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

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	nAB1812338789
District RP	
Facility ID	
Application ID	

# **Release Notification**

# **Responsible Party**

Responsible	Party WI	PX Energy Pe	rmian, LLC	OGRID 2	246289			
Contact Nan				Contact T	elephone 575	5-689-7597		
Contact ema	<sup>il</sup> jim.ral	ley@dvn.com		Incident #	(assigned by OCD)			
Contact mail			Vista Drive, 0	Carlsbad, New	Mexico 882	220		
			Location	of Release S	OUTCE			
0.0	0.4000		Location					
Latitude 32	2.04906		<u> </u>	Longitude	-103.87848	<u> </u>		
			(NAD 83 in dec	rimal degrees to 5 decir	nai piaces)			
Site Name	Tucker Dr	aw 9-4-4		Site Type	Well Pad			
Date Release	Discovered	4/13/18		API# (if app	plicable) 30-0	15-44487		
		Ι				1		
Unit Letter	Section	Township	Range	Cour	nty			
Α	16	26S	30E	Eddy				
Surface Owne	r: 🔽 State	☐ Federal ☐ Tr	ihal 🔲 Private (A	Name:		)		
Surface 5 wife	. y state		iour 🗀 i ii vate (i	<u> </u>				
			Nature and	l Volume of 1	Release			
	Materia	l(s) Released (Select al	l that apply and attach	calculations or specific	justification for the	volumes provided below)		
Crude Oi		Volume Release		<u> </u>	Volume Reco			
✓ Produced	Water	Volume Release	d (bbls) 7		Volume Reco	vered (bbls) 5		
Is the concentration of dissolved chloride produced water >10,000 mg/l?			hloride in the	in the Yes No				
Condensa	ite	Volume Release			Volume Reco	vered (bbls)		
Natural C	ias	Volume Release	d (Mcf)		Volume Reco	vered (Mcf)		
Other (de		Volume/Weight	Released (provide	e units)	Volume/Weight Recovered (provide units)			
Freshwa	ater							

### Cause of Release

A valve to the pump down tank was not closed properly which resulted in overfilling the tank. 7 bbls of produced water was spilled inside dirt SPCC containment. None of the fluids have left the location. Release contained produced water and freshwater (50/50 mix).

 $bbl\ estimate = \frac{saturated\ soil\ volume\ (ft^3)}{4.21(\frac{ft^3}{bbl\ equivalent})}*\ estimated\ soil\ porosity(\%) + recovered\ fluids\ (bbl)$ 

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Incident ID	nAB1812338789
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the respon	nsible party consider this a major release?						
☐ Yes ☑ No								
If YES, was immediate no	otice given to the OCD? By whom? To wh	nom? When and by what means (phone, email, etc)?						
Yes, NMOCD (Crystal Weaver & Michael Bratcher, BLM Shelly Tucker via email on April 14, 2018.								
Initial Response								
The responsible	party must undertake the following actions immediatel	y 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	the environment.						
Released materials ha	ave been contained via the use of berms or o	likes, absorbent pads, or other containment devices.						
All free liquids and re	ecoverable materials have been removed an	d managed appropriately.						
has begun, please attach	a narrative of actions to date. If remedial	emediation immediately after discovery of a release. If remediation efforts have been successfully completed or if the release occurred blease attach all information needed for closure evaluation.						
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.								
Printed Name: Jim Ra	aley	Title: Environmental Professional						
Signature: Im Riff		Date: 8-31-2022						
email: _jim.raley@dv	n.com	Telephone: 575-689-7597						
OCD Only								
Received by:		Date:						

Incident ID nAB1812338789
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.	
Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring well Field data	ls.
Data table of soil contaminant concentration data	
Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release  Boring or excavation logs	
✓ Photographs including date and GIS information	
☐ Topographic/Aerial maps	
☑ Laboratory data including chain of custody	

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

Received by OCD: 8/31/2022 3:37:11 PM Form C-141 State of New Mexico Page 4 Oil Conservation Division

Page	4	oj	f 167	

Incident ID	nAB1812338789
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Facility ID	
Application ID	

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

Printed Name: Jim Raley

Title: Environmental Professional

Date: 8-31-2022

email: jim.raley@dvn.com

Telephone: 575-689-7597

Date: \_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_

of New Mexico

Incident ID nAB1812338789
District RP
Facility ID
Application ID

# Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attach	ment Checklist: Each of the following	ng items must be inc	luded in the closure report.							
✓ A scaled site and sa	mpling diagram as described in 19.15.	29.11 NMAC								
✓ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)										
✓ Laboratory analyses	of final sampling (Note: appropriate (	ODC District office r	nust be notified 2 days prior to final sampling)							
Description of reme	diation activities									
may endanger public heal should their operations ha human health or the envir compliance with any othe restore, reclaim, and re-ve	th or the environment. The acceptance we failed to adequately investigate and comment. In addition, OCD acceptance or federal, state, or local laws and/or regegetate the impacted surface area to the .13 NMAC including notification to the	e of a C-141 report be a remediate contamine of a C-141 report dogulations. The respose conditions that exists the OCD when reclaims	tions and perform corrective actions for releases which y the OCD does not relieve the operator of liability ation that pose a threat to groundwater, surface water, bees not relieve the operator of responsibility for insible party acknowledges they must substantially ted prior to the release or their final land use in lation and re-vegetation are complete.							
101.	· <b>,</b>	· · · · · · · · · · · · · · · · · · ·								
Signature.		Date:8-31-2								
email: jim.raley@c	lvn.com	Telephone: 5	75-689-7597							
OCD Only										
Received by:		Date:								
		_								
remediate contamination		ace water, human hea	d their operations have failed to adequately investigate and lth, or the environment nor does not relieve the responsible							
Closure Approved by:	Nelson Velez	Date:	12/08/2022							
Printed Name:	Nelson Velez Nelson Velez		Environmental Specialist - Adv							



# **CLOSURE REQUEST REPORT**

Site Location:

Tucker Draw 9-4-4 Eddy County, New Mexico Incident Number nAB1812338789

August 29, 2022 Ensolum Project No. 03A1987046

Prepared for:

WPX Energy Permian, LLC 5315 Buena Vista Dr. Carlsbad, NM 88220 Attention: Jim Raley

Prepared by:

Joseph S. Hernandez Senior Geologist

Joyn S. Holy.

Ashley Ager, MS, PG
Program Director, Geologist

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App	endix	D:	Photographic Log
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#### 1.0 INTRODUCTION

## 1.1 Site Description & Background

Ensolum, LLC (Ensolum) has prepared this Closure Request Report (CRR) to document site assessment, soil sampling activities, and corrective actions performed to date by WPX Permian Energy, LLC (WPX) at the Tucker Draw 9-4-4 (hereinafter referred to as the "Site") in Unit A, Section 26, Township 26 South, Range 30 East, in Eddy County, New Mexico (Figure 1 in Appendix A). Based on the information provided on the Corrective Action Form (Form C-141), a valve to the pump-down tank was not closed properly resulting in approximately 7 barrels (bbls) of produced water, which also contained fresh water, to be released inside the earthen berm tank battery containment. None of the fluids left the location. The incident was assigned nAB1812338789. An updated Form C-141 (current revision August 24, 2018) is provided in this CRR.

Previous corrective actions were completed and documented in an Emergency Response Report (ERR), authored by Allied International Emergency, LLC (AIE), which was denied by the New Mexico Oil and Conservation Division (NMOCD) on June 30, 2022. All previous remediation activities and soil sample analytical results can be referenced in the original ERR. WPX respectfully submits this CRR, which summarizes additional soil sampling activities for a reportable release of produced water and freshwater and provides updated depth to groundwater data from a recently drilled boring located within 0.5 mile of the Site.

#### 1.2 Site Characterization

Ensolum characterized the Site according to Table 1, Closure Criteria for Soils Impacted by a Release, from Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential site receptors are identified on **Figure 1 in Appendix A**.

Due to the absence of groundwater well data within 0.5 mile of the Site, WPX contracted Atkins Engineering Associates (Atkins) to advance soil boring TW-1 (New Mexico Office of State Engineer (NMOSE) File # C-04655) approximately 0.08 miles northwest of the Site, via solid stem auger to a total depth of 55 feet bgs. Atkins completed soil boring TW-1 on July 28, 2022. During drilling activities, the lithology and observed soil conditions for evidence of a water-bearing zone were documented by Atkins. Soil boring TW-1 was drilled to 55 feet bgs and was allowed to equilibrate for at least 72 hours. Groundwater measurement activities for water well C-04655 occurred on August 2, 2022. No groundwater was detected, and the soil boring was plugged. The NMOSE Well Record & Log is included in **Appendix B**.

The closest surface water or significant watercourse to the Site is an intermittent riverine, located approximately 1,022 feet south the Site. The Site is greater than 300 feet from any occupied residence, school, hospital, institution, church, or wetland and greater than 1,000 feet to a freshwater well or spring. The Site is not within a 100-year floodplain. This Site is located in a medium potential karst area.

Based on the results of the Site Characterization and recently drilled soil boring, TW-1, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg



- Total Petroleum Hydrocarbon (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- Total Petroleum Hydrocarbon (TPH): 2,500 mg/kg

Chloride: 10,000 mg/kg

#### 2.0 REMEDIATION SUMMARY AND SOIL SAMPLING

Based on the ERR remediation summary, 160 cubic yards of soil were excavated from the well pad to address constituents of concern (COCs) in soil exceeding the applied Table 1 Closure Criteria. Between July 20, 2022 and August 19, 2022, WPX conducted delineation soil sampling for Incident Number nAB1812338789 for the following reasons:

"Closure request rejected as explained in bullets #1 & #2 below. Future exemption & requirements also listed in bullets #3 & #4. 1. Closure confirmation sampling requirements not met per 19.15.29.12D (1, 1a, 1b, 1c). 2. Chlorides and Total Petroleum Hydrocarbons not fully delineated based on reclamation/revegetation standards established for 0 to 4 feet below grade - 19.15.29.12C (2), then to 19.15.13.D (1). See document within OCD's web site referred to as "Procedures for implementation of the Spill Rule: September 6, 2019". 3. Benzene and total BTEX will not be required for any future laboratory analysis associated with this release. 4. WPX Energy Permian has 60 days (by 08/31/2022) to provide delineation data and 90 days (by 10/03/2022) to re-submit its closure report."

#### 2.1 Delineation Activities

Between July 20, 2022 and August 19, 2022 delineation activities were conducted by Ensolum to further characterize the subject release by verifying the presence or absence of impacted soil as compared to soil sampling events performed by AIE. Delineation samples were collected in potholes advanced with heavy equipment (samples designated PH). Delineation activites were directed by field sceening soil for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. A total of two soil samples were collected from each delineation soil sample location (PH01 through PH11): the sample with the highest observed field screening (0.5 foot bgs) and the greatest depth (1 foot bgs). The location of the delineation samples are shown in Figure 2 in Appendix A. Field screening results and observations for each delineation soil sample were recorded on lithologic/soil sampling logs (Appendix C). The soil samples were placed directly into a precleaned glass jars, labeled with the location, date, time, sampler name, 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 procedures, to Eurofins LLC (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. Photographic documentation during delineation activities is included in Appendix D.

### 3.0 SOIL SAMPLING RESULTS

Laboratory analytical results for delineation soil samples PH01 through PH11 indicated TPH and chloride were within the applicable Closure Criteria and remediation efforts documented in the AIE report appear sufficient. Laboratory analytical results are summarized in the **Table 1** in **Appendix E**. The executed chain-of-custody forms and laboratory analytical reports are provided in **Appendix F**. **Appendix G** provides correspondence email notification receipts associated with the subject release.



#### 4.0 CLOSURE REQUEST

The primary objectives of Ensolum's scope of services were to confirm remediation and continued delineation activities performed at the Site were completed in accordance with the applicable NMOCD regulatory guidelines and to document those concentrations of COCs present in soil remaining on-Site.

Based on the results documented in this report, the following findings and conclusions regarding the release are presented:

- Laboratory analytical results for delineation soil samples PH01 through PH11 indicated TPH and chloride were within the applicable Closure Criteria based on a confirmed depth to groundwater between 51 and 100 feet bgs.
- Laboratory analytical results for delineation soil samples PH03, PH04, PH05, PH09, PH10, and PH11 indicated TPH and chloride were below the reclamation standard and provide representative lateral and vertical delineation of the remediated area of concern:
- Based on laboratory analytical results for delineation samples collected within the area of concern (PH01, PH02 and PH04 through PH09), no additional remediation efforts are required in this area, specifically the area previously excavated to address exceedances in soil samples S-3 and S-4.

Remediation, confirmation of depth to groundwater, and results of delineation soil samples documented that impacted soil had been removed during initial remediation efforts. Per the ERR, the remediated area was backfilled and restored to "as close to its original state" as possible. WPX believes the scope of work described above will meet requirements set forth in NMAC 19.15.29.13 and be protective of human health, the environment, and groundwater. As such, WPX respectfully requests approval of this CRR from NMOCD.



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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

District IV

State of New Mexico Energy Minerals and Natural Resources

APR 26 2018

Form C-141 Revised April 3, 2017

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC. DISTRICT II-ARTESIA O.C.D.

Release Notification	n and	Corrective	Action

Address: 5315 Buena Vista Dr. Facility Name: Tucker Draw 9-4-4  Mineral Owner: Federal COATION OF RELEASE  Unit Letter Section Township Range Feet from the North/South Line Feet from the East/West Line County  Latitude: 32,049067_Longitude -103.878483 NAD83  NATURE OF RELEASE  Type of Release: Produced Water & Fresh water 50/50 mix Volume of Release: 7 bbls Volume Recovered 5 bbls  Source of Release: Produced Water & Fresh water 50/50 mix Volume of Release: 7 bbls Volume Recovered 5 bbls  Source of Release: Date and Hour of Occurrence Alignment of Yes Date and Hour of Discovery How Produced Water & Fresh water 50/50 mix Volume Recovered 5 bbls  Source of Release: Date and Hour of Occurrence Date and Hour of Discovery How Produced Water & Fresh water 50/50 mix Volume Recovered 5 bbls Volume Recovered 5 bbls  Source of Release: Date and Hour of Occurrence Date and Hour of Discovery How Produced Water & Fresh water 50/50 mix Volume If YES, To Whom?  Was Immediate Notice Given? Yes No Not Required Date and Hour 41/4/2018 at 12:11  Was a Watercourse Reached? How Produced Water & Fresh water Source of Problem and Remedial Action Taken.*  A valve to the pump down tank was not closed properly which resulted in overfilling the tank. 7 bbls of produced water was spilled inside dirt SPCC containment. None of the fluids have left the location.  Describe Area Affected and Cleanup Action Taken.*  Te impacted area was immediately mapped with a Trimble to delineate the horizontal extent of the impacts. Any further delineation or remediation is not safe due to ongoing completion operations. Once the completion and workover operations are completed and the temporary pump down tanks are removed, WPX will conduct baseline sampling and delineation.	NAB18	1233	8189	2101			OPERA'	ГOR		⊠ Initia	l Report	Report	
Facility Name: Tucker Draw 9-4-4   Facility Type: Well Pad	Name of Company: RKI Exploration / WPX Energy 240384												
Surface Owner: Federel    Mineral Owner: Federal   LOCATION OF RELEASE													
LOCATION OF RELEASE	Facility Name: Tucker Draw 9-4-4					I	Facility Typ	e: Well Pad				<u>.</u>	
Unit Letter   Section   Township   Range   Feet from the   North/South Line   Feet from the   East/West Line   County	Surface Own	ner: Fe <del>der</del>	at SLD		Mineral O	wner: F	Federal C	LO		API No	. 30- 015-44487		
Latitude: 32.049067_Longitude -103.878483 NAD83  NATURE OF RELEASE  Type of Release: Produced Water & Fresh water 50/50 mix  Volume of Release: 7 bbls  Volume Recovered 5 bbls  Source of Release: Produced Water & Fresh water 50/50 mix  Volume of Release: 7 bbls  Volume Recovered 5 bbls  Source of Release: Produced Water & Fresh water 50/50 mix  Volume of Release: 7 bbls  Volume Recovered 5 bbls  Volume Recovered 5 bbls  Date and Hour of Occurrence  4/13/18 5.50 pm  If YES, To Whom?  NMCDC Crystal Weaver & Michael Bratcher, BLM Shelly Tucker  By Whom? Karolina Blaney  Value of North Required  Date and Hour 4/14/2018 at 12:11  If YES, Volume Impacting the Watercourse.  If YES, Volume Impacting the Watercourse.  If Watercourse was Impacted, Describe Fully.*  N/A  Describe Cause of Problem and Remedial Action Taken.*  A valve to the pump down tank was not closed properly which resulted in overfilling the tank. 7 bbls of produced water was spilled inside dift SPCC containment. None of the fluids have left the location.  Describe Area Affected and Cleanup Action Taken.*  The impacted area was immediately mapped with a Trimble to delineate the horizontal extent of the impacts. Any further delineation or remediation is not safe due to ongoing completion operations. Once the completion and workover operations are completed and the temporary pump down tanks are removed, WPX will conduct baseline sampling and delineation.  In hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.  OIL CONSERVATION DIVISION  Approval Date: MIA  Attached Approval  Attached Approval  Attached Approval  Attache					LOCA	TION							
Latitude: 32.049067_Longitude 103.878483 NAD83  NATURE OF RELEASE  Type of Release: Produced Water & Fresh water 50/50 mix  Volume of Release: 7 bbls  Volume Recovered 5 bbls  Source of Release: 4/13/18  Was Immediate Notice Given?  Yes No Not Required  By Whom? Karolina Blaney  Was a Watercourse Reached?  Yes No Date and Hour of Occurrence  Howback tank  Was Immediate Notice Given?  Was a Watercourse Reached?  Yes No Date and Hour of Occurrence  How Was Immediate Potice Given?  Was a Watercourse Reached?  Yes No Date and Hour of Occurrence  How Was Was Watercourse Reached?  Yes No Date and Hour of Occurrence  How Was	Unit Letter	Section	Township	Range	Feet from the	North/S	South Line	Feet from the	East/V	West Line	County		
Type of Release: Produced Water & Fresh water 50/50 mix    Volume of Release: 7 bbls   Volume Recovered 5 bbls	Α	16	26S	30E	260	]	FNL	405	]	FEL	Eddy		
Type of Release: Produced Water & Fresh water 50/50 mix    Volume of Release: 7 bbls   Volume Recovered 5 bbls				L	atitude: 32.0490	67_ Lo	ongitude -1	03.878483 NAI	083				
Source of Release:					NAT	URE	OF REL	EASE					
Flowback tank	Type of Relea	se: Produc	ed Water & F	resh water	50/50 mix		Volume of	Release: 7 bbls		Volume R	ecovered 5 bbls		
Was Immediate Notice Given?								Iour of Occurrence	e				
By Whom? Karolina Blaney  Was a Watercourse Reached?  Yes No  If a Watercourse was Impacted, Describe Fully.*  N/A  Describe Cause of Problem and Remedial Action Taken.*  A valve to the pump down tank was not closed properly which resulted in overfilling the tank. 7 bbls of produced water was spilled inside dirt SPCC containment. None of the fluids have left the location.  Describe Area Affected and Cleanup Action Taken.*  The impacted area was immediately mapped with a Trimble to delineate the horizontal extent of the impacts. Any further delineation or remediation is not safe due to ongoing completion operations. Once the completion and workover operations are completed and the temporary pump down tanks are removed, WPX will conduct baseline sampling and delineation.  Ihereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as Final Report does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.  Signature:  Printed Name: Karolina Blaney  Title: Environmental Specialist  Approved by Environmental Specialist:  Ap				Yes [	No □ Not Re	quired	If YES, To		Michae				
Was a Watercourse Reached?  Yes No  If a Watercourse was Impacted, Describe Fully.*  N/A  Describe Cause of Problem and Remedial Action Taken.*  A valve to the pump down tank was not closed properly which resulted in overfilling the tank. 7 bbls of produced water was spilled inside dirt SPCC containment. None of the fluids have left the location.  Describe Area Affected and Cleanup Action Taken.*  The impacted area was immediately mapped with a Trimble to delineate the horizontal extent of the impacts. Any further delineation or remediation is not safe due to ongoing completion operations. Once the completion and workover operations are completed and the temporary pump down tanks are removed, WPX will conduct baseline sampling and delineation.  Thereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Finial Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.  Signature:  Printed Name: Karolina Blaney  Title: Environmental Specialist  Approved by Environmental Specialist:  Approved by Environmental	By Whom? K	arolina Bla	nev			*							
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Signature:  Printed Name: Karolina Blaney  Approved by Environmental Specialist:  Approval Date: 51118 Expiration Date: HIA  E-mail Address: Karolina.blaney@wpxenergy.com  Conditions of Approval:  Conditions of Approval:	public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other												
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Printed Name: Karolina Blaney  Title: Environmental Specialist  Approval Date: 5118  E-mail Address: Karolina.blaney@wpxenergy.com  Conditions of Approval:  Conditions of Approval:	Signature: Karolina Blaney						1 A D 4 D						
E-mail Address: Karolina.blaney@wpxenergy.com  Conditions of Approval:  Conditions of Approval:  Attached 200 4128	Printed Name	: Karolina	Blaney				spproved by	Environmental 5	Pecians	$^{"}$ $\mathcal{M}$	oux vo		
E-mail Address: Karolina.blaney@wpxenergy.com  Conditions of Approval:  Conditions of Approval:  Attached 200 4128	Control to our	NO Server	W. 900				Approval Da	te: 5 1 18		Expiration	Date: NIA		
Ceo attached 2004128	E-mail Addre	ess: Karolin	a.blaney@wp	xenergy.c	om		Conditions o	f Approval:	,			0.00	
	Date: 4-26-1	18	Phone	: 970 589	0743		Sel	attal	Ne	A	JRP-4	128	

## Weaver, Crystal, EMNRD

From:

Blaney, Karolina < Karolina.Blaney@wpxenergy.com>

Sent:

Thursday, April 26, 2018 3:12 PM

To:

Weaver, Crystal, EMNRD; 'Tucker, Shelly'

Cc:

Bratcher, Mike, EMNRD; Raley, Jim

Subject:

RE: WPX - initial spill notification - Tucker Draw 9-4-4

**Attachments:** 

Tucker Draw 9-4-4 C-141.doc

#### Good afternoon,

Attached is the C-141 for the Tucker Draw 9-4-4 spill of produced water/fresh water mix.

Please let me know if you have any questions or concerns.

Thank you and have a great afternoon,

## Karolina Blaney

Environmental Specialist WPX Energy

Office: (575) 885-7514 Cell: (970) 589-0743

karolina.blaney@wpxenergy.com

From: Blaney, Karolina

Sent: Saturday, April 14, 2018 12:11 PM

To: Weaver, Crystal, EMNRD < Crystal. Weaver@state.nm.us>; Tucker, Shelly < stucker@blm.gov>

Cc: 'Bratcher, Mike, EMNRD' <mike.bratcher@state.nm.us>; Raley, Jim <james.raley@wpxenergy.com>

Subject: WPX - initial spill notification - Tucker Draw 9-4-1

#### Good morning,

WPX had a small spill yesterday, 4-13-18, at 5:50 pm, at the Tucker Draw at the 9-4-1 well pad, API # 30-015-44477, B-16-26S-30E. A valve to the pump down tank was not closed properly which resulted in overfilling the tank. 7 bbls of produced water was spilled inside dirt SPCC containment. None of the fluids have left the location.

The C-141 report will be submitted within 15 days of the incident however if you have any questions, please do not hesitate to contact me.

