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

State of New Mexico Energy Minerals and Natural Resources Department

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

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

Incident ID	nAPP2128544986
District RP	
Facility ID	
Application ID	

## **Release Notification**

## **Responsible Party**

Responsible Party Marathon Oil Permian LLC	OGRID 372098
Contact Name Melodie Sanjari	Contact Telephone 575-988-8753
Contact email msanjari@marathonoil.com	Incident # (assigned by OCD)
Contact mailing address 4111 S. Tidwell Rd., Carlsbad, NM 8220	

## **Location of Release Source**

-104.17061069

County

Latitude	32.21021092	Longitude	-104.17061069	
(NAD 83 in decin			grees to 5 decimal places)	
Site Nan	ne: BLACK RIVER 15	5 10 STATE COM X #004H	Site Type Oil & Gas Facility	

Longitude

Range

27E

Site Name: BLACK RIVER 15 10 STATE COM X #004H	Site Type Oil & Gas Facility
Date Release Discovered: 10/11/2021	API# (if applicable) 30-015-43959

1	13	243	2/12	Eddy	
Surface Owner	r: 🔀 State	☐ Federal ☐ Ti	ribal 🗌 Private (1	Vame:	

## Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below) Crude Oil Volume Released (bbls) Volume Recovered (bbls) Produced Water Volume Released (bbls) 45.3 Volume Recovered (bbls) 50 bbl. PW & Rainwater Is the concentration of dissolved chloride in the Yes No produced water >10,000 mg/l? Condensate Volume Released (bbls) Volume Recovered (bbls) Natural Gas Volume Released (Mcf) Volume Recovered (Mcf) Other (describe) Volume/Weight Released (provide units) Volume/Weight Recovered (provide units)

#### Cause of Release

Unit Letter

Section

Township

245

A corroded 3/4" nipple on the wye strainer resulted in 45.3 bbl. of produced water to be released inside of the lined, secondary containment, 1.14 bbl. of which released to the SLO ROW to the west of the facility. All fluid was recovered throughout the evening and the volume includes a portion of standing fluid within the recirculating pump's secondary containment that's not associated with this incident (vac ticket attached). During a facility inspection, a potential failure in the liner was noted near the point of release. Details will be provided in a remediation plan and submitted to both the NM OCD and SLO.

Received by OCD: 12/21/2021 11539:14AM State of New Mexico Page 2 Oil Conservation Division

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Incident ID	nAPP2128544986
District RP	
Facility ID	
Application ID	

Was this a major release as defined by	If YES, for what reason(s) does the respons Volume	ible party consider this a major release?
19.15.29.7(A) NMAC?		
⊠ Yes □ No		
If VEC was immediate no	otice given to the OCD? By whom? To who	m? When and by what means (phone, email, etc)?
	2/2021 and notice provided to SLO.	m: when and by what means (phone, eman, etc):
	Initial Res	sponse
The responsible p	varty must undertake the following actions immediately t	unless they could create a safety hazard that would result in injury
The source of the rele	ease has been stopped.	
The impacted area ha	s been secured to protect human health and th	ne environment.
Released materials ha	ive been contained via the use of berms or dil	xes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed and	managed appropriately.
If all the actions described	d above have <u>not</u> been undertaken, explain wl	hy:
		mediation immediately after discovery of a release. If remediation forts have been successfully completed or if the release occurred
		ease attach all information needed for closure evaluation.
		est of my knowledge and understand that pursuant to OCD rules and
public health or the environr	nent. The acceptance of a C-141 report by the OC	cations and perform corrective actions for releases which may endanger CD does not relieve the operator of liability should their operations have
		to groundwater, surface water, human health or the environment. In sponsibility for compliance with any other federal, state, or local laws
and/or regulations.		
Printed Name: Mel	odie Sanjari	Title: Environmental Professional
Signature:Melod	lie Sanjari	Date: 10/12/2021
email: <u>msanjari@marat</u>	thonoil.com	Telephone: <u>575-988-8753</u>
OCD Only		
Received by: Ramona I	Marcus	Date: 10/13/2021
J		

# 11:28 AM

# Page 3 of 269

# Spill Estimator Tool



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ΣE	С	D	E	F	G	Н	1	
Ç.	pill Calculati	on Tool					Mara	atho
2	oni Calculati	011 1001						
Sta	nding Liquid Inputs:						NAPP212854498	36
T				Avg. Liquid		Total Volume	Water Volume	Oil
Ш		Length (ft.)	Width (ft.)	Depth (in.)	% Oil	(bbls)	(bbls)	
Ц	Rectangle Area #1	145	35	0.75		56.49	56.49	
Ц	Rectangle Area #2					0.00	0.00	
Ц	Rectangle Area #3					0.00	0.00	
Ш	Rectangle Area #4		į.			0.00	0.00	
Ц	Rectangle Area #5					0.25	0.25	
П	Rectangle Area #6				El H	0.00	0.00	
II:	Tank Displacement		1128	0.75		12.56		
	Tank Displacement		a a		8	0.00	0.00	
I					Liquid Volume:	44.19	i i	
							j.	
Γ	Saturated Soil		Soil Type:	Gravel Loam				
П				Avg. Saturated		Total Volume	Water Volume	Oil
		Length (ft.)	Width (ft.)	Depth (in.)	% Oil	(bbls)	(bbls)	3.0
İ	Rectangle Area #1	35	2	1	0%	0.15	0.15	
Î	Rectangle Area #2	100	2	1	0%	0.42	0.42	
İ	Rectangle Area #3	9	15	1	0%	0.28	0.28	
1	Rectangle Area #4	6	10	1	0%	0.12	0.12	
İ	Rectangle Area #5	4	6	1	0%	0.05	0.05	
t	Rectangle Area #6	10	4	1	0%	0.08	0.08	
f	Rectangle Area #7	10	2	1		0.04	0.04	
1	Rectangle Area #8		-	*		0.00	0.00	
t	cetaligie Alea no				aturated Volume	1.14	0.00	
t					aturated volume	2.27		
İ	Volume F	Recovered and no	t included in Stand	ling Liquid Inputs:	W 011	Total Volume (bbls)	Water Volume (bbls)	Oil
1					% Oil	(mais)	(DDIS)	
Ť								
İ						Total Volume (bbls)	Water Volume (bbls)	Oil
t				Total Spi	ill Volume (bbls):	45.33	0.00	
t				1018139	rolulle (bbis).	72.22	0.00	
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45

Codigo CC# 29503606

ompany man Keit Dziokonski

Work done by: Josue Caro

Unit #: 92

Accepted:

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

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

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 55437

#### **CONDITIONS**

Operator:	OGRID:
MARATHON OIL PERMIAN LLC	372098
990 Town & Country Blvd. Houston, TX 77024	Action Number: 55437
	Action Type: [C-141] Release Corrective Action (C-141)

#### CONDITIONS

Created By	Condition	Condition Date
rmarcus	None	10/13/2021

e of New Mexico

Incident ID	nAPP2128544986
District RP	
Facility ID	
Application ID	

# **Site Assessment/Characterization**

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

What is the shallowest depth to groundwater beneath the area affected by the release?	51-100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☑ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☑ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☑ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☑ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☑ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☑ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☑ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☑ No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	☐ Yes ☑ No
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and ver contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.	tical extents of soil
Characterization Report Checklist: Each of the following items must be included in the report.	
<ul> <li>✓ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wel</li> <li>✓ Field data</li> <li>✓ Data table of soil contaminant concentration data</li> <li>✓ Depth to water determination</li> <li>✓ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release</li> </ul>	<b>l</b> s.
<ul> <li>✓ Boring or excavation logs</li> <li>✓ Photographs including date and GIS information</li> <li>✓ Topographic/Aerial maps</li> </ul>	

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

☐ Laboratory data including chain of custody

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Incident ID	nAPP2128544986
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.				
Printed Name: Melodie Sanjari	Title: Environmental Professional			
Signature:Melodie Sanjari	Date: 12/20/2021			
email: msanjari@marathonoil.com	Telephone: 575-988-8753			
OCD Only				
Received by:	Date:			

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Incident ID	nAPP2128544986
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Facility ID	
Application ID	

# **Remediation Plan**

Remediation Plan Checklist: Each of the following its	ems must be included in	the plan.	
Detailed description of proposed remediation technic Scaled sitemap with GPS coordinates showing deline Estimated volume of material to be remediated Closure criteria is to Table 1 specifications subject to Proposed schedule for remediation (note if remediated	eation points o 19.15.29.12(C)(4) NM		approval is required)
Deferral Requests Only: Each of the following items	must be confirmed as po	urt of any request fo	r deferral of remediation.
Contamination must be in areas immediately under of deconstruction.	or around production equ	nipment where remed	diation could cause a major facility
✓ Extents of contamination must be fully delineated.			
Contamination does not cause an imminent risk to he	uman health, the environ	nment, or groundwate	er.
I hereby certify that the information given above is true a rules and regulations all operators are required to report which may endanger public health or the environment. I liability should their operations have failed to adequately surface water, human health or the environment. In additional responsibility for compliance with any other federal, state	and/or file certain release. The acceptance of a C-14 y investigate and remediation, OCD acceptance of te, or local laws and/or re-	e notifications and p 41 report by the OCI ate contamination the f a C-141 report doe egulations.	erform corrective actions for releases D does not relieve the operator of at pose a threat to groundwater, s not relieve the operator of
Printed Name: Melodie Sanjari	Title: Er	nvironmental Pr	ofessional
Signature: Melodie Sanjari	Γ	Date: 12/20/2021	
email: msanjari@marathonoil.com	Telephon	e: <u>575-988-8753</u>	
OCD Only			
Received by:	Date:		
☐ Approved with Attached Co	onditions of Approval	☐ Denied	☐ Deferral Approved
Signature:			_
Chad Hensley		02/	/16/2022 ×
Chad Heno		02	/16/2022

wsp

WSP USA

508 West Stevens Street Carlsbad, NM 88220 575.887.0101

December 20, 2021

District II New Mexico Oil Conservation Division 811 South First Street Artesia, New Mexico 88210

**RE:** Deferral Request

Black River 15 10 State Com X #004H Incident Number nAPP2128544986 Eddy County, New Mexico

To Whom It May Concern:

WSP USA Inc. (WSP), on behalf of Marathon Oil Permian, LLC. (Marathon), is pleased to present the following Deferral Request detailing site assessment, soil sampling, and excavation activities at the Black River 15 10 State Com X #004H (Site) located in Unit P, Section 15, Township 24 South, Range 27 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, soil sampling and excavation activities was to address impacts to soil following a release of produced water at the Site. Based on field activities, delineation and excavation activities and results of soil sampling events, Marathon is submitting this Deferral Request, describing remediation and delineation activities that have occurred and requesting deferral of final remediation of Incident Number nAPP2128544986 until the equipment in the affected area is removed during other operations, or when the well or facility is plugged or abandoned, whichever comes first.

#### **RELEASE BACKGROUND**

On October 11, 2021, a corroded ¾-inch nipple on the wye strainer failed and resulted in the release of approximately 45.3 barrels (bbls) of produced water into the lined, secondary containment and adjacent Right-of-Way (ROW). Approximately 50 bbls of produced water and rainwater were recovered via vacuum truck. Marathon reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Form C-141 on October 12, 2021 and was assigned Incident Number nAPP2128544986.

### SITE CHARACTERIZATION

WSP characterized the Site according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be between 51 and 100 feet below ground surface (bgs) based on the nearest groundwater well data. The nearest permitted water well with depth to water data is New Mexico Office of the State Engineer (NMOSE) file number



C-01452, located approximately 0.66 miles southwest of the Site. The NMOSE water well has a reported depth to groundwater of 70 feet bgs and a total depth of 95 feet bgs. The referenced well record is included as Attachment 1. While depth to groundwater appears to be between 51 100 feet bgs for the Site, the well location does not meet the NMOCD interpretated guidance of estimation of depth to water.

The closest continuously flowing or significant watercourse to the Site is a stream/river, located approximately 9,034 feet north of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area). Site receptors are identified on Figure 1.

#### **CLOSURE CRITERIA**

There do not appear to be any sensitive receptors related to the Site; however, there are no water wells within 0.5-mile of the Site and therefore, the follow NMOCD Table 1 Closure Criteria apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH): 100 mg/kg
- Chloride: 600 mg/kg

## SITE ASSESSMENT AND LINER INSPECTION

On October 14, 2021, WSP personnel visited the Site to conduct site assessment activities and evaluate the release extent based on information provided on the Form C-141 and visual observations. WSP reviewed and verified the Form C-141 incident description (release source and release location) with visual soil impacts and confirmed that the release impacted areas to the north and southwest areas outside containment. WSP visually inspected the lined secondary containment for any signs of holes or tears that would act as a conduit to subsurface soil. The subsequent visual inspection of liner integrity determined the liner was not in working condition. Based on the site assessment and visual observations, delineation activities appeared to be warranted to investigate potential soil impacts related to the produced water release. Photographic documentation of the release and liner assessment is provided in Attachment 2.



#### **INITIAL DELINEATION ACTIVITIES**

On October 21, 2021, WSP personnel conducted delineation activities to confirm the presence or absence of impacted soils as a result of the impaired liner. Utilizing a hand auger, WSP installed one delineation soil sample within the breach area (BHO1) and areas where fluids escaped outside containment (BH02 and BH03). Delineation activities were directed by field screening soil samples for volatile aromatic hydrocarbons using a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. A total of two soil samples were collected from each of the borehole locations: the sample with the highest observed field screening concentrations (approximately 1 foot bgs) and the greatest depth (ranging from 4 to 7 feet bgs). The delineation soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler initials, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C), under strict chain-of-custody (COC) procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH following EPA Method 8015M/D; and chloride following EPA Method 300.0. The delineation sample locations were mapped utilizing a handheld GPS unit and are presented on Figure 2. Field screening results and observations for the boreholes were recorded on lithologic/soil sampling logs and are presented in Attachment 3.

#### CONTINUED DELINEATION AND EXCAVATION ACTIVITIES

During November 17 and 19, 2021, WSP personnel returned to the site to oversee additional delineation activities associated with BH01 to determine chloride impacts to be left in place and additional areas outside of the containment to investigate lithology and confirm lateral delineation through potholes (PH01 through PH06) through the use of a track hoe. Delineation activities were directed by field screening soil samples for volatile aromatic hydrocarbons and chloride. A total of two soil samples were collected from each of the pothole locations: the sample with the highest observed field screening concentrations (ranging from 1 foot to 7.5 bgs) and the greatest depth (approximately 11 feet bgs). The delineation sample locations were mapped utilizing a handheld GPS unit and are presented on Figure 2. Field screening results and observations for the boreholes were recorded on lithologic/soil sampling logs and are presented in Attachment 3.

Utilizing heavy equipment, the southwest impacted area outside containment was excavated to a depth consistent with laboratory analytical data (4.5 feet bgs). Excavation continued laterally until sidewall samples were compliant with the Closure Criteria. Excavation to the north of the containment was restricted to the impacted areas adjacent to the pipelines and would not be able to extend beyond 4 feet bgs; therefore, the area was safely excavated to a depth of approximately 0.5 to 1 foot bgs to remove surface staining via hydrovac and would be included in the deferral estimate. A total of 80 cubic yards was removed during excavation activities and disposed at an R360 disposal facility under Marathon approved manifests.



Following removal of impacted soil, WSP collected 5-point composite soil samples every 200 square feet. The 5-point composite soil samples were collected by depositing five aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Confirmation soil samples SW01 through SW03 and FS01 through FS05 were collected from the southwest excavation; confirmation sample FS06 was collected from the northern excavation to characterize impacts left in place. The excavation sample locations were mapped utilizing a GPS unit and are depicted on Figure 3.

The delineation and excavation soil samples were collected, handled, and analyzed as previously described.

#### LABORATORY ANALYTICAL RESULTS

Based on laboratory analytical results, the vertical extent of impacted soil does not exceed 7.5 feet bgs inside the containment and 4 feet bgs in the area north of the containment. Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria. Laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were compliant with the Closure Criteria in the excavation samples collected from the southwestern excavation. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are provided in Attachment 4.

#### **DEFERRAL REQUEST**

An estimated 1,821 cubic yards of impacted soil remain in place beneath the now repaired lined secondary containment, based on a laboratory analytical data of BH01 at 7.5 feet bgs and 25 cubic yards north of the containment based on laboratory analytical data of BH03 at 4 feet bgs. All deferral areas are located on the well pad. The release is delineated laterally to the north by soil samples PH03 and PH06, to the east by soil samples PH01 and PH02, to the south by soil sample PH04 and to the west by soil samples SW02, SW03, PH05 and PH06. The deferral request area is shown on Figure 3.

Marathon requests to complete remediation of residual soil impacts during any major future well pad construction/alteration or final plugging and abandonment, whichever occurs first. WSP and Marathon do not believe deferment will result in imminent risk to human health, the environment, or groundwater. Based on the additional data collected as described in this report, impacts have been fully delineated, and no further soil removal can occur safely at this time. Marathon requests deferral of final remediation for Incident Number nAPP2128544986.

If you have any questions or comments, please do not hesitate to contact Mr. Daniel Moir at (303) 887-2946.



Sincerely,

WSP USA Inc.

Joseph S. Hernandez

Associate Consultant, Geologist

Daniel R. Moir, P.G. Lead Consultant, Geologist

cc: Melodie Sanjari, Marathon

## Attachments:

Figure 1 Site Location Map

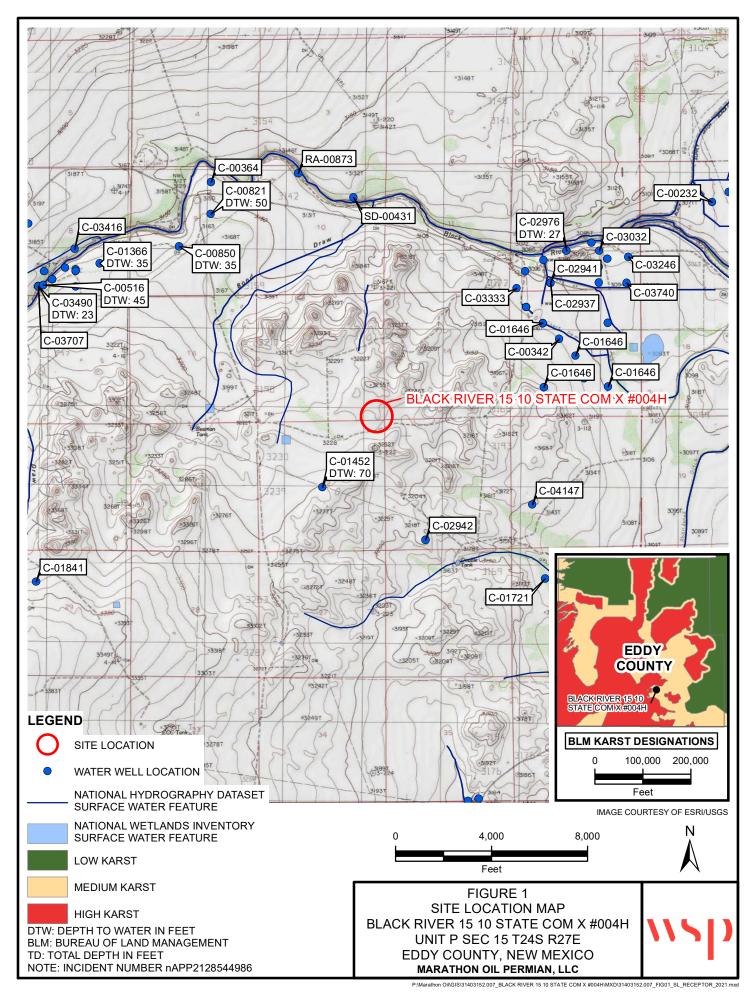
Figure 2 Delineation Soil Sample Locations Figure 2 Excavation Soil Sample Locations

Table 1 Soil Analytical Results
Attachment 1 Referenced Well Record

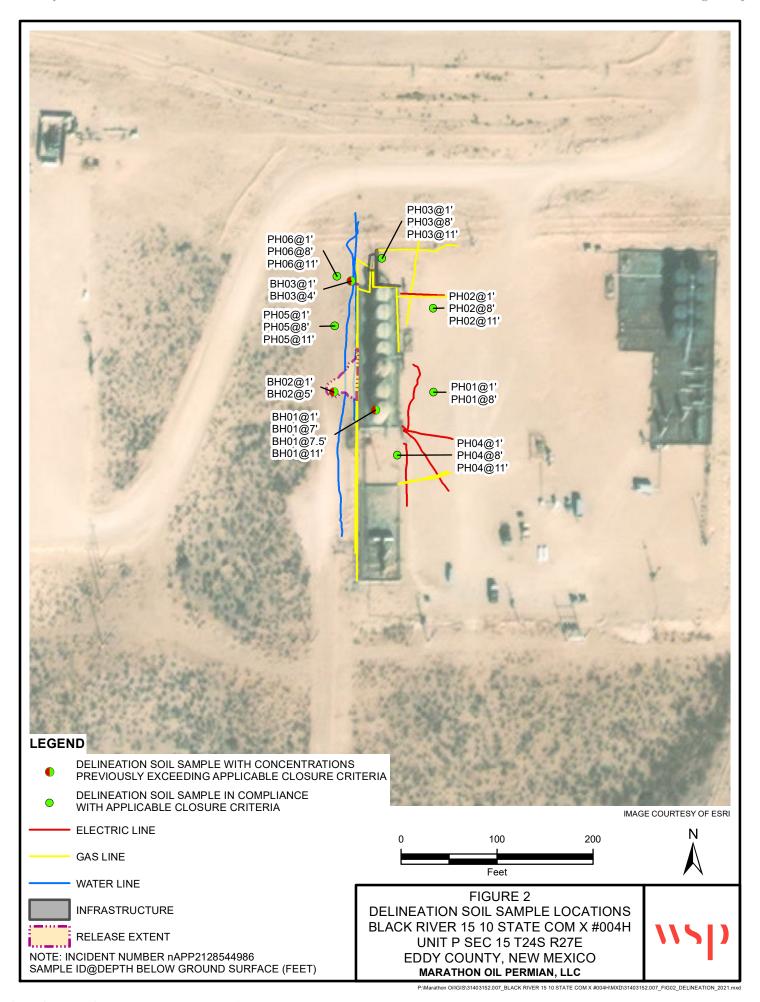
Attachment 2 Photographic Log

Attachment 3 Lithologic/Sampling Log

Attachment 4 Laboratory Analytical Reports



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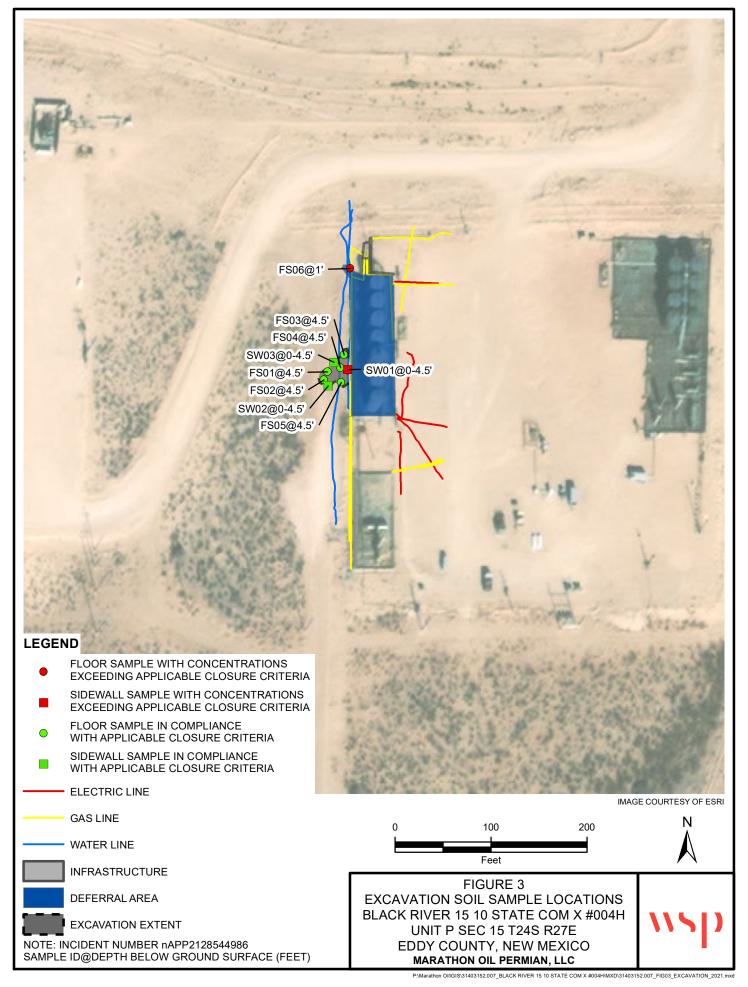


Table 1

Soil Analytical Results
Black River 15 10 State Com X #004H
Incident Number nAPP2128544986
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Clo	osure Criteria (NMA	AC 19.15.29)	10	50	NE	NE	NE	NE	100	600
Delineation Soil Sam	ples									
BH01	10/21/2021	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	9,430
BH01	10/21/2021	7	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	729
BH01	11/17/2021	7.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	540
BH01	11/17/2021	11	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	354
BH02	10/21/2021	1	<0.00202	<0.00404	<50.0	<50.0	<50.0	<50.0	<50.0	5,580
BH02	10/21/2021	5	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	<49.8	205
BH03	10/21/2021	1	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<49.9	4,910
BH03	10/21/2021	4	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	174
PH01	11/17/2021	1	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	275
PH01	11/17/2021	8	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	<49.8	379
PH02	11/19/2021	1	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	44.2
PH02	11/19/2021	8	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	<49.8	142
PH02	11/19/2021	11	<0.00202	<0.00404	<49.9	<49.9	<49.9	<49.9	<49.9	43.7
PH03	11/19/2021	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	54.9
PH03	11/19/2021	8	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	74.3
PH03	11/19/2021	11	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	136
PH04	11/19/2021	1	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	126
PH04	11/19/2021	8	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	85.5
PH04	11/19/2021	11	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	272

Table 1

### Soil Analytical Results Black River 15 10 State Com X #004H Incident Number nAPP2128544986 Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Clo	sure Criteria (NMA	AC 19.15.29)	10	50	NE	NE	NE	NE	100	600
PH05	11/19/2021	1	<0.00202	<0.00404	<50.0	<50.0	<50.0	<50.0	<50.0	56.9
PH05	11/19/2021	8	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	121
PH05	11/19/2021	11	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	<49.9	38.0
PH06	11/19/2021	1	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	<49.8	<5.00
PH06	11/19/2021	8	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	48.2
PH06	11/19/2021	11	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	337
Excavation Soil Samp	ples									
FS01	11/18/2021	4.5	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	19.3
FS02	11/18/2021	4.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	29.4
FS03	11/18/2021	4.5	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	196
FS04	11/18/2021	4.5	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	78.7
FS05	11/18/2021	4.5	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	47.4
SW01	11/18/2021	0 - 4.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	2,350
SW02	11/18/2021	0 - 4.5	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	20.5
SW03	11/18/2021	0 - 4.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	22.7

ft - feet/foot

mg/kg - milligrams per kilograms

BTEX - benzene, toluene, ethylbenzene, and total xylenes

TPH - total petroleum hydrocarbons

DRO - diesel range organics

GRO - gasoline range organics

ORO - motor oil range organics

NMOCD - New Mexico Oil Conservation Division

NMAC - New Mexico Administrative Code

< - indicates result is less than the stated laboratory method practical quantitation limit

NE - Not Established

 $\textbf{BOLD -} indicates \ results \ exceed \ the \ higher \ of \ the \ background \ sample \ result \ or \ applicable \ regulatory \ standard$ 

Greyed data represents samples that were excavated



# New Mexico Office of the State Engineer

# **Point of Diversion Summary**

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

**POD Number** Well Tag

Q64 Q16 Q4 Sec Tws Rng

X

C 01452

22 24S 27E 577435 3563175\*

**Driller License:** 30

**Driller Company:** 

BARRON, EMMETT

**Driller Name: Drill Start Date:**  BARRON, EMMETT

07/21/1971

**Drill Finish Date:** 

07/23/1971

Plug Date:

Log File Date:

08/02/1971

**PCW Rcv Date:** 

Shallow Source:

**Pump Type:** 

Pipe Discharge Size:

**Estimated Yield:** 

**Casing Size:** 

7.00

Depth Well:

95 feet Depth Water: 70 feet

Water Bearing Stratifications:

Top Bottom Description

60

70 Sandstone/Gravel/Conglomerate

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

12/17/21 9:00 AM

POINT OF DIVERSION SUMMARY

<sup>\*</sup>UTM location was derived from PLSS - see Help



PHOTOGRAPHIC LOG				
Marathon Oil Permian, Black River 15 10 State Com X #004H 31403152.007				
LLC.	Eddy County, NM			

Photo No.	Date	
1	October 14, 2021	
V:		

View of the southwest release area outside containment during the site assessment.



Photo No.	Date
2	October 14, 2021

View of the breached area (BH01) inside containment.





PHOTOGRAPHIC LOG									
Marathon Oil Permian,	Black River 15 10 State Com X #004H	31403152.007							
LLC.	Eddy County, NM								

Photo No.	Date
3	November 17,
3	2021
W. CDII	1

View of BH01 area during delineation activities.



Photo No.	Date
4	November 17,
4	2021
V. C.1	1

View of the southwest excavation during remediation activities.



\\'	LITH	)	Car	08 West S Isbad, Ne	Stevens S w Mexico	Sample ID:  BH01  11/17/2021  Site Name: Black River 15 10 State Com X #004H  Incident Number: nAPP2128544986  WSP Job Number: 31403152.007  Logged By: Luis Del Val  Method: Back Hoe	
		0200	7 001	Field Scre	ening:		Hole Diameter: Total Depth:
nents: Mois	ture cont	ent "M"	- Moist; "D"	- Dry; BDL	- Below D	etection Li	Not Applicable 11 feet Limit of HACH Low Range Chloride Testing Strips (<116 ppm)
de testing	performed	d with 1	:4 dilution of	soil to dist	illed water		
Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Deptin	USCS/Rock Symbol	Lithology/Remarks
					0		
140	0.1	No	PH01	1 <u>-</u>	1	SP-SC	brown, dry, poorly-graded SAND (m.) with clay and gravel, low plasticity, low cohesiveness, no odor
BDL	0.2	No		2	2		
				- - - -	3		
260	0.3	No		4	4	CCHE	brown, dry, moderately cemented CALICHE, sandy (c.) matrix, no odor
260	0.0	No		6	6	SP	red-brown, dry, poorly-graded SAND (m.), no plasticity, no
				- - -	7		cohesiveness, no odor
228	0.3	No	PH01	8	8	SP-SM	red-brown, dry, poorly-graded SAND (m.) with silt and gravel, no plasticity, no cohesiveness, no odor
				- - -	9		
				- -	10		
160	0.1	No		11	11	SP-SM	/ SAA
ì	nents: Moiside testing	260 0.3  228 0.3	260 0.0 No  228 0.3 No	Car   Car	LITHOLOGIC / SOIL SAMPI  Ong: 0476, -104.171468 Pield Scrip 140	LITHOLOGIC / SOIL SAMPLING LO  Dong: O476, -104.171468 Pield Screening: Chloride, PID Piology	LITHOLOGIC / SOIL SAMPLING LOG  Deg: O476, -104.171468

	\\'	LITH	) OLOG	5 Car SIC / SOIL	08 West S Isbad, Ne	w Mexico	Sample ID:  PH02  Date:  11/19/2021  Site Name:Black River 15 10 State Com X #004H  Incident Number: nAPP2128544986  WSP Job Number: 31403152.007  Logged By: Anna Byers  Method: Back Hoe	
Lat/Lo					Field Scre	ening:		Hole Diameter: Total Depth:
Comn		sture cont				- Below D		Not Applicable 11 feet Limit of HACH Low Range Chloride Testing Strips (<116 ppm)
Chlori	de testing	performed	d with 1	:4 dilution of	soil to dist	illed water		ection factor included; SAA - Same as Above
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
D	116	0.1	No	PH02	1 _	1 2		brown, dry, poorly-graded SAND (m.) with clay and gravel, low plasticity, low cohesiveness, no odor
D D	168 260	0.0	No No		3 _	3	CCHE	E brown, dry, moderately cemented CALICHE, sandy (c.) matrix,
					-	5		no odor
D	260	0.1	No		6 _	7	SP	red-brown, dry, poorly-graded SAND (m.), no plasticity, no cohesiveness, no odor
D	140	0.1	No	PH02	8 -	9	SP-SM	red-brown, dry, poorly-graded SAND (m.) with silt and gravel, no plasticity, no cohesiveness, no odor
D	BDL	0.1	No	PH02	11 _	11	SP-SM	1 SAA

	\\'		)	5 Car SIC / SOIL	08 West S Isbad, Ne	w Mexico	WSP Job Number: 31403152.007		
Lat/Lo			JLUG	11C / 3OIL	Field Scre			Logged By: Anna Byers Method: Back Hoe Hole Diameter: Total Depth:	_
	0866, -104		ent "M"	- Moist: "D"	Chloride,		etection Li	Not Applicable 11 feet Limit of HACH Low Range Chloride Testing Strips (<116 ppm)	
							, no correc	control of the print that the print the print that the print the print that the print the p	
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	(ft bgs)	USCS/Rock Symbol	Lithology/Remarks	
D D	BDL BDL	0.2	No No	PH03	1 _	1 2		brown, dry, poorly-graded SAND (m.) with clay and gravel, low plasticity, low cohesiveness, no odor	
D	BDL	0.1	No		4	4 5	CCHE	brown, dry, moderately cemented CALICHE, sandy (c.) matrix, no odor	
D	BDL	0.7	No		6	7	SP	red-brown, dry, poorly-graded SAND (m.), no plasticity, no cohesiveness, no odor	
D	BDL	0.4	No	PH03	8 -	9	SP-SM	red-brown, dry, poorly-graded SAND (m.) with silt and gravel, no plasticity, no cohesiveness, no odor	)
D	BDL	0.1	No	PH03	11 <u>-</u> - -	11	SP-SM	1 SAA	

	0297, -104	.171551		Car GIC / SOIL	08 West Sabad, Ne SAMPL Field Scree Chloride,	Mexico	Sample ID:  Date: 11/19/2021  Site Name:Black River 15 10 State Com X #004H  Incident Number: nAPP2128544986  WSP Job Number: 31403152.007  Logged By: Anna Byers  Hole Diameter: Not Applicable  Limit of HACH Low Range Chloride Testing Strips (<116 ppm)	
							, no correc	ction factor included; SAA - Same as Above
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	(ft bgs)	USCS/Rock Symbol	Lithology/Remarks
М	140 BDL	1.2	No No	PH04	1 _	1 2	SP-SC	brown, dry, poorly-graded SAND (m.) with clay and gravel, low plasticity, low cohesiveness, no odor
М	BDL	0.3	No		4	3 4 - 4 - 5	ССНЕ	brown, dry, moderately cemented CALICHE, sandy (c.) matrix, no odor
D	168	1.3	No		6 -	6 - - - - - 7	SP	red-brown, dry, poorly-graded SAND (m.), no plasticity, no cohesiveness, no odor
D	196	0.0	No	PH04	8 _	9	SP-SM	red-brown, dry, poorly-graded SAND (m.) with silt and gravel, no plasticity, no cohesiveness, no odor
D	196	0.2	No	PH04	11 _	11	SP-SM	1 SAA

7			7		WS	P USA	Sample ID: Date: 11/19/2021	
	• •			5	08 West S	Stevens S	Site Name:Black River 15 10 State Com X #004H	
				Car	Isbad, Ne	w Mexico	Incident Number: nAPP2128544986 WSP Job Number: 31403152.007	
		LITH <sup>,</sup>	OLOG	SIC / SOIL	SAMPL	ING LO	Logged By: Anna Byers Method: Back Hoe	
Lat/Lo					Field Scre	ening:		Hole Diameter: Total Depth:
	0667, -104 nents: Mois		ent "M"	- Moist: "D"	Chloride, - Drv: BDL		etection Li	Not Applicable 11 feet Limit of HACH Low Range Chloride Testing Strips (<116 ppm)
Chlori	de testing	performe	d with 1	:4 dilution of	soil to dist	illed water	, no correc	ection factor included; SAA - Same as Above
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
					_	Ĺ		
D	BDL	1.4	No	PH05	1 _	1	SP-SC	brown, dry, poorly-graded SAND (m.) with clay and gravel, low plasticity, low cohesiveness, trace roots, no odor
D	116	0.4	No		2	2		
					- -	3		
D	168	1.0	No		4	4	ССНЕ	brown, dry, moderately cemented CALICHE, sandy (c.) matrix, no odor
					- - -	5		
D	332	1.4	No		6	6	SP	red-brown, dry, poorly-graded SAND (m.), no plasticity, no cohesiveness, no odor
					- - -	7		
D	140	0.8	No	PH05	8	8	SP-SM	red-brown, dry, poorly-graded SAND (m.) with silt and gravel, no plasticity, no cohesiveness, no odor
					- - -	9		
					- -	10		
D	BDL	0.2	No	PH05	11 _	11	SP-SM	/ SAA

7			7		WS	P USA	Sample ID: Date: 11/19/2021	
·	• •			5	08 West 9	Stevens S	Street	Site Name:Black River 15 10 State Com X #004H
				Car	Isbad, Ne	w Mexico	Incident Number: nAPP2128544986	
		LITH	OL OC	SIC / SOIL	SAMPI	INGIO	WSP Job Number: 31403152.007  Logged By: Anna Byers Method: Back Hoe	
Lat/Lo	ng:			7 0012	Field Scre			Hole Diameter: Total Depth:
	0809, -104		ont "M"	Moiet: "D"	Chloride,		otootion Li	Not Applicable 11 feetimit of HACH Low Range Chloride Testing Strips (<116 ppm)
								ction factor included; SAA - Same as Above
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
						0		
					_	Ĺ		
D	BDL	0.2	No	PH06	1	1	SP-SC	brown, dry, poorly-graded SAND (m.) with clay and gravel, low plasticity, low cohesiveness, trace roots, no odor
D	BDL	0.1	No		2	2		
					- - -	3		_
D	BDL	0.0	No		4	4	CCHE	brown, dry, moderately cemented CALICHE, sandy (c.) matrix, no odor
					- - -	5		
D	BDL	0.2	No		6	6	SP	red-brown, dry, poorly-graded SAND (m.), no plasticity, no cohesiveness, no odor
					- - -	7		
D	BDL	0.0	No	PH06	8	8 -	SP-SM	red-brown, dry, poorly-graded SAND (m.) with silt and gravel, no plasticity, no cohesiveness, no odor
					- - -	9		
					- - -	10		
D	BDL	0.0	No	PH06	11 _	11	SP-SM	1 SAA
					-			

	\\'	LITH	) OLOG	5 Car SIC / SOIL	08 West S Isbad, Ne	w Mexico	Sample ID: Date:  BH01	
Lat/Lo					Field Scre	ening:		Hole Diameter: Total Depth:
	0426, -104 nents: Mois		ent "M"	- Moist; "D"	Chloride, - Dry; BDL		etection Li	Not Applicable 11 feet Limit of HACH Low Range Chloride Testing Strips (<116 ppm)
Chlori	de testing	performed	d with 1	:4 dilution of	soil to dist	illed water	, 40% corr	rrection factor included; SAA - Same as Above
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
M	5,258 11,000	1.1	No No	BH01	1	1 2		C brown, dry, poorly-graded SAND (m.) with clay and gravel, low plasticity, low cohesiveness, no odor
M	6,171 2,901	2.2	No No		3 -	3		
M	4,838	1.1	No		4.5 _ - -	5	CCHE	brown, dry, moderately cemented CALICHE, sandy (c.) matrix, no odor
M		1.0	No		6	6		
M	403	1.3	No	BH01	7 _	7	SP-SM	M red-brown, dry, poorly-graded SAND (m.) with silt and gravel, no
M D	403 476	0.9	No No	BH01	7.5	9		plasticity, no cohesiveness, no odor
D	308	0.6	No	BH01	11 <u>-</u> -	11	SP-SM	// SAA

									Sample ID:	С	Date:		
					WS	P USA			BH02	1	0/21 & 11/17/2021		
	• •			5	08 West	Stevens S	Street		Site Name:Black River 15 10 State Com X #004H				
				Car	lsbad, Ne	Incident Number: nAPP2128544986							
					0.115	WSP Job Number: 31403							
1		LITH	OLOG	SIC / SOIL		Logged By: Ben Belill		Method: Hand Auger					
Lat/Lo 32.21	ong: 0477, -104	.171805			Field Scre Chloride,				Hole Diameter: Not Applicable		otal Depth: Steet		
Comn	nents: Mois	ture cont	ent "M"	- Moist; "D"	- Dry; BDL	- Below D	etection L	imit of HAC	H Low Range Chloride Te	sting Strips			
Chlori	ide testing	performe	d with 1	:4 dilution of	soil to dist	illed water,		ection facto	r included; SAA - Same as	s Above			
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol		Litho	ology/Re	marks		
M	2,413	0.4	No No	BH02	1 1 2	0 1 2	lry, poorly-graded SA , low cohesiveness,		with clay and gravel, low ots, no odor				
M	1,338	0.6	No No		3 _	3		lry, moderately ceme	ented CA	LICHE, sandy (c.) matrix,			
D	476	0.3	No	BH02	5	- - 5		no odor					
	D 476 0.3 No BH02 5 5 Total Depth												

	\\'	LITH	) OLOG	5 Car SIC / SOIL	08 West l Isbad, Ne	w Mexico	Sample ID: BH03 Site Name:Black River 1 Incident Number: nAPP: WSP Job Number: 3140 Logged By: Ben Belill	21285449	986		
Lat/Lo	ong:			, 5011	Field Scre		Hole Diameter:		Total Depth:		
32.21	0795, -104		#5 57	84.1	Chloride,	PID	-1	1	Not Applicable	1: ^	4 feet
Chlori	nents: Mois ide testing	ture cont performed	ent "M" d with 1	- Moist; "D" :4 dilution of	<ul> <li>Dry; BDL soil to dist</li> </ul>	- Below D illed water,	etection I , 40% coi	rrection factor	H Low Range Chloride To or included; SAA - Same a	esting Str as Above	ips (<116 ppm)
Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Sample Depth (ft bgs)  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution of soil to distilled water, 40% correction factor  Chloride testing performed with 1:4 dilution factor factor factor factor factor factor factor factor fa									Lithology/Remarks		
D D	D 11,273 0.2 No BH03 1 1 SP-SC brown, d plasticity								dry, poorly-graded S. /, low cohesiveness,		n.) with clay and gravel, low oots, no odor
D	1,551 308	0.2	No No	BH03	3 _	3		no odor		ented C	CALICHE, sandy (c.) matrix,
								otal Depth			

### **Environment Testing America**

#### **ANALYTICAL REPORT**

Eurofins Xenco, Carlsbad 1089 N Canal St. Carlsbad, NM 88220 Tel: (575)988-3199

Laboratory Job ID: 890-1471-1

Laboratory Sample Delivery Group: 31403152.007

Client Project/Site: Black River 4h

Revision: 1

For:

WSP USA Inc. 2777 N. Stemmons Freeway **Suite 1600** Dallas, Texas 75207

Attn: Kalei Jennings

RAMER

Authorized for release by: 10/27/2021 5:21:58 PM

Jessica Kramer, Project Manager (432)704-5440

jessica.kramer@eurofinset.com

·····LINKS ·······

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Released to Imaging: 2/16/2022 10:04:59 AM

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: WSP USA Inc.

Laboratory Job ID: 890-1471-1

Project/Site: Black River 4h

SDG: 31403152.007

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#### **Definitions/Glossary**

Client: WSP USA Inc.

Job ID: 890-1471-1

Project/Site: Black River 4h

SDG: 31403152.007

6

**Qualifiers** 

**GC VOA** 

Qualifier Description

U Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier Qualifier Description

U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier Description

F1 MS and/or MSD recovery exceeds control limits.

U Indicates the analyte was analyzed for but not detected.

**Glossary** 

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

Eisted under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

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

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

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

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

#### Case Narrative

Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1471-1
SDG: 31403152.007

Job ID: 890-1471-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative 890-1471-1

#### **REVISION**

The report being provided is a revision of the original report sent on 10/25/2021. The report (revision 1) is being revised due to Per client email, requesting re homogenize and extract for Chloride.

Report revision history

#### Receipt

The sample was received on 10/22/2021 9:13 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

#### 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

Method 300\_ORGFM\_28D: An incorrect volume of spiking solution was inadvertently added to the laboratory control sample (LCS), matrix spike (MS), AND/OR matrix spike duplicate (MSD) associated with preparation batch 880-10447 and analytical batch 880-10433. Percent recoveries are based on the amount spiked.

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 880-10447 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-10607 and 880-10607 and analytical batch 880-10631 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

9

3

4

9

10

12

13

Matrix: Solid

Lab Sample ID: 890-1471-1

Client: WSP USA Inc.

