03	122	127	
880-22198-6 MS	W-FS03	110	102	
880-22198-6 MSD	W-FS03	101	95	
880-22199-A-41-E MS	Matrix Spike	113	117	
880-22199-A-41-F MSD	Matrix Spike Duplicate	127	131 S1+	
LCS 880-41225/2-A	Lab Control Sample	144 S1+	168 S1+	
LCS 880-41226/2-A	Lab Control Sample	134 S1+	159 S1+	
LCS 880-41259/2-A	Lab Control Sample	116	119	
LCSD 880-41225/3-A	Lab Control Sample Dup	152 S1+	179 S1+	
LCSD 880-41226/3-A	Lab Control Sample Dup	141 S1+	162 S1+	
LCSD 880-41259/3-A	Lab Control Sample Dup	104	107	
MB 880-41225/1-A	Method Blank	109	167 S1+	
	Method Blank	115	171 S1+	
MB 880-41226/1-A				

Prep Type: Total/NA

5 6

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### **Surrogate Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso 1CO = 1-Chlorooctane OTPH = o-Terphenyl Job ID: 880-22198-1 SDG: Eddy

Eurofins Midland

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

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

Lab Sample ID: MB 880-41400	)/ <b>5-A</b>						Client Sa	mple ID: Metho	d Blank
Matrix: Solid								Prep Type: 1	ſotal/NA
Analysis Batch: 41705								Prep Batch	n: <b>41400</b>
	МВ	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/08/22 16:23	12/13/22 23:56	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/08/22 16:23	12/13/22 23:56	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/08/22 16:23	12/13/22 23:56	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		12/08/22 16:23	12/13/22 23:56	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/08/22 16:23	12/13/22 23:56	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/08/22 16:23	12/13/22 23:56	1
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		70 - 130				12/08/22 16:23	12/13/22 23:56	1
1,4-Difluorobenzene (Surr)	103		70 - 130				12/08/22 16:23	12/13/22 23:56	1
Lab Sample ID: LCS 880-4140	0/1-A					c	lient Sample I	D: Lab Control	Sample

### Matrix: Solid

### Analysis Batch: 41705

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1049		mg/Kg		105	70 - 130	
Toluene	0.100	0.09994		mg/Kg		100	70 - 130	
Ethylbenzene	0.100	0.1102		mg/Kg		110	70 - 130	
m-Xylene & p-Xylene	0.200	0.2402		mg/Kg		120	70 - 130	
o-Xylene	0.100	0.1173		mg/Kg		117	70 - 130	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	141	S1+	70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

### Lab Sample ID: LCSD 880-41400/2-A

### Matrix: Solid

Analysis Batch: 41705							Prep	Batch:	41400
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08250		mg/Kg		82	70 - 130	24	35
Toluene	0.100	0.08174		mg/Kg		82	70 - 130	20	35
Ethylbenzene	0.100	0.08948		mg/Kg		89	70 - 130	21	35
m-Xylene & p-Xylene	0.200	0.1962		mg/Kg		98	70 - 130	20	35
o-Xylene	0.100	0.09728		mg/Kg		97	70 - 130	19	35

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	127		70 - 130
1,4-Difluorobenzene (Surr)	91		70 - 130

### Lab Sample ID: 880-22122-A-50-C MS

### Matrix: Solid Analysis Potoby 41705

Analysis Batch: 41705									Pre	p Batch: 41400
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00201	U	0.100	0.08982		mg/Kg		90	70 - 130	
Toluene	<0.00201	U	0.100	0.08948		mg/Kg		89	70 - 130	

**Eurofins Midland** 

Prep Type: Total/NA

**Client Sample ID: Matrix Spike** 

13

Job ID: 880-22198-1

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Lab Control Sample Dup

Prep Batch: 41400

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

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Job ID: 880-22198-1 SDG: Eddy

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

_ab Sample ID: 880-22122-A-50-0	CMS								Client	Sample ID: N	latrix Spike
Aatrix: Solid										Ргер Тур	e: Total/N/
Analysis Batch: 41705										Prep Ba	atch: 41400
	Sample	Samp	ole	Spike	MS	MS				%Rec	
Analyte	Result	Quali	ifier	Added	Result	Qualifie	r Unit		D %Rec	Limits	
Ethylbenzene	<0.00201	U		0.100	0.09715		mg/Kg		97	70 - 130	
m-Xylene & p-Xylene	< 0.00402	U		0.200	0.2154		mg/Kg		108	70 - 130	
o-Xylene	<0.00201	U		0.100	0.1050		mg/Kg		104	70 - 130	
	MS	MS									
Surrogate	%Recovery	Qual	ifier	Limits							
4-Bromofluorobenzene (Surr)	145	S1+		70 - 130							
1,4-Difluorobenzene (Surr)	93			70 - 130							
_ab Sample ID: 880-22122-A-50-I	D MSD							Client	Sample ID	: Matrix Spik	e Duplicate
Matrix: Solid										Ргер Тур	e: Total/NA
Analysis Batch: 41705										Prep Ba	atch: 4140
	Sample	Samp	ole	Spike	MSD	MSD				%Rec	RPI
Analyte	Result	Quali	ifier	Added	Result	Qualifie	r Unit		D %Rec	Limits	RPD Limi
Benzene	<0.00201	U		0.0996	0.07413		mg/Kg		74	70 - 130	19 3
ōluene	<0.00201	U		0.0996	0.07447		mg/Kg		75	70 - 130	18 3
Ethylbenzene	<0.00201	U		0.0996	0.08070		mg/Kg		81	70 - 130	19 3
n-Xylene & p-Xylene	<0.00402	U		0.199	0.1781		mg/Kg		89	70 - 130	19 3
p-Xylene	<0.00201	U		0.0996	0.08881		mg/Kg		89	70 - 130	17 3
	MSD	MSD									
Surrogate	%Recovery	Qual	ifier	Limits							
1-Bromofluorobenzene (Surr)	134	S1+		70 - 130							
1,4-Difluorobenzene (Surr)	85			70 - 130							
_ab Sample ID: MB 880-41401/5-/	A								Client S	ample ID: Me	thod Blanl
Matrix: Solid										Ргер Тур	e: Total/NA
Analysis Batch: 41705										Prep Ba	atch: 4140 <sup>,</sup>
		MB	МВ								
Analyte	R	esult	Qualifier		RL	MDL Un	it	D	Prepared	Analyzed	Dil Fa
Benzene	<0.0	0200	U	0.0	0200	mg	g/Kg	1	2/08/22 16:47	12/13/22 12:	20
oluene	<0.0	0200	U	0.0	0200	mg	g/Kg	1	2/08/22 16:47	12/13/22 12:	20
Ethylbenzene	<0.0	0200	U	0.0	0200	mg	g/Kg	1	2/08/22 16:47	12/13/22 12:	20
n-Xylene & p-Xylene	<0.0	0400	U	0.0	0400	mç	j/Kg	1	2/08/22 16:47	12/13/22 12:	20
p-Xylene	<0.0	0200	U	0.0	0200		j/Kg		2/08/22 16:47	12/13/22 12:	20
Xylenes, Total		0400			0400	-	j/Kg		2/08/22 16:47	12/13/22 12:	
		ΜΒ	МВ								
Surrogate	%Reco		Qualifier	Limit	ts				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)		78		70 - 1				1	2/08/22 16:47		
1,4-Difluorobenzene (Surr)		103		70 - 1	30			1	2/08/22 16:47	12/13/22 12:	20
Lab Sample ID: MB 880-41668/5-	۵								Client S	ample ID: Me	thod Blan
Lab Sample ID. MB 660-41666/5-/ Matrix: Solid	•								onent 3		e: Total/N/
											e. Total/NA

Analysis Batch: 41701

	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/12/22 15:50	12/13/22 11:45	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/12/22 15:50	12/13/22 11:45	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/12/22 15:50	12/13/22 11:45	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		12/12/22 15:50	12/13/22 11:45	1

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Prep Batch: 41668

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

Client Sample ID: Lab Control Sample Dup

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

Lab Sample ID: MB 880-41668/5-A										Client Sa	mple ID: Metho	
Matrix: Solid											Prep Type:	
Analysis Batch: 41701											Prep Batcl	า: <mark>4166</mark> 8
	M	з МВ										
Analyte	Resu	t Qualifier			MDL	Unit		D	P	repared	Analyzed	Dil Fac
o-Xylene	<0.0020	D U	0.00200			mg/K	g		12/1	2/22 15:50	12/13/22 11:45	4
Xylenes, Total	<0.0040	D U	0.00400			mg/K	g		12/1	2/22 15:50	12/13/22 11:45	1
	M	3 <i>MB</i>										
Surrogate	%Recover	y Qualifier	Limits						Р	repared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	10	6	70 - 130						12/1	2/22 15:50	12/13/22 11:45	
1,4-Difluorobenzene (Surr)	8	7	70 - 130						12/1	2/22 15:50	12/13/22 11:45	
Lab Sample ID: LCS 880-41668/1-4								С	lient	Sample I	D: Lab Control	Sample
Matrix: Solid											Prep Type: <sup>•</sup>	
Analysis Batch: 41701											Prep Batcl	
· · · · · · · · · · · · · · · · · · ·			Spike	LCS	LCS						%Rec	
Analyte			Added	Result	Qual	lifier	Unit		D	%Rec	Limits	
Benzene			0.100	0.1175			mg/Kg			118	70 - 130	
Toluene			0.100	0.1084			mg/Kg			108	70 - 130	
Ethylbenzene			0.100	0.1053			mg/Kg			105	70 - 130	
m-Xylene & p-Xylene			0.200	0.2247			mg/Kg			112	70 - 130	
o-Xylene			0.100	0.1096			mg/Kg			110	70 - 130	
	LCS LC	s										
Surrogata	Basayary Or	- 1:6:	Limito									

	200	200	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

### Lab Sample ID: LCSD 880-41668/2-A Matrix: Solid

### Analysis Batch: 41701

Analyte

### Prep Type: Total/NA Prep Batch: 41668 Spike LCSD LCSD RPD %Rec Added Result Qualifier Unit D %Rec Limits RPD Limit

Benzene		0.100	0.1136	mg/Kg	114	70 - 130	3	35
Toluene		0.100	0.1036	mg/Kg	104	70 - 130	5	35
Ethylbenze	ene	0.100	0.09505	mg/Kg	95	70 - 130	10	35
m-Xylene	& p-Xylene	0.200	0.1989	mg/Kg	99	70 - 130	12	35
o-Xylene		0.100	0.09808	mg/Kg	98	70 - 130	11	35
1								

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

### Lab Sample ID: 890-3613-A-1-G MS Matrix: Solid

Analysis Batch: 41701									Prep	Batch: 41668
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00201	U	0.0998	0.08393		mg/Kg		84	70 - 130	
Toluene	<0.00201	U	0.0998	0.08250		mg/Kg		83	70 - 130	
Ethylbenzene	<0.00201	U	0.0998	0.08222		mg/Kg		82	70 - 130	
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1739		mg/Kg		87	70 - 130	
o-Xylene	<0.00201	U	0.0998	0.08792		mg/Kg		88	70 - 130	

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**Client Sample ID: Matrix Spike** 

Prep Type: Total/NA

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

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

### Lab Sample ID: 890-3613-A-1-G MS Matrix: Solid

### Analysis Batch: 41701

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

### Lab Sample ID: 890-3613-A-1-H MSD Matrix: Solid

Analysis Batch: 41701									Prep	Batch:	41668
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00201	U	0.100	0.07966		mg/Kg		79	70 - 130	5	35
Toluene	<0.00201	U	0.100	0.07771		mg/Kg		78	70 - 130	6	35
Ethylbenzene	<0.00201	U	0.100	0.07671		mg/Kg		77	70 - 130	7	35
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1619		mg/Kg		81	70 - 130	7	35
o-Xylene	<0.00201	U	0.100	0.08296		mg/Kg		83	70 - 130	6	35
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	105		70 - 130								
1,4-Difluorobenzene (Surr)	99		70 - 130								

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

Lab Sample ID: MB 880-41225/1-A									Client Sa	ample ID: Metho	
Matrix: Solid										Prep Type:	
Analysis Batch: 41315										Prep Batcl	1: 41225
	MB	MB									
Analyte	Result	Qualifier	RL		MDL	Unit		D P	repared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0			mg/Kg	9	12/0	7/22 09:25	12/08/22 21:43	1
(GRO)-C6-C10											
Diesel Range Organics (Over	<50.0	U	50.0			mg/Kg	9	12/0	7/22 09:25	12/08/22 21:43	1
C10-C28)											
Oll Range Organics (Over C28-C36)	<50.0	U	50.0			mg/Kg	9	12/0	07/22 09:25	12/08/22 21:43	1
	MB	МВ									
Surrogate	%Recovery	Qualifier	Limits					F	Prepared	Analyzed	Dil Fac
1-Chlorooctane	109		70 - 130					12/0	07/22 09:25	12/08/22 21:43	1
o-Terphenyl	167	S1+	70 - 130					12/0	07/22 09:25	12/08/22 21:43	1
Lab Sample ID: LCS 880-41225/2-A								Client	t Sample	ID: Lab Control	Sample
Matrix: Solid										Prep Type:	
Analysis Batch: 41315										Prep Batcl	
Analysis Daten. 41919			Spike	LCS	LCS					%Rec	1. 41225
Analyte			Added	Result		ifier	Unit	D	%Rec	Limits	
Gasoline Range Organics			1000	917.2			mg/Kg		92	70 - 130	
(GRO)-C6-C10			1000	517.2					52	10-100	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	144	S1+	70 - 130
o-Terphenyl	168	S1+	70 _ 130

Job ID: 880-22198-1
SDG: Eddy

Prep Type: Total/NA

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Client Sample ID: Matrix Spike Duplicate

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Diesel Range Organics (Over

C10-C28)

1000

914.5

mg/Kg

91

70 - 130

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso Page 190 of 268

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

Lab Sample ID: LCSD 880-412	25/3-A							Cli	ent	Sam	ple ID: L	ab Contro		
Matrix: Solid													уре: То	
Analysis Batch: 41315													Batch:	
				Spike	LCSD	LCSE	כ					%Rec		RPD
Analyte				Added	Result	Quali	ifier	Unit		D	%Rec	Limits	RPD	Limit
Gasoline Range Organics				1000	913.4			mg/Kg			91	70 - 130	0	20
(GRO)-C6-C10				4000	055.0									
Diesel Range Organics (Over C10-C28)				1000	955.3			mg/Kg			96	70 - 130	4	20
	LCSD	LCSD	)											
Surrogate	%Recovery			Limits										
1-Chlorooctane	152	<u>S1+</u>		70 - 130										
o-Terphenyl		S1+		70 - 130										
Lab Sample ID: 880-22199-A-4	1-E MS										Client	Sample ID	: Matrix	Spike
Matrix: Solid												Prep T	ype: To	tal/NA
Analysis Batch: 41315													Batch:	
-	Sample	Samp	le	Spike	MS	MS						%Rec		
Analyte	Result	Qualif	fier	Added	Result	Quali	ifier	Unit		D	%Rec	Limits		
Gasoline Range Organics	<50.0	U		999	1034			mg/Kg		_	100	70 - 130		
(GRO)-C6-C10														
Diesel Range Organics (Over C10-C28)	513			999	1252			mg/Kg			74	70 - 130		
	MS	мs												
Surrogate	%Recovery		fier	Limits										
1-Chlorooctane	113			70 - 130										
o-Terphenyl	117													
101101101101				70 - 130										
Lab Sample ID: 880-22199-A-4 Matrix: Solid				70 - 130					Clie	nt Sa	ample ID		oike Dur Type: To Batch:	tal/N/
Lab Sample ID: 880-22199-A-4 Matrix: Solid		Samp	le	70 <sub>-</sub> 130 Spike	MSD	MSD			Clie	nt Sa	ample ID	Prep T	ype: To	tal/NA 41225
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315	11-F MSD				MSD Result		ifier	Unit	Clie	nt Sa D	ample ID %Rec	Prep T Prep	ype: To	tal/N/ 4122 RPI
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics	1-F MSD Sample	Qualif		Spike			ifier		Clie		-	Prep T Prep %Rec	ype: To Batch:	tal/N/ 4122 RPI Limi
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	H1-F MSD Sample Result	Qualif		Spike Added	Result		ifier	Unit	Clie		%Rec	Prep T Prep %Rec Limits	ype: To Batch: 	tal/N/ 4122 RPI Limi 20
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Sample Result <50.0 513	Qualif		Spike Added 997	Result 1192		ifier	Unit mg/Kg	Clie		<b>%Rec</b>	Prep T Prep %Rec Limits 70 - 130	ype: To Batch: RPD 14	tal/NA 41225 RPC Limi 20
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Sample Result <50.0 513 MSD	Qualif U MSD	fier	Spike Added 997 997	Result 1192		ifier	Unit mg/Kg	Clie		<b>%Rec</b>	Prep T Prep %Rec Limits 70 - 130	ype: To Batch: RPD 14	tal/NA 41225 RPD Limit
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane	Sample Result <50.0 513	Qualif U MSD	fier	Spike Added 997	Result 1192		ifier	Unit mg/Kg	Clie		<b>%Rec</b>	Prep T Prep %Rec Limits 70 - 130	ype: To Batch: RPD 14	tal/NA
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane	Sample Result <50.0 513 MSD %Recovery 127	Qualif U MSD Qualif	fier	<b>Spike</b> <b>Added</b> 997 997 <u>997</u> <i>Limits</i> 70 - 130	Result 1192		ifier	Unit mg/Kg	Clie		<b>%Rec</b>	Prep T Prep %Rec Limits 70 - 130	ype: To Batch: RPD 14	tal/N/ 4122 RPI Limi 20
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane	Sample Result <50.0 513 MSD %Recovery 127	Qualif U MSD	fier	Spike Added 997 997 Limits	Result 1192		ifier	Unit mg/Kg	Clier		<b>%Rec</b>	Prep T Prep %Rec Limits 70 - 130	ype: To Batch: RPD 14	tal/N/ 4122 RPI Limi
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane o-Terphenyl Lab Sample ID: MB 880-41226	<b>Sample</b> <b>Result</b> <50.0 513 <i>MSD %Recovery</i> 127 131	Qualif U MSD Qualif	fier	<b>Spike</b> <b>Added</b> 997 997 <u>997</u> <i>Limits</i> 70 - 130	Result 1192		ifier	Unit mg/Kg	Clie	<u>D</u>	%Rec 116 90	Prep 7 %Rec Limits 70 - 130 70 - 130 70 - 130	ype: To Batch: <u>RPD</u> 14 12 Method	tal/N/ 41225 RPI 20 20 Blani
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane o-Terphenyl Lab Sample ID: MB 880-41226 Matrix: Solid	<b>Sample</b> <b>Result</b> <50.0 513 <i>MSD %Recovery</i> 127 131	Qualif U MSD Qualif S1+	fier	<b>Spike</b> <b>Added</b> 997 997 <u>997</u> <i>Limits</i> 70 - 130	Result 1192		ifier	Unit mg/Kg	Clie	<u>D</u>	%Rec 116 90	Prep 7 Prep %Rec Limits 70 - 130 70 - 130 70 - 130	ype: To Batch: RPD 14 12	tal/N/ 41225 RPI Limi 20 20 Blanl tal/N/
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane o-Terphenyl Lab Sample ID: MB 880-41226 Matrix: Solid Analysis Batch: 41315	A1-F MSD Sample Result <50.0 513 MSD %Recovery 127 131 5/1-A	Qualif U MSD Qualif S1+	fier	<b>Spike</b> <b>Added</b> 997 997 <u>997</u> <i>Limits</i> 70 - 130	Result 1192			Unit mg/Kg	D	D	%Rec 116 90	Prep 7 Prep %Rec Limits 70 - 130 70 - 130 70 - 130	ype: To Batch: <u>RPD</u> 14 12 Method ype: To Batch:	tal/N/ 41225 RPI Limi 20 20 Blanl tal/N/ 41220
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane o-Terphenyl Lab Sample ID: MB 880-41226 Matrix: Solid Analysis Batch: 41315 Analyte	L1-F MSD Sample Result <50.0 513 MSD %Recovery 127 131 5/1-A	Qualif U MSD Qualif S1+	fier fier MB Qualifier	<b>Spike</b> <b>Added</b> 997 997 <u>997</u> <i>Limits</i> 70 - 130	Result 1192 1409	Quali		Unit mg/Kg mg/Kg		P	%Rec           116           90           Client St	Prep T Prep %Rec Limits 70 - 130 70 - 130 70 - 130 70 - 190 Prep T Prep T	Type: To Batch: <u>RPD</u> 14 12 Method Type: To Batch: ed	tal/NA 41225 RPC Limi 20 20 Blank tal/NA
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate	L1-F MSD Sample Result <50.0 513 MSD %Recovery 127 131 5/1-A	Qualif U MSD Qualif S1+	fier fier MB Qualifier	<b>Spike</b> <b>Added</b> 997 997 <u>997</u> <i>Limits</i> 70 - 130	Result 1192 1409	Quali	Unit	Unit mg/Kg mg/Kg		P	%Rec 116 90 Client S	Prep T Prep %Rec Limits 70 - 130 70 - 130 70 - 130 70 - 130 70 - 130 70 - 130	Type: To Batch: <u>RPD</u> 14 12 Method Type: To Batch: ed	tal/NA 41225 RPC Limi 20 20 Blank tal/NA 41226 Dill Fac
Lab Sample ID: 880-22199-A-4 Matrix: Solid Analysis Batch: 41315 Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane o-Terphenyl Lab Sample ID: MB 880-41226 Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics	L1-F MSD Sample Result <pre>&lt;50.0</pre> 513 MSD %Recovery 127 131 5/1-A Recovery	Qualif U MSD Qualif S1+	fier fier MB Qualifier U	<b>Spike</b> <b>Added</b> 997 997 <u>997</u> <i>Limits</i> 70 - 130	Result 1192 1409	Quali	Unit	Unit mg/Kg mg/Kg		<u>р</u> Рг 12/0	%Rec 116 90 Client S	Prep T Prep %Rec Limits 70 - 130 70 - 130 70 - 130 70 - 130 70 - 130 70 - 130	Type: To Batch: <u>RPD</u> 14 12 Method Type: To Batch: <u>Batch:</u> <u>Batch:</u> <u>Batch:</u>	tal/N/ 4122 RPI Limi 2 2 2 Blanl tal/N/ 4122 Dil Fa