Thank you and have a great weekend,

## Karolina Blaney

Environmental Specialist

WPX Energy

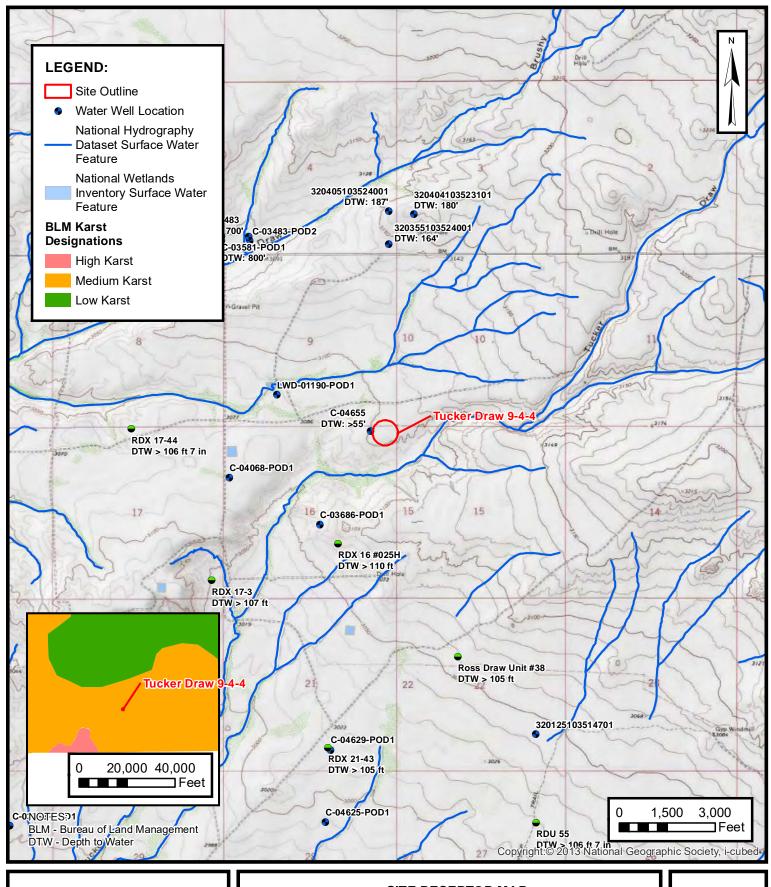
Office: (575) 885-7514 Cell: (970) 589-0743

karolina.blaney@wpxenergy.com



**APPENDIX A** 

**Figures** 

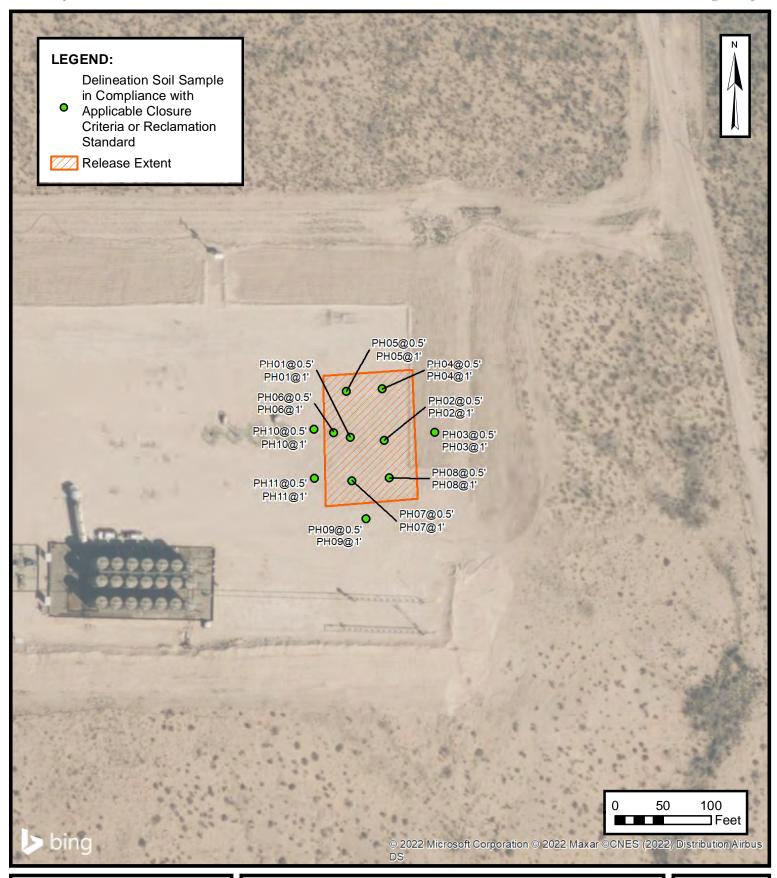




### SITE RECEPTOR MAP

WPX ENERGY PERMIAN, LLC TUCKER DRAW 9-4-4 Unit A Sec 16 T26S R30E Eddy County, New Mexico **FIGURE** 

1





### **DELINEATION SOIL SAMPLE LOCATIONS**

WPX ENERGY PERMIAN, LLC TUCKER DRAW 9-4-4 Unit A Sec 16 T26S R30E Eddy County, New Mexico **FIGURE** 

2



**APPENDIX B** 

Well Record



NO	OSE POD NO. (WELL NO.) POD 1 (TW-1)  WELL TAG ID NO N/A					OSE FILE NO(S). C-4655								
OCATIC	WELL OWNER NAME(S) Devon Energy							PHONE (OPTIONAL) 575-748-1838						
WELL L	WELL OWNER MAILING ADDRESS 6488 7 Rivers Hwy							CITY Artesia				STATE NM	88210	ZIP
1. GENERAL AND WELL LOCATION	WELL DEGREES MINUTES SECON 32 2 58.3					* ACCURA	* ACCURACY REQUIRED: ONE TENTH OF A SECOND							
NER/	(FROM GF	PS) LO	NGITUDE	103	52	48.3	37 W	* DATUM F	REQUI	IRED: WGS	84			
1. GE			NG WELL LOCATION TO		RESS AND COMMON	LANDM	ARKS – PLS	S (SECTION,	TOWN	NSHJIP, RA	NGE) WH	IERE AV	AILABLE	
	LICENSE NO 124		NAME OF LICENSEE		Jackie D. Atkins				1	NAME OF V			COMPANY g Associates, I	nc.
	DRILLING ST		DRILLING ENDED 7/28/2022		OMPLETED WELL (FT emporary Well	Γ)		LE DEPTH (FT ±55	I (	DEPTH WA	ATER FIR	ST ENCO	DUNTERED (FT) A	
N	COMPLETE	D WELL IS:	ARTESIAN	✓ DRY HO	LE SHALLOV	W (UNCO	NFINED)			ATER LEVI ETED WEL	el L N	/A	DATE STATIC MEASURED 7/28/22, 8/2/22	
ATIC	DRILLING F	LUID:	AIR	MUD	ADDITIV	ES – SPEC	CIFY:							
)RM	DRILLING METHOD: ROTARY HAMMER CABLE TOOL OTHER - SPECIFY: Hollow Stem Auger CHECK HERE IF PITLESS ADAPTER IS INSTALLED										PTER IS			
DRILLING & CASING INFORMATION	FROM TO DIAM		(include	include each casing string, and		CASING CONNECTION TYPE (add coupling diameter)					TH	ING WALL IICKNESS (inches)	SLOT SIZE (inches)	
% C∠	0	55	±6.5		Boring-HSA									
NG				1					_					
IILL				-					+					
2. DF														
									$\perp$					
				+					+					
. 1	DEPTH	(feet bgl)	BORE HOLE	1	IST ANNULAR SE				Ì		OUNT		МЕТНО	
ANNULAR MATERIAL	FROM	ТО	DIAM. (inches)	GRA	AVEL PACK SIZE-	-RANGE	BY INTE	ERVAL	+	(cub	ic feet)		PLACEN	1ENI
ATE				1					+					
RM														
IULA														
				1					+					
3									+					
			1	1										

 FOR OSE INTERNAL USE
 WR-20 WELL RECORD & LOG (Version 01/28/2022)

 FILE NO.
 POD NO.
 TRN NO.

 LOCATION
 WELL TAG ID NO.
 PAGE 1 OF 2

	DEPTH (f	eet bgl)		COLOR AND TYPE OF MATERIAL ENCOUNTERED -		WATER	ESTIMATED
	FROM	то	THICKNESS (feet)	INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONE (attach supplemental sheets to fully describe all units)	ES	BEARING? (YES / NO)	YIELD FOR WATER- BEARING ZONES (gpm)
	0	4	4	Sand, Fine-grained, poorly graded, Brown		Y ✓ N	
	4	48	44	Sand, Fine-grained, poorly graded, with caliche Tan and white		Y ✓N	
	48	55	7	Sand, Fine-grained, poorly graded, Tan Brown		Y ✓N	
						Y N	
						Y N	
Ţ						Y N	
WEI						Y N	
4. HYDROGEOLOGIC LOG OF WELL						Y N	
507						Y N	
[]						Y N	
OTO						Y N	
GEO						Y N	_
ORO						Y N	
HX						Y N	
4						Y N	
	_					Y N	
	_					Y N	
	_					Y N	_
						Y N	
	_					Y N	
						Y N	
			STIMATE YIELD	OF WATER-BEARING STRATA:	l	L ESTIMATED L YIELD (gpm):	0.00
	PUMI	•	IR LIFT	BAILER OTHER – SPECIFY:	WEL	L TIELD (gpiii).	0.00
NO	WELL TES	l I		ACH A COPY OF DATA COLLECTED DURING WELL TESTING, IN ME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OV			
VISI	MISCELLA	NEOUS INI	FORMATION: <sub>To</sub>	mporary well material removed and soil boring backfilled using d	rill outti	ings from total da	unth to ton foot
PER			be	low ground surface(bgs), then hydrated bentonite chips ten feet bg	s to sur	face.	pui to ten reet
TEST; RIG SUPERVISION							
; RI							
EST	PRINT NAM	IE(S) OF D	RILL RIG SUPER	VISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CON	ISTRUC	TION OTHER TH	AN LICENSEE:
ŗ.	Shane Eldric	lge, Came	ron Pruitt				
VTURE	CORRECT F	RECORD O	F THE ABOVE D	TIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BEI DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL O DAYS AFTER COMPLETION OF WELL DRILLING:			
6. SIGNATURE	Jack 1	Atkins		Jackie D. Atkins		8/4/2022	
J		SIGNAT	URE OF DRILLE	R / PRINT SIGNEE NAME		DATE	

FOR OSE INTERNAL USE			WR-20 WELL RECORD & LOG (Vers	sion 01/28/2022)
FILE NO.	POD NO.		TRN NO.	
LOCATION		WELL	TAG ID NO.	PAGE 2 OF 2



# PLUGGING RECORD



NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. <u>G</u>	ENERAL / WELL OWNERS	HIP:				
State	Engineer Well Number: C-465	5				
	owner: Devon Energy			Phone	e No.: <u>57</u>	5-748-1838
Mail	ing address: 6488 7 Rivers Hw	у				
City:	Artesia	State:		New Mexico		Zip code: 88210
II. <u>v</u>	WELL PLUGGING INFORM					
1)	Name of well drilling comp	any that plugged well:	Jackie D.	Atkins ( Atkins E	ingineering	g Associates Inc.)
2)	New Mexico Well Driller I	icense No.: 1249			Expir	ation Date: 04/30/23
3)	Well plugging activities we Shane Eldridge, Cameron I		owing wel	ll driller(s)/rig s	upervisor(	s):
4)	Date well plugging began:	8/2/2022	Date	well plugging o	oncluded:	8/2/2022
5)		Latitude: 32 Longitude: 103	deg, deg,	2 min, 52 min,		sec _sec, WGS 84
6)	Depth of well confirmed at by the following manner: <u>W</u>		: 55	ft below gro		(bgl),
7)	Static water level measured	at initiation of plugging	g: <u>n/a</u>	ft bgl		
8)	Date well plugging plan of	operations was approved	d by the St	ate Engineer: _	7/8/2022	<u> </u>
9)	Were all plugging activities differences between the app					

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

## For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement  Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
181	0-10' Hydrated Bentonite	Approx. 15 gallons	15 gallons	Augers	
	10'-55' Drill Cuttings	Approx. 71 gallons	71 gallons	Boring	
100					
Sal Jeok					
		MULTIPLY I cubic feet x 7.4	I BY AND OBTAIN 1805 = gallons	I	ı

## cubic feet x 7.4805 = gallons cubic yards x 201.97 = gallons

## **III. SIGNATURE:**

I, Jackie D. Atkins	_, say that I	am	familiar	with	the	rules	of the	Office	of the	State
Engineer pertaining to the plugging of wells and that	each and all	of th	e stateme	ents in	this	Plugg	ging Re	cord an	d attach	ments
are true to the best of my knowledge and belief.										

Jack Atkins	8/4/2022
Signature of Well Driller	Date

# 31\_C-4655\_WR-20 Well Record and Log-forsign

Final Audit Report 2022-08-04

Created: 2022-08-04

By: Lucas Middleton (lucas@atkinseng.com)

Status: Signed

Transaction ID: CBJCHBCAABAA\_5o4o-wmvWNvta5TAYYJLKwG9RHyq1i5

# "31\_C-4655\_WR-20 Well Record and Log-forsign" History

Document created by Lucas Middleton (lucas@atkinseng.com) 2022-08-04 - 9:48:16 PM GMT- IP address: 64.17.71.25

Document emailed to Jack Atkins (jack@atkinseng.com) for signature 2022-08-04 - 9:48:44 PM GMT

Email viewed by Jack Atkins (jack@atkinseng.com) 2022-08-04 - 9:48:57 PM GMT- IP address: 64.90.153.232

Document e-signed by Jack Atkins (jack@atkinseng.com)

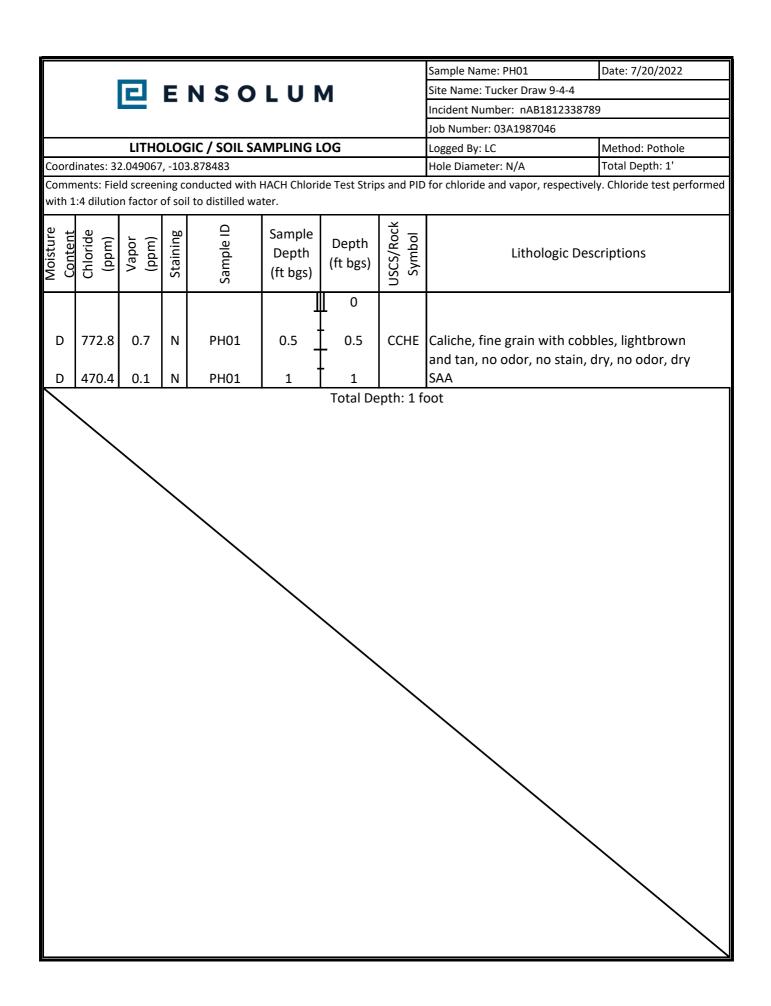
Signature Date: 2022-08-04 - 9:49:29 PM GMT - Time Source: server- IP address: 64.90.153.232

Agreement completed. 2022-08-04 - 9:49:29 PM GMT



# **APPENDIX C**

Lithologic Soil Sampling Logs



Site Name: Tucker Draw 9-4-4 Incident Number: nABISI 238789 Job Number: 0343987046  LITHOLOGIC / SOIL SAMPLING LOG Logged By: LC Method: Pothole Coordinates: 32.049067, -103.878483  Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test perform with 1.4 dilution factor of soil to distilled water.  Sample Depth (ft bgs) (ft bg									Sample Name: PH02	Date: 7/20/2022
Incident Number: nAB1812338789   Job Number: 03A1987046				F	NSO	1 11 1	М			ļ
LITHOLOGIC / SOIL SAMPLING LOG  Coordinates: 32.049067, -103.878483  Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test perform with 1:4 dilution factor of soil to distilled water.  Sample Depth (ft bgs)  Depth				_	11 5 5	_ 0 1			Incident Number: nAB181	2338789
Coordinates: 32.049067, -103.878483  Hole Diameter: N/A  Total Depth: 1'  Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test perform with 1:4 dilution factor of soil to distilled water.  Sample Depth (ft bgs)									Job Number: 03A1987046	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test perform with 1:4 dilution factor of soil to distilled water.    O			LITHC	LOG	ilC / SOIL SA	MPLING L	.OG		Logged By: LC	Method: Pothole
with 1:4 dilution factor of soil to distilled water.    Sample   Depth   (ft bgs)   Depth										
D 369.4 2.8 N PH02 0.5 0.5 CCHE Caliche, fine grain with cobbles, lightbrown and tan, no odor, no stain, dry, no odor, dry SAA							de Test Strip	os and PID	for chloride and vapor, res	pectively. Chloride test performe
D 369.4 2.8 N PH02 0.5 O.5 CCHE Caliche, fine grain with cobbles, lightbrown and tan, no odor, no stain, dry, no odor, dry SAA	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Depth	-	USCS/Rock Symbol	Litholog	ic Descriptions
D 240.8 2.5 N PH02 1 1 SAA							0			
D 240.8 2.5 N PH02 1 1 1 SAA	D	369.4	2.8	N	PH02	0.5	0.5	ССНЕ	_	
	D	240.8	2.5	N	PHO2		1			stain, dry, no odor, dry
Total Depth. 1 lock	Ť	2-0.0	د.ے	. •	11102			nth· 1 f		
				\						

								Sample Name: PH03	Date: 7/20/2022
			E	NSO	LUN	М		Site Name: Tucker Draw 9-4	1-4
			_		_ • •	- •		Incident Number: nAB1812	338789
								Job Number: 03A1987046	
		LITHC	LOG	SIC / SOIL SA	MPLING L	.OG		Logged By: LC	Method: Pothole
	inates: 32							Hole Diameter: N/A	Total Depth: 1'
				onducted with I I to distilled wa		de Test Strip	os and PID	for chloride and vapor, resp	ectively. Chloride test perform
Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologi	c Descriptions
						0			
D	<168	0.8	N	PH03	0.5	0.5	SM	Silty sand with gravel,	fg-mg, light brown,
D	<168	0.5	N	PH03	, .	1		no stain, no odor, dry SAA	
	/100	0.5	IN	г поэ	1	1	nth: 1 f		
			\			Total De	sptii. I ii	oot	
						Total De	.рип. 1 п	oot	

<b>LITHO</b> 32.049067,	LOGI	<b>NSO</b>	LUN	<b>A</b>		Sample Name: PH04	
<b>LITHO</b> 32.049067,	LOGI			VI		Site Name: Tucker Draw 9-4-	4
32.049067,						Incident Number: nAB18123	38789
32.049067,						Job Number: 03A1987046	
		C / SOIL SA	MPLING L	OG		Logged By: LC	Method: Pothole
	-103.8	878483				Hole Diameter: N/A	Total Depth: 1'
		nducted with I to distilled wa		de Test Strip	s and PID	for chloride and vapor, respe	ctively. Chloride test performe
Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic	Descriptions
				0			
0.6	N	PH04	0.5	0.5	SM		g-mg, light brown,
04	N	рн∩и	1 -	<u> </u>		·	
0.4	1 4	1 110-			nth: 1 f		
	0.6	0.6 N	0.6 N PH04	0.6 N PH04 0.5	0.6 N PH04 0.5 0.5 0.4 N PH04 1 1	0.6 N PH04 0.5 0.5 SM 0.4 N PH04 1 1	0.6 N PH04 0.5 0.5 SM Silty sand with gravel, fg no stain, no odor, dry

Site Name: Tucker Draw 9-4-4 Incident Number: 03A1987046  LITHOLOGIC / SOIL SAMPLING LOG Logged By: LC Logged By:									Sample Name: PH05	Date: 7/20/2022
Incident Number: nAB1812338789   Job Number: 03A1987046   Job Number: 03A1987046   Logged By: LC   Method: Pothole   Coordinates: 32.049067, -103.878483   Hole Diameter: N/A   Total Depth: 1'   Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performs with 1:4 dilution factor of soil to distilled water.    Part				F	NSO	1 11 1	М			
LITHOLOGIC / SOIL SAMPLING LOG  Coordinates: 32.049067, -103.878483  Hole Diameter: N/A  Total Depth: 1'  Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performe with 1:4 dilution factor of soil to distilled water.  Sample Depth (ft bgs)				_	14 5 0				Incident Number: nAB181	2338789
Coordinates: 32.049067, -103.878483  Hole Diameter: N/A  Total Depth: 1'  Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performe with 1:4 dilution factor of soil to distilled water.  Sample Depth (ft bgs)									Job Number: 03A1987046	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performe with 1:4 dilution factor of soil to distilled water.    Outgoing   Outgoi			LITHC	LOG	iIC / SOIL SA	MPLING L	.OG		Logged By: LC	Method: Pothole
with 1:4 dilution factor of soil to distilled water.    Sample   Depth   (ft bgs)   Depth										
D 280 0.3 N PH05 0.5 0.5 CCHE Caliche, fine grain with cobbles, lightbrown, and tan, no odor, no stain, dry  D 240.8 0.1 N PH05 1 1 SAA							de Test Strip	os and PID	for chloride and vapor, res	pectively. Chloride test performe
D 280 0.3 N PH05 0.5 O.5 CCHE Caliche, fine grain with cobbles, lightbrown, and tan, no odor, no stain, dry SAA	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Depth	-	USCS/Rock Symbol	Litholog	ic Descriptions
D 240.8 0.1 N PH05 1 1 SAA							0			
D 240.8 0.1 N PH05 1 1 SAA	D	280	0.3	N	PH05	0.5	0.5	ССНЕ	_	_
	D	240.8	0.1	N	DHUZ	_	1			tain, dry
Total Deptil. 1 loot	\ \	240.0	0.1	1 V	FEIOS	<u> </u>		nth· 1 f		
				\						