Job ID: 890-1471-1
Project/Site: Black River 4h

SDG: 31403152.007

**Client Sample ID: BH01A** 

Date Collected: 10/21/21 12:32 Date Received: 10/22/21 09:13

Sample Depth: 7

Method: 8021B - Volatile Orga Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00199	$\overline{U}$	0.00199	mg/Kg		10/25/21 10:15	10/25/21 14:25	
Toluene	< 0.00199	U	0.00199	mg/Kg		10/25/21 10:15	10/25/21 14:25	
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		10/25/21 10:15	10/25/21 14:25	
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/25/21 10:15	10/25/21 14:25	
o-Xylene	< 0.00199	U	0.00199	mg/Kg		10/25/21 10:15	10/25/21 14:25	
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		10/25/21 10:15	10/25/21 14:25	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil F
4-Bromofluorobenzene (Surr)	128		70 - 130			10/25/21 10:15	10/25/21 14:25	
1,4-Difluorobenzene (Surr)	106		70 - 130			10/25/21 10:15	10/25/21 14:25	
Method: Total BTEX - Total B	ΓEX Calcula	tion						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil F
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/25/21 18:48	
	•		•		_			
	•		•	Unit	n	Propared	Analyzod	Dil E
Analyte	•	Qualifier	RL 49.9	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 10/25/21 19:23	Dil F
Analyte Total TPH	<b>Result</b> <49.9	Qualifier U	<b>RL</b> 49.9		<u>D</u>	Prepared		Dil F
Analyte Total TPH Method: 8015B NM - Diesel Ra	Result <49.9	Qualifier U	RL 49.9	mg/Kg	_ =		10/25/21 19:23	
Analyte Total TPH Method: 8015B NM - Diesel Ra Analyte	Result <49.9 ange Organ Result	Qualifier U ics (DRO) Qualifier	RL 49.9 (GC)	mg/Kg	<u>D</u>	Prepared	10/25/21 19:23  Analyzed	
Analyte  Total TPH  Method: 8015B NM - Diesel Ra  Analyte  Gasoline Range Organics	Result <49.9	Qualifier U ics (DRO) Qualifier	RL 49.9	mg/Kg	_ =		10/25/21 19:23	
Analyte Total TPH  Method: 8015B NM - Diesel Ra Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <49.9 ange Organ Result	Qualifier U  ics (DRO) Qualifier U	RL 49.9 (GC)	mg/Kg	_ =	Prepared 10/25/21 10:09	10/25/21 19:23  Analyzed	
Analyte Total TPH  Method: 8015B NM - Diesel Ra Analyte Gasoline Range Organics GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <49.9  ange Organ Result <49.9	Qualifier U  ics (DRO) Qualifier U	(GC) RL 49.9	mg/Kg  Unit mg/Kg	_ =	Prepared 10/25/21 10:09 10/25/21 10:09	10/25/21 19:23 <b>Analyzed</b> 10/25/21 13:26	
Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result	Qualifier U  ics (DRO) Qualifier U  U	RL 49.9 (GC) RL 49.9	mg/Kg  Unit mg/Kg  mg/Kg	_ =	Prepared 10/25/21 10:09 10/25/21 10:09	10/25/21 19:23 <b>Analyzed</b> 10/25/21 13:26 10/25/21 13:26	Dil Fa
Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate	Result	Qualifier U  ics (DRO) Qualifier U  U	RL 49.9 (GC) RL 49.9 49.9	mg/Kg  Unit mg/Kg  mg/Kg	_ =	Prepared 10/25/21 10:09 10/25/21 10:09 10/25/21 10:09	Analyzed 10/25/21 13:26 10/25/21 13:26 10/25/21 13:26	Dil Fa
Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate G-Chlorooctane	Result	Qualifier U  ics (DRO) Qualifier U  U	RL 49.9 (GC) RL 49.9 49.9 49.9	mg/Kg  Unit mg/Kg  mg/Kg	_ =	Prepared 10/25/21 10:09 10/25/21 10:09 10/25/21 10:09 Prepared 10/25/21 10:09	Analyzed 10/25/21 13:26 10/25/21 13:26 10/25/21 13:26 Analyzed	Dil F
Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result   <49.9	Qualifier U  Qualifier U  Qualifier U  U  Qualifier	RL 49.9 (GC) RL 49.9 49.9 49.9 Limits 70 - 130 70 - 130	mg/Kg  Unit mg/Kg  mg/Kg	_ =	Prepared 10/25/21 10:09 10/25/21 10:09 10/25/21 10:09 Prepared 10/25/21 10:09	Analyzed 10/25/21 13:26 10/25/21 13:26 10/25/21 13:26 Analyzed 10/25/21 13:26	Dil Fa
Method: 8015 NM - Diesel Rar Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl  Method: 300.0 - Anions, Ion Canalyte	Result	Qualifier U  Qualifier U  Qualifier U  U  Qualifier	RL 49.9 (GC) RL 49.9 49.9 49.9 Limits 70 - 130 70 - 130	mg/Kg  Unit mg/Kg  mg/Kg	_ =	Prepared 10/25/21 10:09 10/25/21 10:09 10/25/21 10:09 Prepared 10/25/21 10:09	Analyzed 10/25/21 13:26 10/25/21 13:26 10/25/21 13:26 Analyzed 10/25/21 13:26	Dil Fa

#### **Surrogate Summary**

Client: WSP USA Inc. Job ID: 890-1471-1 Project/Site: Black River 4h SDG: 31403152.007

Method: 8021B - Volatile Organic Compounds (GC)

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

	BFB1	DFBZ1				
Client Sample ID	(70-130)	(70-130)				
BH01A	128	106				-
BH01A	107	109				
BH01A	119	105				
Lab Control Sample	101	110				
Lab Control Sample Dup	110	111				
Method Blank	114	98				
	BH01A BH01A BH01A Lab Control Sample Lab Control Sample Dup	BH01A       128         BH01A       107         BH01A       119         Lab Control Sample       101         Lab Control Sample Dup       110	BH01A       128       106         BH01A       107       109         BH01A       119       105         Lab Control Sample       101       110         Lab Control Sample Dup       110       111	BH01A 128 106 BH01A 107 109 BH01A 119 105 Lab Control Sample 101 110 Lab Control Sample Dup 110 111	BH01A 128 106 BH01A 107 109 BH01A 119 105 Lab Control Sample 101 110 Lab Control Sample Dup 110 111	BH01A 128 106 BH01A 107 109 BH01A 119 105 Lab Control Sample 101 110 Lab Control Sample Dup 110 111

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

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

Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)	
890-1471-1	BH01A	98	107	
890-1471-1 MS	BH01A	110	106	
890-1471-1 MSD	BH01A	112	108	
LCS 880-10374/2-A	Lab Control Sample	101	102	
LCSD 880-10374/3-A	Lab Control Sample Dup	109	113	
MB 880-10374/1-A	Method Blank	113	127	

1CO = 1-Chlorooctane OTPH = o-Terphenyl

Client: WSP USA Inc. Job ID: 890-1471-1 Project/Site: Black River 4h SDG: 31403152.007

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-10255/5-A

**Matrix: Solid** 

**Analysis Batch: 10379** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 10255

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/25/21 10:15	10/25/21 14:03	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/25/21 10:15	10/25/21 14:03	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/25/21 10:15	10/25/21 14:03	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/25/21 10:15	10/25/21 14:03	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/25/21 10:15	10/25/21 14:03	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/25/21 10:15	10/25/21 14:03	1

MB MB

Surrogate	%Recovery Qualifi	ier Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114	70 - 130	10/25/21 10:15	10/25/21 14:03	1
1,4-Difluorobenzene (Surr)	98	70 - 130	10/25/21 10:15	10/25/21 14:03	1

Lab Sample ID: LCS 880-10255/1-A

**Matrix: Solid** 

**Analysis Batch: 10379** 

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** 

Prep Batch: 10255

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09553		mg/Kg		96	70 - 130	
Toluene	0.100	0.08488		mg/Kg		85	70 - 130	
Ethylbenzene	0.100	0.08280		mg/Kg		83	70 - 130	
m-Xylene & p-Xylene	0.200	0.1741		mg/Kg		87	70 - 130	
o-Xylene	0.100	0.08500		mg/Kg		85	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	110		70 - 130

Lab Sample ID: LCSD 880-10255/2-A

**Matrix: Solid** 

**Analysis Batch: 10379** 

Client Sample I	D: Lab	Control	Sample	Dup

Prep Type: Total/NA Prep Batch: 10255

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1082		mg/Kg		108	70 - 130	12	35
Toluene	0.100	0.09762		mg/Kg		98	70 - 130	14	35
Ethylbenzene	0.100	0.09531		mg/Kg		95	70 - 130	14	35
m-Xylene & p-Xylene	0.200	0.2028		mg/Kg		101	70 - 130	15	35
o-Xylene	0.100	0.1007		mg/Kg		101	70 - 130	17	35

LCSD LCSD

Sample Sample

<0.00199 U

<0.00199 U

Result Qualifier

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		70 - 130
1.4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: 890-1471-1 MS

**Matrix: Solid** 

Analyte

Benzene

Toluene

**Analysis Batch: 10379** 

Client Sample ID: BH01A Prep Type: Total/NA Prep Batch: 10255

MS MS %Rec. Result Qualifier Unit %Rec Limits 0.09219 mg/Kg 92 70 - 130 0.08241 mg/Kg 82 70 - 130

Eurofins Xenco, Carlsbad

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Spike

Added

0.100

0.100

Client: WSP USA Inc. Job ID: 890-1471-1 Project/Site: Black River 4h SDG: 31403152.007

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

Lab Sample ID: 890-1471-1 MS Client Sample ID: BH01A **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 10379** Prep Batch: 10255

	Sample	Sample	Spike	MS	IVIS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00199	U	0.100	0.07957		mg/Kg		79	70 - 130	
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1712		mg/Kg		85	70 - 130	
o-Xylene	<0.00199	U	0.100	0.08400		mg/Kg		83	70 - 130	

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

Lab Sample ID: 890-1471-1 MSD Client Sample ID: BH01A **Matrix: Solid Prep Type: Total/NA** Prep Batch: 10255 **Analysis Batch: 10379** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00199	U	0.100	0.09892		mg/Kg		99	70 - 130	7	35
Toluene	<0.00199	U	0.100	0.09132		mg/Kg		91	70 - 130	10	35
Ethylbenzene	<0.00199	U	0.100	0.09365		mg/Kg		94	70 - 130	16	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.2014		mg/Kg		101	70 - 130	16	35
o-Xylene	<0.00199	U	0.100	0.1010		mg/Kg		101	70 - 130	18	35

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	119		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

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

Lab Sample ID: MB 880-10374/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 10361** Prep Batch: 10374 MR MR

	IVID	IAID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/25/21 10:09	10/25/21 12:23	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/25/21 10:09	10/25/21 12:23	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/25/21 10:09	10/25/21 12:23	1

	MB MB	; <b>MB</b>				
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac	
1-Chlorooctane	113	70 - 130	10/25/21 10:09	10/25/21 12:23	1	
o-Terphenyl	127	70 - 130	10/25/21 10:09	10/25/21 12:23	1	

Lab Sample ID: LCS 880-10374/2-A		Client Sample ID: Lab Control Sample				trol Sample		
Matrix: Solid							Prep Ty	pe: Total/NA
Analysis Batch: 10361							Prep B	atch: 10374
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	866.4		mg/Kg		87	70 - 130	

(GRO)-C6-C10 Diesel Range Organics (Over 1000 1006 mg/Kg 101 70 - 130 C10-C28)

Client: WSP USA Inc. Job ID: 890-1471-1 SDG: 31403152.007 Project/Site: Black River 4h

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

Lab Sample ID: LCS 880-10374/2-A

**Matrix: Solid** 

**Analysis Batch: 10361** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 10374

LCS LCS %Recovery Qualifier Limits Surrogate 1-Chlorooctane 101 70 - 130 o-Terphenyl 102 70 - 130

Lab Sample ID: LCSD 880-10374/3-A

**Matrix: Solid** 

**Analysis Batch: 10361** 

**Client Sample ID: Lab Control Sample Dup** 

**Prep Type: Total/NA** 

Prep Batch: 10374

LCSD LCSD RPD %Rec. Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Gasoline Range Organics 1000 838.2 mg/Kg 84 70 - 130 3 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 1126 mg/Kg 113 70 - 130 11 20 C10-C28)

LCSD LCSD

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 109 70 - 130 70 - 130 o-Terphenyl 113

Lab Sample ID: 890-1471-1 MS

**Matrix: Solid** 

**Analysis Batch: 10361** 

Client Sample ID: BH01A **Prep Type: Total/NA** 

Prep Batch: 10374

%Rec.

Sample Sample Spike MS MS Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec <49.9 U Gasoline Range Organics 997 963.8 mg/Kg 97 70 - 130 (GRO)-C6-C10 997 Diesel Range Organics (Over <49.9 U 933.9 mg/Kg 91 70 - 130 C10-C28)

MS MS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 70 - 130 110 o-Terphenyl 106 70 - 130

Lab Sample ID: 890-1471-1 MSD

**Matrix: Solid** 

**Analysis Batch: 10361** 

Client Sample ID: BH01A

**Prep Type: Total/NA** 

Prep Batch: 10374 %Rec. **RPD** 

Sample Sample Spike MSD MSD Result Qualifier Added Result Qualifier Limits **RPD** Limit **Analyte** Unit D %Rec Gasoline Range Organics <49.9 U 1000 1019 102 70 - 130 20 mg/Kg 6 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 1000 974.2 mg/Kg 94 70 - 130 4 20

C10-C28)

MSD MSD

%Recovery Qualifier Limits Surrogate 1-Chlorooctane 112 70 - 130 o-Terphenyl 108 70 - 130

Job ID: 890-1471-1 SDG: 31403152.007

Project/Site: Black River 4h

Lab Sample ID: MB 880-10447/1-A

Method: 300.0 - Anions, Ion Chromatography

Client Sample ID: Method Blank

**Prep Type: Soluble** 

**Analysis Batch: 10433** 

Client: WSP USA Inc.

**Matrix: Solid** 

MB MB

Result Qualifier RL Unit Analyzed Dil Fac Analyte D Prepared 5.00 10/25/21 15:13 Chloride <5.00 U mg/Kg

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 880-10447/2-A **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 10433** 

Spike LCS LCS %Rec. Added Result Qualifier Unit D %Rec Limits Analyte 200 209.3 90 - 110 Chloride mg/Kg 105

Lab Sample ID: LCSD 880-10447/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 10433** 

Spike LCSD LCSD %Rec. **RPD** Added Result Qualifier Limits **RPD Analyte** Unit D %Rec Limit Chloride 200 207.3 90 - 110 mg/Kg

Lab Sample ID: 890-1471-1 MS Client Sample ID: BH01A **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 10433** 

Spike MS MS %Rec. Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 1970 F1 1260 2978 F1 mg/Kg 90 - 110

Lab Sample ID: 890-1471-1 MSD Client Sample ID: BH01A **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 10433** 

MSD MSD RPD Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Limit Chloride 1970 F1 1260 2995 F1 81 mg/Kg 90 - 110

Lab Sample ID: MB 880-10607/1-A Client Sample ID: Method Blank **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 10631** 

MB MB

Result Qualifier Analyte RL Unit Dil Fac Prepared Analyzed <5.00 5.00 Chloride U mg/Kg 10/26/21 15:01

Lab Sample ID: LCS 880-10607/2-A Client Sample ID: Lab Control Sample **Prep Type: Soluble** 

**Matrix: Solid Analysis Batch: 10631** 

Spike LCS LCS %Rec. Added

Result Qualifier Limits Analyte Unit %Rec Chloride 200 215.9 mg/Kg 108 90 - 110

Lab Sample ID: LCSD 880-10607/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 10631** 

Released to Imaging: 2/16/2022 10:04:59 AM

Spike LCSD LCSD %Rec. **RPD RPD** Added Limits Analyte Result Qualifier Unit D %Rec Limit Chloride 200 90 - 110 208.7 mg/Kg 104 20

Job ID: 890-1471-1 SDG: 31403152.007

Project/Site: Black River 4h

Client: WSP USA Inc.

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 890-1458-A-7-D MS Client Sample ID: Matrix Spike **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 10631** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier %Rec Limits Analyte Unit D 90 - 110 Chloride 90.4 F1 251 298.0 F1 mg/Kg 83

Lab Sample ID: 890-1458-A-7-E MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 10631** 

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Analyte D 90.4 F1 251 90 - 110 Chloride 297.8 F1 mg/Kg 83 n

Lab Sample ID: MB 880-10760/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 10761** 

MB MB Result Qualifier RL Unit Analyte Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 10/27/21 15:36 mg/Kg

Lab Sample ID: LCS 880-10760/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 10761** 

Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit %Rec Limits Chloride 245.4 250 mg/Kg 98 90 - 110

Lab Sample ID: LCSD 880-10760/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 10761** 

LCSD LCSD RPD Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits Limit Chloride 250 247.7 99 mg/Kg 90 - 110

Lab Sample ID: 890-1478-A-1-M MS **Client Sample ID: Matrix Spike Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 10761** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec 253 Chloride 63.9 321.3 mg/Kg 102 90 - 110

Lab Sample ID: 890-1478-A-1-N MSD **Client Sample ID: Matrix Spike Duplicate Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 10761** 

Released to Imaging: 2/16/2022 10:04:59 AM

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Analyte Result Qualifier Limits RPD Limit Unit %Rec 63.9 253 Chloride 316.1 mg/Kg 100 90 - 110

#### **QC Association Summary**

Client: WSP USA Inc. Job ID: 890-1471-1 Project/Site: Black River 4h SDG: 31403152.007

#### **GC VOA**

#### Prep Batch: 10255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1471-1	BH01A	Total/NA	Solid	5035	
MB 880-10255/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-10255/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-10255/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1471-1 MS	BH01A	Total/NA	Solid	5035	
890-1471-1 MSD	BH01A	Total/NA	Solid	5035	

#### **Analysis Batch: 10379**

<b>Lab Sample ID</b> 890-1471-1	Client Sample ID BH01A	Prep Type Total/NA	Matrix Solid	Method 8021B	Prep Batch 10255
MB 880-10255/5-A	Method Blank	Total/NA	Solid	8021B	10255
LCS 880-10255/1-A	Lab Control Sample	Total/NA	Solid	8021B	10255
LCSD 880-10255/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	10255
890-1471-1 MS	BH01A	Total/NA	Solid	8021B	10255
890-1471-1 MSD	BH01A	Total/NA	Solid	8021B	10255

#### **Analysis Batch: 10526**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1471-1	BH01A	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### **Analysis Batch: 10361**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1471-1	BH01A	Total/NA	Solid	8015B NM	10374
MB 880-10374/1-A	Method Blank	Total/NA	Solid	8015B NM	10374
LCS 880-10374/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	10374
LCSD 880-10374/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	10374
890-1471-1 MS	BH01A	Total/NA	Solid	8015B NM	10374
890-1471-1 MSD	BH01A	Total/NA	Solid	8015B NM	10374

#### Prep Batch: 10374

<b>Lab Sample ID</b> 890-1471-1	Client Sample ID BH01A	Prep Type Total/NA	Matrix Solid	Method 8015NM Prep	Prep Batch
MB 880-10374/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-10374/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-10374/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1471-1 MS	BH01A	Total/NA	Solid	8015NM Prep	
890-1471-1 MSD	BH01A	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 10533**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1471-1	BH01A	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### **Analysis Batch: 10433**

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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-10447/1-A	Method Blank	Soluble	Solid	300.0	10447
LCS 880-10447/2-A	Lab Control Sample	Soluble	Solid	300.0	10447
LCSD 880-10447/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	10447
890-1471-1 MS	BH01A	Soluble	Solid	300.0	10447

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Page 12 of 21

#### **QC Association Summary**

Client: WSP USA Inc.

Job ID: 890-1471-1
Project/Site: Black River 4h

SDG: 31403152.007

#### **HPLC/IC (Continued)**

#### **Analysis Batch: 10433 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1471-1 MSD	BH01A	Soluble	Solid	300.0	10447

#### Leach Batch: 10447

Lab Sample ID MB 880-10447/1-A	Client Sample ID  Method Blank	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
LCS 880-10447/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-10447/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1471-1 MS	BH01A	Soluble	Solid	DI Leach	
890-1471-1 MSD	BH01A	Soluble	Solid	DI Leach	

#### Leach Batch: 10607

<b>Lab Sample ID</b> 890-1471-1	Client Sample ID BH01A	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-10607/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-10607/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-10607/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1458-A-7-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1458-A-7-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### **Analysis Batch: 10631**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1471-1	BH01A	Soluble	Solid	300.0	10607
MB 880-10607/1-A	Method Blank	Soluble	Solid	300.0	10607
LCS 880-10607/2-A	Lab Control Sample	Soluble	Solid	300.0	10607
LCSD 880-10607/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	10607
890-1458-A-7-D MS	Matrix Spike	Soluble	Solid	300.0	10607
890-1458-A-7-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	10607

#### Leach Batch: 10760

	880-10760/1-A	Client Sample ID  Method Blank	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
LCS	S 880-10760/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCS	SD 880-10760/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890	)-1478-A-1-M MS	Matrix Spike	Soluble	Solid	DI Leach	
890	)-1478-A-1-N MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### **Analysis Batch: 10761**

Lab Sample ID MB 880-10760/1-A	Client Sample ID  Method Blank	Prep Type Soluble	Matrix Solid	Method 300.0	Prep Batch 10760
LCS 880-10760/2-A	Lab Control Sample	Soluble	Solid	300.0	10760
LCSD 880-10760/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	10760
890-1478-A-1-M MS	Matrix Spike	Soluble	Solid	300.0	10760
890-1478-A-1-N MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	10760

Eurofins Xenco, Carlsbad

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#### **Lab Chronicle**

Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1471-1
SDG: 31403152.007

**Client Sample ID: BH01A** 

ID: BH01A Lab Sample ID: 890-1471-1

**Matrix: Solid** 

Date Collected: 10/21/21 12:32 Date Received: 10/22/21 09:13

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	10255	10/25/21 10:15	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	10379	10/25/21 14:25	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			10526	10/25/21 18:48	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			10533	10/25/21 19:23	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	10374	10/25/21 10:09	AJ	XEN MID
Total/NA	Analysis	8015B NM		1			10361	10/25/21 13:26	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	10607	10/26/21 09:57	SC	XEN MID
Soluble	Analysis	300.0		1			10631	10/26/21 18:28	CH	XEN MID

#### Laboratory References:

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

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#### **Accreditation/Certification Summary**

Client: WSP USA Inc.

Job ID: 890-1471-1
Project/Site: Black River 4h

SDG: 31403152.007

#### **Laboratory: Eurofins Xenco, Midland**

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

Authority		ogram	Identification Number	Expiration Date 06-30-22	
Texas	NI NI		T104704400-21-22		
The following analyte	e are included in this reno	art but the laboratory is r	ant portified by the governing outbority	This list may include analytes for u	
the agency does not	offer certification.	•	not certified by the governing authority.	This list may include analytes for w	
	•	Matrix	Analyte	This list may include analytes for w	
the agency does not	offer certification.	•	, , ,	This list may include analytes for w	

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**Method Description** 

Volatile Organic Compounds (GC)

#### **Method Summary**

Client: WSP USA Inc. Project/Site: Black River 4h

Method

8021B

Job ID: 890-1471-1 SDG: 31403152.007

Protocol	Laboratory
SW846	XEN MID
TAL SOP	XEN MID
SW846	XEN MID
SW846	XEN MID
MCAWW	XEN MID

5

Total BTEX **Total BTEX Calculation** 8015 NM Diesel Range Organics (DRO) (GC) 8015B NM Diesel Range Organics (DRO) (GC) 300.0 Anions, Ion Chromatography 5035 Closed System Purge and Trap XEN MID SW846 8015NM Prep Microextraction SW846 XEN MID DI Leach XEN MID **Deionized Water Leaching Procedure ASTM** 

7

#### **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:**

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

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#### **Sample Summary**

Client: WSP USA Inc. Project/Site: Black River 4h Job ID: 890-1471-1

SDG: 31403152.007

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1471-1	BH01A	Solid	10/21/21 12:32	10/22/21 09:13	7

Company Name: Project Manager:

WSP

Joseph Hernandez

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300	0
Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334	Chain of Custody

Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Joseph Hernandez

Bill to: (if different) Company Name:

WSP

Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296

Address: 33	3300 North A Street	et		Address:	မ္ပ	3300 North A Street	th A S	reet						State of Project:	r Proj	eci:					1	]		]
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	281.702.2329		Email:	Email: ben.belill@wsp.com	p.com				-			L	De l	Deliverables: EDD	es: E	B		A	ADaPT 🗆		Other:	er		
Project Name: BI	BLACK RIVER 4H		Tu	Turn Around						ANALYSIS		REQUEST	EST		-		-	-	_	<	Work Order Notes	Order	Notes	<b>"</b>
Project Number:	3/403152.	007	Routine	ne □																				
	NAPP212854488C	72544	Rush:	2448													_			5				
Sampler's Name: Bu	Benjamin Belill		Due Date:	)ate:												=			12	T.	)	1.7	272	
SAMPLE RECEIPT	Temp Blank:	Blank: Yes No	Wet Ice: (Yes	No No	) ——					=								_		10	30-015-43731	2	731	
Temperature (°C):	5.4/5.	2	Thermometer ID	ō	ners		_	, —													3	77	0	
Received Intact:	(Yes) No		Dum-0	TT 8					-	e =	890-1471		Chain of Custody	stody		1			_	1,	(1,0,0001	0	-	
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Sample Custody Seals:	No	N/A T	Total Containers:		_			e (EI		_										la	lab, if received by 4:30pm	eived by	y 4:30p	] 3
Sample Identification		Matrix Date Sampled	Time d Sampled	Depth	Numb	TPH (E	втех (	Chlorid												ဟ	Sample Comments	Com	ment	σ,
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Circle Method(s) and Metal(s) to be analyzed	and Metal(s) to	be analyzed	TCLP / SPL	TCLP / SPLP 6010: 8RCRA		Sb As	Ва Ве	S C	Cd Cr Co	5	Cu Pb Mn	ш	Mo Ni Se Ag	Ag	=				<u>ē</u>	124	1631 / 243.1 / /4/0	5	//#/I. ng	9
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. 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 service. A service of this property is a subcontrol of the control of the cost	sument and relinquish	ment of samples co	nstitutes a valid pur not assume any res	rchase order from sponsibility for any	client co	npany to	Xenco, ses incu	its affili	ates and he clien	subcon if such	ractors. losses ar	It assigns standard terms and conditions due to circumstances beyond the contro	ns stand circum	dard ter	ms and beyon	d condit	ions							
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Carlsbad NM 88220

1089 N Canal St

**Eurofins Xenco, Carlsbad** 

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# Chain of Custody Record

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💸 eurofins

**Environment Testing** 

BH01A (890-1471-1) State Zip TX 79701 Sample Identification - Client ID (Lab ID) Jote Since laboratory accreditations are subject to change Eurofins Xenco LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently naintain accreditation in the State of Origin listed above for analysis/lesis/matrix being analyzed the samples must be shipped back to the Eurofins Xenco LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Xenco LLC attention immediately. If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Xenco LLC. mpty Kit Relinquished by Deliverable Requested | II | II | IV Other (specify) Black River 4h Midland 1211 W Florida Ave Client Information (Sub Contract Lab) Phone 575-988-3199 Fax 575-988-3199 elinquished by ossible Hazard Identification 32-704-5440(Tel) Custody Seals Intact:

A Yes A No Hinquished by linquished by: oject Name urofins Xenco ipping/Receiving Custody Seal No 10.22.2 Primary Deliverable Rank WO# PO# Date/Time Date/Time 89000048 TAT Requested (days) Due Date Requested 10/25/2021 Phone Sample Date 10/21/21 Date Mountain Sample G=grab) (C=comp, Preservation Code Type Company Company Company Matrix Solid jessica kramer@eurofinset.com Kramer Jessica NELAP - Louisiana, NELAP - Texas Ime Perform MS/MSD (Yes or No) Special Instructions/QC Requirements Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) 8015MOD\_NM/8015NM\_S\_Prep Full TPH Cooler Temperature(s) °C and Other Remarks ceived by Return To Client 300\_ORGFM\_28D/DI\_LEACH Chloride 8021B/5035FP\_Calc BTEX × × Total\_BTEX\_GCV Analysis Requested × 8015MOD\_Calc Disposal By Lab State of Origin New Mexico Carrier Tracking No(s) Date/Time Archive For Total Number of containers A HCL
B NaOH
C Zn Acetate
D Nitric Acid
E NaHSO4
F MeOH
G Amchlor
H Ascorbic Acid COC No 890-477 1 Preservation Codes Page 1 of 1 890-1471-1 Ice
DI Water
EDTA
EDA Special Instructions/Note Hexane
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Asone Company Ver: 06/08/2021 Company other (specify)

#### **Login Sample Receipt Checklist**

Client: WSP USA Inc. Job Number: 890-1471-1 SDG Number: 31403152.007

Login Number: 1471 List Source: Eurofins Xenco, Carlsbad

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

**Eurofins Xenco, Carlsbad** 

Released to Imaging: 2/16/2022 10:04:59 AM

#### **Login Sample Receipt Checklist**

Client: WSP USA Inc. Job Number: 890-1471-1 SDG Number: 31403152.007

Login Number: 1471 List Source: Eurofins Xenco, Midland List Creation: 10/25/21 08:20 AM List Number: 2

Creator: Kramer, Jessica

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	3.3/3.4
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 <6mm (1/4").	N/A	

# **Environment Testing America**

#### **ANALYTICAL REPORT**

Eurofins Xenco, Carlsbad 1089 N Canal St. Carlsbad, NM 88220 Tel: (575)988-3199

Laboratory Job ID: 890-1473-1

Laboratory Sample Delivery Group: 31403152.007

Client Project/Site: BLACK RIVER 4H

For:

WSP USA Inc. 2777 N. Stemmons Freeway Suite 1600 Dallas, Texas 75207

Attn: Kalei Jennings

J. KRAMER

Authorized for release by: 11/1/2021 11:24:04 AM

Jessica Kramer, Project Manager (432)704-5440

jessica.kramer@eurofinset.com

LINKS

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www.eurofinsus.com/Env

Results relate only to the items tested and the sample(s) as received by the laboratory.

intended to be the legally binding equivalent of a traditionally handwritten signature.

This report has been electronically signed and authorized by the signatory. Electronic signature is

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Released to Imaging: 2/16/2022 10:04:59 AM

Client: WSP USA Inc.

Laboratory Job ID: 890-1473-1

Project/Site: BLACK RIVER 4H

SDG: 31403152.007

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#### **Definitions/Glossary**

Client: WSP USA Inc. Job ID: 890-1473-1 Project/Site: BLACK RIVER 4H SDG: 31403152.007

#### **Qualifiers**

<b>GC VOA</b>
Qualifier

F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

**Qualifier Description** 

#### **GC Semi VOA**

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

#### HPLC/IC

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

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit

Minimum Level (Dioxin) ML 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 Positive / Present POS PQL **Practical Quantitation Limit** 

Presumptive **PRES Quality Control** QC

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

Toxicity Equivalent Factor (Dioxin) TEF **TEQ** Toxicity Equivalent Quotient (Dioxin)

Released to Imaging: 2/16/2022 10:04:59 AM

TNTC Too Numerous To Count

#### **Case Narrative**

Client: WSP USA Inc. Job ID: 890-1473-1 Project/Site: BLACK RIVER 4H

SDG: 31403152.007

Job ID: 890-1473-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative 890-1473-1

#### Receipt

The samples were received on 10/22/2021 9:13 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C

#### **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.

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

Matrix: Solid

#### **Client Sample Results**

Client: WSP USA Inc. Job ID: 890-1473-1 Project/Site: BLACK RIVER 4H SDG: 31403152.007

**Client Sample ID: BH01** 

Lab Sample ID: 890-1473-1 Date Collected: 10/21/21 10:30 Date Received: 10/22/21 09:13

Sample Depth: 1

	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U F1	0.00199	mg/Kg		10/28/21 10:38	10/28/21 21:15	
Toluene	< 0.00199	U F2 F1	0.00199	mg/Kg		10/28/21 10:38	10/28/21 21:15	•
Ethylbenzene	< 0.00199	U F1	0.00199	mg/Kg		10/28/21 10:38	10/28/21 21:15	1
m-Xylene & p-Xylene	<0.00398	U F1	0.00398	mg/Kg		10/28/21 10:38	10/28/21 21:15	1
o-Xylene	< 0.00199	U F1	0.00199	mg/Kg		10/28/21 10:38	10/28/21 21:15	1
Xylenes, Total	<0.00398	U F1	0.00398	mg/Kg		10/28/21 10:38	10/28/21 21:15	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130			10/28/21 10:38	10/28/21 21:15	1
1,4-Difluorobenzene (Surr)	98		70 - 130			10/28/21 10:38	10/28/21 21:15	1
Method: Total BTEX - Total BTEX	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			10/29/21 15:37	1
		Ouglifier	DI	Heit	_ n	Dronored	Analyzad	DilEo
Analyte Total TDH		Qualifier	RL	Unit	D	Prepared	Analyzed	
Total TPH	<b>Result</b> <49.9		49.9	mg/Kg	<u>D</u>	Prepared	Analyzed 10/27/21 13:36	
	<49.9	U			<u>D</u>	Prepared		
Total TPH  Method: 8015B NM - Diesel Rang	<49.9  ge Organics (D  Result	RO) (GC) Qualifier	49.9		<u>D</u>	Prepared Prepared		1
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	<49.9 ge Organics (D	RO) (GC) Qualifier	49.9	mg/Kg		<u> </u>	10/27/21 13:36	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte  Gasoline Range Organics (GRO)-C6-C10	<49.9  ge Organics (D  Result	CODE (GC) Qualifier U	49.9	mg/Kg		Prepared	10/27/21 13:36  Analyzed	Dil Fac
Total TPH	<49.9  ge Organics (D)  Result  <49.9	CODE (GC) Qualifier U	49.9  RL 49.9	mg/Kg  Unit  mg/Kg		Prepared 10/28/21 16:48	10/27/21 13:36  Analyzed  10/30/21 03:10	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	<49.9  ge Organics (D)  Result  <49.9	RO) (GC) Qualifier U	49.9  RL 49.9	mg/Kg  Unit  mg/Kg		Prepared 10/28/21 16:48	10/27/21 13:36  Analyzed  10/30/21 03:10	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<49.9  ge Organics (D  Result  <49.9  <49.9	U RO) (GC) Qualifier U U	49.9  RL 49.9  49.9	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 10/28/21 16:48 10/28/21 16:48	10/27/21 13:36  Analyzed  10/30/21 03:10  10/30/21 03:10	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<49.9 ge Organics (D) Result <49.9 <49.9	U RO) (GC) Qualifier U U	49.9  RL 49.9  49.9  49.9	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 10/28/21 16:48 10/28/21 16:48 10/28/21 16:48	Analyzed 10/30/21 03:10 10/30/21 03:10 10/30/21 03:10	Dil Face
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	<49.9 ge Organics (D) Result <49.9 <49.9 <49.9 %Recovery	U RO) (GC) Qualifier U U	49.9  RL 49.9  49.9  49.9  Limits	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 10/28/21 16:48 10/28/21 16:48 10/28/21 16:48 Prepared	Analyzed 10/30/21 03:10 10/30/21 03:10 10/30/21 03:10 Analyzed	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	49.9 ge Organics (D) Result <49.9 <49.9 <49.9 **Recovery 102 113	CONTROL (GC) Qualifier U U Qualifier	49.9  RL 49.9  49.9  49.9  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 10/28/21 16:48 10/28/21 16:48 10/28/21 16:48 Prepared 10/28/21 16:48	Analyzed 10/30/21 03:10 10/30/21 03:10 10/30/21 03:10 Analyzed 10/30/21 03:10	Dil Fac
Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	49.9 ge Organics (D Result <49.9 <49.9 <89.9 %Recovery 102 113 omatography -	CONTROL (GC) Qualifier U U Qualifier	49.9  RL 49.9  49.9  49.9  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 10/28/21 16:48 10/28/21 16:48 10/28/21 16:48 Prepared 10/28/21 16:48	Analyzed 10/30/21 03:10 10/30/21 03:10 10/30/21 03:10 Analyzed 10/30/21 03:10	Dil Fac

Client Sample ID: BH02

Date Collected: 10/21/21 14:00 Date Received: 10/22/21 09:13

Sample Depth: 1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		10/28/21 10:38	10/28/21 21:36	1
Toluene	<0.00202	U	0.00202	mg/Kg		10/28/21 10:38	10/28/21 21:36	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		10/28/21 10:38	10/28/21 21:36	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		10/28/21 10:38	10/28/21 21:36	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		10/28/21 10:38	10/28/21 21:36	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		10/28/21 10:38	10/28/21 21:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130			10/28/21 10:38	10/28/21 21:36	

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Lab Sample ID: 890-1473-2

Matrix: Solid

Client: WSP USA Inc.

Job ID: 890-1473-1 SDG: 31403152.007

Project/Site: BLACK RIVER 4H

Client Sample ID: BH02

Date Collected: 10/21/21 14:00 Date Received: 10/22/21 09:13

Sample Depth: 1

Lab	Samp	le ID:	890-1	1473-2
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. Matrix: Solid

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

Surrogate	%Recovery Qual	lifier Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	102	70 - 130	10/28/21 10:38	10/28/21 21:36	1

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			10/29/21 15:37	1

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

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Total TPH	<50.0 U	50.0	ma/Ka			10/28/21 16:34	1	

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

Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/28/21 16:48	10/30/21 03:32	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/28/21 16:48	10/30/21 03:32	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/28/21 16:48	10/30/21 03:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 130	10/28/21 16:48	10/30/21 03:32	1
o-Terphenyl	113		70 - 130	10/28/21 16:48	10/30/21 03:32	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5580	25.2	mg/Kg		_	10/29/21 12:17	5

Client Sample ID: BH02A

Date Collected: 10/21/21 14:29

Lab Sample ID: 890-1473-3

Matrix: Solid

Date Collected: 10/21/21 14:29 Date Received: 10/22/21 09:13

Sample Depth: 5

Method: 8021B -	. Volatila	Organic (	Compounds	(GC)
Methou, ouz ib :	· voiatile	Oruanic C	JUHUUUHIUS	100

-1	motification of gain	o oompounds (	(33)						
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Benzene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 21:56	1
	Toluene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 21:56	1
	Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 21:56	1
١	m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/28/21 10:38	10/28/21 21:56	1
	o-Xylene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 21:56	1
	Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/28/21 10:38	10/28/21 21:56	1
	Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
	4-Bromofluorobenzene (Surr)	103		70 - 130			10/28/21 10:38	10/28/21 21:56	1
	1,4-Difluorobenzene (Surr)	101		70 - 130			10/28/21 10:38	10/28/21 21:56	1

Mothod:	Total	RTFY	- Total	RTFY	Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00400	U	0.00400	ma/Ka			10/29/21 15:37	1

Analyte	•	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH		<49.8	U	49.8	mg/Kg		-	10/28/21 16:34	1

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12

Matrix: Solid

Lab Sample ID: 890-1473-3

Client: WSP USA Inc. Job ID: 890-1473-1 SDG: 31403152.007

Project/Site: BLACK RIVER 4H

Client Sample ID: BH02A Date Collected: 10/21/21 14:29

Date Received: 10/22/21 09:13

Sample Depth: 5

Method: 8015B NM - Diesel Rang	e Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		10/28/21 16:48	10/30/21 03:54	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		10/28/21 16:48	10/30/21 03:54	1
Oll Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		10/28/21 16:48	10/30/21 03:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130			10/28/21 16:48	10/30/21 03:54	1
o-Terphenyl	112		70 - 130			10/28/21 16:48	10/30/21 03:54	1
Method: 300.0 - Anions, Ion Chro	matography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	205		5.05	mg/Kg			10/29/21 12:23	1

**Client Sample ID: BH03** Lab Sample ID: 890-1473-4 Matrix: Solid

Date Collected: 10/21/21 13:20 Date Received: 10/22/21 09:13

Sample Depth: 1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		10/28/21 10:38	10/28/21 22:17	1
Toluene	<0.00198	U	0.00198	mg/Kg		10/28/21 10:38	10/28/21 22:17	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		10/28/21 10:38	10/28/21 22:17	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		10/28/21 10:38	10/28/21 22:17	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		10/28/21 10:38	10/28/21 22:17	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		10/28/21 10:38	10/28/21 22:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130			10/28/21 10:38	10/28/21 22:17	1
1,4-Difluorobenzene (Surr)	106		70 - 130			10/28/21 10:38	10/28/21 22:17	1
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			10/29/21 15:37	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			10/28/21 16:34	1
Method: 8015B NM - Diesel Rang	e Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/28/21 16:48	10/30/21 04:15	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		10/28/21 16:48	10/30/21 04:15	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		10/28/21 16:48	10/30/21 04:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130			10/28/21 16:48	10/30/21 04:15	1
o-Terphenyl	111		70 - 130			10/28/21 16:48	10/30/21 04:15	1

Matrix: Solid

Job ID: 890-1473-1

Client: WSP USA Inc. Project/Site: BLACK RIVER 4H SDG: 31403152.007

**Client Sample ID: BH03** Lab Sample ID: 890-1473-4 Date Collected: 10/21/21 13:20

Date Received: 10/22/21 09:13

Sample Depth: 1

Method: 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result Qualifier	r RL	Unit	D	Prepared	Analyzed	Dil Fac		
Chloride	4910	25.0	mg/Kg			10/29/21 12:29	5		

Client Sample ID: BH03A Lab Sample ID: 890-1473-5 Matrix: Solid

Date Collected: 10/21/21 13:47 Date Received: 10/22/21 09:13

Sample Depth: 4

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 22:37	
Toluene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 22:37	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 22:37	
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		10/28/21 10:38	10/28/21 22:37	
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 22:37	
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		10/28/21 10:38	10/28/21 22:37	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	103		70 - 130			10/28/21 10:38	10/28/21 22:37	
1,4-Difluorobenzene (Surr)	105		70 - 130			10/28/21 10:38	10/28/21 22:37	
Method: Total BTEX - Total BTE	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil F
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/29/21 15:37	
Mothod: 9045 NM Diocal Bong	o Organico (DD)	0) (CC)						
Method: 8015 NM - Diesel Rango Analyte Total TPH		Qualifier	RL 49.9	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 10/28/21 16:34	Dil Fa
Analyte Total TPH		Qualifier U	RL	Unit	<u>D</u>	Prepared		Dil Fa
Analyte	Result <49.9  ge Organics (Di	Qualifier U	RL	Unit	D_	Prepared Prepared		Dil Fa
Analyte Total TPH  Method: 8015B NM - Diesel Randanalyte  Gasoline Range Organics	Result <49.9  ge Organics (Di	Qualifier U RO) (GC) Qualifier	<b>RL</b> 49.9	Unit mg/Kg		<u> </u>	10/28/21 16:34	
Analyte Total TPH  Method: 8015B NM - Diesel Randanalyte  Gasoline Range Organics (GRO)-C6-C10  Diesel Range Organics (Over	Result <49.9  ge Organics (Dige Result	Qualifier U  RO) (GC) Qualifier U		Unit mg/Kg		Prepared	10/28/21 16:34 Analyzed	
Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)		Qualifier U  RO) (GC) Qualifier U	RL 49.9	Unit mg/Kg  Unit mg/Kg		Prepared 10/28/21 16:48	10/28/21 16:34  Analyzed  10/30/21 04:37	
Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result   <49.9	Qualifier U  RO) (GC) Qualifier U  U	RL 49.9 49.9	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 10/28/21 16:48 10/28/21 16:48	10/28/21 16:34  Analyzed 10/30/21 04:37 10/30/21 04:37	
Analyte Total TPH  Method: 8015B NM - Diesel Randanalyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate	Result   <49.9	Qualifier U  RO) (GC) Qualifier U  U	RL 49.9  RL 49.9  49.9  49.9	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 10/28/21 16:48 10/28/21 16:48	10/28/21 16:34  Analyzed 10/30/21 04:37 10/30/21 04:37	Dil F
Analyte Total TPH  Method: 8015B NM - Diesel Ran Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result   <49.9	Qualifier U  RO) (GC) Qualifier U  U	RL 49.9 RL 49.9 49.9	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 10/28/21 16:48 10/28/21 16:48 10/28/21 16:48 Prepared	10/28/21 16:34  Analyzed 10/30/21 04:37 10/30/21 04:37 10/30/21 04:37  Analyzed	Dil F
Analyte Total TPH  Method: 8015B NM - Diesel Ran	Result   <49.9	Qualifier U  RO) (GC) Qualifier U  U  Qualifier	RL 49.9  RL 49.9  49.9  49.9  49.9  Limits 70 - 130	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 10/28/21 16:48 10/28/21 16:48 10/28/21 16:48  Prepared 10/28/21 16:48	10/28/21 16:34  Analyzed 10/30/21 04:37 10/30/21 04:37  Analyzed 10/30/21 04:37	Dil F

10/29/21 12:34

4.95

mg/Kg

174

Chloride

#### **Surrogate Summary**

Client: WSP USA Inc.

Job ID: 890-1473-1

Project/Site: BLACK RIVER 4H

SDG: 31403152.007

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recov
		BFB1	DFBZ1	
ab Sample ID	Client Sample ID	(70-130)	(70-130)	
390-1473-1	BH01	100	98	
390-1473-1 MS	BH01	118	86	
390-1473-1 MSD	BH01	136 S1+	132 S1+	
390-1473-2	BH02	106	102	
390-1473-3	BH02A	103	101	
390-1473-4	BH03	103	106	
390-1473-5	BH03A	103	105	
.CS 880-10706/1-A	Lab Control Sample	101	94	
CSD 880-10706/2-A	Lab Control Sample Dup	102	101	
MB 880-10446/5-A	Method Blank	114	103	
MB 880-10706/5-A	Method Blank	115	101	
Surrogate Legend				

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-1466-A-40-E MS	Matrix Spike	98	96	
890-1466-A-40-F MSD	Matrix Spike Duplicate	99	97	
890-1473-1	BH01	102	113	
890-1473-2	BH02	101	113	
890-1473-3	BH02A	100	112	
890-1473-4	BH03	100	111	
890-1473-5	BH03A	103	114	
LCS 880-10876/2-A	Lab Control Sample	98	108	
LCSD 880-10876/3-A	Lab Control Sample Dup	88	97	
MB 880-10876/1-A	Method Blank	113	131 S1+	

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: WSP USA Inc. Job ID: 890-1473-1 Project/Site: BLACK RIVER 4H SDG: 31403152.007

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-10446/5-A

**Matrix: Solid** 

Analysis Batch: 10683

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 10446

	MB	МВ						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/25/21 14:32	10/28/21 09:51	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/25/21 14:32	10/28/21 09:51	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/25/21 14:32	10/28/21 09:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/25/21 14:32	10/28/21 09:51	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/25/21 14:32	10/28/21 09:51	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/25/21 14:32	10/28/21 09:51	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prep	ared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114	70 - 130	10/25/2	1 14:32	10/28/21 09:51	1
1,4-Difluorobenzene (Surr)	103	70 - 130	10/25/2	1 14:32	10/28/21 09:51	1

Lab Sample ID: MB 880-10706/5-A

Matrix: Solid

**Client Sample ID: Method Blank** Prep Type: Total/NA

Prep Batch: 10706

**Analysis Batch: 10683** 

	III D	1410						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 20:53	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 20:53	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 20:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/28/21 10:38	10/28/21 20:53	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/28/21 10:38	10/28/21 20:53	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/28/21 10:38	10/28/21 20:53	1

мв мв

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130	10/28/21 10:38	10/28/21 20:53	1
1,4-Difluorobenzene (Surr)	101		70 - 130	10/28/21 10:38	10/28/21 20:53	1

Lab Sample ID: LCS 880-10706/1-A

**Matrix: Solid** 

**Analysis Batch: 10683** 

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Prep Batch: 10706

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.07409		mg/Kg		74	70 - 130	
Toluene	0.100	0.07324		mg/Kg		73	70 - 130	
Ethylbenzene	0.100	0.08106		mg/Kg		81	70 - 130	
m-Xylene & p-Xylene	0.200	0.1556		mg/Kg		78	70 - 130	
o-Xylene	0.100	0.08156		mg/Kg		82	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	101	70 - 130
1.4-Difluorobenzene (Surr)	94	70 - 130

Lab Sample ID: LCSD 880-10706/2-A

Matrix: Solid

**Analysis Batch: 10683** 

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

Prep Batch: 10706

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.07695		mg/Kg		77	70 - 130	4	35

1,4-Difluorobenzene (Surr)

#### QC Sample Results

Client: WSP USA Inc. Job ID: 890-1473-1 Project/Site: BLACK RIVER 4H SDG: 31403152.007

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

101

Lab Sample ID: LCSD 880-10706/2-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 10683** Prep Batch: 10706 Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit D Toluene 0.100 0.07281 73 70 - 130 35 mg/Kg Ethylbenzene 0.100 0.08012 mg/Kg 80 70 - 130 35 m-Xylene & p-Xylene 0.200 0.1549 77 70 - 130 35 mg/Kg 0 o-Xylene 0.100 0.08142 mg/Kg 81 70 - 130 O 35 LCSD LCSD %Recovery Qualifier Limits Surrogate 70 - 130 4-Bromofluorobenzene (Surr) 102

Lab Sample ID: 890-1473-1 MS **Client Sample ID: BH01 Matrix: Solid** Prep Type: Total/NA

70 - 130

**Analysis Batch: 10683** Prep Batch: 10706

Sample	Sample	Spike	MS	MS				%Rec.	
Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
<0.00199	U F1	0.100	0.05982	F1	mg/Kg		60	70 - 130	
<0.00199	U F2 F1	0.100	0.07020		mg/Kg		70	70 - 130	
<0.00199	U F1	0.100	0.07684		mg/Kg		77	70 - 130	
<0.00398	U F1	0.200	0.1517		mg/Kg		76	70 - 130	
<0.00199	U F1	0.100	0.07651		mg/Kg		77	70 - 130	
	Result <0.00199 <0.00199 <0.00199 <0.00398	Sample   Sample     Result   Qualifier     U F1	Result         Qualifier         Added           <0.00199	Result         Qualifier         Added         Result           <0.00199	Result         Qualifier         Added         Result         Qualifier           <0.00199	Result         Qualifier         Added         Result         Qualifier         Unit           <0.00199	Result         Qualifier         Added         Result         Qualifier         Unit         D           <0.00199	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec           <0.00199	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec         Limits           <0.00199

MS MS Qualifier %Recovery Limits Surrogate 70 - 130 4-Bromofluorobenzene (Surr) 118 70 - 130 1,4-Difluorobenzene (Surr) 86

Lab Sample ID: 890-1473-1 MSD Client Sample ID: BH01 **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 10683** Prep Batch: 10706

_	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00199	U F1	0.0998	0.06272	F1	mg/Kg		63	70 - 130	5	35
Toluene	<0.00199	U F2 F1	0.0998	0.04675	F2 F1	mg/Kg		47	70 - 130	40	35
Ethylbenzene	<0.00199	U F1	0.0998	0.06485	F1	mg/Kg		65	70 - 130	17	35
m-Xylene & p-Xylene	<0.00398	U F1	0.200	0.1310	F1	mg/Kg		66	70 - 130	15	35
o-Xylene	<0.00199	U F1	0.0998	0.06581	F1	mg/Kg		66	70 - 130	15	35

MSD MSD %Recovery Qualifier Limits Surrogate 4-Bromofluorobenzene (Surr) 136 S1+ 70 - 130 1,4-Difluorobenzene (Surr) 132 S1+ 70 - 130

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

Lab Sample ID: MB 880-10876/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 10889 Prep Batch: 10876 мв мв

Result Qualifier RL Unit Prepared Analyzed Dil Fac <50.0 U 50.0 mg/Kg 10/28/21 16:48 10/29/21 20:27 Gasoline Range Organics (GRO)-C6-C10

Client: WSP USA Inc. Job ID: 890-1473-1 SDG: 31403152.007 Project/Site: BLACK RIVER 4H

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

Lab Sample ID: MB 880-10876/1-A **Matrix: Solid** 

Lab Sample ID: LCS 880-10876/2-A

Analysis Batch: 10889

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 10876

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	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/28/21 16:48	10/29/21 20:27	1
	Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/28/21 16:48	10/29/21 20:27	1

MB MB

MR MR

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130	10/28/21 16:48	10/29/21 20:27	1
o-Terphenyl	131	S1+	70 - 130	10/28/21 16:48	10/29/21 20:27	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 10876

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 824.7 82 70 - 130 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 949.0 mg/Kg 95 70 - 130 C10-C28)

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	108		70 - 130

Lab Sample ID: LCSD 880-10876/3-A

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 10889

**Analysis Batch: 10889** 

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

Prep Batch: 10876

	Spike	LCSD	LCSD			%Rec.		RPD
Analyte	Added	Result	Qualifier U	nit D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	1000	834.2	m	ng/Kg	83	70 - 130	1	20
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	957.1	m	ng/Kg	96	70 - 130	1	20
C10-C28)								

LCSD LCSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 88 70 - 130 o-Terphenyl 97 70 - 130

Lab Sample ID: 890-1466-A-40-E MS

**Matrix: Solid** 

**Analysis Batch: 10889** 

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 10876

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<49.9	U	997	999.8		mg/Kg		99	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over	<49.9	U	997	904.2		mg/Kg		88	70 - 130	

C10-C28)

	IVIS	IVIS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	96		70 - 130

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Job ID: 890-1473-1

Client: WSP USA Inc. Project/Site: BLACK RIVER 4H

SDG: 31403152.007

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

Lab Sample ID: 890-1466-A-40-F MSD

**Matrix: Solid** 

Analysis Batch: 10889

Client Sample ID: Matrix Spike Duplicate

**Client Sample ID: Lab Control Sample Dup** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 10876

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	<49.9	U	1000	1009		mg/Kg		99	70 - 130	1	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<49.9	U	1000	925.3		mg/Kg		90	70 - 130	2	20
040,000)											

C10-C28)

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	99		70 - 130
o-Terphenyl	97		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-10660/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 10799** 

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Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/29/21 08:58	1

Lab Sample ID: LCS 880-10660/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 10799** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	248.7		mg/Kg		99	90 - 110	

Lab Sample ID: LCSD 880-10660/3-A

**Matrix: Solid** 

Analysis Batch: 10799

	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	247 7		ma/Ka		99	90 - 110		20	

Lab Sample ID: 880-7518-A-4-F MS

**Matrix: Solid** 

**Analysis Batch: 10799** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	182		250	419.3		ma/Ka	_	95	90 110	

Lab Sample ID: 880-7518-A-4-G MSD

**Matrix: Solid** 

Analysis Ratch: 10799

Analysis batch: 10799											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	182		250	434.2		mg/Kg		101	90 - 110	3	20

#### **QC Association Summary**

Client: WSP USA Inc.