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

Lab Sample ID: MB 880-4122	26/1-A							Client S	ample ID: I		
Matrix: Solid										ype: To	
Analysis Batch: 41315									Prep	Batch:	41226
		MB MB									
Surrogate	%Reco	very Qualifi	er Limits				P	repared	Analyz	ed	Dil Fac
1-Chlorooctane		115	70 - 130	-				7/22 09:28			
o-Terphenyl		171 S1+	70 - 130				12/0	7/22 09:28	3 12/08/22 (	09:18	·
Lab Sample ID: LCS 880-412	226/2-A						Client	t Sample	ID: Lab Co	ontrol S	ample
Matrix: Solid									Prep T	ype: To	otal/NA
Analysis Batch: 41315									Prep	Batch:	41226
			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics			1000	901.7		mg/Kg		90	70 - 130		
GRO)-C6-C10											
Diesel Range Organics (Over			1000	848.3		mg/Kg		85	70 - 130		
C10-C28)											
	LCS	LCS									
Surrogate	%Recovery	Qualifier	Limits								
-Chlorooctane	134	S1+	70 - 130								
o-Terphenyl	159	S1+	70 - 130								
Matrix: Solid									Prep I	ype: To	otal/NA
Analysis Batch: 41315			Spike	LCSD	LCSD					Batch:	
-			Spike Added		LCSD Qualifier	Unit	D	%Rec	%Rec		RPD
Analyte			Spike 		LCSD Qualifier	_ Unit mg/Kg	D	%Rec 93		Batch:	RPI Limi
Analyte Gasoline Range Organics			Added	Result		_ <mark>Unit</mark> mg/Kg	<u>D</u>		%Rec Limits	RPD	RPI Limi
Analyte Gasoline Range Organics GRO)-C6-C10			Added	Result	Qualifier		<u>D</u>		%Rec Limits	RPD	RPI Limi 20
Analyte Basoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over			Added	<b>Result</b> 928.8	Qualifier	mg/Kg	<u>D</u>	93	%Rec Limits 70 - 130	<b>RPD</b> 3	RPI Limi 20
Analyte Basoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over			Added	<b>Result</b> 928.8	Qualifier	mg/Kg	<u>D</u>	93	%Rec Limits 70 - 130	<b>RPD</b> 3	RPI Limi 20
Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28)		LCSD Qualifier	Added	<b>Result</b> 928.8	Qualifier	mg/Kg	<u> </u>	93	%Rec Limits 70 - 130	<b>RPD</b> 3	RPE Limi 20
Analyte Basoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate	%Recovery		Added	<b>Result</b> 928.8	Qualifier	mg/Kg	<u>D</u>	93	%Rec Limits 70 - 130	<b>RPD</b> 3	RPI Limi 20
analyte Basoline Range Organics GRO)-C6-C10 biesel Range Organics (Over 510-C28) Furrogate -Chlorooctane	%Recovery	Qualifier S1+	Added 1000 1000 Limits	<b>Result</b> 928.8	Qualifier	mg/Kg	<u> </u>	93	%Rec Limits 70 - 130	<b>RPD</b> 3	RPI Limi 20
Analyte Basoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate -Chlorooctane -Terphenyl	<b>%Recovery</b> 141 162	Qualifier S1+	Added 1000 1000 Limits 70 - 130	<b>Result</b> 928.8	Qualifier	mg/Kg	<u>D</u>	93 -	%Rec Limits 70 - 130 70 - 130	3 2	<b>RPI</b>
Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate (-Chlorooctane D-Terphenyl Lab Sample ID: 880-22177-A	<b>%Recovery</b> 141 162	Qualifier S1+	Added 1000 1000 Limits 70 - 130	<b>Result</b> 928.8	Qualifier	mg/Kg	<u>D</u>	93 87	%Rec Limits 70 - 130 70 - 130 Sample ID:	RPD 3 2	<b>RPI</b> Limi 20 20
Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate I-Chlorooctane D-Terphenyl Lab Sample ID: 880-22177-A Matrix: Solid	<b>%Recovery</b> 141 162	Qualifier S1+	Added 1000 1000 Limits 70 - 130	<b>Result</b> 928.8	Qualifier	mg/Kg	<u>D</u>	93 87	%Rec           Limits           70 - 130           70 - 130           Sample ID:           Prep T	RPD 3 2	RPI Limi 20 20 20 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate I-Chlorooctane D-Terphenyl Lab Sample ID: 880-22177-A Matrix: Solid		<b>Qualifier</b> S1+ S1+	Added 1000 1000 <u>Limits</u> 70 - 130 70 - 130	<b>Result</b> 928.8 867.2	Qualifier	mg/Kg	<u>D</u>	93 87	%Rec Limits 70 - 130 70 - 130 Sample ID: Prep T Prep T	RPD 3 2	RPE Limi 20 20 20 3 5 5 5 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate -Chlorooctane D-Terphenyl Lab Sample ID: 880-22177-A Matrix: Solid Analysis Batch: 41315		Qualifier S1+ S1+ Sample	Added 1000 1000 <u>Limits</u> 70 - 130 70 - 130 Spike	Result 928.8 867.2 MS	Qualifier	mg/Kg mg/Kg		93 87 Client	%Rec Limits 70 - 130 70 - 130 Sample ID: Prep T Prep T Prep %Rec	RPD 3 2	RPE Limi 20 20 20 3 5 5 5 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate C-Chlorooctane D-Terphenyl Lab Sample ID: 880-22177-A Matrix: Solid Analysis Batch: 41315 Analyte		Qualifier S1+ S1+ Sample Qualifier	Added 1000 1000 Limits 70 - 130 70 - 130 Spike Added	Result           928.8           867.2           MS           Result	Qualifier	mg/Kg mg/Kg	<u>D</u>	93 87 Client	%Rec Limits 70 - 130 70 - 130 Sample ID: Prep T Prep %Rec Limits	RPD 3 2	RPE Limi 20 20 20 3 5 5 5 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate I-Chlorooctane D-Terphenyl Lab Sample ID: 880-22177-A Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics		Qualifier S1+ S1+ Sample Qualifier	Added 1000 1000 <u>Limits</u> 70 - 130 70 - 130 Spike	Result 928.8 867.2 MS	Qualifier	mg/Kg mg/Kg		93 87 Client	%Rec Limits 70 - 130 70 - 130 Sample ID: Prep T Prep T Prep %Rec	RPD 3 2	RPE Limi 20 20 20 3 5 5 5 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate (-Chlorooctane D-Terphenyl Lab Sample ID: 880-22177-A Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics GRO)-C6-C10		Qualifier S1+ S1+ Sample Qualifier U	Added 1000 1000 Limits 70 - 130 70 - 130 70 - 130 Spike Added 999	Result           928.8           867.2           MS           Result           1017	Qualifier MS Qualifier	mg/Kg mg/Kg <u>Unit</u> mg/Kg		93 87 Client %Rec 99	%Rec           Limits           70 - 130           70 - 130           90 - 130           Prep T           Prep T           %Rec           Limits           70 - 130	RPD 3 2	RPE Limi 20 20 20 3 5 5 5 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate -Chlorooctane D-Terphenyl Lab Sample ID: 880-22177-A Matrix: Solid Analysis Batch: 41315 Sanalyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over		Qualifier S1+ S1+ Sample Qualifier U	Added 1000 1000 Limits 70 - 130 70 - 130 Spike Added	Result           928.8           867.2           MS           Result	Qualifier MS Qualifier	mg/Kg mg/Kg		93 87 Client	%Rec Limits 70 - 130 70 - 130 Sample ID: Prep T Prep %Rec Limits	RPD 3 2	RPI Limi 20 20 20 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate C-Chlorooctane D-Terphenyl Lab Sample ID: 880-22177-A Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over	- %Recovery 141 162 	Qualifier S1+ S1+ Sample Qualifier U U MS	Added 1000 1000 Limits 70 - 130 70 - 130 70 - 130 Spike Added 999	Result           928.8           867.2           MS           Result           1017	Qualifier MS Qualifier	mg/Kg mg/Kg <u>Unit</u> mg/Kg		93 87 Client %Rec 99	%Rec           Limits           70 - 130           70 - 130           90 - 130           Prep T           Prep T           %Rec           Limits           70 - 130	RPD 3 2	RPE Limi 20 20 20 3 5 5 5 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Analysis Batch: 41315 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate 1-Chlorooctane o-Terphenyl Lab Sample ID: 880-22177-A Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate		Qualifier S1+ S1+ Sample Qualifier U U MS	Added 1000 1000 Limits 70 - 130 70 - 130 70 - 130 Spike Added 999	Result           928.8           867.2           MS           Result           1017	Qualifier MS Qualifier	mg/Kg mg/Kg <u>Unit</u> mg/Kg		93 87 Client %Rec 99	%Rec           Limits           70 - 130           70 - 130           90 - 130           Prep T           Prep T           %Rec           Limits           70 - 130	RPD 3 2	RPE Limi 20 20 20 3 5 5 5 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Surrogate I-Chlorooctane p-Terphenyl Lab Sample ID: 880-22177-A Matrix: Solid Analysis Batch: 41315 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	- %Recovery 141 162 	Qualifier S1+ S1+ Sample Qualifier U U MS	Added           1000           1000           1000           Limits           70 - 130           70 - 130           Spike           Added           999           999	Result           928.8           867.2           MS           Result           1017	Qualifier MS Qualifier	mg/Kg mg/Kg <u>Unit</u> mg/Kg		93 87 Client %Rec 99	%Rec           Limits           70 - 130           70 - 130           90 - 130           Prep T           Prep T           %Rec           Limits           70 - 130	RPD 3 2	RPE Limi 20 20 20 3 5 5 5 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

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

atrix: Solid													Гуре: То	
Analysis Batch: 41315												Prep	Batch:	41226
	Sample			Spike		MSD	MSD					%Rec		RPD
Analyte	Result		lifier	Added		Result	Qualifier	Unit		<u>D</u>	%Rec	Limits	RPD	Limit
Gasoline Range Organics GRO)-C6-C10	<50.0	U		997		1242		mg/Kg			122	70 - 130	20	20
Diesel Range Organics (Over C10-C28)	<50.0	U		997		1289		mg/Kg			129	70 - 130	14	20
	MSD	MSE	)											
Surrogate	%Recovery	Qua	lifier	Limits										
1-Chlorooctane	124			70 - 130										
p-Terphenyl	128			70 - 130										
_ab Sample ID: MB 880-41259	/ <b>1-A</b>									c	lient Sa	mple ID:	Method	Blank
Matrix: Solid												Prep 1	Гуре: То	tal/NA
Analysis Batch: 41213													Batch:	
		МВ	MB											
Analyte	R	esult	Qualifier		RL		MDL Unit		D	Pre	pared	Analyz	zed	Dil Fac
Gasoline Range Organics		<50.0	U		50.0		mg/K	(g		12/07	22 10:37	12/07/22	19:46	1
GRO)-C6-C10														
Diesel Range Organics (Over C10-C28)	<	<50.0	U		50.0		mg/K	ζg		12/07	22 10:37	12/07/22	19:46	1
DII Range Organics (Over C28-C36)	<	<50.0	U		50.0		mg/K	ζg		12/07	22 10:37	12/07/22	19:46	1
		MB	МВ											
Surrogate	%Reco	overy	Qualifier	Limi	ts					Pre	pared	Analyz	zed	Dil Fac
-Chlorooctane		120		70 -	130				-	12/07	/22 10:37	12/07/22	19:46	1
p-Terphenyl		130		70 -	130					12/07	/22 10:37	12/07/22	19:46	1
_ab Sample ID: LCS 880-4125	9/2-A								С	lient \$	Sample	ID: Lab C	ontrol S	ample
Matrix: Solid													Гуре: То	
Analysis Batch: 41213													Batch:	
				Spike		LCS	LCS					%Rec		
Analyte				Added		Result	Qualifier	Unit		D	%Rec	Limits		
Gasoline Range Organics				1000		1015		mg/Kg			102	70 - 130		
GRO)-C6-C10														
Diesel Range Organics (Over C10-C28)				1000		1071		mg/Kg			107	70 - 130		
	LCS	LCS												
Surrogate	%Recovery	Qua	lifier	Limits										
1-Chlorooctane	116			70 - 130										
p-Terphenyl	119			70 - 130										
ab Sample ID: LCSD 880-412	59/3-A							Cli	ent	Sam	ole ID: L	ab Contro	ol Sampl	e Dup
-													Гуре: То	
Matrix: Solid													Batch:	
				Spike		LCSD	LCSD					%Rec		RPD
Matrix: Solid Analysis Batch: 41213				-			Qualifian	Unit		D	%Rec	Limits		
				Added		Result	Qualifier	Unit		U	/orcec	Linnits	RPD	Limit
Analysis Batch: 41213				<b>Added</b> 1000		1088	Quaimer	mg/Kg		<u> </u>	109	70 - 130	7	20

Released to Imaging: 8/2/2024 11:28:39 AM

Limits

70 - 130

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

Lab Sample ID: LCSD 880-41259/3-A

Matrix: Solid

Surrogate

1-Chlorooctane

Analysis Batch: 41213

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

LCSD LCSD

%Recovery Qualifier

104

Prep Type: Total/NA

Prep Batch: 41259

Client Sample ID: Lab Control Sample Dup

# 5 6 7 8 9 10 11 12 13 14

Lab Sample ID: 880-22198-6	6 MS							С	lient Samp	le ID: W	-FS03
Matrix: Solid									Prep T	ype: To	tal/N/
Analysis Batch: 41213									Prep	Batch:	4125
	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F2	999	1193		mg/Kg		117	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	999	891.4		mg/Kg		87	70 - 130		
	MS	MS									
		O	Limits								
Surrogate	%Recovery	Qualifier	Linits								
	% <i>Recovery</i> 110	Quaimer	70 - 130								
1-Chlorooctane o-Terphenyl Lab Sample ID: 880-22198-6	110 102	Quaimer						с	lient Samp		
1-Chlorooctane o-Terphenyl	110 102	Quaimer	70 - 130					с	Prep T	le ID: W ype: Tot Batch:	tal/N
1-Chlorooctane o-Terphenyl Lab Sample ID: 880-22198-6 Matrix: Solid	110 102 5 MSD	Sample	70 - 130	MSD	MSD			С	Prep T	ype: To	tal/N
1-Chlorooctane o-Terphenyl Lab Sample ID: 880-22198-6 Matrix: Solid	110 102 5 MSD Sample		70 - 130 70 - 130		MSD Qualifier	Unit	D	C %Rec	Prep T Prep	ype: To	tal/N 4125
1-Chlorooctane o-Terphenyl Lab Sample ID: 880-22198-6 Matrix: Solid Analysis Batch: 41213 Analyte Gasoline Range Organics (GRO)-C6-C10	110 102 5 MSD Sample	Sample Qualifier	70 - 130 70 - 130 <b>Spike</b>	<b>Result</b> 941.5	Qualifier	Unit mg/Kg	D		Prep T Prep %Rec Limits 70 - 130	ype: To Batch:	tal/N 4125 RP Lim
1-Chlorooctane o-Terphenyl Lab Sample ID: 880-22198-6 Matrix: Solid Analysis Batch: 41213	110 102 5 MSD Sample Result	Sample Qualifier U F2	70 - 130 70 - 130 Spike Added	Result	Qualifier		D	%Rec	Prep 1 Prep %Rec Limits	Type: Tot         Batch:         RPD	tal/N 4125 RP
1-Chlorooctane o-Terphenyl Lab Sample ID: 880-22198-6 Matrix: Solid Analysis Batch: 41213 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	110 102 5 MSD Sample Result <49.9 <49.9	Sample Qualifier U F2	70 - 130 70 - 130 Spike Added 997	<b>Result</b> 941.5	Qualifier	mg/Kg	<u>D</u>	<b>%Rec</b> 92	Prep T Prep %Rec Limits 70 - 130	Sype: Tot       Batch:       RPD       24	tal/N 4125 RP Lim
1-Chlorooctane o-Terphenyl Lab Sample ID: 880-22198-6 Matrix: Solid Analysis Batch: 41213 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	110 102 5 MSD Sample Result <49.9 <49.9	Sample Qualifier U F2 U	70 - 130 70 - 130 Spike Added 997	<b>Result</b> 941.5	Qualifier	mg/Kg	<u>D</u>	<b>%Rec</b> 92	Prep T Prep %Rec Limits 70 - 130	Sype: Tot       Batch:       RPD       24	tal/N 4125 RP Lim
1-Chlorooctane o-Terphenyl Lab Sample ID: 880-22198-6 Matrix: Solid Analysis Batch: 41213 Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	110 102 5 MSD Sample Result <49.9 <49.9 MSD	Sample Qualifier U F2 U	70 - 130 70 - 130 <b>Spike</b> Added 997	<b>Result</b> 941.5	Qualifier	mg/Kg	<u>D</u>	<b>%Rec</b> 92	Prep T Prep %Rec Limits 70 - 130	Sype: Tot       Batch:       RPD       24	tal/N 4125 RF Lin