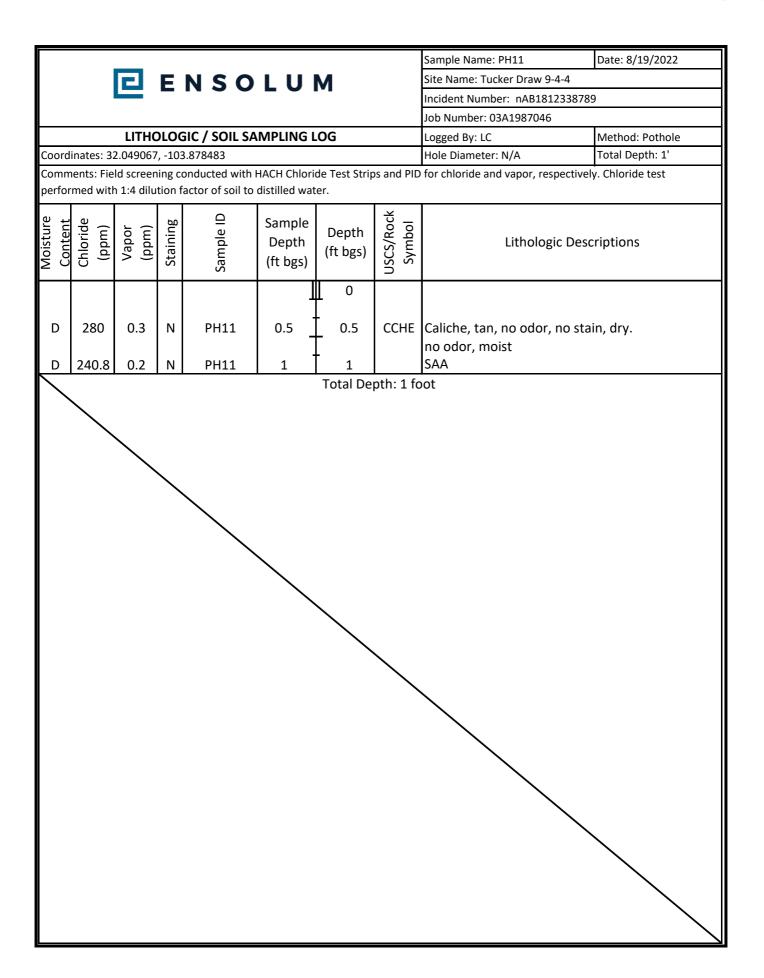
Site Name: Tucker Draw 9-4-4 Incident Number: nA81812338789 Job Number: 03A1987046  LITHOLOGIC / SOIL SAMPLING LOG Coordinates: 32.049067, 103.878483 Hole Diameter: N/A Total Depth: 1¹ Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test perform with 1:4 dilution factor of soil to distilled water.    Value   Value									Sample Name: PH06	Date: 7/20/2022
LITHOLOGIC / SOIL SAMPLING LOG  Logged By: LC  Method: Pothole  Coordinates: 32.049067, -103.878483  Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test perform with 1:4 dilution factor of soil to distilled water.  Sample Depth (ft bgs)  Depth					N S O		М			
Dob Number: 03A1987046   Logged By: LC   Method: Pothole					14 3 0		<b>V</b> 1			
Coordinates: 32.049067, -103.878483  Hole Diameter: N/A  Total Depth: 1'  Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test perform with 1:4 dilution factor of soil to distilled water.  Sample Depth (ft bgs)										
Coordinates: 32.049067, -103.878483  Hole Diameter: N/A  Total Depth: 1'  Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test perform with 1:4 dilution factor of soil to distilled water.  Sample Depth (ft bgs)			LITHC	LOG	IC / SOIL SA	MPLING L	.OG		Logged By: LC	Method: Pothole
with 1:4 dilution factor of soil to distilled water.    Sample   Depth   (ft bgs)   Depth	Coord	inates: 32	2.049067	, -103	.878483				Hole Diameter: N/A	Total Depth: 1'
D 240.8 0.1 N PH06 0.5 0.5 CCHE Caliche, fine grain with cobbles, lightbrown, and tan, no odor, no stain, dry  D 470.8 0.3 N PH06 1 1 SAA							de Test Strip	s and PID	for chloride and vapor, resp	ectively. Chloride test performe
D 240.8 0.1 N PH06 0.5 0.5 CCHE Caliche, fine grain with cobbles, lightbrown, and tan, no odor, no stain, dry  D 470.8 0.3 N PH06 1 1 SAA	Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Depth		USCS/Rock Symbol	Lithologi	c Descriptions
D 470.8 0.3 N PH06 1 1 SAA							0			
D 470.8 0.3 N PH06 1 1 1 SAA	D	240.8	0.1	N	PH06	0.5	0.5	ССНЕ	_	_
Total Depth: 1 foot	D	470.8	0.3	Ν	PH06	1	1			•
	$\overline{}$						Total De	pth: 1 fo	oot	
				\						

								Sample Name: PH07	Date: 7/20/2022
			F	NSO		M		Site Name: Tucker Draw 9-	
			_		_ 0 1			Incident Number: nAB1812	2338789
								Job Number: 03A1987046	
		LITHC	LOG	SIC / SOIL SA	MPLING L	.OG		Logged By: LC	Method: Pothole
	inates: 32							Hole Diameter: N/A	Total Depth: 1'
			_	onducted with I to distilled wa		de Test Strip	os and PID	for chloride and vapor, resp	pectively. Chloride test performe
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologi	ic Descriptions
						0			
D	414.4	0.6	N	PH07	0.5	0.5	ССНЕ	Caliche, fine grain with	
D	470.4	0.1	N	PH07	, .	- 1		no odor, no stain, dry, SAA	
<u></u>	470.4	0.1	IV	FHU/	1	1 Total De	nth· 1 f		
			\						

								Sample Name: PH08	Date: 7/20/2022
			F	NSO				Site Name: Tucker Draw 9-	
				., 50		<b>-</b> 1		Incident Number: nAB1812	
								Job Number: 03A1987046	
		LITHC	LOG	IC / SOIL SA	MPLING L	OG		Logged By: LC	Method: Pothole
	inates: 32						Hole Diameter: N/A	Total Depth: 1'	
				onducted with to distilled wa		de Test Strip	s and PID	for chloride and vapor, resp	pectively. Chloride test performe
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Litholog	ic Descriptions
						0			
D	369.6	0.1	N	PH08	0.5	- 0.5	CCHE	Caliche, lightbrown, no	o odor, no stain, dry
D	240.8	0	N.	5		_			
eg			Ν	PH08	1	1		SAA	
			N	РН08	1	1 Total De	epth: 1 fo		
			N	РН08	1		epth: 1 fo		

								Sample Name: PH09	Date: 8/19/2022
			F	NSO	LUN	М		Site Name: Tucker Draw 9-4	-4
			_		_ • .	- •		Incident Number: nAB18123	338789
								Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG								Logged By: LC	Method: Pothole
	inates: 32							Hole Diameter: N/A	Total Depth: 1'
			_	onducted with to distilled wa		de Test Strip	s and PID	for chloride and vapor, response	ectively. Chloride test performe
Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologio	: Descriptions
						0			
D	<168	0.3	N	PH09	0.5	0.5	ССНЕ	Caliche, tan, no odor, n	o stain, dry.
_	-160	0.3	N.	PH09	, .	- 1		no odor, moist SAA	
D	<168	0.3	N	71109	1	1 Total De	nth: 1 f		
			\						

					Sample Name: PH10	Date: 8/19/2022
_	ENSO	LUN	<b>4</b>		Site Name: Tucker Draw 9-4-4	
					Incident Number: nAB181233	38789
					Job Number: 03A1987046	
	HOLOGIC / SOIL SA	MPLING LC		Logged By: LC	Method: Pothole	
Coordinates: 32.04906				Hole Diameter: N/A	Total Depth: 1'	
Comments: Field scree with 1:4 dilution factor			e Test Strip	s and PID	for chloride and vapor, respec	ctively. Chloride test performed
Moisture Content Chloride (ppm) Vapor	Staining Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic	Descriptions
			0			
D <168 0.2 D <168 0	N PH10	0.5	. 0.5 1	ССНЕ	Caliche, tan, no odor, no no odor, moist SAA	stain, dry.
2 1 1200 1 0	1 14 1 11170		Total De	nth·1 fo		





APPENDIX D

Photographic Log



## **Photographic Log**

WPX Energy Permian, LLC.
Tucker Draw 9-4-4
Incident Number nAB1812338789
Ensolum Job Number: 03A1987046





Photograph 1

Date: July 20, 2022

Description: Site during delineation activities

# Photograph 2

Date: July 20, 2022

Description: Site during delineation activities





# Photograph 3

Date: July 20, 2022

Description: Site following delineation activities

## Photograph 4

Date: August 19, 2022

Description: Site during delineation activities



# **APPENDIX E**

**Tables** 

Received by OCD: 8/31/2022 3:37:11 PM



# TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS WPX Energy Permian, LLC - Tucker Draw 9-4-4 Eddy County, New Mexico

Ensolum Project No. 03A1987046

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 (	Closure Criteria	(NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	10,000
				Deline	ation Soil Sample A	nalytical Results				
PH01	07/20/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	763
PH01	07/20/2022	1	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	544
PH02	07/20/2022	0.5	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	175
PH02	07/20/2022	1	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	399
PH03	07/20/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	24.0
PH03	07/20/2022	1	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	53.2
PH04	07/20/2022	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	94.2
PH04	07/20/2022	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	270
PH05	07/20/2022	0.5	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	373
PH05	07/20/2022	1	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	454
PH06	07/20/2022	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	120
PH06	07/20/2022	1	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	<49.8	639
PH07	07/20/2022	0.5	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	1,150
PH07	07/20/2022	1	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	504
PH08	07/20/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	352
PH08	07/20/2022	1	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	301
PH09	08/19/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	182
PH09	08/19/2022	1	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	118

Ensolum 1 of 2

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# TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS WPX Energy Permian, LLC - Tucker Draw 9-4-4 Eddy County, New Mexico

## Ensolum Project No. 03A1987046

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 C	losure Criteria	(NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	10,000
PH10	0.5	08/19/2022	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	21.9
PH10	1	08/19/2022	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	22.8
PH11	0.5	08/19/2022	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	132
PH11	1	08/19/2022	<0.00200	0.00607	<49.9	<49.9	<49.9	<49.9	<49.9	484

#### Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

Concentrations in **bold** exceed the NMOCD Table 1 Closure Criteria and/or

Reclamation Standard for Soils Impacted by a Release

Ensolum 2 of 2



## **APPENDIX F**

Laboratory Analytical Reports & Chain-of-Custody Documentation



# **Environment Testing America**

## **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2605-1

Laboratory Sample Delivery Group: 03A1987046

Client Project/Site: Tucker Draw 944

Revision: 1

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Joseph Hernandez

JURAMER

Authorized for release by: 7/27/2022 11:05:23 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Review your project results through

····· Links ······

EOL.

Have a Question?



Visit us at:

www.eurofinsus.com/Env
Released to Imaging: 12/8/2022 12:25:26 PM

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.

Client: Ensolum
Project/Site: Tucker Draw 944

Laboratory Job ID: 890-2605-1
SDG: 03A1987046

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## **Definitions/Glossary**

Client: Ensolum Job ID: 890-2605-1 Project/Site: Tucker Draw 944

SDG: 03A1987046

**Qualifiers** 

**GC VOA** Qualifier **Qualifier Description** 

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

GC Semi VOA

Qualifier **Qualifier Description** 

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

**HPLC/IC** 

Qualifier **Qualifier Description** 

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 **Practical Quantitation Limit** PQL

**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: Ensolum

Project/Site: Tucker Draw 944

Job ID: 890-2605-1

SDG: 03A1987046

Job ID: 890-2605-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2605-1

#### Receipt

The samples were received on 7/21/2022 9:41 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 18.1°C

#### **Receipt Exceptions**

The following samples were received at the laboratory outside the required temperature criteria: PH03 @ 0.5' (890-2605-1), PH03 @ 1' (890-2605-2), PH04 @ 0.5' (890-2605-3), PH04 @ 1' (890-2605-4), PH05 @ 0.5' (890-2605-5), PH05 @ 1' (890-2605-6), PH06 @ 0.5' (890-2605-7), PH06 @ 1' (890-2605-8), PH07 @ 0.5' (890-2605-9) and PH07 @ 1' (890-2605-10). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to <CHOOSE\_ONE> proceed with/cancel analysis. Samples received were 18.3 corrected temp of 18.1, client wants samples ran.

#### **GC VOA**

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-30303 and analytical batch 880-30324 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.

#### GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-30462 and analytical batch 880-30468 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.

Job ID: 890-2609-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2609-1

#### Receipt

The samples were received on 7/21/2022 9:41 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 18.1°C

#### **Receipt Exceptions**

The following samples were received at the laboratory outside the required temperature criteria: PH08 @ 0.5' (890-2609-1) and PH08 @ 1' (890-2609-2). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to <CHOOSE\_ONE> proceed with/cancel analysis. Samples received out of temp range 18.3 corrected 18.1 client advised wants samples ran.

#### **GC VOA**

Method 8021B: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30361 and analytical batch 880-30473 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because

Eurofins Carlsbad 7/27/2022 (Rev. 1)

#### Case Narrative

Client: Ensolum

Project/Site: Tucker Draw 944 SDG: 03A1987046

Job ID: 890-2605-1

## Job ID: 890-2609-1 (Continued)

## **Laboratory: Eurofins Carlsbad (Continued)**

the associated laboratory control sample / laboratory control sample 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.

#### GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30460 and analytical batch 880-30464 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.

Method 8015MOD NM: Surrogate recovery for the following sample was outside control limits: (MB 880-30460/1-A). Evidence of matrix interferences is not obvious.

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

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30398 and analytical batch 880-30435 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.

Client: Ensolum Job ID: 890-2605-1 Project/Site: Tucker Draw 944 SDG: 03A1987046

Client Sample ID: PH03 @ 0.5' Lab Sample ID: 890-2605-1

Date Collected: 07/20/22 10:40 Matrix: Solid Date Received: 07/21/22 09:41

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 18:10	1
Toluene	< 0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 18:10	1
Ethylbenzene	< 0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 18:10	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		07/21/22 16:45	07/22/22 18:10	1
o-Xylene	< 0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 18:10	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		07/21/22 16:45	07/22/22 18:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130				07/21/22 16:45	07/22/22 18:10	1
1,4-Difluorobenzene (Surr)	114		70 - 130				07/21/22 16:45	07/22/22 18:10	1
Method: Total BTEX - Total B	ΓEX Calcula	tion							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			07/25/22 10:15	1
Mothod: 8015 NM - Diosal Par	nge Organic	s (DBO) (6	2C)						
		s (DRO) (G Qualifier	GC)	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Method: 8015 NM - Diesel Rai Analyte Total TPH		Qualifier	•	MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 07/25/22 11:07	
Analyte	<b>Result</b> <49.9	Qualifier U	RL 49.9	MDL		<u>D</u>	Prepared		
Analyte Total TPH	Result <49.9	Qualifier U	RL 49.9	MDL MDL	mg/Kg	<u>D</u>	Prepared Prepared		Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel R	Result <49.9	Qualifier U ics (DRO) Qualifier	RL 49.9 (GC)		mg/Kg	_ =	Prepared	07/25/22 11:07	1 Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel R Analyte Gasoline Range Organics	Result <49.9 ange Organ Result	Qualifier U ics (DRO) Qualifier U	(GC)		mg/Kg Unit	_ =	Prepared 07/23/22 10:56	07/25/22 11:07  Analyzed	1 Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel R Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <49.9  ange Organ Result <49.9	Qualifier U  ics (DRO) Qualifier U	(GC) RL 49.9		mg/Kg  Unit mg/Kg	_ =	Prepared 07/23/22 10:56 07/23/22 10:56	07/25/22 11:07  Analyzed  07/23/22 20:39	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel R Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	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 07/23/22 10:56 07/23/22 10:56	07/25/22 11:07  Analyzed 07/23/22 20:39 07/23/22 20:39	1 Dil Fac 1 1
Analyte Total TPH  Method: 8015B NM - Diesel R Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <49.9  ange Organ Result <49.9  <49.9  <49.9	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 07/23/22 10:56 07/23/22 10:56	07/25/22 11:07  Analyzed 07/23/22 20:39 07/23/22 20:39 07/23/22 20:39	1 Dil Fac 1 1
Analyte Total TPH  Method: 8015B NM - Diesel R Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	Result	Qualifier U  ics (DRO) Qualifier U  U	RL 49.9  (GC)  RL 49.9  49.9  49.9  Limits		mg/Kg  Unit mg/Kg mg/Kg	_ =	Prepared 07/23/22 10:56 07/23/22 10:56 07/23/22 10:56 Prepared 07/23/22 10:56	07/25/22 11:07  Analyzed 07/23/22 20:39 07/23/22 20:39 07/23/22 20:39 Analyzed	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel R 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  CS (DRO) Qualifier U  U  Qualifier S1+	RL 49.9  (GC)  RL 49.9  49.9  49.9  Limits  70 - 130  70 - 130		mg/Kg  Unit mg/Kg mg/Kg	_ =	Prepared 07/23/22 10:56 07/23/22 10:56 07/23/22 10:56 Prepared 07/23/22 10:56	07/25/22 11:07  Analyzed 07/23/22 20:39  07/23/22 20:39  07/23/22 20:39  Analyzed 07/23/22 20:39	1 Dil Fac 1 1 1 1 Dil Fac 1
Analyte Total TPH  Method: 8015B NM - Diesel R Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result <49.9  ange Organ Result <49.9 <49.9 <49.9  %Recovery 120 131  chromatogra	Qualifier U  CS (DRO) Qualifier U  U  Qualifier S1+	RL 49.9  (GC)  RL 49.9  49.9  49.9  Limits  70 - 130  70 - 130		mg/Kg  Unit mg/Kg mg/Kg mg/Kg	_ =	Prepared 07/23/22 10:56 07/23/22 10:56 07/23/22 10:56 Prepared 07/23/22 10:56	07/25/22 11:07  Analyzed 07/23/22 20:39  07/23/22 20:39  07/23/22 20:39  Analyzed 07/23/22 20:39	1 Dil Fac 1 1 1 1 Dil Fac 1

Client Sample ID: PH03 @ 1'

Date Collected: 07/20/22 10:45 Date Received: 07/21/22 09:41

Sample Depth: 1'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 18:37	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 18:37	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 18:37	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		07/21/22 16:45	07/22/22 18:37	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 18:37	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		07/21/22 16:45	07/22/22 18:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130				07/21/22 16:45	07/22/22 18:37	1

**Eurofins Carlsbad** 

Matrix: Solid

Lab Sample ID: 890-2605-2

Job ID: 890-2605-1

Lab Sample ID: 890-2605-2

Lab Sample ID: 890-2605-3

**Matrix: Solid** 

Client: Ensolum Project/Site: Tucker Draw 944 SDG: 03A1987046

Client Sample ID: PH03 @ 1'

Date Received: 07/21/22 09:41

Sample Depth: 1'

Date Collected: 0	07/20/22 10:4	5	Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	86		70 - 130	07/21/22 16:45	07/22/22 18:37	1

**Method: Total BTEX - Total BTEX Calculation** 

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/25/22 11:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:00	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:00	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Surrogate	%Recovery (	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	122		70 - 130	07/23/22 10:	66 07/23/22 21:00	1
o-Terphenyl	138 \$	S1+	70 - 130	07/23/22 10:	66 07/23/22 21:00	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	53.2	5.03	mg/Kg			07/23/22 08:39	1

Client Sample ID: PH04 @ 0.5'

Date Collected: 07/20/22 11:00 Date Received: 07/21/22 09:41

Sample Depth: 0.5'

Mothod: 9021B	Volatile	Organic (	Compounds	(CC)

Method: 8021B - Volatile U	rganic Compo	unas (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:03	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:03	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:03	1
m-Xylene & p-Xylene	< 0.00399	U	0.00399		mg/Kg		07/21/22 16:45	07/22/22 19:03	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:03	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/21/22 16:45	07/22/22 19:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130				07/21/22 16:45	07/22/22 19:03	1
1,4-Difluorobenzene (Surr)	90		70 - 130				07/21/22 16:45	07/22/22 19:03	1

4-Bromofluorobenzene (Surr)	124	70 - 130	07/21/22 16:45 07/22/22 19:03	1
1,4-Difluorobenzene (Surr)	90	70 - 130	07/21/22 16:45 07/22/22 19:03	1

**Method: Total BTEX - Total BTEX Calculation** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/25/22 10:15	1

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

Analyte	Result Qu	ualifier RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9 U	49.9	mg/Kg			07/25/22 11:07	1

Client: Ensolum Job ID: 890-2605-1 SDG: 03A1987046

Project/Site: Tucker Draw 944

Client Sample ID: PH04 @ 0.5' Lab Sample ID: 890-2605-3 Date Collected: 07/20/22 11:00 **Matrix: Solid** Date Received: 07/21/22 09:41

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:20	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:20	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130				07/23/22 10:56	07/23/22 21:20	1
o-Terphenyl	120		70 - 130				07/23/22 10:56	07/23/22 21:20	1

Method: 300.0 - Anions, Ion Ch	ıromatography - Solubl	le					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	94.2	4.96	mg/Kg			07/23/22 08:48	1

Lab Sample ID: 890-2605-4 Client Sample ID: PH04 @ 1' Date Collected: 07/20/22 11:30 **Matrix: Solid** 

Date Received: 07/21/22 09:41

Sample Denth: 1'

Method: 8021B - Volatile Org Analyte	_	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	$\overline{U}$	0.00199		mg/Kg		07/21/22 16:45	07/22/22 19:29	1
Toluene	< 0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 19:29	1
Ethylbenzene	< 0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 19:29	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/21/22 16:45	07/22/22 19:29	1
o-Xylene	< 0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 19:29	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/21/22 16:45	07/22/22 19:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130				07/21/22 16:45	07/22/22 19:29	1
1,4-Difluorobenzene (Surr)	92		70 - 130				07/21/22 16:45	07/22/22 19:29	1
<b>Method: Total BTEX - Total B</b>	<b>TEX Calcula</b>	tion							
Method: Total BTEX - Total B									
Analyte	Result	Qualifier	RL	MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed	Dil Fac
		Qualifier	RL 0.00398	MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 07/25/22 10:15	
Analyte	<0.00398	<b>Qualifier</b> U	0.00398	MDL		<u>D</u>	Prepared		
Analyte Total BTEX	Result <0.00398	<b>Qualifier</b> U	0.00398			<u>D</u>	Prepared Prepared		1
Analyte Total BTEX  Method: 8015 NM - Diesel Ra	Result <0.00398	Qualifier U s (DRO) (Qualifier	0.00398 GC)		mg/Kg		· ·	07/25/22 10:15	Dil Fac Dil Fac
Analyte Total BTEX  Method: 8015 NM - Diesel Ra Analyte Total TPH	Result <0.00398 ange Organic Result <49.9	Qualifier U  S (DRO) (O Qualifier U	0.00398  GC)  RL  49.9		mg/Kg Unit		· ·	07/25/22 10:15  Analyzed	1 Dil Fac
Analyte Total BTEX  Method: 8015 NM - Diesel Ra Analyte Total TPH  Method: 8015B NM - Diesel F	Result <0.00398  Inge Organic Result <49.9  Range Organ	Qualifier U  S (DRO) (C Qualifier U	0.00398  GC)  RL 49.9	MDL	mg/Kg  Unit mg/Kg	<u>D</u>	Prepared	07/25/22 10:15  Analyzed 07/25/22 11:07	Dil Fac
Analyte Total BTEX  Method: 8015 NM - Diesel Ra Analyte Total TPH  Method: 8015B NM - Diesel F Analyte	Result <0.00398  Inge Organic Result <49.9  Range Organ	Qualifier U  S (DRO) (C Qualifier U  ics (DRO) Qualifier	0.00398  GC)  RL  49.9	MDL	mg/Kg  Unit mg/Kg  Unit		· ·	07/25/22 10:15  Analyzed	1 Dil Fac
Analyte Total BTEX  Method: 8015 NM - Diesel Ra Analyte Total TPH  Method: 8015B NM - Diesel F	Result <0.00398  Inge Organic Result <49.9  Range Organ Result	Qualifier U  S (DRO) (C Qualifier U  ics (DRO) Qualifier	0.00398  RL 49.9  (GC) RL	MDL	mg/Kg  Unit mg/Kg	<u>D</u>	Prepared Prepared	07/25/22 10:15  Analyzed 07/25/22 11:07  Analyzed	Dil Fac
Analyte Total BTEX  Method: 8015 NM - Diesel Ra Analyte Total TPH  Method: 8015B NM - Diesel F Analyte Gasoline Range Organics	Result <0.00398  Inge Organic Result <49.9  Range Organ Result	Qualifier U  S (DRO) (C Qualifier U  ics (DRO) Qualifier U	0.00398  RL 49.9  (GC) RL	MDL	mg/Kg  Unit mg/Kg  Unit	<u>D</u>	Prepared Prepared	07/25/22 10:15  Analyzed 07/25/22 11:07  Analyzed 07/23/22 21:41	Dil Fac

**Eurofins Carlsbad** 

Analyzed

Prepared

07/23/22 10:56 07/23/22 21:41

07/23/22 10:56 07/23/22 21:41

Limits

70 - 130

70 - 130

%Recovery Qualifier

116

122

Dil Fac

Surrogate

o-Terphenyl

1-Chlorooctane

Job ID: 890-2605-1

Client: Ensolum Project/Site: Tucker Draw 944 SDG: 03A1987046

Client Sample ID: PH04 @ 1' Lab Sample ID: 890-2605-4

Date Collected: 07/20/22 11:30 **Matrix: Solid** Date Received: 07/21/22 09:41

Sample Depth: 1'

Method: 300.0 - Anions, Ion Chro	omatogra	phy - Soluble							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	270		5.00		mg/Kg			07/23/22 08:57	1

Lab Sample ID: 890-2605-5 Client Sample ID: PH05 @ 0.5'