Job ID: 890-1473-1

Project/Site: BLACK RIVER 4H

SDG: 31403152.007

**GC VOA** 

Prep Batch: 10446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-10446/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 10683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1473-1	BH01	Total/NA	Solid	8021B	10706
890-1473-2	BH02	Total/NA	Solid	8021B	10706
890-1473-3	BH02A	Total/NA	Solid	8021B	10706
890-1473-4	BH03	Total/NA	Solid	8021B	10706
890-1473-5	BH03A	Total/NA	Solid	8021B	10706
MB 880-10446/5-A	Method Blank	Total/NA	Solid	8021B	10446
MB 880-10706/5-A	Method Blank	Total/NA	Solid	8021B	10706
LCS 880-10706/1-A	Lab Control Sample	Total/NA	Solid	8021B	10706
LCSD 880-10706/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	10706
890-1473-1 MS	BH01	Total/NA	Solid	8021B	10706
890-1473-1 MSD	BH01	Total/NA	Solid	8021B	10706

Prep Batch: 10706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1473-1	BH01	Total/NA	Solid	5035	<del></del>
890-1473-2	BH02	Total/NA	Solid	5035	
890-1473-3	BH02A	Total/NA	Solid	5035	
890-1473-4	BH03	Total/NA	Solid	5035	
890-1473-5	ВН03А	Total/NA	Solid	5035	
MB 880-10706/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-10706/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-10706/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1473-1 MS	BH01	Total/NA	Solid	5035	
890-1473-1 MSD	BH01	Total/NA	Solid	5035	

Analysis Batch: 10986

Lab Sample ID 890-1473-1	Client Sample ID BH01	Prep Type  Total/NA	Matrix Solid	Method Total BTEX	Prep Batch
890-1473-2	BH02	Total/NA	Solid	Total BTEX	
890-1473-3	BH02A	Total/NA	Solid	Total BTEX	
890-1473-4	BH03	Total/NA	Solid	Total BTEX	
890-1473-5	ВН03А	Total/NA	Solid	Total BTEX	

#### GC Semi VOA

Analysis Batch: 10676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1473-1	BH01	Total/NA	Solid	8015 NM	

**Analysis Batch: 10872** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Batch
890-1473-2	BH02	Total/NA	Solid	8015 NM
890-1473-3	BH02A	Total/NA	Solid	8015 NM
890-1473-4	BH03	Total/NA	Solid	8015 NM
890-1473-5	BH03A	Total/NA	Solid	8015 NM

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#### **QC Association Summary**

Client: WSP USA Inc.

Project/Site: BLACK RIVER 4H

SDG: 31403152.007

GC Semi VOA

Prep Batch: 10876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1473-1	BH01	Total/NA	Solid	8015NM Prep	
890-1473-2	BH02	Total/NA	Solid	8015NM Prep	
890-1473-3	BH02A	Total/NA	Solid	8015NM Prep	
890-1473-4	BH03	Total/NA	Solid	8015NM Prep	
890-1473-5	BH03A	Total/NA	Solid	8015NM Prep	
MB 880-10876/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-10876/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-10876/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1466-A-40-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1466-A-40-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 10889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1473-1	BH01	Total/NA	Solid	8015B NM	10876
890-1473-2	BH02	Total/NA	Solid	8015B NM	10876
890-1473-3	BH02A	Total/NA	Solid	8015B NM	10876
890-1473-4	BH03	Total/NA	Solid	8015B NM	10876
890-1473-5	BH03A	Total/NA	Solid	8015B NM	10876
MB 880-10876/1-A	Method Blank	Total/NA	Solid	8015B NM	10876
LCS 880-10876/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	10876
LCSD 880-10876/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	10876
890-1466-A-40-E MS	Matrix Spike	Total/NA	Solid	8015B NM	10876
890-1466-A-40-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	10876

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Leach Batch: 10660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1473-1	BH01	Soluble	Solid	DI Leach	
890-1473-2	BH02	Soluble	Solid	DI Leach	
890-1473-3	BH02A	Soluble	Solid	DI Leach	
890-1473-4	BH03	Soluble	Solid	DI Leach	
890-1473-5	BH03A	Soluble	Solid	DI Leach	
MB 880-10660/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-10660/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-10660/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-7518-A-4-F MS	Matrix Spike	Soluble	Solid	DI Leach	
880-7518-A-4-G MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

**Analysis Batch: 10799** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1473-1	BH01	Soluble	Solid	300.0	10660
890-1473-2	BH02	Soluble	Solid	300.0	10660
890-1473-3	BH02A	Soluble	Solid	300.0	10660
890-1473-4	BH03	Soluble	Solid	300.0	10660
890-1473-5	BH03A	Soluble	Solid	300.0	10660
MB 880-10660/1-A	Method Blank	Soluble	Solid	300.0	10660
LCS 880-10660/2-A	Lab Control Sample	Soluble	Solid	300.0	10660
LCSD 880-10660/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	10660
880-7518-A-4-F MS	Matrix Spike	Soluble	Solid	300.0	10660
880-7518-A-4-G MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	10660

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Released to Imaging: 2/16/2022 10:04:59 AM

Job ID: 890-1473-1

Client: WSP USA Inc. Project/Site: BLACK RIVER 4H SDG: 31403152.007

**Client Sample ID: BH01** Lab Sample ID: 890-1473-1 Date Collected: 10/21/21 10:30

**Matrix: Solid** Date Received: 10/22/21 09:13

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	10706	10/28/21 10:38	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	10683	10/28/21 21:15	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			10986	10/29/21 15:37	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			10676	10/27/21 13:36	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	10876	10/28/21 16:48	DM	XEN MID
Total/NA	Analysis	8015B NM		1			10889	10/30/21 03:10	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	10660	10/26/21 17:10	CA	XEN MID
Soluble	Analysis	300.0		10			10799	10/29/21 12:11	CH	XEN MID

**Client Sample ID: BH02** Lab Sample ID: 890-1473-2

Date Collected: 10/21/21 14:00 Matrix: Solid Date Received: 10/22/21 09:13

Batch Dil Initial Final Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab 5035 Total/NA Prep 4.95 g 5 mL 10706 10/28/21 10:38 KL XEN MID Total/NA 8021B 5 mL 10/28/21 21:36 XEN MID Analysis 1 5 mL 10683 KL Total/NA Total BTEX 10986 XEN MID Analysis 1 10/29/21 15:37 A.I Total/NA Analysis 8015 NM 10872 10/28/21 16:34 XEN MID Total/NA XEN MID Prep 8015NM Prep 10.00 g 10876 10/28/21 16:48 DM 10 mL Total/NA Analysis 8015B NM 10889 10/30/21 03:32 AJ XEN MID Soluble XEN MID Leach DI Leach 4.96 g 50 mL 10660 10/26/21 17:10 CA Soluble Analysis 300.0 5 10799 10/29/21 12:17 CH XEN MID

Lab Sample ID: 890-1473-3 Client Sample ID: BH02A

Date Collected: 10/21/21 14:29 **Matrix: Solid** Date Received: 10/22/21 09:13

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	10706	10/28/21 10:38	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	10683	10/28/21 21:56	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			10986	10/29/21 15:37	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			10872	10/28/21 16:34	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	10876	10/28/21 16:48	DM	XEN MID
Total/NA	Analysis	8015B NM		1			10889	10/30/21 03:54	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	10660	10/26/21 17:10	CA	XEN MID
Soluble	Analysis	300.0		1			10799	10/29/21 12:23	CH	XEN MID

**Client Sample ID: BH03** Lab Sample ID: 890-1473-4

Matrix: Solid Date Collected: 10/21/21 13:20 Date Received: 10/22/21 09:13

	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	10706	10/28/21 10:38	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	10683	10/28/21 22:17	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			10986	10/29/21 15:37	AJ	XEN MID

#### **Lab Chronicle**

Client: WSP USA Inc. Job ID: 890-1473-1 Project/Site: BLACK RIVER 4H SDG: 31403152.007

**Client Sample ID: BH03** 

Lab Sample ID: 890-1473-4

Matrix: Solid

Date Collected: 10/21/21 13:20 Date Received: 10/22/21 09:13

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			10872	10/28/21 16:34	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	10876	10/28/21 16:48	DM	XEN MID
Total/NA	Analysis	8015B NM		1			10889	10/30/21 04:15	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	10660	10/26/21 17:10	CA	XEN MID
Soluble	Analysis	300.0		5			10799	10/29/21 12:29	CH	XEN MID

Client Sample ID: BH03A Lab Sample ID: 890-1473-5

Date Collected: 10/21/21 13:47 Matrix: Solid Date Received: 10/22/21 09:13

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	10706	10/28/21 10:38	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	10683	10/28/21 22:37	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			10986	10/29/21 15:37	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			10872	10/28/21 16:34	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	10876	10/28/21 16:48	DM	XEN MID
Total/NA	Analysis	8015B NM		1			10889	10/30/21 04:37	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	10660	10/26/21 17:10	CA	XEN MID
Soluble	Analysis	300.0		1			10799	10/29/21 12:34	CH	XEN MID

Laboratory References:

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

#### **Accreditation/Certification Summary**

Client: WSP USA Inc.

Job ID: 890-1473-1

Project/Site: BLACK RIVER 4H

SDG: 31403152.007

#### **Laboratory: Eurofins Xenco, Midland**

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

Authority	Pro	ogram	Identification Number	<b>Expiration Date</b>
Texas	NE	ELAP	T104704400-21-22	06-30-22
The following analytes	are included in this report bu	t the laboratory is not certifi	ed by the governing authority. This list ma	av include analytes for y
the agency does not of	' '	t the laboratory to not contin	ed by the governing additionty. This list the	ay include analytes for v
the agency does not of Analysis Method	' '	Matrix	Analyte	y include analytes for v
9 ,	fer certification.	•	, , ,	

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#### **Method Summary**

Client: WSP USA Inc.

Project/Site: BLACK RIVER 4H

Job ID: 890-1473-1

SDG: 31403152.007

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

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

Eurofins Xenco, Carlsbad

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#### **Sample Summary**

Client: WSP USA Inc.

Project/Site: BLACK RIVER 4H

Job ID: 890-1473-1

SDG: 31403152.007

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1473-1	BH01	Solid	10/21/21 10:30	10/22/21 09:13	1
890-1473-2	BH02	Solid	10/21/21 14:00	10/22/21 09:13	1
890-1473-3	BH02A	Solid	10/21/21 14:29	10/22/21 09:13	5
890-1473-4	BH03	Solid	10/21/21 13:20	10/22/21 09:13	1
890-1473-5	BH03A	Solid	10/21/21 13:47	10/22/21 09:13	4

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			Chain of Custody	ıstody	Work Order No:	No:
XMZCO	0	Houston,TX (281) 240-4	200 Dallas,TX (214) 902-0300	Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334		
		M (575-392-7550) Phoenix	Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa	75-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)	20-2000) <u>www.xenco.com</u>	om Page of
Project Manager: Joseph Hernandez		Bill to: (if different)	ut) Joseph Hernandez			Work Order Comments
		Company Name	9.		Program: UST/PST ☐PRP ☐Brownfields	wnfields RC Duperfund D
Address: 3300 North A Street	Street	Address:	3300 North A Street			
te ZIP:	9705	City, State ZIP:			Reporting:Level II  evel III	ST/UST THE TWELLY
Phone: 281.702.2329		Email: ben.belill@wsp.com	sp.com		Deliverables: EDD AD	ADaPT Other:
Project Name: BLACK RIVER 4H	R 4H	Turn Around		ANALYSIS REQUEST	ST	Work Order Notes
er:	52,007	Routine 🛚 🗓				
	985115821120144	Rush:			1	
Sampler's Name: Benjamin Belill		Due Date:	_			APT
SAMPLE RECEIPT Te	Temp Blank: Yes No	Wet Ice: (Yes) No	•			30-015-43959
Temperature (°C): 5 · 4	(D 'S)	Thermometer ID				: 22
Received Intact:	No /	ECO-WIN	021)	890-1473 Chain o	Chain of Custody	CL.11,01649
Yes	N. P.	Correction Factor: -0.2	0=8			TAT starts the day recevied by the
Sample Custody Seals: Yes	No WA Total C	Total Containers:	PA 8			lab, if received by 4:30pm
Sample Identification	Matrix Date Sampled S	Time Depth	TPH (El BTEX (I			Sample Comments
10म्	S 10/21/21	1030 1				
2048		1100 1				
8 Satis		1129 5'				
5 9418		1320 1				
BLH3A	4	347 4	4 4 4			\
		2	7			
		2/2/2	MATTER			
		\ \ \ \				
Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	8	TCLP / SPLP 6010: 8RCRA		Cd Ca Cr Co Cu Fe Cr Co Cu Pb Mn M	=e Pb Mg Mn Mo Ni K Se Ag SiO: Mo Ni Se Ag TI U	SiO2 Na Sr Ti Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Hg
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. of service. 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 a	quishment of samples constitut ost of samples and shall not as	es a valid purchase order fror sume any responsibility for ar	n client company to Xenco, its aff		It assigns standard terms and conditions due to circumstances beyond the control	
or none of this minute straight of a state minute applied to search project and a straight of the court and more and search of the court and the court of the cou	s apprior to each project and a	cian go or wo lot outsit sumbro				
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# **Chain of Custody Record**

Eurofins Xenco, Carlsbad	<b>.</b>		5	- J																eur	္သီး eurofins	<u> </u>					
Carlsbad NM 88220 Phone 575-988-3199 Fax 575-988-3199		i di	Chain of Custody Record	נסמאַ	eco	ŗa																	A E	Environn America	nent	Environment Testing America	80
Client Information (Sub Contract Lab)	Sampler			Lab PM Krame	Lab PM Kramer Jessica	ssica				l		୍ଷ	Carrier Tracking No(s)	ackin	No(	٦			8 S	COC No 890-477 1	۱ ـ						
Shipping/Receiving	Phone			E-Mail Jessic	E-Mail  essica kramer@eurofinset com	ner@	eurofi	inset	S			<u>₹</u> %	State of Origin New Mexico	Drigin					D D	Page: Page 1 of 1	3						
Eurofins Xenco					Accreditations Required (See note): NELAP - Louisiana NELAP -	tations P - Lo	Requir	a ed Se	ELAF	e): P - Texas	xas	ł	l		ı				2 Job #	Job#:	<u>د</u> د						
Address 1211 W Florida Ave	Due Date Requested 10/29/2021	i.					l		<u> </u>	Analysis Requested	2	į	<del>Š</del>	2	l				핗	serv	Preservation Codes	<u>6</u>	ő		l		
City: Midland	TAT Requested (days):	/s):			(marth		_	_			-1	-		一!	$\dashv$	$\dashv$	$\dashv$	- 1		NaOH	-			Hexane None	w		
State Zip TX 79701					inger Service Marie Service Marie Service														m U О	Zn Acetate Nitric Acid NaHSO4	etate Acid		O T O	AsNaO2 Na2O4S Na2SO3	o w v		
Phone. 432-704-5440(Tel)	PO#				hantikar V	РН	В					***********							െ⊓	MeOH Amchlor	ᅙ			182S2 2SO4	ပ္ထ		
Email	WO#				10,02,00,000	Full 1	hlorid											<u> </u>	- <del>-</del> I	Asco.	Ascorbic Acid ce DI Water			TSP Dod	ndeca	TSP Dodecahydrate Acetone	ē ē
Project Name BLACK RIVER 4H	Project #: 89000048				PR TO 230 70	S_Pre		ΞX										ainers	$\Gamma X$	EDTA EDA			-	pH 4-5 other (specify)	pecify	-	
Site	SSOW#				omerar source	15NM_			<i>-</i>					·				f cont	Blo Brush	Other:							
			Sample	Matrix	- 100 Maria 100 Maria 100 Maria 100 Maria 100 Maria 100 Maria 100 Maria 100 Maria 100 Maria 100 Maria 100 Mari	_NM/80	·			_Calc	***************************************				·			mberc									
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	(C=comp,	S=solid O=waste/oil,	ield Fi Perforn	016MO	00_OR	021B/60	otal_B1	016MOI				····		<del></del>		otal Nu		,		-		•		-	
	$\bigg \langle \bigg \rangle$	X	140000	ion Code:	X	7 - 7 - 1	<u>Jeaner</u>	10000	tendele			-4		1		Silve Led		V.	7	1	Proper instruction strate.					1	
BH01 (890-1473-1)	10/21/21	10 30 Mountain		Solid		×	×	×	×	×															200		
BH02 (890-1473-2)	10/21/21	14 00 Mountain		Solid		×	×	×	×	×						1		4	and I								
BH02A (890-1473-3)	10/21/21	14 29 Mountain		Solid		×	×	×	×	×			$\neg \uparrow$					ellis I	er ann de ch								
BH03 (890-1473-4)	10/21/21	13 20 Mountain		Solid		×	×	×	×	×		_						اعقع	-o.n.odisch				1				
BH03A (890-1473-5)	10/21/21	13 47 Mountain		Solid		×	×	×	×	×								/A	September 1								
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Note. Since laboratory accreditations are subject to change Eurofins Xenco LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Xenco LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Xenco LLC attention immediately. If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Xenco LLC.	aces the ownership or sing analyzed the san signed Chain of Cust	f method ana uples must be ody attesting	llyte & accredita shipped back to said complica	ation compliand to the Eurofins ance to Eurofir	e upon c Xenco L s Xenco	LLC.	contrac	t labor or oth	ratorie er inst	s Thi	s sam, 1s will	ole shi	pmen	is for Any	warde chang	d und es to	er ch	ain-of ditatio	-custo on sta	ody If	the lat	orator broug	y doe ght to	s not Eurofi	currer ns Xe	ntly	7.
Possible Hazard Identification Unconfirmed					Sar	Sample Disposal ( A fe	Dispo	osal (	Afe	e ma	∏be	ass	sse	diffs	amp	les	<b>∏</b> ૄૼૼ	etai	ned .	longe	may be assessed if samples are retained longer than 1 month)	m 1,	non	Ė			
Deliverable Requested I II III IV Other (specify)	Primary Deliverable Rank	ole Rank 2			Spe	Special Instructions/QC	al Instructions/QC	tions	ÖC .		Requirements	ents	ents	2	g			2	2000	9			ŝ	MOHILIS	ľ		
Empty Kit Relinquished by		Date			Time	>				ı	ı	l	Me	Method of Shipment:	Ship	ment:	l										
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Custody Seals Intact Custody Seal No						Cooler Temperature(s) °C and Other Remarks	Temp	eratun	e(s) °C	and o	Other I	Remar	8		(1)	33/34	$\mathbb{Z}$	S	7	+							

Ver 06/08/2021

#### **Login Sample Receipt Checklist**

Job Number: 890-1473-1

SDG Number: 31403152.007

List Source: Eurofins Xenco, Carlsbad

Login Number: 1473 List Number: 1 Creator: Clifton, Cloe

Client: WSP USA Inc.

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Released to Imaging: 2/16/2022 10:04:59 AM

#### **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1473-1

SDG Number: 31403152.007

List Source: Eurofins Xenco, Midland

List Creation: 10/25/21 08:20 AM

List Number: 2 Creator: Kramer, Jessica

Login Number: 1473

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	3.3/3.4
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 <6mm (1/4").	N/A	

Released to Imaging: 2/16/2022 10:04:59 AM

### **Environment Testing America**

#### **ANALYTICAL REPORT**

Eurofins Xenco, Carlsbad 1089 N Canal St. Carlsbad, NM 88220 Tel: (575)988-3199

Laboratory Job ID: 890-1592-1

Laboratory Sample Delivery Group: Eddy County

Client Project/Site: Black River 4H

For:

WSP USA Inc. 2777 N. Stemmons Freeway Suite 1600 Dallas, Texas 75207

Attn: Joseph Hernandez

JURAMER

Authorized for release by: 11/23/2021 5:57:38 PM

Jessica Kramer, Project Manager (432)704-5440

jessica.kramer@eurofinset.com

LINKS

Review your project results through

**Have a Question?** 



Visit us at:

www.eurofinsus.com/Env

Released to Imaging: 2/16/2022 10:04:59 AM

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: WSP USA Inc.

Project/Site: Black River 4H

Laboratory Job ID: 890-1592-1

SDG: Eddy County

#### **Table of Contents**

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QC Sample Results	7
QC Association Summary	11
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Method Summary	15
Sample Summary	16
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#### **Definitions/Glossary**

Client: WSP USA Inc. Job ID: 890-1592-1 Project/Site: Black River 4H SDG: Eddy County

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

LCS and/or LCSD is outside acceptance limits, low biased.

F1 MS and/or MSD recovery exceeds control limits.

F2 MS/MSD RPD exceeds control limits

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

**HPLC/IC** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**Glossary** 

%R

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

**CFL** Contains Free Liquid CFU Colony Forming Unit CNF Contains No Free Liquid

Percent Recovery

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

Decision Level Concentration (Radiochemistry) DLC

EDL Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" Minimum Detectable Activity (Radiochemistry) MDA Minimum Detectable Concentration (Radiochemistry) MDC

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** 

Presumptive **PRES** QC **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TFO

**TNTC** Too Numerous To Count

#### **Case Narrative**

Client: WSP USA Inc.

Project/Site: Black River 4H

SDG: Eddy County

Job ID: 890-1592-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative 890-1592-1

#### Receipt

The sample was received on 11/18/2021 11:37 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

#### GC VOA

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

#### GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-12848 and analytical batch 880-12855 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD\_NM: An incorrect volume of surrogate spiking solution was inadvertently added the following samples: (LCS 880-12848/2-A) and (LCSD 880-12848/3-A). Percent recoveries are based on the amount spiked.

Method 8015MOD\_NM: The spike amount in the system for the MS/MSD is inadvertently doubled. The surrogate recovery for these samples is acceptable based on the actual spike amounts which should be 100 ppm and 50 ppm respectively.(890-1608-A-5-F MS) and (890-1608-A-5-F MSD)

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

#### HPLC/IC

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

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#### **Client Sample Results**

Client: WSP USA Inc. Job ID: 890-1592-1 Project/Site: Black River 4H SDG: Eddy County

**Client Sample ID: BH01** 

Date Collected: 11/17/21 15:00

Date Received: 11/18/21 11:37 Sample Depth: 11 - GRAB

Lab San	nple I	D: 89	0-1592-1
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Matrix: Solid

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J

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/23/21 08:30	11/23/21 15:06	
Toluene	< 0.00199	U	0.00199	mg/Kg		11/23/21 08:30	11/23/21 15:06	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		11/23/21 08:30	11/23/21 15:06	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/23/21 08:30	11/23/21 15:06	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/23/21 08:30	11/23/21 15:06	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/23/21 08:30	11/23/21 15:06	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130			11/23/21 08:30	11/23/21 14:45	1
4-Bromofluorobenzene (Surr)	120		70 - 130			11/23/21 08:30	11/23/21 15:06	1
1,4-Difluorobenzene (Surr)	102		70 - 130			11/23/21 08:30	11/23/21 14:45	1
1,4-Difluorobenzene (Surr)	97		70 - 130			11/23/21 08:30	11/23/21 15:06	1
Method: Total BTEX - Total BTEX	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/22/21 13:36	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/22/21 13:12	1
Method: 8015B NM - Diesel Rang	je Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/21/21 12:42	11/22/21 14:40	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/21/21 12:42	11/22/21 14:40	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/21/21 12:42	11/22/21 14:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	64	S1-	70 - 130			11/21/21 12:42	11/22/21 14:40	1
o-Terphenyl	64	S1-	70 - 130			11/21/21 12:42	11/22/21 14:40	1
Mathadi 200 0 - Aniana Jan Chia	omatography -	Soluble						
Method: 300.0 - Anions, ion Chro								
Method: 300.0 - Anions, Ion Chro Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

#### **Surrogate Summary**

Client: WSP USA Inc.

Project/Site: Black River 4H

SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-8571-A-1-F MS	Matrix Spike	116	98	
880-8571-A-1-G MSD	Matrix Spike Duplicate	117	101	
890-1592-1	BH01	113	102	
890-1592-1	BH01	120	97	
LCS 880-12919/1-A	Lab Control Sample	112	99	
LCSD 880-12919/2-A	Lab Control Sample Dup	106	95	
MB 880-12919/5-A	Method Blank	121	95	
Surrogate Legend				

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1001	OTPH1	
_ab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-1592-1	BH01	64 S1-	64 S1-	
890-1608-A-5-F MS	Matrix Spike	59 S1-	50 S1-	
890-1608-A-5-F MSD	Matrix Spike Duplicate	60 S1-	58 S1-	
LCS 880-12848/2-A	Lab Control Sample	297 S1+	281 S1+	
LCSD 880-12848/3-A	Lab Control Sample Dup	299 S1+	277 S1+	
MB 880-12848/1-A	Method Blank	128	130	
Surrogate Legend				
1CO = 1-Chlorooctane				

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OTPH = o-Terphenyl

Eurofins Xenco, Carlsbad

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Client: WSP USA Inc. Project/Site: Black River 4H

MD MD

Job ID: 890-1592-1 SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-12919/5-A

**Analysis Batch: 13000** 

**Matrix: Solid** 

Lab Sample ID: LCS 880-12919/1-A

**Matrix: Solid** 

Analysis Batch: 13000

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12919

	INID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:30	11/23/21 11:33	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:30	11/23/21 11:33	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:30	11/23/21 11:33	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/23/21 08:30	11/23/21 11:33	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:30	11/23/21 11:33	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/23/21 08:30	11/23/21 11:33	1

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		70 - 130	11.	/23/21 08:30	11/23/21 11:33	1
1,4-Difluorobenzene (Surr)	95		70 - 130	11.	/23/21 08:30	11/23/21 11:33	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12919

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.08665 mg/Kg 87 70 - 130 Toluene 0.100 0.08939 mg/Kg 89 70 - 130 0.100 0.08923 Ethylbenzene mg/Kg 89 70 - 130 0.200 0.1778 70 - 130 m-Xylene & p-Xylene mg/Kg 89 0.100 0.08985 70 - 130 o-Xylene mg/Kg

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

**Client Sample ID: Lab Control Sample Dup** 

**Matrix: Solid** 

**Analysis Batch: 13000** 

Lab Sample ID: LCSD 880-12919/2-A

Prep Type: Total/NA Prep Batch: 12919

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.07779		mg/Kg		78	70 - 130	11	35
Toluene	0.100	0.08279		mg/Kg		83	70 - 130	8	35
Ethylbenzene	0.100	0.08447		mg/Kg		84	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.1618		mg/Kg		81	70 - 130	9	35
o-Xylene	0.100	0.08066		mg/Kg		81	70 - 130	11	35

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	106	70 - 130
1,4-Difluorobenzene (Surr)	95	70 - 130

Lab Sample ID: 880-8571-A-1-F MS

**Matrix: Solid** 

**Analysis Batch: 13000** 

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

Prep Batch: 12919

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U	0.100	0.08913		mg/Kg		89	70 - 130	
Toluene	<0.00199	U	0.100	0.09511		mg/Kg		94	70 - 130	

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Page 7 of 19

Client: WSP USA Inc. Project/Site: Black River 4H Job ID: 890-1592-1 SDG: Eddy County

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

Lab Sample ID: 880-8571-A-1-F MS

**Matrix: Solid** 

Analysis Batch: 13000

Client Sample ID: Matrix Spike

Prep Type: Total/NA Prep Batch: 12919

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00199	U	0.100	0.08993		mg/Kg		90	70 - 130	
m-Xylene & p-Xylene	<0.00398	U	0.201	0.1726		mg/Kg		85	70 - 130	
o-Xylene	<0.00199	U	0.100	0.08478		mg/Kg		84	70 - 130	

MS MS

Surrogate	%Recovery Qualifie	er Limits
4-Bromofluorobenzene (Surr)	116	70 - 130
1,4-Difluorobenzene (Surr)	98	70 - 130

Client Sample ID: Matrix Spike Duplicate

70 - 130

80

mg/Kg

Prep Type: Total/NA

5

Prep Batch: 12919

**Analysis Batch: 13000** 

**Matrix: Solid** 

o-Xylene

Lab Sample ID: 880-8571-A-1-G MSD

Sample Sample Spike MSD MSD %Rec. RPD Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit %Rec 0.101 Benzene <0.00199 U 0.07947 mg/Kg 79 70 - 130 11 35 Toluene 0.08328 <0.00199 U 0.101 mg/Kg 82 70 - 130 13 35 Ethylbenzene <0.00199 U 0.101 0.08478 mg/Kg 84 70 - 130 6 35 0.201 0.1669 82 70 - 130 35 m-Xylene & p-Xylene <0.00398 U mg/Kg 3

0.08092

0.101

MSD MSD

<0.00199 U

Surrogate	%Recovery Qua	alifier Limits
4-Bromofluorobenzene (Surr)	117	70 - 130
1,4-Difluorobenzene (Surr)	101	70 - 130

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

Lab Sample ID: MB 880-12848/1-A

**Matrix: Solid** 

Analysis Batch: 12855

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12848

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/21/21 12:42	11/22/21 10:19	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/21/21 12:42	11/22/21 10:19	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/21/21 12:42	11/22/21 10:19	1

MB MB

Surrogate	%Recovery Quali	fier Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	128	70 - 130	11/21/21 12:42	11/22/21 10:19	1
o-Terphenyl	130	70 - 130	11/21/21 12:42	11/22/21 10:19	1

Lab Sample ID: LCS 880-12848/2-A

**Matrix: Solid** 

**Analysis Batch: 12855** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 12848

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1500	1122		mg/Kg		75	70 - 130	 
(GRO)-C6-C10								
Diesel Range Organics (Over	1500	900.0	*-	mg/Kg		60	70 - 130	
C10-C28)								

Job ID: 890-1592-1

SDG: Eddy County

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

Lab Sample ID: LCS 880-12848/2-A

**Matrix: Solid** 

Client: WSP USA Inc.

Project/Site: Black River 4H

Analysis Batch: 12855

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Prep Batch: 12848

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	297	S1+	70 - 130
o-Terphenyl	281	S1+	70 - 130

Lab Sample ID: LCSD 880-12848/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

Analysis Batch: 12855

Prep Type: Total/NA

Prep Batch: 12848

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	1500	1149		mg/Kg		77	70 - 130	2	20
(GRO)-C6-C10									
Diesel Range Organics (Over	1500	889.2	*-	mg/Kg		59	70 - 130	1	20
C10-C28)									

LCSD LCSD Surrogate %Recovery Qualifier Limits 299 S1+ 70 - 130 1-Chlorooctane o-Terphenyl 277 S1+ 70 - 130

Lab Sample ID: 890-1608-A-5-F MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

**Analysis Batch: 12855** 

Prep Type: Total/NA

Prep Batch: 12848

١		Sample	Sample	Spike	MS	MS				%Rec.		
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
	Gasoline Range Organics	<49.9	U F1 F2	499	1262	F1	mg/Kg		246	70 - 130		_
	(GRO)-C6-C10 Diesel Range Organics (Over	<49.9	U F1 *- F2	499	1122	F1	mg/Kg		220	70 - 130		
	C10-C28)											

MS MS %Recovery Qualifier Limits Surrogate 1-Chlorooctane 59 S1-70 - 130 50 S1-70 - 130 o-Terphenyl

Lab Sample ID: 890-1608-A-5-F MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Analysis Batch: 12855

Prep Type: Total/NA

Prep Batch: 12848

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	<49.9	U F1 F2	499	396.3	F2	mg/Kg		73	70 - 130	104	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<49.9	U F1 *- F2	499	78.61	F1 F2	mg/Kg		10	70 - 130	174	20
C10-C28)											

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	60	S1-	70 - 130
o-Terphenyl	58	S1-	70 - 130

Job ID: 890-1592-1

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Client: WSP USA Inc. Project/Site: Black River 4H SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-12495/1-A

**Matrix: Solid** 

**Analysis Batch: 12947** 

MB MB

Dil Fac Analyte Result Qualifier RL Unit D Prepared Analyzed Chloride <5.00 U 5.00 mg/Kg 11/22/21 09:10

Lab Sample ID: LCS 880-12495/2-A

**Matrix: Solid** 

**Analysis Batch: 12947** 

Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 259.2 mg/Kg 104 90 - 110

Lab Sample ID: LCSD 880-12495/3-A

**Matrix: Solid** 

Analysis Batch: 12947

LCSD LCSD %Rec. RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 259.4 mg/Kg 104 90 - 110

Lab Sample ID: 880-8306-A-1-H MS

**Matrix: Solid** 

**Analysis Batch: 12947** 

MS MS Sample Sample Spike %Rec. Analyte Qualifier Added %Rec Result Result Qualifier Unit Limits 2680 Chloride 1240 3857 90 - 110 mg/Kg

Lab Sample ID: 880-8306-A-1-I MSD

**Matrix: Solid** 

Analysis Batch: 12947

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit 1240 Chloride 2680 3850 mg/Kg 95 90 - 110 0 20

#### **QC Association Summary**

Client: WSP USA Inc.

Project/Site: Black River 4H

SDG: Eddy County

#### **GC VOA**

#### Prep Batch: 12919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1592-1	BH01	Total/NA	Solid	5035	
MB 880-12919/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-12919/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-12919/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-8571-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
880-8571-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

#### Analysis Batch: 12945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1592-1	BH01	Total/NA	Solid	Total BTEX	

#### Analysis Batch: 13000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1592-1	BH01	Total/NA	Solid	8021B	12919
890-1592-1	BH01	Total/NA	Solid	8021B	12919
MB 880-12919/5-A	Method Blank	Total/NA	Solid	8021B	12919
LCS 880-12919/1-A	Lab Control Sample	Total/NA	Solid	8021B	12919
LCSD 880-12919/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	12919
880-8571-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	12919
880-8571-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	12919

#### **GC Semi VOA**

#### Analysis Batch: 12781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1592-1	BH01	Total/NA	Solid	8015 NM	

#### Prep Batch: 12848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1592-1	BH01	Total/NA	Solid	8015NM Prep	
MB 880-12848/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-12848/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-12848/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1608-A-5-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1608-A-5-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### Analysis Batch: 12855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1592-1	BH01	Total/NA	Solid	8015B NM	12848
MB 880-12848/1-A	Method Blank	Total/NA	Solid	8015B NM	12848
LCS 880-12848/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	12848
LCSD 880-12848/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	12848
890-1608-A-5-F MS	Matrix Spike	Total/NA	Solid	8015B NM	12848
890-1608-A-5-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	12848

#### HPLC/IC

#### Leach Batch: 12495

<b>Lab Sample ID</b> 890-1592-1	Client Sample ID BH01	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-12495/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-12495/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

Eurofins Xenco, Carlsbad

11/23/2021

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#### **QC Association Summary**

Client: WSP USA Inc.

Project/Site: Black River 4H

SDG: Eddy County

#### **HPLC/IC** (Continued)

#### Leach Batch: 12495 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-12495/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-8306-A-1-H MS	Matrix Spike	Soluble	Solid	DI Leach	
880-8306-A-1-I MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### Analysis Batch: 12947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1592-1	BH01	Soluble	Solid	300.0	12495
MB 880-12495/1-A	Method Blank	Soluble	Solid	300.0	12495
LCS 880-12495/2-A	Lab Control Sample	Soluble	Solid	300.0	12495
LCSD 880-12495/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	12495
880-8306-A-1-H MS	Matrix Spike	Soluble	Solid	300.0	12495
880-8306-A-1-I MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	12495

Eurofins Xenco, Carlsbad

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#### **Lab Chronicle**

Client: WSP USA Inc.

Project/Site: Black River 4H

SDG: Eddy County

Client Sample ID: BH01

Lab Sample ID: 890-1592-1

Matrix: Solid

Date Collected: 11/17/21 15:00 Date Received: 11/18/21 11:37

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	12919	11/23/21 08:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13000	11/23/21 14:45	KL	XEN MID
Total/NA	Prep	5035			5.02 g	5 mL	12919	11/23/21 08:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13000	11/23/21 15:06	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/22/21 13:12	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12848	11/21/21 12:42	AJ	XEN MID
Total/NA	Analysis	8015B NM		1			12855	11/22/21 14:40	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	12495	11/22/21 08:08	CA	XEN MID
Soluble	Analysis	300.0		5			12947	11/22/21 12:44	CH	XEN MID

#### Laboratory References:

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

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#### **Accreditation/Certification Summary**

Client: WSP USA Inc.

Project/Site: Black River 4H

SDG: Eddy County

#### **Laboratory: Eurofins Xenco, Midland**

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

Authority	Pi	ogram	Identification Number	<b>Expiration Date</b>
Texas	N	ELAP	T104704400-21-22	06-30-22
The following analytes	are included in this report hi	it the laboratory is not certifi	ed by the governing authority. This list ma	y include analytes for
the agency does not of	• •	at the laboratory is not certain	ed by the governing authority. This list his	ay include analytes for
,	• •	Matrix	Analyte	ay include analytes for
the agency does not of	fer certification.	•	, , ,	

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#### **Method Summary**

Client: WSP USA Inc.

Project/Site: Black River 4H

SDG: Eddy County

Method **Method Description** Protocol Laboratory 8021B Volatile Organic Compounds (GC) SW846 XEN MID **Total BTEX Calculation** Total BTEX TAL SOP XEN MID 8015 NM Diesel Range Organics (DRO) (GC) SW846 XEN MID 8015B NM Diesel Range Organics (DRO) (GC) SW846 **XEN MID** 300.0 Anions, Ion Chromatography MCAWW XEN MID 5035 SW846 XEN MID Closed System Purge and Trap 8015NM Prep Microextraction SW846 XEN MID

#### **Protocol References:**

DI Leach

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

Deionized Water Leaching Procedure

#### **Laboratory References:**

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

Eurofins Xenco, Carlsbad

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XEN MID

ASTM

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4.0

#### **Sample Summary**

Client: WSP USA Inc. Project/Site: Black River 4H Job ID: 890-1592-1 SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1592-1	BH01	Solid	11/17/21 15:00	11/18/21 11:37	11 - GRAB

# Chain of Custody

Xenco	EL Paso, TX (9)	EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296		
	Hobbs, NM (5)	75) 392-7550, Carlsbad, NM (575) 988-3199	www.xenc	o.com Page of
	Bill to: (if different)		Work O	omn
	Company Name:		Program: UST/PST PRP	Brownfields ☐ RRC ☐ Superfund ☐
A Sheet	Address:		State of Project:	
	City, State ZIP:		Reporting: Level II Level II	I ☐ PST/UST ☐ TRRP ☐ Level IV ☐
23	joe. herna	ndex Clusp com	Deliverables: EDD	ADaPT Other:
44	round	ANALYSIS	REQUEST	Preservative Codes
Rout	sh			None: NO DI Water: H <sub>2</sub> O
	24 He			Cool: Cool MeOH: Me
Ļ	day received by	3)		
		216		H DO . HP
Thermometer	3	gas		NaHSO 4: NABIS
N/A Correction Factor:		A 6 (#	hain of Custody	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ; NaSO <sub>3</sub>
	1.4/1.2	ER		Zn Acetate+NaOH: Zn
Corrected Temperature:	_1.1	=X(		INDOLLENS COLOR DESIGNATION OF THE PERSON OF
Matrix Date Time Sampled Sampled		Bre		Sample Comments
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f samples constitutes a valid purchase orde of samples and shall not assume any respoi	r from client company to Eurol Isibility for any losses or expens	ins Xenco, its affiliates and subcontractors. It assigns stan es incurred by the client if such losses are due to circumst	dard terms and conditions tances beyond the control	
pplied to each project and a charge of \$5 n	or each sample submitted to El	Date/Time Relinguished by: (5	eceived	gnature) Date/Time
anne Bys	2	121@ 1016/10 ?	Byers (MM)	11 12-81-11
Xence A Sance	Xenco   Xenc	EL Paso, TX (9) Hobbs, NM (57	EL PASO, TX (915) 585-3443, Lubbock, TX (806) 794-1256  Hobbs, NM (573) 392-7550, Carlsbad NM (573) 588-3195  A Shee et Address:  TX 74778 S City, State ZIP:  Land Due Date:  Land Due Date:  Land Tim Around  The mometer ID:  TWA 747-2  The mometer ID:  Twans the day received by 430pm  Segono West Ice:  Correction Factor:  Time  Date  Time	EL PASO, IX (915) 382-7850. Contibud. MM (975) 882-3199  WW.  Acc. Selection of differents Company Name:  Compa

#### **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1592-1

SDG Number: Eddy County

List Source: Eurofins Xenco, Carlsbad

Login Number: 1592 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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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#### **Login Sample Receipt Checklist**

Client: WSP USA Inc. Job Number: 890-1592-1

SDG Number: Eddy County

List Source: Eurofins Xenco, Midland Login Number: 1592 List Number: 2

List Creation: 11/22/21 08:17 AM

Creator: Kramer, Jessica

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.	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	

<6mm (1/4").



## **Environment Testing America**

#### **ANALYTICAL REPORT**

Eurofins Xenco, Carlsbad 1089 N Canal St. Carlsbad, NM 88220 Tel: (575)988-3199

Laboratory Job ID: 890-1593-1

Laboratory Sample Delivery Group: Eddy County

Client Project/Site: Black River 4H

Revision: 1

For:

WSP USA Inc. 2777 N. Stemmons Freeway Suite 1600 Dallas, Texas 75207

Attn: Joseph Hernandez

MAMER

Authorized for release by: 11/22/2021 3:58:05 PM

Jessica Kramer, Project Manager (432)704-5440

jessica.kramer@eurofinset.com

LINKS

Review your project results through

**Have a Question?** 



Visit us at:

www.eurofinsus.com/Env

Released to Imaging: 2/16/2022 10:04:59 AM

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: WSP USA Inc.

Project/Site: Black River 4H

Laboratory Job ID: 890-1593-1

SDG: Eddy County

#### **Table of Contents**

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#### **Definitions/Glossary**

Client: WSP USA Inc.

Job ID: 890-1593-1

Project/Site: Black River 4H

SDG: Eddy County

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**Qualifiers** 

**GC VOA** 

Qualifier Qualifier Description

U Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier Qualifier Description

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

HPLC/IC

U Indicates the analyte was analyzed for but not detected.

**Glossary** 

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

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

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

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

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

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

#### **Case Narrative**

Client: WSP USA Inc.

Project/Site: Black River 4H

Job ID: 890-1593-1

SDG: Eddy County

Job ID: 890-1593-1

**Laboratory: Eurofins Xenco, Carlsbad** 

Narrative

Job Narrative 890-1593-1

#### **REVISION**

The report being provided is a revision of the original report sent on 11/19/2021. The report (revision 1) is being revised due to Per client email, took 11' sample off HOLD also requesting re run on chloride.