Lab Sample ID: MB 880-40961/1-A Matrix: Solid Analysis Batch: 41090										С	lient S	ample ID: Metho Prep Type:	
	ΜВ	МВ											
Analyte R	esult	Qualifier		RL		MDL	Unit		D	Pre	pared	Analyzed	Dil Fac
Chloride	<5.00	U		5.00			mg/Kg					12/08/22 22:02	1
Lab Sample ID: LCS 880-40961/2-A Matrix: Solid									Clie	nt S	ample	ID: Lab Control Prep Type:	
Analysis Batch: 41090		Si	oike		LCS	LCS						%Rec	
Analyte			ded		Result		ifier	Unit	D	)	%Rec	Limits	
Chloride			250		267.2			mg/Kg			107	90 - 110	

Eurofins Midland

### **QC Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso Job ID: 880-22198-1 SDG: Eddy

### Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-40961/3 Matrix: Solid Analysis Batch: 41090	- <b>A</b>					Clie	nt Sam	ple ID:	Lab Contro Prep	ol Sampl Type: S	
Analysis Baton: 41000			Spike	LCSD	LCSD				%Rec		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride			250	272.6		mg/Kg		109	90 - 110	2	20
Lab Sample ID: 880-22198-1 MS								CI	ient Sampl	e ID: EN	-FS01
Matrix: Solid										Type: S	
Analysis Batch: 41090											
	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	237		250	506.3		mg/Kg		108	90 - 110		
Lab Sample ID: 880-22198-1 MSD								CI	ient Sampl	e ID: EN	-FS01
Matrix: Solid									Prep	Type: S	oluble
Analysis Batch: 41090											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	237		250	504.6		mg/Kg		107	90 _ 110	0	20

### **QC** Association Summary

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

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Job ID: 880-22198-1 SDG: Eddy

# GC VOA

### Prep Batch: 41400

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Bat
880-22198-1	EN-FS01	Total/NA	Solid	5035	
880-22198-2	EN-FS02	Total/NA	Solid	5035	
380-22198-3	WN-FS02	Total/NA	Solid	5035	
380-22198-4	W-FS01	Total/NA	Solid	5035	
380-22198-6	W-FS03	Total/NA	Solid	5035	
MB 880-41400/5-A	Method Blank	Total/NA	Solid	5035	
_CS 880-41400/1-A	Lab Control Sample	Total/NA	Solid	5035	
_CSD 880-41400/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
380-22122-A-50-C MS	Matrix Spike	Total/NA	Solid	5035	
380-22122-A-50-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	
rep Batch: 41401					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bate
/IB 880-41401/5-A	Method Blank	Total/NA	Solid	5035	
ep Batch: 41668					
ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bat
30-22198-5	W-FS02	Total/NA	Solid	5035	_ <u> </u>
B 880-41668/5-A	Method Blank	Total/NA	Solid	5035	
CS 880-41668/1-A	Lab Control Sample	Total/NA	Solid	5035	
CSD 880-41668/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
0-3613-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
90-3613-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	
ab Sample ID 30-22198-5	Client Sample ID W-FS02	Prep Type Total/NA	Matrix Solid	<u>Method</u> 8021B	Prep Bat 416
IB 880-41668/5-A	Method Blank	Total/NA	Solid	8021B	410
CS 880-41668/1-A	Lab Control Sample	Total/NA	Solid	8021B	
		TOtal/INA	Solid		/16
		Total/NIA	Solid		
	Lab Control Sample Dup	Total/NA	Solid	8021B	416
90-3613-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B 8021B	416 416
90-3613-A-1-G MS 90-3613-A-1-H MSD				8021B	416 416
90-3613-A-1-G MS 90-3613-A-1-H MSD	Matrix Spike	Total/NA	Solid	8021B 8021B	416 416
00-3613-A-1-G MS 00-3613-A-1-H MSD alysis Batch: 41705 ab Sample ID	Matrix Spike Matrix Spike Duplicate Client Sample ID	Total/NA Total/NA <b>Prep Type</b>	Solid Solid Matrix	8021B 8021B 8021B Method	416 416 416 
00-3613-A-1-G MS 00-3613-A-1-H MSD alysis Batch: 41705 Nb Sample ID 00-22198-1	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01	Total/NA Total/NA <b>Prep Type</b> Total/NA	Solid Solid <u>Matrix</u> Solid	8021B 8021B 8021B <b>Method</b> 8021B	416 416 416 
00-3613-A-1-G MS 00-3613-A-1-H MSD alysis Batch: 41705 Nb Sample ID 00-22198-1	Matrix Spike Matrix Spike Duplicate Client Sample ID	Total/NA Total/NA <b>Prep Type</b>	Solid Solid Matrix	8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 
90-3613-A-1-G MS 90-3613-A-1-H MSD alysis Batch: 41705 ab Sample ID 30-22198-1 30-22198-2	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02	Total/NA Total/NA <b>Prep Type</b> Total/NA	Solid Solid <u>Matrix</u> Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 
00-3613-A-1-G MS 00-3613-A-1-H MSD alysis Batch: 41705 ab Sample ID 30-22198-1 30-22198-2 30-22198-3	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02	Total/NA Total/NA Prep Type Total/NA Total/NA	Solid Solid Matrix Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 
00-3613-A-1-G MS 00-3613-A-1-H MSD alysis Batch: 41705 ab Sample ID 00-22198-1 00-22198-2 00-22198-3 00-22198-4	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02	Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA	Solid Solid Matrix Solid Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 <b>Prep Ba</b> 414 414 414
90-3613-A-1-G MS 90-3613-A-1-H MSD alysis Batch: 41705 ab Sample ID 30-22198-1 30-22198-2 30-22198-3 30-22198-4 30-22198-6	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02 W-FS01	Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA	Solid Solid Matrix Solid Solid Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 <b>Prep Bat</b> 414 414 414 414 414
90-3613-A-1-G MS 90-3613-A-1-H MSD alysis Batch: 41705 ab Sample ID 30-22198-1 30-22198-2 30-22198-3 30-22198-4 30-22198-6 B 880-41400/5-A	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02 W-FS01 W-FS03	Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Matrix Solid Solid Solid Solid Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 <b>Prep Bai</b> 414 414 414 414 414 414
00-3613-A-1-G MS 00-3613-A-1-H MSD alysis Batch: 41705 ab Sample ID 30-22198-1 30-22198-2 30-22198-3 30-22198-3 30-22198-6 B 880-41400/5-A B 880-41401/5-A	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02 W-FS01 W-FS03 Method Blank	Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Matrix Solid Solid Solid Solid Solid Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 414 414 414 414 414 414 414
90-3613-A-1-G MS 90-3613-A-1-H MSD alysis Batch: 41705 ab Sample ID 30-22198-1 30-22198-2 30-22198-3 30-22198-4 30-22198-6 B 880-41400/5-A B 880-41400/5-A CS 880-41400/1-A	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02 W-FS01 W-FS03 Method Blank Method Blank	Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Matrix Solid Solid Solid Solid Solid Solid Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 416 414 414 414 414 414 414
90-3613-A-1-G MS 90-3613-A-1-H MSD alysis Batch: 41705 ab Sample ID 80-22198-1 80-22198-2 80-22198-3 80-22198-4 80-22198-6 IB 880-41400/5-A IB 880-41400/5-A IS 880-41400/1-A CSD 880-41400/2-A	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02 W-FS01 W-FS03 Method Blank Method Blank Lab Control Sample	Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 416 414 414 414 414 414 414
90-3613-A-1-G MS 90-3613-A-1-H MSD halysis Batch: 41705 ab Sample ID 80-22198-1 80-22198-2 80-22198-3 80-22198-4 80-22198-6 IB 880-41400/5-A IB 880-41400/5-A IS 880-41400/1-A CS 880-41400/2-A 80-22122-A-50-C MS	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02 W-FS01 W-FS03 Method Blank Method Blank Lab Control Sample Lab Control Sample Dup	Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 416 414 414 414 414 414 414
90-3613-A-1-G MS 90-3613-A-1-H MSD halysis Batch: 41705 ab Sample ID 80-22198-1 80-22198-2 80-22198-3 80-22198-4 80-22198-6 AB 880-41400/5-A AB 880-41400/5-A AGS 880-41400/1-A CSD 880-41400/2-A 80-22122-A-50-C MS 80-22122-A-50-D MSD	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02 W-FS01 W-FS03 Method Blank Method Blank Lab Control Sample Lab Control Sample Dup Matrix Spike	Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 <b>Prep Bat</b> 414 414 414 414 414 414 414 414
890-3613-A-1-G MS         890-3613-A-1-H MSD         halysis Batch: 41705         Lab Sample ID         880-22198-1         880-22198-2         880-22198-3         880-22198-6         MB 880-41400/5-A         MB 880-41400/1-A         LCSD 880-41400/1-A         LCSD 880-41400/2-A         880-22122-A-50-C MS         880-22122-A-50-D MSD         halysis Batch: 41798	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02 W-FS01 W-FS03 Method Blank Method Blank Lab Control Sample Lab Control Sample Dup Matrix Spike	Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 416 416 416 416 416 414 414
390-3613-A-1-G MS 390-3613-A-1-H MSD nalysis Batch: 41705 Lab Sample ID 380-22198-1 380-22198-2 380-22198-3 380-22198-6 MB 880-41400/5-A MB 880-41400/5-A MB 880-41400/1-A LCSD 880-41400/1-A LCSD 880-41400/2-A 380-22122-A-50-C MS 380-22122-A-50-D MSD nalysis Batch: 41798 Lab Sample ID	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02 W-FS01 W-FS03 Method Blank Lab Control Sample Lab Control Sample Lab Control Sample Dup Matrix Spike Matrix Spike Duplicate	Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	416 416 416 <b>Prep Bat</b> 414 414 414 414 414 414 414 414 414 41
LCSD 880-41668/2-A 890-3613-A-1-G MS 890-3613-A-1-H MSD Analysis Batch: 41705 Lab Sample ID 880-22198-1 880-22198-2 880-22198-3 880-22198-6 MB 880-41400/5-A MB 880-41400/5-A LCS 880-41400/1-A LCSD 880-41400/1-A LCSD 880-41400/2-A 880-22122-A-50-C MS 880-22122-A-50-D MSD Analysis Batch: 41798 Lab Sample ID 880-22198-1 880-22198-1 880-22198-2	Matrix Spike Matrix Spike Duplicate Client Sample ID EN-FS01 EN-FS02 WN-FS02 W-FS01 W-FS03 Method Blank Lab Control Sample Lab Control Sample Lab Control Sample Dup Matrix Spike Matrix Spike Duplicate Client Sample ID	Total/NA Total/NA Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid Solid	8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B 8021B	4160 4160 4160 4160 4160 4140 4140 4140

### **QC Association Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

### GC VOA (Continued)

### Analysis Batch: 41798 (Continued)

Lab Sample ID 880-22198-3	Client Sample ID WN-FS02	Prep Type Total/NA	Matrix Solid	Method Total BTEX	Prep Batch
880-22198-4	W-FS01	Total/NA	Solid	Total BTEX	
880-22198-5	W-FS02	Total/NA	Solid	Total BTEX	
880-22198-6	W-FS03	Total/NA	Solid	Total BTEX	

### GC Semi VOA

### Analysis Batch: 41213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22198-6	W-FS03	Total/NA	Solid	8015B NM	41259
MB 880-41259/1-A	Method Blank	Total/NA	Solid	8015B NM	41259
LCS 880-41259/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41259
_CSD 880-41259/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41259
380-22198-6 MS	W-FS03	Total/NA	Solid	8015B NM	41259
880-22198-6 MSD	W-FS03	Total/NA	Solid	8015B NM	41259

### Prep Batch: 41225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22198-4	W-FS01	Total/NA	Solid	8015NM Prep	
880-22198-5	W-FS02	Total/NA	Solid	8015NM Prep	
MB 880-41225/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41225/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41225/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-22199-A-41-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-22199-A-41-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Prep Batch: 41226

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
880-22198-1	EN-FS01	Total/NA	Solid	8015NM Prep	
880-22198-2	EN-FS02	Total/NA	Solid	8015NM Prep	
880-22198-3	WN-FS02	Total/NA	Solid	8015NM Prep	
MB 880-41226/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41226/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41226/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-22177-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-22177-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Prep Batch: 41259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22198-6	W-FS03	Total/NA	Solid	8015NM Prep	
MB 880-41259/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41259/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41259/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-22198-6 MS	W-FS03	Total/NA	Solid	8015NM Prep	
880-22198-6 MSD	W-FS03	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 41315

Lab Sample ID 880-22198-1	Client Sample ID EN-FS01	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 41226
880-22198-2	EN-FS02	Total/NA	Solid	8015B NM	41226
880-22198-3	WN-FS02	Total/NA	Solid	8015B NM	41226

**Eurofins Midland** 

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# Job ID: 880-22198-1

SDG: Eddy

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### **QC** Association Summary

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

### GC Semi VOA (Continued)

### Analysis Batch: 41315 (Continued)

	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22198-4 V	W-FS01	Total/NA	Solid	8015B NM	41225
880-22198-5 V	W-FS02	Total/NA	Solid	8015B NM	41225
MB 880-41225/1-A	Method Blank	Total/NA	Solid	8015B NM	41225
MB 880-41226/1-A	Method Blank	Total/NA	Solid	8015B NM	41226
LCS 880-41225/2-A L	_ab Control Sample	Total/NA	Solid	8015B NM	41225
LCS 880-41226/2-A L	Lab Control Sample	Total/NA	Solid	8015B NM	41226
LCSD 880-41225/3-A	_ab Control Sample Dup	Total/NA	Solid	8015B NM	41225
LCSD 880-41226/3-A L	ab Control Sample Dup	Total/NA	Solid	8015B NM	41226
880-22177-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	41226
880-22177-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41226
880-22199-A-41-E MS	Matrix Spike	Total/NA	Solid	8015B NM	41225
880-22199-A-41-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	41225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22198-1	EN-FS01	Total/NA	Solid	8015 NM	1
880-22198-2	EN-FS02	Total/NA	Solid	8015 NM	
880-22198-3	WN-FS02	Total/NA	Solid	8015 NM	
880-22198-4	W-FS01	Total/NA	Solid	8015 NM	
880-22198-5	W-FS02	Total/NA	Solid	8015 NM	
880-22198-6	W-FS03	Total/NA	Solid	8015 NM	

### HPLC/IC

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### Leach Batch: 40961

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
880-22198-1	EN-FS01	Soluble	Solid	DI Leach	
880-22198-2	EN-FS02	Soluble	Solid	DI Leach	
880-22198-3	WN-FS02	Soluble	Solid	DI Leach	
880-22198-4	W-FS01	Soluble	Solid	DI Leach	
880-22198-5	W-FS02	Soluble	Solid	DI Leach	
880-22198-6	W-FS03	Soluble	Solid	DI Leach	
MB 880-40961/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-40961/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-40961/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-22198-1 MS	EN-FS01	Soluble	Solid	DI Leach	
880-22198-1 MSD	EN-FS01	Soluble	Solid	DI Leach	

### Analysis Batch: 41090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22198-1	EN-FS01	Soluble	Solid	300.0	40961
880-22198-2	EN-FS02	Soluble	Solid	300.0	40961
880-22198-3	WN-FS02	Soluble	Solid	300.0	40961
880-22198-4	W-FS01	Soluble	Solid	300.0	40961
880-22198-5	W-FS02	Soluble	Solid	300.0	40961
880-22198-6	W-FS03	Soluble	Solid	300.0	40961
MB 880-40961/1-A	Method Blank	Soluble	Solid	300.0	40961
LCS 880-40961/2-A	Lab Control Sample	Soluble	Solid	300.0	40961
LCSD 880-40961/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	40961
880-22198-1 MS	EN-FS01	Soluble	Solid	300.0	40961
880-22198-1 MSD	EN-FS01	Soluble	Solid	300.0	40961

Eurofins Midland

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# Job ID: 880-22198-1

SDG: Eddy

Job ID: 880-22198-1 SDG: Eddy

### Lab Sample ID: 880-22198-1 Matrix: Solid

Date Collected: 11/30/22 09:44 Date Received: 12/01/22 13:02

**Client Sample ID: EN-FS01** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	41400	12/08/22 16:23	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41705	12/14/22 05:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41798	12/14/22 10:47	SM	EET MID
Total/NA	Analysis	8015 NM		1			41343	12/09/22 09:57	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	41226	12/07/22 09:28	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41315	12/08/22 20:17	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	40961	12/03/22 13:53	SMC	EET MID
Soluble	Analysis	300.0		1			41090	12/08/22 22:22	СН	EET MID

# Lab Sample ID: 880-22198-2

Lab Sample ID: 880-22198-3

Lab Sample ID: 880-22198-4

Matrix: Solid

Matrix: Solid

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Date Collected: 11/30/22 09:47 Date Received: 12/01/22 13:02

**Client Sample ID: EN-FS02** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	41400	12/08/22 16:23	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41705	12/14/22 05:40	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41798	12/14/22 10:47	SM	EET MID
Total/NA	Analysis	8015 NM		1			41343	12/09/22 09:57	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	41226	12/07/22 09:28	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41315	12/08/22 20:38	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	40961	12/03/22 13:53	SMC	EET MID
Soluble	Analysis	300.0		1			41090	12/08/22 22:42	СН	EET MID

### **Client Sample ID: WN-FS02**

### Date Collected: 11/30/22 09:57

### Date Received: 12/01/22 13:02

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	41400	12/08/22 16:23	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41705	12/14/22 06:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41798	12/14/22 10:47	SM	EET MID
Total/NA	Analysis	8015 NM		1			41343	12/09/22 09:57	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41226	12/07/22 09:28	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41315	12/08/22 21:00	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	40961	12/03/22 13:53	SMC	EET MID
Soluble	Analysis	300.0		1			41090	12/08/22 22:49	СН	EET MID

### **Client Sample ID: W-FS01** Date Collected: 11/30/22 09:59 Date Received: 12/01/22 13:02

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	41400	12/08/22 16:23	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41705	12/14/22 06:21	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41798	12/14/22 10:47	SM	EET MID