Date Collected: 07/20/22 11:35 Matrix: Solid

Date Received: 07/21/22 09:41

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:56	
Toluene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:56	
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:56	
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		07/21/22 16:45	07/22/22 19:56	
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:56	
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		07/21/22 16:45	07/22/22 19:56	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
4-Bromofluorobenzene (Surr)	120		70 - 130				07/21/22 16:45	07/22/22 19:56	
1,4-Difluorobenzene (Surr)	91		70 - 130				07/21/22 16:45	07/22/22 19:56	
Method: Total BTEX - Total B	ΓEX Calcula	tion							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Total BTEX	<0.00401	U	0.00401		mg/Kg			07/25/22 10:15	
	•		•	MDI	1114	_	D	Anabasad	D'' E
	•	s (DRO) (G Qualifier	C)	MDL	Unit	D	Prepared	Analyzed	Dil F
Analyte	•	Qualifier	•	MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 07/25/22 11:07	Dil F
Analyte Total TPH	Result   <50.0	Qualifier U	RL 50.0	MDL		<u>D</u>	Prepared		Dil F
Analyte Total TPH Method: 8015B NM - Diesel R	Result <50.0	Qualifier U	RL 50.0	MDL MDL	mg/Kg	<u>D</u>	Prepared Prepared		
Analyte Total TPH  Method: 8015B NM - Diesel Ranalyte Gasoline Range Organics	Result <50.0	Qualifier U  ics (DRO) Qualifier	RL 50.0		mg/Kg	_ =	<u> </u>	07/25/22 11:07	
Analyte Total TPH  Method: 8015B NM - Diesel Re Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <50.0 ange Organ Result	Qualifier U  CCS (DRO) Qualifier U	RL 50.0 (GC)		mg/Kg Unit	_ =	Prepared 07/25/22 16:23	07/25/22 11:07  Analyzed	
Analyte Total TPH  Method: 8015B NM - Diesel Re Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <50.0  ange Organ Result <50.0	Qualifier U  CS (DRO) Qualifier U	RL 50.0 (GC) RL 50.0		mg/Kg  Unit mg/Kg	_ =	Prepared 07/25/22 16:23 07/25/22 16:23	07/25/22 11:07  Analyzed  07/26/22 12:17	
Analyte Total TPH  Method: 8015B NM - Diesel Re Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result	Qualifier U  CCS (DRO) Qualifier U  U	RL 50.0 (GC) RL 50.0 50.0		mg/Kg  Unit mg/Kg mg/Kg	_ =	Prepared 07/25/22 16:23 07/25/22 16:23	07/25/22 11:07  Analyzed  07/26/22 12:17  07/26/22 12:17	Dil F
Analyte Total TPH  Method: 8015B NM - Diesel Roanalyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate	Result <50.0  ange Organ Result <50.0  <50.0  <50.0	Qualifier U  CCS (DRO) Qualifier U  U	RL 50.0  (GC) RL 50.0  50.0  50.0		mg/Kg  Unit mg/Kg mg/Kg	_ =	Prepared 07/25/22 16:23 07/25/22 16:23 07/25/22 16:23	07/25/22 11:07  Analyzed 07/26/22 12:17  07/26/22 12:17	Dil F
Analyte Total TPH  Method: 8015B NM - Diesel Roanalyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result   <50.0	Qualifier U  CCS (DRO) Qualifier U  U	RL 50.0  (GC)  RL 50.0  50.0  50.0  Limits		mg/Kg  Unit mg/Kg mg/Kg	_ =	Prepared 07/25/22 16:23 07/25/22 16:23 07/25/22 16:23 Prepared 07/25/22 16:23	07/25/22 11:07  Analyzed 07/26/22 12:17  07/26/22 12:17  07/26/22 12:17  Analyzed	Dil F
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) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl  Method: 300.0 - Anions, Ion C	Result   <50.0	Qualifier U CS (DRO) Qualifier U U U Qualifier	RL 50.0  (GC)  RL 50.0  50.0  50.0  Limits  70 - 130  70 - 130		mg/Kg  Unit mg/Kg mg/Kg	_ =	Prepared 07/25/22 16:23 07/25/22 16:23 07/25/22 16:23 Prepared 07/25/22 16:23	07/25/22 11:07  Analyzed 07/26/22 12:17  07/26/22 12:17  07/26/22 12:17  Analyzed 07/26/22 12:17	Dil F
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	Result   <50.0	Qualifier U CS (DRO) Qualifier U U U Qualifier	RL 50.0  (GC)  RL 50.0  50.0  50.0  Limits  70 - 130  70 - 130		mg/Kg  Unit mg/Kg  mg/Kg  mg/Kg	_ =	Prepared 07/25/22 16:23 07/25/22 16:23 07/25/22 16:23 Prepared 07/25/22 16:23	07/25/22 11:07  Analyzed 07/26/22 12:17  07/26/22 12:17  07/26/22 12:17  Analyzed 07/26/22 12:17	Dil F

**Eurofins Carlsbad** 

Client: Ensolum Job ID: 890-2605-1 SDG: 03A1987046 Project/Site: Tucker Draw 944

Cli

Da Date Received: 07/21/22 09:41

lient Sample ID: PH05 @ 1'	Lab Sample ID: 890-2605-6
ate Collected: 07/20/22 11:40	Matrix: Solid

Sample Depth: 1' Method: 8021B - Volatile Organic Compounds (GC) Result Qualifier Dil Fac Analyte RL MDL Unit D Prepared Analyzed <0.00200 U 07/21/22 16:45 07/22/22 20:22 0.00200 mg/Kg

Benzene Toluene <0.00200 U 0.00200 mg/Kg 07/21/22 16:45 07/22/22 20:22 Ethylbenzene 0.00200 07/21/22 16:45 07/22/22 20:22 <0.00200 U mg/Kg m-Xylene & p-Xylene <0.00399 U 0.00399 mg/Kg 07/21/22 16:45 07/22/22 20:22 o-Xylene <0.00200 U 0.00200 mg/Kg 07/21/22 16:45 07/22/22 20:22 Xylenes, Total <0.00399 U 0.00399 mg/Kg 07/21/22 16:45 07/22/22 20:22

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 07/21/22 16:45 07/22/22 20:22 4-Bromofluorobenzene (Surr) 126 70 - 130 1,4-Difluorobenzene (Surr) 89 70 - 130 07/21/22 16:45 07/22/22 20:22

**Method: Total BTEX - Total BTEX Calculation** Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Total BTEX <0.00399 U 0.00399 mg/Kg 07/25/22 10:15

Method: 8015 NM - Diesel Range Organics (DRO) (GC) Analyte Result Qualifier Dil Fac RL MDL Unit D Prepared Analyzed Total TPH <50.0 U 50.0 07/25/22 11:07 mg/Kg

Method: 8015B NM - Diesel Range Organics (DRO) (GC) **MDL** Unit Analyte Result Qualifier RL D Analyzed Dil Fac Prepared <50.0 U 50.0 07/23/22 10:56 07/23/22 22:23 Gasoline Range Organics mg/Kg (GRO)-C6-C10 07/23/22 10:56 07/23/22 22:23 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg

<50.0 U 50.0 07/23/22 10:56 07/23/22 22:23 Oll Range Organics (Over C28-C36) mg/Kg Limits Prepared Dil Fac Surrogate %Recovery Qualifier Analyzed 70 - 130 07/23/22 10:56 07/23/22 22:23 1-Chlorooctane 107 113 70 - 130 07/23/22 10:56 07/23/22 22:23 o-Terphenyl

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte Result Qualifier RL **MDL** Unit D Prepared Analyzed Dil Fac 5.05 07/23/22 09:34 Chloride 454 mg/Kg

Client Sample ID: PH06 @ 0.5' Lab Sample ID: 890-2605-7 Date Collected: 07/20/22 11:45 Matrix: Solid

Date Received: 07/21/22 09:41

Sample Depth: 0.5'

C10-C28)

Method: 8021B - Volatile Organic Compounds (GC) Analyte Result Qualifier MDL Unit D Dil Fac RL Prepared Analyzed Benzene <0.00199 U 0.00199 mg/Kg 07/21/22 16:45 07/22/22 20:49 Toluene <0.00199 U 0.00199 mg/Kg 07/21/22 16:45 07/22/22 20:49 Ethylbenzene 0.00199 mg/Kg 07/21/22 16:45 07/22/22 20:49 <0.00199 U 0.00398 07/21/22 16:45 07/22/22 20:49 m-Xylene & p-Xylene <0.00398 U mg/Kg o-Xylene <0.00199 U 0.00199 mg/Kg 07/21/22 16:45 07/22/22 20:49 Xylenes, Total <0.00398 U 0.00398 07/21/22 16:45 07/22/22 20:49 mg/Kg Qualifier Limits Surrogate %Recovery Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 127 70 - 130 07/21/22 16:45 07/22/22 20:49

**Matrix: Solid** 

Lab Sample ID: 890-2605-7

Lab Sample ID: 890-2605-8

**Matrix: Solid** 

Client: Ensolum Job ID: 890-2605-1
Project/Site: Tucker Draw 944 SDG: 03A1987046

Client Sample ID: PH06 @ 0.5'

Date Collected: 07/20/22 11:45 Date Received: 07/21/22 09:41

Sample Depth: 0.5'

Method: 8021B - Volatile O	rganic Compounds	(GC) (Continued)

Surrogate	%Recovery Qualifie	er Limits	Prepared Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	99	70 - 130	07/21/22 16:45 07/22/22 20:49	1

#### **Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			07/25/22 10:15	1

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

Analyte	Result Qual	ifier RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9 U	49.9	mg/Kg			07/25/22 11:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 22:44	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 22:44	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 22:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Surrogate	%Recovery Qu	ualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	124		70 - 130	07/23/22 10:56	07/23/22 22:44	1
o-Terphenyl	133 S1-	+	70 - 130	07/23/22 10:56	07/23/22 22:44	1

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

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	120		5.02		mg/Kg			07/24/22 13:16	1

#### Client Sample ID: PH06 @ 1'

Date Collected: 07/20/22 11:50 Date Received: 07/21/22 09:41

Sample Depth: 1'

Mothod: 9021B	Volatila	Organic (	Compounds	(CC)

Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Allalyte	Result	Qualifier	- KL	MDL	UIIIL		Prepareu	Allalyzeu	DII Fac
Benzene	< 0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 21:15	1
Toluene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 21:15	1
Ethylbenzene	< 0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 21:15	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/21/22 16:45	07/22/22 21:15	1
o-Xylene	< 0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 21:15	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/21/22 16:45	07/22/22 21:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		70 - 130				07/21/22 16:45	07/22/22 21:15	1
1,4-Difluorobenzene (Surr)	105		70 - 130				07/21/22 16:45	07/22/22 21:15	1

lothod:	Total	DTEV	Total	DTEV	Calculation	n

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398	mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8	mg/Kg			07/25/22 11:07	1

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Client: Ensolum Job ID: 890-2605-1

Project/Site: Tucker Draw 944 SDG: 03A1987046

Client Sample ID: PH06 @ 1' Lab Sample ID: 890-2605-8

Date Collected: 07/20/22 11:50 **Matrix: Solid** Date Received: 07/21/22 09:41

Sample Depth: 1'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:05	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:05	1
Oll Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	116		70 - 130				07/23/22 10:56	07/23/22 23:05	1
o-Terphenyl	120		70 - 130				07/23/22 10:56	07/23/22 23:05	1

Method: 300.0 - Anions, Ion Chromatography - Soluble								
	Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	639	4.96	mg/Kg			07/23/22 09:52	1

Lab Sample ID: 890-2605-9 Client Sample ID: PH07 @ 0.5' Date Collected: 07/20/22 12:00 **Matrix: Solid** 

Date Received: 07/21/22 09:41

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 21:41	1
Toluene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 21:41	1
Ethylbenzene	< 0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 21:41	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		07/21/22 16:45	07/22/22 21:41	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 21:41	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		07/21/22 16:45	07/22/22 21:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130				07/21/22 16:45	07/22/22 21:41	1
1,4-Difluorobenzene (Surr)	92		70 - 130				07/21/22 16:45	07/22/22 21:41	1
Analyte Total BTEX	<0.00402	Qualifier U	0.00402	MDL	mg/Kg	<u>D</u>	Prepared	Analyzed 07/25/22 10:15	Dil Fac
Method: 8015 NM - Diesel Rar Analyte	•	s (DRO) (0 Qualifier	GC)	MDI	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0		50.0		mg/Kg			07/25/22 11:07	1
Method: 8015B NM - Diesel R			(GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 23:27	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 23:27	1
,	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 23:27	1
Oll Range Organics (Over C28-C36)									
Oll Range Organics (Over C28-C36)  Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
,		Qualifier	Limits 70 - 130				<b>Prepared</b> 07/23/22 10:56	Analyzed 07/23/22 23:27	Dil Fac

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7/27/2022 (Rev. 1)

Job ID: 890-2605-1

Client: Ensolum Project/Site: Tucker Draw 944 SDG: 03A1987046

Client Sample ID: PH07 @ 0.5' Lab Sample ID: 890-2605-9

Date Collected: 07/20/22 12:00 Matrix: Solid Date Received: 07/21/22 09:41

Sample Depth: 0.5'

Method: 300.0 - Anions, Ion Chromatography - Soluble									
	Analyte	Result	Qualifier	RL	MDL Ur	nit D	Prepared	Analyzed	Dil Fac
	Chloride	1150		25.0	mį	ıg/Kg		07/26/22 14:43	5

Client Sample ID: PH07 @ 1' Lab Sample ID: 890-2605-10

Date Collected: 07/20/22 12:10 Matrix: Solid

Date Received: 07/21/22 09:41

Sample Depth: 1'

<0.00200 <0.00200 <0.00200	-	0.00200		mg/Kg		07/21/22 16:45	07/22/22 22:08	
	11			mg/rtg		07/21/22 10:45	01/22/22 22:00	
<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 22:08	
<b>~</b> 0.00≥00	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 22:08	
< 0.00399	U	0.00399		mg/Kg		07/21/22 16:45	07/22/22 22:08	
<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 22:08	
<0.00399	U	0.00399		mg/Kg		07/21/22 16:45	07/22/22 22:08	
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
129		70 - 130				07/21/22 16:45	07/22/22 22:08	
89		70 - 130				07/21/22 16:45	07/22/22 22:08	
EX Calcula	tion							
		RL	MDL	Unit	D	Prepared	Analyzed	Dil F
<0.00399	$\overline{U}$	0.00399		mg/Kg			07/25/22 10:15	
no Organic	e (DRO) (G	2C)						
		RL	MDL	Unit	D	Prepared	Analyzed	Dil F
<49.8	U	49.8		mg/Kg			07/25/22 11:07	
nge Organi	ics (DRO)	(GC)						
_		RL	MDL	Unit	D	Prepared	Analyzed	Dil F
<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:47	
<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:47	
<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:47	
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
118		70 - 130				07/23/22 10:56	07/23/22 23:47	
128		70 - 130				07/23/22 10:56	07/23/22 23:47	
	<0.00399 %Recovery 129 89 EX Calcular Result <0.00399 ge Organic Result <49.8 <49.8 <49.8 <49.8 <49.8 %Recovery 118	<0.00399 U %Recovery 129 89 EX Calculation Result Qualifier  <0.00399 U Ge Organics (DRO) (Organics (DRO)) Result Qualifier  <49.8 U <49.8 U <49.8 U <49.8 U <49.8 U %Recovery Qualifier  118	<0.00399	<0.00399       U       0.00399         %Recovery       Qualifier       Limits         129       70 - 130         89       70 - 130         EX Calculation       Result Qualifier       RL MDL         <0.00399	<0.00399         U         0.00399         mg/Kg           %Recovery         Qualifier         Limits           129         70 - 130           89         70 - 130           EX Calculation         Result         Qualifier         RL         MDL         Unit           <0.00399	<0.00399         U         0.00399         mg/Kg           %Recovery         Qualifier         Limits           129         70 - 130           89         70 - 130           EX Calculation         Result Qualifier         RL MDL Unit mg/Kg           <0.00399	<0.00399         U         0.00399         mg/Kg         07/21/22 16:45           %Recovery         Qualifier         Limits         Prepared           129         70 - 130         07/21/22 16:45           89         70 - 130         07/21/22 16:45           EX Calculation         Result Qualifier         RL MDL Unit mg/Kg         D Prepared           <0.00399	%Recovery Qualifier         Limits         Prepared O7/21/22 16:45         O7/22/22 22:08           89         70 - 130         07/21/22 16:45         07/22/22 22:08           89         70 - 130         07/21/22 16:45         07/22/22 22:08           EX Calculation Result Qualifier         RL MDL Unit mg/Kg         D Prepared Manalyzed O7/25/22 10:15         Analyzed O7/25/22 10:15           Ge Organics (DRO) (GC) Result Qualifier         RL MDL Unit mg/Kg         D Prepared Manalyzed O7/25/22 11:07         Analyzed O7/25/22 11:07           nge Organics (DRO) (GC) Result Qualifier         RL MDL Unit mg/Kg         D Prepared O7/23/22 10:56         Analyzed O7/25/22 11:07           nge Organics (DRO) (GC) Result Qualifier         RL MDL Unit mg/Kg         D Prepared O7/23/22 10:56         Analyzed O7/23/22 23:47           < 49.8 U 49.8 mg/Kg

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07/24/22 13:25

5.04

mg/Kg

504

Chloride

Client: Ensolum Job ID: 890-2605-1 Project/Site: Tucker Draw 944 SDG: 03A1987046

Client Sample ID: PH08 @ 0.5' Lab Sample ID: 890-2609-1

Date Collected: 07/20/22 13:00 Matrix: Solid Date Received: 07/21/22 09:41

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		07/22/22 10:18	07/24/22 07:12	1
Toluene	< 0.00199	U	0.00199		mg/Kg		07/22/22 10:18	07/24/22 07:12	1
Ethylbenzene	< 0.00199	U	0.00199		mg/Kg		07/22/22 10:18	07/24/22 07:12	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/22/22 10:18	07/24/22 07:12	1
o-Xylene	< 0.00199	U	0.00199		mg/Kg		07/22/22 10:18	07/24/22 07:12	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/22/22 10:18	07/24/22 07:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130				07/22/22 10:18	07/24/22 07:12	1
1,4-Difluorobenzene (Surr)	89		70 - 130				07/22/22 10:18	07/24/22 07:12	1
Method: Total BTEX - Total B	TEX Calcula	tion							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			07/25/22 11:06	1
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte Total TPH	<50.0		RL	MDL	Unit mg/Kg	D	Prepared	Analyzed 07/25/22 09:55	Dil Fac
-	55.5		33.3		9/. 19			07720722 00.00	
Method: 8015B NM - Diesel R	ange Organ	ics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 17:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 17:24	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 17:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130				07/23/22 10:54	07/23/22 17:24	1
o-Terphenyl	105		70 - 130				07/23/22 10:54	07/23/22 17:24	1
Method: 300.0 - Anions, Ion C	_		ıble						
		O		MADI	1114		Barra a sana at	A I	
Analyte	Result	Qualifier	RL	MDL	Unit mg/Kg	D	Prepared	Analyzed 07/23/22 11:52	Dil Fac

Client Sample ID: PH08 @ 1' Lab Sample ID: 890-2609-2 Date Collected: 07/20/22 13:05

Date Received: 07/21/22 09:41

Sample Depth: 1'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 07:32	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 07:32	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 07:32	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		07/22/22 10:18	07/24/22 07:32	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 07:32	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		07/22/22 10:18	07/24/22 07:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130				07/22/22 10:18	07/24/22 07:32	1

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**Matrix: Solid** 

Matrix: Solid

Lab Sample ID: 890-2609-2

## **Client Sample Results**

Client: Ensolum Job ID: 890-2605-1 Project/Site: Tucker Draw 944 SDG: 03A1987046

Client Sample ID: PH08 @ 1'

Date Collected: 07/20/22 13:05 Date Received: 07/21/22 09:41

Sample Depth: 1'

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

Surrogate	%Recovery (	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	90		70 - 130	07/22/22 10:18	07/24/22 07:32	1

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			07/25/22 11:06	1

Method: 8015 NM - Diesel I	Range Organics	(DRO)	(GC)
Method. 8013 MM - Diesel I	Kange Organics	(DRO)	(GC)

Analyte	Result Qu	ualifier RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0 U	50.0	mg/Kg			07/25/22 09:55	1

Method:	8015B	NM -	Diesel	Range	<b>Organics</b>	(DRO)	(GC)
motiloa.	00.00		<b>D</b> 10001	···uiigo	O. game	(5.10)	(

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		07/23/22 10:54	07/23/22 17:45	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		07/23/22 10:54	07/23/22 17:45	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		07/23/22 10:54	07/23/22 17:45	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	112	70 - 130	07/23/22 10:54	07/23/22 17:45	1
o-Terphenyl	123	70 - 130	07/23/22 10:54	07/23/22 17:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	301		5.02		mg/Kg			07/23/22 12:02	1

## **Surrogate Summary**

Client: Ensolum Job ID: 890-2605-1
Project/Site: Tucker Draw 944 SDG: 03A1987046

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	Percen DFBZ1	t Surrogate Recover
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-17239-A-1-B MS	Matrix Spike	103	102	
880-17239-A-1-C MSD	Matrix Spike Duplicate	107	88	
890-2605-1	PH03 @ 0.5'	114	114	
890-2605-2	PH03 @ 1'	103	86	
890-2605-3	PH04 @ 0.5'	124	90	
890-2605-4	PH04 @ 1'	113	92	
890-2605-5	PH05 @ 0.5'	120	91	
890-2605-6	PH05 @ 1'	126	89	
890-2605-7	PH06 @ 0.5'	127	99	
890-2605-8	PH06 @ 1'	129	105	
890-2605-9	PH07 @ 0.5'	124	92	
890-2605-10	PH07 @ 1'	129	89	
890-2609-1	PH08 @ 0.5'	114	89	
890-2609-2	PH08 @ 1'	120	90	
LCS 880-30303/1-A	Lab Control Sample	120	95	
LCS 880-30361/1-A	Lab Control Sample	128	98	
LCSD 880-30303/2-A	Lab Control Sample Dup	104	96	
LCSD 880-30361/2-A	Lab Control Sample Dup	117	99	
MB 880-30303/5-A	Method Blank	83	91	
MB 880-30361/5-A	Method Blank	104	85	
MB 880-30426/5-A	Method Blank	94	86	

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

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

Matrix: Solid Prep Type: Total/NA

			Perc	cent S
		1CO1	ОТРН1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-17280-A-18-D MS	Matrix Spike	88	94	
880-17280-A-18-E MSD	Matrix Spike Duplicate	85	92	
890-2604-A-21-G MS	Matrix Spike	111	105	
890-2604-A-21-H MSD	Matrix Spike Duplicate	109	100	
890-2605-1	PH03 @ 0.5'	120	131 S1+	
390-2605-2	PH03 @ 1'	122	138 S1+	
890-2605-3	PH04 @ 0.5'	113	120	
890-2605-4	PH04 @ 1'	116	122	
890-2605-5	PH05 @ 0.5'	103	110	
890-2605-6	PH05 @ 1'	107	113	
890-2605-7	PH06 @ 0.5'	124	133 S1+	
890-2605-8	PH06 @ 1'	116	120	
890-2605-9	PH07 @ 0.5'	113	120	
890-2605-10	PH07 @ 1'	118	128	
890-2609-1	PH08 @ 0.5'	98	105	
890-2609-2	PH08 @ 1'	112	123	
LCS 880-30460/2-A	Lab Control Sample	119	124	
LCS 880-30462/2-A	Lab Control Sample	87	87	

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## **Surrogate Summary**

Client: Ensolum Job ID: 890-2605-1
Project/Site: Tucker Draw 944 SDG: 03A1987046

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

Matrix: Solid Prep Type: Total/NA

			Percent S	Surrogate Recovery (Acceptance Limits)
		1001	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
LCS 880-30622/2-A	Lab Control Sample	102	114	
LCSD 880-30460/3-A	Lab Control Sample Dup	112	113	
LCSD 880-30462/3-A	Lab Control Sample Dup	90	90	
LCSD 880-30622/3-A	Lab Control Sample Dup	91	104	
MB 880-30460/1-A	Method Blank	161 S1+	189 S1+	
MB 880-30462/1-A	Method Blank	198 S1+	232 S1+	
MB 880-30622/1-A	Method Blank	98	110	
Surrogate Legend				
1CO = 1-Chlorooctane				
OTPH = o-Terphenyl				