Report revision history

#### Receipt

The sample was received on 11/18/2021 11:37 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

#### GC VOA

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

#### GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-12716 and analytical batch 880-12735 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

#### HPLC/IC

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

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Client: WSP USA Inc. Job ID: 890-1593-1 Project/Site: Black River 4H SDG: Eddy County

**Client Sample ID: BH01** 

Date Collected: 11/17/21 13:30

Date Received: 11/18/21 11:37 Sample Depth: 7.5 - GRAB

Lab Sample ID: 890-1593-1

**Matrix: Solid** 

Method: 8021B - Volatile O	rganic Compo	unds (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/19/21 09:45	11/19/21 12:18	1
Toluene	< 0.00200	U	0.00200	mg/Kg		11/19/21 09:45	11/19/21 12:18	1
Ethylbenzene	< 0.00200	U	0.00200	mg/Kg		11/19/21 09:45	11/19/21 12:18	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		11/19/21 09:45	11/19/21 12:18	1
o-Xylene	< 0.00200	U	0.00200	mg/Kg		11/19/21 09:45	11/19/21 12:18	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/19/21 09:45	11/19/21 12:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130			11/19/21 09:45	11/19/21 12:18	1
1 4-Difluorobenzene (Surr)	100		70 - 130			11/19/21 09:45	11/19/21 12:18	1

**Method: Total BTEX - Total BTEX Calculation** Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Total BTEX <0.00399 U 0.00399 mg/Kg 11/19/21 13:44

Method: 8015 NM - Diesel Range Organics (DRO) (GC) Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Total TPH <50.0 U 50.0 mg/Kg 11/19/21 13:54

Method: 8015B NM - Diesel R	ange Organ	ics (DRO)	(GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F1	50.0	mg/Kg		11/19/21 09:12	11/19/21 13:40	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/19/21 09:12	11/19/21 13:40	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/19/21 09:12	11/19/21 13:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	102		70 - 130			11/19/21 09:12	11/19/21 13:40	1
o-Terphenyl	126		70 - 130			11/19/21 09:12	11/19/21 13:40	1

ı	Method: 300.0 - Anions, Ion Cl	nromatogra	phy - Soluble						
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	540		5.00	mg/Kg			11/22/21 12:51	1

#### **Surrogate Summary**

Job ID: 890-1593-1 Client: WSP USA Inc. Project/Site: Black River 4H SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-1593-1	BH01	95	100	
890-1593-1 MS	BH01	100	90	
890-1593-1 MSD	BH01	99	94	
LCS 880-12636/1-A	Lab Control Sample	96	89	
LCSD 880-12636/2-A	Lab Control Sample Dup	95	94	
MB 880-12636/5-A	Method Blank	111	98	
Surrogate Legend				
BFB = 4-Bromofluorob	penzene (Surr)			
DFBZ = 1,4-Difluorobe	enzene (Surr)			

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

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

			Percent	Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
390-1593-1	BH01	102	126	
890-1593-1 MS	BH01	104	110	
890-1593-1 MSD	BH01	97	97	
LCS 880-12716/2-A	Lab Control Sample	104	112	
_CSD 880-12716/3-A	Lab Control Sample Dup	89	95	
MB 880-12716/1-A	Method Blank	108	129	

1CO = 1-Chlorooctane OTPH = o-Terphenyl

Client: WSP USA Inc. Job ID: 890-1593-1 Project/Site: Black River 4H SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-12636/5-A

**Matrix: Solid** 

**Analysis Batch: 12713** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 12636

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/19/21 09:45	11/19/21 11:56	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/19/21 09:45	11/19/21 11:56	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/19/21 09:45	11/19/21 11:56	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/19/21 09:45	11/19/21 11:56	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/19/21 09:45	11/19/21 11:56	1
Xylenes, Total	< 0.00400	U	0.00400	mg/Kg		11/19/21 09:45	11/19/21 11:56	1

MB MB

Surrogate	%Recovery Qu	ualifier Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111	70 - 130	11/19/21 09:45	11/19/21 11:56	1
1,4-Difluorobenzene (Surr)	98	70 - 130	11/19/21 09:45	11/19/21 11:56	1

Lab Sample ID: LCS 880-12636/1-A

**Matrix: Solid** 

**Analysis Batch: 12713** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 12636

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.08879		mg/Kg		89	70 - 130	
Toluene	0.100	0.07904		mg/Kg		79	70 - 130	
Ethylbenzene	0.100	0.09078		mg/Kg		91	70 - 130	
m-Xylene & p-Xylene	0.200	0.1751		mg/Kg		88	70 - 130	
o-Xylene	0.100	0.08756		mg/Kg		88	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits	
4-Bromofluorobenzene (Surr)	96		70 - 130	
1,4-Difluorobenzene (Surr)	89		70 - 130	

Lab Sample ID: LCSD 880-12636/2-A

**Matrix: Solid** 

**Analysis Batch: 12713** 

**Client Sample ID: Lab Control Sample Dup** 

%Rec

Prep Type: Total/NA Prep Batch: 12636

Spike LCSD LCSD **RPD** %Rec. Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Benzene 0.100 0.09392 mg/Kg 94 70 - 130 6 35 Toluene 0.100 0.08333 mg/Kg 83 70 - 130 5 35 Ethylbenzene 0.100 0.08763 mg/Kg 88 70 - 130 35 m-Xylene & p-Xylene 0.200 0.1689 mg/Kg 84 70 - 130 35 0.100 0.08523 85 70 - 130 35 o-Xylene mg/Kg

LCSD LCSD

Sample Sample

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 890-1593-1 MSD

**Matrix: Solid** 

**Analysis Batch: 12713** 

**Client Sample ID: BH01** Prep Type: Total/NA

Prep Batch: 12636 RPD %Rec. Limits RPD Limit

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit
Benzene	<0.00200	U	0.100	0.09093		mg/Kg
Toluene	<0.00200	U	0.100	0.08477		mg/Kg

Eurofins Xenco, Carlsbad

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Spike

MSD MSD

Client: WSP USA Inc. Job ID: 890-1593-1 Project/Site: Black River 4H SDG: Eddy County

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

Lab Sample ID: 890-1593-1 MSD

**Analysis Batch: 12713** 

**Matrix: Solid** 

**Client Sample ID: BH01 Prep Type: Total/NA** 

Prep Batch: 12636

MSD MSD **RPD** Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Ethylbenzene <0.00200 U 0 100 0.08814 mg/Kg m-Xylene & p-Xylene <0.00399 U 0.200 0.1714 mg/Kg o-Xylene <0.00200 U 0.100 0.08719 mg/Kg

MSD MSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	99	70 - 130
1,4-Difluorobenzene (Surr)	94	70 - 130

Lab Sample ID: 890-1593-1 MS

**Matrix: Solid** 

**Analysis Batch: 12713** 

MS MS

%Recovery Qualifier Limits Surrogate 70 - 130 4-Bromofluorobenzene (Surr) 100 1,4-Difluorobenzene (Surr) 90 70 - 130

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

Lab Sample ID: MB 880-12716/1-A

**Matrix: Solid** 

**Analysis Batch: 12735** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12716

**Client Sample ID: BH01** 

Prep Type: Total/NA

MB MB Result Qualifier RL Unit Prepared Analyzed Gasoline Range Organics <50.0 U 50.0 mg/Kg 11/19/21 09:12 11/19/21 12:33 (GRO)-C6-C10 <50.0 U 50.0 11/19/21 09:12 11/19/21 12:33 Diesel Range Organics (Over mg/Kg C10-C28) Oll Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg 11/19/21 09:12 11/19/21 12:33

MB MB

%Recovery Qualifier Limits Prepared Dil Fac Surrogate Analyzed 1-Chlorooctane 108 70 - 130 11/19/21 09:12 11/19/21 12:33 o-Terphenyl 129 70 - 130 11/19/21 09:12 11/19/21 12:33

Lab Sample ID: LCS 880-12716/2-A

**Matrix: Solid** 

**Analysis Batch: 12735** 

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Prep Batch: 12716

%Rec.

LCS LCS Spike Added Analyte Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 930.1 mg/Kg 93 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over 1000 877.0 mg/Kg 88 70 - 130

C10-C28)

LCS LCS

Surrogate	%Recovery Qualifie	r Limits
1-Chlorooctane	104	70 - 130
o-Terphenvl	112	70 - 130

Client: WSP USA Inc. Job ID: 890-1593-1 Project/Site: Black River 4H SDG: Eddy County

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

Lab Sample ID: LCSD 880-12716/3-A

**Matrix: Solid** 

**Analysis Batch: 12735** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 12716

**Client Sample ID: BH01** 

Prep Batch: 12716 %Rec. **RPD** 

Spike LCSD LCSD Added Result Qualifier Limits RPD Limit Analyte Unit D %Rec Gasoline Range Organics 1000 1092 mg/Kg 109 70 - 130 16 20 (GRO)-C6-C10 1000 Diesel Range Organics (Over 840.6 mg/Kg 84 70 - 1304 20

C10-C28)

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	89		70 - 130
o-Terphenyl	95		70 - 130

Lab Sample ID: 890-1593-1 MS **Client Sample ID: BH01 Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 12735** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F1	998	1446	F1	mg/Kg		145	70 - 130	
Diesel Range Organics (Over C10-C28)	<50.0	U	998	912.7		mg/Kg		91	70 - 130	

MS MS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 104 70 - 130 o-Terphenyl 110 70 - 130

Lab Sample ID: 890-1593-1 MSD

Matrix: Solid				Prep Type: Total	/NA
Analysis Batch: 12735				Prep Batch: 12	716
	Sample Sample	Spike	MSD MSD	%Rec.	RPD

Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit <50.0 U F1 998 122 Gasoline Range Organics 1213 70 - 130 20 mg/Kg 18 (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 998 846.2 mg/Kg 85 70 - 130 8 20

C10-C28)

MSD MSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 97 70 - 130 97 70 - 130 o-Terphenyl

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-12748/1-A

**Matrix: Solid** 

**Analysis Batch: 12795** 

**Prep Type: Soluble** MB MB

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac 5.00 Chloride <5.00 U mg/Kg 11/19/21 16:21

Eurofins Xenco, Carlsbad

**Client Sample ID: Method Blank** 

Job ID: 890-1593-1

Client: WSP USA Inc. Project/Site: Black River 4H SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-12748/2-A Client Sample ID: Lab Control Sample **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 12795** Spike LCS LCS

%Rec. Added Result Qualifier Limits Analyte Unit D %Rec Chloride 250 246.1 mg/Kg 98 90 - 110

Lab Sample ID: LCSD 880-12748/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 12795** 

Spike LCSD LCSD %Rec. **RPD** Added Result Qualifier Unit D %Rec Limits RPD Limit Analyte 250 90 - 110 Chloride 247.8 mg/Kg

Lab Sample ID: 890-1586-A-1-G MS Client Sample ID: Matrix Spike **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 12795** 

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits **Analyte** Unit %Rec Chloride 477 249 715.1 96 90 - 110 mg/Kg

Lab Sample ID: 890-1586-A-1-H MSD **Client Sample ID: Matrix Spike Duplicate Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 12795** 

Spike MSD MSD **RPD** %Rec. Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit 714.5 Chloride 477 249 mg/Kg 95 90 - 110

Lab Sample ID: MB 880-12495/1-A Client Sample ID: Method Blank **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 12947** 

MB MB Analyte RL Unit Result Qualifier Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 11/22/21 09:10 mg/Kg

Lab Sample ID: LCS 880-12495/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 12947** 

Spike LCS LCS %Rec. Added Analyte Result Qualifier %Rec Limits Unit D 250 Chloride 259.2 mg/Kg 104 90 - 110

Lab Sample ID: LCSD 880-12495/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 12947** 

Spike LCSD LCSD %Rec. **RPD** Added Result Qualifier Unit Limits RPD Limit Analyte %Rec 250 Chloride 259.4 mg/Kg 104 90 - 110 0

Lab Sample ID: 880-8304-A-13-D MS **Client Sample ID: Matrix Spike Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 12947** 

Released to Imaging: 2/16/2022 10:04:59 AM

Spike MS MS %Rec. Sample Sample Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits Chloride 124 90 - 110 250 374.0 mg/Kg 100

# **QC Sample Results**

Client: WSP USA Inc. Job ID: 890-1593-1 Project/Site: Black River 4H SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 880-8304-A-13-E MSD **Client Sample ID: Matrix Spike Duplicate Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 12947** 

7 <b>,</b> 0.00	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	124		250	367.7		mg/Kg		98	90 - 110	2	20

# **QC Association Summary**

Client: WSP USA Inc.

Job ID: 890-1593-1

Project/Site: Black River 4H

SDG: Eddy County

# **GC VOA**

# Prep Batch: 12636

<b>Lab Sample ID</b> 890-1593-1	Client Sample ID BH01	Prep Type Total/NA	Matrix Solid	Method 5035	Prep Batch
MB 880-12636/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-12636/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-12636/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1593-1 MSD	BH01	Total/NA	Solid	5035	

# **Analysis Batch: 12713**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1593-1	BH01	Total/NA	Solid	8021B	12636
MB 880-12636/5-A	Method Blank	Total/NA	Solid	8021B	12636
LCS 880-12636/1-A	Lab Control Sample	Total/NA	Solid	8021B	12636
LCSD 880-12636/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	12636
890-1593-1 MS	BH01	Total/NA	Solid	8021B	
890-1593-1 MSD	BH01	Total/NA	Solid	8021B	12636

# **Analysis Batch: 12779**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1593-1	BH01	Total/NA	Solid	Total BTEX	

# **GC Semi VOA**

# Prep Batch: 12716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1593-1	BH01	Total/NA	Solid	8015NM Prep	
MB 880-12716/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-12716/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-12716/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1593-1 MS	BH01	Total/NA	Solid	8015NM Prep	
890-1593-1 MSD	BH01	Total/NA	Solid	8015NM Prep	

# **Analysis Batch: 12735**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1593-1	BH01	Total/NA	Solid	8015B NM	12716
MB 880-12716/1-A	Method Blank	Total/NA	Solid	8015B NM	12716
LCS 880-12716/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	12716
LCSD 880-12716/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	12716
890-1593-1 MS	BH01	Total/NA	Solid	8015B NM	12716
890-1593-1 MSD	BH01	Total/NA	Solid	8015B NM	12716

# **Analysis Batch: 12781**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1593-1	BH01	Total/NA	Solid	8015 NM	

# **HPLC/IC**

#### Leach Batch: 12495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1593-1	BH01	Soluble	Solid	DI Leach	
MB 880-12495/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-12495/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-12495/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-8304-A-13-D MS	Matrix Spike	Soluble	Solid	DI Leach	

Eurofins Xenco, Carlsbad

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# **QC Association Summary**

Job ID: 890-1593-1 Client: WSP USA Inc. Project/Site: Black River 4H SDG: Eddy County

# **HPLC/IC (Continued)**

# Leach Batch: 12495 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-8304-A-13-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### Leach Batch: 12748

Lab Sample ID MB 880-12748/1-A	Client Sample ID  Method Blank	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
LCS 880-12748/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-12748/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1586-A-1-G MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1586-A-1-H MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

# **Analysis Batch: 12795**

<b>Lab Sample ID</b> MB 880-12748/1-A	Client Sample ID  Method Blank	Prep Type Soluble	Matrix Solid	Method 300.0	Prep Batch 12748
LCS 880-12748/2-A	Lab Control Sample	Soluble	Solid	300.0	12748
LCSD 880-12748/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	12748
890-1586-A-1-G MS	Matrix Spike	Soluble	Solid	300.0	12748
890-1586-A-1-H MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	12748

# **Analysis Batch: 12947**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1593-1	BH01	Soluble	Solid	300.0	12495
MB 880-12495/1-A	Method Blank	Soluble	Solid	300.0	12495
LCS 880-12495/2-A	Lab Control Sample	Soluble	Solid	300.0	12495
LCSD 880-12495/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	12495
880-8304-A-13-D MS	Matrix Spike	Soluble	Solid	300.0	12495
880-8304-A-13-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	12495

# **Lab Chronicle**

Client: WSP USA Inc.

Project/Site: Black River 4H

Job ID: 890-1593-1

SDG: Eddy County

Client Sample ID: BH01

Lab Sample ID: 890-1593-1

Matrix: Solid

Date Collected: 11/17/21 13:30 Date Received: 11/18/21 11:37

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	12636	11/19/21 09:45	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12713	11/19/21 12:18	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12779	11/19/21 13:44	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	12716	11/19/21 09:12	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12735	11/19/21 13:40	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	12495	11/22/21 08:08	CA	XEN MID
Soluble	Analysis	300.0		1			12947	11/22/21 12:51	CH	XEN MID

# Laboratory References:

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

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# **Accreditation/Certification Summary**

Client: WSP USA Inc.

Job ID: 890-1593-1

Project/Site: Black River 4H

SDG: Eddy County

# **Laboratory: Eurofins Xenco, Midland**

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

Authority	Program		Identification Number	Expiration Date
Texas	NE	ELAP	T104704400-21-22	06-30-22
The following analyte	e are included in this reno	art but the laboratory is r	ant nortified by the any coming outbority	This list may include analytes for u
the agency does not	offer certification.	•	not certified by the governing authority.	This list may include analytes for w
	•	Matrix	Analyte	This list may include analytes for w
the agency does not	offer certification.	•	, , ,	This list may include analytes for w

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# **Method Summary**

Client: WSP USA Inc. Project/Site: Black River 4H Job ID: 890-1593-1

Laboratory	
SDG: Eddy County	

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

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

Eurofins Xenco, Carlsbad

11/22/2021 (Rev. 1)

Page 16 of 20 Released to Imaging: 2/16/2022 10:04:59 AM

# **Sample Summary**

Client: WSP USA Inc. Project/Site: Black River 4H Job ID: 890-1593-1 SDG: Eddy County

 Lab Sample ID
 Client Sample ID
 Matrix
 Collected
 Received
 Depth

 890-1593-1
 BH01
 Solid
 11/17/21 13:30
 1/1/18/21 11:37
 7.5 - GRAB

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Circle Method(s) and Metal(s) to be analyzed

Total 200.7 / 6010

200.8 / 6020:

8RCRA 13PPM Texas 11 Al Sb As Ba

TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U

Be B

0

Ca Cr Co Cu Fe Pb Mg Mn Mo Ni

ㅈ

Se Ag SiO<sub>2</sub> Na Sr Tl Sn U V Zn Hg: 1631 / 245.1 / 7470 / 7471

eurofins

Xenco

**Environment Testing** 

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# Chain of Custody

Midland, TX (432) 704-5440, San Antonio, TX (210) 509-333 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

_	890-1593 Chain of Custody							ANALYSIS REQUEST	Com						)88-3199	94-1296	509-3334
	Custody							EST	Deliverables: EDD ADa	Reporting: Level II   Level III   PST/UST   TRRP	State of Project:	Program: UST/PST PRP Bro	Work Order Comments	www.xenco.com			Work Order No:
Zn Acetate+NaOH: Zn	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	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	HCL: HC HNO 3: HN	Cool: Cool MeOH: Me	None: NO DI Water: H <sub>2</sub> O	Preservative Codes	ADaPT Other:	PST/UST TRRP Level IV		Brownfields ☐ RRC ☐ Superfund ☐	omments	Page of			

SAMPLE RECEIPT

cooler Custody Seals: amples Received Intact:

ample Custody Seals:

Yes No Yes No

Total Containers:

Sample Identification

Matrix

Date Sampled 10/E/VI

Depth

Cont # of

TPH

Corrected Temperature: Temperature Reading:

S

1330 Time

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Group Comp Grab/

SHO

Sampler's Name:

cc: cr.21. 62649 Elliof Lee

Temp Blank: Yes No

(Kes)No

Wet Ice:

Yes No

(EPA Spisma)

Thermometer ID: Correction Factor:

F89-74

**Parameters** 

BTEX (EPA 8/21B)

Chloride (EPA 3/00)

oject Location:

Phone:

City, State ZIP:

Midland

Z

Satut

City, State ZIP:

joe. hernandez @

wsp.

3300 N MUSP

A Street

Company Name

Bill to: (if different)

Joseph Hernandez

(281) 762-2329

ddress: ompany Name: roject Manager:

Project Number:

31403152.007 Black River 4H

Eddy County

Due Date:

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Routine

Itine Around

Code

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

Project Name:

	1	1. 11.0	Mille 1son	Relinquished by: (Signature)	Notice: Signature of this document and relinquishmen of service. Eurofins Xenco will be liable only for the co of Eurofins Xenco. A minimum charge of \$85.00 will b
	0	9	Many Cours	Received by: (Signature)	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from cilent company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and condition 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 mag
		, , ,	W/18/20 100 100	Date/Time	ompany to Eurofins Xenco, its affiliates and losses or expenses incurred by the client it submitted to Eurofins Xenco, but not ana
0	,		W/18/20 1869 2 / Marc Pople	Relinquished by: (Signature)	I subcontractors. It assigns standard terms and condition such losses are due to circumstances beyond the control lyzed. These terms will be enforced unless previously neg
				Received by: (Signature)	ditions Introl y negotiated.
			11.18.21113=	Date/Time	

NaOH+Ascorbic Acid: SAPC

Sample Comments

985AHS8CIEGAU

Incident #

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Revised Date: 08/25/2020 Rev. 2020 2

# **Login Sample Receipt Checklist**

Job Number: 890-1593-1 SDG Number: Eddy County

List Source: Eurofins Xenco, Carlsbad

Login Number: 1593 List Number: 1

Client: WSP USA Inc.

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

# **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1593-1
SDG Number: Eddy County

Login Number: 1593
List Source: Eurofins Xenco, Midland
List Number: 2
List Creation: 11/19/21 11:47 AM

Creator: Kramer, Jessica

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	3.7
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 <6mm (1/4").	N/A	

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# **Environment Testing America**

# **ANALYTICAL REPORT**

Eurofins Xenco, Carlsbad 1089 N Canal St. Carlsbad, NM 88220 Tel: (575)988-3199

Laboratory Job ID: 890-1595-1

Laboratory Sample Delivery Group: Eddy County

Client Project/Site: Black River 4h

For:

WSP USA Inc. 2777 N. Stemmons Freeway Suite 1600 Dallas, Texas 75207

Attn: Joseph Hernandez

JURAMER

Authorized for release by: 12/2/2021 11:13:22 AM

Jessica Kramer, Project Manager (432)704-5440

jessica.kramer@eurofinset.com

.....LINKS .....

Review your project results through

**Have a Question?** 



Visit us at:

www.eurofinsus.com/Env

Released to Imaging: 2/16/2022 10:04:59 AM

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: WSP USA Inc.

Project/Site: Black River 4h

Laboratory Job ID: 890-1595-1

SDG: Eddy County

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# **Definitions/Glossary**

Job ID: 890-1595-1 Client: WSP USA Inc. Project/Site: Black River 4h SDG: Eddy County

# **Qualifiers GC VOA**

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

#### **GC Semi VOA**

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.
HDI C/IC	

#### HPLC/IC

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

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)

MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated

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

RER	Relative Error Ratio (Radiochemistry)
D.	D (C 1.)

RL	Reporting Limit of Requested Limit (Radiochemistry)

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

TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

#### Case Narrative

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

Job ID: 890-1595-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative 890-1595-1

#### Receipt

The samples were received on 11/18/2021 11:37 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

#### **GC VOA**

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-12786 and analytical batch 880-12909 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-12786 and analytical batch 880-12909 was outside the upper control limits.

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

#### GC Semi VOA

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

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-12803 and analytical batch 880-13320 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

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Matrix: Solid

Lab Sample ID: 890-1595-1

Client: WSP USA Inc. Job ID: 890-1595-1 Project/Site: Black River 4h SDG: Eddy County

**Client Sample ID: PH01** 

Date Collected: 11/17/21 15:57 Date Received: 11/18/21 11:37

Sample Depth: 1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:00	11/22/21 23:00	
Toluene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:00	11/22/21 23:00	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:00	11/22/21 23:00	
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		11/22/21 08:00	11/22/21 23:00	
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:00	11/22/21 23:00	
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/22/21 08:00	11/22/21 23:00	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	92		70 - 130			11/22/21 08:00	11/22/21 23:00	
1,4-Difluorobenzene (Surr)	100		70 - 130			11/22/21 08:00	11/22/21 23:00	
Method: Total BTEX - Total BTE	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00399	U	0.00399	mg/Kg			11/24/21 10:52	
Total TPH	<49.9	U	49.9	mg/Kg			11/23/21 08:35	
	<49.9	U	49.9	mg/kg			11/23/21 08:35	
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte		Qualifier	RL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fa
Gasoline Range Organics	<49.9	U *+	49.9	mg/Kg		11/19/21 09:13	11/19/21 21:14	
(GRO)-C6-C10	.40.0							
						44/40/04 00:40	44/40/04 04:44	
Diesel Range Organics (Over	<49.9	U	49.9	mg/Kg		11/19/21 09:13	11/19/21 21:14	
	<49.9 <49.9		49.9 49.9	mg/Kg mg/Kg		11/19/21 09:13 11/19/21 09:13	11/19/21 21:14 11/19/21 21:14	
C10-C28) OII Range Organics (Over C28-C36)		U						
C10-C28) Oll Range Organics (Over C28-C36) Surrogate	<49.9	U	49.9			11/19/21 09:13	11/19/21 21:14	
C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	<49.9 <b>%Recovery</b>	U	49.9			11/19/21 09:13  Prepared	11/19/21 21:14  Analyzed	Dil F
C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	<49.9 <b>%Recovery</b> 99 116	U Qualifier	49.9  Limits  70 - 130			11/19/21 09:13  Prepared  11/19/21 09:13	11/19/21 21:14  Analyzed  11/19/21 21:14	
C10-C28)	<49.9  **Recovery 99 116  omatography -	U Qualifier	49.9  Limits  70 - 130		D	11/19/21 09:13  Prepared  11/19/21 09:13	11/19/21 21:14  Analyzed  11/19/21 21:14	Dil Fa

Client Sample ID: PH01 A LDV

Date Collected: 11/17/21 16:28

Date Received: 11/18/21 11:37

Sample Depth: 8

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/22/21 08:00	11/22/21 23:27	1
Toluene	<0.00199	U	0.00199	mg/Kg		11/22/21 08:00	11/22/21 23:27	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/22/21 08:00	11/22/21 23:27	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/22/21 08:00	11/22/21 23:27	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/22/21 08:00	11/22/21 23:27	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/22/21 08:00	11/22/21 23:27	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 130			11/22/21 08:00	11/22/21 23:27	1

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Lab Sample ID: 890-1595-2

Matrix: Solid

Matrix: Solid

Lab Sample ID: 890-1595-2

# **Client Sample Results**

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

Client Sample ID: PH01 A LDV

Date Collected: 11/17/21 16:28 Date Received: 11/18/21 11:37

Sample Depth: 8

Chloride

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	89		70 - 130			11/22/21 08:00	11/22/21 23:27	1
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/24/21 10:52	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			11/23/21 08:35	1
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Method: 8015B NM - Diesel Rang	e Organics (D	RO) (GC)						
Gasoline Range Organics (GRO)-C6-C10	<49.8	U *+	49.8	mg/Kg		11/19/21 09:13	11/19/21 21:34	1
Diesel Range Organics (Over	<49.8	U	49.8	mg/Kg		11/19/21 09:13	11/19/21 21:34	1
C10-C28)				3 3				
Oll Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/19/21 09:13	11/19/21 21:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	94		70 - 130			11/19/21 09:13	11/19/21 21:34	1
o-Terphenyl	112		70 - 130			11/19/21 09:13	11/19/21 21:34	1
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa

4.99

mg/Kg

379

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11/30/21 23:05

# **Surrogate Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Rec
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-8509-A-23-B MS	Matrix Spike	91	123	
880-8509-A-23-C MSD	Matrix Spike Duplicate	90	116	
890-1595-1	PH01	92	100	
890-1595-2	PH01 A LDV	98	89	
LCS 880-12786/1-A	Lab Control Sample	117	113	
LCSD 880-12786/2-A	Lab Control Sample Dup	100	111	
MB 880-12786/5-A	Method Blank	66 S1-	100	
Surrogate Legend				
BFB = 4-Bromofluoroben	zene (Surr)			
DFBZ = 1,4-Difluorobenz	ene (Surr)			

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

Matrix: Solid Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
		1CO1	OTPH1					
Lab Sample ID	Client Sample ID	(70-130)	(70-130)					
890-1595-1	PH01	99	116					
890-1595-2	PH01 A LDV	94	112					
890-1601-A-1-G MS	Matrix Spike	101	97					
390-1601-A-1-H MSD	Matrix Spike Duplicate	108	103					
_CS 880-12717/2-A	Lab Control Sample	91	73					
LCSD 880-12717/3-A	Lab Control Sample Dup	131 S1+	119					
MB 880-12717/1-A	Method Blank	96	106					

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

OTPH = o-Terphenyl

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

Matrix: Solid Prep Type: Total/NA

-		Percent Surrogate Recovery (Acceptance Limits)						
		1CO1	OTPH1					
Lab Sample ID	Client Sample ID							
890-1601-A-1-G MS	Matrix Spike							
890-1601-A-1-H MSD	Matrix Spike Duplicate							
Surrogate Legend								
1CO = 1-Chlorooctane								

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Client: WSP USA Inc. Job ID: 890-1595-1 Project/Site: Black River 4h SDG: Eddy County

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

Lab Sample ID: MB 880-12786/5-A

**Matrix: Solid** 

Analysis Batch: 12909

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12786

	MB	MB						
Analyte	Result Qualifier		RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:00	11/22/21 15:17	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:00	11/22/21 15:17	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:00	11/22/21 15:17	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/22/21 08:00	11/22/21 15:17	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:00	11/22/21 15:17	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/22/21 08:00	11/22/21 15:17	1

MB MB

Surrogate	%Recovery Qua	alifier Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	66 S1-	- 70 - 130	11/22/21 08:00	11/22/21 15:17	1
1,4-Difluorobenzene (Surr)	100	70 - 130	11/22/21 08:00	11/22/21 15:17	1

Lab Sample ID: LCS 880-12786/1-A

**Matrix: Solid** 

**Analysis Batch: 12909** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 12786

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.09549 mg/Kg 95 70 - 130 Toluene 0.100 0.1078 mg/Kg 108 70 - 130 0.100 Ethylbenzene 0.1096 mg/Kg 110 70 - 130 70 - 130 0.200 0.2452 123 m-Xylene & p-Xylene mg/Kg 0.100 o-Xylene 0.1134 mg/Kg 113 70 - 130

LCS LCS

Surrogate	%Recovery Qualif	ier Limits
4-Bromofluorobenzene (Surr)	117	70 - 130
1,4-Difluorobenzene (Surr)	113	70 - 130

Lab Sample ID: LCSD 880-12786/2-A

**Matrix: Solid** 

Analyte

Benzene

Toluene

o-Xylene

Ethylbenzene

m-Xylene & p-Xylene

**Analysis Batch: 12909** 

Client Sample ID: Lab Control Sample Dup

90

Prep Type: Total/NA Prep Batch: 12786

LCSD LCSD RPD Spike %Rec. Added Result Qualifier Unit %Rec Limits RPD Limit 0.100 0.08790 mg/Kg 88 70 - 130 8 35 0.100 0.08563 mg/Kg 86 70 - 130 23 35 0.100 0.08519 mg/Kg 85 70 - 130 25 35 0.200 0.1905 mg/Kg 95 70 - 130 25 35

mg/Kg

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1.4-Difluorobenzene (Surr)	111		70 <sub>-</sub> 130

Lab Sample ID: 880-8509-A-23-B MS

**Matrix: Solid** 

Analysis Batch: 12909

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

70 - 130

35

Prep Batch: 12786

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U F1	0.100	0.06002	F1	mg/Kg		60	70 - 130	
Toluene	< 0.00199	U F1	0.100	0.05472	F1	mg/Kg		55	70 - 130	

0.100

0.08983

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# QC Sample Results

Client: WSP USA Inc. Job ID: 890-1595-1 Project/Site: Black River 4h SDG: Eddy County

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

Lab Sample ID: 880-8509-A-23-B MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

m-Xylene & p-Xylene

**Analysis Batch: 12909** Prep Batch: 12786 Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits D < 0.00199 U F1 0.100 0.04726 F1 47 70 - 130 Ethylbenzene mg/Kg

0.1012 F1

mg/Kg

mg/Kg

50

51

70 - 130

70 - 130

Prep Type: Total/NA

0.201

<0.00199 UF1 0.100 0.05081 F1 o-Xylene MS MS Surrogate Qualifier Limits %Recovery

<0.00398

U F1

70 - 130 4-Bromofluorobenzene (Surr) 91 1,4-Difluorobenzene (Surr) 70 - 130 123

Lab Sample ID: 880-8509-A-23-C MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

**Analysis Batch: 12909** 

Prep Batch: 12786 Sample Sample Spike MSD MSD %Rec. RPD %Rec RPD Limit Analyte Result Qualifier babbA Result Qualifier Limits Unit D Benzene <0.00199 U F1 0.0998 0.05758 F1 mg/Kg 58 70 - 130 4 35 Toluene <0.00199 U F1 0.0998 0.05483 F1 mg/Kg 55 70 - 130 0 35 Ethylbenzene U F1 0.0998 0.04956 F1 50 70 - 130 35 < 0.00199 mg/Kg 5 m-Xylene & p-Xylene <0.00398 UF1 0.200 0.1065 F1 mg/Kg 53 70 - 130 5 35 70 - 130 0.0998 0.05334 F1 53 o-Xylene <0.00199 U.F.1 mg/Kg 35

MSD MSD Qualifier Limits Surrogate %Recovery 4-Bromofluorobenzene (Surr) 90 70 - 130 1,4-Difluorobenzene (Surr) 116 70 - 130

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

Lab Sample ID: MB 880-12717/1-A Client Sample ID: Method Blank

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 12737** Prep Batch: 12717 мв мв

Result Qualifier RL Unit D Prepared Dil Fac Analyte Analyzed <50.0 U 50.0 11/19/21 09:13 11/19/21 12:33 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 11/19/21 09:13 11/19/21 12:33 mg/Kg C10-C28) OII Range Organics (Over C28-C36) <50.0 U 50.0 11/19/21 09:13 mg/Kg 11/19/21 12:33

MB MB

%Recovery Limits Qualifier Prepared Analyzed Dil Fac Surrogate 1-Chlorooctane 96 70 - 130 11/19/21 09:13 11/19/21 12:33 106 70 - 130 11/19/21 09:13 11/19/21 12:33 o-Terphenyl

Lab Sample ID: LCS 880-12717/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 12737** Prep Batch: 12717

	<b>Spike</b>	LCS	LCS				%Rec.		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics	1000	1214		mg/Kg		121	70 - 130		-
(GRO)-C6-C10									
Diesel Range Organics (Over	1000	751.9		mg/Kg		75	70 - 130		
C10-C28)									

C10-C28)

o-Terphenyl

Job ID: 890-1595-1 Client: WSP USA Inc. Project/Site: Black River 4h SDG: Eddy County

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

LCS LCS

Lab Sample ID: LCS 880-12717/2-A Client Sample ID: Lab Control Sample

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

**Analysis Batch: 12737** Prep Batch: 12717

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 91 70 - 130 o-Terphenyl 73 70 - 130

Lab Sample ID: LCSD 880-12717/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 12737** Prep Batch: 12717

Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 1000 1354 135 70 - 13011 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 859.7 mg/Kg 86 70 - 13013 20

LCSD LCSD Surrogate %Recovery Qualifier Limits S1+ 70 - 130 1-Chlorooctane 131 119 70 - 130 o-Terphenyl

Lab Sample ID: 890-1601-A-1-G MS Client Sample ID: Matrix Spike

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

**Analysis Batch: 12737** Prep Batch: 12717 Sample Sample MS MS Spike

Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits Gasoline Range Organics <50.0 U \*+ 998 965.1 mg/Kg 94 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 998 793.3 mg/Kg 79 70 - 130 C10-C28)

MS MS %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 101

97

Lab Sample ID: 890-1601-A-1-G MS Client Sample ID: Matrix Spike

70 - 130

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 13043

Prep Batch: 12717 MS MS Spike %Rec. Sample Sample

Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 998 1127 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 998 1068 mg/Kg

C10-C28) MS MS

Surrogate %Recovery Qualifier Limits

1-Chlorooctane o-Terphenyl

Job ID: 890-1595-1 Client: WSP USA Inc. Project/Site: Black River 4h SDG: Eddy County

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

Lab Sample ID: 890-1601-A-1-H MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Prep Type: Total/NA **Analysis Batch: 12737** Prep Batch: 12717

	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 *+	998	945.5		mg/Kg		92	70 - 130	2	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<50.0	U	998	856.3		mg/Kg		86	70 - 130	8	20
C10-C28)											

MSD MSD Qualifier Limits Surrogate %Recovery 70 - 130 1-Chlorooctane 108 o-Terphenyl 103 70 - 130

Lab Sample ID: 890-1601-A-1-H MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 13043** Prep Batch: 12717

MSD MSD RPD Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits **RPD** Limit 998 Gasoline Range Organics 1129 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 998 1074 mg/Kg

C10-C28)

MSD MSD Surrogate %Recovery Qualifier Limits

MB MB

1-Chlorooctane

o-Terphenyl

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-12803/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 13320** 

Analyte Result Qualifier Unit RL Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 11/30/21 21:43 mg/Kg

Lab Sample ID: LCS 880-12803/2-A Client Sample ID: Lab Control Sample **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 13320

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 110 Chloride 250 274 7 90 - 110 mg/Kg

Lab Sample ID: LCSD 880-12803/3-A Client Sample ID: Lab Control Sample Dup Matrix: Solid **Prep Type: Soluble** 

**Analysis Batch: 13320** 

Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier %Rec Limits RPD Limit Unit Chloride 250 274.8 mg/Kg 110 90 \_ 110 20

# **QC Sample Results**

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-1590-A-10-F MS

Client Sample ID: Matrix Spike
Matrix: Solid

Prep Type: Soluble

Analysis Batch: 13320

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Analyte Unit %Rec Limits Chloride 20.6 F1 249 327.3 F1 mg/Kg 123 90 - 110

Lab Sample ID: 890-1590-A-10-G MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Solid Prep Type: Soluble

Analysis Batch: 13320

Sample Sample Spike MSD MSD %Rec. RPD Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit D %Rec Chloride 20.6 F1 249 316.9 F1 mg/Kg 119 90 - 110 3 20

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# **QC Association Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1595-1

SDG: Eddy County

# **GC VOA**

# Prep Batch: 12786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1595-1	PH01	Total/NA	Solid	5035	
890-1595-2	PH01 A LDV	Total/NA	Solid	5035	
MB 880-12786/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-12786/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-12786/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-8509-A-23-B MS	Matrix Spike	Total/NA	Solid	5035	
880-8509-A-23-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

# Analysis Batch: 12909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1595-1	PH01	Total/NA	Solid	8021B	12786
890-1595-2	PH01 A LDV	Total/NA	Solid	8021B	12786
MB 880-12786/5-A	Method Blank	Total/NA	Solid	8021B	12786
LCS 880-12786/1-A	Lab Control Sample	Total/NA	Solid	8021B	12786
LCSD 880-12786/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	12786
880-8509-A-23-B MS	Matrix Spike	Total/NA	Solid	8021B	12786
880-8509-A-23-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	12786

# Analysis Batch: 12945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1595-1	PH01	Total/NA	Solid	Total BTEX	
890-1595-2	PH01 A LDV	Total/NA	Solid	Total BTEX	

# GC Semi VOA

# Prep Batch: 12717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1595-1	PH01	Total/NA	Solid	8015NM Prep	
890-1595-2	PH01 A LDV	Total/NA	Solid	8015NM Prep	
MB 880-12717/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-12717/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-12717/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1601-A-1-G MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1601-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### Analysis Batch: 12737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1595-1	PH01	Total/NA	Solid	8015B NM	12717
890-1595-2	PH01 A LDV	Total/NA	Solid	8015B NM	12717
MB 880-12717/1-A	Method Blank	Total/NA	Solid	8015B NM	12717
LCS 880-12717/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	12717
LCSD 880-12717/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	12717
890-1601-A-1-G MS	Matrix Spike	Total/NA	Solid	8015B NM	12717
890-1601-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	12717

# Analysis Batch: 12781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1595-1	PH01	Total/NA	Solid	8015 NM	
890-1595-2	PH01 A LDV	Total/NA	Solid	8015 NM	

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# **QC Association Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

# GC Semi VOA

# Analysis Batch: 13043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1601-A-1-G MS	Matrix Spike	Total/NA	Solid	8015B NM	12717
890-1601-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	12717

# HPLC/IC

#### Leach Batch: 12803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1595-1	PH01	Soluble	Solid	DI Leach	_
890-1595-2	PH01 A LDV	Soluble	Solid	DI Leach	
MB 880-12803/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-12803/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-12803/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1590-A-10-F MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1590-A-10-G MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

# Analysis Batch: 13320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1595-1	PH01	Soluble	Solid	300.0	12803
890-1595-2	PH01 A LDV	Soluble	Solid	300.0	12803
MB 880-12803/1-A	Method Blank	Soluble	Solid	300.0	12803
LCS 880-12803/2-A	Lab Control Sample	Soluble	Solid	300.0	12803
LCSD 880-12803/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	12803
890-1590-A-10-F MS	Matrix Spike	Soluble	Solid	300.0	12803
890-1590-A-10-G MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	12803

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Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1595-1

SDG: Eddy County

Client Sample ID: PH01

Lab Sample ID: 890-1595-1

Matrix: Solid

Date Collected: 11/17/21 15:57 Date Received: 11/18/21 11:37

	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	12786	11/22/21 08:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12909	11/22/21 23:00	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/24/21 10:52	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/23/21 08:35	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	12717	11/19/21 09:13	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12737	11/19/21 21:14	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	12803	11/19/21 16:51	SC	XEN MID
Soluble	Analysis	300.0		1			13320	11/30/21 22:53	CH	XEN MID

Client Sample ID: PH01 A LDV Lab Sample ID: 890-1595-2

Date Collected: 11/17/21 16:28

Matrix: Solid

Date Received: 11/18/21 11:37

	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	12786	11/22/21 08:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12909	11/22/21 23:27	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/24/21 10:52	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/23/21 08:35	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	12717	11/19/21 09:13	DM	XEN MID
Total/NA	Analysis	8015B NM		1			12737	11/19/21 21:34	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	12803	11/19/21 16:51	SC	XEN MID
Soluble	Analysis	300.0		1			13320	11/30/21 23:05	CH	XEN MID

**Laboratory References:** 

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

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# **Accreditation/Certification Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

# **Laboratory: Eurofins Xenco, Midland**

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

Authority	Pre	ogram	Identification Number	<b>Expiration Date</b>		
Texas	NE	ELAP	T104704400-21-22	06-30-22		
The following analytes	are included in this report, bu	t the laboratory is not certif	ied by the governing authority. This list ma	av include analytes for wh		
the agency does not of	fer certification.	•	3 · · · · · · · · · · · · · · · · · · ·	.,		
the agency does not of Analysis Method	fer certification. Prep Method	Matrix	Analyte	.,		
0 ,		Matrix Solid				

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# **Method Summary**

Client: WSP USA Inc. Job ID: 890-1595-1 Project/Site: Black River 4h SDG: Eddy County

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

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

# **Sample Summary**

Client: WSP USA Inc. Project/Site: Black River 4h Job ID: 890-1595-1 SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1595-1	PH01	Solid	11/17/21 15:57	11/18/21 11:37	1
890-1595-2	PH01 A LDV	Solid	11/17/21 16:28	11/18/21 11:37	8

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**Environment Testing** 

13

Chain of Custody

Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 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

ha Kork	Relinquished by: (	Notice: Signature of this docur of service, Eurofins Xenco will of Eurofins Xenco. A minimun	Total 200.7 / 6010 Circle Method(s) a									PHE A	PHIXI	Sample Identif	Total Containers:	Sample Custody Seals:	Cooler Custody Seals:	Samples Received Intac	SAMPLE RECEIPT	PO #:			Project Number:	Project Name:	Phone:	City, State ZIP:	Address:	Company Name:	Project Manager:
	Signature)	nent and relinquishment of sam be liable only for the cost of sam charge of \$85.00 will be applied	200.8 / 6020: and Metal(s) to be an									S S	S			Yes No (N/A)	Yes No MATA	/\	Temp Blank: 🗡		- 3	Feddy Burt	31403152.00	Black River	(281) 702 - 23	2	3388 N A St	MSP	Joseph Hern
	Received by: (Signatu	ples constitutes a valid purchase on the sand shall not assume any rest to each project and a charge of	8RCR,										+ 331 10/ FI/VII	Date Time Sampled Sampled	Corrected Temperature:	Temperature Reading:	Correction Factor:	eter ID:	Yes No Wet Ice:	) [						SØFPF X	reet		andre
	ire)	rder from client company to Europonsibility for any losses or expensionability for any losses or expensionable submitted to	SPLP 6010 : 8RCRA									8' Grah 1	1' Bab 1	Depth Grab/ # of		1.4/1.2	Pa	FOO 2	Yes		he day received by		Rush	n Around		City, State ZIP:	Address:	Company Name:	Bill to: (if different)
18/21/08/D	Date/Time	ofins Xenco, its affiliates and subnises incurred by the client if suc Eurofins Xenco, but not analyze	b As Ba Be B Cd C Sb As Ba Be Cd Cr	-								×	×	TPI	X	(E	PA	8	<b>1</b> 2 .	2.1	B)	)			nduz @ wsp.				
them byen	Relinquished by: (Signature	contractors. It assigns standard terms in losses are due to circumstances beyond. These terms will be enforced unless p	a Cr Co Cu Fe Pb Mg I Co Cu Pb Mn Mo Ni Se																					ANALYSIS REQUES	-487				
Clar of	e) Received by: (Si	and conditions ad the control reviously negotiated.	Ni K Se Ag SiO <sub>2</sub> Hg: 1631														Custody				-				Deliverables: EDD	Reporting: Level II Level II	State of Project:		Work O
1	D		/7470 / 747						Task oil	CL. 21, 82649	CC:	v866338244381	Incident #:	Sample Comments	NaOH+Ascorbic Acid: SAPC	Zn Acetate+NaOH: Zn	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	NaHSO 4: NABIS	H <sub>3</sub> PO <sub>4</sub> : HP	H <sub>2</sub> S0 <sub>4</sub> : H <sub>2</sub> NaOH: Na		Cool: Cool MeOH: Me	None: NO DI Water:	Preservative Codes	ADaPT Other:	PST/UST   TRRP   Level	]	Brownfields RRC	Work Order Comments
	Horland Union Byens 11/18/21/1889 " them toyen ( lat W)	ceived by: (Signature)	numbers of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors: it assigns standard terms and conditions 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 on will be applied to each project and a charge of \$55 for each sample submitted to Eurofins Aenco, but not analyzed. These terms will be enforced unless previously negotiated.  Received by: (Signature)  Pate/Time  Relinquished by: (Signature)  Author (Signature)  Author (Signature)  Author (Signature)	Se Ag SIO <sub>2</sub> Na Sr II Sh O V A Hg: 1631 / 245.1 / 7470 / 747 Eccived by: (Signature)	Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V / Hg: 1631 / 245.1 / 7470 / 747 cceived by: (\$ignature)	Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V 7 Hg: 1631 / 245.1 / 7470 / 747 eccived by: (\$\ightarrow{\text{gnature}}{\text{dl U}}	Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V i Hg: 1631 / 245.1 / 7470 / 747 Ceived by: (Signature)	Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V i Hg: 1631 / 245.1 / 7470 / 747 Hg: (Signature)	Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V i Hg: 1631 / 245.1 / 7470 / 747 Kceived by: (Signature)	Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V i Hg: 1631 / 245.1 / 7470 / 747 cceived by: (Sygnature)	Se Ag SiO <sub>2</sub> Na Sr Tl Hg: 1631/245.1/7	CC: 21.9  CL. 21.9  Task p  Task p  Task p  Task p  Task p  Task p	Se Ag SiO <sub>2</sub> Na Sr Hg: 1631 / 245.1 Cceived by: (Signature)	Se Ag SiO <sub>2</sub> Na Sr Hg: 1631 / 245.1 /	Se Ag SiO <sub>2</sub> Na Sr Hg: 1631 / 245.1	Se Ag SiO <sub>2</sub> Na Sr Hg: 1631 / 245.1 dd M	Se Ag SiO <sub>2</sub> Na Sr Hg: 1631 / 245.1	Se Ag SiO <sub>2</sub> Na Sr Hg: 1631 / 245.1 Cceived by: (Signature)	Se Ag SiO <sub>2</sub> Na Sr Hg: 1631 / 245.1.1	Se Ag SiO <sub>2</sub> Na Sr Hg: 1631 / 245.1	Se Ag SiO <sub>2</sub> Na Sr Hg: 1631 / 245.1	Se Ag SiO <sub>2</sub> Na Sr Hg: 1631 / 245.1	Cool: Cool HCL: HC H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : HP NaHSO <sub>4</sub> : NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub> Zn Acetate+NaOH NaOH+Ascorbic Ac Sample Cor NaOH-Ascorbic Ac Sample Cor 10.21.23.26:53 CC: CL.21.26:27 TGAL 27	None: NO   Cool: Cool   HcL: HC   H250 4: H2   H3F0 4: HP   NaH50 4: NABIS   Na 25 103: NASO 3   Zn Acetate+NaOH   NaOH+Ascorbic Ac   Sample Cor   CC 1	Preservative None: NO Cool: Cool HCL: HC H <sub>2</sub> S0 <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : HP NaHSO <sub>4</sub> : NABIS Na <sub>2</sub> S <sub>1</sub> O <sub>3</sub> : NaSO <sub>3</sub> Zn Acetate+NaOH NaOH+Ascorbic As Sample Cor Sample Cor 10. 21. 22. CC : CL 21. 22. CC : CL 21. 22. CC : CL 21. 22. CC : CL 21. 22. CC : CL 21. 22. CC : CL 21. 22. CC : CC : CC : CC : CC : CC : CC : CC	Preservative    Preservative   None: NO     Cool: Cool     HCL: HC     H₂SO ₄: H₂     H₃PO ₄: NABIS     NaOH+Ascorbic As     NaOH+Asco	Reporting Level   Report   Reporting Level	Adds   Adds	el II  Level III  Ps  EDD

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Work Order Comments

# **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1595-1

SDG Number: Eddy County

List Source: Eurofins Xenco, Carlsbad

Login Number: 1595 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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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# **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1595-1 SDG Number: Eddy County

List Source: Eurofins Xenco, Midland

List Creation: 11/19/21 11:47 AM

Creator: Kramer, Jessica

Login Number: 1595 List Number: 2

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	3.7
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 <6mm (1/4").	N/A	

# **Environment Testing America**

# **ANALYTICAL REPORT**

Eurofins Xenco, Carlsbad 1089 N Canal St. Carlsbad, NM 88220 Tel: (575)988-3199

Laboratory Job ID: 890-1608-1

Laboratory Sample Delivery Group: 31403152.007 tASK 02

Client Project/Site: Black River 4H

For:

WSP USA Inc. 2777 N. Stemmons Freeway Suite 1600 Dallas, Texas 75207

Attn: Joseph Hernandez

MAMER

Authorized for release by: 11/22/2021 7:12:23 PM

Jessica Kramer, Project Manager (432)704-5440

jessica.kramer@eurofinset.com

LINKS

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Released to Imaging: 2/16/2022 10:04:59 AM

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: WSP USA Inc.