**Eurofins Midland** 

Matrix: Solid

Initial

Amount

10.04 g

1 uL

4.97 g

Final

Amount

10 mL

1 uL

50 mL

Batch

41343

41225

41315

40961

41090

Number

Dil

1

1

1

Factor

Run

Batch

Туре

Prep

Analysis

Analysis

Leach

Analysis

Batch

Method

8015 NM

8015NM Prep

8015B NM

**DI Leach** 

300.0

Prep Type

Total/NA

Total/NA

Total/NA

Soluble

Soluble

Page	199	of	268

# Lab Sample ID: 880-22198-4

Analyst

SM

DM

SM

SMC

СН

Lab Sample ID: 880-22198-5

Prepared

or Analyzed

12/09/22 09:57

12/07/22 09:25

12/09/22 06:20

12/03/22 13:53

12/08/22 22:55

Matrix: Solid

Lab

EET MID

EET MID

EET MID

EET MID

EET MID

Matrix: Solid

### Client Sample ID: W-FS02 Date Collected: 11/30/22 10:02

### Date Received: 12/01/22 13:02

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	41668	12/12/22 15:50	MNR	EET MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	41701	12/13/22 19:43	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41798	12/14/22 11:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			41343	12/09/22 09:57	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41225	12/07/22 09:25	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41315	12/09/22 06:42	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	40961	12/03/22 13:53	SMC	EET MID
Soluble	Analysis	300.0		1			41090	12/08/22 23:02	СН	EET MID

### **Client Sample ID: W-FS03**

Date Collected: 11/30/22 12:04 Date Received: 12/01/22 13:02 Lab Sample ID: 880-22198-6 Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	41400	12/08/22 16:23	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41705	12/14/22 06:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41798	12/14/22 10:47	SM	EET MID
Total/NA	Analysis	8015 NM		1			41343	12/08/22 10:05	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	41259	12/07/22 10:37	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41213	12/07/22 20:49	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	40961	12/03/22 13:53	SMC	EET MIC
Soluble	Analysis	300.0		5			41090	12/08/22 23:22	СН	EET MID

### Laboratory References:

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

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### **Accreditation/Certification Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso Job ID: 880-22198-1 SDG: Eddy

### Laboratory: Eurofins Midland

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

Authority	Pr	rogram	Identification Number	Expiration Date
lexas 🛛	N	ELAP	T104704400-22-24	06-30-23
The following analytes the agency does not o	. ,	ut the laboratory is not certifi	ed by the governing authority. This list ma	y include analytes for wh
Analysis Method	Prep Method	Matrix	Analyte	
Analysis Method 8015 NM	Prep Method	Matrix Solid	Analyte Total TPH	

Eurofins Midland

Released to Imaging: 8/2/2024 11:28:39 AM

### **Method Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso

Job ID: 880-22198-1

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 MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	MCAWW	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

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. 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

SDG: Eddy

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11

**Eurofins Midland** 

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Yaso Job ID: 880-22198-1 SDG: Eddy

ab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
80-22198-1	EN-FS01	Solid	11/30/22 09:44	12/01/22 13:02	3'
80-22198-2	EN-FS02	Solid	11/30/22 09:47	12/01/22 13:02	3'
80-22198-3	WN-FS02	Solid	11/30/22 09:57	12/01/22 13:02	2'
80-22198-4	W-FS01	Solid	11/30/22 09:59	12/01/22 13:02	2'
80-22198-5	W-FS02	Solid	11/30/22 10:02	12/01/22 13:02	2'
0-22198-6	W-FS03	Solid	11/30/22 12:04	12/01/22 13:02	0 - 2'

5
8
9
13

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: 22198

Revised Date: 08/25/2020 Rev 2020.2		6							0
		4			0			0	π
		2	12/1/22 13:02	5	P		Les Com	Sectly Mit	Ball
Received by (Signature) Date/Time		Relinquished by (Signature)	Date/Time		ture)	Received by: (Signature)		Relinquished by (Signature)	Relinquished
	ns and conditions yond the control s previously negotiated.	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	urofins Xenco, its affiliates and penses incurred by the client if ; to Eurofins Xenco, but not analy	company to E ny losses or exp ple submitted t	e order from client esponsibility for au of \$5 for each sam	constitutes a valid purchase and shall not assume any r each project and a charge c	Inquishment of samples ly for the cost of samples 85.00 will be applied to	s document and rel nco will be liable on inimum charge of \$	Notice: Signature of thi of service. Eurofins Xei of Eurofins Xenco. A m
: Ag SiO <sub>2</sub> Na Sr 11 Sn U V Zn Hg 1631/2451/7470/7471	Ag TI U	Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo M Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U	A Sb As Ba Be Cd C	8RCRA	TCLP / SPLP 6010	ZED SACAA IS	Circle Method(s) and Metal(s) to be analyzed	(s) and Meta	Circle Methoc
	:   []					111	no / 6000.		Total 200 7 / 6010
880-22198 Chain of Custody									
			8 8 8	þ	4 0-21	× 12:0	5	503	K - K
			888	C 1	2 21	0 0/	5	202	W - F
			x X X	C /	12 6	9.5	5	S 01	W - F
			8 8 8	C	7 21	95	S	205	WN-1
			88	C /	7 31	1 9.4	S	=S 02	FN-1
			888	c /	4 31	hh. b 05/11	S	FS01	EN -
Sample Comments			₹ 4 Ch1 BT -9F	Grab/ # of Comp Cont	Depth	Date Time Sampled Sampled	Matrix	Sample Identification	Sample k
NaOH+Ascorbic Acid SAPC			е E PH			Corrected Temperature			Total Containers.
Zn Acetate+NaOH Zn			. Д Х		٥.6	Temperature Reading	No N/A	eals. Yes	Sample Custody Seals
Na 2S 2O 3 NaSO 3			. (			Correction Factor	No N/A	eals: Yes	Cooler Custody Seals:
NaHSO 4 NABIS			<u>(</u> 80 80	~	7	Thermometer ID	Yes No TI	l Intact:	Samples Received Intact:
H <sub>3</sub> PO <sub>4</sub> HP				eters	Yes No	Yes No Wet Ice	Temp Blank.		SAMPLE RECEIPT
2			~A 20 4 (		the lab, if received by 4:30pm	the lab, if	a		PO #
HCL.HC HNO, HN			) 3)	d by	the day receive	11.es TAT starts	Kind Mit	Rec	Sampler's Name.
			)			Due Date	Criss	2	Project Location
None NO DI Water H <sub>2</sub> O				Pres. Code	e 🗌 Rush		610Z019	KHX	Project Number
Preservative Codes	EST /	ANALYSIS REQUE			Turn Around	Masor I	4. Boud	Osar	Project Name
EDD ADaPT Other	Deliverables ED	Storand	e. willer 6	Ly Seel	ail becky	) 20   Email	689 40	1575	Phone
	Reporting Level II Level III			ZIP	City, State ZIP	NM 8822	Shad 1	Carl	City, State ZIP
	<u>o</u>				Address:	lesce	BW P	451	Address.
UST/PST PRP Brownfields RRC Superfund	Program: UST/PS			Name:	Company Name:		racion	Tes	Company Name
omments				lifferent)	Bill to: (if different)	espharen	e Gu	2	Project Manager
www.xenco.com Page / of		101 (2/2) 988-3199	подиз, NM (273) 392-7330, Carisbad, NM (273) 988-3 199	FIUDUS, IVIVI		/			

eurofins ??

Xenco

Environment Testing

Job Number: 880-22198-1 SDG Number: Eddy

List Source: Eurofins Midland

### Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

### Login Number: 22198 List Number: 1 Creator: Kramer, Jessica

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.	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	N/A	

Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").

Received by OCD: 7/11/2024 8:37:02 AM



**Environment Testing** 

# **ANALYTICAL REPORT**

# **PREPARED FOR**

Attn: Joseph Guesnier Terracon Consulting Eng & Scientists 5847 50th St Lubbock, Texas 79424 Generated 12/13/2022 2:48:29 PM

# **JOB DESCRIPTION**

Osage Boyd SDG NUMBER Eddy

# **JOB NUMBER**

890-3598-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220

See page two for job notes and contact information



Received by OCD: 7/11/2024 8:37:02 AM

1

# **Eurofins Carlsbad**

Job Notes

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

RAMER

Generated 12/13/2022 2:48:29 PM

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

Eurofins Carlsbad is a laboratory within Eurofins Environment Testing South Central, LLC, a company within Eurofins Environment Testing Group of Companies

# **Eurofins Carlsbad**

# **Compliance Statement**

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments. QC data that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result. Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

### Coliform MCLs

• Based on the EPA primary drinking water standard MCL for total coliforms, a water supply is considered bacteriologically "SAFE" if no coliform bacteria are detected. To be considered "SAFE" your report should indicate "<1 cfu/100mL" or "NEG" for the coliform test. If you report indicates a positive result "POS" or a value greater than or equal to one, then your supply is "UNSAFE FOR DRINKING" contact your local health department.

### Warranties, Terms, and Conditions

Analyses for Field Parameters are performed by Eurofins Philadelphia field staff. Locations and certifications are identified on the Chain of Custody as follows:

ERF = field staff performs tests under NJ State certification #02015

VL = field staff performs tests under NJ State certification #06005

WG = field staff performs tests under NJ State certification #PA001

H = field staff performs tests under NJ NELAP certification #PA093, PA NELAP certification # 46-05499

• Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.

· The report shall not be reproduced, except in full, without the written consent of the laboratory

· All samples are collected as "grab" samples unless otherwise identified.

• Reported results related only to the samples as tested. Eurofins Philadelphia is not responsible for sample integrity unless sampling has been performed by a member of our staff.

• Eurofins Philadelphia is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance.

• Eurofins' online data portal "TotalAccess" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.

• The following personnel or their deputies have approved the results of the tests performed by Eurofins Philadelphia : Nicki Smith (Environmental Chemistry) and Jacqueline Gartner (Water Microbiology).

MRAMER

Laboratory Job ID: 890-3598-1 SDG: Eddy

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Sample Summary	24
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DER

DLC

EDL

LOD LOQ

MCL

MDA

MDC MDL

ML

MPN

MQL

NC

ND

NEG

POS

PQL

QC RER

RL RPD

TEF TEQ

TNTC

PRES

Dil Fac DL

DL, RA, RE, IN

**Dilution Factor** 

Detection Limit (DoD/DOE)

Estimated Detection Limit (Dioxin) Limit of Detection (DoD/DOE)

Limit of Quantitation (DoD/DOE)

Method Detection Limit

Minimum Level (Dioxin)

Most Probable Number

Not Calculated

Negative / Absent

Positive / Present

Presumptive **Quality Control** 

Method Quantitation Limit

Practical Quantitation Limit

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Too Numerous To Count

Toxicity Equivalent Quotient (Dioxin)

Duplicate Error Ratio (normalized absolute difference)

Decision Level Concentration (Radiochemistry)

EPA recommended "Maximum Contaminant Level" Minimum Detectable Activity (Radiochemistry)

Minimum Detectable Concentration (Radiochemistry)

Not Detected at the reporting limit (or MDL or EDL if shown)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

ceivea by OCI	J: //11/2024 8:3 /:02 AM	Page 209 of 2	00
	Definitions/Glossary		
Client: Terrac Project/Site:	on Consulting Eng & Scientists Osage Boyd	Job ID: 890-3598-1 SDG: Eddy	
Qualifiers			3
GC VOA Qualifier	Qualifier Description		4
S1+ U	Surrogate recovery exceeds control limits, high biased. Indicates the analyte was analyzed for but not detected.		5
GC Semi VC Qualifier	A Qualifier Description		6
S1+ U	Surrogate recovery exceeds control limits, high biased. Indicates the analyte was analyzed for but not detected.		
HPLC/IC Qualifier	Qualifier Description		8
U	Indicates the analyte was analyzed for but not detected.		Q
Glossary			3
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		

**Case Narrative** 

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

Job ID: 890-3598-1 SDG: Eddy

### Job ID: 890-3598-1

### Laboratory: Eurofins Carlsbad

Narrative

Job Narrative 890-3598-1

### Receipt

The samples were received on 12/7/2022 2:38 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 5.4°C

### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: C-FS 1.3 (890-3598-1), C-FS 3.3 (890-3598-2), NW-FS 1.3 (890-3598-3), NE-FS 1.3 (890-3598-4), C-FS 2.7 (890-3598-5) and N Entrance (890-3598-6).

### GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: C-FS 1.3 (890-3598-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following sample was outside control limits: C-FS 1.3 (890-3598-1). 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 880-41491 and analytical batch 880-41523 was outside the upper control limits.

Method 8015MOD NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-41523/5), (LCS 880-41491/2-A) and (LCSD 880-41491/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD NM: The method blank for preparation batch 880-41491 and analytical batch 880-41523 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples 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.

### **Client Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

Matrix: Solid

5

Job ID: 890-3598-1 SDG: Eddy

Lab Sample ID: 890-3598-1

### Client Sample ID: C-FS 1.3 Date Collected: 12/07/22 07:55 Date Received: 12/07/22 14:38 Sample Depth: 3'

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.227		0.0200		mg/Kg		12/08/22 15:57	12/09/22 19:42	1
Toluene	2.25		0.0200		mg/Kg		12/08/22 15:57	12/09/22 19:42	1
Ethylbenzene	10.5		0.200		mg/Kg		12/12/22 16:04	12/13/22 00:55	10
m-Xylene & p-Xylene	5.32		0.0399		mg/Kg		12/08/22 15:57	12/09/22 19:42	1
o-Xylene	9.38		0.200		mg/Kg		12/12/22 16:04	12/13/22 00:55	10
Xylenes, Total	19.4		0.399		mg/Kg		12/12/22 16:04	12/13/22 00:55	10
Surrogate	%Recovery		Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)		S1+	70 - 130				12/08/22 15:57		1
1,4-Difluorobenzene (Surr)	112		70 - 130				12/08/22 15:57	12/09/22 19:42	1
Method: TAL SOP Total BTEX									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Total BTEX	27.7		0.200		mg/Kg			12/12/22 15:56	
Method: SW846 8015 NM - Die		· ·							
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Total TPH	85.3		50.0		mg/Kg	_		12/12/22 12:52	
Method: SW846 8015B NM - D	• • •	• •							
Analyte	Result	Qualifier		MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/09/22 14:59	12/11/22 15:56	
Diesel Range Organics (Over C10-C28)	85.3		50.0		mg/Kg		12/09/22 14:59	12/11/22 15:56	
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/09/22 14:59	12/11/22 15:56	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	105		70 - 130				12/09/22 14:59	12/11/22 15:56	
o-Terphenyl	104		70 - 130				12/09/22 14:59	12/11/22 15:56	Ĩ
Method: MCAWW 300.0 - Anic							_	<b>.</b> .	
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Chloride	535		5.03		mg/Kg			12/10/22 10:05	1
	<u>ີ</u>						Lab Samp	le ID: 890-3	598-2
lient Sample ID: C-FS 3.	5								
ate Collected: 12/07/22 08:00	5								
•	5								
ate Collected: 12/07/22 08:00 ate Received: 12/07/22 14:38 ample Depth: 3'		Compour							
ate Collected: 12/07/22 08:00 ate Received: 12/07/22 14:38 ample Depth: 3' Method: SW846 8021B - Volat	tile Organic Result	Qualifier		MDL	Unit	D	Prepared	Matrix Analyzed	c: Solid
ate Collected: 12/07/22 08:00 ate Received: 12/07/22 14:38 ample Depth: 3' Method: SW846 8021B - Volat Analyte	tile Organic	Qualifier	RL 0.00199	MDL	Unit mg/Kg	<u>D</u>		Matrix	c: Solic
ate Collected: 12/07/22 08:00 ate Received: 12/07/22 14:38 ample Depth: 3' Method: SW846 8021B - Volat Analyte Benzene Toluene	tile Organic Result <0.00199 <0.00199	Qualifier U U	RL 0.00199 0.00199	MDL	mg/Kg mg/Kg	<u>D</u>	Prepared 12/08/22 15:57 12/08/22 15:57	Matrix Analyzed 12/09/22 18:00 12/09/22 18:00	c: Solic
ate Collected: 12/07/22 08:00 ate Received: 12/07/22 14:38 ample Depth: 3' Method: SW846 8021B - Volat Analyte Benzene Foluene Ethylbenzene	tile Organic Result <0.00199	Qualifier U U	RL 0.00199 0.00199 0.00199	MDL	mg/Kg	<u>D</u>	Prepared 12/08/22 15:57	Matrix Analyzed 12/09/22 18:00 12/09/22 18:00 12/09/22 18:00	C: Solic
ate Collected: 12/07/22 08:00 ate Received: 12/07/22 14:38 ample Depth: 3' Method: SW846 8021B - Volat Analyte Benzene Foluene Ethylbenzene	tile Organic Result <0.00199 <0.00199	Qualifier U U U	RL 0.00199 0.00199	MDL	mg/Kg mg/Kg	<u>D</u>	Prepared 12/08/22 15:57 12/08/22 15:57	Matrix Analyzed 12/09/22 18:00 12/09/22 18:00 12/09/22 18:00	c: Solic
ate Collected: 12/07/22 08:00 ate Received: 12/07/22 14:38	tile Organic Result <0.00199 <0.00199 <0.00199	Qualifier U U U U	RL 0.00199 0.00199 0.00199	MDL	mg/Kg mg/Kg mg/Kg	<u>D</u>	Prepared 12/08/22 15:57 12/08/22 15:57 12/08/22 15:57	Matrix Analyzed 12/09/22 18:00 12/09/22 18:00 12/09/22 18:00 12/09/22 18:00	C: Solic

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1

Limits

70 - 130

0.00398

RL

RL

49.8

RL

49.8

49.8

49.8

MDL Unit

MDL Unit

MDL Unit

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

Job ID: 890-3598-1 SDG: Eddy

### Client Sample ID: C-FS 3.3 Date Collected: 12/07/22 08:00 Date Received: 12/07/22 14:38 Sample Depth: 3'

Project/Site: Osage Boyd

1,4-Difluorobenzene (Surr)

Gasoline Range Organics

**Diesel Range Organics (Over** 

Oll Range Organics (Over C28-C36)

Surrogate

Analyte

Analyte

Analyte

C10-C28)

Surrogate

o-Terphenyl

1-Chlorooctane

(GRO)-C6-C10

Total TPH

Total BTEX

**Client: Terracon Consulting Eng & Scientists** 

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

Method: TAL SOP Total BTEX - Total BTEX Calculation

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

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

%Recovery Qualifier

**Result Qualifier** 

**Result Qualifier** 

Result Qualifier

<49.8 U

<49.8 U

<49.8 U

<49.8 U

%Recovery Qualifier

98 97

97

<0.00398 U

# Lab Sample ID: 890-3598-2

Analyzed

Analyzed

12/12/22 15:56

Analyzed

12/12/22 12:52

Analyzed

12/11/22 16:41

Lab Sample ID: 890-3598-3

12/08/22 15:57 12/09/22 18:00

Matrix: Solid

Dil Fac

Dil Fac

Dil Fac

Dil Fac

1

12/11/22 16:41 1 12/09/22 14:59 12/11/22 16:41

Matrix: Solid

	Prepared	Analyzed	Dil Fac	
-	12/09/22 14:59	12/11/22 16:41	1	
	12/09/22 14:59	12/11/22 16:41	1	

Prepared

Prepared

Prepared

Prepared

12/09/22 14:59

12/09/22 14:59

D

D

D

Method: MCAWW 300.0 - Anions	s, Ion Chromatograph	y - Soluble					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac

70 - 130

Limits 70 - 130

Chloride	34.1	4.97	mg/Kg	12/10/22 10:11	1

### Client Sample ID: NW-FS 1.3

Date Collected: 12/07/22 08:25 Date Received: 12/07/22 14:38 Sample Depth: 4'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/08/22 15:57	12/09/22 18:20	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/08/22 15:57	12/09/22 18:20	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/08/22 15:57	12/09/22 18:20	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		12/08/22 15:57	12/09/22 18:20	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/08/22 15:57	12/09/22 18:20	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		12/08/22 15:57	12/09/22 18:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		70 - 130				12/08/22 15:57	12/09/22 18:20	1
1,4-Difluorobenzene (Surr)	70		70 - 130				12/08/22 15:57	12/09/22 18:20	1
- Method: TAL SOP Total BT	EX - Total BTE	X Calculat	ion						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			12/12/22 15:56	1
-									
Method: SW846 8015 NM -	Diesel Range	Urganics (							
Method: SW846 8015 NM - Analyte	-	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

**Eurofins Carlsbad** 

e Deptil. 4	
od: SW846 8021B - Volatile C	)
)	

### **Client Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

### **Client Sample ID: NW-FS 1.3** Date Collected: 12/07/22 08:25 Date Received: 12/07/22 14:38 Sample Depth: 4'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		12/09/22 14:59	12/11/22 17:03	
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		12/09/22 14:59	12/11/22 17:03	
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		12/09/22 14:59	12/11/22 17:03	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
1-Chlorooctane	101		70 - 130				12/09/22 14:59	12/11/22 17:03	
o-Terphenyl	97		70 - 130				12/09/22 14:59	12/11/22 17:03	
Method: MCAWW 300.0 - Anio	ons, Ion Chr	omatogra	phy - Soluble						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Chloride	493		5.01		mg/Kg			12/10/22 10:18	
Ient Sample ID: NE-FS <sup>2</sup> ate Collected: 12/07/22 10:40 ate Received: 12/07/22 14:38 ample Depth: 4'	1.5							le ID: 890-3 Matrix	
Method: SW846 8021B - Volat	-				11-14	_	Durana	Ameliand	
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Benzene	< 0.00199		0.00199		mg/Kg			12/09/22 18:41	
Foluene	<0.00199		0.00199		mg/Kg			12/09/22 18:41	
Ethylbenzene	< 0.00199		0.00199		mg/Kg			12/09/22 18:41	
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg			12/09/22 18:41	
<b>o-Xylene</b> Xylenes, Total	<b>0.00301</b> <0.00398	U	0.00199 0.00398		mg/Kg mg/Kg			12/09/22 18:41 12/09/22 18:41	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
4-Bromofluorobenzene (Surr)	87		70 - 130					12/09/22 18:41	
1,4-Difluorobenzene (Surr)	76		70 - 130				12/08/22 15:57	12/09/22 18:41	
Method: TAL SOP Total BTEX	- Total BTE	X Calculat	tion						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Total BTEX	<0.00398	U	0.00398		mg/Kg			12/12/22 15:56	
Method: SW846 8015 NM - Die	-	-	(DRO) (GC)			_			
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
<sup>Тоtal ТРН</sup> Method: SW846 8015B NM - I	<50.0		50.0		mg/Kg			12/12/22 12:52	
Analyte		Qualifier		мо	Unit	D	Prepared	Analyzed	Dil F
Gasoline Range Organics GRO)-C6-C10	<50.0		50.0		mg/Kg		12/09/22 14:59		
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/09/22 14:59	12/11/22 17:25	
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/09/22 14:59	12/11/22 17:25	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil
			70 400				10/00/00 11:50	40/44/00 47:05	

Dil Fac %Recovery Qualifier Limits Prepared Analyzed 70 - 130 12/09/22 14:59 12/11/22 17:25 1-Chlorooctane 103 1 105 70 - 130 12/09/22 14:59 12/11/22 17:25 1

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Job ID: 890-3598-1 SDG: Eddy

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### Released to Imaging: 8/2/2024 11:28:39 AM

o-Terphenyl

5

### **Client Sample Results**

Client: Terracon Consulting Eng & Scientists Job ID: 890-3598-1 Project/Site: Osage Boyd SDG: Eddy Client Sample ID: NE-FS 1.3 Lab Sample ID: 890-3598-4 Date Collected: 12/07/22 10:40 Matrix: Solid Date Received: 12/07/22 14:38 Sample Depth: 4' Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble **Result Qualifier** Analyte RL MDL Unit D Prepared Analyzed Dil Fac 5.02 12/10/22 10:25 Chloride 48.7 mg/Kg Client Sample ID: C-FS 2.7 Lab Sample ID: 890-3598-5 Date Collected: 12/07/22 13:35 Matrix: Solid Date Received: 12/07/22 14:38 Sample Depth: 6' Method: SW846 8021B - Volatile Organic Compounds (GC) **Result Qualifier** RL MDL Unit Prepared Analyzed Analyte D Dil Fac 12/08/22 15:57 12/09/22 19:01 0.00200 **Benzene** 0.00729 mg/Kg 1 Toluene 0.00540 0.00200 mg/Kg 12/08/22 15:57 12/09/22 19:01 1 12/08/22 15:57 12/09/22 19:01 Ethylbenzene <0.00200 U 0.00200 mg/Kg 1 m-Xylene & p-Xylene <0.00401 U 0.00401 mg/Kg 12/08/22 15:57 12/09/22 19:01 1 o-Xylene <0.00200 U 0.00200 mg/Kg 12/08/22 15:57 12/09/22 19:01 1 12/08/22 15:57 12/09/22 19:01 Xylenes, Total <0.00401 U 0.00401 mg/Kg 1 Dil Fac Surrogate %Recovery Qualifier Limits Prepared Analyzed 4-Bromofluorobenzene (Surr) 101 70 - 130 12/08/22 15:57 12/09/22 19:01 1,4-Difluorobenzene (Surr) 99 70 - 130 12/08/22 15:57 12/09/22 19:01 Method: TAL SOP Total BTEX - Total BTEX Calculation MDL Unit D Analyte **Result Qualifier** RL Prepared Analyzed Dil Fac 0.00401 **Total BTEX** 0.0127 mg/Kg 12/12/22 15:56 1 Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC) **Result Qualifier** MDL Unit D Analyte RL Prepared Analyzed Dil Fac <49.9 U Total TPH 49.9 mg/Kg 12/12/22 12:52 1 Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC) Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed Dil Fac <49.9 U 12/09/22 14:59 Gasoline Range Organics 49.9 12/11/22 17:47 mg/Kg (GRO)-C6-C10 12/09/22 14:59 12/11/22 17:47 **Diesel Range Organics (Over** <49.9 U 49.9 mg/Kg 1 C10-C28) Oll Range Organics (Over C28-C36) <49.9 U 49 9 mg/Kg 12/09/22 14:59 12/11/22 17:47 1 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 12/09/22 14:59 1-Chlorooctane 98 70 - 130 12/11/22 17:47 1 o-Terphenyl 99 70 - 130 12/09/22 14:59 12/11/22 17:47 1 Method: MCAWW 300.0 - Anions, Ion Chromatography - Soluble Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed Dil Fac

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12/10/22 10:31

Chloride

4.99

mg/Kg

288

### **Client Sample Results**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

# Job ID: 890-3598-1

SDG: Eddy

Matrix: Solid

Lab Sample ID: 890-3598-6

### **Client Sample ID: N Entrance** Date Collected: 12/07/22 10:44 Date Received: 12/07/22 14:38 Sample Depth: 3'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00625		0.00199		mg/Kg		12/08/22 15:57	12/09/22 19:22	1
Toluene	0.0170		0.00199		mg/Kg		12/08/22 15:57	12/09/22 19:22	1
Ethylbenzene	0.0145		0.00199		mg/Kg		12/08/22 15:57	12/09/22 19:22	1
m-Xylene & p-Xylene	0.0161		0.00398		mg/Kg		12/08/22 15:57	12/09/22 19:22	1
o-Xylene	0.00766		0.00199		mg/Kg		12/08/22 15:57	12/09/22 19:22	1
Xylenes, Total	0.0238		0.00398		mg/Kg		12/08/22 15:57	12/09/22 19:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130				12/08/22 15:57	12/09/22 19:22	1
1,4-Difluorobenzene (Surr)	106		70 - 130				12/08/22 15:57	12/09/22 19:22	1
Method: TAL SOP Total BTEX	- Total BTE	X Calculat	ion						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.0615		0.00398		mg/Kg			12/12/22 15:56	1
Method: SW846 8015 NM - Die	esel Range (	Organics (	DRO) (GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
									Biii au
Total TPH	<50.0	U	50.0		mg/Kg			12/12/22 12:52	1
					mg/Kg				
Method: SW846 8015B NM - E	Diesel Range				mg/Kg Unit	 D	Prepared		
Method: SW846 8015B NM - C Analyte Gasoline Range Organics	Diesel Range	e Organics Qualifier	(DRO) (GC)			D	Prepared 12/09/22 14:59	12/12/22 12:52	1
Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Diesel Range Result	e Organics Qualifier U	(DRO) (GC) RL		Unit	D	12/09/22 14:59	12/12/22 12:52 Analyzed	1 Dil Fac
Method: SW846 8015B NM - E Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Diesel Range Result <50.0	<b>Organics</b> Qualifier U	(DRO) (GC) <u>RL</u> 50.0		Unit mg/Kg	D	12/09/22 14:59 12/09/22 14:59	<b>Analyzed</b> 12/11/22 12:52	1 <b>Dil Fac</b> 1
Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Diesel Range Result <50.0 <50.0	U U U U	(DRO) (GC) RL 50.0		Unit mg/Kg mg/Kg	D	12/09/22 14:59 12/09/22 14:59	<b>Analyzed</b> 12/12/22 12:52 <b>Analyzed</b> 12/11/22 18:10 12/11/22 18:10	1 Dil Fac 1
Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	Diesel Range Result <50.0 <50.0 <50.0	U U U U	(DRO) (GC) RL 50.0 50.0 50.0		Unit mg/Kg mg/Kg	D	12/09/22 14:59 12/09/22 14:59 12/09/22 14:59	Analyzed           12/11/22         12:52           Analyzed         12/11/22           12/11/22         18:10           12/11/22         18:10           12/11/22         18:10	1 Dil Fac 1 1
Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane	Diesel Range Result <50.0 <50.0 <50.0 %Recovery	U U U U	(DRO) (GC) RL 50.0 50.0 50.0 Limits		Unit mg/Kg mg/Kg	D	12/09/22 14:59 12/09/22 14:59 12/09/22 14:59 <b>Prepared</b> 12/09/22 14:59	Analyzed           12/11/22 12:52           Analyzed           12/11/22 18:10           12/11/22 18:10           12/11/22 18:10           Analyzed	1 Dil Fac 1 1 1 Dil Fac
Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane o-Terphenyl	Diesel Range Result <50.0 <50.0 <50.0 %Recovery 100 97	Crganics Qualifier U U U Qualifier	(DRO) (GC) RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130		Unit mg/Kg mg/Kg	<u>D</u>	12/09/22 14:59 12/09/22 14:59 12/09/22 14:59 <b>Prepared</b> 12/09/22 14:59	Analyzed           12/11/22 12:52           Analyzed           12/11/22 18:10           12/11/22 18:10           12/11/22 18:10           12/11/22 18:10           12/11/22 18:10	1 Dil Fac 1 1 1 1 <i>Dil Fac</i> 1
Total TPH Method: SW846 8015B NM - E Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate 1-Chlorooctane o-Terphenyl Method: MCAWW 300.0 - Anic Analyte	Diesel Range Result <50.0 <50.0 <50.0 %Recovery 100 97 Dons, Ion Chr	Crganics Qualifier U U U Qualifier	(DRO) (GC) RL 50.0 50.0 50.0 Limits 70 - 130 70 - 130		Unit mg/Kg mg/Kg mg/Kg	D	12/09/22 14:59 12/09/22 14:59 12/09/22 14:59 <b>Prepared</b> 12/09/22 14:59	Analyzed           12/11/22 12:52           Analyzed           12/11/22 18:10           12/11/22 18:10           12/11/22 18:10           12/11/22 18:10           12/11/22 18:10	1 Dil Fac 1 1 1 1 <i>Dil Fac</i> 1

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Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

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

			Pe	cent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1		-
Lab Sample ID	Client Sample ID	(70-130)	(70-130)		5
LCS 880-41393/1-A LCS 880-41395/1-A	Lab Control Sample Lab Control Sample	101 122	111 94		6
LCS 880-41393/1-A	Lab Control Sample Dup	122	94 112		O
LCSD 880-41395/2-A	Lab Control Sample Dup	121	102		
MB 880-41393/5-A	Method Blank	86	100		
MB 880-41395/5-A	Method Blank	85	100		8
MB 880-41570/5-A	Method Blank	87	99		
Surrogate Legend					9

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid

			Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	13
LCS 880-41491/2-A	Lab Control Sample	147 S1+	136 S1+	_
LCSD 880-41491/3-A	Lab Control Sample Dup	144 S1+	136 S1+	
MB 880-41491/1-A	Method Blank	113	151 S1+	

### Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

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Job ID: 890-3598-1 SDG: Eddy

Prep Type: Total/NA

Prep Type: Total/NA
Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

Lab Sample ID: MB 880-41393/5-A

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

#### Matrix: Solid Prep Type: Total/NA Analysis Batch: 41420 Prep Batch: 41393 MB MB Analyte **Result Qualifier** RL MDL Unit Prepared Analyzed Dil Fac D 12/08/22 15:57 12/09/22 11:50 Benzene <0.00200 U 0.00200 mg/Kg 1 Toluene <0.00200 U 0.00200 mg/Kg 12/08/22 15:57 12/09/22 11:50 1 Ethylbenzene mg/Kg 12/08/22 15:57 12/09/22 11:50 <0.00200 U 0.00200 1 m-Xylene & p-Xylene <0.00400 U 0.00400 mg/Kg 12/08/22 15:57 12/09/22 11:50 1 <0.00200 U o-Xylene 0.00200 mg/Kg 12/08/22 15:57 12/09/22 11:50 1 Xylenes, Total <0.00400 U 0.00400 mg/Kg 12/08/22 15:57 12/09/22 11:50 MB MB %Recovery Qualifier Limits Surrogate Prepared Dil Fac Analyzed 70 - 130 4-Bromofluorobenzene (Surr) 86 12/08/22 15:57 12/09/22 11:50 1 1,4-Difluorobenzene (Surr) 100 70 - 130 12/08/22 15:57 12/09/22 11:50

### Lab Sample ID: LCS 880-41393/1-A **Matrix: Solid** Analysis Batch: 41420

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1221		mg/Kg		122	70 - 130	
Toluene	0.100	0.1089		mg/Kg		109	70 - 130	
Ethylbenzene	0.100	0.1108		mg/Kg		111	70 - 130	
m-Xylene & p-Xylene	0.200	0.2201		mg/Kg		110	70 - 130	
o-Xylene	0.100	0.1084		mg/Kg		108	70 - 130	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

### Lab Sample ID: LCSD 880-41393/2-A **Matrix: Solid**

### Analysis Batch: 41420

Analysis Batch: 41420		Prep E	Prep Batch: 41393					
	Spike	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1225	mg/Kg		122	70 - 130	0	35
Toluene	0.100	0.1087	mg/Kg		109	70 - 130	0	35
Ethylbenzene	0.100	0.1061	mg/Kg		106	70 - 130	4	35
m-Xylene & p-Xylene	0.200	0.2133	mg/Kg		107	70 - 130	3	35
o-Xylene	0.100	0.1043	mg/Kg		104	70 - 130	4	35

	LCSD I	LCSD	
Surrogate	%Recovery (	Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	112		70 - 130

### Lab Sample ID: MB 880-41395/5-A Matrix: Solid

Analysis Batch: 41565								Prep Batch:	41395
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/12/22 11:53	12/12/22 21:29	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/12/22 11:53	12/12/22 21:29	1

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Prep Type: Total/NA

**Client Sample ID: Method Blank** 

Page 217 of 268 Job ID: 890-3598-1 SDG: Eddy

**Client Sample ID: Method Blank** 1

### **Client Sample ID: Lab Control Sample**

Prep Type: Total/NA

Prep Batch: 41393

Client Sample ID: Lab Control Sample D	up
Prep Type: Total/	A

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

Job ID: 890-3598-1 SDG: Eddy

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

Lab Sample ID: MB 880-41 Matrix: Solid Analysis Batch: 41565	395/5-A							le ID: Methoc Prep Type: To Prep Batch:	otal/NA
Analysia	MB	MB Qualifier	Ы	MDL	Unit		Dronorod	Anolyzed	
Analyte			RL	MDL		D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/12/22 11:53	12/12/22 21:29	1
m-Xylene & p-Xylene	< 0.00400	U	0.00400		mg/Kg		12/12/22 11:53	12/12/22 21:29	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/12/22 11:53	12/12/22 21:29	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/12/22 11:53	12/12/22 21:29	1
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130				12/12/22 11:53	12/12/22 21:29	1
1,4-Difluorobenzene (Surr)	100		70 - 130				12/12/22 11:53	12/12/22 21:29	1
Lab Sample ID: LCS 880-4	1395/1-A					Client	Sample ID:	Lab Control S	Sample

### Lab Sample ID: LCS 880-41395/1-A Matrix: Solid Analysis Batch: 41565

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	0.100	0.1023		mg/Kg		102	70 - 130
Toluene	0.100	0.09929		mg/Kg		99	70 - 130
Ethylbenzene	0.100	0.1053		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.2256		mg/Kg		113	70 - 130
o-Xylene	0.100	0.1125		mg/Kg		113	70 - 130

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	122		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

### Lab Sample ID: LCSD 880-41395/2-A Matrix: Solid Analysis Batch: 41565

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.1055		mg/Kg		105	70 - 130	3	35	
Toluene	0.100	0.09676		mg/Kg		97	70 - 130	3	35	
Ethylbenzene	0.100	0.1022		mg/Kg		102	70 - 130	3	35	
m-Xylene & p-Xylene	0.200	0.2215		mg/Kg		111	70 - 130	2	35	
o-Xylene	0.100	0.1104		mg/Kg		110	70 - 130	2	35	

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	121		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

### Lab Sample ID: MB 880-41570/5-A Matrix: Solid Analysis Batch: 41565

#### MB MB MDL Unit Analyte **Result Qualifier** RL D Prepared Analyzed Dil Fac <0.00200 U 0.00200 12/12/22 08:35 12/12/22 10:55 Benzene mg/Kg 1 12/12/22 08:35 12/12/22 10:55 Toluene <0.00200 U 0.00200 mg/Kg 1 Ethylbenzene <0.00200 U 0.00200 mg/Kg 12/12/22 08:35 12/12/22 10:55 1 m-Xylene & p-Xylene <0.00400 U 0.00400 mg/Kg 12/12/22 08:35 12/12/22 10:55 1

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Prep Batch: 41395

Prep Type: Total/NA

# **Client Sample ID: Lab Control Sample Dup**

Prep Type: Total/NA Prep Batch: 41395

### **Client Sample ID: Method Blank** Prep Type: Total/NA Prep Batch: 41570

**Released to Imaging: 8/2/2024 11:28:39 AM** 

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

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

Lab Sample ID: MB 880-41 Matrix: Solid Analysis Batch: 41565		МВ						le ID: Method Prep Type: To Prep Batch:	otal/NA
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/12/22 08:35	12/12/22 10:55	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/12/22 08:35	12/12/22 10:55	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		70 - 130				12/12/22 08:35	12/12/22 10:55	1
1,4-Difluorobenzene (Surr)	99		70 - 130				12/12/22 08:35	12/12/22 10:55	1