Client: Ensolum Job ID: 890-2605-1 Project/Site: Tucker Draw 944

SDG: 03A1987046

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30303/5-A

**Matrix: Solid** 

**Analysis Batch: 30324** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 30303

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 11:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 11:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 11:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/21/22 16:45	07/22/22 11:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 11:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/21/22 16:45	07/22/22 11:36	1
	440	***							

MB MB

MD MD

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83	70 - 130	07/21/22 16:45	07/22/22 11:36	1
1,4-Difluorobenzene (Surr)	91	70 - 130	07/21/22 16:45	07/22/22 11:36	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 30303

Lab Sample ID: LCS 880-30303/1-A **Matrix: Solid Prep Type: Total/NA Analysis Batch: 30324** Prep Batch: 30303

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09936		mg/Kg		99	70 - 130	
Toluene	0.100	0.09819		mg/Kg		98	70 - 130	
Ethylbenzene	0.100	0.1024		mg/Kg		102	70 - 130	
m-Xylene & p-Xylene	0.200	0.1966		mg/Kg		98	70 - 130	
o-Xylene	0.100	0.1066		mg/Kg		107	70 - 130	
I and the second								

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	120		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

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

**Matrix: Solid** 

**Analysis Batch: 30324** 

Lab Sample ID: LCSD 880-30303/2-A

-	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08885		mg/Kg		89	70 - 130	11	35
Toluene	0.100	0.08775		mg/Kg		88	70 - 130	11	35
Ethylbenzene	0.100	0.09068		mg/Kg		91	70 - 130	12	35
m-Xylene & p-Xylene	0.200	0.1758		mg/Kg		88	70 - 130	11	35
o-Xylene	0.100	0.09466		mg/Kg		95	70 - 130	12	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: 880-17239-A-1-B MS

Analysis Batch: 30324										/pe: Total/N <i>P</i> Batch: 30303	
-	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Benzene	<0.00201	U	0.0994	0.07405		mg/Kg		74	70 - 130		-
Toluene	< 0.00201	U F1	0.0994	0.06459	F1	mg/Kg		65	70 - 130		

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**Client Sample ID: Matrix Spike** 

Client: Ensolum Job ID: 890-2605-1 SDG: 03A1987046 Project/Site: Tucker Draw 944

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

Lab Sample ID: 880-17239-A-1-B MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

**Prep Type: Total/NA** Analysis Batch: 30324 Prep Batch: 30303

	Sample	Sample	эріке	IVIO	IVIO				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00201	U F1	0.0994	0.05760	F1	mg/Kg		58	70 - 130	
m-Xylene & p-Xylene	<0.00402	U F1	0.199	0.1105	F1	mg/Kg		56	70 - 130	
o-Xylene	<0.00201	U F1	0.0994	0.05831	F1	mg/Kg		59	70 - 130	

MS MS

MB MB

Surrogate	%Recovery G	Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 880-17239-A-1-C MSD

**Matrix: Solid** 

**Analysis Batch: 30324** 

Prep Batch: 30303 Sample Sample Spike MSD MSD %Rec **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Benzene <0.00201 U 0.0992 0.07325 74 70 - 130 35 mg/Kg 1 Toluene <0.00201 UF1 0.0992 0.05894 F1 59 70 - 130 35 mg/Kg 0.0992 47 Ethylbenzene <0.00201 UF1 0.04701 F1 mg/Kg 70 - 130 20 35 m-Xylene & p-Xylene <0.00402 U F1 0.198 0.08792 F1 mg/Kg 44 70 - 130 23 35 <0.00201 UF1 0.0992 0.04635 F1 47 70 - 130 23 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	88		70 - 130

Lab Sample ID: MB 880-30361/5-A

**Matrix: Solid** 

**Analysis Batch: 30473** 

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

**Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Total/NA** 

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/22/22 10:18	07/24/22 01:23	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared Anal	lyzed Dil	Fac
4-Bromofluorobenzene (Surr)	104		70 - 130	07/22/22 10:18 07/24/2	2 01:23	1
1,4-Difluorobenzene (Surr)	85		70 - 130	07/22/22 10:18 07/24/2	2 01:23	1

Lab Sample ID: LCS 880-30361/1-A

**Matrix: Solid** 

**Analysis Batch: 30473** 

			Prep Type: Total/NA Prep Batch: 30361						
			%Rec						
Unit	D	%Rec	Limits						
mg/Kg		97	70 - 130						
		400	70 400						

**Client Sample ID: Lab Control Sample** 

Analyte Added Result Qualifier Benzene 0.100 0.09697 Toluene 0.100 0.1018 mg/Kg 70 - 130Ethylbenzene 0.100 0.1105 mg/Kg 111 70 - 130 m-Xylene & p-Xylene 0.200 0.2303 70 - 130 mg/Kg 115

LCS LCS

Spike

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Prep Batch: 30361

Spike

Added

0 100

LCS LCS

0 1290

Result Qualifier

Unit

mg/Kg

Client: Ensolum Project/Site: Tucker Draw 944

Job ID: 890-2605-1

SDG: 03A1987046

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

Lab Sample ID: LCS 880-30361/1-A

Lab Sample ID: LCSD 880-30361/2-A

**Matrix: Solid** 

Analyte

o-Xylene

Surrogate

**Analysis Batch: 30473** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA Prep Batch: 30361

%Rec

%Rec Limits

129

70 - 130

LCS LCS

98

%Recovery Qualifier Limits 128 70 - 130 70 - 130

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

**Prep Type: Total/NA** 

**Matrix: Solid** 

**Analysis Batch: 30473** 

4-Bromofluorobenzene (Surr)

1,4-Difluorobenzene (Surr)

Prep Batch: 30361

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.07948		mg/Kg		79	70 - 130	20	35
Toluene	0.100	0.08370		mg/Kg		84	70 - 130	20	35
Ethylbenzene	0.100	0.09040		mg/Kg		90	70 - 130	20	35
m-Xylene & p-Xylene	0.200	0.1865		mg/Kg		93	70 - 130	21	35
o-Xylene	0.100	0.1072		mg/Kg		107	70 - 130	18	35

LCSD LCSD

MB MB

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	117		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: MB 880-30426/5-A **Client Sample ID: Method Blank** 

**Matrix: Solid** 

**Matrix: Solid** 

**Analysis Batch: 30473** 

Prep Type: Total/NA

Prep Batch: 30426

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/22/22 15:06	07/23/22 14:49	1

MB MB %Recovery Qualifier Dil Fac Surrogate Limits Prepared Analyzed 07/22/22 15:06 07/23/22 14:49 4-Bromofluorobenzene (Surr) 94 70 - 130 86 07/22/22 15:06 07/23/22 14:49 1,4-Difluorobenzene (Surr) 70 - 130

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

Lab Sample ID: MB 880-30460/1-A **Client Sample ID: Method Blank** 

**Analysis Batch: 30464** 

Released to Imaging: 12/8/2022 12:25:26 PM

**Prep Type: Total/NA** Prep Batch: 30460

MB MB Result Qualifier MDL Unit RL Prepared Analyzed Dil Fac

Gasoline Range Organics <50.0 U 50.0 07/23/22 10:54 07/23/22 12:33 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 07/23/22 10:54 07/23/22 12:33 Oll Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg 07/23/22 10:54 07/23/22 12:33

Client: Ensolum

C10-C28)

Project/Site: Tucker Draw 944

Job ID: 890-2605-1

SDG: 03A1987046

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

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	161	S1+	70 - 130	07/23/22 10:54	07/23/22 12:33	1
o-Terphenyl	189	S1+	70 - 130	07/23/22 10:54	07/23/22 12:33	1

Lab Sample ID: LCS 880-30460/2-A Client Sample ID: Lab Control Sample **Matrix: Solid** Prep Type: Total/NA Prep Batch: 30460 **Analysis Batch: 30464** Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Gasoline Range Organics 1000 1129 mg/Kg 113 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over 1000 965.7 mg/Kg 97 70 - 130

 Surrogate
 %Recovery
 Qualifier
 Limits

 1-Chlorooctane
 119
 70 - 130

 o-Terphenyl
 124
 70 - 130

Lab Sample ID: LCSD 880-30460/3-A

Matrix: Solid

Analysis Batch: 30464

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30460

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Gasoline Range Organics 1000 1091 109 70 - 130 3 20 mg/Kg (GRO)-C6-C10 1000 Diesel Range Organics (Over 925.1 mg/Kg 93 70 - 130 20 C10-C28)

010 020)

 Surrogate
 %Recovery
 Qualifier
 Limits

 1-Chlorooctane
 112
 70 - 130

 o-Terphenyl
 113
 70 - 130

Lab Sample ID: MB 880-30462/1-A

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 30468 Prep Batch: 30462

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 12:37	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 12:37	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 12:37	1

	МВ	МВ				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	198	S1+	70 - 130	07/23/22 10:56	07/23/22 12:37	1
o-Terphenyl	232	S1+	70 - 130	07/23/22 10:56	07/23/22 12:37	1

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Client: Ensolum Job ID: 890-2605-1 Project/Site: Tucker Draw 944 SDG: 03A1987046

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

Lab Sample	ID: LCS	880-30462/2-A
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**Matrix: Solid** 

**Analysis Batch: 30468** 

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total/NA** Prep Batch: 30462

Prep Type: Total/NA

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	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	911.1		mg/Kg		91	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	882.7		mg/Kg		88	70 - 130	
C10-C28)								

	LCS LCS	
Surrogate	%Recovery Quar	lifier Limits
1-Chlorooctane	87	70 - 130
o-Terphenyl	87	70 - 130

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

70 - 130

Lab Sample ID: LCSD 880-30462/3-A **Matrix: Solid** 

Diesel Range Organics (Over

Analysis Batch: 30468							Prep Batch: 30462					
-	Spike	LCSD	LCSD				%Rec		RPD			
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit			
Gasoline Range Organics	1000	986.4		mg/Kg		99	70 - 130	8	20			
(GRO)-C6-C10												

924.2

mg/Kg

1000

C10-C28)

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

Lab Sample ID: 890-2604-A-21-G MS **Client Sample ID: Matrix Spike** 

**Matrix: Solid Prep Type: Total/NA Analysis Batch: 30468** Prep Batch: 30462

	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	1000	1521	F1	mg/Kg		151	70 - 130	
Diesel Range Organics (Over	<50.0	U	1000	1245		mg/Kg		121	70 - 130	

C10-C28)

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

MS MS

Lab Sample ID: 890-2604-A-21-H MSD

**Matrix: Solid** 

**Analysis Batch: 30468** 

Client Sample	ID:	Matrix S	Spike	<b>Duplicate</b>
		D	<b>T</b>	T-4-1/81A

**Prep Type: Total/NA** Prep Batch: 30462

	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	<50.0	U F1	999	1465	F1	mg/Kg		145	70 - 130	4	20	
Diesel Range Organics (Over	<50.0	U	999	1177		mg/Kg		114	70 - 130	6	20	

C10-C28)

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	109		70 - 130

Client: Ensolum

Job ID: 890-2605-1

SDG: 03A1987046

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

Lab Sample ID: 890-2604-A-21-H MSD

**Matrix: Solid** 

**Analysis Batch: 30468** 

Project/Site: Tucker Draw 944

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30462

MSD MSD

%Recovery Qualifier Surrogate Limits 70 - 130 o-Terphenyl 100

Lab Sample ID: MB 880-30622/1-A **Client Sample ID: Method Blank** 

**Matrix: Solid** 

**Analysis Batch: 30645** 

Prep Type: Total/NA

Prep Batch: 30622

ı		MB	MR							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/25/22 16:23	07/26/22 09:44	1
	Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/25/22 16:23	07/26/22 09:44	1
	Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/25/22 16:23	07/26/22 09:44	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130	07/25/22 16:23 07/26/22 09:44	1
o-Terphenyl	110		70 - 130	07/25/22 16:23 07/26/22 09:44	1

**Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

**Analysis Batch: 30645** 

Lab Sample ID: LCS 880-30622/2-A

Prep Type: Total/NA Prep Batch: 30622 Snika

	Spike	LCS	LUS				70Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	957.4		mg/Kg	_	96	70 - 130	
Diesel Range Organics (Over	1000	926.5		mg/Kg		93	70 - 130	

C10-C28)

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	102		70 - 130
o-Terphenyl	114		70 - 130

Lab Sample ID: LCSD 880-30622/3-A **Client Sample ID: Lab Control Sample Dup Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 30645** 

Prep Batch: 30622 Spike LCSD LCSD %Rec RPD Added Result Qualifier Unit Limit Limits RPD Analyte D %Rec Gasoline Range Organics 1000 988.4 mg/Kg 99 70 - 130 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 863.8 mg/Kg 86 70 - 130 7 20

C10-C28)

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	91		70 - 130
o-Terphenyl	104		70 - 130

Client: Ensolum Job ID: 890-2605-1 SDG: 03A1987046 Project/Site: Tucker Draw 944

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

Lab Sample ID: 880-17280-A-18-D MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

**Analysis Batch: 30645** 

Prep Type: Total/NA Prep Batch: 30622

Sample Sample Spike MS MS %Rec Result Qualifier Result Qualifier Added %Rec Limits Analyte Unit Gasoline Range Organics <50.0 U 1000 1163 mg/Kg 116 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over 1000 789.8 79 <50.0 U mg/Kg 70 - 130

> Limits 70 - 130

70 - 130

C10-C28)

MS MS Surrogate %Recovery Qualifier 1-Chlorooctane 88 o-Terphenyl 94

Lab Sample ID: 880-17280-A-18-E MSD **Client Sample ID: Matrix Spike Duplicate** 

**Matrix: Solid** 

**Analysis Batch: 30645** 

**Prep Type: Total/NA** 

**Client Sample ID: Lab Control Sample** 

Client Sample ID: Lab Control Sample Dup

90 - 110

106

Prep Batch: 30622

Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Added Result Qualifier Limits **RPD** Limit Analyte Unit D %Rec Gasoline Range Organics <50.0 U 999 1054 106 70 - 130 10 20 mg/Kg (GRO)-C6-C10 2 Diesel Range Organics (Over <50.0 U 999 773.5 mg/Kg 77 70 - 130 20

C10-C28)

MSD MSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 85 70 - 130 o-Terphenyl 92 70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30398/1-A **Client Sample ID: Method Blank Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 30435** 

MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 mg/Kg 07/23/22 07:34

Lab Sample ID: LCS 880-30398/2-A

**Matrix: Solid** 

**Analysis Batch: 30435** 

Spike LCS LCS %Rec **Analyte** Added Result Qualifier Unit %Rec Limits Chloride 250 263.3 mg/Kg 105 90 - 110

250

Lab Sample ID: LCSD 880-30398/3-A

Chloride

Matrix: Solid							Prep	Type: Sc	luble
Analysis Batch: 30435									
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit

264.5

mg/Kg

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**Prep Type: Soluble** 

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Client: Ensolum Job ID: 890-2605-1 Project/Site: Tucker Draw 944

SDG: 03A1987046

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2605-10 MS Client Sample ID: PH07 @ 1' **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 30435** 

Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier Unit %Rec Limits Analyte D Chloride 504 252 752.9 mg/Kg 99 90 - 110

Lab Sample ID: 890-2605-10 MSD Client Sample ID: PH07 @ 1' **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 30435** 

Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Analyte 252 90 - 110 Chloride 504 761.7 mg/Kg 102

Lab Sample ID: MB 880-30597/1-A Client Sample ID: Method Blank **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 30701** 

MB MB Result Qualifier RL MDL Unit **Analyte** Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 07/26/22 13:20 mg/Kg

Lab Sample ID: LCS 880-30597/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 30701** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits Chloride 256.4 250 mg/Kg 103 90 - 110

Lab Sample ID: LCSD 880-30597/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 30701** 

LCSD LCSD RPD Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Chloride 250 257.9 103 mg/Kg 90 - 110

Lab Sample ID: 880-17350-A-5-B MS

**Matrix: Solid** 

**Analysis Batch: 30701** 

Sample Sample Spike MS MS %Rec Result Qualifier Added Analyte Result Qualifier Unit D %Rec Limits 1240 Chloride 227 1558 mg/Kg 107 90 - 110

Lab Sample ID: 880-17350-A-5-C MSD **Client Sample ID: Matrix Spike Duplicate Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 30701** 

Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Added Analyte Result Qualifier Limits RPD Limit Unit D %Rec 227 1240 1555 Chloride mg/Kg 107 90 - 110 0

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**Client Sample ID: Matrix Spike** 

**Prep Type: Soluble** 

Client: Ensolum Job ID: 890-2605-1
Project/Site: Tucker Draw 944 SDG: 03A1987046

**GC VOA** 

Prep Batch: 30303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	5035	
890-2605-2	PH03 @ 1'	Total/NA	Solid	5035	
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	5035	
890-2605-4	PH04 @ 1'	Total/NA	Solid	5035	
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	5035	
890-2605-6	PH05 @ 1'	Total/NA	Solid	5035	
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	5035	
890-2605-8	PH06 @ 1'	Total/NA	Solid	5035	
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	5035	
890-2605-10	PH07 @ 1'	Total/NA	Solid	5035	
MB 880-30303/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30303/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30303/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17239-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-17239-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

**Analysis Batch: 30324** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	8021B	30303
890-2605-2	PH03 @ 1'	Total/NA	Solid	8021B	30303
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	8021B	30303
890-2605-4	PH04 @ 1'	Total/NA	Solid	8021B	30303
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	8021B	30303
890-2605-6	PH05 @ 1'	Total/NA	Solid	8021B	30303
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	8021B	30303
890-2605-8	PH06 @ 1'	Total/NA	Solid	8021B	30303
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	8021B	30303
890-2605-10	PH07 @ 1'	Total/NA	Solid	8021B	30303
MB 880-30303/5-A	Method Blank	Total/NA	Solid	8021B	30303
LCS 880-30303/1-A	Lab Control Sample	Total/NA	Solid	8021B	30303
LCSD 880-30303/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30303
880-17239-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	30303
880-17239-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30303

Prep Batch: 30361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2609-1	PH08 @ 0.5'	Total/NA	Solid	5035	<u> </u>
890-2609-2	PH08 @ 1'	Total/NA	Solid	5035	
MB 880-30361/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30361/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30361/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Prep Batch: 30426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-30426/5-A	Method Blank	Total/NA	Solid	5035	

**Analysis Batch: 30473** 

<b>Lab Sample ID</b> 890-2609-1	Client Sample ID PH08 @ 0.5'	Prep Type Total/NA	Matrix Solid	Method 8021B	Prep Batch 30361
890-2609-2	PH08 @ 1'	Total/NA	Solid	8021B	30361
MB 880-30361/5-A	Method Blank	Total/NA	Solid	8021B	30361

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Client: Ensolum Job ID: 890-2605-1 Project/Site: Tucker Draw 944 SDG: 03A1987046

## **GC VOA (Continued)**

## **Analysis Batch: 30473 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-30426/5-A	Method Blank	Total/NA	Solid	8021B	30426
LCS 880-30361/1-A	Lab Control Sample	Total/NA	Solid	8021B	30361
LCSD 880-30361/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30361

## **Analysis Batch: 30544**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2605-2	PH03 @ 1'	Total/NA	Solid	Total BTEX	
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2605-4	PH04 @ 1'	Total/NA	Solid	Total BTEX	
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2605-6	PH05 @ 1'	Total/NA	Solid	Total BTEX	
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2605-8	PH06 @ 1'	Total/NA	Solid	Total BTEX	
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2605-10	PH07 @ 1'	Total/NA	Solid	Total BTEX	

#### **Analysis Batch: 30568**

<b>Lab Sample ID</b> 890-2609-1	Client Sample ID PH08 @ 0.5'	Prep Type Total/NA	Matrix Solid	Method Total BTEX	Prep Batch
890-2609-2	PH08 @ 1'	Total/NA	Solid	Total BTEX	

## **GC Semi VOA**

## Prep Batch: 30460

<b>Lab Sample ID</b> 890-2609-1	Client Sample ID PH08 @ 0.5'	Prep Type Total/NA	Matrix Solid	Method Prep I 8015NM Prep	Batch
890-2609-2	PH08 @ 1'	Total/NA	Solid	8015NM Prep	
MB 880-30460/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30460/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30460/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

## Prep Batch: 30462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2605-2	PH03 @ 1'	Total/NA	Solid	8015NM Prep	
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2605-4	PH04 @ 1'	Total/NA	Solid	8015NM Prep	
890-2605-6	PH05 @ 1'	Total/NA	Solid	8015NM Prep	
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2605-8	PH06 @ 1'	Total/NA	Solid	8015NM Prep	
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2605-10	PH07 @ 1'	Total/NA	Solid	8015NM Prep	
MB 880-30462/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30462/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30462/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2604-A-21-G MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2604-A-21-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Client: Ensolum Job ID: 890-2605-1 Project/Site: Tucker Draw 944 SDG: 03A1987046

GC Semi VOA

## Analysis Batch: 30464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2609-1	PH08 @ 0.5'	Total/NA	Solid	8015B NM	30460
890-2609-2	PH08 @ 1'	Total/NA	Solid	8015B NM	30460
MB 880-30460/1-A	Method Blank	Total/NA	Solid	8015B NM	30460
LCS 880-30460/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30460
LCSD 880-30460/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30460

## **Analysis Batch: 30468**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	8015B NM	30462
890-2605-2	PH03 @ 1'	Total/NA	Solid	8015B NM	30462
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	8015B NM	30462
890-2605-4	PH04 @ 1'	Total/NA	Solid	8015B NM	30462
890-2605-6	PH05 @ 1'	Total/NA	Solid	8015B NM	30462
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	8015B NM	30462
890-2605-8	PH06 @ 1'	Total/NA	Solid	8015B NM	30462
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	8015B NM	30462
890-2605-10	PH07 @ 1'	Total/NA	Solid	8015B NM	30462
MB 880-30462/1-A	Method Blank	Total/NA	Solid	8015B NM	30462
LCS 880-30462/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30462
LCSD 880-30462/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30462
890-2604-A-21-G MS	Matrix Spike	Total/NA	Solid	8015B NM	30462
890-2604-A-21-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30462

## **Analysis Batch: 30537**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2609-1	PH08 @ 0.5'	Total/NA	Solid	8015 NM	
890-2609-2	PH08 @ 1'	Total/NA	Solid	8015 NM	

## **Analysis Batch: 30570**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	8015 NM	_
890-2605-2	PH03 @ 1'	Total/NA	Solid	8015 NM	
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	8015 NM	
890-2605-4	PH04 @ 1'	Total/NA	Solid	8015 NM	
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	8015 NM	
890-2605-6	PH05 @ 1'	Total/NA	Solid	8015 NM	
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	8015 NM	
890-2605-8	PH06 @ 1'	Total/NA	Solid	8015 NM	
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	8015 NM	
890-2605-10	PH07 @ 1'	Total/NA	Solid	8015 NM	

### Prep Batch: 30622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	8015NM Prep	
MB 880-30622/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30622/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30622/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-17280-A-18-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-17280-A-18-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Client: Ensolum Job ID: 890-2605-1 Project/Site: Tucker Draw 944 SDG: 03A1987046

GC Semi VOA

## **Analysis Batch: 30645**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	8015B NM	30622
MB 880-30622/1-A	Method Blank	Total/NA	Solid	8015B NM	30622
LCS 880-30622/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30622
LCSD 880-30622/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30622
880-17280-A-18-D MS	Matrix Spike	Total/NA	Solid	8015B NM	30622
880-17280-A-18-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30622

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#### Leach Batch: 30398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Soluble	Solid	DI Leach	<del> </del>
890-2605-2	PH03 @ 1'	Soluble	Solid	DI Leach	
890-2605-3	PH04 @ 0.5'	Soluble	Solid	DI Leach	
890-2605-4	PH04 @ 1'	Soluble	Solid	DI Leach	
890-2605-5	PH05 @ 0.5'	Soluble	Solid	DI Leach	
890-2605-6	PH05 @ 1'	Soluble	Solid	DI Leach	
890-2605-7	PH06 @ 0.5'	Soluble	Solid	DI Leach	
890-2605-8	PH06 @ 1'	Soluble	Solid	DI Leach	
890-2605-10	PH07 @ 1'	Soluble	Solid	DI Leach	
890-2609-1	PH08 @ 0.5'	Soluble	Solid	DI Leach	
890-2609-2	PH08 @ 1'	Soluble	Solid	DI Leach	
MB 880-30398/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30398/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30398/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2605-10 MS	PH07 @ 1'	Soluble	Solid	DI Leach	
890-2605-10 MSD	PH07 @ 1'	Soluble	Solid	DI Leach	