Project/Site: Black River 4H

Laboratory Job ID: 890-1608-1

SDG: 31403152.007 tASK 02

# **Table of Contents**

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# **Definitions/Glossary**

Client: WSP USA Inc. Job ID: 890-1608-1 Project/Site: Black River 4H SDG: 31403152.007 tASK 02

#### **Qualifiers**

**GC VOA** 

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

#### **GC Semi VOA**

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

# **HPLC/IC**

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

# **Glossary**

DLC

Abbreviation These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis %R Percent Recovery **CFL** Contains Free Liquid CFU Colony Forming Unit **CNF** Contains No Free Liquid DER Duplicate Error Ratio (normalized absolute difference) Dil Fac Dilution Factor DL Detection Limit (DoD/DOE) DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

EDL Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" Minimum Detectable Activity (Radiochemistry) MDA Minimum Detectable Concentration (Radiochemistry) MDC

Decision Level 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** 

Presumptive **PRES** QC **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TFO

**TNTC** Too Numerous To Count

#### **Case Narrative**

 Client: WSP USA Inc.
 Job ID: 890-1608-1

 Project/Site: Black River 4H
 SDG: 31403152.007 tASK 02

Job ID: 890-1608-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative 890-1608-1

#### Receipt

The samples were received on 11/19/2021 2:10 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 4.0°C

#### **GC VOA**

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

#### GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 880-12855 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

#### HPLC/IC

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

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Client: WSP USA Inc. Job ID: 890-1608-1 Project/Site: Black River 4H SDG: 31403152.007 tASK 02

**Client Sample ID: FS01** 

Lab Sample ID: 890-1608-1 Date Collected: 11/18/21 15:33 Matrix: Solid

Date Received: 11/19/21 14:10 Sample Depth: 4.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 13:07	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 13:07	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 13:07	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/22/21 08:30	11/22/21 13:07	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 13:07	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/22/21 08:30	11/22/21 13:07	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	126		70 - 130			11/22/21 08:30	11/22/21 13:07	1
1,4-Difluorobenzene (Surr)	109		70 - 130			11/22/21 08:30	11/22/21 13:07	1
Method: Total BTEX - Total BTE	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			11/22/21 13:36	1
Analyte Total TDH		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0		50.0	mg/Kg	— <u>-</u>		11/19/21 13:54	1
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte	Pocult	<u> </u>						
-		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0		50.0	mg/Kg	<u>D</u>	Prepared 11/22/21 08:30	Analyzed 11/22/21 12:12	
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over		U			<u>D</u>	<u> </u>		
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg	<u>D</u>	11/22/21 08:30	11/22/21 12:12	1
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	<50.0 <50.0	U U	50.0	mg/Kg	<u>D</u>	11/22/21 08:30 11/22/21 08:30	11/22/21 12:12	1 1
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate	<50.0 <50.0 <50.0	U U	50.0 50.0 50.0	mg/Kg	<u>D</u>	11/22/21 08:30 11/22/21 08:30 11/22/21 08:30	11/22/21 12:12 11/22/21 12:12 11/22/21 12:12	1 1 1 Dil Fac
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	<50.0 <50.0 <50.0 < <b>%Recovery</b>	U U	50.0 50.0 50.0 <i>Limits</i>	mg/Kg	<u> </u>	11/22/21 08:30 11/22/21 08:30 11/22/21 08:30 Prepared	11/22/21 12:12 11/22/21 12:12 11/22/21 12:12 4nalyzed	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	<50.0 <50.0 <50.0 <b>%Recovery</b> 127 138	U U Qualifier S1+	50.0 50.0 50.0 <b>Limits</b> 70 - 130	mg/Kg	<u>D</u>	11/22/21 08:30 11/22/21 08:30 11/22/21 08:30 Prepared 11/22/21 08:30	11/22/21 12:12 11/22/21 12:12 11/22/21 12:12 Analyzed 11/22/21 12:12	1
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	<50.0 <50.0 <50.0 <50.0  **Recovery 127 138 **comatography -	U U Qualifier S1+	50.0 50.0 50.0 <b>Limits</b> 70 - 130	mg/Kg	<u>D</u>	11/22/21 08:30 11/22/21 08:30 11/22/21 08:30 Prepared 11/22/21 08:30	11/22/21 12:12 11/22/21 12:12 11/22/21 12:12 Analyzed 11/22/21 12:12	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

**Client Sample ID: FS02** Lab Sample ID: 890-1608-2

Date Collected: 11/18/21 15:30

Date Received: 11/19/21 14:10 Sample Depth: 4.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/22/21 08:30	11/22/21 13:27	1
Toluene	<0.00199	U	0.00199	mg/Kg		11/22/21 08:30	11/22/21 13:27	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/22/21 08:30	11/22/21 13:27	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/22/21 08:30	11/22/21 13:27	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/22/21 08:30	11/22/21 13:27	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/22/21 08:30	11/22/21 13:27	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	128		70 - 130			11/22/21 08:30	11/22/21 13:27	1

Eurofins Xenco, Carlsbad

Matrix: Solid

Client Sample ID: FS02 Lab Sample ID: 890-1608-2

Date Collected: 11/18/21 15:30 Matrix: Solid
Date Received: 11/19/21 14:10

Sample Depth: 4.5

110		70 - 130					
		• • • • •			11/22/21 08:30	11/22/21 13:27	1
alculation							
Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
<0.00398	U	0.00398	mg/Kg			11/22/21 13:36	1
rganics (DR	O) (GC)						
_		RL	Unit	D	Prepared	Analyzed	Dil Fac
<50.0	U	50.0	mg/Kg			11/19/21 13:54	1
Organics (D	RO) (GC)						
Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 13:15	1
<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 13:15	1
<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 13:15	1
	<0.00398  organics (DR)  Result  <50.0  Organics (DI)  Result  <50.0  <50.0	Result   Qualifier	<0.00398 U 0.00398 erganics (DRO) (GC) Result Qualifier RL <50.0 U 50.0 Organics (DRO) (GC) Result Qualifier RL <50.0 U 50.0 <50.0 U 50.0	Result         Qualifier         RL         Unit           <50.0	Result	Result	<0.00398

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113	70 - 130	11/22/21 08:3	30 11/22/21 13:15	1
o-Terphenyl	130	70 - 130	11/22/21 08:3	30 11/22/21 13:15	1
Method: 300.0 - Anions, Ion Chron	natography - Soluble				

Date Collected: 11/18/21 15:08 Date Received: 11/19/21 14:10

**Client Sample ID: FS03** 

Sample Depth: 4.5

Total TPH

Released to Imaging: 2/16/2022 10:04:59 AM

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		11/22/21 08:30	11/22/21 13:48	1
Toluene	<0.00198	U	0.00198	mg/Kg		11/22/21 08:30	11/22/21 13:48	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		11/22/21 08:30	11/22/21 13:48	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		11/22/21 08:30	11/22/21 13:48	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		11/22/21 08:30	11/22/21 13:48	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		11/22/21 08:30	11/22/21 13:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130			11/22/21 08:30	11/22/21 13:48	1
1,4-Difluorobenzene (Surr)	105		70 - 130			11/22/21 08:30	11/22/21 13:48	1
Method: Total BTEX - Total B	ΓEX Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			11/22/21 13:36	1
- Method: 8015 NM - Diesel Rar	nge Organics (DR	O) (GC)						
	'			Unit				

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11/19/21 13:54

Lab Sample ID: 890-1608-3

**Matrix: Solid** 

50.0

mg/Kg

<50.0 U

2

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Client: WSP USA Inc. Job ID: 890-1608-1 Project/Site: Black River 4H SDG: 31403152.007 tASK 02

**Client Sample ID: FS03** Lab Sample ID: 890-1608-3

Date Collected: 11/18/21 15:08 Matrix: Solid Date Received: 11/19/21 14:10

Sample Depth: 4.5

Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 13:37	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 13:37	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 13:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	109		70 - 130			11/22/21 08:30	11/22/21 13:37	1
o-Terphenyl	125		70 - 130			11/22/21 08:30	11/22/21 13:37	1
- Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	196		4.97	mg/Kg			11/22/21 18:16	1

Lab Sample ID: 890-1608-4 **Client Sample ID: FS04 Matrix: Solid** 

Date Collected: 11/18/21 15:14

Date Received: 11/19/21 14:10

Sample Depth: 4.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		11/22/21 08:30	11/22/21 14:08	1
Toluene	<0.00198	U	0.00198	mg/Kg		11/22/21 08:30	11/22/21 14:08	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		11/22/21 08:30	11/22/21 14:08	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		11/22/21 08:30	11/22/21 14:08	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		11/22/21 08:30	11/22/21 14:08	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		11/22/21 08:30	11/22/21 14:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125		70 - 130			11/22/21 08:30	11/22/21 14:08	1
1,4-Difluorobenzene (Surr)	79		70 - 130			11/22/21 08:30	11/22/21 14:08	1
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			11/22/21 13:36	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			11/19/21 13:54	1
Method: 8015B NM - Diesel Rang	je Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 13:58	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 13:58	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 13:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	111		70 - 130			11/22/21 08:30	11/22/21 13:58	1
o-Terphenyl	126		70 - 130			11/22/21 08:30	11/22/21 13:58	1

Job ID: 890-1608-1

Project/Site: Black River 4H SDG: 31403152.007 tASK 02

**Client Sample ID: FS04** Lab Sample ID: 890-1608-4 Date Collected: 11/18/21 15:14 Matrix: Solid

Date Received: 11/19/21 14:10

Sample Depth: 4.5

Client: WSP USA Inc.

	Method: 300.0 - Anions, Ion Chron	natography -	Soluble						
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
L	Chloride	78.7		4.95	mg/Kg			11/22/21 18:23	1

**Client Sample ID: FS05** Lab Sample ID: 890-1608-5 Matrix: Solid

Date Collected: 11/18/21 15:19 Date Received: 11/19/21 14:10

Sample Depth: 4.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00202	U	0.00202	mg/Kg		11/22/21 08:30	11/22/21 14:29	1
Toluene	<0.00202	U	0.00202	mg/Kg		11/22/21 08:30	11/22/21 14:29	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		11/22/21 08:30	11/22/21 14:29	1
m-Xylene & p-Xylene	<0.00403	U	0.00403	mg/Kg		11/22/21 08:30	11/22/21 14:29	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		11/22/21 08:30	11/22/21 14:29	1
Xylenes, Total	<0.00403	U	0.00403	mg/Kg		11/22/21 08:30	11/22/21 14:29	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130			11/22/21 08:30	11/22/21 14:29	1
1,4-Difluorobenzene (Surr)	99		70 - 130			11/22/21 08:30	11/22/21 14:29	1
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403	mg/Kg			11/22/21 13:36	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/19/21 13:54	1
Method: 8015B NM - Diesel Rang	je Organics (Di	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1	49.9	mg/Kg		11/21/21 12:42	11/22/21 12:12	1
Diesel Range Organics (Over C10-C28)	<49.9	U F1	49.9	mg/Kg		11/21/21 12:42	11/22/21 12:12	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/21/21 12:42	11/22/21 12:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	64	S1-	70 - 130			11/21/21 12:42	11/22/21 12:12	1
o-Terphenyl	63	S1-	70 - 130			11/21/21 12:42	11/22/21 12:12	1
Method: 300.0 - Anions, Ion Chro	matography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
			4.98	mg/Kg			11/22/21 18:31	

Client Sample ID: SW01 Lab Sample ID: 890-1608-6

Date Collected: 11/18/21 15:25

Matrix: Solid

Date Received: 11/19/21 14:10

Sample Depth: 0 - 4.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00199	U	0.00199	mg/Kg		11/22/21 08:30	11/22/21 14:49	
Toluene	< 0.00199	U	0.00199	mg/Kg		11/22/21 08:30	11/22/21 14:49	
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		11/22/21 08:30	11/22/21 14:49	
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/22/21 08:30	11/22/21 14:49	
o-Xylene	< 0.00199	U	0.00199	mg/Kg		11/22/21 08:30	11/22/21 14:49	
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/22/21 08:30	11/22/21 14:49	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	135	S1+	70 - 130			11/22/21 08:30	11/22/21 14:49	
1,4-Difluorobenzene (Surr)	114		70 - 130			11/22/21 08:30	11/22/21 14:49	
Method: Total BTEX - Total BTE	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/22/21 13:36	-
Total TPH	<50.0	U	50.0	mg/Kg			11/19/21 13:54	
Iotal IPH - -	<50.0	U	50.0	mg/Kg			11/19/21 13:54	
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte	Result	Qualifier						
		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
	<50.0		RL	Unit mg/Kg	<u>D</u>	Prepared 11/21/21 12:42	Analyzed 11/22/21 13:15	Dil Fa
(GRO)-C6-C10	<50.0	U	50.0	mg/Kg	D	11/21/21 12:42	11/22/21 13:15	
(GRO)-C6-C10 Diesel Range Organics (Over		U			<u>D</u>			
(GRO)-C6-C10 Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg	<u>D</u>	11/21/21 12:42	11/22/21 13:15	
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)	<50.0 <50.0 <50.0	U U	50.0 50.0 50.0	mg/Kg	<u>D</u>	11/21/21 12:42 11/21/21 12:42 11/21/21 12:42	11/22/21 13:15 11/22/21 13:15 11/22/21 13:15	
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	<50.0 <50.0	U U	50.0	mg/Kg	<u>D</u>	11/21/21 12:42	11/22/21 13:15	
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	<50.0 <50.0 <50.0 <80.0 %Recovery 58	U U U Qualifier	50.0 50.0 50.0 <i>Limits</i>	mg/Kg	<u>D</u>	11/21/21 12:42 11/21/21 12:42 11/21/21 12:42 Prepared	11/22/21 13:15 11/22/21 13:15 11/22/21 13:15 11/22/21 13:15 Analyzed	
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	<50.0 <50.0 <50.0 <8Recovery 58 56	U U Qualifier S1- S1-	50.0 50.0 50.0 <b>Limits</b> 70 - 130	mg/Kg	<u>D</u>	11/21/21 12:42 11/21/21 12:42 11/21/21 12:42 Prepared 11/21/21 12:42	11/22/21 13:15 11/22/21 13:15 11/22/21 13:15 Analyzed 11/22/21 13:15	
C10-C28) OII Range Organics (Over C28-C36)  Surrogate	<50.0 <50.0 <50.0 <50.0  %Recovery 58 56  comatography -	U U Qualifier S1- S1-	50.0 50.0 50.0 <b>Limits</b> 70 - 130	mg/Kg	<u>D</u>	11/21/21 12:42 11/21/21 12:42 11/21/21 12:42 Prepared 11/21/21 12:42	11/22/21 13:15 11/22/21 13:15 11/22/21 13:15 Analyzed 11/22/21 13:15	

Client Sample ID: SW02 Lab Sample ID: 890-1608-7

Date Collected: 11/18/21 15:38 Date Received: 11/19/21 14:10

Sample Depth: 0 - 4.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 15:09	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 15:09	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 15:09	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		11/22/21 08:30	11/22/21 15:09	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 15:09	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		11/22/21 08:30	11/22/21 15:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130			11/22/21 08:30	11/22/21 15:09	1

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14/22/202

Matrix: Solid

#### **Client Sample Results**

Client: WSP USA Inc. Job ID: 890-1608-1 Project/Site: Black River 4H SDG: 31403152.007 tASK 02

**Client Sample ID: SW02** Lab Sample ID: 890-1608-7 Matrix: Solid

Date Collected: 11/18/21 15:38 Date Received: 11/19/21 14:10

Sample Depth: 0 - 4.5

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

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	102	70 - 130	11/22/21 08:30	11/22/21 15:09	1

#### **Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			11/22/21 13:36	1

Method: 8015 NM - Diesel Range Organic	s (DRO)	(GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			11/19/21 13:54	1

Method: 8015B NI	M - Diesel Range	Organics (F	RO) (GC)
Metriou. Ou lab Mi	vi - Diesei Kaliye	Organics (L	iko) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/21/21 12:42	11/22/21 13:37	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/21/21 12:42	11/22/21 13:37	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/21/21 12:42	11/22/21 13:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	60	S1-	70 - 130	11/21/21 12:	11/22/21 13:37	1
o-Terphenyl	58	S1-	70 - 130	11/21/21 12:	42 11/22/21 13:37	1

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

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	20.5	4.96	mg/Kg		_	11/22/21 18:46	1

**Client Sample ID: SW03** Lab Sample ID: 890-1608-8

Date Collected: 11/18/21 15:45 Date Received: 11/19/21 14:10

Sample Depth: 0 - 4.5

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

	/									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Benzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 15:30	1		
Toluene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 15:30	1		
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 15:30	1		
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		11/22/21 08:30	11/22/21 15:30	1		
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 15:30	1		
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/22/21 08:30	11/22/21 15:30	1		
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac		
4-Bromofluorobenzene (Surr)	126		70 - 130			11/22/21 08:30	11/22/21 15:30	1		
1,4-Difluorobenzene (Surr)	104		70 - 130			11/22/21 08:30	11/22/21 15:30	1		

Mothod:	Total RT	EY Tota	I DTEY	Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00399	U	0.00399	ma/Ka			11/22/21 13:36	1

Analyte	•	•	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH			<49.9	U	49.9	mg/Kg			11/19/21 13:54	1

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**Matrix: Solid** 

Matrix: Solid

Lab Sample ID: 890-1608-8

#### **Client Sample Results**

 Client: WSP USA Inc.
 Job ID: 890-1608-1

 Project/Site: Black River 4H
 SDG: 31403152.007 tASK 02

Client Sample ID: SW03

Date Collected: 11/18/21 15:45 Date Received: 11/19/21 14:10

Sample Depth: 0 - 4.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U	49.9	mg/Kg		11/21/21 12:42	11/22/21 13:58	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<49.9	U	49.9	mg/Kg		11/21/21 12:42	11/22/21 13:58	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/21/21 12:42	11/22/21 13:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	59	S1-	70 - 130			11/21/21 12:42	11/22/21 13:58	1
o-Terphenyl	57	S1-	70 - 130			11/21/21 12:42	11/22/21 13:58	1
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
			4.98	mg/Kg			11/22/21 18:53	

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#### **Surrogate Summary**

 Client: WSP USA Inc.
 Job ID: 890-1608-1

 Project/Site: Black River 4H
 SDG: 31403152.007 tASK 02

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

-				Percent Surro
		BFB1	DFBZ1	
_ab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-1604-A-1-B MSD	Matrix Spike Duplicate	110	107	
890-1604-A-1-E MS	Matrix Spike	106	109	
890-1608-1	FS01	126	109	
890-1608-2	FS02	128	110	
890-1608-3	FS03	120	105	
890-1608-4	FS04	125	79	
890-1608-5	FS05	120	99	
890-1608-6	SW01	135 S1+	114	
890-1608-7	SW02	122	102	
890-1608-8	SW03	126	104	
LCS 880-12796/1-A	Lab Control Sample	104	107	
LCSD 880-12796/2-A	Lab Control Sample Dup	106	108	
MB 880-12796/5-A	Method Blank	109	95	
Surrogate Legend				
BFB = 4-Bromofluorobenzen	e (Surr)			
DFBZ = 1,4-Difluorobenzene	(Surr)			

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

Matrix: Solid Prep Type: Total/NA

_				
				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID			
880-1608-A-5-E MSD	880-1608-A-5-E MSD			
Surrogate Legend				
1CO = 1-Chlorooctane				
OTPH = o-Terphenyl				

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits
		1001	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
90-1608-1	FS01	127	138 S1+	
90-1608-1 MS	FS01	110	105	
90-1608-1 MSD	FS01	106	111	
390-1608-2	FS02	113	130	
390-1608-3	FS03	109	125	
90-1608-4	FS04	111	126	
390-1608-5	FS05	64 S1-	63 S1-	
90-1608-5 MS	FS05	119	12 S1-	
390-1608-6	SW01	58 S1-	56 S1-	
390-1608-7	SW02	60 S1-	58 S1-	
90-1608-8	SW03	59 S1-	57 S1-	
CS 880-12847/2-A	Lab Control Sample	108	114	
_CS 880-12848/2-A	Lab Control Sample	149 S1+	4 S1-	
.CSD 880-12847/3-A	Lab Control Sample Dup	97	106	
LCSD 880-12848/3-A	Lab Control Sample Dup	149 S1+	4 S1-	

#### **Surrogate Summary**

Client: WSP USA Inc. Job ID: 890-1608-1 Project/Site: Black River 4H SDG: 31403152.007 tASK 02

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

Matrix: Solid Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
		1CO1	OTPH1					
Lab Sample ID	Client Sample ID	(70-130)	(70-130)					
MB 880-12847/1-A	Method Blank	132 S1+	148 S1+					
MB 880-12848/1-A	Method Blank	64 S1-	65 S1-					
Surrogate Legend								

1CO = 1-Chlorooctane OTPH = o-Terphenyl

Client: WSP USA Inc. Job ID: 890-1608-1 Project/Site: Black River 4H SDG: 31403152.007 tASK 02

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-12796/5-A

**Matrix: Solid** Analysis Batch: 12902 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12796

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 12:05	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 12:05	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 12:05	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/22/21 08:30	11/22/21 12:05	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/22/21 08:30	11/22/21 12:05	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/22/21 08:30	11/22/21 12:05	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Pre	epared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	11/22/	/21 08:30	11/22/21 12:05	1
1,4-Difluorobenzene (Surr)	95		70 - 130	11/22/	/21 08:30	11/22/21 12:05	1

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 880-12796/1-A

Matrix: Solid

Analysis Batch: 12902

Prep Type: Total/NA

Prep Batch: 12796

	<b>Spike</b>	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1018		mg/Kg		102	70 - 130	
Toluene	0.100	0.09108		mg/Kg		91	70 - 130	
Ethylbenzene	0.100	0.08837		mg/Kg		88	70 - 130	
m-Xylene & p-Xylene	0.200	0.1832		mg/Kg		92	70 - 130	
o-Xylene	0.100	0.09141		mg/Kg		91	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	104	70 - 130
1,4-Difluorobenzene (Surr)	107	70 - 130

Lab Sample ID: LCSD 880-12796/2-A

Matrix: Solid

Analysis Batch: 12902

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA

Prep Batch: 12796

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.09500		mg/Kg		95	70 - 130	7	35
Toluene	0.100	0.08552		mg/Kg		86	70 - 130	6	35
Ethylbenzene	0.100	0.08678		mg/Kg		87	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1798		mg/Kg		90	70 - 130	2	35
o-Xylene	0.100	0.08882		mg/Kg		89	70 - 130	3	35

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	106	70 - 130
1,4-Difluorobenzene (Surr)	108	70 - 130

Lab Sample ID: 890-1604-A-1-B MSD

Matrix: Solid

Analysis Batch: 12902

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

Prep Batch: 12796

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00201	U	0.0994	0.08173		mg/Kg		82	70 - 130	12	35
Toluene	<0.00201	U F1	0.0994	0.07197		mg/Kg		71	70 - 130	19	35

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#### QC Sample Results

Client: WSP USA Inc. Job ID: 890-1608-1 Project/Site: Black River 4H SDG: 31403152.007 tASK 02

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

Lab Sample ID: 890-1604-A-1-B MSD **Matrix: Solid** 

Lab Sample ID: 890-1604-A-1-E MS

**Analysis Batch: 12902** 

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 12796

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ethylbenzene	<0.00201	U F1	0.0994	0.06480	F1	mg/Kg		65	70 - 130	14	35
m-Xylene & p-Xylene	<0.00402	U F1	0.199	0.1341	F1	mg/Kg		67	70 - 130	18	35
o-Xylene	<0.00201	U F1	0.0994	0.06690	F1	mg/Kg		67	70 - 130	20	35

MSD MSD

Surrogate	%Recovery Qu	ualifier	Limits
4-Bromofluorobenzene (Surr)	110		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 12796

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier %Rec Limits Analyte Unit 0.100 0.07245 Benzene <0.00201 U mg/Kg 72 70 - 130 Toluene 0.100 0.05964 F1 <0.00201 UF1 mg/Kg 58 70 - 130 56 Ethylbenzene <0.00201 UF1 0.100 0.05615 F1 mg/Kg 70 - 130 <0.00402 UF1 0.200 0.1118 F1 70 - 130 m-Xylene & p-Xylene mg/Kg 56 0.100 <0.00201 UF1 0.05493 F1 70 - 130 o-Xylene mg/Kg 54

MS MS

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

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

Lab Sample ID: MB 880-12847/1-A

**Matrix: Solid** 

**Matrix: Solid** 

**Analysis Batch: 12902** 

Analysis Batch: 12853

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12847

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 10:19	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 10:19	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/22/21 08:30	11/22/21 10:19	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	132	S1+	70 - 130	11/22/21 08:30	11/22/21 10:19	1
o-Terphenyl	148	S1+	70 - 130	11/22/21 08:30	11/22/21 10:19	1

Lab Sample ID: LCS 880-12847/2-A

**Matrix: Solid** 

**Analysis Batch: 12853** 

**Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Prep Batch: 12847

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	861.4		mg/Kg		86	70 - 130	 
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	1120		mg/Kg		112	70 - 130	
C10-C28)								

Job ID: 890-1608-1

Client: WSP USA Inc. Project/Site: Black River 4H SDG: 31403152.007 tASK 02

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

Lab Sample ID: LCS 880-12847/2-A **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 12853

			Prep Batch: 12847
LCS	LCS		
overy	Qualifier	Limits	

%Recover Surrogate 70 - 130 1-Chlorooctane 108 o-Terphenyl 114 70 - 130

Lab Sample ID: LCSD 880-12847/3-A Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 12853							Prep Batch: 12847		
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	1000	837.9		mg/Kg		84	70 - 130	3	20
(GRO)-C6-C10									
Diesel Range Organics (Over	1000	1057		mg/Kg		106	70 - 130	6	20
C10-C28)									

LCSD LCSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 97 70 - 130 o-Terphenyl 106 70 - 130

Lab Sample ID: 890-1608-1 MS **Client Sample ID: FS01** Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 12853** Prep Batch: 12847 Sample Sample Spike MS MS %Rec.

		- · · · · ·								
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<50.0	U	999	1040		mg/Kg		104	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over	<50.0	U	999	1010		mg/Kg		100	70 - 130	
C10-C28)										

ı		IVIS	IVIS	
	Surrogate	%Recovery	Qualifier	Limits
	1-Chlorooctane	110		70 - 130
	o-Ternhenyl	105		70 130

Lab Sample ID: 890-1608-1 MSD **Client Sample ID: FS01** 

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 12853 Prep Batch: 12847

	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	998	1033		mg/Kg		104	70 - 130	1	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<50.0	U	998	1064		mg/Kg		105	70 - 130	5	20
C10-C28)											

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	106		70 - 130
o-Terphenyl	111		70 - 130

Client: WSP USA Inc. Job ID: 890-1608-1 Project/Site: Black River 4H SDG: 31403152.007 tASK 02

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

MD MD

65 S1-

Lab Sample ID: MB 880-12848/1-A

**Matrix: Solid** Analysis Batch: 12855 Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 12848

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0	mg/Kg		11/21/21 12:42	11/22/21 10:19	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		11/21/21 12:42	11/22/21 10:19	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/21/21 12:42	11/22/21 10:19	1
	МВ	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	64	S1-	70 - 130			11/21/21 12:42	11/22/21 10:19	1

70 - 130

Lab Sample ID: LCS 880-12848/2-A

**Matrix: Solid** Analysis Batch: 12855

o-Terphenyl

Client Sample ID: Lab Control Sample

11/21/21 12:42 11/22/21 10:19

Prep Type: Total/NA Prep Batch: 12848

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 1122 Gasoline Range Organics 1500 75 70 - 130 mg/Kg (GRO)-C6-C10 1500 1063 Diesel Range Organics (Over mg/Kg 71 70 - 130C10-C28)

LCS LCS %Recovery Qualifier Limits Surrogate 1-Chlorooctane 149 S1+ 70 - 130 o-Terphenyl 4 S1-70 - 130

Lab Sample ID: LCSD 880-12848/3-A

**Matrix: Solid** 

**Analysis Batch: 12855** 

Client Sample ID: Lab Co	ntrol Sample Dup
--------------------------	------------------

Prep Type: Total/NA

Prep Batch: 12848

	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1500	1149		mg/Kg		77	70 - 130	2	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1500	1050		mg/Kg		70	70 - 130	1	20	
C10-C28)										

LCSD LCSD %Recovery Qualifier Limits Surrogate 149 S1+ 70 - 130 1-Chlorooctane 70 - 130 o-Terphenyl 4 S1-

Lab Sample ID: 880-1608-A-5-E MSD Client Sample ID: 880-1608-A-5-E MSD Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 12855** 

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9		500	397.0		mg/Kg					
Diesel Range Organics (Over C10-C28)	<49.9		500	148.0		mg/Kg					

Job ID: 890-1608-1 SDG: 31403152.007 tASK 02

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

Client Sample ID: 880-1608-A-5-E MSD Lab Sample ID: 880-1608-A-5-E MSD

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

Analysis Batch: 12855

Client: WSP USA Inc.

Project/Site: Black River 4H

MSD MSD

Surrogate %Recovery Qualifier Limits

1-Chlorooctane o-Terphenyl

Lab Sample ID: 890-1608-5 MS **Client Sample ID: FS05** 

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

Analysis Batch: 12855

-	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	<49.9	U F1	500	1264	F1	mg/Kg		246	70 - 130
(GRO)-C6-C10									
Diesel Range Organics (Over	<49.9	U F1	500	1178	F1	mg/Kg		230	70 - 130
C10-C28)									

MS MS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	119		70 - 130
o-Terphenyl	12	S1-	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-12936/1-A Client Sample ID: Method Blank **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 12958** 

MB MB

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00 U	5.00	mg/Kg			11/22/21 14:42	1

Lab Sample ID: LCS 880-12936/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 12958** 

Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit %Rec Limits Chloride 250 263.7 mg/Kg 105 90 - 110

Lab Sample ID: LCSD 880-12936/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid** 

**Analysis Batch: 12958** 

Spike LCSD LCSD %Rec. Result Qualifier Added Analyte Unit %Rec Limits RPD Limit Chloride 250 264.5 mg/Kg 106 90 - 110

Lab Sample ID: 890-1604-A-1-I MS Client Sample ID: Matrix Spike

**Matrix: Solid Analysis Batch: 12958** 

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	1460		1250	2635		mg/Kg		94	90 - 110	_

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**Prep Type: Soluble** 

RPD

**Prep Type: Soluble** 

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#### **QC Sample Results**

Job ID: 890-1608-1 Client: WSP USA Inc. Project/Site: Black River 4H SDG: 31403152.007 tASK 02

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-1604-A-1-J MSD **Client Sample ID: Matrix Spike Duplicate Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 12958

•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	1460		1250	2634		mg/Kg		94	90 - 110	0	20

#### **QC Association Summary**

 Client: WSP USA Inc.
 Job ID: 890-1608-1

 Project/Site: Black River 4H
 SDG: 31403152.007 tASK 02

#### **GC VOA**

#### Prep Batch: 12796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1608-1	FS01	Total/NA	Solid	5035	
890-1608-2	FS02	Total/NA	Solid	5035	
890-1608-3	FS03	Total/NA	Solid	5035	
890-1608-4	FS04	Total/NA	Solid	5035	
890-1608-5	FS05	Total/NA	Solid	5035	
890-1608-6	SW01	Total/NA	Solid	5035	
890-1608-7	SW02	Total/NA	Solid	5035	
890-1608-8	SW03	Total/NA	Solid	5035	
MB 880-12796/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-12796/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-12796/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1604-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	
890-1604-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	

#### Analysis Batch: 12902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1608-1	FS01	Total/NA	Solid	8021B	12796
890-1608-2	FS02	Total/NA	Solid	8021B	12796
890-1608-3	FS03	Total/NA	Solid	8021B	12796
890-1608-4	FS04	Total/NA	Solid	8021B	12796
890-1608-5	FS05	Total/NA	Solid	8021B	12796
890-1608-6	SW01	Total/NA	Solid	8021B	12796
890-1608-7	SW02	Total/NA	Solid	8021B	12796
890-1608-8	SW03	Total/NA	Solid	8021B	12796
MB 880-12796/5-A	Method Blank	Total/NA	Solid	8021B	12796
LCS 880-12796/1-A	Lab Control Sample	Total/NA	Solid	8021B	12796
LCSD 880-12796/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	12796
890-1604-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	12796
890-1604-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	12796

#### Analysis Batch: 12945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1608-1	FS01	Total/NA	Solid	Total BTEX	
890-1608-2	FS02	Total/NA	Solid	Total BTEX	
890-1608-3	FS03	Total/NA	Solid	Total BTEX	
890-1608-4	FS04	Total/NA	Solid	Total BTEX	
890-1608-5	FS05	Total/NA	Solid	Total BTEX	
890-1608-6	SW01	Total/NA	Solid	Total BTEX	
890-1608-7	SW02	Total/NA	Solid	Total BTEX	
890-1608-8	SW03	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### Analysis Batch: 12781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1608-1	FS01	Total/NA	Solid	8015 NM	
890-1608-2	FS02	Total/NA	Solid	8015 NM	
890-1608-3	FS03	Total/NA	Solid	8015 NM	
890-1608-4	FS04	Total/NA	Solid	8015 NM	
890-1608-5	FS05	Total/NA	Solid	8015 NM	
890-1608-6	SW01	Total/NA	Solid	8015 NM	

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11/22/2021

#### **QC Association Summary**

 Client: WSP USA Inc.
 Job ID: 890-1608-1

 Project/Site: Black River 4H
 SDG: 31403152.007 tASK 02

#### GC Semi VOA (Continued)

#### **Analysis Batch: 12781 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1608-7	SW02	Total/NA	Solid	8015 NM	
890-1608-8	SW03	Total/NA	Solid	8015 NM	

#### Prep Batch: 12847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1608-1	FS01	Total/NA	Solid	8015NM Prep	
890-1608-2	FS02	Total/NA	Solid	8015NM Prep	
890-1608-3	FS03	Total/NA	Solid	8015NM Prep	
890-1608-4	FS04	Total/NA	Solid	8015NM Prep	
MB 880-12847/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-12847/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-12847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1608-1 MS	FS01	Total/NA	Solid	8015NM Prep	
890-1608-1 MSD	FS01	Total/NA	Solid	8015NM Prep	

#### Prep Batch: 12848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1608-5	FS05	Total/NA	Solid	8015NM Prep	
890-1608-6	SW01	Total/NA	Solid	8015NM Prep	
890-1608-7	SW02	Total/NA	Solid	8015NM Prep	
890-1608-8	SW03	Total/NA	Solid	8015NM Prep	
MB 880-12848/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-12848/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-12848/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 12853**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1608-1	FS01	Total/NA	Solid	8015B NM	12847
890-1608-2	FS02	Total/NA	Solid	8015B NM	12847
890-1608-3	FS03	Total/NA	Solid	8015B NM	12847
890-1608-4	FS04	Total/NA	Solid	8015B NM	12847
MB 880-12847/1-A	Method Blank	Total/NA	Solid	8015B NM	12847
LCS 880-12847/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	12847
LCSD 880-12847/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	12847
890-1608-1 MS	FS01	Total/NA	Solid	8015B NM	12847
890-1608-1 MSD	FS01	Total/NA	Solid	8015B NM	12847

#### Analysis Batch: 12855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1608-5	FS05	Total/NA	Solid	8015B NM	12848
890-1608-6	SW01	Total/NA	Solid	8015B NM	12848
890-1608-7	SW02	Total/NA	Solid	8015B NM	12848
890-1608-8	SW03	Total/NA	Solid	8015B NM	12848
MB 880-12848/1-A	Method Blank	Total/NA	Solid	8015B NM	12848
LCS 880-12848/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	12848
LCSD 880-12848/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	12848
880-1608-A-5-E MSD	880-1608-A-5-E MSD	Total/NA	Solid	8015B NM	
890-1608-5 MS	FS05	Total/NA	Solid	8015B NM	

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#### **QC Association Summary**

 Client: WSP USA Inc.
 Job ID: 890-1608-1

 Project/Site: Black River 4H
 SDG: 31403152.007 tASK 02

#### **HPLC/IC**

#### Leach Batch: 12936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1608-1	FS01	Soluble	Solid	DI Leach	
890-1608-2	FS02	Soluble	Solid	DI Leach	
890-1608-3	FS03	Soluble	Solid	DI Leach	
890-1608-4	FS04	Soluble	Solid	DI Leach	
890-1608-5	FS05	Soluble	Solid	DI Leach	
890-1608-6	SW01	Soluble	Solid	DI Leach	
890-1608-7	SW02	Soluble	Solid	DI Leach	
890-1608-8	SW03	Soluble	Solid	DI Leach	
MB 880-12936/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-12936/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-12936/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1604-A-1-I MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1604-A-1-J MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### **Analysis Batch: 12958**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1608-1	FS01	Soluble	Solid	300.0	12936
890-1608-2	FS02	Soluble	Solid	300.0	12936
890-1608-3	FS03	Soluble	Solid	300.0	12936
890-1608-4	FS04	Soluble	Solid	300.0	12936
890-1608-5	FS05	Soluble	Solid	300.0	12936
890-1608-6	SW01	Soluble	Solid	300.0	12936
890-1608-7	SW02	Soluble	Solid	300.0	12936
890-1608-8	SW03	Soluble	Solid	300.0	12936
MB 880-12936/1-A	Method Blank	Soluble	Solid	300.0	12936
LCS 880-12936/2-A	Lab Control Sample	Soluble	Solid	300.0	12936
LCSD 880-12936/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	12936
890-1604-A-1-I MS	Matrix Spike	Soluble	Solid	300.0	12936
890-1604-A-1-J MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	12936

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Client Sample ID: FS01 Lab Sample ID: 890-1608-1

Date Collected: 11/18/21 15:33 Matrix: Solid
Date Received: 11/19/21 14:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	12796	11/22/21 08:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12902	11/22/21 13:07	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10.02 mL	12847	11/22/21 08:30	AJ	XEN MID
Total/NA	Analysis	8015B NM		1			12853	11/22/21 12:12	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	12936	11/22/21 12:15	CA	XEN MID
Soluble	Analysis	300.0		1			12958	11/22/21 17:47	SC	XEN MID

Client Sample ID: FS02 Lab Sample ID: 890-1608-2

Date Collected: 11/18/21 15:30 Matrix: Solid
Date Received: 11/19/21 14:10

	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	12796	11/22/21 08:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12902	11/22/21 13:27	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10.02 mL	12847	11/22/21 08:30	AJ	XEN MID
Total/NA	Analysis	8015B NM		1			12853	11/22/21 13:15	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	12936	11/22/21 12:15	CA	XEN MID
Soluble	Analysis	300.0		1			12958	11/22/21 18:09	SC	XEN MID

Client Sample ID: FS03 Lab Sample ID: 890-1608-3

Date Collected: 11/18/21 15:08 Matrix: Solid
Date Received: 11/19/21 14:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	12796	11/22/21 08:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12902	11/22/21 13:48	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10.03 mL	12847	11/22/21 08:30	AJ	XEN MID
Total/NA	Analysis	8015B NM		1			12853	11/22/21 13:37	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	12936	11/22/21 12:15	CA	XEN MID
Soluble	Analysis	300.0		1			12958	11/22/21 18:16	SC	XEN MID

Client Sample ID: FS04 Lab Sample ID: 890-1608-4

Date Collected: 11/18/21 15:14 Matrix: Solid
Date Received: 11/19/21 14:10

	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	12796	11/22/21 08:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12902	11/22/21 14:08	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID

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Client Sample ID: FS04 Lab Sample ID: 890-1608-4

Date Collected: 11/18/21 15:14

Date Received: 11/19/21 14:10

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10.02 mL	12847	11/22/21 08:30	AJ	XEN MID
Total/NA	Analysis	8015B NM		1			12853	11/22/21 13:58	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	12936	11/22/21 12:15	CA	XEN MID
Soluble	Analysis	300.0		1			12958	11/22/21 18:23	SC	XEN MID

Client Sample ID: FS05 Lab Sample ID: 890-1608-5

Date Collected: 11/18/21 15:19

Matrix: Solid

Date Received: 11/19/21 14:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	12796	11/22/21 08:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12902	11/22/21 14:29	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12848	11/21/21 12:42	AJ	XEN MID
Total/NA	Analysis	8015B NM		1			12855	11/22/21 12:12	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	12936	11/22/21 12:15	CA	XEN MID
Soluble	Analysis	300.0		1			12958	11/22/21 18:31	SC	XEN MID

Client Sample ID: SW01 Lab Sample ID: 890-1608-6

Date Collected: 11/18/21 15:25 Date Received: 11/19/21 14:10

	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	12796	11/22/21 08:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12902	11/22/21 14:49	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	12848	11/21/21 12:42	AJ	XEN MID
Total/NA	Analysis	8015B NM		1			12855	11/22/21 13:15	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	12936	11/22/21 12:15	CA	XEN MID
Soluble	Analysis	300.0		5			12958	11/22/21 18:38	SC	XEN MID

Client Sample ID: SW02 Lab Sample ID: 890-1608-7

Date Collected: 11/18/21 15:38 Date Received: 11/19/21 14:10

	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	12796	11/22/21 08:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12902	11/22/21 15:09	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	12848	11/21/21 12:42	AJ	XEN MID
Total/NA	Analysis	8015B NM		1			12855	11/22/21 13:37	AJ	XEN MID

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**Matrix: Solid** 

**Matrix: Solid** 

Client Sample ID: SW02 Lab Sample ID: 890-1608-7

Date Collected: 11/18/21 15:38 Matrix: Solid
Date Received: 11/19/21 14:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.04 g	50 mL	12936	11/22/21 12:15	CA	XEN MID
Soluble	Analysis	300.0		1			12958	11/22/21 18:46	SC	XEN MID

Client Sample ID: SW03 Lab Sample ID: 890-1608-8

Date Collected: 11/18/21 15:45 Matrix: Solid

Date Received: 11/19/21 14:10

	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	12796	11/22/21 08:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12902	11/22/21 15:30	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/22/21 13:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/19/21 13:54	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	12848	11/21/21 12:42	AJ	XEN MID
Total/NA	Analysis	8015B NM		1			12855	11/22/21 13:58	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	12936	11/22/21 12:15	CA	XEN MID
Soluble	Analysis	300.0		1			12958	11/22/21 18:53	SC	XEN MID

Laboratory References:

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

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#### **Accreditation/Certification Summary**

 Client: WSP USA Inc.
 Job ID: 890-1608-1

 Project/Site: Black River 4H
 SDG: 31403152.007 tASK 02

#### Laboratory: Eurofins Xenco, Midland

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

Authority		ogram	Identification Number	<b>Expiration Date</b>	
Texas	NE	ELAP	T104704400-21-22	06-30-22	
The following analytes	are included in this report, bu	t the laboratory is not certif	ied by the governing authority. This list ma	av include analytes for wh	
the agency does not of	fer certification.	•	3,	.,	
the agency does not of Analysis Method	fer certification.  Prep Method	Matrix	Analyte	.,	
0 ,		Matrix Solid	, , ,		

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#### **Method Summary**

 Client: WSP USA Inc.
 Job ID: 890-1608-1

 Project/Site: Black River 4H
 SDG: 31403152.007 tASK 02

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

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

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#### **Sample Summary**

Client: WSP USA Inc. Project/Site: Black River 4H Job ID: 890-1608-1

SDG: 31403152.007 tASK 02

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1608-1	FS01	Solid	11/18/21 15:33	11/19/21 14:10	4.5
890-1608-2	FS02	Solid	11/18/21 15:30	11/19/21 14:10	4.5
890-1608-3	FS03	Solid	11/18/21 15:08	11/19/21 14:10	4.5
890-1608-4	FS04	Solid	11/18/21 15:14	11/19/21 14:10	4.5
890-1608-5	FS05	Solid	11/18/21 15:19	11/19/21 14:10	4.5
890-1608-6	SW01	Solid	11/18/21 15:25	11/19/21 14:10	0 - 4.5
890-1608-7	SW02	Solid	11/18/21 15:38	11/19/21 14:10	0 - 4.5
890-1608-8	SW03	Solid	11/18/21 15:45	11/19/21 14:10	0 - 4.5