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

Lab Sample ID: MB 880-4149 Matrix: Solid Analysis Batch: 41523		MD						le ID: Method Prep Type: To Prep Batch:	otal/NA
Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/09/22 14:59	12/11/22 09:16	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/09/22 14:59	12/11/22 09:16	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/09/22 14:59	12/11/22 09:16	1
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130				12/09/22 14:59	12/11/22 09:16	1
o-Terphenyl	151	S1+	70 - 130				12/09/22 14:59	12/11/22 09:16	1

### Lab Sample ID: LCS 880-41491/2-A Matrix: Solid Analysis Batch: 41523

### Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Client Sample ID: Lab Control Sample Dup** 

### Prep Batch: 41491

Prep Type: Total/NA

Analysis Daton. 41020							11001	
	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	 1000	869.9		mg/Kg		87	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	1019		mg/Kg		102	70 - 130	
C10-C28)								

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	147	S1+	70 - 130
o-Terphenyl	136	S1+	70 - 130

### Lab Sample ID: LCSD 880-41491/3-A Matrix: Solid Analysis Batch: 41523

Analysis Batch: 41523							Prep E	Batch: 4	1491
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	1000	857.3		mg/Kg		86	70 - 130	1	20
(GRO)-C6-C10									
Diesel Range Organics (Over	1000	969.5		mg/Kg		97	70 - 130	5	20
C10-C28)									

**Eurofins Carlsbad** 

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

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

Lab Sample ID: LCSD 880 Matrix: Solid	)-41491/3-A					C	Client Sa	mple	ID: Lab	Control Prep Ty		
Analysis Batch: 41523										Prep E	Batch:	<b>4149</b> 1
	LCSD	LCSD										
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	144	S1+	70 - 130	-								
o-Terphenyl	136	S1+	70 - 130									
Method: 300.0 - Anion	s, Ion Chro	omatograp	ohy									
Lab Sample ID: MB 880-4	1433/1-A							Clie	ent Sam	nple ID: M	ethod	Blanł
Matrix: Solid										· Prep T	ype: So	olubl
Analysis Batch: 41532												
		MB MB										
Analyte	Re	sult Qualifier		RL	I	MDL Unit		D P	repared	Analy	zed	Dil Fa
Chloride	<	5.00 U		5.00		mg/K	g			12/10/22	08:45	
Lab Sample ID: LCS 880-	41433/2-A						Clie	nt Sa	mple ID	: Lab Cor	ntrol Sa	ampl
Matrix: Solid							••			Prep T		
Analysis Batch: 41532												
			Spike	L	_cs	LCS				%Rec		
Analyte			Added	Res	sult	Qualifier	Unit	D	%Rec	Limits		
Chloride			250	26	60.9		mg/Kg		104	90 - 110		
Lab Sample ID: LCSD 880	)-41433/3 <b>-</b> ∆						lient Sa	mnle	ID· I at	o Control	Sample	
Matrix: Solid								mpio		Prep T		
Analysis Batch: 41532											, , , , , , , , , , , , , , , , , , , ,	
·····, ····			Spike	LC	SD	LCSD				%Rec		RPI
Analyte			Added	Res	sult	Qualifier	Unit	D	%Rec	Limits	RPD	Lim
Chloride			250	26	61.5		mg/Kg		105	90 - 110	0	2
Lab Sample ID: 890-3598-	6 MS								Client S	ample ID	· N Ent	ranc
Matrix: Solid	•									Prep T		
Analysis Batch: 41532											,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	Sample	Sample	Spike		MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Res	sult	Qualifier	Unit	D	%Rec	Limits		
Chloride	334		249	58	30.4		mg/Kg		99	90 - 110		
Lab Sample ID: 890-3598-	-6 MSD								Client S	ample ID	· N Ent	ranc
Matrix: Solid										Prep T		
Analysis Batch: 41532											,	
····	Sample	Sample	Spike	Μ	ISD	MSD				%Rec		RPI
Analyte	Result	Qualifier	Added	Res	sult	Qualifier	Unit	D	%Rec	Limits	RPD	Limi
Chloride	334		249	58	31.0		mg/Kg		99	90 - 110	0	20

SDG: Eddy

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Job ID: 890-3598-1

# **QC Association Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

### **GC VOA**

#### Patch 11202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3598-1	C-FS 1.3	Total/NA	Solid	5035	
890-3598-2	C-FS 3.3	Total/NA	Solid	5035	
890-3598-3	NW-FS 1.3	Total/NA	Solid	5035	
890-3598-4	NE-FS 1.3	Total/NA	Solid	5035	
890-3598-5	C-FS 2.7	Total/NA	Solid	5035	
890-3598-6	N Entrance	Total/NA	Solid	5035	
MB 880-41393/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-41393/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-41393/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

### Prep Batch: 41395

Lab Sample ID 890-3598-1	Client Sample ID C-FS 1.3	Prep Type Total/NA	Matrix Solid	Method 5035	Prep Batch
MB 880-41395/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-41395/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-41395/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

### Analysis Batch: 41420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3598-1	C-FS 1.3	Total/NA	Solid	8021B	41393
890-3598-2	C-FS 3.3	Total/NA	Solid	8021B	41393
890-3598-3	NW-FS 1.3	Total/NA	Solid	8021B	41393
890-3598-4	NE-FS 1.3	Total/NA	Solid	8021B	41393
890-3598-5	C-FS 2.7	Total/NA	Solid	8021B	41393
890-3598-6	N Entrance	Total/NA	Solid	8021B	41393
MB 880-41393/5-A	Method Blank	Total/NA	Solid	8021B	41393
LCS 880-41393/1-A	Lab Control Sample	Total/NA	Solid	8021B	41393
LCSD 880-41393/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	41393

### Analysis Batch: 41565

Lab Sample ID 890-3598-1	Client Sample ID C-FS 1.3	Prep Type Total/NA	Matrix Solid	Method 8021B	Prep Batch 41395
MB 880-41395/5-A	Method Blank	Total/NA	Solid	8021B	41395
MB 880-41570/5-A	Method Blank	Total/NA	Solid	8021B	41570
LCS 880-41395/1-A	Lab Control Sample	Total/NA	Solid	8021B	41395
LCSD 880-41395/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	41395

### Prep Batch: 41570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-41570/5-A	Method Blank	Total/NA	Solid	5035	

### Analysis Batch: 41671

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3598-1	C-FS 1.3	Total/NA	Solid	Total BTEX	
890-3598-2	C-FS 3.3	Total/NA	Solid	Total BTEX	
890-3598-3	NW-FS 1.3	Total/NA	Solid	Total BTEX	
890-3598-4	NE-FS 1.3	Total/NA	Solid	Total BTEX	
890-3598-5	C-FS 2.7	Total/NA	Solid	Total BTEX	
890-3598-6	N Entrance	Total/NA	Solid	Total BTEX	

SDG: Eddy

Job ID: 890-3598-1

# **QC Association Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

### GC Semi VOA

### Prep Batch: 41491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3598-1	C-FS 1.3	Total/NA	Solid	8015NM Prep	
890-3598-2	C-FS 3.3	Total/NA	Solid	8015NM Prep	
890-3598-3	NW-FS 1.3	Total/NA	Solid	8015NM Prep	
890-3598-4	NE-FS 1.3	Total/NA	Solid	8015NM Prep	
890-3598-5	C-FS 2.7	Total/NA	Solid	8015NM Prep	
890-3598-6	N Entrance	Total/NA	Solid	8015NM Prep	
MB 880-41491/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41491/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41491/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 41523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch	
890-3598-1	C-FS 1.3	Total/NA	Solid	8015B NM	41491	
890-3598-2	C-FS 3.3	Total/NA	Solid	8015B NM	41491	
890-3598-3	NW-FS 1.3	Total/NA	Solid	8015B NM	41491	
890-3598-4	NE-FS 1.3	Total/NA	Solid	8015B NM	41491	
890-3598-5	C-FS 2.7	Total/NA	Solid	8015B NM	41491	
890-3598-6	N Entrance	Total/NA	Solid	8015B NM	41491	
MB 880-41491/1-A	Method Blank	Total/NA	Solid	8015B NM	41491	
LCS 880-41491/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41491	
LCSD 880-41491/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41491	

### Analysis Batch: 41640

Client Sample ID	Prep Type	Matrix	Method	Prep Batch
C-FS 1.3	Total/NA	Solid	8015 NM	
C-FS 3.3	Total/NA	Solid	8015 NM	
NW-FS 1.3	Total/NA	Solid	8015 NM	
NE-FS 1.3	Total/NA	Solid	8015 NM	
C-FS 2.7	Total/NA	Solid	8015 NM	
N Entrance	Total/NA	Solid	8015 NM	
	C-FS 1.3 C-FS 3.3 NW-FS 1.3 NE-FS 1.3 C-FS 2.7	C-FS 1.3         Total/NA           C-FS 3.3         Total/NA           NW-FS 1.3         Total/NA           NE-FS 1.3         Total/NA           C-FS 2.7         Total/NA	C-FS 1.3Total/NASolidC-FS 3.3Total/NASolidNW-FS 1.3Total/NASolidNE-FS 1.3Total/NASolidC-FS 2.7Total/NASolid	C-FS 1.3         Total/NA         Solid         8015 NM           C-FS 3.3         Total/NA         Solid         8015 NM           NW-FS 1.3         Total/NA         Solid         8015 NM           NE-FS 1.3         Total/NA         Solid         8015 NM           C-FS 2.7         Total/NA         Solid         8015 NM

### HPLC/IC

### Leach Batch: 41433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3598-1	C-FS 1.3	Soluble	Solid	DI Leach	
890-3598-2	C-FS 3.3	Soluble	Solid	DI Leach	
890-3598-3	NW-FS 1.3	Soluble	Solid	DI Leach	
890-3598-4	NE-FS 1.3	Soluble	Solid	DI Leach	
890-3598-5	C-FS 2.7	Soluble	Solid	DI Leach	
890-3598-6	N Entrance	Soluble	Solid	DI Leach	
MB 880-41433/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-41433/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-41433/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3598-6 MS	N Entrance	Soluble	Solid	DI Leach	
890-3598-6 MSD	N Entrance	Soluble	Solid	DI Leach	

### Analysis Batch: 41532

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
890-3598-1	C-FS 1.3	Soluble	Solid	300.0	41433
890-3598-2	C-FS 3.3	Soluble	Solid	300.0	41433

**Eurofins Carlsbad** 

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Job ID: 890-3598-1 SDG: Eddy

# **QC Association Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

### HPLC/IC (Continued)

### Analysis Batch: 41532 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3598-3	NW-FS 1.3	Soluble	Solid	300.0	41433
890-3598-4	NE-FS 1.3	Soluble	Solid	300.0	41433
890-3598-5	C-FS 2.7	Soluble	Solid	300.0	41433
890-3598-6	N Entrance	Soluble	Solid	300.0	41433
MB 880-41433/1-A	Method Blank	Soluble	Solid	300.0	41433
LCS 880-41433/2-A	Lab Control Sample	Soluble	Solid	300.0	41433
LCSD 880-41433/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	41433
890-3598-6 MS	N Entrance	Soluble	Solid	300.0	41433
890-3598-6 MSD	N Entrance	Soluble	Solid	300.0	41433

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Job ID: 890-3598-1 SDG: Eddy

**Eurofins Carlsbad** 

Job ID: 890-3598-1 SDG: Eddy

Matrix: Solid

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Lab Sample ID: 890-3598-1

### Client Sample ID: C-FS 1.3 Date Collected: 12/07/22 07:55 Date Received: 12/07/22 14:38

Project/Site: Osage Boyd

Client: Terracon Consulting Eng & Scientists

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	41393	12/08/22 15:57	MNR	EET MID
Total/NA	Analysis	8021B		10	5 mL	5 mL	41420	12/09/22 19:42	MNR	EET MID
Total/NA	Prep	5035			5.01 g	5 mL	41395	12/12/22 16:04	MNR	EET MID
Total/NA	Analysis	8021B		100	5 mL	5 mL	41565	12/13/22 00:55	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41671	12/12/22 15:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			41640	12/12/22 12:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41491	12/09/22 14:59	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41523	12/11/22 15:56	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	41433	12/09/22 12:00	KS	EET MID
Soluble	Analysis	300.0		1			41532	12/10/22 10:05	CH	EET MID

### Client Sample ID: C-FS 3.3 Date Collected: 12/07/22 08:00 Date Received: 12/07/22 14:38

### Lab Sample ID: 890-3598-2

Lab Sample ID: 890-3598-3

Matrix: Solid

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	41393	12/08/22 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41420	12/09/22 18:00	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41671	12/12/22 15:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			41640	12/12/22 12:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	41491	12/09/22 14:59	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41523	12/11/22 16:41	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	41433	12/09/22 12:00	KS	EET MID
Soluble	Analysis	300.0		1			41532	12/10/22 10:11	СН	EET MID

### Client Sample ID: NW-FS 1.3 Date Collected: 12/07/22 08:25 Date Received: 12/07/22 14:38

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	41393	12/08/22 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41420	12/09/22 18:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41671	12/12/22 15:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			41640	12/12/22 12:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	41491	12/09/22 14:59	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41523	12/11/22 17:03	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	41433	12/09/22 12:00	KS	EET MID
Soluble	Analysis	300.0		1			41532	12/10/22 10:18	СН	EET MID

### Released to Imaging: 8/2/2024 11:28:39 AM

Project/Site: Osage Boyd

Job ID: 890-3598-1 SDG: Eddy

### **Client Sample ID: NE-FS 1.3** Date Collected: 12/07/22 10:40 Date Received: 12/07/22 14:38

Client: Terracon Consulting Eng & Scientists

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	41393	12/08/22 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41420	12/09/22 18:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41671	12/12/22 15:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			41640	12/12/22 12:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41491	12/09/22 14:59	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41523	12/11/22 17:25	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	41433	12/09/22 12:00	KS	EET MID
Soluble	Analysis	300.0		1			41532	12/10/22 10:25	СН	EET MID

### Lab Sample ID: 890-3598-5 Matrix: Solid

Lab Sample ID: 890-3598-6

Matrix: Solid

Date Collected: 12/07/22 13:35 Date Received: 12/07/22 14:38

Client Sample ID: C-FS 2.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	41393	12/08/22 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41420	12/09/22 19:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41671	12/12/22 15:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			41640	12/12/22 12:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	41491	12/09/22 14:59	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41523	12/11/22 17:47	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	41433	12/09/22 12:00	KS	EET MID
Soluble	Analysis	300.0		1			41532	12/10/22 10:31	СН	EET MID

### **Client Sample ID: N Entrance** Date Collected: 12/07/22 10:44 Date Received: 12/07/22 14:38

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	41393	12/08/22 15:57	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	41420	12/09/22 19:22	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			41671	12/12/22 15:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			41640	12/12/22 12:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	41491	12/09/22 14:59	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	41523	12/11/22 18:10	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	41433	12/09/22 10:42	KS	EET MID
Soluble	Analysis	300.0		1			41532	12/10/22 10:38	СН	EET MID

### Laboratory References:

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

### **Accreditation/Certification Summary**

Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd Job ID: 890-3598-1

SDG: Eddy

### Laboratory: Eurofins Midland

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

Authority	Pr	ogram	Identification Number	Expiration Date
Texas	NE	ELAP	T104704400-22-24	06-30-23
The following analyte	s are included in this repo	ort, but the laboratory is r	not certified by the governing authority.	This list may include analytes for which
the agency does not	offer certification.			
the agency does not o Analysis Method	offer certification. Prep Method	Matrix	Analyte	
8,		Matrix Solid	Analyte Total TPH	

**Eurofins Carlsbad** 

### **Method Summary**

### Client: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

Job ID: 890-3598-1 SDG: Eddy

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	MCAWW	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

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. 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: Terracon Consulting Eng & Scientists Project/Site: Osage Boyd

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Dept
890-3598-1	C-FS 1.3	Solid	12/07/22 07:55	12/07/22 14:38	3'
890-3598-2	C-FS 3.3	Solid	12/07/22 08:00	12/07/22 14:38	3'
890-3598-3	NW-FS 1.3	Solid	12/07/22 08:25	12/07/22 14:38	4'
890-3598-4	NE-FS 1.3	Solid	12/07/22 10:40	12/07/22 14:38	4'
890-3598-5	C-FS 2.7	Solid	12/07/22 13:35	12/07/22 14:38	6'
890-3598-6	N Entrance	Solid	12/07/22 10:44	12/07/22 14:38	3'

		Relinquished by: (Signature)	Date/Time	Bty	Received by: (Signature)	r: (Signature)	Relinquished by: (Signature)
	and conditions nd the control rreviously negotiated.	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 circumstance 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 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 of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each sample submitted to 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. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco. A minimum charge of \$85.00 will be enforced unless previously negotiated of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each sample submitted to Eurofins Xenco. A minimum charge of \$85.00 will be enforced unless previously negotiated of Eurofins Xenco. A minimum charge of \$85.00 will be enforced unless previously negotiated of Eurofins Xenco. A minimum charge of \$85.00 will be enforced unless previously negotiated of Eurofins Xenco. A minimum charge of \$85.00 will be enforced unless previously negotiated of Eurofins Xenco. A minimum charge of \$85.00 will be enforced unless previously negotiated of Eurofins Xenco. A minimum charge of \$85.00 will be enforced unless previously negotiated of Eurofins Xenco. A minimum charge of \$85.00 will be enforced unless previously negotiated of Eurof	Eurofins Xenco, its affiliates and su xpenses incurred by the client if su I to Eurofins Xenco, but not analyz	ler from client company to onsibility for any losses or e for each sample submitted	amples constitutes a valid purchase or amples and shall not assume any resp lied to each project and a charge of \$2	cument and relinquishment of s vill be liable only for the cost of a um charge of \$85.00 will be app	Notice: Signature of this do of service. Eurofins Xenco v of Eurofins Xenco. A minim
e Ag SiO <sub>2</sub> Na Sr TI Sn U V Zn Ha: 1631/245.1/7470/7471	li K Se	Ca Cr Co Cu Fe Pb Mg I r Co Cu Pb Mn Mo Ni Se	A 13PPM Texas 11 AI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb TCLP/SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo	PM Texas 11 Al PLP 6010 : 8RCR/	8RCRA 13PPM nalyzed TCLP / SPLF	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010 Circle Method(s) ar
			- 0 2 2		1 10.44	Gauce	NENT
			5 8	16,1	1:35	2.7.5	C-FS
			88	L, L	8:25	FS 1.3	NW I
			888	3' C	55.42/21 S	2-3	C- FS
Sample Comments			Cont CL	Depth Grab/ #	rix Date Time Sampled Sampled	tification Matrix	Sample Identification
NaOH+Ascorbic Acid: SAPC	Sustody	890-3598 Chain of Custody	al PI TE	5.4	Corrected Temperature:		Total Containers:
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub> Zn Acetate+NaOH: Zn				10.2	T	Yes	Cooler Custody Seals:
NaHSO &: NABIS				TOM 207	Thermometer	6	Samples Received Intact:
H <sub>3</sub> PO <sub>4</sub> : HP			eters	Re No	Res No Wet Ice:	Temp Blank:	SAMPLE RECEIPT
HCL: HC HNO ;: HN H <sub>2</sub> SO ;: H <sub>2</sub> NaOH: Na			EF 30 15) 0211	TAT starts the day received by the lab, if received by 4:30pm	the lab, if rev	Bicky	Sampler's Name: PO #:
Cool: Cool MeOH: Me					Due Date:	T & A in	Project Location:
None: NO DI Water: H <sub>2</sub> O			Pres.	sh	7190 BRoutine	1202CHN	Project Number:
Preservative Codes	F	ANALYSIS REQUEST		Turn Around	Bacinal Turr	Osaal	Project Name:
EDD ADaPT Other:	Deliverables: ED				7 7076 Email:	806 50	Phone:
Reporting: Level II Level III PST/UST TRRP Level IV	Reporting: Level II			City, State ZIP:	ad MM	Carlsh	City, State ZIP:
] ]	State of Project:			Address:	1 Parce	4518 W	Address:
UST/PST PRP Brownfields RRC Superfund	Program: UST/PS			Company Name:	con	Terra	Company Name:
Work Order Comments				Bill to: (if different)	ensures	Jan C	Project Manager:
www.xenco.com Page of		X (806) 794-1296 M (575) 988-3199	EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199	EL Paso, T Hobbs, N	0	Xenco	
Work Order No:	W	( (214) 902-0300 , TX (210) 509-3334	Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334	Houston Midland, Ti	<b>Environment Testing</b>	eurotins Envir	euro

Job Number: 890-3598-1 SDG Number: Eddy

List Source: Eurofins Carlsbad

### Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

### Login Number: 3598 List Number: 1 Creator: Stutzman, Amanda

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	

Job Number: 890-3598-1 SDG Number: Eddy

List Source: Eurofins Midland

List Creation: 12/09/22 11:39 AM

### Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Login Number: 3598 List Number: 2 Creator: Rodriguez, Leticia

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	N/A	

Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").