**Analysis Batch: 30435** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Soluble	Solid	300.0	30398
890-2605-2	PH03 @ 1'	Soluble	Solid	300.0	30398
890-2605-3	PH04 @ 0.5'	Soluble	Solid	300.0	30398
890-2605-4	PH04 @ 1'	Soluble	Solid	300.0	30398
890-2605-5	PH05 @ 0.5'	Soluble	Solid	300.0	30398
890-2605-6	PH05 @ 1'	Soluble	Solid	300.0	30398
890-2605-7	PH06 @ 0.5'	Soluble	Solid	300.0	30398
890-2605-8	PH06 @ 1'	Soluble	Solid	300.0	30398
890-2605-10	PH07 @ 1'	Soluble	Solid	300.0	30398
890-2609-1	PH08 @ 0.5'	Soluble	Solid	300.0	30398
890-2609-2	PH08 @ 1'	Soluble	Solid	300.0	30398
MB 880-30398/1-A	Method Blank	Soluble	Solid	300.0	30398
LCS 880-30398/2-A	Lab Control Sample	Soluble	Solid	300.0	30398
LCSD 880-30398/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30398
890-2605-10 MS	PH07 @ 1'	Soluble	Solid	300.0	30398
890-2605-10 MSD	PH07 @ 1'	Soluble	Solid	300.0	30398

Leach Batch: 30597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-9	PH07 @ 0.5'	Soluble	Solid	DI Leach	
MB 880-30597/1-A	Method Blank	Soluble	Solid	DI Leach	

Client: Ensolum Project/Site: Tucker Draw 944

Job ID: 890-2605-1

SDG: 03A1987046

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

## Leach Batch: 30597 (Continued)

Lab Sample ID LCS 880-30597/2-A	Client Sample ID Lab Control Sample	Prep Type Soluble	Matrix Solid	Method DI Leach	Prep Batch
LCSD 880-30597/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-17350-A-5-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-17350-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## **Analysis Batch: 30701**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-9	PH07 @ 0.5'	Soluble	Solid	300.0	30597
MB 880-30597/1-A	Method Blank	Soluble	Solid	300.0	30597
LCS 880-30597/2-A	Lab Control Sample	Soluble	Solid	300.0	30597
LCSD 880-30597/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30597
880-17350-A-5-B MS	Matrix Spike	Soluble	Solid	300.0	30597
880-17350-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30597

Client: Ensolum

## Client Sample ID: PH03 @ 0.5'

Date Collected: 07/20/22 10:40 Date Received: 07/21/22 09:41

Project/Site: Tucker Draw 944

Lab Sample ID: 890-2605-1

**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			4.98 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 18:10	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 20:39	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 08:29	CH	XEN MID

Client Sample ID: PH03 @ 1'

Date Collected: 07/20/22 10:45 Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-2

**Matrix: Solid** 

Batch Batch Dil Initial Final Batch Prepared Method **Prep Type** Type Run **Factor Amount** Amount Number or Analyzed **Analyst** Lab Total/NA 5035 30303 07/21/22 16:45 MR XEN MID Prep 4.99 g 5 mL Total/NA 8021B 30324 07/22/22 18:37 SM XEN MID Analysis 1 Total/NA Total BTEX Analysis 1 30544 07/25/22 10:15 SM XEN MID Total/NA 8015 NM 30570 XEN MID Analysis 1 07/25/22 11:07 AJ Total/NA Prep 8015NM Prep 10.03 g 10 mL 30462 07/23/22 10:56 DM XEN MID Total/NA 8015B NM 30468 XEN MID Analysis 1 07/23/22 21:00 AJ Soluble 30398 07/22/22 11:43 SMC Leach DI Leach 4.97 g 50 mL XEN MID 300.0 07/23/22 08:39 CH Soluble Analysis 1 30435 **XEN MID** 

Client Sample ID: PH04 @ 0.5' Lab Sample ID: 890-2605-3

Date Collected: 07/20/22 11:00 Date Received: 07/21/22 09:41

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	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 19:03	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 21:20	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 08:48	CH	XEN MID

Client Sample ID: PH04 @ 1'

Date Collected: 07/20/22 11:30 Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-4

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			5.03 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 19:29	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID

Client: Ensolum Job ID: 890-2605-1 Project/Site: Tucker Draw 944 SDG: 03A1987046

Client Sample ID: PH04 @ 1' Lab Sample ID: 890-2605-4 Date Collected: 07/20/22 11:30

Matrix: Solid

Date Received: 07/21/22 09:41

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
P	тер Туре	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
T	otal/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
T	otal/NA	Prep	8015NM Prep			10.03 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
T	otal/NA	Analysis	8015B NM		1			30468	07/23/22 21:41	AJ	XEN MID
S	oluble	Leach	DI Leach			5 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Ls	oluble	Analysis	300.0		1			30435	07/23/22 08:57	CH	XEN MID

Client Sample ID: PH05 @ 0.5' Lab Sample ID: 890-2605-5

Date Received: 07/21/22 09:41

Date Collected: 07/20/22 11:35 **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			4.99 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 19:56	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30622	07/25/22 16:23	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30645	07/26/22 12:17	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/24/22 13:07	CH	XEN MID

Client Sample ID: PH05 @ 1' Lab Sample ID: 890-2605-6 **Matrix: Solid** 

Date Collected: 07/20/22 11:40 Date Received: 07/21/22 09:41

	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	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 20:22	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 22:23	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 09:34	CH	XEN MID

Client Sample ID: PH06 @ 0.5' Lab Sample ID: 890-2605-7 Date Collected: 07/20/22 11:45 Matrix: Solid

Date Received: 07/21/22 09:41

_	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	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 20:49	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA Total/NA	Prep Analysis	8015NM Prep 8015B NM		1	10.02 g	10 mL	30462 30468	07/23/22 10:56 07/23/22 22:44		XEN MID XEN MID

Client: Ensolum

Project/Site: Tucker Draw 944

Client Sample ID: PH06 @ 0.5'

Date Collected: 07/20/22 11:45 Date Received: 07/21/22 09:41 Lab Sample ID: 890-2605-7

Matrix: Solid

Job ID: 890-2605-1

SDG: 03A1987046

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/24/22 13:16	CH	XEN MID

Lab Sample ID: 890-2605-8 Client Sample ID: PH06 @ 1' Matrix: Solid

Date Collected: 07/20/22 11:50 Date Received: 07/21/22 09:41

	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	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 21:15	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 23:05	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 09:52	CH	XEN MID

Lab Sample ID: 890-2605-9 Client Sample ID: PH07 @ 0.5'

Date Collected: 07/20/22 12:00 Date Received: 07/21/22 09:41

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1			30324	07/22/22 21:41	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 23:27	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	30597	07/25/22 14:17	SMC	XEN MID
Soluble	Analysis	300.0		5			30701	07/26/22 14:43	CH	XEN MID

Client Sample ID: PH07 @ 1'

Date Collected: 07/20/22 12:10

Date Received: 07/21/22 09:41

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1			30324	07/22/22 22:08	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 23:47	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/24/22 13:25	CH	XEN MID

Lab Sample ID: 890-2605-10

**Matrix: Solid** 

**Matrix: Solid** 

Job ID: 890-2605-1

SDG: 03A1987046

Client Sample ID: PH08 @ 0.5'

Lab Sample ID: 890-2609-1

**Matrix: Solid** 

Date Collected: 07/20/22 13:00 Date Received: 07/21/22 09:41

Project/Site: Tucker Draw 944

Client: Ensolum

	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	30361	07/22/22 10:18	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30473	07/24/22 07:12	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30568	07/25/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30537	07/25/22 09:55	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30460	07/23/22 10:54	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30464	07/23/22 17:24	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 11:52	CH	XEN MID

Client Sample ID: PH08 @ 1'

Lab Sample ID: 890-2609-2

**Matrix: Solid** 

Date Collected: 07/20/22 13:05 Date Received: 07/21/22 09:41

	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	30361	07/22/22 10:18	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30473	07/24/22 07:32	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30568	07/25/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30537	07/25/22 09:55	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30460	07/23/22 10:54	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30464	07/23/22 17:45	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 12:02	CH	XEN MID

### **Laboratory References:**

Released to Imaging: 12/8/2022 12:25:26 PM

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

# **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2605-1
Project/Site: Tucker Draw 944 SDG: 03A1987046

# **Laboratory: Eurofins Midland**

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

Authority		rogram	Identification Number	Expiration Date 06-30-23	
Texas	NELAP		T104704400-22-24		
The following analyte	e are included in this ren	ort but the laboratory is r	not certified by the governing authority.	This list may include analytes for	
	•	ort, but the laboratory is i	ior certified by the governing authority.	This list may include analytes for	
the agency does not	•	ort, but the laboratory is i	lot certilled by the governing authority.	This list may include analytes for	
	•	Matrix	Analyte	This list may include analytes for	
the agency does not o	offer certification.	•	, , ,	This list may include analytes for	

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# **Method Summary**

Client: Ensolum

Project/Site: Tucker Draw 944

Job ID: 890-2605-1

SDG: 03A1987046

rotocol	Laboratory
W846	XEN MID
AL SOP	XEN MID
W846	XEN MID
W846	XEN MID

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

# **Sample Summary**

Client: Ensolum

Project/Site: Tucker Draw 944

Job ID: 890-2605-1 SDG: 03A1987046

Lab Carrata ID	Olland Orangla ID	Madala	O all a start	D l l	
Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2605-1	PH03 @ 0.5'	Solid	07/20/22 10:40	07/21/22 09:41	0.5'
890-2605-2	PH03 @ 1'	Solid	07/20/22 10:45	07/21/22 09:41	1'
890-2605-3	PH04 @ 0.5'	Solid	07/20/22 11:00	07/21/22 09:41	0.5'
890-2605-4	PH04 @ 1'	Solid	07/20/22 11:30	07/21/22 09:41	1'
890-2605-5	PH05 @ 0.5'	Solid	07/20/22 11:35	07/21/22 09:41	0.5'
890-2605-6	PH05 @ 1'	Solid	07/20/22 11:40	07/21/22 09:41	1'
890-2605-7	PH06 @ 0.5'	Solid	07/20/22 11:45	07/21/22 09:41	0.5'
890-2605-8	PH06 @ 1'	Solid	07/20/22 11:50	07/21/22 09:41	1'
890-2605-9	PH07 @ 0.5'	Solid	07/20/22 12:00	07/21/22 09:41	0.5'
890-2605-10	PH07 @ 1'	Solid	07/20/22 12:10	07/21/22 09:41	1'
890-2609-1	PH08 @ 0.5'	Solid	07/20/22 13:00	07/21/22 09:41	0.5'
890-2609-2	PH08 @ 1'	Solid	07/20/22 13:05	07/21/22 09:41	1'

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<b>C</b> *	Chain of Custody
eurofins	Houston, TX (281) 240-4200. Dallas, TX (214) 9

Xenco

TX (214) 902-0300 **Environment Testing** Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296

Work Order No:	
110111010101	

Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199 CIP-Cooling In Process www.xenco.com Joseph Hemander Jim Raiel Bill to: (if different) **Work Order Comments** Project Manager: Program: UST/PST PRP Brownfields RRC Superfund novse mulan-Company Name: Company Name: Nati. Park Hum 5315 Burena Vista Dr. State of Project: Address: Address: Reporting: Level II 🗌 Level III 🗍 PST/UST 🗍 TRRP 📗 Level IV 📗 Caristad NM 83220 risbad NM 8977U City, State ZIP: City, State ZIP: Theododer Densolum com EDD 🗌 Deliverables: ADaPT Other: Phone: Draw guy **Preservative Codes ANALYSIS REQUEST** Turn Around Project Name: Rush DI Water: H<sub>2</sub>O 98704 Routine None: NO Project Number: Lay MeOH: Me Cool: Cool ddy Counti Due Date: Project Location: HNO 3: HN HCL: HC TAT starts the day received by Sampler's Name: POK MID epa prethod 10216 the lab, if received by 4:30pm NaOH: Na H,SO4: H, PO #: epa metrod H<sub>3</sub>PO<sub>4</sub>: HP Yes/No SAMPLE RECEIPT Temp Blank: Wet Ice: No NaHSO 4: NABIS (Yes) Thermometer ID: Samples Received Intact: tph epo method Na 3S 3O3: NaSO Cooler Custody Seals: Yes No MYA Correction Factor: Zn Acetate+NaOH: Zn Sample Custody Seals: Yes No N/A Temperature Reading: Chloride . NaOH+Ascorbic Acid: SAPC Corrected Temperature: **Total Containers:** Grab/ # of Date Sample Comments Sample Identification Matrix Depth Sampled Sampled Cont Comp 3 35 20st center 1040 7/20/22 6 045 incident number 0 1130 0 nab1812338789 135 @ 0 0.5 1150 0.5 1200 1210 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 Total 200.7 / 6010 200.8 / 6020: Hg: 1631 / 245.1 / 7470 / 7471 TCLP/SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Circle Method(s) and Metal(s) to be analyzed

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

Religiquished by; (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
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	I				Revised Date: 08/25/2020 Rev. 2020.2











# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2605-1 SDG Number: 03A1987046

Login Number: 2605 **List Source: Eurofins Carlsbad** 

List Number: 1

Creator: Stutzman, Amanda

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	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: Ensolum

Job Number: 890-2605-1

SDG Number: 03A1987046

List Source: Eurofins Midland
List Number: 2
List Creation: 07/22/22 10:18 AM

Creator: Rodriguez, Leticia

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

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# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2607-1

Laboratory Sample Delivery Group: Eddy County

Client Project/Site: Tucker Draw 944

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Joseph Hernandez

MAMER

Authorized for release by: 7/25/2022 10:49:06 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Links

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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: Ensolum
Project/Site: Tucker Draw 944

Laboratory Job ID: 890-2607-1
SDG: Eddy County

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# **Definitions/Glossary**

Client: Ensolum Job ID: 890-2607-1 Project/Site: Tucker Draw 944 SDG: Eddy County

### **Qualifiers**

# **GC VOA**

Qualifier	Qualifier Description				
F1	MS and/or MSD recovery exceeds control limits.				
F2	MS/MSD RPD exceeds control limits				
U	Indicates the analyte was analyzed for but not detected.				

### **GC Semi VOA**

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

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.
n	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

Dil Fac

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 MLMinimum Level (Dioxin) MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

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

NEG Negative / Absent POS Positive / Present

PQL Practical Quantitation Limit

**PRES** Presumptive **Quality Control** 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)

TNTC Too Numerous To Count

### **Case Narrative**

Client: Ensolum

Project/Site: Tucker Draw 944

Job ID: 890-2607-1 SDG: Eddy County

Job ID: 890-2607-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2607-1

### Receipt

The samples were received on 7/21/2022 9:41 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 18.1°C

### **Receipt Exceptions**

The following samples were received at the laboratory outside the required temperature criteria: PH01 @ 0.5' (890-2607-1), PH01 @ 1' (890-2607-2), PH02 @ 0.5' (890-2607-3) and PH02 @ 1' (890-2607-4). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to <CHOOSE\_ONE> proceed with/cancel analysis. Samples received out of temp range 18.3 corrected 18.1, client advised wants samples ran.

### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30361 and analytical batch 880-30473 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample 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.

### GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30432 and analytical batch 880-30368 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.

Method 8015MOD\_NM: The diesel range was biased high in the LCS, however since only an LCS or LCSD are required the data was qualified and reported. (LCS 880-30432/2-A)

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 880-30398 and analytical batch 880-30435 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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Lab Sample ID: 890-2607-1

Client: Ensolum Job ID: 890-2607-1

Project/Site: Tucker Draw 944 SDG: Eddy County

Client Sample ID: PH01 @ 0.5'

Date Collected: 07/20/22 10:20 Date Received: 07/21/22 09:41

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		07/22/22 10:18	07/24/22 03:06	1
Toluene	<0.00201	U	0.00201		mg/Kg		07/22/22 10:18	07/24/22 03:06	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		07/22/22 10:18	07/24/22 03:06	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		07/22/22 10:18	07/24/22 03:06	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		07/22/22 10:18	07/24/22 03:06	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		07/22/22 10:18	07/24/22 03:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130				07/22/22 10:18	07/24/22 03:06	1
1,4-Difluorobenzene (Surr)	79		70 - 130				07/22/22 10:18	07/24/22 03:06	1
Method: Total BTEX - Total BTEX	Calculation								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Method: 8015 NM - Diesel Range Analyte Total TPH	•	Qualifier	RL 49.9	MDL	Unit mg/Kg	<u>D</u>	Prepared	Analyzed 07/25/22 09:39	Dil Fac
 Method: 8015B NM - Diesel Rang	je Organics (D	RO) (GC)			0 0				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/22/22 15:43	07/23/22 06:10	1
Diesel Range Organics (Over C10-C28)	<49.9	U *+	49.9		mg/Kg		07/22/22 15:43	07/23/22 06:10	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/22/22 15:43	07/23/22 06:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 130				07/22/22 15:43	07/23/22 06:10	1
o-Terphenyl	123		70 - 130				07/22/22 15:43	07/23/22 06:10	1
Method: 300.0 - Anions, Ion Chro	•								
Analyte Chloride	Result	Qualifier	RL 49.7	MDL	mg/Kg	D	Prepared	Analyzed 07/23/22 10:38	Dil Fac

Client Sample ID: PH01 @ 1'

Date Collected: 07/20/22 10:22

Date Received: 07/21/22 09:41

Sample Depth: 1'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 03:27	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 03:27	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 03:27	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/22/22 10:18	07/24/22 03:27	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 03:27	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/22/22 10:18	07/24/22 03:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130				07/22/22 10:18	07/24/22 03:27	1

**Eurofins Carlsbad** 

Lab Sample ID: 890-2607-2

Matrix: Solid

Lab Sample ID: 890-2607-2

Lab Sample ID: 890-2607-3

**Matrix: Solid** 

Client: Ensolum

Job ID: 890-2607-1

Project/Site: Tucker Draw 944 SDG: Eddy County

Client Sample ID: PH01 @ 1'

Date Collected: 07/20/22 10:22 Date Received: 07/21/22 09:41

Sample Depth: 1'

Method: 8021B - Volatile O	rganic Compou	nds (GC)	(Continued)
Michiga: OUL 1B Volume C	i gaino compou	1145 (55)	(Goillinaca)

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1.4-Difluorobenzene (Surr)	79	70 - 130	07/22/22 10:18	07/24/22 03:27	1

# **Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	MDL	Unit	)	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg		_	07/25/22 11:06	1

ı			
ı	Mothod: 8015 NM -	Diesel Range Organio	e (DRO) (GC)

Analyte	Result Qua	alifier RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8 U	49.8	mg/Kg			07/25/22 09:39	1

Mothod: 901ED	NM Diocol	Pango Ore	aniec /	DBO	(CC)
Method: 8015B	MINI - DIESEI	Range Org	janics (	DRO	(GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.8	U	49.8		mg/Kg		07/22/22 15:43	07/23/22 06:31	1
(GRO)-C6-C10									
Diesel Range Organics (Over	<49.8	U *+	49.8		mg/Kg		07/22/22 15:43	07/23/22 06:31	1
C10-C28)									
Oll Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		07/22/22 15:43	07/23/22 06:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

1-Chlorooctane	104	70 - 130
o-Terphenyl	123	70 - 130

Method: 300.0 - Anions Jon Chromatogram	hv - Soluble				
o-Terphenyl	123	70 - 130	07/22/22 15:43	07/23/22 06:31	1
1-Chlorooctane	104	70 - 130	07/22/22 15:43	07/23/22 06:31	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	544	5.00	mg/Kg			07/23/22 10:48	1

Client Sample ID: PH02 @ 0.5'

Date Collected: 07/20/22 10:30

Date Received: 07/21/22 09:41

Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		07/22/22 10:18	07/24/22 03:47	1
Toluene	<0.00202	U	0.00202		mg/Kg		07/22/22 10:18	07/24/22 03:47	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		07/22/22 10:18	07/24/22 03:47	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		07/22/22 10:18	07/24/22 03:47	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		07/22/22 10:18	07/24/22 03:47	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		07/22/22 10:18	07/24/22 03:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130				07/22/22 10:18	07/24/22 03:47	1
1,4-Difluorobenzene (Surr)	84		70 - 130				07/22/22 10:18	07/24/22 03:47	1

Method: T	otal RTFY	- Total RTFY	Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00403	U	0.00403		ma/Ka			07/25/22 11:06	1

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0 U	50.0	mg/Kg			07/25/22 09:39	1

Lab Sample ID: 890-2607-3

Lab Sample ID: 890-2607-4

Matrix: Solid

Job ID: 890-2607-1

Client: Ensolum Project/Site: Tucker Draw 944 SDG: Eddy County

Client Sample ID: PH02 @ 0.5'

Date Collected: 07/20/22 10:30 Date Received: 07/21/22 09:41

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0		mg/Kg		07/22/22 15:43	07/23/22 06:52	1
(GRO)-C6-C10									
Diesel Range Organics (Over	<50.0	U *+	50.0		mg/Kg		07/22/22 15:43	07/23/22 06:52	1
C10-C28)									
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/22/22 15:43	07/23/22 06:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	83		70 - 130				07/22/22 15:43	07/23/22 06:52	1
o-Terphenyl	99		70 - 130				07/22/22 15:43	07/23/22 06:52	1
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble							
					1114	_	D	A II	D:: F
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: PH02 @ 1'

Date Collected: 07/20/22 10:31

Date Received: 07/21/22 09:41

Sample Depth: 1'

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 04:08	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 04:08	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 04:08	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/22/22 10:18	07/24/22 04:08	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 04:08	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/22/22 10:18	07/24/22 04:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130				07/22/22 10:18	07/24/22 04:08	1
1,4-Difluorobenzene (Surr)	89		70 - 130				07/22/22 10:18	07/24/22 04:08	1
Method: Total BTEX - Total BTEX	Calculation								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/25/22 11:06	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			07/25/22 09:39	1
Method: 8015B NM - Diesel Rang	e Organics (D	RO) (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		07/22/22 15:43	07/23/22 07:14	1
Diesel Range Organics (Over C10-C28)	<49.8	U *+	49.8		mg/Kg		07/22/22 15:43	07/23/22 07:14	1
Oll Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		07/22/22 15:43	07/23/22 07:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	87		70 - 130				07/22/22 15:43	07/23/22 07:14	1
o-Terphenyl	102		70 <sub>-</sub> 130				07/22/22 15:43	07/23/22 07:14	1

# **Client Sample Results**

Client: Ensolum Job ID: 890-2607-1
Project/Site: Tucker Draw 944 SDG: Eddy County

Client Sample ID: PH02 @ 1'

Lab Sa

Date Collected: 07/20/22 10:31

Lab Sample ID: 890-2607-4

Matrix: Solid

Date Received: 07/21/22 09:41 Sample Depth: 1'

Method: 300.0 - Anions, Ion Chrom	natography - So	oluble						
Analyte	Result Q	ualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	399	4.96		mg/Kg			07/23/22 11:25	1

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# **Surrogate Summary**

Client: Ensolum Job ID: 890-2607-1 Project/Site: Tucker Draw 944 SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limit
		BFB1	DFBZ1	
Sample ID	Client Sample ID	(70-130)	(70-130)	
-17260-A-15-B MS	Matrix Spike	114	94	
-17260-A-15-C MSD	Matrix Spike Duplicate	129	84	
-2607-1	PH01 @ 0.5'	118	79	
2607-2	PH01 @ 1'	105	79	
-2607-3	PH02 @ 0.5'	111	84	
-2607-4	PH02 @ 1'	118	89	
880-30361/1-A	Lab Control Sample	128	98	
D 880-30361/2-A	Lab Control Sample Dup	117	99	
880-30361/5-A	Method Blank	104	85	
880-30426/5-A	Method Blank	94	86	

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)	
390-2607-1	PH01 @ 0.5'	101	123	
390-2607-2	PH01 @ 1'	104	123	
390-2607-3	PH02 @ 0.5'	83	99	
390-2607-4	PH02 @ 1'	87	102	
390-2614-A-1-D MS	Matrix Spike	21 S1-	17 S1-	
390-2614-A-1-E MSD	Matrix Spike Duplicate	11 S1-	6 S1-	
_CS 880-30432/2-A	Lab Control Sample	151 S1+	179 S1+	
LCSD 880-30432/3-A	Lab Control Sample Dup	123	155 S1+	
MB 880-30432/1-A	Method Blank	137 S1+	182 S1+	