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## Chain of Custody

Work Order No:

of service. 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 Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard P.O. Number: Phone: Received Intact: Sampler's Name: Project Number Project Name: Project Manager: Sample Custody Seals: Cooler Custody Seals: Temperature (°C): City, State ZIP: Company Name: SAMPLE RECEIPT Address: Relinquished by: (Signature) Total 200.7 / 6010 Circle Method(s) and Metal(s) to be analyzed Sample Identification SWUS SW02 SW01 FS05 FS04 FS03 FS02 FS01 Luis Del Val Midland, TX 79705 3300 North A Street WSP USA Inc Joseph Hernandez 432.236.3849 200.8 / 6020: Yes Mo Yes Cost Center: CL.21.02649 31403152.007- Task 02 is Yes Temp Blank: 8 Black River 4H E.O No Matrix N/A N/A ഗ ഗ ഗ S ഗ ഗ S 11/18/202 11/18/2021 11/1/8/2011 11/18/202 11/18/2021 11/18/2021 11/18/2021 11/18/2021 Sampled Received by: (Signature) Date es Y Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000) Correction Factor: ~ ( Total Containers: 8RCRA 13PPM Texas 11 Al FOO MIN TCLP / SPLP 6010: 8RCRA hermometer ID Time Sampled 51,91 1519 1508 1530 1533 1538 1525 1514 Wet Ice: Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296 Routine Email: | luis.delval@wsp.com; | joe.hernandez@wsp.com Due Date Rush: &4 hr Turn Around City, State ZIP Bill to: (if different) Company Name: 0-4.5" Depth (es 0-4.5 0-4.5 4.5 4.5 4.5 4.5 4. 5<u>1</u> Ö **Number of Containers** Sb As Sb As Ba **元**の Date/Time TPH (EPA 8015) Ва BTEX (EPA 0=8021) Be Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Chloride (EPA 300.0) B Cd Ca Cr Co Cu Fe Pb Mg Relinquished by: (Signature) ANALYSIS REQUEST 890-1608 Chain of Custody Deliverables: EDD Program: UST/PST ☐PRP ☐Brownfields ☐RC State of Project: Mn Mo Ni Received by: (Signature) K Se www.xenco.com **Work Order Comments** Ą SiO2 Na Sr TI Sn U V TSU/TS ADaPT  $\square$ 1631 / 245.1 / 7470 / 7471 : Hg Incident #: nAPP2128544986 TAT starts the day recevied by the lab, if received by 4:30pm Page Sample Comments Work Order Notes Other \_uperfund □vel IV Date/Time Zn 으 

Revised Date 051418 Rev. 2018

Carlsbad, NM 88220

1089 N Canal St

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Chain of Custody Record

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Environment Testing
America

State Zip: TX 79701 Vote: Since laboratory accreditations are subject to change Eurofins Xenco LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently realinatin accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Xenco LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Xenco LLC.

attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Xenco LLC. SW01 (890-1608-6) FS02 (890-1608-2) SW03 (890-1608-8) SW02 (890-1608-7) FS05 (890-1608-5) FS03 (890-1608-3) FS01 (890-1608-1) Sample Identification - Client ID (Lab ID Black Rivedr 4H 432-704-5440(Tel) Midland Shipping/Receiving mpty Kit Relinquished by Deliverable Requested | II | II | IV Other (specify) ossible Hazard Identification =S04 (890-1608-4) 1211 W Florida Ave hone 575-988-3199 Fax. 575-988-3199 elinquished by urofins Xenco Custody Seals Intact. linquished by linquished by: ient Contact lient Information Yes N 0 (Sub Contract Lab) Custody Seal No C Sampler Date/Time Primary Deliverable Rank 2 89000048 WO# PO #: Due Date Requested Phone FAT Requested (days). Date/Time Sample Date 11/18/21 11/18/21 11/18/21 11/18/21 11/18/21 11/18/21 11/18/21 11/18/21 Mountain 15 08 Date Mountain 15 19 Mountain Mountain 15 45 Mountain 15 38 Mountain 15 25 Mountain 15 14 Mountain 15 30 15 33 G=grab) (C=comp Sample Preservation Code: Type Company Company Company Matrix Solid Solid Solid Solid Solid Solid Solid Solid E-Mail jessica kramer@eurofinset com
Accreditations Required (See note).
NELAP - Louisiana NELAP - Texas Kramer, Jessica Field Filtered Sample (Yes or No) Ime Perform MS/MSD (Yes or No) Special Instructions/QC Requirements Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For \_\_\_\_\_\_ Mon 8015MOD\_NM/8015NM\_S\_Prep Full TPH × × × × × × × × Cooler Temperature(s) °C and Other Remarks Rebelived by: 300 ORGFM 28D/DI LEACH Chloride × × × × ×  $\times$  $\times$ × × 8021B/5035FP\_Calc BTEX × × × × × × × Total\_BTEX\_GCV × × × × × × × Analysis Requested 8015MOD\_Calc × × × × × × × State of Origin.
New Mexico Carrier Tracking No(s) Jate/I Ime J DI Water K EDTA L EDA Total Number of containers per la ر کلید 148 A HCL
B NaCH
C Zn Acetate
D Nitric Acid
E NaHSO4
F MaCH
G Amchlor
H Ascorbic Acid COC No 890-517 1 Page 1 Preservation Codes 390-1608-1 Special Instructions/Note: 으 M - Hexane
N None
O AsNaO2
P Na2O4S
Q Na2SO3
R Na2SO3
S H2SO4
T TSP Dodecahydrate
U Acetone N≶ Company Company other (specify) MCAA pH 4-5 **Months** F

/er 06/08/2021

Carlsbad NM 88220

089 N Canal St

**Eurofins Xenco, Carlsbad** 

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# **Chain of Custody Record**

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**Environment Testing** 

State, Zip: TX 79701 SW02 (890-1608-7) SW01 (890-1608-6) FS01 (890-1608-1) SW03 (890-1608-8) FS02 (890-1608-2) Sample Identification - Client ID (Lab ID) <sup>-</sup>S05 (890-1608-5) 432-704-5440(Tel) Phone: 575-988-3199 Fax 575-988-3199 Empty Kit Relinquished by lote Since laboratory accreditations are subject to change, Eurofins Xenco LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment laintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Xenco LLC laboratory or other instructions will be provided tention immediately. If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Xenco LLC. <sup>-</sup>S03 (890-1608-3) eliverable Requested | II III IV ossible Hazard Identification 'S04 (890-1608-4) /lidland 211 W Florida Ave hipping/Receiving lack Rivedr 4H linquished by: linquished by Custody Seals Intact. yect Name: rofins Xenco lient Information inquished by: Yes ö (Sub Contract Lab Custody Seal No Other (specify) (C) Date/Time Date/Time WO# TAT Requested (days) Primary Deliverable Rank. 2 The Date Requested 11/22/2021 Date/Time 39000048 roject #: Sample Date 11/18/21 11/18/21 11/18/21 11/18/21 11/18/21 11/18/21 11/18/21 11/18/21 Mountain 15 38 Mountain 15 25 Mountain 15 19 Mountain 15 14 Mountain 15 08 Mountain 15 30 Date Mountair Mountair 15 45 15 33 (C=comp, G=grab) Sample Preservation Code: Type Company Company Company Matrix Solid Solid Solid Solid Solid Solid Solid Solid jessica kramer@eurofinset.com Kramer, Jessica Accreditations Required (See note)
NELAP - Louisiana, NELAP - Texas Field Filtered Sample (Yes or No) Time Perform MS/MSD (Yes or No) Special Instructions/QC Requirements Received by: × × 8015MOD\_NM/8015NM\_S\_Prep Full TPH × × × × × Cooler Temperature(s) °C and Other Remarks × Return To Client 300\_ORGFM\_28D/DI\_LEACH Chloride × × × × × × × × 8021B/5035FP\_Calc BTEX × × × × × × × × × × × × × × × Total BTEX GCV × Analysis Requested × × × × 8015MOD\_Calc × × This sample shipment is forwarded under chain-of-custody If the laboratory does not currently actions will be provided. Any changes to accreditation status should be brought to Eurofins Xenco LLC Disposal By Lab State of Origin New Mexico Carrier Tracking No(s) Method of Shipment A HCL
B NaOH
C D Nitro Acid
E NaHSO4
F- MeOH
G Amchlor
H- Ascorbic Acid
I Ice
J Di Water
K EDTA
L EDA Archive For 4 Total Number of containers أنكيه A. إكني gajing. Ç. Page Page 1 of 1 COC No. 890-517 1 Preservation 390-1608-1 Special Instructions/Note: N ≤ < C → O J O J O Z Z Company Company M Hexane
V None
AkNaO2
Na2O4S
Na2O3
Ak2SO3
Ak2SO3
Ak2SO3
Ak2SO3
Ak2SO3
Ak2SO4
TSP Dodecahydrate Ver 06/08/2021 other (specify) Acetone MCAA

#### **Login Sample Receipt Checklist**

Job Number: 890-1608-1

SDG Number: 31403152.007 tASK 02

List Source: Eurofins Xenco, Carlsbad

Login Number: 1608 List Number: 1 Creator: Clifton, Cloe

Client: WSP USA Inc.

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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#### **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1608-1

SDG Number: 31403152.007 tASK 02

List Source: Eurofins Xenco, Midland

List Creation: 11/22/21 08:09 AM

Creator: Kramer, Jessica

Login Number: 1608

List Number: 2

<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	4.2/4.3
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	

Released to Imaging: 2/16/2022 10:04:59 AM

### **Environment Testing America**

#### **ANALYTICAL REPORT**

Eurofins Xenco, Carlsbad 1089 N Canal St. Carlsbad, NM 88220 Tel: (575)988-3199

Laboratory Job ID: 890-1610-1

Laboratory Sample Delivery Group: 31403152.007

Client Project/Site: Black River 4h

For:

WSP USA Inc. 2777 N. Stemmons Freeway Suite 1600 Dallas, Texas 75207

Attn: Kalei Jennings

MAMER

Authorized for release by: 11/23/2021 7:37:46 PM

Jessica Kramer, Project Manager (432)704-5440

jessica.kramer@eurofinset.com

LINKS .....

Review your project results through

**Have a Question?** 



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Released to Imaging: 2/16/2022 10:04:59 AM

Client: WSP USA Inc.

Laboratory Job ID: 890-1610-1

Project/Site: Black River 4h

SDG: 31403152.007

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#### **Definitions/Glossary**

Client: WSP USA Inc. Job ID: 890-1610-1 Project/Site: Black River 4h SDG: 31403152.007

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** F1 MS and/or MSD recovery exceeds control limits. F2 MS/MSD RPD exceeds control limits

Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

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

**HPLC/IC** 

Qualifier **Qualifier Description** 

F1 MS and/or MSD recovery exceeds control limits.

U Indicates the analyte was analyzed for but not detected.

**Glossary** 

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

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery CFL Contains Free Liquid CFU Colony Forming Unit Contains No Free Liquid **CNF** 

Duplicate Error Ratio (normalized absolute difference) DER

Dil Fac Dilution Factor

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) Limit of Quantitation (DoD/DOE) LOQ

MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Method Quantitation Limit

Method Detection Limit MDL ML Minimum Level (Dioxin) MPN Most Probable Number MOI

NC Not Calculated

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

NEG Negative / Absent POS Positive / Present

Practical Quantitation Limit **PQL PRES** Presumptive

**Quality Control** QC

Relative Error Ratio (Radiochemistry) **RER** 

Reporting Limit or Requested Limit (Radiochemistry) RL

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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) **TEQ** 

**TNTC** Too Numerous To Count

#### Case Narrative

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: 31403152.007

Job ID: 890-1610-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative 890-1610-1

#### Receipt

The sample was received on 11/22/2021 10:10 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

#### 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: An incorrect volume of surrogate spiking solution was inadvertently added the following samples: (LCS 880-13010/2-A) and (LCSD 880-13010/3-A). Percent recoveries are based on the amount spiked. MS/MSD were acceptable.

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-13010 and analytical batch 880-13046 was outside the upper control limits.

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

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-12589 and 880-12589 and analytical batch 880-12961 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. The associated samples are: FS06 (890-1610-1), (890-1573-A-31-H MS) and (890-1573-A-31-I MSD).

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

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Matrix: Solid

Lab Sample ID: 890-1610-1

#### **Client Sample Results**

Client: WSP USA Inc. Job ID: 890-1610-1 Project/Site: Black River 4h SDG: 31403152.007

**Client Sample ID: FS06** 

Date Collected: 11/19/21 16:02 Date Received: 11/22/21 10:10

Sample Depth: 1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:15	11/23/21 16:14	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:15	11/23/21 16:14	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:15	11/23/21 16:14	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/23/21 08:15	11/23/21 16:14	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:15	11/23/21 16:14	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/23/21 08:15	11/23/21 16:14	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	112		70 - 130			11/23/21 08:15	11/23/21 16:14	
1,4-Difluorobenzene (Surr)	107		70 - 130			11/23/21 08:15	11/23/21 16:14	1
- Method: Total BTEX - Total BTEX	<b>Calculation</b>							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			11/23/21 12:11	1
Method: 8015 NM - Diesel Range Analyte	Result	Qualifier	RL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Total TPH	<49.8		49.8	mg/Kg	_ =	Trepareu	11/23/21 08:35	1
: Method: 8015B NM - Diesel Rang								
	de Organics (I)	RO) (GC)						
	•	RO) (GC)  Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	•	Qualifier		Unit mg/Kg	<u>D</u>	Prepared 11/23/21 08:57	Analyzed 11/23/21 14:56	Dil Fac
Analyte Gasoline Range Organics	Result	Qualifier			<u>D</u>	<u>.</u>		
Analyte Gasoline Range Organics (GRO)-C6-C10	Result	Qualifier U			<u>D</u>	<u>.</u>		
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result   <49.8   <49.8	Qualifier U	49.8	mg/Kg	<u> </u>	11/23/21 08:57 11/23/21 08:57	11/23/21 14:56 11/23/21 14:56	1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result   <49.8	Qualifier U	49.8	mg/Kg	<u>D</u>	11/23/21 08:57	11/23/21 14:56	1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result   <49.8   <49.8   <49.8   <49.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80	Qualifier U U U	49.8	mg/Kg	<u>D</u>	11/23/21 08:57 11/23/21 08:57	11/23/21 14:56 11/23/21 14:56	1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result	Qualifier U U U	49.8 49.8 49.8	mg/Kg	<u> </u>	11/23/21 08:57 11/23/21 08:57 11/23/21 08:57	11/23/21 14:56 11/23/21 14:56 11/23/21 14:56	1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	Result   <49.8   <49.8   <49.8   <49.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80.8   <80	Qualifier U U U	49.8 49.8 49.8 <i>Limits</i>	mg/Kg	<u>D</u>	11/23/21 08:57 11/23/21 08:57 11/23/21 08:57 Prepared	11/23/21 14:56 11/23/21 14:56 11/23/21 14:56 Analyzed	1 Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result   <49.8   <49.8   <49.8   <49.8     <49.8     <111   113   113   113	Qualifier  U  U  Qualifier	49.8 49.8 49.8  Limits 70 - 130	mg/Kg	<u>D</u>	11/23/21 08:57 11/23/21 08:57 11/23/21 08:57 Prepared 11/23/21 08:57	11/23/21 14:56 11/23/21 14:56 11/23/21 14:56 Analyzed 11/23/21 14:56	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result	Qualifier  U  U  Qualifier	49.8 49.8 49.8  Limits 70 - 130	mg/Kg	<u>D</u>	11/23/21 08:57 11/23/21 08:57 11/23/21 08:57 Prepared 11/23/21 08:57	11/23/21 14:56 11/23/21 14:56 11/23/21 14:56 Analyzed 11/23/21 14:56	Dil Fac

#### **Surrogate Summary**

Job ID: 890-1610-1 Client: WSP USA Inc. Project/Site: Black River 4h SDG: 31403152.007

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

•				Percent Surro	ogate Re
		BFB1	DFBZ1		
Lab Sample ID	Client Sample ID	(70-130)	(70-130)		
880-8509-A-21-I MS	Matrix Spike	128	86		
880-8509-A-21-J MSD	Matrix Spike Duplicate	111	104		
890-1610-1	FS06	112	107		
LCS 880-12798/1-A	Lab Control Sample	104	100		
LCSD 880-12798/2-A	Lab Control Sample Dup	107	104		
MB 880-12798/5-A	Method Blank	106	99		
Surrogate Legend					
BFB = 4-Bromofluorobenze	ene (Surr)				
DFBZ = 1,4-Difluorobenzer	ne (Surr)				

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (A
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-1602-A-11-H MS	Matrix Spike	97	88	
890-1602-A-11-I MSD	Matrix Spike Duplicate	100	89	
890-1610-1	FS06	111	113	
LCS 880-13010/2-A	Lab Control Sample	309 S1+	300 S1+	
LCSD 880-13010/3-A	Lab Control Sample Dup	301 S1+	292 S1+	
MB 880-13010/1-A	Method Blank	141 S1+	141 S1+	

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: WSP USA Inc. Job ID: 890-1610-1 Project/Site: Black River 4h SDG: 31403152.007

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

Lab Sample ID: MB 880-12798/5-A

Lab Sample ID: LCS 880-12798/1-A

**Matrix: Solid** Analysis Batch: 12991 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12798

	INID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:15	11/23/21 11:26	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:15	11/23/21 11:26	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:15	11/23/21 11:26	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/23/21 08:15	11/23/21 11:26	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 08:15	11/23/21 11:26	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/23/21 08:15	11/23/21 11:26	1

MB MB

MD MD

Surrogate	%Recovery	Qualifier	Limits	P	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	11/2	23/21 08:15	11/23/21 11:26	1
1,4-Difluorobenzene (Surr)	99		70 - 130	11/2	23/21 08:15	11/23/21 11:26	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 12798

Spike LCS LCS Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.09400 mg/Kg 94 70 - 130 Toluene 0.100 0.08963 mg/Kg 90 70 - 130 0.100 0.08826 88 Ethylbenzene mg/Kg 70 - 130 0.200 0.1861 93 70 - 130 m-Xylene & p-Xylene mg/Kg 0.100 0.09220 70 - 130 o-Xylene mg/Kg

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	104	70 - 130
1,4-Difluorobenzene (Surr)	100	70 - 130

Lab Sample ID: LCSD 880-12798/2-A

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 12991

Analysis Batch: 12991

Prep Type: Total/NA

Prep Batch: 12798

	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.09642		mg/Kg		96	70 - 130	3	35	
Toluene	0.100	0.09139		mg/Kg		91	70 - 130	2	35	
Ethylbenzene	0.100	0.09158		mg/Kg		92	70 - 130	4	35	
m-Xylene & p-Xylene	0.200	0.1917		mg/Kg		96	70 - 130	3	35	
o-Xylene	0.100	0.09431		mg/Kg		94	70 - 130	2	35	

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	107	70 - 130
1 4-Difluorobenzene (Surr)	104	70 - 130

Lab Sample ID: 880-8509-A-21-I MS

**Matrix: Solid** 

Analysis Batch: 12991

Client Sample ID: Matrix Spike	е
Prep Type: Total/N/	4

Prep Batch: 12798

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U F1 F2	0.0998	0.01923	F1	mg/Kg	_	18	70 - 130	
Toluene	<0.00199	U F1 F2	0.0998	0.02465	F1	mg/Kg		24	70 - 130	

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Prep Batch: 12798

#### **QC Sample Results**

Client: WSP USA Inc. Job ID: 890-1610-1 SDG: 31403152.007 Project/Site: Black River 4h

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

Lab Sample ID: 880-8509-A-21-I MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 12991

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00199	U F1 F2	0.0998	0.02735	F1	mg/Kg		26	70 - 130	
m-Xylene & p-Xylene	<0.00398	U F1 F2	0.200	0.04375	F1	mg/Kg		22	70 - 130	
o-Xylene	<0.00199	U F1	0.0998	0.03361	F1	mg/Kg		32	70 - 130	

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	128	70 - 130
1,4-Difluorobenzene (Surr)	86	70 - 130

Lab Sample ID: 880-8509-A-21-J MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 12991

Analysis Batch: 12991									Prep	Batch:	12/98
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00199	U F1 F2	0.101	0.06006	F1 F2	mg/Kg		59	70 - 130	103	35
Toluene	<0.00199	U F1 F2	0.101	0.04947	F1 F2	mg/Kg		49	70 - 130	67	35
Ethylbenzene	<0.00199	U F1 F2	0.101	0.04158	F1 F2	mg/Kg		40	70 - 130	41	35
m-Xylene & p-Xylene	<0.00398	U F1 F2	0.201	0.08518	F1 F2	mg/Kg		42	70 - 130	64	35
o-Xylene	< 0.00199	U F1	0.101	0.04121	F1	mg/Kg		39	70 - 130	20	35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

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

Lab Sample ID: MB 880-13010/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 13046

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/23/21 08:57	11/23/21 11:43	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/23/21 08:57	11/23/21 11:43	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/23/21 08:57	11/23/21 11:43	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	141	S1+	70 - 130	11/23/21 08:57	11/23/21 11:43	1
o-Terphenyl	141	S1+	70 - 130	11/23/21 08:57	11/23/21 11:43	1

Lab Sample ID: LCS 880-13010/2-A **Matrix: Solid** 

Analysis Batch: 13046							Prep B	atch: 13010
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	1147		mg/Kg		115	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	972.6		mg/Kg		97	70 - 130	
C10-C28)								

Eurofins Xenco, Carlsbad

Prep Type: Total/NA

**Client Sample ID: Lab Control Sample** 

Prep Batch: 13010

Client: WSP USA Inc. Job ID: 890-1610-1 Project/Site: Black River 4h SDG: 31403152.007

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

Lab Sample ID: LCS 880-13010/2-A

**Matrix: Solid** 

Analysis Batch: 13046

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 13010

LCS LCS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 309 S1+ 70 - 130 o-Terphenyl 300 S1+ 70 - 130

Lab Sample ID: LCSD 880-13010/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

Analysis Batch: 13046

Prep Type: Total/NA

Prep Batch: 13010

Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit 1000 1237 124 70 - 1307 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 940.4 94 mg/Kg 70 - 1303 20

C10-C28)

LCSD LCSD Surrogate %Recovery Qualifier Limits 301 S1+ 70 - 130 1-Chlorooctane 292 S1+ 70 - 130 o-Terphenyl

Lab Sample ID: 890-1602-A-11-H MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

Analysis Batch: 13046

Prep Type: Total/NA

Prep Batch: 13010

Sample Sample MS MS Spike %Rec. Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits D Gasoline Range Organics <49.9 U 997 1281 mg/Kg 129 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 997 1005 mg/Kg 101 70 - 130

C10-C28)

MS MS %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 97 o-Terphenyl 88 70 - 130

Lab Sample ID: 890-1602-A-11-I MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Analysis Batch: 13046

Prep Type: Total/NA

Prep Batch: 13010

Sample Sample MSD MSD RPD Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit U 999 1182 Gasoline Range Organics <49.9 118 70 - 130 8 20 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 999 1033 mg/Kg 103 70 - 130 3 20

70 - 130

C10-C28)

Surrogate

o-Terphenyl

1-Chlorooctane

MSD MSD %Recovery Qualifier Limits 100 70 - 130

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Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

#### **QC Sample Results**

Client: WSP USA Inc.

Job ID: 890-1610-1

Project/Site: Black River 4h

SDG: 31403152.007

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-12589/1-A

Matrix: Solid

Analysis Batch: 12961

MB MB

 Analyte
 Result
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 Chloride
 <5.00</td>
 U
 5.00
 mg/Kg
 11/23/21 11:07
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Lab Sample ID: LCS 880-12589/2-A

Matrix: Solid

**Analysis Batch: 12961** 

Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 256.5 mg/Kg 103 90 - 110

Lab Sample ID: LCSD 880-12589/3-A

Matrix: Solid

Analysis Batch: 12961

LCSD LCSD %Rec. RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 256.4 mg/Kg 103 90 - 110

Lab Sample ID: 890-1573-A-31-H MS

Matrix: Solid

Analysis Batch: 12961

MS MS Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier %Rec Unit Limits 608.2 F1 Chloride 388 F1 250 90 - 110 mg/Kg

Lab Sample ID: 890-1573-A-31-I MSD

Matrix: Solid

Analysis Batch: 12961

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 388 F1 250 608.7 F1 mg/Kg 88 90 - 110 0 20

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# **QC Association Summary**

Client: WSP USA Inc.

Job ID: 890-1610-1

Project/Site: Black River 4h

SDG: 31403152.007

#### **GC VOA**

#### Prep Batch: 12798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1610-1	FS06	Total/NA	Solid	5035	
MB 880-12798/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-12798/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-12798/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-8509-A-21-I MS	Matrix Spike	Total/NA	Solid	5035	
880-8509-A-21-J MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

#### Analysis Batch: 12945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1610-1	FS06	Total/NA	Solid	Total BTEX	

#### Analysis Batch: 12991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1610-1	FS06	Total/NA	Solid	8021B	12798
MB 880-12798/5-A	Method Blank	Total/NA	Solid	8021B	12798
LCS 880-12798/1-A	Lab Control Sample	Total/NA	Solid	8021B	12798
LCSD 880-12798/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	12798
880-8509-A-21-I MS	Matrix Spike	Total/NA	Solid	8021B	12798
880-8509-A-21-J MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	12798

#### **GC Semi VOA**

#### **Analysis Batch: 12781**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1610-1	FS06	Total/NA	Solid	8015 NM	

#### Prep Batch: 13010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1610-1	FS06	Total/NA	Solid	8015NM Prep	
MB 880-13010/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-13010/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-13010/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1602-A-11-H MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1602-A-11-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 13046**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch 13010
890-1610-1	FS06	Total/NA	Solid	8015B NM	
MB 880-13010/1-A	Method Blank	Total/NA	Solid	8015B NM	13010
LCS 880-13010/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	13010
LCSD 880-13010/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	13010
890-1602-A-11-H MS	Matrix Spike	Total/NA	Solid	8015B NM	13010
890-1602-A-11-I MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	13010

#### HPLC/IC

#### Leach Batch: 12589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method F	Prep Batch
890-1610-1	FS06	Soluble	Solid	DI Leach	
MB 880-12589/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-12589/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-12589/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

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# **QC Association Summary**

 Client: WSP USA Inc.
 Job ID: 890-1610-1

 Project/Site: Black River 4h
 SDG: 31403152.007

# **HPLC/IC** (Continued)

#### Leach Batch: 12589 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1573-A-31-H MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1573-A-31-I MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### Analysis Batch: 12961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1610-1	FS06	Soluble	Solid	300.0	12589
MB 880-12589/1-A	Method Blank	Soluble	Solid	300.0	12589
LCS 880-12589/2-A	Lab Control Sample	Soluble	Solid	300.0	12589
LCSD 880-12589/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	12589
890-1573-A-31-H MS	Matrix Spike	Soluble	Solid	300.0	12589
890-1573-A-31-I MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	12589

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#### Lab Chronicle

Client: WSP USA Inc.

Job ID: 890-1610-1

Project/Site: Black River 4h

SDG: 31403152.007

**Client Sample ID: FS06** 

Lab Sample ID: 890-1610-1

Matrix: Solid

Date Collected: 11/19/21 16:02 Date Received: 11/22/21 10:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	12798	11/23/21 08:15	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	12991	11/23/21 16:14	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			12945	11/23/21 12:11	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			12781	11/23/21 08:35	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	13010	11/23/21 08:57	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13046	11/23/21 14:56	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	12589	11/23/21 12:59	CA	XEN MID
Soluble	Analysis	300.0		5			12961	11/23/21 17:15	SC	XEN MID

#### Laboratory References:

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

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# **Accreditation/Certification Summary**

Client: WSP USA Inc.

Job ID: 890-1610-1

Project/Site: Black River 4h

SDG: 31403152.007

#### **Laboratory: Eurofins Xenco, Midland**

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

Authority Texas		ogram	Identification Number	Expiration Date 06-30-22	
		ELAP	T104704400-21-22		
The following analytes	are included in this report bu	it the laboratory is not certific	ed by the governing authority. This list ma	av include analytes for y	
the agency does not of	• •	it the laboratory to not certifi	ed by the governing additionty. This list me	ay include analytes for v	
,	• •	Matrix	Analyte	ay include analytes for v	
the agency does not of	fer certification.	•	, , ,	ay include analytes for v	

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#### **Method Summary**

Client: WSP USA Inc. Job ID: 890-1610-1 Project/Site: Black River 4h SDG: 31403152.007

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

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

# **Sample Summary**

Client: WSP USA Inc. Project/Site: Black River 4h Job ID: 890-1610-1 SDG: 31403152.007

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1610-1	FS06	Solid	11/19/21 16:02	11/22/21 10:10	1

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Work Order No:

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334

**Environment Testing** 

: eurofins

Chain of Custody

EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296

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Project Manager:	bsech Hennades	Bill to: (if different)			Work Order Comments	S
	d	Company Name:		Program;	n: UST/PST   PRP   Brownfields   RRC	RRC Superfund
Address: 3300	30 North A Street	Address:		State of		
City, State ZIP:	Misland. TX 79705	City, State ZIP:		Reporti	Reporting: Level II   Level III   PST/UST	PST/UST TRRP LevelIV
Phone: (281)	52 - 2329	Email: JO.e. N	hernandes alwsp. com	<b>Deliverables</b> :	ables: EDD ADaPT	Other:
Project Name:	Black River 4H	Turn Around		ANALYSIS REQUEST	Pre	Preservative Codes
er:	152, 007   Rout	ne Rush	Pres. Code		None: NO	VO DI Water: H <sub>2</sub> O
	34 Comty Due Date:	te: 11/23/11			Cool: Cool	ool MeOH: Me
A	Byers	TAT starts the day received by			HCL: HC	
PO #:	649	the lab, if received by 4:30pm	(1		H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>	H 2 NaOH: Na
SAMPLE RECEIPT	Temp Blank: Yes No Wet Ice:		109		H3PO 4: HP	Н
Samples Received Intact:	Yes No Thermometer ID:	MMaco	17		NaHSO	NaHSO 4: NABIS
Cooler Custody Seals:	Yes No N/A Correction Factor:	-0.2	300	890-1610 Chain of Custody	Na <sub>2</sub> S <sub>2</sub> O	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>
Sample Custody Seals:	Yes No N/A Temperature Reading:	7.0	A	The same state of the same sta	Zn Aceta	Zn Acetate+NaOH: Zn
Total Containers:	Corrected Temperature:	re:   . 2	43		NaOH+A	NaOH+Ascorbic Acid: SAPC
Sample Identification	Matrix Sampled Sampled	Depth Grab/	on to the first of		Sai	Sample Comments
F506	5 11/19/21 1602	>	×		The	Incident #:
					nAPP	MAPP 2128544486
					Task	< 02
		<				
			•			
		*				
Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	200.8 / 6020: 8RCRA 13PPM etal(s) to be analyzed TCLP / SPLR	A 13PPM Texas 11 Al S TCLP/SPLP6010:8RCRA	Al Sb As Ba Be B Cd Ca Cr Co CRA Sb As Ba Be Cd Cr Co Cu P	b As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U	Ni K Se Ag SiO <sub>2</sub> Na Sr Tl Sn U V Zn U Hg: 1631/245.1/7470 /7471	U V Zn /7471
Notice: Signature of this document and of service. Eurofins Xenco will be liable of Eurofins Xenco. A minimum charge	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. A minimum charge of \$85.00 will be enforced unless previously negotiated.	se order from client company responsibility for any losses o of \$5 for each sample submit	to Eurofins Xenco, its affiliates and subcor expenses incurred by the client if such to ted to Eurofins Xenco, but not analyzed. T	ntractors. It assigns standard terms and conditions are due to circumstances beyond the contributes terms will be enforced unless previously in	ons rol egotiated.	
Relinquished by: (Signature)	nture) Received by 15ign ture)	ture)	Date/Time Re	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
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1089 N Canal St.

**Eurofins Xenco, Carlsbad** 

Chain of Custody Record

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🐉 eurofins 🏻

Environment Testing

Note: Since laboratory accreditations are subject to change Eurofins Xenco LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysistests/matrix being analyzed the samples must be shipped back to the Eurofins Xenco LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Xenco LLC. State Zip: TX, 79701 Carlsbad NM 88220 Phone 575-988-3199 Fax 575-988-3199 Empty Kit Relinquished by Deliverable Requested | | | | | | | | | Other (specify) Sample Identification - Client ID (Lab ID) Black River 4h ossible Hazard Identification <sup>2</sup>S06 (890-1610-1) 432-704-5440(Tel) Midland 1211 W Florida Ave telinquished by: elinquished by: linquished by: oject Name Custody Seals Intact: nconfirmed urofins Xenco nipping/Receiving lient Information Yes () N (Sub Contract Lab) Custody Seal No. -22.2 Primary Deliverable Rank 2 TAT Requested (days): Due Date Requested 11/23/2021 Phone: 39000048 )ate/⊺ime Sample Date 11/19/21 Mountain Sample 16 02 (C=comp, G=grab) Sample Preservation Code: Type Company Company Company Matrix Solid E-Mail Kramer Jessica essica kramer@eurofinset.com Field Filtered Sample (Yes or No) NELAP - Louisiana NELAP - Texas lime. Perform MS/MSD (Yes or No) Special Instructions/QC Requirements Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) 8015MOD\_NM/8015NM\_S\_Prep Full TPH × Cooler Temperature(s) °C and Other Remarks: Return To Client 300\_ORGFM\_28D/DI\_LEACH Chloride × × 8021B/5035FP\_Calc BTEX × Total\_BTEX\_GCV Analysis Requested × 8015MOD\_Calc Disposal By Lab State of Origin New Mexico Carrier Tracking No(s) lethod of Shipment 9 Archive For Total Number of containers A HCL
B NACH
C Zn Acetate
D Nitric Acid
E NaHSO4
F MeOH
G Amchlor
H - Ascorbic Acid COC No: 890-518 1 Preservation Codes 890-1610-Page 1 of 1 ice
DI Water
EDTA
EDA Special Instructions/Note Company M Hexane
N None
O AsNaO2
O AsNaO2
O Na2SO3
O Na2SO3
R Na2SCO3
R NA2SCO3
F HZSO4
F HZSO4
U Acetone
U Acetone Company Ver: 06/08/2021 other (specify) Months

## **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1610-1

SDG Number: 31403152.007

Login Number: 1610 List Source: Eurofins Xenco, Carlsbad

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

## **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1610-1 SDG Number: 31403152.007

List Source: Eurofins Xenco, Midland

List Creation: 11/23/21 12:51 PM

Login Number: 1610 List Number: 2 Creator: Kramer, Jessica

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.	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	

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<6mm (1/4").

# **Environment Testing America**

# **ANALYTICAL REPORT**

Eurofins Xenco, Carlsbad 1089 N Canal St. Carlsbad, NM 88220 Tel: (575)988-3199

Laboratory Job ID: 890-1611-1

Laboratory Sample Delivery Group: Eddy County

Client Project/Site: Black River 4h

For:

WSP USA Inc. 2777 N. Stemmons Freeway Suite 1600 Dallas, Texas 75207

Attn: Joseph Hernandez

MAMER

Authorized for release by: 12/3/2021 3:32:51 PM

Jessica Kramer, Project Manager (432)704-5440

jessica.kramer@eurofinset.com

LINKS

Review your project results through

**Have a Question?** 



Visit us at:

www.eurofinsus.com/Env
Released to Imaging: 2/16/2022 10:04:59 AM

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: WSP USA Inc.

Project/Site: Black River 4h

Laboratory Job ID: 890-1611-1

SDG: Eddy County

# **Table of Contents**

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#### **Definitions/Glossary**

Client: WSP USA Inc. Job ID: 890-1611-1 Project/Site: Black River 4h SDG: Eddy County

#### **Qualifiers**

**GC VOA** 

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

**GC Semi VOA** 

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

HPLC/IC

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**Glossary** 

Abbreviation These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery CFL Contains Free Liquid CFU Colony Forming Unit **CNF** Contains No Free Liquid

DFR 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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level" MCL MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Method Detection Limit MDL 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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TEQ

**TNTC** Too Numerous To Count

#### **Case Narrative**

Client: WSP USA Inc.

Job ID: 890-1611-1

Project/Site: Black River 4h

SDG: Eddy County

Job ID: 890-1611-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative 890-1611-1

#### Receipt

The samples were received on 11/22/2021 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

#### **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: PH02 (890-1611-1), PH03 (890-1611-2), PH04 (890-1611-3), PH05 (890-1611-4), PH06 (890-1611-5), (MB 880-13088/1-A) and (880-8632-A-1-D). 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.

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Matrix: Solid

Lab Sample ID: 890-1611-1

# **Client Sample Results**

Client: WSP USA Inc. Job ID: 890-1611-1 Project/Site: Black River 4h SDG: Eddy County

**Client Sample ID: PH02** 

Date Collected: 11/19/21 10:10 Date Received: 11/22/21 10:10

Sample Depth: 1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 16:33	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 16:33	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 16:33	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		11/23/21 12:37	11/24/21 16:33	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 16:33	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		11/23/21 12:37	11/24/21 16:33	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	157	S1+	70 - 130			11/23/21 12:37	11/24/21 16:33	1
1,4-Difluorobenzene (Surr)	89		70 - 130			11/23/21 12:37	11/24/21 16:33	1
Method: Total BTEX - Total BTE	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			11/30/21 15:30	1
	THISDA	Oualifier	RI	Unit	D	Prenared	Analyzed	Dil Fa
Analyte Total TDH		Qualifier	RL 40.0	Unit	D	Prepared	Analyzed	
Total TPH	<49.9	U	49.9	mg/Kg	<u>D</u>	Prepared	Analyzed 12/01/21 20:09	
	<49.9	U			<u> </u>	<u> </u>		
Total TPH  Method: 8015B NM - Diesel Ran	<49.9  ge Organics (D  Result	RO) (GC) Qualifier	49.9	mg/Kg	D	Prepared Prepared	12/01/21 20:09  Analyzed	1
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	<49.9 ge Organics (D	RO) (GC) Qualifier	49.9	mg/Kg		<u> </u>	12/01/21 20:09	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	<49.9  ge Organics (D  Result	CODE (CODE)  Qualifier  U	49.9	mg/Kg		Prepared	12/01/21 20:09  Analyzed	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<49.9  ge Organics (D  Result  <49.9  <49.9	RO) (GC) Qualifier U	49.9  RL 49.9  49.9	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 11/23/21 14:30 11/23/21 14:30	12/01/21 20:09  Analyzed  11/24/21 05:15  11/24/21 05:15	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	<49.9  ge Organics (D)  Result  <49.9	RO) (GC) Qualifier U	49.9  RL 49.9	mg/Kg  Unit  mg/Kg		Prepared 11/23/21 14:30	12/01/21 20:09  Analyzed  11/24/21 05:15	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<49.9  ge Organics (D  Result  <49.9  <49.9	U RO) (GC) Qualifier U U	49.9  RL 49.9  49.9	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 11/23/21 14:30 11/23/21 14:30	12/01/21 20:09  Analyzed  11/24/21 05:15  11/24/21 05:15	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<49.9 ge Organics (D) Result <49.9 <49.9	U RO) (GC) Qualifier U U	49.9  RL 49.9  49.9  49.9	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 11/23/21 14:30 11/23/21 14:30 11/23/21 14:30	Analyzed 11/24/21 05:15 11/24/21 05:15	Dil Face
Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	49.9 ge Organics (D) Result <49.9 <49.9 <49.9 <80.9 %Recovery 142	U RO) (GC) Qualifier U U Qualifier	49.9  RL 49.9  49.9  49.9  Limits	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 11/23/21 14:30 11/23/21 14:30 11/23/21 14:30 Prepared	Analyzed 11/24/21 05:15 11/24/21 05:15 11/24/21 05:15 Analyzed	Dil Fac
Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	49.9 ge Organics (D) Result <49.9 <49.9 <49.9 <8ecovery 142 168	CONTROLUCION (CONTROLUCION (CO	49.9  RL 49.9  49.9  49.9  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 11/23/21 14:30 11/23/21 14:30 11/23/21 14:30 Prepared 11/23/21 14:30	Analyzed 11/24/21 05:15 11/24/21 05:15 11/24/21 05:15 Analyzed 11/24/21 05:15	Dil Fac
Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	qe Organics (D) Result <49.9 <49.9 <49.9 %Recovery 142 168 omatography -	CONTROLUCION (CONTROLUCION (CO	49.9  RL 49.9  49.9  49.9  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 11/23/21 14:30 11/23/21 14:30 11/23/21 14:30 Prepared 11/23/21 14:30	Analyzed 11/24/21 05:15 11/24/21 05:15 11/24/21 05:15 Analyzed 11/24/21 05:15	Dil Fac

**Client Sample ID: PH03** Lab Sample ID: 890-1611-2

Date Collected: 11/19/21 10:54 Date Received: 11/22/21 10:10

Sample Depth: 1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/23/21 12:37	11/24/21 17:00	1
Toluene	<0.00199	U	0.00199	mg/Kg		11/23/21 12:37	11/24/21 17:00	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		11/23/21 12:37	11/24/21 17:00	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/23/21 12:37	11/24/21 17:00	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		11/23/21 12:37	11/24/21 17:00	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/23/21 12:37	11/24/21 17:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130			11/23/21 12:37	11/24/21 17:00	1

Eurofins Xenco, Carlsbad

Matrix: Solid

Client: WSP USA Inc.

Job ID: 890-1611-1

SDG: Eddy County

Lab Sample ID: 890-1611-2 **Client Sample ID: PH03** Date Collected: 11/19/21 10:54

Matrix: Solid

Sample Depth: 1

Project/Site: Black River 4h

Date Received: 11/22/21 10:10

Method: 8021B - Volatile Organic Compo	ounds (GC)	(Continued)
modification totaling organic compa	Julius (33)	( Continuou,

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	91		70 - 130	11/23/21 12:37	11/24/21 17:00	1

Method: To	ntal RTFY.	Total BTEX	Calculation
mictilou. It	Jiai Di La	TOTAL DIEX	Odiculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/30/21 15:30	1

Mothod: 2015 NM	Diccol Pango	Organice	(DPO) (GC)

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9 U	49.9	ma/Ka			12/01/21 20:09	1

ALC: LOCATE NA	D: 1 D	•	(DDO) (	
Method: 8015B NM	- Diesel Range	Organics	(DKO) (	GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/23/21 14:30	11/24/21 05:37	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/23/21 14:30	11/24/21 05:37	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/23/21 14:30	11/24/21 05:37	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	DII Fac
1-Chlorooctane	126	70 - 130	11/23/21 14:	30 11/24/21 05:37	1
o-Terphenyl	145 S1+	70 - 130	11/23/21 14:	30 11/24/21 05:37	1

Method: 300.0 - Anions, Ion C	hromatography - Soluble

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	54.9	4.95	mg/Kg			12/03/21 03:08	1

**Client Sample ID: PH04** Lab Sample ID: 890-1611-3 Matrix: Solid

Date Collected: 11/19/21 11:40 Date Received: 11/22/21 10:10

Sample Depth: 1

Mathadi 0004D	Valatile Overen	ic Compounds (GC)
Memoo: Auzib	- voianie Urdan	ic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 17:27	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 17:27	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 17:27	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		11/23/21 12:37	11/24/21 17:27	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 17:27	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/23/21 12:37	11/24/21 17:27	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130			11/23/21 12:37	11/24/21 17:27	1
1,4-Difluorobenzene (Surr)	90		70 - 130			11/23/21 12:37	11/24/21 17:27	1

Mothod:	Total RT	EY - Tota	I DTEY	Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00399	U	0.00399	ma/Ka			11/30/21 15:30	1

	Method: 8015 NM - Diesel	Range Organics (DRO	D) (GC)	١
ı	Michiga. 00 to Min - Diese	i italige Organics (Ditt		,

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/01/21 20:09	1

Matrix: Solid

Lab Sample ID: 890-1611-3

Client: WSP USA Inc. Job ID: 890-1611-1 Project/Site: Black River 4h SDG: Eddy County

**Client Sample ID: PH04** 

Date Collected: 11/19/21 11:40 Date Received: 11/22/21 10:10

Sample Depth: 1

Method: 8015B NM - Diesel Rang	e Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/23/21 14:30	11/24/21 05:59	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/23/21 14:30	11/24/21 05:59	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/23/21 14:30	11/24/21 05:59	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	125		70 - 130			11/23/21 14:30	11/24/21 05:59	1
o-Terphenyl	145	S1+	70 - 130			11/23/21 14:30	11/24/21 05:59	1
Method: 300.0 - Anions, Ion Chro	matography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	126		5.03	mg/Kg			12/03/21 03:19	1

**Client Sample ID: PH05** Lab Sample ID: 890-1611-4 Date Collected: 11/19/21 14:54 Matrix: Solid

Date Received: 11/22/21 10:10

Sample Depth: 1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		11/23/21 12:37	11/24/21 17:54	1
Toluene	<0.00202	U	0.00202	mg/Kg		11/23/21 12:37	11/24/21 17:54	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		11/23/21 12:37	11/24/21 17:54	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		11/23/21 12:37	11/24/21 17:54	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		11/23/21 12:37	11/24/21 17:54	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		11/23/21 12:37	11/24/21 17:54	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130			11/23/21 12:37	11/24/21 17:54	1
1,4-Difluorobenzene (Surr)	92		70 - 130			11/23/21 12:37	11/24/21 17:54	1
- Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
T-4-L DTEV								
Total BTEX	<0.00404	U	0.00404	mg/Kg			11/30/21 15:30	1
			0.00404	mg/Kg			11/30/21 15:30	1
Method: 8015 NM - Diesel Range	Organics (DR		0.00404 <b>RL</b>	mg/Kg <b>Unit</b>	D	Prepared	11/30/21 15:30  Analyzed	
Method: 8015 NM - Diesel Range Analyte Total TPH	Organics (DR	O) (GC) Qualifier			<u>D</u>	Prepared		Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH	Organics (DR Result <50.0	O) (GC) Qualifier	RL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range	Organics (DR Result <50.0	O) (GC) Qualifier	RL	Unit	<u>D</u>	Prepared Prepared	Analyzed	Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH Method: 8015B NM - Diesel Rang	Organics (DR Result <50.0	Qualifier U RO) (GC) Qualifier	RL 50.0	Unit mg/Kg			Analyzed 12/01/21 20:09	Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	Organics (DR/Result <50.0   Result < 50.0   Result < 50.0   Result < 50.0	Qualifier U  RO) (GC) Qualifier U	RL 50.0	Unit mg/Kg  Unit mg/Kg		Prepared 11/23/21 14:30	Analyzed  12/01/21 20:09  Analyzed  11/24/21 06:21	Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Organics (DR/Result <50.0	Qualifier U  RO) (GC) Qualifier U	RL 	Unit mg/Kg		Prepared	Analyzed 12/01/21 20:09 Analyzed	Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10	Organics (DR/Result <50.0   Result < 50.0   Result < 50.0   Result < 50.0	Qualifier U  RO) (GC) Qualifier U  U  U  U	RL 50.0	Unit mg/Kg  Unit mg/Kg		Prepared 11/23/21 14:30	Analyzed  12/01/21 20:09  Analyzed  11/24/21 06:21	Dil Fac  Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Organics (DR/Result <50.0   Result <50.0   Result <50.0   Result <50.0	Qualifier U  RO) (GC) Qualifier U  U  U  U	RL 50.0 50.0 50.0	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 11/23/21 14:30 11/23/21 14:30	Analyzed 12/01/21 20:09  Analyzed 11/24/21 06:21 11/24/21 06:21	Dil Fac  Dil Fac  1  1  1
Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Organics (DR   Result   <50.0	Qualifier U  RO) (GC) Qualifier U  U  U  U	RL 50.0 50.0 50.0	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 11/23/21 14:30 11/23/21 14:30 11/23/21 14:30	Analyzed 12/01/21 20:09  Analyzed 11/24/21 06:21 11/24/21 06:21	Dil Fac  Dil Fac  1  Dil Fac  1  Dil Fac  1

Matrix: Solid

Lab Sample ID: 890-1611-4

Job ID: 890-1611-1 SDG: Eddy County

**Client Sample ID: PH05** 

Date Collected: 11/19/21 14:54 Date Received: 11/22/21 10:10

Sample Depth: 1

Client: WSP USA Inc.