February 14, 2024

JOSEPH GUESNIER TERRACON CONSULTANTS 5827 50TH ST. SUITE 1 LUBBOCK, TX 79424

RE: OSAGE YASO BOYD BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 02/09/24 13:02.

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 <a href="https://www.tceq.texas.gov/field/qa/lab\_accred\_certif.html">www.tceq.texas.gov/field/qa/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	02/09/2024	Sampling Date:	02/08/2024
Reported:	02/14/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: S - SW - 01.2 0'-2' (H240636-01)

BTEX 8021B	mg	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/10/2024	ND	2.21	111	2.00	13.2	
Toluene*	<0.050	0.050	02/10/2024	ND	2.21	110	2.00	13.3	
Ethylbenzene*	<0.050	0.050	02/10/2024	ND	2.19	109	2.00	13.3	
Total Xylenes*	<0.150	0.150	02/10/2024	ND	6.37	106	6.00	13.6	
Total BTEX	<0.300	0.300	02/10/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.5	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/kg		Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>592</b> 16.0		02/12/2024 ND		384	96.0	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/09/2024	ND	218	109	200	1.23	
DRO >C10-C28*	<10.0	10.0	02/09/2024	ND	224	112	200	6.76	
EXT DRO >C28-C36	<10.0	10.0	02/09/2024	ND					
Surrogate: 1-Chlorooctane	79.9	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	73.5	% 49.1-14	8						

#### Cardinal Laboratories

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	02/09/2024	Sampling Date:	02/08/2024
Reported:	02/14/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: W - 1.2 0.5' (H240636-02)

BTEX 8021B	mg/	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/10/2024	ND	2.21	111	2.00	13.2	
Toluene*	<0.050	0.050	02/10/2024	ND	2.21	110	2.00	13.3	
Ethylbenzene*	<0.050	0.050	02/10/2024	ND	2.19	109	2.00	13.3	
Total Xylenes*	<0.150	0.150	02/10/2024	ND	6.37	106	6.00	13.6	
Total BTEX	<0.300	0.300	02/10/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	98.6	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	02/12/2024	ND	384	96.0	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/09/2024	ND	218	109	200	1.23	
DRO >C10-C28*	<10.0	10.0	02/09/2024	ND	224	112	200	6.76	
EXT DRO >C28-C36	<10.0	10.0	02/09/2024	ND					
Surrogate: 1-Chlorooctane	83.3	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	76.0	% 49.1-14	8						

### Cardinal Laboratories

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### **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

#### Cardinal Laboratories

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

### Received by OCD: 7/11/2024 8:37:02 AM

s. Please email changes to celev keene@cardinallabsnm com	hard	Time:     Time:	service. In no event shall cardinate builde for incidental to consequential damages, including without limitation, business ande in writing and received by Cardinal within 30 days after completion of the applicable affiliates or successors arising out of or related to the performance of services herounder by Cardinal, regardless of whether such claim is based upon any of the above statled reasons or otherwise.  Relinguished By: Date: 0. 2.01. Received By:	ind client's exclusive remedy for any c		C W - 1. d U. 2. C. V V 2-8-24/12:58 V V V	4	D.	MATRIX PRESERV. SAMPLING	Fax #:	by Phone #: 575-441-8619 0)	Project Name: Usage raso boyd battery State: NM Zip: 88210	oject Owner:	057 Fax #:	City: Carlsbad State: NM Zip: 88220 Attn: Kathy Purvis	Address: 4518 W. Pierce Street Company:Spur Energy Partners LLC	anager: Joseph Guesnier P.O. #: 810 P.O. #: 810	BILL TO ANALYSIS	101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476	CHAIN-O	CARDINAL
	Bacteria (only) S Cool Intact	IAdd'l Phone #: provide Email address: Gus.Sanchez@Terracon.com; h.Guesnier@Terracon.com; BeckySue.Miller@Terracon; umber : 7010-7410																		F-CUSTODY AND ANALYSIS REQUEST	

### Page 5 of 5

Page 236 of 268



May 03, 2024

JOSEPH GUESNIER TERRACON CONSULTANTS 5827 50TH ST. SUITE 1 LUBBOCK, TX 79424

RE: OSAGE YASO BOYD BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 04/26/24 13:50.

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 <a href="https://www.tceq.texas.gov/field/qa/lab\_accred\_certif.html">www.tceq.texas.gov/field/qa/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	04/26/2024	Sampling Date:	04/25/2024
Reported:	05/03/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: WN - SW 0-4' (H242250-01)

BTEX 8021B	mg,	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	0.697	
Toluene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	4.68	
Ethylbenzene*	<0.050	0.050	04/30/2024	ND	2.19	109	2.00	5.03	
Total Xylenes*	<0.150	0.150	04/30/2024	ND	6.58	110	6.00	4.69	
Total BTEX	<0.300	0.300	04/30/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 9	% 71.5-13	4						
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	640	16.0	04/30/2024	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/30/2024	ND	225	113	200	2.25	
DRO >C10-C28*	<10.0	10.0	04/30/2024	ND	227	114	200	2.83	
EXT DRO >C28-C36	<10.0	10.0	04/30/2024	ND					
Surrogate: 1-Chlorooctane	91.8	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	87.4	% 49.1-14	8						

### Cardinal Laboratories

#### \*=Accredited Analyte

Celez D. Keine

Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	04/26/2024	Sampling Date:	04/25/2024
Reported:	05/03/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: E - FS 4.2 4' (H242250-02)

BTEX 8021B	mg,	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/01/2024	ND	2.14	107	2.00	0.697	
Toluene*	<0.050	0.050	05/01/2024	ND	2.14	107	2.00	4.68	
Ethylbenzene*	<0.050	0.050	05/01/2024	ND	2.19	109	2.00	5.03	
Total Xylenes*	<0.150	0.150	05/01/2024	ND	6.58	110	6.00	4.69	
Total BTEX	<0.300	0.300	05/01/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	108	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3440	16.0	04/30/2024	ND	432	108	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/01/2024	ND	225	113	200	2.25	
DRO >C10-C28*	2710	10.0	05/01/2024	ND	227	114	200	2.83	
EXT DRO >C28-C36	698	10.0	05/01/2024	ND					
Surrogate: 1-Chlorooctane	98.2	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	132	% 49.1-14	8						

#### Cardinal Laboratories

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	04/26/2024	Sampling Date:	04/25/2024
Reported:	05/03/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: EM - SW 1.2 0-4' (H242250-03)

BTEX 8021B	mg,	′kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	0.697	
Toluene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	4.68	
Ethylbenzene*	<0.050	0.050	04/30/2024	ND	2.19	109	2.00	5.03	
Total Xylenes*	<0.150	0.150	04/30/2024	ND	6.58	110	6.00	4.69	
Total BTEX	<0.300	0.300	04/30/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	108	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/	′kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	04/30/2024	ND	432	108	400	0.00	
TPH 8015M	mg/	′kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/03/2024	ND	225	113	200	2.25	
DRO >C10-C28*	<10.0	10.0	05/03/2024	ND	227	114	200	2.83	
EXT DRO >C28-C36	<10.0	10.0	05/03/2024	ND					
Surrogate: 1-Chlorooctane	70.9	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	82.5	% 49.1-14	8						

#### Cardinal Laboratories

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	04/26/2024	Sampling Date:	04/25/2024
Reported:	05/03/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: EN - SW 2.2 0-4' (H242250-04)

BTEX 8021B	mg,	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	0.697	
Toluene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	4.68	
Ethylbenzene*	<0.050	0.050	04/30/2024	ND	2.19	109	2.00	5.03	
Total Xylenes*	<0.150	0.150	04/30/2024	ND	6.58	110	6.00	4.69	
Total BTEX	<0.300	0.300	04/30/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	108	% 71.5-13	4						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	04/30/2024	ND	432	108	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/30/2024	ND	210	105	200	0.836	
DRO >C10-C28*	<10.0	10.0	04/30/2024	ND	214	107	200	0.560	
EXT DRO >C28-C36	<10.0	10.0	04/30/2024	ND					
Surrogate: 1-Chlorooctane	83.7	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	80.5	% 49.1-14	8						

#### Cardinal Laboratories

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	04/26/2024	Sampling Date:	04/25/2024
Reported:	05/03/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: EM - FS 2.2 4' (H242250-05)

BTEX 8021B	mg	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	0.697	
Toluene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	4.68	
Ethylbenzene*	<0.050	0.050	04/30/2024	ND	2.19	109	2.00	5.03	
Total Xylenes*	<0.150	0.150	04/30/2024	ND	6.58	110	6.00	4.69	
Total BTEX	<0.300	0.300	04/30/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	110	% 71.5-13	4						
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	04/30/2024	ND	432	108	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/30/2024	ND	210	105	200	0.836	
DRO >C10-C28*	<10.0	10.0	04/30/2024	ND	214	107	200	0.560	
EXT DRO >C28-C36	<10.0	10.0	04/30/2024	ND					
Surrogate: 1-Chlorooctane	101	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	98.6	% 49.1-14	8						

#### Cardinal Laboratories

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	04/26/2024	Sampling Date:	04/25/2024
Reported:	05/03/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: W - FS 2.2 4' (H242250-06)

BTEX 8021B	mg/	′kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	0.697	
Toluene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	4.68	
Ethylbenzene*	<0.050	0.050	04/30/2024	ND	2.19	109	2.00	5.03	
Total Xylenes*	<0.150	0.150	04/30/2024	ND	6.58	110	6.00	4.69	
Total BTEX	<0.300	0.300	04/30/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/	′kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	04/30/2024	ND	432	108	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	04/30/2024	ND	210	105	200	0.836	
DRO >C10-C28*	<10.0	10.0	04/30/2024	ND	214	107	200	0.560	
EXT DRO >C28-C36	<10.0	10.0	04/30/2024	ND					
Surrogate: 1-Chlorooctane	97.9	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	93.6	% 49.1-14	8						

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#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	04/26/2024	Sampling Date:	04/25/2024
Reported:	05/03/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: WN - FS 4' (H242250-07)

BTEX 8021B	mg/	kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	0.697	
Toluene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	4.68	
Ethylbenzene*	<0.050	0.050	04/30/2024	ND	2.19	109	2.00	5.03	
Total Xylenes*	<0.150	0.150	04/30/2024	ND	6.58	110	6.00	4.69	
Total BTEX	<0.300	0.300	04/30/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	108 9	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	04/30/2024	ND	432	108	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	04/30/2024	ND	210	105	200	0.836	
DRO >C10-C28*	<10.0	10.0	04/30/2024	ND	214	107	200	0.560	
EXT DRO >C28-C36	<10.0	10.0	04/30/2024	ND					
Surrogate: 1-Chlorooctane	100 9	48.2-13	4						
Surrogate: 1-Chlorooctadecane	93.7	% 49.1-14	8						

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#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	04/26/2024	Sampling Date:	04/25/2024
Reported:	05/03/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: S - SW 01.2 0-4' (H242250-08)

BTEX 8021B	mg/	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	0.697	
Toluene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	4.68	
Ethylbenzene*	<0.050	0.050	04/30/2024	ND	2.19	109	2.00	5.03	
Total Xylenes*	<0.150	0.150	04/30/2024	ND	6.58	110	6.00	4.69	
Total BTEX	<0.300	0.300	04/30/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 9	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	04/30/2024	ND	432	108	400	0.00	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/30/2024	ND	210	105	200	0.836	
DRO >C10-C28*	<10.0	10.0	04/30/2024	ND	214	107	200	0.560	
EXT DRO >C28-C36	<10.0	10.0	04/30/2024	ND					
Surrogate: 1-Chlorooctane	96.2	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	93.9	% 49.1-14	8						

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#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	04/26/2024	Sampling Date:	04/25/2024
Reported:	05/03/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: C - FS 01.2 4' (H242250-09)

BTEX 8021B	mg,	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	0.697	
Toluene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	4.68	
Ethylbenzene*	<0.050	0.050	04/30/2024	ND	2.19	109	2.00	5.03	
Total Xylenes*	<0.150	0.150	04/30/2024	ND	6.58	110	6.00	4.69	
Total BTEX	<0.300	0.300	04/30/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	107 5	% 71.5-13	4						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	04/30/2024	ND	432	108	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	04/30/2024	ND	210	105	200	0.836	
DRO >C10-C28*	<10.0	10.0	04/30/2024	ND	214	107	200	0.560	
EXT DRO >C28-C36	<10.0	10.0	04/30/2024	ND					
Surrogate: 1-Chlorooctane	93.4	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	90.6	% 49.1-14	8						

#### Cardinal Laboratories

#### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	04/26/2024	Sampling Date:	04/25/2024
Reported:	05/03/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: SE - SW 01.2 0-4' (H242250-10)

BTEX 8021B	mg/	'kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	0.697	
Toluene*	<0.050	0.050	04/30/2024	ND	2.14	107	2.00	4.68	
Ethylbenzene*	<0.050	0.050	04/30/2024	ND	2.19	109	2.00	5.03	
Total Xylenes*	<0.150	0.150	04/30/2024	ND	6.58	110	6.00	4.69	
Total BTEX	<0.300	0.300	04/30/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 9	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1970	16.0	04/30/2024	ND	432	108	400	0.00	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/30/2024	ND	210	105	200	0.836	
DRO >C10-C28*	<10.0	10.0	04/30/2024	ND	214	107	200	0.560	
EXT DRO >C28-C36	<10.0	10.0	04/30/2024	ND					
Surrogate: 1-Chlorooctane	94.1	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	88.5	% 49.1-14	8						

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### \*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



### **Notes and Definitions**

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager

P	age 249 of .	268
101 East Marland, (575) 393-2326 F	<b>CARD</b> Labora	
id, Hobbs, NM 88240 3 FAX (575) 393-2476	<b>DINAL</b> ratories	

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST

Received by OCD: 7/11/2024 8:37:02 AM	- 1	S	σ	D	T	T	0	Þ	D	0	Ĺ
Lab I.D. Hayaaa Hayaaa Barata Hayaa Hayaa Haya	No. of Concession, Name of Con	Sampler Name:	Project Location:	Project Name:	Project #: 人从乙	Phone #: 8065077057	City: Carlsbad	Address: 4518 W	Project Manager: Joseph Guesnier	Company Name:	
D.     Sample I.D.       D.     IMN - SW       D.     IMN - FS       D.     IMN - FS       D.     IMN - FS       D.     Image: Similar Simil		Travis Casey	Ecloly	baar B	610422	7057		4518 W. Perice Street	Joseph Guesnier	Terracon	10.01000
			0	uch Yasa	Project Owner:	Fax #:	State: NM				
cannot accept ve	S ER R			٢	Spine		Zip: 88220				
Sample Condition Cool Intacts By: By: By: Cool Intacts By: By: Cool Intacts By: By: By: Cool Intacts By: By: By: Cool Intacts By: By: By: Cool Intacts By: By: Cool Intacts By: By: Cool Intacts By: Cool Intacts	MATRIX	Fax	Phone #:	State:	City: Hace	Address:	Attn:	Company:	P.O. #:		
41       C (G)	PRESERV. SAM		#	57044.:di7 X1.	bac		Kathen T	iny: Spuck		DIFFIC	DII I TO
TIME     Chloride       1304     1304       1314     1314       1312     1314       1300     1300       1300     1300       1300     1300       1300     1300       1300     1300       1300     1300       1300     1300       1300     1300       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1300     1400       1400     1400       1400     1400       1400     1400       1400     1400       1400     1400       1400     1400       1400     1400       1400     1400       1400     1400       1400     1400	SAMPLING					Les FWX	indivis	δ			
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hone #: li address: hael.adams@terracon.com; hael.adams@terracon.co											



May 17, 2024

JOSEPH GUESNIER TERRACON CONSULTANTS 5827 50TH ST. SUITE 1 LUBBOCK, TX 79424

RE: OSAGE YASO BOYD BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 05/14/24 9:37.