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2607-1 Project/Site: Tucker Draw 944 SDG: Eddy County

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

Lab Sample ID: MB 880-30361/5-A

**Analysis Batch: 30473** 

**Matrix: Solid** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30361

ı		MB	MR							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
	Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
	Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
	m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
	o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
	Xylenes, Total	< 0.00400	U	0.00400		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
ı										

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MD MD

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130	07/22/22 10:18	07/24/22 01:23	1
1,4-Difluorobenzene (Surr)	85		70 - 130	07/22/22 10:18	07/24/22 01:23	1

Lab Sample ID: LCS 880-30361/1-A

**Matrix: Solid** 

**Analysis Batch: 30473** 

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 30361

	<b>Spike</b>	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09697	-	mg/Kg		97	70 - 130	
Toluene	0.100	0.1018		mg/Kg		102	70 - 130	
Ethylbenzene	0.100	0.1105		mg/Kg		111	70 - 130	
m-Xylene & p-Xylene	0.200	0.2303		mg/Kg		115	70 - 130	
o-Xylene	0.100	0.1290		mg/Kg		129	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	128	70 - 130
1,4-Difluorobenzene (Surr)	98	70 - 130

Lab Sample ID: LCSD 880-30361/2-A

Matrix: Solid

Analysis Batch: 30473

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

Prep Type: Total/NA

Prep Batch: 30361

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.07948		mg/Kg		79	70 - 130	20	35	
Toluene	0.100	0.08370		mg/Kg		84	70 - 130	20	35	
Ethylbenzene	0.100	0.09040		mg/Kg		90	70 - 130	20	35	
m-Xylene & p-Xylene	0.200	0.1865		mg/Kg		93	70 - 130	21	35	
o-Xylene	0.100	0.1072		mg/Kg		107	70 - 130	18	35	

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	117		70 - 130
1.4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 880-17260-A-15-B MS

Matrix: Solid

**Analysis Batch: 30473** 

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30361

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00201	U F2 F1	0.0998	0.07498		mg/Kg	_	75	70 - 130	
Toluene	<0.00201	U F1	0.0998	0.07676		mg/Kg		75	70 - 130	

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Released to Imaging: 12/8/2022 12:25:26 PM

Client: Ensolum

Project/Site: Tucker Draw 944

Job ID: 890-2607-1 SDG: Eddy County

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

Lab Sample ID: 880-17260-A-15-B MS

Lab Sample ID: 880-17260-A-15-C MSD

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 30473

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 30361

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00201	U F1	0.0998	0.07639		mg/Kg		77	70 - 130	
m-Xylene & p-Xylene	<0.00402	U F1	0.200	0.1541		mg/Kg		76	70 - 130	
o-Xylene	<0.00201	U F1	0.0998	0.08436		mg/Kg		85	70 - 130	

MS MS

Surrogate	%Recovery	Qualifier	Limits		
4-Bromofluorobenzene (Surr)	114		70 - 130		
1,4-Difluorobenzene (Surr)	94		70 - 130		

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 30361

RPD

**Analysis Batch: 30473** Sample Sample Spike MSD MSD Result Qualifier Added Result Qualifier %Rec RPD Limit Analyte Unit Limits 0.100 Benzene <0.00201 U F2 F1 0.04516 F2 F1 mg/Kg 45 70 - 130 50 35 Toluene <0.00201 UF1 0.100 0.05845 F1 mg/Kg 57 70 - 130 27 35 Ethylbenzene <0.00201 UF1 0.100 0.06139 F1 61 70 - 130 22 35 mg/Kg 0.201 0.1216 F1 70 - 130 35 m-Xylene & p-Xylene <0.00402 UF1 mg/Kg 60 24 0.100 <0.00201 UF1 0.06840 F1 68 70 - 130 21 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	129		70 - 130
1,4-Difluorobenzene (Surr)	84		70 - 130

Lab Sample ID: MB 880-30426/5-A

**Matrix: Solid** 

**Analysis Batch: 30473** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30426

MB MB

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/22/22 15:06	07/23/22 14:49	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130	07/22/22 15:06	07/23/22 14:49	1
1,4-Difluorobenzene (Surr)	86		70 - 130	07/22/22 15:06	07/23/22 14:49	1

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

Lab Sample ID: MB 880-30432/1-A

**Matrix: Solid** 

Analysis Batch: 30368

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 30432

мв мв Result Qualifier RL MDL Unit Prepared Gasoline Range Organics <50.0 U 50.0 07/22/22 15:43 07/22/22 21:35 mg/Kg

(GRO)-C6-C10

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Released to Imaging: 12/8/2022 12:25:26 PM

Client: Ensolum

Job ID: 890-2607-1 Project/Site: Tucker Draw 944 SDG: Eddy County

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

Lab Sample ID: MB 880-30432/1-A **Matrix: Solid** 

Analysis Batch: 30368

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

Prep Batch: 30432

MB MB Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac <50.0 U 50.0 07/22/22 15:43 07/22/22 21:35 Diesel Range Organics (Over mg/Kg C10-C28) 50.0 07/22/22 15:43 07/22/22 21:35 Oll Range Organics (Over C28-C36) <50.0 U mg/Kg

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	137	S1+	70 - 130	07/22/22 15:43	07/22/22 21:35	1
o-Terphenyl	182	S1+	70 - 130	07/22/22 15:43	07/22/22 21:35	1

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 880-30432/2-A **Matrix: Solid** Prep Type: Total/NA Prep Batch: 30432

Analysis Batch: 30368

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 952.7 95 70 - 130 mg/Kg (GRO)-C6-C10 1000 1360 \*+ Diesel Range Organics (Over mg/Kg 136 70 - 130C10-C28)

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	151	S1+	70 - 130
o-Terphenyl	179	S1+	70 - 130

Lab Sample ID: LCSD 880-30432/3-A

**Matrix: Solid** 

**Analysis Batch: 30368** 

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

Prep Batch: 30432

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier %Rec Limits RPD Limit Unit D Gasoline Range Organics 1000 812.0 81 70 - 130 20 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 1147 mg/Kg 115 70 - 130 17 20

C10-C28)

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	123		70 - 130
o-Terphenyl	155	S1+	70 - 130

Lab Sample ID: 890-2614-A-1-D MS

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**Matrix: Solid** 

**Analysis Batch: 30368** 

Client Sample ID: Matrix Spike

Prep Type: Total/NA Prep Batch: 30432

%Rec Sample Sample Spike MS MS Pocult Qualifion

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	U	%Rec	Limits	
Gasoline Range Organics	<50.0	U F1 F2	1000	286.3	F1	mg/Kg		26	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over	<50.0	U *+ F1	1000	173.7	F1	mg/Kg		17	70 - 130	
C10-C28)		F2								

MS MS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 21 S1-

70 - 130 70 - 130 17 S1o-Terphenyl

Job ID: 890-2607-1

Client: Ensolum Project/Site: Tucker Draw 944 SDG: Eddy County

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

Lab Sample ID: 890-2614-A-1-E MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 30368** Prep Batch: 30432

	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	<50.0	U F1 F2	999	212.0	F1 F2	mg/Kg		19	70 - 130	30	20
Diesel Range Organics (Over	<50.0	U *+ F1	999	74.76	F1 F2	mg/Kg		7	70 - 130	80	20
C10-C28)		F2									

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	11	S1-	70 - 130
o-Terphenyl	6	S1-	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30398/1-A Client Sample ID: Method Blank

**Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 30435** 

MB MB MDL Unit Result Qualifier RL Analyte Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 07/23/22 07:34 mg/Kg

Lab Sample ID: LCS 880-30398/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid Analysis Batch: 30435** 

Spike LCS LCS %Rec

Analyte Added Result Qualifier Unit D %Rec Limits Chloride 250 263.3 105 90 - 110 mg/Kg

Lab Sample ID: LCSD 880-30398/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 30435

**Analysis Batch: 30435** 

Spike LCSD LCSD RPD %Rec Analyte Added Result Qualifier Unit %Rec RPD Limits Limit Chloride 250 264.5 106 90 - 110 mg/Kg

Lab Sample ID: 890-2604-A-30-C MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

Sample Sample Spike MS MS %Rec Qualifier Added Qualifier Analyte Result Result Unit %Rec Limits

Chloride 12.4 F1 251 292.5 F1 112 90 - 110 mg/Kg

Lab Sample ID: 890-2604-A-30-D MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid** 

Analysis Batch: 30435

Sample Sample Spike MSD MSD %Rec RPD Result Qualifier Added Qualifier Analyte Result %Rec Limits RPD Limit Unit D 12.4 F1 251 Chloride 294.3 F1 112 90 - 110 mg/Kg

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**Prep Type: Soluble** 

**Prep Type: Soluble** 

# **QC Association Summary**

Client: Ensolum Job ID: 890-2607-1
Project/Site: Tucker Draw 944 SDG: Eddy County

**GC VOA** 

Prep Batch: 30361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	5035	
890-2607-2	PH01 @ 1'	Total/NA	Solid	5035	
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	5035	
890-2607-4	PH02 @ 1'	Total/NA	Solid	5035	
MB 880-30361/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30361/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30361/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17260-A-15-B MS	Matrix Spike	Total/NA	Solid	5035	
880-17260-A-15-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 30426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-30426/5-A	Method Blank	Total/NA	Solid	5035	

**Analysis Batch: 30473** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	8021B	30361
890-2607-2	PH01 @ 1'	Total/NA	Solid	8021B	30361
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	8021B	30361
890-2607-4	PH02 @ 1'	Total/NA	Solid	8021B	30361
MB 880-30361/5-A	Method Blank	Total/NA	Solid	8021B	30361
MB 880-30426/5-A	Method Blank	Total/NA	Solid	8021B	30426
LCS 880-30361/1-A	Lab Control Sample	Total/NA	Solid	8021B	30361
LCSD 880-30361/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30361
880-17260-A-15-B MS	Matrix Spike	Total/NA	Solid	8021B	30361
880-17260-A-15-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30361

Analysis Batch: 30565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2607-2	PH01 @ 1'	Total/NA	Solid	Total BTEX	
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2607-4	PH02 @ 1'	Total/NA	Solid	Total BTEX	

**GC Semi VOA** 

Analysis Batch: 30368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	8015B NM	30432
890-2607-2	PH01 @ 1'	Total/NA	Solid	8015B NM	30432
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	8015B NM	30432
890-2607-4	PH02 @ 1'	Total/NA	Solid	8015B NM	30432
MB 880-30432/1-A	Method Blank	Total/NA	Solid	8015B NM	30432
LCS 880-30432/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30432
LCSD 880-30432/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30432
890-2614-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	30432
890-2614-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30432

Prep Batch: 30432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	8015NM Prep	

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# **QC Association Summary**

Client: Ensolum

Project/Site: Tucker Draw 944

Job ID: 890-2607-1 SDG: Eddy County

# Prep Batch: 30432 (Continued)

GC Semi VOA (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-2	PH01 @ 1'	Total/NA	Solid	8015NM Prep	
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2607-4	PH02 @ 1'	Total/NA	Solid	8015NM Prep	
MB 880-30432/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30432/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30432/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2614-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2614-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 30528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	8015 NM	
890-2607-2	PH01 @ 1'	Total/NA	Solid	8015 NM	
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	8015 NM	
890-2607-4	PH02 @ 1'	Total/NA	Solid	8015 NM	

### HPLC/IC

### Leach Batch: 30398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Soluble	Solid	DI Leach	
890-2607-2	PH01 @ 1'	Soluble	Solid	DI Leach	
890-2607-3	PH02 @ 0.5'	Soluble	Solid	DI Leach	
890-2607-4	PH02 @ 1'	Soluble	Solid	DI Leach	
MB 880-30398/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30398/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30398/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2604-A-30-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2604-A-30-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

### Analysis Batch: 30435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Soluble	Solid	300.0	30398
890-2607-2	PH01 @ 1'	Soluble	Solid	300.0	30398
890-2607-3	PH02 @ 0.5'	Soluble	Solid	300.0	30398
890-2607-4	PH02 @ 1'	Soluble	Solid	300.0	30398
MB 880-30398/1-A	Method Blank	Soluble	Solid	300.0	30398
LCS 880-30398/2-A	Lab Control Sample	Soluble	Solid	300.0	30398
LCSD 880-30398/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30398
890-2604-A-30-C MS	Matrix Spike	Soluble	Solid	300.0	30398
890-2604-A-30-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30398

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Job ID: 890-2607-1 Project/Site: Tucker Draw 944 SDG: Eddy County

Client Sample ID: PH01 @ 0.5'

Date Collected: 07/20/22 10:20 Date Received: 07/21/22 09:41

Client: Ensolum

Lab Sample ID: 890-2607-1

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	30361	07/22/22 10:18	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30473	07/24/22 03:06	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30565	07/25/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30528	07/25/22 09:39	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30432	07/22/22 15:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30368	07/23/22 06:10	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		10			30435	07/23/22 10:38	CH	XEN MID

Client Sample ID: PH01 @ 1'

Date Collected: 07/20/22 10:22

Date Received: 07/21/22 09:41

Lab Sample ID: 890-2607-2

**Matrix: Solid** 

Dil Initial Final Batch Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Prep 5035 Total/NA 5.01 g 5 mL 30361 07/22/22 10:18 MR XEN MID Total/NA 8021B 5 mL XEN MID Analysis 1 5 mL 30473 07/24/22 03:27 MR Total/NA Total BTEX 30565 07/25/22 11:06 XEN MID Analysis SM 1 Total/NA Analysis 8015 NM 30528 07/25/22 09:39 XEN MID Total/NA 30432 XEN MID Prep 8015NM Prep 10.04 g 07/22/22 15:43 DM 10 mL Total/NA Analysis 8015B NM 30368 07/23/22 06:31 AJ XEN MID Soluble SMC XEN MID Leach DI Leach 5 g 50 mL 30398 07/22/22 11:43 Soluble Analysis 300.0 30435 07/23/22 10:48 CH XEN MID

Client Sample ID: PH02 @ 0.5'

Date Collected: 07/20/22 10:30

Date Received: 07/21/22 09:41

Lab Sample ID: 890-2607-3

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	30361	07/22/22 10:18	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30473	07/24/22 03:47	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30565	07/25/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30528	07/25/22 09:39	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30432	07/22/22 15:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30368	07/23/22 06:52	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 11:16	CH	XEN MID

Client Sample ID: PH02 @ 1'

Date Collected: 07/20/22 10:31

Date Received: 07/21/22 09:41

Lab Sample I	D: 890-2607-4
	Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	30361	07/22/22 10:18	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30473	07/24/22 04:08	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30565	07/25/22 11:06	SM	XEN MID

# **Lab Chronicle**

Client: Ensolum Job ID: 890-2607-1 Project/Site: Tucker Draw 944 SDG: Eddy County

Client Sample ID: PH02 @ 1'

Lab Sample ID: 890-2607-4 Date Collected: 07/20/22 10:31

Matrix: Solid

Date Received: 07/21/22 09:41

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			30528	07/25/22 09:39	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	30432	07/22/22 15:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30368	07/23/22 07:14	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 11:25	CH	XEN MID

### Laboratory References:

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

# **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2607-1 Project/Site: Tucker Draw 944

SDG: Eddy County

# **Laboratory: Eurofins Midland**

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

Authority	Pr	rogram	Identification Number	Expiration Date
Texas	NI	ELAP	T104704400-22-24	06-30-23
The following analytes the agency does not of		ut the laboratory is not certif	ied by the governing authority. This list ma	ay include analytes fo
Analysis Method	Prep Method	Matrix	Analyte	
8015 NM		Solid	Total TPH	
Total BTEX		Solid	Total BTEX	

# **Method Summary**

Client: Ensolum

Project/Site: Tucker Draw 944

Job ID: 890-2607-1 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 Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

# **Sample Summary**

Client: Ensolum

Project/Site: Tucker Draw 944

Job ID: 890-2607-1

SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2607-1	PH01 @ 0.5'	Solid	07/20/22 10:20	07/21/22 09:41	0.5'
890-2607-2	PH01 @ 1'	Solid	07/20/22 10:22	07/21/22 09:41	1'
890-2607-3	PH02 @ 0.5'	Solid	07/20/22 10:30	07/21/22 09:41	0.5'
890-2607-4	PH02 @ 1'	Solid	07/20/22 10:31	07/21/22 09:41	1'

Received by OCD: 8/31/2022 3:37:11 PM



# **Chain of Custody**

**Environment Testing** Xenco

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296

Work Order No:

					Н	lobbs, NM (5	575) 392-	7550, Ca	ırlsbad, I	NM (575) 988	-3199	100	ان مين	F	MCt	www.xen	co.com	Page	of	
Project Manager:	JOSEPH	Hem	and	27	Bill to: (if diff		Ju	n	20	ieu								mments		
Company Name:	Envolun	2			Company Na	ame:	De	VCY					Progr	ram:	UST/PST	PRP[	Bro	wnfields 📗 F	RC Superfi	und 🔲
Address:	3122 NO	ti. Pal	rlsi H	NU	Address:		53	15	BUE	ana V	Uta	Dr-	_	of Proje			_	_		
City, State ZIP:	Carriba	d NN	1885	20	City, State ZI	P:	CC	25/1	DOC	d N	MP)	3620	Repo	rting:			II 🗌 F	PST/UST 1	RRP Level I	v 🔲
Phone:	281702	1329		Email:	Men	long	22	De	nsc	avuk	con	<u> </u>	Deliv	erables:	: EDE		ADal	PT Ot	her:	
Project Name:	Tixice D	mu 91	44	Turn /	Around						ANAL'	YSIS REC	QUEST	,				Preser	vative Codes	
Project Number:	03A199	370	16 [	Routine	@Qush	Pres. Code												None: NO	DI Water:	H <sub>2</sub> O
Project Location: Sampler's Name: PO #:	Eddy (	Cant	TA		2 da day received b ived by 4:30pr	y	roug	VOS MID	0.000									Cool: Cool HCL: HC H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>	MeOH: Me HNO ₃: HN NaOH: Na	- 1
SAMPLE RECEIPT Samples Received Into Cooler Custody Seals: Sample Custody Seals Total Containers:	Yes No	o Ther N/A Corr N/A Tem Corr	rmometer ID rection Factor perature Re rected Temp	or: eading: perature:	Ves No	3 2	cpa method	CDA PREMIS	chiloride eye, prefinad	890-	2607 C	hain of (	Custody			_		H <sub>3</sub> PO <sub>.4</sub> : HP NaHSO <sub>.4</sub> : NA Na <sub>.2</sub> S <sub>.2</sub> O <sub>.3</sub> : Na Zn Acetate+	ABIS SO 3	
Sample Ident	ification	RASTRIV 1	Date npled S	Time Sampled	Depth	rab/ # of cont	Prex	toh	0 50									Sampl	e Comments	
PHOIG	© ().S'	S 712	1 11	020	0.5' (	y													center:	
PHO2 6	61, 50'2,	1		030		1 1	V	J	1										nt num 8123387	
Total 200.7 / 601 Circle Method(s)	and Metal(s) to I	oe analyze	d	TCLP / SF	PLP 6010 :	8RCRA S	Sb As	Ва Ве	Cd C	r Co Cu	Pb Mn	Mo Ni	Se Ag	ΠU				TI Sn U V / 7470 / 743		
Notice: Signature of this doc of service. Eurofins Xenco w of Eurofins Xenco. A minim	vill be liable only for the co	ost of samples and	d shall not assu	ime any respor	sibility for any k	osses or expen	nses incum	ed by the	client if s	such losses are	due to circ	umstances	beyond the co	ontrol	ted.					
Relinquished by	(Signature)	Red	ceived by:	(Signature	)		Date	Time		Relinqu	ished b	y: (Signa	ature)		Receive	ed by: (Si	gnature	2)	Date/Time	
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5 U										6								Revised	Date 08/25/2020 Rev. 20	020.2









# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2607-1 SDG Number: Eddy County

Login Number: 2607 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda Question

Question	Answer C	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	N/A	

<6mm (1/4").

# **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-2607-1

SDG Number: Eddy County

List Source: Eurofins Midland List Creation: 07/22/22 10:18 AM

List Number: 2 Creator: Rodriguez, Leticia

Login Number: 2607

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

13

14

<6mm (1/4").

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-2787-1

Laboratory Sample Delivery Group: Eddy County NM

Client Project/Site: Tucker Draw 9-4-4

For:

eurofins

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Joseph Hernandez

MRAMER

Authorized for release by: 8/24/2022 3:58:27 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Links

Review your project results through

**Have a Question?** 



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Released to Imaging: 12/8/2022 12:25:26 PM

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.

Client: Ensolum
Project/Site: Tucker Draw 9-4-4
Laboratory Job ID: 890-2787-1
SDG: Eddy County NM

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# **Definitions/Glossary**

Job ID: 890-2787-1 Client: Ensolum Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

F1 MS and/or MSD recovery exceeds control limits.

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

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor** 

Detection Limit (DoD/DOE) DL

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)

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

NC Not Calculated

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

NFG 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)

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

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

**TNTC** Too Numerous To Count

### **Case Narrative**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1

SDG: Eddy County NM

Job ID: 890-2787-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2787-1

### Receipt

The samples were received on 8/19/2022 1:46 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 25.4°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 880-32606 and analytical batch 880-32588 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.