Project/Site: Black River 4h

Method: 300.0 - Anions, Ion Chromatography - Soluble										
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Chloride	56.9		4.98	mg/Kg			12/03/21 03:31	1		

**Client Sample ID: PH06** Lab Sample ID: 890-1611-5 Matrix: Solid

Date Collected: 11/19/21 15:50 Date Received: 11/22/21 10:10

Sample Depth: 1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		11/23/21 12:37	11/24/21 18:20	1
Toluene	<0.00201	U	0.00201	mg/Kg		11/23/21 12:37	11/24/21 18:20	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		11/23/21 12:37	11/24/21 18:20	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		11/23/21 12:37	11/24/21 18:20	
o-Xylene	<0.00201	U	0.00201	mg/Kg		11/23/21 12:37	11/24/21 18:20	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/23/21 12:37	11/24/21 18:20	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130			11/23/21 12:37	11/24/21 18:20	1
1,4-Difluorobenzene (Surr)	107		70 - 130			11/23/21 12:37	11/24/21 18:20	1
Method: Total BTEX - Total BTE	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			11/30/21 15:30	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			12/01/21 20:09	1
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/23/21 14:30	11/24/21 06:43	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/23/21 14:30	11/24/21 06:43	1
Oll Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/23/21 14:30	11/24/21 06:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	126		70 - 130			11/23/21 14:30	11/24/21 06:43	1
o-Terphenyl	147	S1+	70 - 130			11/23/21 14:30	11/24/21 06:43	1
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg	_		12/03/21 03:42	1

# **Surrogate Summary**

Client: WSP USA Inc. Job ID: 890-1611-1 Project/Site: Black River 4h SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
390-1606-A-1-E MS	Matrix Spike	125	102	
890-1606-A-1-F MSD	Matrix Spike Duplicate	119	95	
390-1611-1	PH02	157 S1+	89	
390-1611-2	PH03	115	91	
390-1611-3	PH04	115	90	
390-1611-4	PH05	102	92	
390-1611-5	PH06	104	107	
LCS 880-13076/1-A	Lab Control Sample	107	104	
LCSD 880-13076/2-A	Lab Control Sample Dup	109	106	
MB 880-13076/5-A	Method Blank	72	96	
MB 880-13087/5-A	Method Blank	71	97	
Surrogate Legend				

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits
		1CO1	OTPH1	
Sample ID	Client Sample ID	(70-130)	(70-130)	
-8632-A-1-E MS	Matrix Spike	121	116	
-8632-A-1-F MSD	Matrix Spike Duplicate	123	119	
-1611-1	PH02	142 S1+	168 S1+	
-1611-2	PH03	126	145 S1+	
-1611-3	PH04	125	145 S1+	
-1611-4	PH05	124	141 S1+	
-1611-5	PH06	126	147 S1+	
S 880-13088/2-A	Lab Control Sample	124	129	
SD 880-13088/3-A	Lab Control Sample Dup	117	123	
880-13088/1-A	Method Blank	148 S1+	171 S1+	

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: WSP USA Inc. Job ID: 890-1611-1 Project/Site: Black River 4h SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-13076/5-A

**Matrix: Solid** Analysis Batch: 13097 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 13076

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 10:17	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 10:17	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 10:17	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/23/21 12:37	11/24/21 10:17	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 10:17	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/23/21 12:37	11/24/21 10:17	1

MB MB

MD MD

Surrogate	%Recovery Qu	ualifier Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72	70 - 130	11/23/21 12:37	11/24/21 10:17	1
1,4-Difluorobenzene (Surr)	96	70 - 130	11/23/21 12:37	11/24/21 10:17	1

Lab Sample ID: LCS 880-13076/1-A

Matrix: Solid

Analysis Batch: 13097

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 13076

	<b>Spike</b>	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.08609		mg/Kg		86	70 - 130	
Toluene	0.100	0.08085		mg/Kg		81	70 - 130	
Ethylbenzene	0.100	0.07935		mg/Kg		79	70 - 130	
m-Xylene & p-Xylene	0.200	0.1753		mg/Kg		88	70 - 130	
o-Xylene	0.100	0.08509		mg/Kg		85	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	107	70 - 130
1,4-Difluorobenzene (Surr)	104	70 - 130

Lab Sample ID: LCSD 880-13076/2-A

**Matrix: Solid** 

Analysis Batch: 13097

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA Prep Batch: 13076

LCSD LCSD RPD Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits Limit 0.08998 Benzene 0.100 mg/Kg 90 70 - 130 35 Toluene 0.100 0.08514 mg/Kg 85 70 - 130 5 35 Ethylbenzene 0.100 0.08446 mg/Kg 84 70 - 130 6 35 0.200 m-Xylene & p-Xylene 0.1876 mg/Kg 94 70 - 130 35 0.100 0.09093 o-Xylene mg/Kg 70 - 130 35

LCSD LCSD

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

Lab Sample ID: 890-1606-A-1-E MS

**Matrix: Solid** 

Analysis Batch: 13097

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

Prep Batch: 13076

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00198	U F1	0.0996	0.05858	F1	mg/Kg		59	70 - 130	
Toluene	<0.00198	U F1	0.0996	0.06553	F1	mg/Kg		66	70 - 130	

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#### QC Sample Results

Client: WSP USA Inc. Job ID: 890-1611-1 Project/Site: Black River 4h SDG: Eddy County

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

Lab Sample ID: 890-1606-A-1-E MS Client Sample ID: Matrix Spike

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 13097 Prep Batch: 13076

Ethylbenzene <0.00198 U F1 0.0996 0.06470 F1 mg/Kg 65 70 -		Sample	Sample	Spike	MS	MS				%Rec.
1/11	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
m Vylono 8 n Vylono co 00306 II 0 100 0 1440 mg/kg 72 70	Ethylbenzene	<0.00198	U F1	0.0996	0.06470	F1	mg/Kg		65	70 - 130
111-Ayletie & p-Ayletie 10:00000 0 0:100 0:1440 111g/kg 12 10 -	m-Xylene & p-Xylene	<0.00396	U	0.199	0.1440		mg/Kg		72	70 - 130
o-Xylene <0.00198 U F1 0.0996 0.06394 F1 mg/Kg 64 70 -	o-Xylene	<0.00198	U F1	0.0996	0.06394	F1	mg/Kg		64	70 - 130

MS MS Surrogate %Recovery Qualifier Limits 70 - 130 4-Bromofluorobenzene (Surr) 125 70 - 130 1,4-Difluorobenzene (Surr) 102

Client Sample ID: Matrix Spike Duplicate Lab Sample ID: 890-1606-A-1-F MSD

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 13097** Prep Batch: 13076

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00198	U F1	0.100	0.05973	F1	mg/Kg		60	70 - 130	2	35
Toluene	<0.00198	U F1	0.100	0.06784	F1	mg/Kg		68	70 - 130	3	35
Ethylbenzene	<0.00198	U F1	0.100	0.06693	F1	mg/Kg		67	70 - 130	3	35
m-Xylene & p-Xylene	<0.00396	U	0.200	0.1488		mg/Kg		74	70 - 130	3	35
o-Xylene	<0.00198	U F1	0.100	0.06867	F1	mg/Kg		69	70 - 130	7	35

MSD MSD Surrogate Qualifier Limits %Recovery 70 - 130 4-Bromofluorobenzene (Surr) 119 1,4-Difluorobenzene (Surr) 70 - 130 95

Lab Sample ID: MB 880-13087/5-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 13097** Prep Batch: 13087 MR MR

	INID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 14:25	11/23/21 19:58	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 14:25	11/23/21 19:58	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 14:25	11/23/21 19:58	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/23/21 14:25	11/23/21 19:58	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 14:25	11/23/21 19:58	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/23/21 14:25	11/23/21 19:58	1

	MB MB				
Surrogate	%Recovery Qualified	r Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71	70 - 130	11/23/21 14:25	11/23/21 19:58	1
1,4-Difluorobenzene (Surr)	97	70 - 130	11/23/21 14:25	11/23/21 19:58	1

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

Lab Sample ID: MB 880-13088/1-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 13043

мв мв Result Qualifier RL Unit Prepared Gasoline Range Organics <50.0 U 50.0 mg/Kg 11/23/21 14:30 11/23/21 21:25

(GRO)-C6-C10

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Prep Batch: 13088

Client: WSP USA Inc.
Project/Site: Black River 4h
SDG

Job ID: 890-1611-1 SDG: Eddy County

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

Lab Sample ID: MB 880-13088/1-A

Matrix: Solid

Analysis Batch: 13043

Prep Batch: 13088

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/23/21 14:30	11/23/21 21:25	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/23/21 14:30	11/23/21 21:25	1
	МВ	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	148	S1+	70 - 130			11/23/21 14:30	11/23/21 21:25	1
o-Terphenyl	171	S1+	70 - 130			11/23/21 14:30	11/23/21 21:25	1

Lab Sample ID: LCS 880-13088/2-A **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA Analysis Batch: 13043 Prep Batch: 13088 LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 919.5 92 70 - 130 mg/Kg (GRO)-C6-C10 1000 1277 Diesel Range Organics (Over mg/Kg 128 70 - 130 C10-C28) LCS LCS Qualifier Limits Surrogate %Recovery 1-Chlorooctane 70 - 130 124 o-Terphenyl 129 70 - 130

Lab Sample ID: LCSD 880-13088/3-A

Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 13043

Prep Batch: 13088

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	1000	927.0		mg/Kg		93	70 - 130	1	20
(GRO)-C6-C10									
Diesel Range Organics (Over	1000	1254		mg/Kg		125	70 - 130	2	20
C10-C28)									

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	117		70 - 130
o-Terphenyl	123		70 - 130

Lab Sample ID: 880-8632-A-1-E MS Client Sample ID: Matrix Spike **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 13043 Prep Batch: 13088 MS MS %Rec. Spike Sample Sample Result Qualifier Added Result Qualifier Unit %Rec Limits Analyte <49.9 U 997 70 - 130 Gasoline Range Organics 1175 mg/Kg 118 (GRO)-C6-C10 997 Diesel Range Organics (Over <49.9 U 1137 mg/Kg 111 70 - 130

C10-C28)			
	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	121		70 - 130
o-Terphenyl	116		70 - 130

Job ID: 890-1611-1 Client: WSP USA Inc. Project/Site: Black River 4h SDG: Eddy County

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

Lab Sample ID: 880-8632-A-1-F MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Prep Type: Total/NA

Client Sample ID: Lab Control Sample Dup

**Prep Type: Soluble** 

Client Sample ID: PH06

**Client Sample ID: PH06** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Analysis Batch: 13043 Prep Batch: 13088 Sample Sample MSD MSD RPD Spike Result Qualifier Analyte Added Result Qualifier %Rec Limits RPD Limit Unit D Gasoline Range Organics <49.9 U 999 1191 mg/Kg 119 70 - 130 20 (GRO)-C6-C10

Diesel Range Organics (Over

999 1181 <49.9 U mg/Kg 115 70 - 13020

C10-C28)

Qualifier Limits Surrogate %Recovery 1-Chlorooctane 70 - 130 123 o-Terphenyl 119 70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-13079/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 13774** 

MB MB

MSD MSD

Result Qualifier RL Unit Analyte Prepared Analyzed Dil Fac Chloride <5.00 5.00 mg/Kg 12/03/21 00:28

Lab Sample ID: LCS 880-13079/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 13774** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Chloride 250 245.7 90 - 110 mg/Kg

Lab Sample ID: LCSD 880-13079/3-A

**Matrix: Solid** 

**Analysis Batch: 13774** 

Spike LCSD LCSD RPD %Rec. Analyte Added Result Qualifier Unit %Rec RPD Limit Chloride 250 240.5 96 90 - 110 mg/Kg 2

Lab Sample ID: 890-1611-5 MS

**Matrix: Solid** 

**Analysis Batch: 13774** 

Sample Sample Spike MS MS %Rec. Qualifier Added Qualifier Analyte Result Result Unit %Rec Limits Chloride U 250 107 90 - 110 <5.00 269.9 mg/Kg

Lab Sample ID: 890-1611-5 MSD

Matrix: Solid

Analysis Batch: 13774

Analysis Daton. 13774											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	<5.00	U	250	271.7	·	mg/Kg		107	90 - 110	1	20

# **QC Association Summary**

Client: WSP USA Inc.

Job ID: 890-1611-1

Project/Site: Black River 4h

SDG: Eddy County

**GC VOA** 

Prep Batch: 13076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1611-1	PH02	Total/NA	Solid	5035	
890-1611-2	PH03	Total/NA	Solid	5035	
890-1611-3	PH04	Total/NA	Solid	5035	
890-1611-4	PH05	Total/NA	Solid	5035	
890-1611-5	PH06	Total/NA	Solid	5035	
MB 880-13076/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-13076/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-13076/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1606-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-1606-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 13087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-13087/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 13097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1611-1	PH02	Total/NA	Solid	8021B	13076
890-1611-2	PH03	Total/NA	Solid	8021B	13076
890-1611-3	PH04	Total/NA	Solid	8021B	13076
890-1611-4	PH05	Total/NA	Solid	8021B	13076
890-1611-5	PH06	Total/NA	Solid	8021B	13076
MB 880-13076/5-A	Method Blank	Total/NA	Solid	8021B	13076
MB 880-13087/5-A	Method Blank	Total/NA	Solid	8021B	13087
LCS 880-13076/1-A	Lab Control Sample	Total/NA	Solid	8021B	13076
LCSD 880-13076/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	13076
890-1606-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	13076
890-1606-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	13076

**Analysis Batch: 13453** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1611-1	PH02	Total/NA	Solid	Total BTEX	
890-1611-2	PH03	Total/NA	Solid	Total BTEX	
890-1611-3	PH04	Total/NA	Solid	Total BTEX	
890-1611-4	PH05	Total/NA	Solid	Total BTEX	
890-1611-5	PH06	Total/NA	Solid	Total BTEX	

**GC Semi VOA** 

Analysis Batch: 13043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1611-1	PH02	Total/NA	Solid	8015B NM	13088
890-1611-2	PH03	Total/NA	Solid	8015B NM	13088
890-1611-3	PH04	Total/NA	Solid	8015B NM	13088
890-1611-4	PH05	Total/NA	Solid	8015B NM	13088
890-1611-5	PH06	Total/NA	Solid	8015B NM	13088
MB 880-13088/1-A	Method Blank	Total/NA	Solid	8015B NM	13088
LCS 880-13088/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	13088
LCSD 880-13088/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	13088
880-8632-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	13088
880-8632-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	13088

# **QC Association Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

#### GC Semi VOA

#### Prep Batch: 13088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1611-1	PH02	Total/NA	Solid	8015NM Prep	
890-1611-2	PH03	Total/NA	Solid	8015NM Prep	
890-1611-3	PH04	Total/NA	Solid	8015NM Prep	
890-1611-4	PH05	Total/NA	Solid	8015NM Prep	
890-1611-5	PH06	Total/NA	Solid	8015NM Prep	
MB 880-13088/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-13088/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-13088/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-8632-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-8632-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### Analysis Batch: 13711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1611-1	PH02	Total/NA	Solid	8015 NM	
890-1611-2	PH03	Total/NA	Solid	8015 NM	
890-1611-3	PH04	Total/NA	Solid	8015 NM	
890-1611-4	PH05	Total/NA	Solid	8015 NM	
890-1611-5	PH06	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 13079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
890-1611-1	PH02	Soluble	Solid	DI Leach	
890-1611-2	PH03	Soluble	Solid	DI Leach	
890-1611-3	PH04	Soluble	Solid	DI Leach	
890-1611-4	PH05	Soluble	Solid	DI Leach	
890-1611-5	PH06	Soluble	Solid	DI Leach	
MB 880-13079/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-13079/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-13079/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1611-5 MS	PH06	Soluble	Solid	DI Leach	
890-1611-5 MSD	PH06	Soluble	Solid	DI Leach	

#### Analysis Batch: 13774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1611-1	PH02	Soluble	Solid	300.0	13079
890-1611-2	PH03	Soluble	Solid	300.0	13079
890-1611-3	PH04	Soluble	Solid	300.0	13079
890-1611-4	PH05	Soluble	Solid	300.0	13079
890-1611-5	PH06	Soluble	Solid	300.0	13079
MB 880-13079/1-A	Method Blank	Soluble	Solid	300.0	13079
LCS 880-13079/2-A	Lab Control Sample	Soluble	Solid	300.0	13079
LCSD 880-13079/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	13079
890-1611-5 MS	PH06	Soluble	Solid	300.0	13079
890-1611-5 MSD	PH06	Soluble	Solid	300.0	13079

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Client: WSP USA Inc.
Project/Site: Black River 4h

SDG: Eddy County

Client Sample ID: PH02

Lab Sample ID: 890-1611-1

Matrix: Solid

Date Collected: 11/19/21 10:10 Date Received: 11/22/21 10:10

	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	13076	11/23/21 12:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13097	11/24/21 16:33	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	13088	11/23/21 14:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13043	11/24/21 05:15	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	13079	11/23/21 13:23	SC	XEN MID
Soluble	Analysis	300.0		1			13774	12/03/21 02:57	CH	XEN MID

Client Sample ID: PH03 Lab Sample ID: 890-1611-2

Date Collected: 11/19/21 10:54

Page Respired: 44/23/24 40:40

Date Received: 11/22/21 10:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	13076	11/23/21 12:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13097	11/24/21 17:00	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	13088	11/23/21 14:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13043	11/24/21 05:37	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	13079	11/23/21 13:23	SC	XEN MID
Soluble	Analysis	300.0		1			13774	12/03/21 03:08	CH	XEN MID

Client Sample ID: PH04 Lab Sample ID: 890-1611-3

Date Collected: 11/19/21 11:40 Date Received: 11/22/21 10:10

	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	13076	11/23/21 12:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13097	11/24/21 17:27	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	13088	11/23/21 14:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13043	11/24/21 05:59	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	13079	11/23/21 13:23	SC	XEN MID
Soluble	Analysis	300.0		1			13774	12/03/21 03:19	CH	XEN MID

Client Sample ID: PH05 Lab Sample ID: 890-1611-4

Date Collected: 11/19/21 14:54 Date Received: 11/22/21 10:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	13076	11/23/21 12:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13097	11/24/21 17:54	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID

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**Matrix: Solid** 

**Matrix: Solid** 

#### **Lab Chronicle**

Client: WSP USA Inc. Job ID: 890-1611-1 Project/Site: Black River 4h SDG: Eddy County

**Client Sample ID: PH05** 

Date Received: 11/22/21 10:10

Lab Sample ID: 890-1611-4 Date Collected: 11/19/21 14:54

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA 8015 NM Analysis 13711 12/01/21 20:09 AJ XEN MID Total/NA Prep 8015NM Prep 10.01 g 10 mL 13088 11/23/21 14:30 DM XEN MID Total/NA Analysis 8015B NM 13043 11/24/21 06:21 ΑJ XEN MID 1 5.02 g 13079 11/23/21 13:23 SC XEN MID Soluble Leach DI Leach 50 mL 300.0 12/03/21 03:31 Soluble Analysis 1 13774 CH XEN MID

**Client Sample ID: PH06** Lab Sample ID: 890-1611-5

Date Collected: 11/19/21 15:50 **Matrix: Solid** 

Date Received: 11/22/21 10:10

	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	13076	11/23/21 12:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13097	11/24/21 18:20	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	13088	11/23/21 14:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13043	11/24/21 06:43	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	13079	11/23/21 13:23	SC	XEN MID
Soluble	Analysis	300.0		1			13774	12/03/21 03:42	CH	XEN MID

Laboratory References:

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

# **Accreditation/Certification Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

#### **Laboratory: Eurofins Xenco, Midland**

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

Authority	Pr	ogram	Identification Number	<b>Expiration Date</b>
Texas	NE	ELAP	T104704400-21-22	06-30-22
The following analytes	are included in this report by		and the state of t	
the agency does not of	• '	it the laboratory is not certifi	ied by the governing authority. This list ma	ay include analytes for
,	• '	Matrix	Analyte	ay include analytes for
the agency does not of	er certification.	•	, , ,	ay include analytes for

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## **Method Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

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

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

Eurofins Xenco, Carlsbad

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# **Sample Summary**

Client: WSP USA Inc. Project/Site: Black River 4h

100 ID. 690-1611	- 1
SDG: Eddy Coun	ıty

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1611-1	PH02	Solid	11/19/21 10:10	11/22/21 10:10	1
890-1611-2	PH03	Solid	11/19/21 10:54	11/22/21 10:10	1
890-1611-3	PH04	Solid	11/19/21 11:40	11/22/21 10:10	1
890-1611-4	PH05	Solid	11/19/21 14:54	11/22/21 10:10	1
890-1611-5	PH06	Solid	11/19/21 15:50	11/22/21 10:10	1

32.2 PD

Date/Time

Hg: 1631 / 245.1 / 7470 / 7471

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334

**Environment Testing** 

eurofins

Xenco

Work Order No.

Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296

Superfund DI Water: H2O Level IV MeOH: Me Preservative Codes PST/UST TRRP UST/PST | PRP | Brownfleids | RRC Other: None: NO Cool: Cool Work Order Comments ADaPT www.xenco.com Reporting: Level II 🗌 Level III 🗍 EDD State of Project: Deliverables: ANALYSIS REQUEST joe hernander @ usp. com Pres. Code Bill to: (if different) Company Name City, State ZIP: Rush Address: **Turn Around** Email: Due Date: 79705 Steet Joseph Hernandez 281) 762- 2329 NOFY A Black River 4H X 31403152. DOT Midland 3300 453 Project Number: Company Name: Project Location City, State ZIP: Project Name: olect Man Address: shone:

n APP2128544986 HNO 3: HN NaOH: Na NaOH+Ascorbic Acid: SAPC Sample Comments Incident #: Zn Acetate+NaOH: Zn Na 2 S 2 O 3: Na SO 3 Task Ba NaHSO 4: NABIS 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO<sub>2</sub> Na Sr Tl Sn U V Zn H,504: H2 H3PO4: HP HCL: HC 890-1611 Chain of Custody 34000 Chloride (ERA (8) Brex LEPA 8824 (Powsips tos) HU # of Cont Parameters Grass Comp Grab/ 25.00 TAT starts the day received by the lab, if received by 4:30pm Xes Are Depth Corrected Temperature: Sampled म्डन 1550 Time 1654 Temperature Reading: Wet Ice 1140 11/19/21/10/10 Correction Factor: Thermometer ID: Sampled Date Yes No : CL. 24, 02649 County Matrix S Temp Blank: Yes No MATA 200.8 / 6020: ON Cal Yes No Eddy Sample Identification Samples Received Intact: Total 200.7 / 6010 Sample Custody Seals: Cooler Custody Seals:

ofins 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 TCLP/SPLP6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Votice. 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 senze. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses on expenses incurred by the client if such losses are due to circumstances beyond the control Circle Method(s) and Metal(s) to be analyzed

Revised Date: 08/25/2020 Rev. 2020 eceived by: (Signature) Relinquished by: (Signature) 11/11/11 0420 Date/Time Received by: (Signature) Refinquished by: (Signature) mon

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SAMPLE RECEIPT

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Sampler's Name

Page 21 of 24

PHP3 PHO2

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Fotal Containers:

Eurofins Xenco, Carlsbad

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Eurofins Xenco					Accreditations Required (See note): NELAP - Louisiana, NELAP - Texas	itation	ouis	Required (See vuisiana, NEI	NEL	note):	Texa	35								990- # doi:	Job # 890-1611-1	۲ ا	l	1					
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Site	SSOW#				CONTRA SOMETION	distribute	VDI_LE	alc BTE	,										conte	Other:	7				;	;			
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PH03 (890-1611-2)	11/19/21	10 54 Mountain		Solid		×	×	×	×	×							$\neg$		4										
PH04 (890-1611-3)	11/19/21	11 40 Mountain		Solid		$\overline{\times}$	×	×	×	×									, <b>1</b>										
PH05 (890-1611-4)	11/19/21	14 54 Mountain		Solid	$\dashv$	×	×	×	×	×	$\neg$	$\Box$		$\Box$	$\Box$		$\Box$	$\top$	*										
PH06 (890-1611-5)	11/19/21	15 50 Mountain		Solid		×	×	×	×	×									22										
Note Since laboratory accreditations are subject to change Eurofins Xenco LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Xenco LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Xenco LLC.	Dplaces the ownership to being analyzed the signed Chain of Cu	of method ana amples must be astody attesting to	lyte & accredite shipped back to said complict	ation complianc to the Eurofins	e upon Xenco s Xenc	ort si	borate	ract la	borate other i	onies.	This s	iample will be	shipr	nent i	s forw	arded	unde s to a	r chai	1-of-c	ustod)	y If the	e labo	)raton brough	/ does	not c	urrent s Xer	ico LL	0.	
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### **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1611-1

SDG Number: Eddy County

List Source: Eurofins Xenco, Carlsbad Login Number: 1611

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

### **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1611-1 SDG Number: Eddy County

Login Number: 1611
List Source: Eurofins Xenco, Midland
List Number: 2
List Creation: 11/23/21 12:51 PM

Creator: Kramer, Jessica

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.	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	

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14

<6mm (1/4").

# **Environment Testing America**

### **ANALYTICAL REPORT**

Eurofins Xenco, Carlsbad 1089 N Canal St. Carlsbad, NM 88220 Tel: (575)988-3199

Laboratory Job ID: 890-1612-1

Laboratory Sample Delivery Group: Eddy County

Client Project/Site: Black River 4h

For:

WSP USA Inc. 2777 N. Stemmons Freeway Suite 1600 Dallas, Texas 75207

Attn: Joseph Hernandez

JURAMER

Authorized for release by: 12/3/2021 4:33:40 PM

Jessica Kramer, Project Manager (432)704-5440

jessica.kramer@eurofinset.com

LINKS

Review your project results through

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Released to Imaging: 2/16/2022 10:04:59 AM

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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4.0

11

Client: WSP USA Inc.

Project/Site: Black River 4h

Laboratory Job ID: 890-1612-1

SDG: Eddy County

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### **Definitions/Glossary**

Client: WSP USA Inc. Job ID: 890-1612-1 Project/Site: Black River 4h SDG: Eddy County

#### **Qualifiers**

#### **GC VOA**

Qualifier **Qualifier Description** 

U Indicates the analyte was analyzed for but not detected.

Indicates the analyte was analyzed for but not detected.

GC Semi v	VOA
Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.
HPLC/IC	
Qualifier	Qualifier Description

U

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE) MCL EPA recommended "Maximum Contaminant Level" Minimum Detectable Activity (Radiochemistry) MDA

MDC Minimum Detectable Concentration (Radiochemistry) MDL Method Detection Limit ML Minimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

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

NEG Negative / Absent POS Positive / Present PQL **Practical Quantitation Limit** 

**PRES** Presumptive QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RLReporting Limit or Requested Limit (Radiochemistry)

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

TEF Toxicity Equivalent Factor (Dioxin) **TEQ** Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

#### **Case Narrative**

Client: WSP USA Inc. Job ID: 890-1612-1 Project/Site: Black River 4h SDG: Eddy County

Job ID: 890-1612-1

Laboratory: Eurofins Xenco, Carlsbad

**Narrative** 

Job Narrative 890-1612-1

#### Receipt

The samples were received on 11/22/2021 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

#### **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.

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

**Matrix: Solid** 

Lab Sample ID: 890-1612-1

Client: WSP USA Inc.

Job ID: 890-1612-1
Project/Site: Black River 4h

SDG: Eddy County

Client Sample ID: PH02

Date Collected: 11/19/21 10:22 Date Received: 11/22/21 10:10

Sample Depth: 8

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 15:55	1
Toluene	< 0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 15:55	1
Ethylbenzene	< 0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 15:55	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		11/23/21 16:45	11/24/21 15:55	1
o-Xylene	< 0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 15:55	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		11/23/21 16:45	11/24/21 15:55	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130			11/23/21 16:45	11/24/21 15:55	1
1,4-Difluorobenzene (Surr)	110		70 - 130			11/23/21 16:45	11/24/21 15:55	1
: Method: Total BTEX - Total B	TEX Calcula	tion						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg		·	11/30/21 15:30	1
Method: 8015 NM - Diesel Rar	nge Organic	s (DRO) (0	SC)					
Analyte	Result	Qualifier	RL	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
	•	Qualifier	•	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 12/01/21 20:09	Dil Fac
Analyte Total TPH	Result   <49.8	Qualifier U	<b>RL</b> 49.8		<u>D</u>	Prepared		
Analyte Total TPH  ** Method: 8015B NM - Diesel Ra	Result <49.8	Qualifier U	<b>RL</b> 49.8		<u>D</u> D	Prepared Prepared		1
Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte Gasoline Range Organics	Result <49.8	Qualifier U ics (DRO) Qualifier	RL 49.8 (GC)	mg/Kg	— =	<u> </u>	12/01/21 20:09	1 Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <49.8 ange Organ Result	Qualifier U ics (DRO) Qualifier U	RL 49.8 (GC)	mg/Kg	— =	Prepared	12/01/21 20:09  Analyzed	
Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte Gasoline Range Organics (GRO)-C6-C10	Result <49.8  ange Organ Result <49.8	Qualifier U ics (DRO) Qualifier U	RL 49.8 (GC) RL 49.8	mg/Kg  Unit mg/Kg	— =	Prepared 11/24/21 08:16 11/24/21 08:16	12/01/21 20:09  Analyzed 11/24/21 17:29	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result	Qualifier U ics (DRO) Qualifier U U	RL 49.8  (GC) RL 49.8  49.8	mg/Kg  Unit mg/Kg  mg/Kg	— =	Prepared 11/24/21 08:16 11/24/21 08:16	12/01/21 20:09  Analyzed 11/24/21 17:29 11/24/21 17:29	1 Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result	Qualifier U ics (DRO) Qualifier U U	RL 49.8  (GC) RL 49.8  49.8  49.8	mg/Kg  Unit mg/Kg  mg/Kg	— =	Prepared 11/24/21 08:16 11/24/21 08:16 11/24/21 08:16	12/01/21 20:09  Analyzed 11/24/21 17:29 11/24/21 17:29 11/24/21 17:29	Dil Fac

Client Sample ID: PH03

Date Collected: 11/19/21 11:10

Lab Sample ID: 890-1612-2

Matrix: Solid

RL

50.1

Unit

mg/Kg

D

Prepared

Result Qualifier

142

Date Received: 11/22/21 10:10

Sample Depth: 8

Analyte

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 16:15	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 16:15	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 16:15	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		11/23/21 16:45	11/24/21 16:15	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 16:15	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		11/23/21 16:45	11/24/21 16:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130			11/23/21 16:45	11/24/21 16:15	1

Eurofins Xenco, Carlsbad

Analyzed

12/03/21 04:17

Dil Fac

2

1

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14

2/2/2021

Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1612-1

SDG: Eddy County

Client Sample ID: PH03 Lab Sample ID: 890-1612-2

Date Collected: 11/19/21 11:10 Matrix: Solid
Date Received: 11/22/21 10:10

Sample Depth: 8

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	97	70 - 130	11/23/21 16:45	11/24/21 16:15	1

#### **Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	ma/Ka			11/30/21 15:30	1

Method: 8015 NM	- Diesel Range	Organics	(DRO) (GC	١.
INICITION. OUTS INIVI	- Diesei Kange	Organics		,

Analyte	Result Qua	alifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0 U	50.0	mg/Kg			12/01/21 20:09	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/24/21 08:16	11/24/21 17:51	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/24/21 08:16	11/24/21 17:51	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/24/21 08:16	11/24/21 17:51	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	107		70 - 130	11/24/21 08:16	11/24/21 17:51	1
o-Terphenyl	105		70 - 130	11/24/21 08:16	11/24/21 17:51	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	74.3	5.05	mg/Kg			12/03/21 04:28	1

Client Sample ID: PH04

Date Collected: 11/19/21 12:08

Lab Sample ID: 890-1612-3

Matrix: Solid

Date Collected: 11/19/21 12:08 Date Received: 11/22/21 10:10

Sample Depth: 8

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 16:36	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 16:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 16:36	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		11/23/21 16:45	11/24/21 16:36	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 16:36	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/23/21 16:45	11/24/21 16:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130			11/23/21 16:45	11/24/21 16:36	1
1,4-Difluorobenzene (Surr)	79		70 - 130			11/23/21 16:45	11/24/21 16:36	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00399	U	0.00399	mg/Kg			11/30/21 15:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg	_		12/01/21 20:09	1

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**Matrix: Solid** 

Lab Sample ID: 890-1612-3

Client: WSP USA Inc. Job ID: 890-1612-1 Project/Site: Black River 4h SDG: Eddy County

**Client Sample ID: PH04** 

Date Collected: 11/19/21 12:08 Date Received: 11/22/21 10:10

Sample Depth: 8

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/24/21 08:16	11/24/21 18:13	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/24/21 08:16	11/24/21 18:13	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/24/21 08:16	11/24/21 18:13	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	126		70 - 130			11/24/21 08:16	11/24/21 18:13	1
o-Terphenyl	127		70 - 130			11/24/21 08:16	11/24/21 18:13	1

Method: 300.0 - Anions, Ion Chromatography - Soluble								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	85.5		5.05	mg/Kg			12/03/21 05:02	1

Lab Sample ID: 890-1612-4 **Client Sample ID: PH05** Date Collected: 11/19/21 15:08 Matrix: Solid

Date Received: 11/22/21 10:10

Sample Depth: 8

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/23/21 16:45	11/24/21 16:56	1
Toluene	< 0.00199	U	0.00199	mg/Kg		11/23/21 16:45	11/24/21 16:56	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		11/23/21 16:45	11/24/21 16:56	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/23/21 16:45	11/24/21 16:56	1
o-Xylene	< 0.00199	U	0.00199	mg/Kg		11/23/21 16:45	11/24/21 16:56	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/23/21 16:45	11/24/21 16:56	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130			11/23/21 16:45	11/24/21 16:56	1
1,4-Difluorobenzene (Surr)	106		70 - 130			11/23/21 16:45	11/24/21 16:56	1
Method: Total BTEX - Total	BTEX Calcula	tion						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/30/21 15:30	1
Method: 8015 NM - Diesel I	Range Organic	s (DRO) (0	SC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/01/21 20:09	

Analyte	Result	Qualifier	RL	Unit	ט	Prepared	Analyzed	DII Fac
Total TPH	<50.0	U	50.0	mg/Kg			12/01/21 20:09	•
Method: 8015B NM - Diesel R	ange Organi	ics (DRO)	(GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/24/21 08:16	11/24/21 18:35	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/24/21 08:16	11/24/21 18:35	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/24/21 08:16	11/24/21 18:35	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	123		70 - 130			11/24/21 08:16	11/24/21 18:35	
o-Terphenyl	121		70 - 130			11/24/21 08:16	11/24/21 18:35	1

Eurofins Xenco, Carlsbad

12/3/2021

Job ID: 890-1612-1

Client: WSP USA Inc. Project/Site: Black River 4h SDG: Eddy County

**Client Sample ID: PH05** Lab Sample ID: 890-1612-4 Date Collected: 11/19/21 15:08

**Matrix: Solid** 

Date Received: 11/22/21 10:10 Sample Depth: 8

M	ethod: 300.0 - Anions, Ion Chromatog	raphy - Soli	uble					
Aı	nalyte Res	ılt Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C	nloride 1	21	4.97	mg/Kg			12/03/21 05:14	1

**Client Sample ID: PH06** Lab Sample ID: 890-1612-5

Date Collected: 11/19/21 16:04 Matrix: Solid

Date Received: 11/22/21 10:10

Sample Depth: 8

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		11/23/21 16:45	11/24/21 17:17	1
Toluene	< 0.00199	U	0.00199	mg/Kg		11/23/21 16:45	11/24/21 17:17	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		11/23/21 16:45	11/24/21 17:17	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		11/23/21 16:45	11/24/21 17:17	1
o-Xylene	< 0.00199	U	0.00199	mg/Kg		11/23/21 16:45	11/24/21 17:17	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		11/23/21 16:45	11/24/21 17:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130			11/23/21 16:45	11/24/21 17:17	1
1,4-Difluorobenzene (Surr)	102		70 - 130			11/23/21 16:45	11/24/21 17:17	1
Method: Total BTEX - Total B	ΓEX Calcula	tion						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			11/30/21 15:30	1
Method: 8015 NM - Diesel Rar	nge Organic	s (DRO) (6	sc)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/01/21 20:09	1
Method: 8015B NM - Diesel R	ange Organi	ics (DRO)	(GC)					
	_	ics (DRO) Qualifier	(GC) RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte Gasoline Range Organics	_	Qualifier	•	Unit mg/Kg	<u>D</u>	Prepared 11/24/21 08:16	Analyzed 11/24/21 19:22	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result	Qualifier U	RL		<u>D</u>		11/24/21 19:22	1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<b>Result</b> <49.9	Qualifier U	<b>RL</b> 49.9	mg/Kg	<u> </u>	11/24/21 08:16	11/24/21 19:22 11/24/21 19:22	1
Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result   <49.9   <49.9	Qualifier U U U	49.9 49.9	mg/Kg	<u> </u>	11/24/21 08:16 11/24/21 08:16	11/24/21 19:22 11/24/21 19:22	Dil Fac
Method: 8015B NM - Diesel Ranalyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result <49.9 <49.9	Qualifier U U U	49.9 49.9	mg/Kg	<u>D</u>	11/24/21 08:16 11/24/21 08:16 11/24/21 08:16	11/24/21 19:22 11/24/21 19:22 11/24/21 19:22	1 1

Analyzed

12/03/21 05:25

RL

4.96

Unit

mg/Kg

D

Prepared

Dil Fac

Analyte

**Chloride** 

Method: 300.0 - Anions, Ion Chromatography - Soluble

Result Qualifier

48.2

### **Surrogate Summary**

Client: WSP USA Inc. Job ID: 890-1612-1 Project/Site: Black River 4h SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

			Perc
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-1612-1	PH02	108	110
890-1612-2	PH03	119	97
890-1612-3	PH04	115	79
890-1612-4	PH05	112	106
890-1612-5	PH06	118	102
890-1619-A-21-E MSD	Matrix Spike Duplicate	106	109
890-1619-A-21-I MS	Matrix Spike	107	106
LCS 880-13016/1-A	Lab Control Sample	106	105
LCSD 880-13016/2-A	Lab Control Sample Dup	107	104
MB 880-13016/5-A	Method Blank	113	102
Surrogate Legend			

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)					
		1CO1	OTPH1				
Lab Sample ID	Client Sample ID	(70-130)	(70-130)				
890-1609-A-1-K MS	Matrix Spike	127	117				
890-1609-A-1-L MSD	Matrix Spike Duplicate	112	97				
890-1612-1	PH02	111	111				
390-1612-2	PH03	107	105				
390-1612-3	PH04	126	127				
390-1612-4	PH05	123	121				
390-1612-5	PH06	118	123				
CS 880-13113/2-A	Lab Control Sample	299 S1+	284 S1+				
_CSD 880-13113/3-A	Lab Control Sample Dup	297 S1+	286 S1+				
MB 880-13113/1-A	Method Blank	141 S1+	142 S1+				

Surrogate Legend

1CO = 1-Chlorooctane OTPH = o-Terphenyl

Client: WSP USA Inc. Job ID: 890-1612-1 Project/Site: Black River 4h SDG: Eddy County

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

Lab Sample ID: MB 880-13016/5-A

**Matrix: Solid** 

**Analysis Batch: 13108** 

Client	Sample	ID:	<b>Method</b>	Blank

Prep Type: Total/NA

Prep Batch: 13016

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 10:46	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 10:46	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 10:46	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/23/21 16:45	11/24/21 10:46	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 16:45	11/24/21 10:46	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/23/21 16:45	11/24/21 10:46	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130	11/23/21 16:45	11/24/21 10:46	1
1,4-Difluorobenzene (Surr)	102		70 - 130	11/23/21 16:45	11/24/21 10:46	1

Lab Sample ID: LCS 880-13016/1-A

**Matrix: Solid** 

**Analysis Batch: 13108** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 13016

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09040		mg/Kg		90	70 - 130	
Toluene	0.100	0.08336		mg/Kg		83	70 - 130	
Ethylbenzene	0.100	0.08400		mg/Kg		84	70 - 130	
m-Xylene & p-Xylene	0.200	0.1755		mg/Kg		88	70 - 130	
o-Xylene	0.100	0.08709		mg/Kg		87	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: LCSD 880-13016/2-A

**Matrix: Solid** 

**Analysis Batch: 13108** 

Client S	Sample	ID: La	ab Co	ontro	I Samp	ole Dup
			_	_	_	4 1/81.4

Prep Type: Total/NA Prep Batch: 13016

	Spike	LCSD LCSD			%Rec.		RPD
Analyte	Added	Result Qualifie	r Unit	D %Rec	Limits	RPD	Limit
Benzene	0.100	0.08879	mg/Kg	89	70 - 130	2	35
Toluene	0.100	0.08362	mg/Kg	84	70 - 130	0	35
Ethylbenzene	0.100	0.08377	mg/Kg	84	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.1743	mg/Kg	87	70 - 130	1	35
o-Xylene	0.100	0.08797	mg/Kg	88	70 - 130	1	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1.4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 890-1619-A-21-E MSD

**Matrix: Solid** 

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

**Analysis Batch: 13108** Prep Batch: 13016 Spike MSD MSD **RPD** Sample Sample %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Benzene <0.00199 U 0.0996 0.08556 mg/Kg 86 70 - 130 35 9 Toluene <0.00199 U 0.0996 0.07906 mg/Kg 79 70 - 130 35

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Client: WSP USA Inc. Job ID: 890-1612-1 Project/Site: Black River 4h SDG: Eddy County

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

Lab Sample ID: 890-1619-A-21-E MSD **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

**Matrix: Solid Analysis Batch: 13108** 

Prep Batch: 13016 MSD MSD **RPD** Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Ethylbenzene <0.00199 Ū 0.0996 0.08020 mg/Kg 81 70 - 130 7 35 m-Xylene & p-Xylene <0.00398 U 0.199 0.1678 mg/Kg 84 70 - 130 8 35 <0.00199 U 0.0996 0.08340 83 70 - 130 35 o-Xylene mg/Kg 8

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

Lab Sample ID: 890-1619-A-21-I MS

**Matrix: Solid** 

**Analysis Batch: 13108** 

**Client Sample ID: Matrix Spike** Prep Type: Total/NA

Prep Batch: 13016

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits <0.00199 U 0.0998 0.09349 94 70 - 130 Benzene mg/Kg Toluene <0.00199 U 0.0998 0.08636 86 70 - 130 mg/Kg 87 Ethylbenzene <0.00199 U 0.0998 0.08643 mg/Kg 70 - 130 m-Xylene & p-Xylene <0.00398 U 0.200 0.1818 mg/Kg 91 70 - 130 0.0998 0.09019 90 70 - 130 o-Xylene <0.00199 U mg/Kg

MS MS %Recovery Surrogate Qualifier Limits 4-Bromofluorobenzene (Surr) 70 - 130 107 1,4-Difluorobenzene (Surr) 106 70 - 130

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

Lab Sample ID: MB 880-13113/1-A **Client Sample ID: Method Blank Matrix: Solid Prep Type: Total/NA Analysis Batch: 13221** Prep Batch: 13113

MB MB Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 11/24/21 08:16 11/24/21 13:24 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 11/24/21 08:16 11/24/21 13:24 mg/Kg C10-C28) Oll Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg 11/24/21 08:16 11/24/21 13:24

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1-Chlorooctane 141 S1+ 70 - 130 11/24/21 08:16 11/24/21 13:24 70 - 130 11/24/21 08:16 11/24/21 13:24 o-Terphenyl 142 S1+

Lab Sample ID: LCS 880-13113/2-A **Client Sample ID: Lab Control Sample** 

**Analysis Batch: 13221** 

**Matrix: Solid** 

Prep Batch: 13113 LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits 1000 976.6 98 70 - 130 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 913.3 mg/Kg 91 70 - 130 C10-C28)

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Prep Type: Total/NA

Client: WSP USA Inc. Job ID: 890-1612-1 SDG: Eddy County Project/Site: Black River 4h

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

Lab Sample ID: LCS 880-13113/2-A

Lab Sample ID: LCSD 880-13113/3-A

**Matrix: Solid** 

**Matrix: Solid** 

**Analysis Batch: 13221** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 13113

LCS LCS %Recovery Qualifier

Surrogate Limits 1-Chlorooctane 299 S1+ 70 - 130 o-Terphenyl 284 S1+ 70 - 130

**Client Sample ID: Lab Control Sample Dup** 

**Prep Type: Total/NA** 

**Analysis Batch: 13221** 

Prep Batch: 13113 RPD %Rec.