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 <a href="https://www.tceq.texas.gov/field/ga/lab\_accred\_certif.html">www.tceq.texas.gov/field/ga/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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,

Whe Singh

Mike Snyder For Celey D. Keene Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	05/14/2024	Sampling Date:	05/07/2024
Reported:	05/17/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: WN - SW 0-4' (H242614-01)

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	05/15/2024	ND	1.97	98.6	2.00	0.0453	
Toluene*	<0.050	0.050	05/15/2024	ND	1.99	99.6	2.00	0.648	
Ethylbenzene*	<0.050	0.050	05/15/2024	ND	1.97	98.3	2.00	1.03	
Total Xylenes*	<0.150	0.150	05/15/2024	ND	6.17	103	6.00	1.08	
Total BTEX	<0.300	0.300	05/15/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 9	% 71.5-13	4						
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	05/15/2024	ND	400	100	400	11.3	
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	05/15/2024	ND	194	97.0	200	0.609	
DRO >C10-C28*	<10.0	10.0	05/15/2024	ND	200	100	200	5.50	
EXT DRO >C28-C36	<10.0	10.0	05/15/2024	ND					
Surrogate: 1-Chlorooctane	66.4	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	66.5	% 49.1-14	8						

### Cardinal Laboratories

\*=Accredited Analyte

Mite Sugar

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	05/14/2024	Sampling Date:	05/07/2024
Reported:	05/17/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

### Sample ID: E - FS 4.2 5' (H242614-02)

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	05/15/2024	ND	1.97	98.6	2.00	0.0453	
Toluene*	<0.050	0.050	05/15/2024	ND	1.99	99.6	2.00	0.648	
Ethylbenzene*	<0.050	0.050	05/15/2024	ND	1.97	98.3	2.00	1.03	
Total Xylenes*	<0.150	0.150	05/15/2024	ND	6.17	103	6.00	1.08	
Total BTEX	<0.300	0.300	05/15/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 9	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1140	16.0	05/15/2024	ND	400	100	400	11.3	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2024	ND	194	97.0	200	0.609	
DRO >C10-C28*	345	10.0	05/15/2024	ND	200	100	200	5.50	
EXT DRO >C28-C36	73.2	10.0	05/15/2024	ND					
Surrogate: 1-Chlorooctane	86.1	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	92.1	% 49.1-14	8						

### Cardinal Laboratories

\*=Accredited Analyte

Mite Sugar

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager


#### PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

#### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	05/14/2024	Sampling Date:	05/07/2024
Reported:	05/17/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Tamara Oldaker
Project Location:	SPUR - EDDY		

#### Sample ID: SE - SW 1.2 0-4' (H242614-03)

BTEX 8021B	mg/	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/15/2024	ND	1.97	98.6	2.00	0.0453	
Toluene*	<0.050	0.050	05/15/2024	ND	1.99	99.6	2.00	0.648	
Ethylbenzene*	<0.050	0.050	05/15/2024	ND	1.97	98.3	2.00	1.03	
Total Xylenes*	<0.150	0.150	05/15/2024	ND	6.17	103	6.00	1.08	
Total BTEX	<0.300	0.300	05/15/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 9	% 71.5-13	4						
Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	05/15/2024	ND	400	100	400	11.3	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2024	ND	194	97.0	200	0.609	
DRO >C10-C28*	<10.0	10.0	05/15/2024	ND	200	100	200	5.50	
EXT DRO >C28-C36	<10.0	10.0	05/15/2024	ND					
Surrogate: 1-Chlorooctane	68.9	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	61.7	% 49.1-14	8						

#### Cardinal Laboratories

#### \*=Accredited Analyte

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Mite Sugar

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



#### **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

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#### \*=Accredited Analyte

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Mite Sugar

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

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# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

# 101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name: Terracon Project Manager: 505 Ph Ceces	Shize	P.O. #:		ANALYSIS R	REQUEST
Address: 4518 W. Perice Street		Company: Terre	( 10)		
City: Carlsbad State: NM	Zip: 88220	S			
Phone #: 8065077057 Fax #:		Address:			
Project #: (HJ270)4 Project Owner:		City:			
Project Name: OSuge Bayel		State: Zip:			
Project Location:		#:	))	)	
Sampler Name: That's Cases		Fax #:	450(	218)	
FOR LAB USE ONLY	MATRIX	ESERV.		od 80	
Lab I.D. Sample I.D.	G)RAB OR (C)OM CONTAINERS ROUNDWATER /ASTEWATER OIL IL LUDGE	THER : CID/BASE: E / COOL THER :	hloride (EPA Me PH Extended 80	ΓΕΧ (EPA Metho	
IN-SU 0	-	1	+	E	
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			Y Y OIN	~	
e remed oever shi ages, inc hereunde	any claim arising whether based in contract or to e deemed waiwed unless made in writing and rec og without limitation, business interruptions, loss o Cardinal, regardless of whether such claim is ba	rt, shall be limited to the amount paid evived by Cardinal within 30 days after of use, or loss of profits incurred by clic used upon any of the above stated reas	by the client for the completion of the applicable ent, its subsidiaries, sons or otherwise.		
Relinquished By: Data:	Munder y.		Verbal Result:  Verbal Result:  Yes Afl Results are emailed.  Pi	Verbal Result:  Ves No Add'I Phone #: At Results are emailed. Please provide Email address:	
Time:	Neceived By:		REMARKS: joesph.guesnier@terracon.c michael.adams@terracon.cc gus.sanchez@terracon.com	REMARKS: joesph.guesnier@terracon.com; travis.casey@terracon.com; austin.wortey@terracon.com; michael.adams@terracon.com; beckysue.miller@terracon.com; justin.friend@terracon.com gus.sanchez@terracon.com	n.com; austin.worley@terracon.com; con.com; justin.friend@terracon.com
Sampler - UPS - Bus - Other: Corrected Temp. °C	Sample Condition Cool_Intact Pres Pres No No No	CHECKED BY: 1	Turnaround Time: Sta Thermometer ID #443-	Standard Bacteria (only)	Bacteria (only) Sample Condition Cool Intact Observed Temp. °C ∐Yes∐Yes
t ORM-000 K 3.2 10/0 //21 † Cardinal c	Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com	s. Please email chanç	yes to celey.keene@car	dinallabsnm.com	Corrected Temp. °C

Received by OCD: 7/11/2024 8:37:02 AM

Page 255 of 268



June 04, 2024

JOSEPH GUESNIER TERRACON CONSULTANTS 5827 50TH ST. SUITE 1 LUBBOCK, TX 79424

RE: OSAGE YASO BOYD BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 05/31/24 16:17.

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 <a href="https://www.tceq.texas.gov/field/qa/lab\_accred\_certif.html">www.tceq.texas.gov/field/qa/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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,

Whe Singh

Mike Snyder For Celey D. Keene Lab Director/Quality Manager



#### PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

#### Analytical Results For:

TERRACON CONSULTANTS JOSEPH GUESNIER 5827 50TH ST. SUITE 1 LUBBOCK TX, 79424 Fax To:

Received:	05/31/2024	Sampling Date:	05/31/2024
Reported:	06/04/2024	Sampling Type:	Soil
Project Name:	OSAGE YASO BOYD BATTERY	Sampling Condition:	Cool & Intact
Project Number:	KH227019	Sample Received By:	Alyssa Parras
Project Location:	SPUR - EDDY		

#### Sample ID: FS 4.2 4.5' (H243086-01)

BTEX 8021B	mg,	/kg	Analyze	d By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.050	0.050	06/04/2024	ND	1.87	93.4	2.00	3.26	
Toluene*	<0.050	0.050	06/04/2024	ND	1.84	92.0	2.00	2.71	
Ethylbenzene*	<0.050	0.050	06/04/2024	ND	1.86	93.1	2.00	2.36	
Total Xylenes*	<0.150	0.150	06/04/2024	ND	5.40	90.1	6.00	2.10	
Total BTEX	<0.300	0.300	06/04/2024	ND					
Surrogate: 4-Bromofluorobenzene (PID	89.5	% 71.5-13	4						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Chloride	16.0	16.0	06/04/2024	ND	432	108	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
GRO C6-C10*	<10.0	10.0	06/03/2024	ND	231	115	200	0.929	
DRO >C10-C28*	<10.0	10.0	06/03/2024	ND	239	120	200	3.15	
EXT DRO >C28-C36	<10.0	10.0	06/03/2024	ND					
Surrogate: 1-Chlorooctane	116 9	% 48.2-13	4						
Surrogate: 1-Chlorooctadecane	112 9	% 49.1-14	0						

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#### \*=Accredited Analyte

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Mite Sugar

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



#### **Notes and Definitions**

BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
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

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Mite Sugar

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

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Invite Casey         Flat F: State:         State::         NM         Zip: State::         Spur         Pole::         Company: Spur         Spur         Company: Spur         Spur         Not Res:         Spur         Not Res:         Spur		inal be liable for incidental or	service. In no event shall Card	ient for the on of the applicable otherwise.	the the	If be limited to th y Cardinal within on any of the ab	t or tort, sha d received b les, is based up	r based in contrac made in writing an client, its subsidiar rhether such claim	d client's exclusive remedy for any claim arising wheth ther cause whatsoever shall be deemed waived unless interruptions, loss of use, or loss of profils incurred by ance of services hereunder by Cardinal, regardless of v	PLEASE NOTE: Liability and Damages. Car analyses. All claims including those for neglic consequental damages, including without limit affiliates or successors arising out of or relate
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Travis Casey     PIL TO:     PIL TO:       V. Piece Street     State: NM     Zip:     89220     Attm:     Company:     Spur       5949     Fax #.     Address:     Address	015	LING		PR	MATRIX		1P.			FOR LAB USE ONLY
Image:	;			Fax #					Travis Casev	Sampler Name:
Travis Casey         P.O. #:         ANALYSIS           Y. Pierce Street         State: NM         Zip:         8220         Attn:         Kathy Purvis           5949         Fax #:         Address:         Address: </td <td></td> <td></td> <td>9#</td> <td>Phone</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Project Location: Eddy</td>			9#	Phone						Project Location: Eddy
Terracon         BILL TO:         ANALYSIS           : Travis Casey         P.O. #:         P.O. #:         P.O. #:           V. Pierce Street         State: NM         Zip:         8220         Attn:         Kathy Purvis           5949         Fax #:         Address:         Address:         Address:         Address:				State:					Osage Bovd Yaso	Project Name:
Terracon     BILL TO:     ANALYSIS       : Travis Casey     P.O. #:     P.O. #:       V. Pierce Street     State: NM Zip: 88220     Company: Spur       5949     Fax #:     Address:				City:	ur	Sp	wner:	Project (	KH227019	Project #:
Terracon     BILL TO:     ANALYSIS       : Travis Casey     P.O. #:     P.O. #:       V. Pierce Street     State: NM Zip: 88220     Company: Spur       V. Pierce Street     State: NM Zip: 88220     Attn:			SS:	Addre				Fax #:		Phone #: 5756895949
Terracon     BILL TO:     ANALYSIS       : Travis Casey     P.O. #:     P.O. #:       V. Pierce Street     Company: Spur		hy Purvis	Kat	Attn:	20			State: N		City: Carlsbad
Terracon BILL TO: ANALYSIS P.O. #:			Spur	Comp					treet	Address: 4526 W. Pierce S
Terracon BILL TO: ANALYSIS				P.O. #					asey	Project Manager: Travis Ca
			BILL TO					Terracon		Company Name:
									oratories	Lab
	CHAIN-OF-CUSTODY AND ANALYSIS REQUEST	1-OF-CUSTO	CHAIN						RUINAL	CA

# APPENDIX E – TERRACON STANDARD OF CARE, LIMITATION, AND RELIANCE

#### Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed with you, Spur Energy Partners, as reflected in our proposal.

#### **Additional Scope Limitations**

The development of this Amended RAP is based upon information provided by the Client and Terracon's remediation and construction services line. Such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable, or not present during these services. We cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those by information provided by the Client. The data, interpretations, findings, and recommendations are based solely upon reformation executed within the scope of these services.

#### Reliance

This report has been prepared for the exclusive use of Spur Energy Partners, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of Spur Energy Partners and Terracon. Any unauthorized distribution or reuse is at Spur Energy Partners sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal and Spur Energy Partners and Terracon's Master Services Agreement. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to Spur Energy Partners and all relying parties unless otherwise agreed in writing. District I

1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720 District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV 1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS

Action 363070

QUESTIO	NS
Operator:	OGRID:
Spur Energy Partners LLC	328947
9655 Katy Freeway	Action Number:
Houston, TX 77024	363070
	Action Type:
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

#### QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2102253370
Incident Name	NAPP2102253370 OSAGE BOYD YESO BATTERY @ 30-015-21355
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received
Incident Well	[30-015-21355] OSAGE BOYD COM #001

#### Location of Release Source

Please answer all the questions in this group.	
Site Name	OSAGE BOYD YESO BATTERY
Date Release Discovered	01/22/2021
Surface Owner	Private

#### 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	Νο
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

Natural Gas Flared (Mcf) Details

 

 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: Equipment Failure | Valve | Produced Water | Released: 21 BBL | Recovered: 10 BBL | Lost: 11 BBL.

 Is the concentration of chloride in the produced water >10,000 mg/l
 No

 Condensate Released (bbls) Details
 Not answered.

 Natural Gas Vented (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)
 A tank overflowed due to the failure of a love joy coupling that broke on the water transfer pump, therfore the pump could not pump down the fluids.

Not answered.

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV 1220 S. St Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3470 Fax: (505) 476-3462

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

Page 262 of 268

QUESTIONS, Page 2

Action 363070

**QUESTIONS** (continued)

Operator:	OGRID:
Spur Energy Partners LLC	328947
9655 Katy Freeway	Action Number:
Houston, TX 77024	363070
	Action Type:
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

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	Unavailable.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial	Response
---------	----------

The responsible party must undertake the following actions immediately unless they could create a s	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	N/A
	iation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of ted or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of evaluation in the follow-up C-141 submission.
to report and/or file certain release notifications and perform corrective actions for releated to a construction of the OCD does not relieve the operator of liability should their operations have failed to a	knowledge and understand that pursuant to OCD rules and regulations all operators are required ases which may endanger public health or the environment. The acceptance of a C-141 report by adequately investigate and remediate contamination that pose a threat to groundwater, surface t does not relieve the operator of responsibility for compliance with any other federal, state, or
I hereby agree and sign off to the above statement	Name: Katherine Purvis Title: EHS Coordinator Email: katherine.purvis@spurenergy.com Date: 07/11/2024

District I

1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720 District II

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#### District III

Operator

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District IV 1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS, Page 3

Action 363070

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 QUESTIONS (continued)

 Spur Energy Partners LLC
 0GRID:

 9655 Katy Freeway
 328947

 Houston, TX 77024
 Action Number:

 363070
 363070

Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

#### 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 75 and 100 (ft.)	
What method was used to determine the depth to ground water	U.S. Geological Survey	
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 1 and 5 (mi.)	
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)	
An occupied permanent residence, school, hospital, institution, or church	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 1 and 5 (mi.)	
Any other fresh water well or spring	Between 1 and 5 (mi.)	
Incorporated municipal boundaries or a defined municipal fresh water well field	Between 1 and 5 (mi.)	
A wetland	Between 1 and 5 (mi.)	
A subsurface mine	Between 1 and 5 (mi.)	
An (non-karst) unstable area	Between 1000 (ft.) and ½ (mi.)	
Categorize the risk of this well / site being in a karst geology	Medium	
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 CI B) 3340 TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M) 8592 GRO+DRO (EPA SW-846 Method 8015M) 7709 BTEX (EPA SW-846 Method 8021B or 8260B) 53.9 (EPA SW-846 Method 8021B or 8260B) Benzene 0.2 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 11/10/2022 On what date will (or did) the final sampling or liner inspection occur 05/31/2024 On what date will (or was) the remediation complete(d) 05/31/2024 What is the estimated surface area (in square feet) that will be reclaimed 6000 What is the estimated volume (in cubic yards) that will be reclaimed 1000 What is the estimated surface area (in square feet) that will be remediated 6000 What is the estimated volume (in cubic yards) that will be remediated 300 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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# **State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. Santa Fe, NM 87505

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QUESTIONS, Page 4

Action 363070

QUEST	ONS (continued)
Operator: Spur Energy Partners LLC	OGRID: 328947
9655 Katy Freeway	Action Number:
Houston, TX 77024	363070
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)
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	LEA LAND LANDFILL [fEEM0112342028]
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 el which includes the anticipated timelines for beginning and completing the remediation.	fforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC
to report and/or file certain release notifications and perform corrective actions for releat the OCD does not relieve the operator of liability should their operations have failed to a	knowledge and understand that pursuant to OCD rules and regulations all operators are required ases which may endanger public health or the environment. The acceptance of a C-141 report by adequately investigate and remediate contamination that pose a threat to groundwater, surface t does not relieve the operator of responsibility for compliance with any other federal, state, or
I hereby agree and sign off to the above statement	Name: Katherine Purvis Title: EHS Coordinator Email: katherine.purvis@spurenergy.com Date: 07/11/2024
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accu- significantly deviate from the remediation plan proposed, then it should consult with the division to a	ordance with the physical realities encountered during remediation. If the responsible party has any need to letermine if another remediation plan submission is required.

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

Action 363070

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QUESTIONS (continued)		
Operator: Spur Energy Partners LLC	OGRID: 328947	
9655 Katy Freeway Houston, TX 77024	Action Number: 363070	
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)	
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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# **State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division** 1220 S. St Francis Dr. Santa Fe, NM 87505

QUESTIONS, Page 6

Action 363070

QUESTIONS (continued)		
Operator:	OGRID:	
Spur Energy Partners LLC	328947	
9655 Katy Freeway	Action Number:	
Houston, TX 77024	363070	
	Action Type:	
	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)	

QUESTIONS

Sampling Event Information		
Last sampling notification (C-141N) recorded	348742	
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	05/31/2024	
What was the (estimated) number of samples that were to be gathered	1	
What was the sampling surface area in square feet	200	

**Remediation Closure Request** 

Only answer the questions in this group if seeking remediation closure for this release because all re	emediation steps have been completed.
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	6000
What was the total volume (cubic yards) remediated	300
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	6000
What was the total volume (in cubic yards) reclaimed	1000
Summarize any additional remediation activities not included by answers (above)	N/A
	closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of
to report and/or file certain release notifications and perform corrective actions for release the OCD does not relieve the operator of liability should their operations have failed to a	knowledge and understand that pursuant to OCD rules and regulations all operators are required ases which may endanger public health or the environment. The acceptance of a C-141 report by adequately investigate and remediate contamination that pose a threat to groundwater, surface t does not relieve the operator of responsibility for compliance with any other federal state or

ocal laws and/or regulations. The re	sponsible party acknowledges the	ey must substantially restor	e, reclaim, and re-ve	getate the impacte	d surface area	a to the condition	is that existe	эd
prior to the release or their final land	use in accordance with 19.15.29.	13 NMAC including notifica	tion to the OCD wher	n reclamation and i	re-vegetation a	are complete.		
							-	

	Name: Katherine Purvis
I hereby agree and sign off to the above statement	Title: EHS Coordinator
Thereby agree and eight of to the above statement	Email: katherine.purvis@spurenergy.com
	Date: 07/11/2024

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

QUESTIONS, Page 7

Action 363070

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**QUESTIONS** (continued) Operator: OGRID: Spur Energy Partners LLC 328947 9655 Katy Freeway Action Number: Houston, TX 77024 363070 Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure) QUESTIONS E

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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

CONDITIONS

Action 363070

Operator: OGRID: Spur Energy Partners LLC 328947 9655 Katy Freeway Action Number: Houston, TX 77024 363070 Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

#### CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	This Remediation Closure Report is approved. Areas reasonably needed for production or subsequent drilling operations will need to be reclaimed and revegetated as soon as they are no longer reasonably needed. A report for reclamation and revegetation will need to be submitted and approved prior to this incident receiving the final status of "Restoration Complete".	8/2/2024
scott.rodgers	The reclamation report will need to include: Executive Summary of the reclamation activities; Scaled Site Map including sampling locations; Analytical results including, but not limited to, results showing that any remaining impacts meet the reclamation standards and results to prove the backfill is non-waste containing; At least one (1) representative 5-point composite sample will need to be collected from the backfill material that will be used for the reclamation of the top four feet of the excavation. OCD reserves the right to request additional sampling if needed; pictures of the backfilled areas showing that the area is back, as nearly as practical, to the original condition or the final land use and maintain those areas to control dust and minimize erosion to the extent practical; pictures of the top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater; and a revegetation plan.	8/2/2024