LCSD LCSD Spike Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Gasoline Range Organics 1000 963.4 mg/Kg 96 70 - 130 1 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 910.4 mg/Kg 91 70 - 130 0 20

C10-C28)

LCSD LCSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 297 S1+ 70 - 130 70 - 130 o-Terphenyl 286 S1+

Lab Sample ID: 890-1609-A-1-K MS **Client Sample ID: Matrix Spike** 

**Matrix: Solid** 

**Analysis Batch: 13221** 

**Prep Type: Total/NA** 

Prep Batch: 13113

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec Gasoline Range Organics <49.9 U F1 F2 997 1262 mg/Kg 124 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over 997 187 1242 mg/Kg 106 70 - 130

C10-C28)

MS MS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 127 70 - 130 o-Terphenyl 117 70 - 130

Lab Sample ID: 890-1609-A-1-L MSD

**Matrix: Solid** 

**Analysis Batch: 13221** 

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA Prep Batch: 13113

Sample Sample Spike MSD MSD %Rec. **RPD** Result Qualifier Added Result Qualifier Limits **RPD** Limit Analyte Unit %Rec <49.9 U F1 F2 999 1717 F1 F2 170 70 - 130 31 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 187 999 1101 mg/Kg 91 70 - 130 12 20

C10-C28)

MSD MSD

%Recovery Qualifier Limits Surrogate 1-Chlorooctane 112 70 - 130 o-Terphenyl 97 70 - 130

### **QC Sample Results**

Client: WSP USA Inc. Job ID: 890-1612-1 Project/Site: Black River 4h SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-13079/1-A

Client Sample ID: Method Blank

**Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Analysis Batch: 13774** 

**Matrix: Solid** 

MB MB

Analyte Result Qualifier RL Unit D Analyzed Dil Fac Prepared 5.00 12/03/21 00:28 Chloride <5.00 U mg/Kg

Lab Sample ID: LCS 880-13079/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 13774** 

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Chloride 250 245.7 90 - 110 mg/Kg 98

Lab Sample ID: LCSD 880-13079/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 13774** 

Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Limits **RPD** Limit Unit %Rec Chloride 250 240.5 96 90 - 110 20 mg/Kg

Lab Sample ID: 890-1611-A-5-D MS **Client Sample ID: Matrix Spike Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 13774** 

Spike MS MS %Rec. Sample Sample Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits Chloride <5.00 U 250 269.9 90 - 110 mg/Kg 107

Lab Sample ID: 890-1611-A-5-E MSD

**Matrix: Solid** 

**Analysis Batch: 13774** 

MSD MSD RPD Sample Sample Spike %Rec. Analyte Result Qualifier Added Unit Limits Limit Result Qualifier %Rec Chloride <5.00 U 250 271.7 107 90 - 110 20 mg/Kg

### **QC Association Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1612-1
SDG: Eddy County

### **GC VOA**

#### Prep Batch: 13016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1612-1	PH02	Total/NA	Solid	5035	
890-1612-2	PH03	Total/NA	Solid	5035	
890-1612-3	PH04	Total/NA	Solid	5035	
890-1612-4	PH05	Total/NA	Solid	5035	
890-1612-5	PH06	Total/NA	Solid	5035	
MB 880-13016/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-13016/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-13016/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1619-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	
890-1619-A-21-I MS	Matrix Spike	Total/NA	Solid	5035	

#### **Analysis Batch: 13108**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1612-1	PH02	Total/NA	Solid	8021B	13016
890-1612-2	PH03	Total/NA	Solid	8021B	13016
890-1612-3	PH04	Total/NA	Solid	8021B	13016
890-1612-4	PH05	Total/NA	Solid	8021B	13016
890-1612-5	PH06	Total/NA	Solid	8021B	13016
MB 880-13016/5-A	Method Blank	Total/NA	Solid	8021B	13016
LCS 880-13016/1-A	Lab Control Sample	Total/NA	Solid	8021B	13016
LCSD 880-13016/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	13016
890-1619-A-21-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	13016
890-1619-A-21-I MS	Matrix Spike	Total/NA	Solid	8021B	13016

#### **Analysis Batch: 13453**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1612-1	PH02	Total/NA	Solid	Total BTEX	
890-1612-2	PH03	Total/NA	Solid	Total BTEX	
890-1612-3	PH04	Total/NA	Solid	Total BTEX	
890-1612-4	PH05	Total/NA	Solid	Total BTEX	
890-1612-5	PH06	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### Prep Batch: 13113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1612-1	PH02	Total/NA	Solid	8015NM Prep	
890-1612-2	PH03	Total/NA	Solid	8015NM Prep	
890-1612-3	PH04	Total/NA	Solid	8015NM Prep	
890-1612-4	PH05	Total/NA	Solid	8015NM Prep	
890-1612-5	PH06	Total/NA	Solid	8015NM Prep	
MB 880-13113/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-13113/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-13113/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1609-A-1-K MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1609-A-1-L MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 13221**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1612-1	PH02	Total/NA	Solid	8015B NM	13113
890-1612-2	PH03	Total/NA	Solid	8015B NM	13113

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### **QC Association Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1612-1
SDG: Eddy County

### GC Semi VOA (Continued)

#### **Analysis Batch: 13221 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1612-3	PH04	Total/NA	Solid	8015B NM	13113
890-1612-4	PH05	Total/NA	Solid	8015B NM	13113
890-1612-5	PH06	Total/NA	Solid	8015B NM	13113
MB 880-13113/1-A	Method Blank	Total/NA	Solid	8015B NM	13113
LCS 880-13113/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	13113
LCSD 880-13113/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	13113
890-1609-A-1-K MS	Matrix Spike	Total/NA	Solid	8015B NM	13113
890-1609-A-1-L MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	13113

#### **Analysis Batch: 13711**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1612-1	PH02	Total/NA	Solid	8015 NM	<del></del>
890-1612-2	PH03	Total/NA	Solid	8015 NM	
890-1612-3	PH04	Total/NA	Solid	8015 NM	
890-1612-4	PH05	Total/NA	Solid	8015 NM	
890-1612-5	PH06	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 13079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1612-1	PH02	Soluble	Solid	DI Leach	
890-1612-2	PH03	Soluble	Solid	DI Leach	
890-1612-3	PH04	Soluble	Solid	DI Leach	
890-1612-4	PH05	Soluble	Solid	DI Leach	
890-1612-5	PH06	Soluble	Solid	DI Leach	
MB 880-13079/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-13079/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-13079/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1611-A-5-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1611-A-5-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### **Analysis Batch: 13774**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1612-1	PH02	Soluble	Solid	300.0	13079
890-1612-2	PH03	Soluble	Solid	300.0	13079
890-1612-3	PH04	Soluble	Solid	300.0	13079
890-1612-4	PH05	Soluble	Solid	300.0	13079
890-1612-5	PH06	Soluble	Solid	300.0	13079
MB 880-13079/1-A	Method Blank	Soluble	Solid	300.0	13079
LCS 880-13079/2-A	Lab Control Sample	Soluble	Solid	300.0	13079
LCSD 880-13079/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	13079
890-1611-A-5-D MS	Matrix Spike	Soluble	Solid	300.0	13079
890-1611-A-5-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	13079

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Job ID: 890-1612-1

SDG: Eddy County

**Matrix: Solid** 

XEN MID

XEN MID

Lab Sample ID: 890-1612-1

Date Collected: 11/19/21 10:22 Date Received: 11/22/21 10:10

**Client Sample ID: PH02** 

Client: WSP USA Inc.

Project/Site: Black River 4h

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	13016	11/23/21 16:45	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13108	11/24/21 15:55	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	13113	11/24/21 08:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13221	11/24/21 17:29	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	13079	11/23/21 13:23	SC	XEN MID
Soluble	Analysis	300.0		10			13774	12/03/21 04:17	CH	XEN MID

**Client Sample ID: PH03** Lab Sample ID: 890-1612-2 Date Collected: 11/19/21 11:10 **Matrix: Solid** 

Date Received: 11/22/21 10:10

Batch Batch Dil Initial Final Batch Prepared **Prep Type** Method Number or Analyzed Type Run **Factor Amount** Amount **Analyst** Lab Total/NA Prep 5035 5 mL 13016 11/23/21 16:45 KL XEN MID 4.99 g Total/NA 8021B 5 mL 11/24/21 16:15 KL XEN MID Analysis 5 mL 13108 1 Total/NA Total BTEX Analysis 1 13453 11/30/21 15:30 AJ XEN MID Total/NA 8015 NM XEN MID Analysis 1 13711 12/01/21 20:09 AJ Total/NA Prep 8015NM Prep 10.00 g 10 mL 13113 11/24/21 08:16 DM XEN MID Total/NA 8015B NM XEN MID Analysis 1 13221 11/24/21 17:51 AJ

Client Sample ID: PH04 Lab Sample ID: 890-1612-3 Date Collected: 11/19/21 12:08 Matrix: Solid

1

4.95 g

50 mL

13079

13774

11/23/21 13:23 SC

12/03/21 04:28 CH

Date Received: 11/22/21 10:10

Leach

Analysis

DI Leach

300.0

Soluble

Soluble

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	13016	11/23/21 16:45	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13108	11/24/21 16:36	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	13113	11/24/21 08:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13221	11/24/21 18:13	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	13079	11/23/21 13:23	SC	XEN MID
Soluble	Analysis	300.0		1			13774	12/03/21 05:02	CH	XEN MID

**Client Sample ID: PH05** Lab Sample ID: 890-1612-4 Date Collected: 11/19/21 15:08 Matrix: Solid

Date Received: 11/22/21 10:10

<b>D</b>	Batch	Batch		Dil	Initial	Final	Batch	Prepared	A L 4	1 -1-
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	13016	11/23/21 16:45	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13108	11/24/21 16:56	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID

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#### **Lab Chronicle**

Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1612-1

SDG: Eddy County

Client Sample ID: PH05

Lab Sample ID: 890-1612-4

Matrix: Solid

Date Collected: 11/19/21 15:08 Date Received: 11/22/21 10:10

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
	Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
	Total/NA	Prep	8015NM Prep			10.00 g	10 mL	13113	11/24/21 08:16	DM	XEN MID
	Total/NA	Analysis	8015B NM		1			13221	11/24/21 18:35	AJ	XEN MID
	Soluble	Leach	DI Leach			5.03 g	50 mL	13079	11/23/21 13:23	SC	XEN MID
L	Soluble	Analysis	300.0		1			13774	12/03/21 05:14	СН	XEN MID

Client Sample ID: PH06 Lab Sample ID: 890-1612-5

Date Collected: 11/19/21 16:04 Matrix: Solid
Date Received: 11/22/21 10:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	13016	11/23/21 16:45	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13108	11/24/21 17:17	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	13113	11/24/21 08:16	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13221	11/24/21 19:22	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	13079	11/23/21 13:23	SC	XEN MID
Soluble	Analysis	300.0		1			13774	12/03/21 05:25	CH	XEN MID

#### **Laboratory References:**

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

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### **Accreditation/Certification Summary**

Client: WSP USA Inc.

Job ID: 890-1612-1
Project/Site: Black River 4h

SDG: Eddy County

### **Laboratory: Eurofins Xenco, Midland**

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

Authority Texas		ogram	Identification Number	Expiration Date 06-30-22	
		ELAP	T104704400-21-22		
The following analyte	e are included in this reno	art but the laboratory is r	ant nortified by the governing outbarity	This list may include analytes for u	
the agency does not	offer certification.	•	not certified by the governing authority.	This list may include analytes for w	
	•	Matrix	Analyte	This list may include analytes for w	
the agency does not	offer certification.	•	, , ,	This list may include analytes for w	

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### **Method Summary**

Client: WSP USA Inc. Project/Site: Black River 4h Job ID: 890-1612-1 SDG: Eddy County

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

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

Eurofins Xenco, Carlsbad

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### **Sample Summary**

Client: WSP USA Inc. Project/Site: Black River 4h Job ID: 890-1612-1

SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1612-1	PH02	Solid	11/19/21 10:22	11/22/21 10:10	8
890-1612-2	PH03	Solid	11/19/21 11:10	11/22/21 10:10	8
890-1612-3	PH04	Solid	11/19/21 12:08	11/22/21 10:10	8
890-1612-4	PH05	Solid	11/19/21 15:08	11/22/21 10:10	8
890-1612-5	PH06	Solid	11/19/21 16:04	11/22/21 10:10	8

Page 21 of 24

Carlsbad NM 88220 Phone: 575-988-3199 Fax 575-988-3199

1089 N Canal St.

**Eurofins Xenco, Carlsbad** 

Chain of Custody Record

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Environment Testing America

State, Zip: TX, 79701 Note: Since laboratory accreditations are subject to change, Eurofins Xenco LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Xenco LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Xenco LLC. PH02 (890-1612-1) PH04 (890-1612-3) PH03 (890-1612-2) Deliverable Requested | II III IV Other (specify) Possible Hazard Identification PH06 (890-1612-5) PH05 (890-1612-4) Sample Identification - Client ID (Lab ID) Black River 4h 432-704-5440(Tel) Midland linquished by: 211 W Florida Ave Custody Seals Intact. linquished by linquished by: npty Kit Relinquished by oject Name ırofins Xenco hipping/Receiving lient Information Yes S 0 É (Sub Contract Lab) Custody Seal ᇹ 11.22.2 Primary Deliverable Rank 89000048 PO# Phone: Date/Time WO# TAT Requested (days): 11/30/2021 Due Date Requested 11/19/21 11/19/21 11/19/21 Time 11/19/21 11/19/21 Date Mountain 16 04 Mountain 12 08 Mountain Mountain 11 10 Mountain 15 08 Sample G=grab) (C=comp. Sample Preservation Code Type Company Company Matrix Solid Solid Solid Solid Solid essica kramer@eurofinset com Kramer Jessica -Mail Time. Field Filtered Sample (Yes or No) Accreditations Required (See note)
NELAP - Louisiana NELAP - Texas Special Instructions/QC Requirements Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Perform MS/MSD (Yes or No) Received by 8016MOD\_NM/8015NM\_S\_Prep Full TPH Cooler Temperature(s) °C and Other Remarks × × ×  $\times$ × Return To Client × × × × × 300\_ORGFM\_28D/DI\_LEACH Chloride 8021B/5035FP\_Calc BTEX ×  $\times$  $\times$ × × × × × Total\_BTEX\_GCV Analysis Requested × 8015MOD\_Calc ×  $\times$ × × Disposal By Lab New Mexico State of Origin Carrier Tracking No(s) thod of Shipment Date/Time J DI Water K EDTA Archive For 4 Total Number of containers 4 9. A HCL
B NAOH
C Nitric Acid
E NaHSO4
F MeOH
G Amchlor
H Ascorbic Acid COC No: 890-518.1 Page 1 of 1 Preservation Codes 390-1612-1 Special Instructions/Note NECCHORDPOZZ Ver 06/08/2021 Company Company A Hexane

A None

A None

A Na2O4S

Na2O4S

Na2SO3

Na2SO3

Na2SO3

N2SO4

TSP Dodecahydrate Acetone MCAA other (specify) Months

### **Login Sample Receipt Checklist**

Client: WSP USA Inc. Job Number: 890-1612-1

SDG Number: Eddy County

Login Number: 1612 List Source: Eurofins Xenco, Carlsbad

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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### **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1612-1

SDG Number: Eddy County

List Number: 1612 List Source: Eurofins Xenco, Midland List Number: 2 List Creation: 11/23/21 12:51 PM

Creator: Kramer, Jessica

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

## **Environment Testing America**

## **ANALYTICAL REPORT**

Eurofins Xenco, Carlsbad 1089 N Canal St. Carlsbad, NM 88220 Tel: (575)988-3199

Laboratory Job ID: 890-1613-1

Laboratory Sample Delivery Group: Eddy County

Client Project/Site: Black River 4h

For:

WSP USA Inc. 2777 N. Stemmons Freeway **Suite 1600** Dallas, Texas 75207

Attn: Joseph Hernandez

RAMER

Authorized for release by: 12/3/2021 3:33:36 PM

Jessica Kramer, Project Manager (432)704-5440

jessica.kramer@eurofinset.com

·····LINKS ·······

**Review your project** results through

**Have a Question?** 



Visit us at:

www.eurofinsus.com/Env

Released to Imaging: 2/16/2022 10:04:59 AM

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: WSP USA Inc.

Project/Site: Black River 4h

Laboratory Job ID: 890-1613-1 SDG: Eddy County

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#### **Definitions/Glossary**

Client: WSP USA Inc. Job ID: 890-1613-1 Project/Site: Black River 4h SDG: Eddy County

#### **Qualifiers**

	^	1/	$\overline{}$	Α.
G	U	v	U	А

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

#### **GC Semi VOA**

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

#### HPLC/IC

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

### Glossary

LOQ

Abbreviation	These commonly used abbreviations may or may not be present in this report.						
п	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)						

MCL EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry) MDL Method Detection Limit

Limit of Quantitation (DoD/DOE)

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 Positive / Present POS

**Practical Quantitation Limit** PQL

**PRES** Presumptive **Quality Control** QC

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)

Too Numerous To Count TNTC

Eurofins Xenco, Carlsbad

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#### **Case Narrative**

Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1613-1

SDG: Eddy County

Job ID: 890-1613-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative 890-1613-1

#### Receipt

The samples were received on 11/22/2021 10:10 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

#### **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

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-13731 and analytical batch 880-13732 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

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Matrix: Solid

Lab Sample ID: 890-1613-1

Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1613-1
SDG: Eddy County

Client Sample ID: PH02

Date Collected: 11/19/21 10:28 Date Received: 11/22/21 10:10

Sample Depth: 11

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		11/23/21 12:37	11/24/21 18:47	1
Toluene	<0.00202	U	0.00202	mg/Kg		11/23/21 12:37	11/24/21 18:47	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		11/23/21 12:37	11/24/21 18:47	1
m-Xylene & p-Xylene	<0.00404	U	0.00404	mg/Kg		11/23/21 12:37	11/24/21 18:47	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		11/23/21 12:37	11/24/21 18:47	1
Xylenes, Total	<0.00404	U	0.00404	mg/Kg		11/23/21 12:37	11/24/21 18:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130			11/23/21 12:37	11/24/21 18:47	1
1,4-Difluorobenzene (Surr)	97		70 - 130			11/23/21 12:37	11/24/21 18:47	1
Method: Total BTEX - Total BTEX	<b>Calculation</b>							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404	mg/Kg			11/30/21 15:30	1
Method: 8015 NM - Diesel Range Analyte	•	O) (GC) Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/01/21 20:09	1
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/24/21 12:36	11/25/21 00:33	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/24/21 12:36	11/25/21 00:33	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/24/21 12:36	11/25/21 00:33	
Oll Range Organics (Over C28-C36)  Surrogate	<49.9 <b>%Recovery</b>		49.9 <b>Limits</b>	mg/Kg		11/24/21 12:36  Prepared	11/25/21 00:33  Analyzed	1
,				mg/Kg				Dil Fac
Surrogate	%Recovery		Limits	mg/Kg		Prepared	Analyzed	1 Dil Fac
Surrogate 1-Chlorooctane	%Recovery 106 116	Qualifier	Limits 70 - 130	mg/Kg		Prepared 11/24/21 12:36	Analyzed 11/25/21 00:33	1 Dil Fac 1
Surrogate 1-Chlorooctane o-Terphenyl	%Recovery 106 116  omatography -	Qualifier	Limits 70 - 130	mg/Kg Unit	D	Prepared 11/24/21 12:36	Analyzed 11/25/21 00:33	1 <b>Dil Fac</b>

**Client Sample ID: PH03** 

Date Collected: 11/19/21 11:22 Date Received: 11/22/21 10:10

Sample Depth: 11

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		11/23/21 12:37	11/24/21 19:14	1
Toluene	<0.00201	U	0.00201	mg/Kg		11/23/21 12:37	11/24/21 19:14	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		11/23/21 12:37	11/24/21 19:14	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		11/23/21 12:37	11/24/21 19:14	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		11/23/21 12:37	11/24/21 19:14	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		11/23/21 12:37	11/24/21 19:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130			11/23/21 12:37	11/24/21 19:14	

Eurofins Xenco, Carlsbad

Lab Sample ID: 890-1613-2

Matrix: Solid

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10/2/2021

Job ID: 890-1613-1

Project/Site: Black River 4h SDG: Eddy County

**Client Sample ID: PH03** Lab Sample ID: 890-1613-2 Date Collected: 11/19/21 11:22

Matrix: Solid

Date Received: 11/22/21 10:10 Sample Depth: 11

Client: WSP USA Inc.

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	92		70 - 130	11/23/21 12:37	11/24/21 19:14	1

**Method: Total BTEX - Total BTEX Calculation** 

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTFX	<0.00402 U	0.00402	ma/Ka			11/30/21 15:30	1

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

Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0 U		50.0	ma/Ka			12/01/21 20:09	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		11/24/21 12:36	11/25/21 01:39	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/24/21 12:36	11/25/21 01:39	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/24/21 12:36	11/25/21 01:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	117	70 - 130	11/24/21 12:36	11/25/21 01:39	1
o-Terphenyl	132 S1+	70 - 130	11/24/21 12:36	11/25/21 01:39	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	136	4.99	mg/Kg			12/03/21 05:48	1

Lab Sample ID: 890-1613-3 Client Sample ID: PH04 **Matrix: Solid** 

Date Collected: 11/19/21 12:18 Date Received: 11/22/21 10:10

Sample Depth: 11

Mothod: 9021R - V	Volatila Organic	Compounds (GC)
MICHIOU. OUZ ID •	VUIALIIE OLUAIIIC	CUIIIDUUIIUS (GC)

Mothod: 0021B Tolding Orga	ino compounas	(00)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 19:40	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 19:40	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 19:40	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		11/23/21 12:37	11/24/21 19:40	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 19:40	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		11/23/21 12:37	11/24/21 19:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	144	S1+	70 - 130			11/23/21 12:37	11/24/21 19:40	1
1.4 Diffuorobenzene (Surr)	110		70 120			11/22/21 12:27	11/24/21 10:40	1

4-Bromotiuoropenzene (Surr)	144 51+	70 - 130	11/23/21 12:37	11/24/21 19:40	7
1,4-Difluorobenzene (Surr)	110	70 - 130	11/23/21 12:37	11/24/21 19:40	1
_					

**Method: Total BTEX - Total BTEX Calculation** 

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	DII Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			11/30/21 15:30	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/01/21 20:09	1

Eurofins Xenco, Carlsbad

12/3/2021

Matrix: Solid

Lab Sample ID: 890-1613-3

Client: WSP USA Inc. Job ID: 890-1613-1 Project/Site: Black River 4h SDG: Eddy County

**Client Sample ID: PH04** 

Date Collected: 11/19/21 12:18 Date Received: 11/22/21 10:10

Sample Depth: 11

Analyte	Pocult	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
					=	<u>·</u>		Dillac
Gasoline Range Organics	<49.9	U	49.9	mg/Kg		11/24/21 12:36	11/25/21 02:01	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<49.9	U	49.9	mg/Kg		11/24/21 12:36	11/25/21 02:01	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/24/21 12:36	11/25/21 02:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	115		70 - 130			11/24/21 12:36	11/25/21 02:01	1
o-Terphenyl	131	S1+	70 - 130			11/24/21 12:36	11/25/21 02:01	1
- Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	272		4.99	mg/Kg			12/03/21 05:59	

Lab Sample ID: 890-1613-4 **Client Sample ID: PH05** Date Collected: 11/19/21 15:18 **Matrix: Solid** 

Date Received: 11/22/21 10:10

Sample Depth: 11

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 20:07	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 20:07	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 20:07	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/23/21 12:37	11/24/21 20:07	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 20:07	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/23/21 12:37	11/24/21 20:07	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130			11/23/21 12:37	11/24/21 20:07	1
1,4-Difluorobenzene (Surr)	98		70 - 130			11/23/21 12:37	11/24/21 20:07	1
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400	mg/Kg			11/30/21 15:30	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			12/01/21 20:09	1
Method: 8015B NM - Diesel Rang	je Organics (Di	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9	mg/Kg		11/24/21 12:36	11/25/21 02:23	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9	mg/Kg		11/24/21 12:36	11/25/21 02:23	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		11/24/21 12:36	11/25/21 02:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	120		70 - 130			11/24/21 12:36	11/25/21 02:23	1
o-Terphenyl	139	S1+	70 - 130			11/24/21 12:36	11/25/21 02:23	1

Job ID: 890-1613-1 SDG: Eddy County

Client Sample ID: PH05

Project/Site: Black River 4h

Date Collected: 11/19/21 15:18 Date Received: 11/22/21 10:10

Sample Depth: 11

Client: WSP USA Inc.

Lab Sample ID: 890-1613-4

Matrix: Solid

**Matrix: Solid** 

Method: 300.0 - Anions, Ion Chron	natography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	38.0		4.99	mg/Kg			12/03/21 06:11	1

Client Sample ID: PH06 Lab Sample ID: 890-1613-5

Date Collected: 11/19/21 16:14 Date Received: 11/22/21 10:10

**Method: Total BTEX - Total BTEX Calculation** 

Sample Depth: 11

Analyte

Total BTEX

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 20:34	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 20:34	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 20:34	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		11/23/21 12:37	11/24/21 20:34	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 20:34	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		11/23/21 12:37	11/24/21 20:34	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		70 - 130			11/23/21 12:37	11/24/21 20:34	1
1,4-Difluorobenzene (Surr)	104		70 - 130			11/23/21 12:37	11/24/21 20:34	1

- 1	Method: 8015 NM - Diesel Range Organ	iics (DRI	J) (GC)						
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Total TPH	<49.8	U	49.8	mg/Kg			12/01/21 20:09	1

0.00399

Result Qualifier

<0.00399 U

Unit

mg/Kg

Prepared

Analyzed

11/30/21 15:30

Dil Fac

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8	mg/Kg		11/24/21 12:36	11/25/21 02:45	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8	mg/Kg		11/24/21 12:36	11/25/21 02:45	1
Oll Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		11/24/21 12:36	11/25/21 02:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	116		70 - 130			11/24/21 12:36	11/25/21 02:45	1
o-Terphenyl	131	S1+	70 - 130			11/24/21 12:36	11/25/21 02:45	1

Method: 300.0 - Anions, Ion Chroma	atography - S	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	337		24.9	mg/Kg			12/02/21 15:22	5

### **Surrogate Summary**

Client: WSP USA Inc. Job ID: 890-1613-1 Project/Site: Black River 4h SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
_ab Sample ID	Client Sample ID	(70-130)	(70-130)	
390-1606-A-1-E MS	Matrix Spike	125	102	
390-1606-A-1-F MSD	Matrix Spike Duplicate	119	95	
390-1613-1	PH02	122	97	
390-1613-2	PH03	115	92	
390-1613-3	PH04	144 S1+	110	
390-1613-4	PH05	105	98	
390-1613-5	PH06	129	104	
_CS 880-13076/1-A	Lab Control Sample	107	104	
_CSD 880-13076/2-A	Lab Control Sample Dup	109	106	
MB 880-13076/5-A	Method Blank	72	96	
MB 880-13087/5-A	Method Blank	71	97	
Surrogate Legend				

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

Matrix: Solid Prep Type: Total/NA

		1CO1	ОТРН1	Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-1613-1	PH02	106	116	
890-1613-1 MS	PH02	109	106	
890-1613-1 MSD	PH02	110	105	
890-1613-2	PH03	117	132 S1+	
890-1613-3	PH04	115	131 S1+	
890-1613-4	PH05	120	139 S1+	
890-1613-5	PH06	116	131 S1+	
LCS 880-13223/2-A	Lab Control Sample	117	128	
LCSD 880-13223/3-A	Lab Control Sample Dup	110	122	
MB 880-13223/1-A	Method Blank	151 S1+	169 S1+	

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: WSP USA Inc. Job ID: 890-1613-1 Project/Site: Black River 4h SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-13076/5-A

**Matrix: Solid** Analysis Batch: 13097 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 13076

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 10:17	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 10:17	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 10:17	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/23/21 12:37	11/24/21 10:17	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 12:37	11/24/21 10:17	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/23/21 12:37	11/24/21 10:17	1

MB MB

MD MD

Surrogate	%Recovery	Qualifier	Limits	Prepai	red	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		70 - 130	11/23/21	12:37	11/24/21 10:17	1
1,4-Difluorobenzene (Surr)	96		70 - 130	11/23/21	12:37	11/24/21 10:17	1

Lab Sample ID: LCS 880-13076/1-A **Client Sample ID: Lab Control Sample** 

Matrix: Solid

Analysis Batch: 13097

Prep Type: Total/NA Prep Batch: 13076

	<b>Spike</b>	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.08609		mg/Kg		86	70 - 130	
Toluene	0.100	0.08085		mg/Kg		81	70 - 130	
Ethylbenzene	0.100	0.07935		mg/Kg		79	70 - 130	
m-Xylene & p-Xylene	0.200	0.1753		mg/Kg		88	70 - 130	
o-Xylene	0.100	0.08509		mg/Kg		85	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	107	70 - 130
1,4-Difluorobenzene (Surr)	104	70 - 130

Lab Sample ID: LCSD 880-13076/2-A

**Matrix: Solid** 

Analysis Batch: 13097

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA Prep Batch: 13076

LCSD LCSD RPD Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits Limit Benzene 0.100 0.08998 mg/Kg 90 70 - 130 35 Toluene 0.100 0.08514 mg/Kg 85 70 - 130 5 35 Ethylbenzene 0.100 0.08446 mg/Kg 84 70 - 130 6 35 0.200 m-Xylene & p-Xylene 0.1876 mg/Kg 94 70 - 130 35 0.100 0.09093 o-Xylene mg/Kg 70 - 130 35

LCSD LCSD

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

Lab Sample ID: 890-1606-A-1-E MS

**Matrix: Solid** 

Analysis Batch: 13097

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

Prep Batch: 13076

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00198	U F1	0.0996	0.05858	F1	mg/Kg		59	70 - 130	
Toluene	<0.00198	U F1	0.0996	0.06553	F1	mg/Kg		66	70 - 130	

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Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 13087

Prep Batch: 13076

## QC Sample Results

Job ID: 890-1613-1 Client: WSP USA Inc. Project/Site: Black River 4h SDG: Eddy County

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

Lab Sample ID: 890-1606-A-1-E MS Client Sample ID: Matrix Spike

**Matrix: Solid** Analysis Batch: 13097

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene <0.00198 U F1 0.0996 0.06470 F1 65 70 - 130 mg/Kg m-Xylene & p-Xylene <0.00396 0.199 0.1440 mg/Kg 72 70 - 130 0.0996 0.06394 F1 o-Xylene <0.00198 UF1 mg/Kg 64 70 - 130

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	125	70 - 130
1,4-Difluorobenzene (Surr)	102	70 - 130

Lab Sample ID: 890-1606-A-1-F MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

**Analysis Batch: 13097** 

Prep Batch: 13076 MSD MSD Sample Sample Spike %Rec. RPD Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit %Rec 0.100 Benzene <0.00198 UF1 0.05973 F1 mg/Kg 60 70 - 130 2 35 Toluene <0.00198 UF1 0.100 0.06784 F1 mg/Kg 68 70 - 130 3 35 Ethylbenzene <0.00198 UF1 0.100 0.06693 F1 67 70 - 130 3 35 mg/Kg 0.200 0.1488 74 70 - 130 35 m-Xylene & p-Xylene <0.00396 U mq/Kq 3 0.100 <0.00198 U F1 0.06867 F1 69 70 - 130 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	119		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: MB 880-13087/5-A Client Sample ID: Method Blank **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 13097

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		11/23/21 14:25	11/23/21 19:58	1
Toluene	<0.00200	U	0.00200	mg/Kg		11/23/21 14:25	11/23/21 19:58	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		11/23/21 14:25	11/23/21 19:58	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		11/23/21 14:25	11/23/21 19:58	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		11/23/21 14:25	11/23/21 19:58	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		11/23/21 14:25	11/23/21 19:58	1
	Benzene Toluene Ethylbenzene m-Xylene & p-Xylene o-Xylene	Analyte         Result           Benzene         <0.00200	Benzene	Analyte         Result         Qualifier         RL           Benzene         <0.00200	Analyte         Result         Qualifier         RL         Unit           Benzene         <0.00200	Analyte         Result         Qualifier         RL         Unit         D           Benzene         <0.00200	Analyte         Result Benzene         Qualifier         RL Ounit Prepared         D Prepared           Benzene         <0.00200	Analyte         Result         Qualifier         RL         Unit         D         Prepared         Analyzed           Benzene         <0.00200

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		70 - 130	11/23/21 14:25	11/23/21 19:58	1
1,4-Difluorobenzene (Surr)	97		70 - 130	11/23/21 14:25	5 11/23/21 19:58	1

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

Lab Sample ID: MB 880-13223/1-A Client Sample ID: Method Blank **Matrix: Solid** 

Analysis Batch: 13220

мв мв Analyte Result Qualifier RL Unit Prepared Analyzed <50.0 U 50.0 mg/Kg 11/24/21 12:36 11/24/21 23:28 Gasoline Range Organics

(GRO)-C6-C10

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Prep Type: Total/NA

Prep Batch: 13223

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 13223

Client: WSP USA Inc. Job ID: 890-1613-1 Project/Site: Black River 4h SDG: Eddy County

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

Lab Sample ID: MB 880-13223/1-A **Matrix: Solid** 

Analysis Batch: 13220

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		11/24/21 12:36	11/24/21 23:28	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		11/24/21 12:36	11/24/21 23:28	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Pre	pared	Analyzed	Dil Fac
1-Chlorooctane	151	S1+	70 - 130	11/24/	21 12:36	11/24/21 23:28	1
o-Terphenyl	169	S1+	70 - 130	11/24/	21 12:36	11/24/21 23:28	1

Lab Sample ID: LCS 880-13223/2-A

**Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA Analysis Batch: 13220 Prep Batch: 13223

	<b>Spike</b>	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	923.3		mg/Kg		92	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	1252		mg/Kg		125	70 - 130	
C10-C28)								

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	117		70 - 130
o-Terphenyl	128		70 - 130

Lab Sample ID: LCSD 880-13223/3-A

Lab Sample ID: LCSD 880-13223/3-A			Client Sample ID: Lab Control Sample Dup
Matrix: Solid			Prep Type: Total/NA
Analysis Batch: 13220			Prep Batch: 13223
	Snike	LCSD LCSD	%Rec. RPD

	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1000	870.1		mg/Kg		87	70 - 130	6	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1000	1240		mg/Kg		124	70 - 130	1	20	
C10-C28)										

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	110		70 - 130
o-Terphenyl	122		70 - 130

Analysis Batch: 13220

Lab Sample ID: 890-1613-1 MS	Client Sample ID: PH02
Matrix: Solid	Prep Type: Total/NA
Analysis Batch: 13220	Prep Batch: 13223

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits <49.9 U Gasoline Range Organics 997 1197 120 70 - 130 mg/Kg (GRO)-C6-C10 <49.9 U 997 1168 mg/Kg 70 - 130 Diesel Range Organics (Over 117

C10-C28)

	IVIS	IVIS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	106		70 - 130

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Client: WSP USA Inc. Job ID: 890-1613-1 Project/Site: Black River 4h SDG: Eddy County

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

Lab Sample ID: 890-1613-1 MSD Client Sample ID: PH02

**Matrix: Solid** 

**Analysis Batch: 13220** 

Prep Type: Total/NA

Prep Batch: 13223

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	1217		mg/Kg		122	70 - 130	2	20
Diesel Range Organics (Over	<49.9	U	999	1172		mg/Kg		117	70 - 130	0	20

C10-C28)

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	110		70 - 130
o-Terphenyl	105		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-13731/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 13732** 

мв мв

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/02/21 12:55	1

Lab Sample ID: LCS 880-13731/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 13732** 

		Spike	LCS	LCS				%Rec.	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride		250	255.8		mg/Kg		102	90 - 110	 

Lab Sample ID: LCSD 880-13731/3-A

**Matrix: Solid** 

Analysis Batch: 13732

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	253.7		ma/Ka		101	90 - 110		20

Lab Sample ID: 880-8881-A-1-B MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

Analysis Batch: 13732

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	5.61	F1	253	293.2	F1	ma/Ka		114	90 - 110	

Lab Sample ID: 880-8881-A-1-C MSD

**Matrix: Solid** 

Analysis Batch: 13732

Analysis Daton. 13/32											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	5.61	F1	253	283.1		mg/Kg		110	90 - 110	4	20

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Client Sample ID: Lab Control Sample Dup

Client Sample ID: Matrix Spike Duplicate

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

12/3/2021

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 880-13079/1-A

Matrix: Solid

Analysis Batch: 13774

MB MB

 Analyte
 Result Chloride
 Qualifier
 RL Unit
 Unit
 D Prepared
 Analyzed
 Dil Fac

 Chloride
 <5.00</td>
 U
 5.00
 mg/Kg
 12/03/21 00:28
 1

Lab Sample ID: LCS 880-13079/2-A

Matrix: Solid

Analysis Batch: 13774

Spike LCS LCS %Rec. Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 245.7 mg/Kg 98 90 - 110

Lab Sample ID: LCSD 880-13079/3-A

Matrix: Solid

**Analysis Batch: 13774** 

LCSD LCSD %Rec. RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 240.5 mg/Kg 90 - 110

Lab Sample ID: 890-1611-A-5-D MS

Matrix: Solid

**Analysis Batch: 13774** 

MS MS Sample Sample Spike %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 269.9 Chloride <5.00 250 107 90 - 110 mg/Kg

Lab Sample ID: 890-1611-A-5-E MSD

Matrix: Solid

Analysis Batch: 13774

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit U 250 Chloride <5.00 271.7 mg/Kg 107 90 - 110 20

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# **QC Association Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1613-1

SDG: Eddy County

**GC VOA** 

Prep Batch: 13076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1613-1	PH02	Total/NA	Solid	5035	
890-1613-2	PH03	Total/NA	Solid	5035	
890-1613-3	PH04	Total/NA	Solid	5035	
890-1613-4	PH05	Total/NA	Solid	5035	
890-1613-5	PH06	Total/NA	Solid	5035	
MB 880-13076/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-13076/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-13076/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1606-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
890-1606-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 13087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-13087/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 13097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1613-1	PH02	Total/NA	Solid	8021B	13076
890-1613-2	PH03	Total/NA	Solid	8021B	13076
890-1613-3	PH04	Total/NA	Solid	8021B	13076
890-1613-4	PH05	Total/NA	Solid	8021B	13076
890-1613-5	PH06	Total/NA	Solid	8021B	13076
MB 880-13076/5-A	Method Blank	Total/NA	Solid	8021B	13076
MB 880-13087/5-A	Method Blank	Total/NA	Solid	8021B	13087
LCS 880-13076/1-A	Lab Control Sample	Total/NA	Solid	8021B	13076
LCSD 880-13076/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	13076
890-1606-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	13076
890-1606-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	13076

**Analysis Batch: 13453** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1613-1	PH02	Total/NA	Solid	Total BTEX	
890-1613-2	PH03	Total/NA	Solid	Total BTEX	
890-1613-3	PH04	Total/NA	Solid	Total BTEX	
890-1613-4	PH05	Total/NA	Solid	Total BTEX	
890-1613-5	PH06	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

Analysis Batch: 13220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1613-1	PH02	Total/NA	Solid	8015B NM	13223
890-1613-2	PH03	Total/NA	Solid	8015B NM	13223
890-1613-3	PH04	Total/NA	Solid	8015B NM	13223
890-1613-4	PH05	Total/NA	Solid	8015B NM	13223
890-1613-5	PH06	Total/NA	Solid	8015B NM	13223
MB 880-13223/1-A	Method Blank	Total/NA	Solid	8015B NM	13223
LCS 880-13223/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	13223
LCSD 880-13223/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	13223
890-1613-1 MS	PH02	Total/NA	Solid	8015B NM	13223
890-1613-1 MSD	PH02	Total/NA	Solid	8015B NM	13223

Eurofins Xenco, Carlsbad

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# **QC Association Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

Job ID: 890-1613-1
SDG: Eddy County

## GC Semi VOA

## Prep Batch: 13223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1613-1	PH02	Total/NA	Solid	8015NM Prep	
890-1613-2	PH03	Total/NA	Solid	8015NM Prep	
890-1613-3	PH04	Total/NA	Solid	8015NM Prep	
890-1613-4	PH05	Total/NA	Solid	8015NM Prep	
890-1613-5	PH06	Total/NA	Solid	8015NM Prep	
MB 880-13223/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-13223/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-13223/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1613-1 MS	PH02	Total/NA	Solid	8015NM Prep	
890-1613-1 MSD	PH02	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 13711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1613-1	PH02	Total/NA	Solid	8015 NM	
890-1613-2	PH03	Total/NA	Solid	8015 NM	
890-1613-3	PH04	Total/NA	Solid	8015 NM	
890-1613-4	PH05	Total/NA	Solid	8015 NM	
890-1613-5	PH06	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 13079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1613-1	PH02	Soluble	Solid	DI Leach	
890-1613-2	PH03	Soluble	Solid	DI Leach	
890-1613-3	PH04	Soluble	Solid	DI Leach	
890-1613-4	PH05	Soluble	Solid	DI Leach	
MB 880-13079/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-13079/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-13079/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1611-A-5-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1611-A-5-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### Leach Batch: 13731

<b>Lab Sample ID</b> 890-1613-5	Client Sample ID PH06	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
MB 880-13731/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-13731/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-13731/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-8881-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-8881-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 13732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1613-5	PH06	Soluble	Solid	300.0	13731
MB 880-13731/1-A	Method Blank	Soluble	Solid	300.0	13731
LCS 880-13731/2-A	Lab Control Sample	Soluble	Solid	300.0	13731
LCSD 880-13731/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	13731
880-8881-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	13731
880-8881-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	13731

Eurofins Xenco, Carlsbad

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# **QC Association Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

## HPLC/IC

## Analysis Batch: 13774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1613-1	PH02	Soluble	Solid	300.0	13079
890-1613-2	PH03	Soluble	Solid	300.0	13079
890-1613-3	PH04	Soluble	Solid	300.0	13079
890-1613-4	PH05	Soluble	Solid	300.0	13079
MB 880-13079/1-A	Method Blank	Soluble	Solid	300.0	13079
LCS 880-13079/2-A	Lab Control Sample	Soluble	Solid	300.0	13079
LCSD 880-13079/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	13079
890-1611-A-5-D MS	Matrix Spike	Soluble	Solid	300.0	13079
890-1611-A-5-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	13079

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Job ID: 890-1613-1

SDG: Eddy County

**Client Sample ID: PH02** 

Project/Site: Black River 4h

Client: WSP USA Inc.

Lab Sample ID: 890-1613-1

Matrix: Solid

Date Collected: 11/19/21 10:28 Date Received: 11/22/21 10:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	13076	11/23/21 12:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13097	11/24/21 18:47	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	13223	11/24/21 12:36	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13220	11/25/21 00:33	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	13079	11/23/21 13:23	SC	XEN MID
Soluble	Analysis	300.0		1			13774	12/03/21 05:37	CH	XEN MID

**Client Sample ID: PH03** Lab Sample ID: 890-1613-2

Date Collected: 11/19/21 11:22 Matrix: Solid

Date Received: 11/22/21 10:10

Batch Dil Initial Final Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab 5035 Total/NA Prep 4.97 g 5 mL 13076 11/23/21 12:37 KL XEN MID Total/NA 8021B 5 mL 11/24/21 19:14 XEN MID Analysis 1 5 mL 13097 KL Total/NA Total BTEX 11/30/21 15:30 XEN MID Analysis 13453 A.I 1 Total/NA Analysis 8015 NM 13711 12/01/21 20:09 XEN MID Total/NA XEN MID Prep 8015NM Prep 10.00 g 13223 11/24/21 12:36 DM 10 mL Total/NA Analysis 8015B NM 13220 11/25/21 01:39 AJ XEN MID Soluble SC XEN MID Leach DI Leach 5.01 g 50 mL 13079 11/23/21 13:23 Soluble Analysis 300.0 1 13774 12/03/21 05:48 CH XEN MID

Client Sample ID: PH04 Lab Sample ID: 890-1613-3 Date Collected: 11/19/21 12:18

Date Received: 11/22/21 10:10

	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	13076	11/23/21 12:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13097	11/24/21 19:40	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	13223	11/24/21 12:36	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13220	11/25/21 02:01	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	13079	11/23/21 13:23	SC	XEN MID
Soluble	Analysis	300.0		1			13774	12/03/21 05:59	CH	XEN MID

**Client Sample ID: PH05** Lab Sample ID: 890-1613-4

Date Collected: 11/19/21 15:18 Date Received: 11/22/21 10:10

Г	D-4-b	Datab		Dil	1 141 1	Final	D-4-b	Dan and		
Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 q	5 mL	13076	11/23/21 12:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13097	11/24/21 20:07	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID

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Released to Imaging: 2/16/2022 10:04:59 AM

**Matrix: Solid** 

**Matrix: Solid** 

#### **Lab Chronicle**

Client: WSP USA Inc.

Job ID: 890-1613-1

Project/Site: Black River 4h

SDG: Eddy County

Client Sample ID: PH05

Lab Sample ID: 890-1613-4

Matrix: Solid

Date Collected: 11/19/21 15:18 Date Received: 11/22/21 10:10

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	13223	11/24/21 12:36	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13220	11/25/21 02:23	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	13079	11/23/21 13:23	SC	XEN MID
Soluble	Analysis	300.0		1			13774	12/03/21 06:11	CH	XEN MID

Client Sample ID: PH06 Lab Sample ID: 890-1613-5

Date Collected: 11/19/21 16:14

Date Received: 11/22/21 10:10

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	13076	11/23/21 12:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	13097	11/24/21 20:34	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			13453	11/30/21 15:30	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			13711	12/01/21 20:09	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	13223	11/24/21 12:36	DM	XEN MID
Total/NA	Analysis	8015B NM		1			13220	11/25/21 02:45	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	13731	12/02/21 11:33	CH	XEN MID
Soluble	Analysis	300.0		5			13732	12/02/21 15:22	CH	XEN MID

#### Laboratory References:

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

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Eurofins Xenco, Carlsbad

# **Accreditation/Certification Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

## Laboratory: Eurofins Xenco, Midland

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

		ogram	Identification Number	Expiration Date
		ELAP	T104704400-21-22	06-30-22
The following analytes	are included in this report bu	t the laboratory is not certifi	ed by the governing authority. This list ma	av include analytes for y
the agency does not of	' '	t the laboratory to not corum	ed by the governing additionty. This list the	ay include analytes for v
the agency does not of Analysis Method	' '	Matrix	Analyte	y include analytes for v
9 ,	fer certification.	•	, , ,	

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## **Method Summary**

Client: WSP USA Inc.

Project/Site: Black River 4h

SDG: Eddy County

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

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

Eurofins Xenco, Carlsbad

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# Sample Summary

Client: WSP USA Inc. Project/Site: Black River 4h Job ID: 890-1613-1 SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1613-1	PH02	Solid	11/19/21 10:28	11/22/21 10:10	11
890-1613-2	PH03	Solid	11/19/21 11:22	11/22/21 10:10	11
890-1613-3	PH04	Solid	11/19/21 12:18	11/22/21 10:10	11
890-1613-4	PH05	Solid	11/19/21 15:18	11/22/21 10:10	11
890-1613-5	PH06	Solid	11/19/21 16:14	11/22/21 10:10	11

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1089 N Canal St

**Eurofins Xenco, Carlsbad** 

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# **Chain of Custody Record**

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Environment Testing

Midland State Zip TX 79701 PH04 (890-1613-3) PH03 (890-1613-2) PH05 (890-1613-4) PH02 (890-1613-1) ossible Hazard Identification iote: Since laboratory accreditations are subject to change Eurofins Xenco LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently raintain accreditation in the State of Origin listed above for analysis/lests/matrix being analyzed the samples must be shipped back to the Eurofins Xenco LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Xenco LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Xenco LLC. <sup>3</sup>H06 (890-1613-5) Black River 4h 432-704-5440(Tel) 1211 W Florida Ave Carlsbad NM 88220 Phone 575-988-3199 Fax: 575-988-3199 eliverable Requested | || || || || Other (specify) ample Identification - Client ID (Lab ID) linquished by hipping/Receiving Custody Seals Intact: npty Kit Relinquished by urofins Xenco oject Name inquished by ent Contact: inquished by: ient Information Yes ∆ No Je Curo (Sub Contract Lab) Custody Seal No 11-22-2 Project # 89000048 P0# TAT Requested (days): Phone Date/Time Date/Time Primary Deliverable Rank 2 Sampler Sample Date ue Date Requested 1/30/2021 11/19/21 11/19/21 11/19/21 11/19/21 11/19/21 Mountain 16 14 Mountain 15 18 Mountain 12 18 Mountain 11 22 Mountair Sample 10 28 (C=comp, G=grab) Sample Preservation Code: Company Company Matrix Solid Solid Solid Solid Solid Kramer Jessica jessica kramer@eurofinset.com Field Filtered Sample (Yes or No) Accreditations Required (See note)
NELAP - Louisiana NELAP - Texas Time Special Instructions/QC Requirements Sample Disposal (A fee may be assessed if samples are retained longer Perform MS/MSD (Yes or No) × × × × × 8015MOD\_NM/8015NM\_S Prep Full TPH Cooler Temperature(s) °C and Other Remarks eceived by Return To Client ×  $\times$ × × × 300\_ORGFM\_28D/DI\_LEACH Chloride 8021B/5035FP\_Calc BTEX × × × × × × × × × × Total BTEX GCV Analysis Requested × × × × × 8015MOD\_Calc Disposal By Lab State of Origin New Mexico Carrier Tracking No(s) Date/Time  $\phi_{\S}$ 088 Archive For Total Number of containers 3200X A HCL
NOTE TO THE CONTROL OF THE CANADA

E NAMENOA

E NAMENOA

E NAMENOA

H Ascorbic Acid

I loe

J Di Water

K EDTA

L EDA COC No: 890-518 1 Preservation Codes 890-1613-1 Page 1 of 1 Special Instructions/Note than 1 month) M Hexane
N None
O AsNaO2
P Na2O4S
Q Na2SO3
R NA2SO3
S H2SO4
T TSP Dodecahydrate
U Acetione
V MCAA
W pH 4-5
Z other (specify) Company Company Months

Ver: 06/08/2021

## **Login Sample Receipt Checklist**

Client: WSP USA Inc.

Job Number: 890-1613-1

SDG Number: Eddy County

Login Number: 1613 List Source: Eurofins Xenco, Carlsbad

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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# **Login Sample Receipt Checklist**

Client: WSP USA Inc. Job Number: 890-1613-1

SDG Number: Eddy County

Login Number: 1613 List Source: Eurofins Xenco, Midland List Number: 2

List Creation: 11/23/21 12:51 PM

Creator: Kramer, Jessica

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.	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	

12/3/2021

<6mm (1/4").

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

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 68079

#### **CONDITIONS**

Operator:	OGRID:
MARATHON OIL PERMIAN LLC	372098
990 Town & Country Blvd.	Action Number:
Houston, TX 77024	68079
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

Created By	Condition	Condition Date
chensley	Marathons' deferral requests to complete final remediation during any future major construction/alteration or final plugging and abandonment, whichever occurs first is approved. The deferred C-141 will be accepted for record and marked accordingly. The release will remain open in OCD database files and reflect an open environmental issue.	2/16/2022