Lab Sample ID: 890-2787-1

# **Client Sample Results**

Client: Ensolum Job ID: 890-2787-1
Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Client Sample ID: PH09 @ 0.5'

Date Collected: 08/19/22 09:00 Date Received: 08/19/22 13:46

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:18	1
Toluene	< 0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:18	1
Ethylbenzene	< 0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:18	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		08/22/22 08:59	08/22/22 16:18	1
o-Xylene	< 0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:18	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		08/22/22 08:59	08/22/22 16:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130				08/22/22 08:59	08/22/22 16:18	1
1,4-Difluorobenzene (Surr)	99		70 - 130				08/22/22 08:59	08/22/22 16:18	1
- Method: Total BTEX - Total BTE	X Calculation								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			08/22/22 18:04	1
Analyte	Result	Qualifier	RL	MDI	Unit	D	Prepared	A ll	
							Порагса	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg	_ <u>-</u>		08/23/22 14:48	
• -					mg/Kg	=	Trepared		
• -	ge Organics (D			MDL			Prepared		1
Method: 8015B NM - Diesel Ran	ge Organics (D	RO) (GC) Qualifier	50.0				<u> </u>	08/23/22 14:48	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	ge Organics (Di	RO) (GC) Qualifier	50.0		Unit		Prepared	08/23/22 14:48  Analyzed	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	ge Organics (D Result <50.0	RO) (GC) Qualifier U	50.0 RL 50.0		Unit mg/Kg		Prepared 08/22/22 09:29	08/23/22 14:48  Analyzed  08/22/22 14:27	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	ge Organics (DI Result <50.0	RO) (GC) Qualifier U	50.0 RL 50.0 50.0		Unit mg/Kg mg/Kg		Prepared 08/22/22 09:29 08/22/22 09:29	08/23/22 14:48  Analyzed  08/22/22 14:27  08/22/22 14:27	Dil Fac 1
Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	ge Organics (D) Result <50.0 <50.0	RO) (GC) Qualifier U	50.0  RL 50.0  50.0  50.0		Unit mg/Kg mg/Kg		Prepared 08/22/22 09:29 08/22/22 09:29 08/22/22 09:29	08/23/22 14:48  Analyzed 08/22/22 14:27 08/22/22 14:27	Dil Face 1 1 1 Dil Face
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 1-Chlorooctane	ge Organics (D)  Result  <50.0  <50.0  <80.0  80.0  80.0  80.0  80.0  80.0  80.0  80.0  80.0  80.0  80.0  80.0  80.0  80.0  80.0	RO) (GC) Qualifier U	50.0  RL 50.0  50.0  50.0  Limits		Unit mg/Kg mg/Kg		Prepared 08/22/22 09:29 08/22/22 09:29 08/22/22 09:29 Prepared	08/23/22 14:48  Analyzed  08/22/22 14:27  08/22/22 14:27  08/22/22 14:27  Analyzed	Dil Fac
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	ge Organics (D)  Result  <50.0  <50.0  <50.0  <80.0  80.0  80.0  80.0  80.0  80.0	RO) (GC) Qualifier U U Qualifier	50.0  RL 50.0  50.0  50.0  Limits 70 - 130		Unit mg/Kg mg/Kg		Prepared 08/22/22 09:29 08/22/22 09:29 08/22/22 09:29 Prepared 08/22/22 09:29	08/23/22 14:48  Analyzed 08/22/22 14:27  08/22/22 14:27  Analyzed  08/22/22 14:27	Dil Fac
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	ge Organics (D)  Result  <50.0  <50.0  <50.0   %Recovery  98 89  omatography -	RO) (GC) Qualifier U U Qualifier	50.0  RL 50.0  50.0  50.0  Limits 70 - 130		Unit mg/Kg mg/Kg mg/Kg		Prepared 08/22/22 09:29 08/22/22 09:29 08/22/22 09:29 Prepared 08/22/22 09:29	08/23/22 14:48  Analyzed 08/22/22 14:27  08/22/22 14:27  Analyzed  08/22/22 14:27	Dil Fac

Client Sample ID: PH09 @ 1'

Date Collected: 08/19/22 09:05

Date Received: 08/19/22 13:46

Sample Depth: 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 16:38	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 16:38	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 16:38	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		08/22/22 08:59	08/22/22 16:38	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 16:38	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		08/22/22 08:59	08/22/22 16:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130				08/22/22 08:59	08/22/22 16:38	1

**Eurofins Carlsbad** 

2

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Lab Sample ID: 890-2787-2

Matrix: Solid

Lab Sample ID: 890-2787-2

# **Client Sample Results**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

Client Sample ID: PH09 @ 1'

Date Collected: 08/19/22 09:05 Date Received: 08/19/22 13:46

Sample Depth: 1

Analyte

Chloride

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	101		70 - 130				08/22/22 08:59	08/22/22 16:38	1
Method: Total BTEX - Total BTEX	( Calculation								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			08/22/22 18:04	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
					mg/Kg			08/23/22 14:48	1
Total TPH	<49.8	U	49.8		ilig/Kg			00/25/22 14.40	'
-			49.8		ilig/Kg			00/23/22 14.40	,
: Method: 8015B NM - Diesel Ranç	ge Organics (D		49.8 <b>R</b> L	MDL		D	Prepared	Analyzed	Dil Fac
Method: 8015B NM - Diesel Ranç Analyte	ge Organics (D	RO) (GC) Qualifier		MDL		<u>D</u>	Prepared 08/22/22 09:29		Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics	ge Organics (D	RO) (GC) Qualifier	RL	MDL	Unit	<u>D</u>	<u>.</u>	Analyzed	Dil Fac
Total TPH  Method: 8015B NM - Diesel Rang Analyte  Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	ge Organics (D	RO) (GC) Qualifier	RL	MDL	Unit	<u>D</u>	<u>.</u>	Analyzed	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	ge Organics (Di Result <49.8	RO) (GC) Qualifier	RL 49.8	MDL	Unit mg/Kg	<u>D</u>	08/22/22 09:29	<b>Analyzed</b> 08/22/22 14:49	Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	ge Organics (Di Result <49.8	RO) (GC) Qualifier U	RL 49.8	MDL	Unit mg/Kg	<u>D</u>	08/22/22 09:29	<b>Analyzed</b> 08/22/22 14:49	<b>Dil Fac</b> 1 1
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	ge Organics (Di Result <49.8	RO) (GC) Qualifier U	RL 49.8	MDL	Unit mg/Kg mg/Kg	<u>D</u>	08/22/22 09:29	Analyzed 08/22/22 14:49 08/22/22 14:49	Dil Fac  1  1  Dil Fac
Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10	ge Organics (D) Result <49.8 <49.8 <49.8	RO) (GC) Qualifier U	RL 49.8 49.8 49.8	MDL	Unit mg/Kg mg/Kg	<u> </u>	08/22/22 09:29 08/22/22 09:29 08/22/22 09:29	Analyzed 08/22/22 14:49 08/22/22 14:49 08/22/22 14:49	1 1

5.02

MDL Unit

mg/Kg

Prepared

Analyzed

08/24/22 10:10

Dil Fac

Result Qualifier

118

# **Surrogate Summary**

Client: Ensolum

Job ID: 890-2787-1

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

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)	
390-2787-1	PH09 @ 0.5'	97	99	
390-2787-1 MS	PH09 @ 0.5'	105	107	
90-2787-1 MSD	PH09 @ 0.5'	102	103	
390-2787-2	PH09 @ 1'	94	101	
CS 880-32594/1-A	Lab Control Sample	105	100	
.CSD 880-32594/2-A	Lab Control Sample Dup	102	106	
MB 880-32594/5-A	Method Blank	78	117	

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

_			
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-18312-A-12-E MS	Matrix Spike	92	83
880-18312-A-12-F MSD	Matrix Spike Duplicate	90	82
890-2787-1	PH09 @ 0.5'	98	89
890-2787-2	PH09 @ 1'	103	93
LCS 880-32606/2-A	Lab Control Sample	92	82
LCSD 880-32606/3-A	Lab Control Sample Dup	109	107
MB 880-32606/1-A	Method Blank	104	101

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum

MD MD

Job ID: 890-2787-1

SDG: Eddy County NM

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

Lab Sample ID: MB 880-32594/5-A

Lab Sample ID: LCS 880-32594/1-A

Matrix: Solid

Analysis Batch: 32625

Analysis Batch: 32625

Project/Site: Tucker Draw 9-4-4

**Matrix: Solid** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 32594

	MB	MR							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78	70 - 130	08/22/22 08:59	08/22/22 15:49	1
1,4-Difluorobenzene (Surr)	117	70 - 130	08/22/22 08:59	08/22/22 15:49	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 32594

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1035 mg/Kg 104 70 - 130 Toluene 0.100 0.1152 mg/Kg 115 70 - 130 0.100 Ethylbenzene 0.1166 mg/Kg 117 70 - 130 0.200 109 70 - 130 m-Xylene & p-Xylene 0.2172 mg/Kg 0.100 0.1148 70 - 130 o-Xylene mg/Kg 115

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	105	70 - 130
1,4-Difluorobenzene (Surr)	100	70 - 130

Lab Sample ID: LCSD 880-32594/2-A Client Sample ID: Lab Control Sample Dup

Spike

**Matrix: Solid** 

Analysis Batch: 32625

Prep Type: Total/NA Prep Batch: 32594

> RPD %Rec

Analyte	Added	Result Qu	alifier Unit	D %Rec	Limits	RPD	Limit
Benzene	0.100	0.1131	mg/Kg	113	70 - 130	9	35
Toluene	0.100	0.1109	mg/Kg	111	70 - 130	4	35
Ethylbenzene	0.100	0.1069	mg/Kg	107	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1993	mg/Kg	100	70 - 130	9	35
o-Xylene	0.100	0.1077	mg/Kg	108	70 - 130	6	35

LCSD LCSD

LCSD LCSD

Surrogate	%Recovery Qua	alifier Limits
4-Bromofluorobenzene (Surr)	102	70 - 130
1,4-Difluorobenzene (Surr)	106	70 - 130

Lab Sample ID: 890-2787-1 MS

**Matrix: Solid** 

Analysis Batch: 32625

Client Sample ID: PH09 @ 0.5'

Prep Type: Total/NA

Prep Batch: 32594

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U	0.0998	0.1080		mg/Kg		108	70 - 130	
Toluene	< 0.00199	U	0.0998	0.1089		mg/Kg		109	70 - 130	

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Released to Imaging: 12/8/2022 12:25:26 PM

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1

SDG: Eddy County NM

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

Lab Sample ID: 890-2787-1 MS

**Matrix: Solid** 

**Analysis Batch: 32625** 

Client Sample ID: PH09 @ 0.5'

Prep Type: Total/NA

Prep Batch: 32594

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00199	U	0.0998	0.1075		mg/Kg		108	70 - 130	
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1968		mg/Kg		99	70 - 130	
o-Xylene	<0.00199	U	0.0998	0.1049		mg/Kg		105	70 - 130	

MS MS

Surrogate	%Recovery	Qualifier	Limits		
4-Bromofluorobenzene (Surr)	105		70 - 130		
1,4-Difluorobenzene (Surr)	107		70 - 130		

Client Sample ID: PH09 @ 0.5'

Prep Type: Total/NA

Prep Batch: 32594

Lab Sample ID: 890-2787-1 MSD **Matrix: Solid Analysis Batch: 32625** 

Sample Sample Spike MSD MSD Result Qualifier Added Result Qualifier %Rec RPD Limit Analyte Unit Limits 0.100 Benzene <0.00199 U 0.08519 mg/Kg 85 70 - 130 24 35 Toluene <0.00199 U 0.09638 96 0.100 mg/Kg 70 - 130 12 35 Ethylbenzene <0.00199 U 0.100 0.09512 mg/Kg 95 70 - 130 12 35 <0.00398 U 0.201 0.1754 87 70 - 130 11 35 m-Xylene & p-Xylene mg/Kg <0.00199 U 0.100 0.09507 95 70 - 130 10 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

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

Lab Sample ID: MB 880-32606/1-A

**Matrix: Solid** 

Analysis Batch: 32588

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 32606

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		08/22/22 09:29	08/22/22 11:08	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		08/22/22 09:29	08/22/22 11:08	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/22/22 09:29	08/22/22 11:08	1
I and the second se									

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	104		70 - 130	08/22/22 09:29	08/22/22 11:08	1
o-Terphenyl	101		70 - 130	08/22/22 09:29	08/22/22 11:08	1

Lab Sample ID: LCS 880-32606/2-A

**Matrix: Solid** 

**Analysis Batch: 32588** 

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

Prep Batch: 32606

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	928.5		mg/Kg		93	70 - 130	 
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	891.9		mg/Kg		89	70 - 130	
C10-C28)								

Job ID: 890-2787-1

Client: Ensolum Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

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

82

Lab Sample ID: LCS 880-32606/2-A Client Sample ID: Lab Control Sample

Limits

70 - 130

70 - 130

**Matrix: Solid** 

Analysis Batch: 32588

Prep Type: Total/NA

Prep Batch: 32606

LCS LCS

Surrogate %Recovery Qualifier 1-Chlorooctane 92

Lab Sample ID: LCSD 880-32606/3-A

**Matrix: Solid** 

**Analysis Batch: 32588** 

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 32606

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit 1000 1038 104 70 - 13011 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 1035 104 mg/Kg 70 - 13020 15

C10-C28)

o-Terphenyl

LCSD LCSD

Sample Sample

<50.0 U F1

<50.0 U F1

Result Qualifier

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	107		70 - 130

Lab Sample ID: 880-18312-A-12-E MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

**Analysis Batch: 32588** 

Prep Type: Total/NA

Prep Batch: 32606

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<50.0	U F1	997	1593	F1	mg/Kg		157	70 - 130	
(GRO)-C6-C10										
Diesel Range Organics (Over	<50.0	U F1	997	1603	F1	mg/Kg		159	70 - 130	
C10-C28)										

C10-C28)

Analyte

(GRO)-C6-C10

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	83		70 - 130

Lab Sample ID: 880-18312-A-12-F MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid** 

Spike

Added

995

995

MSD MSD

Qualifier

Unit

mg/Kg

mg/Kg

Result

1760 F1

1588 F1

Analysis Batch: 32588

Gasoline Range Organics

Diesel Range Organics (Over

Prep Type: Total/NA Prep Batch: 32606

70 - 130

158

RPD %Rec %Rec Limits **RPD** Limit 174 70 - 130 10 20

C10-C28) MSD MSD %Recovery Qualifier Limits

Surrogate 1-Chlorooctane 90 70 - 130 o-Terphenyl 82 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** 

Client Sample ID: PH09 @ 1'

Client Sample ID: PH09 @ 1'

# **QC Sample Results**

Client: Ensolum Job ID: 890-2787-1
Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-32580/1-A

Matrix: Solid

Analysis Batch: 32762

MB MB

 Analyte
 Result Chloride
 Qualifier
 RL Unit mg/Kg
 Unit mg/Kg
 D Prepared Manalyzed
 Analyzed Dil Fac Dil Fac

Lab Sample ID: LCS 880-32580/2-A

Matrix: Solid

**Analysis Batch: 32762** 

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 237.4 mg/Kg 95 90 - 110

Lab Sample ID: LCSD 880-32580/3-A

Matrix: Solid

Analysis Batch: 32762

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Chloride 250 231.4 90 - 110 mg/Kg

Lab Sample ID: 890-2787-2 MS

Matrix: Solid

Analysis Batch: 32762

Spike MS MS Sample Sample %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 118 251 357.7 96 90 - 110 mg/Kg

Lab Sample ID: 890-2787-2 MSD

**Matrix: Solid** 

**Analysis Batch: 32762** 

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 251 118 357.3 mg/Kg 95 90 - 110 20

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# **QC Association Summary**

Client: Ensolum

Job ID: 890-2787-1 Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

# **GC VOA**

### Prep Batch: 32594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	5035	
890-2787-2	PH09 @ 1'	Total/NA	Solid	5035	
MB 880-32594/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2787-1 MS	PH09 @ 0.5'	Total/NA	Solid	5035	
890-2787-1 MSD	PH09 @ 0.5'	Total/NA	Solid	5035	

### Analysis Batch: 32625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	8021B	32594
890-2787-2	PH09 @ 1'	Total/NA	Solid	8021B	32594
MB 880-32594/5-A	Method Blank	Total/NA	Solid	8021B	32594
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	8021B	32594
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	32594
890-2787-1 MS	PH09 @ 0.5'	Total/NA	Solid	8021B	32594
890-2787-1 MSD	PH09 @ 0.5'	Total/NA	Solid	8021B	32594

### Analysis Batch: 32716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2787-2	PH09 @ 1'	Total/NA	Solid	Total BTEX	

### **GC Semi VOA**

### Analysis Batch: 32588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	8015B NM	32606
890-2787-2	PH09 @ 1'	Total/NA	Solid	8015B NM	32606
MB 880-32606/1-A	Method Blank	Total/NA	Solid	8015B NM	32606
LCS 880-32606/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	32606
LCSD 880-32606/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	32606
880-18312-A-12-E MS	Matrix Spike	Total/NA	Solid	8015B NM	32606
880-18312-A-12-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	32606

### Prep Batch: 32606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2787-2	PH09 @ 1'	Total/NA	Solid	8015NM Prep	
MB 880-32606/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-32606/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-32606/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-18312-A-12-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-18312-A-12-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 32785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	8015 NM	
890-2787-2	PH09 @ 1'	Total/NA	Solid	8015 NM	

# **QC Association Summary**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

# HPLC/IC

### Leach Batch: 32580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Soluble	Solid	DI Leach	
890-2787-2	PH09 @ 1'	Soluble	Solid	DI Leach	
MB 880-32580/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2787-2 MS	PH09 @ 1'	Soluble	Solid	DI Leach	
890-2787-2 MSD	PH09 @ 1'	Soluble	Solid	DI Leach	

# Analysis Batch: 32762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Soluble	Solid	300.0	32580
890-2787-2	PH09 @ 1'	Soluble	Solid	300.0	32580
MB 880-32580/1-A	Method Blank	Soluble	Solid	300.0	32580
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	300.0	32580
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	32580
890-2787-2 MS	PH09 @ 1'	Soluble	Solid	300.0	32580
890-2787-2 MSD	PH09 @ 1'	Soluble	Solid	300.0	32580

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Date Received: 08/19/22 13:46

Client: Ensolum

Job ID: 890-2787-1 Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Client Sample ID: PH09 @ 0.5'

Lab Sample ID: 890-2787-1 Date Collected: 08/19/22 09:00

**Matrix: Solid** 

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab 5035 32594 Total/NA Prep 5.03 g 5 mL 08/22/22 08:59 MR **EET MID** 8021B Total/NA Analysis 1 5 mL 5 mL 32625 08/22/22 16:18 MR **EET MID** Total/NA Analysis Total BTEX 32716 08/22/22 18:04 SM **EET MID** Total/NA 8015 NM 32785 08/23/22 14:48 **EET MID** Analysis 1 SM Total/NA 8015NM Prep 32606 08/22/22 09:29 EET MID Prep 10.01 g 10 mL AM Total/NA Analysis 8015B NM 32588 08/22/22 14:27 SM **EET MID** Soluble DI Leach 4.06 g 50 mL 32580 08/21/22 19:02 SMC Leach **EET MID** Soluble Analysis 300.0 5 32762 08/24/22 10:01 SMC **EET MID** 

Client Sample ID: PH09 @ 1'

Lab Sample ID: 890-2787-2 Date Collected: 08/19/22 09:05 **Matrix: Solid** 

Date Received: 08/19/22 13:46

	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	32594	08/22/22 08:59	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32625	08/22/22 16:38	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32716	08/22/22 18:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			32785	08/23/22 14:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	32606	08/22/22 09:29	AM	EET MID
Total/NA	Analysis	8015B NM		1			32588	08/22/22 14:49	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	32580	08/21/22 19:02	SMC	EET MID
Soluble	Analysis	300.0		1			32762	08/24/22 10:10	SMC	EET MID

**Laboratory References:** 

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

# **Accreditation/Certification Summary**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

### **Laboratory: Eurofins Midland**

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

Authority Texas		ogram	Identification Number	Expiration Date		
		ELAP	T104704400-22-24	06-30-23		
The following analytes	are included in this report by	it the laboratory is not certific	ed by the governing authority. This list ma	av include analytes for y		
the agency does not of		at the laboratory is not certific	ed by the governing additionty. This list the	ay ilicidde allaiytes for t		
0 ,		Matrix	Analyte	ay include analytes for t		
the agency does not of	fer certification.	•	, , ,	ay include analytes for t		

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# **Method Summary**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1

SDG: Eddy County NM

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

#### **Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### Laboratory References:

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

# **Sample Summary**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1

SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2787-1	PH09 @ 0.5'	Solid	08/19/22 09:00	08/19/22 13:46	0.5
890-2787-2	PH09 @ 1'	Solid	08/19/22 09:05	08/19/22 13:46	1

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Joseph Hernandez

Project Manager:

**Environment Testing** 

# **Chain of Custody**

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

Jim Raley

Bill to: (if different)

Work Order No:			····	
www.xenco.com	Page	1	1 of	
Work Order Co	<u> </u>			
T/PST PRP Brownf	ields 🗌 Ri	RC 🗌	Superfu	nd 🗌

Company Name:	Enso	lum				Company Name: Devon			Program: UST/PST   PRP Brownfields RRC Superfund														
Address:	3122	National	Parks H	lwy.		Address:		5315 Buena Vista Dr.						e of Pr									
City, State ZIP:	Carls	bad, NM	88220			City, Stat	City, State ZIP: Carlsbad, NM 88220			Reporting: Level II  Level III  PST/UST  TRRP  Level IV													
Phone:	2817	022329			Email:	l: jhernandez@ensolum.com					Deliverables: EDD ☐ ADaPT ☐ Other:												
Project Name:		Tucker	Draw 9	-4-4	Turn	n Around ANALYSIS REQ				QUES	r				Preservative Codes								
Project Number:		03A	198704	6	☑ Routine (	☐ Rush		Pres. Code													No	ne: NO	DI Water: H <sub>2</sub> C
Project Location:		Eddy C	County,	NM	Due Date:	M	HR														Co	ol: Cool	MeOH: Me
Sampler's Name:			LC		TAT starts th	e day recei	ived by														1	L: HC	HNO <sub>3</sub> : HN
PO #:					the lab, if red	eived by 4	:30pm	2				ŀ	1		1		, 	' 			H <sub>2</sub> S	50 <sub>4</sub> : H <sub>2</sub>	NaOH: Na
SAMPLE RECEI	PT	Temp E	Blank: (	es No	Wet Ice:	es	No	nete	6											PO <sub>4</sub> : HP			
Samples Received I	ntact:	(es)	No	Thermomete	er ID:	Ton	-57	772	300.0)										NaHSO <sub>4</sub> : NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>				
Cooler Custody Seal	s:	Yes No	MA	Correction F	actor:	-D.	2	ď	(EPA:					HINK									
Sample Custody Sea	als:	Yes No			890-27	187 C	ain of	Custoc	y				Zn Acetate+NaOH: Zn										
Total Containers:				Corrected T	emperature:	25	-4		i i	015)	(8021			030 2		Na			NaOH+Ascorbic Acid: SAPC				
Sample Ider	ntificat	ion	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp		CHLORIDES	TPH (8015)	втех (											Sampl	e Comments
PH09 @	0.5'		S	8/19/22	900	0.5'	Grab/	1	х	х	х										Inc	Incident ID: NAB1812338789	
PH09 (	@ 1'		s	8/19/22	905	1'	Grab/	1	х	Х	х												
																	_				Co	st Center	:106125501
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			1							<u> </u>					Т.,								

Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$86.00 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.

Relipquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
19	Jorans a Stet	P/19/22 1346	2		
3			4		
5			6		
L		L		F	Revised Date: 08/25/2020 Rev. 20

# **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-2787-1

SDG Number: Eddy County NM

List Source: Eurofins Carlsbad

Login Number: 2787 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: Ensolum Job Number: 890-2787-1 SDG Number: Eddy County NM

List Source: Eurofins Midland

List Creation: 08/22/22 08:49 AM

Login Number: 2787 List Number: 2

Creator: Rodriguez, Leticia

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

<6mm (1/4").

# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2788-1

Laboratory Sample Delivery Group: Eddy County NM

Client Project/Site: Tucker Draw 9-4-4

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Joseph Hernandez

RAMER

8/24/2022 3:58:56 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Authorized for release by:

**Review your project** results through EOL **Have a Question?** 

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Visit us at:

www.eurofinsus.com/Env Released to Imaging: 12/8/2022 12:25:26 PM signature is intended to be the legally binding equivalent of a traditionally handwritten

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

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

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Laboratory Job ID: 890-2788-1
SDG: Eddy County NM

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# **Definitions/Glossary**

Client: Ensolum Job ID: 890-2788-1 Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

### **Qualifiers**

### **GC VOA**

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

### **GC Semi VOA**

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

#### **HPLC/IC**

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

# Glossary

**EDL** 

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

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)

Estimated Detection Limit (Dioxin)

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

NC Not Calculated

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

NEG Negative / Absent POS Positive / Present **PQL Practical Quantitation Limit** 

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

**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

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

**TNTC** Too Numerous To Count

#### Case Narrative

Client: Ensolum

Job ID: 890-2788-1 Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Job ID: 890-2788-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2788-1

#### Receipt

The samples were received on 8/19/2022 1:46 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 25.4°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: (890-2789-A-1-E), (890-2789-A-1-F MS) and (890-2789-A-1-G MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: PH10 @ 0.5 (890-2788-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD NM: The surrogate recovery for the blank associated with preparation batch 880-32608 and analytical batch 880-32586 was outside the upper control limits.

Method 8015MOD\_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-32608 and analytical batch 880-32586 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

#### HPLC/IC

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

Client: Ensolum

Job ID: 890-2788-1 Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Client Sample ID: PH10 @ 0.5

Date Collected: 08/19/22 09:10 Date Received: 08/19/22 13:46

Lab Sample ID: 890-2788-1 Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC) Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Benzene <0.00199 0.00199 08/22/22 08:59 08/22/22 16:59 mg/Kg Toluene <0.00199 U 0.00199 mg/Kg 08/22/22 08:59 08/22/22 16:59 Ethylbenzene <0.00199 U 0.00199 mg/Kg 08/22/22 08:59 08/22/22 16:59 08/22/22 08:59 08/22/22 16:59 m-Xylene & p-Xylene <0.00398 U 0.00398 mg/Kg 0.00199 08/22/22 08:59 08/22/22 16:59 o-Xylene <0.00199 U mg/Kg 08/22/22 08:59 Xylenes, Total <0.00398 U 0.00398 08/22/22 16:59 mg/Kg Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 100 70 - 13008/22/22 08:59 08/22/22 16:59 1,4-Difluorobenzene (Surr) 100 70 - 130 08/22/22 08:59 08/22/22 16:59

**Method: Total BTEX - Total BTEX Calculation** Analyte Result Qualifier RI MDL Unit D Prepared Analyzed Dil Fac Total BTEX <0.00398 0.00398 mg/Kg 08/22/22 18:04

Method: 8015 NM - Diesel Range Organics (DRO) (GC) Analyte Result Qualifier RL MDL Unit D Analyzed Dil Fac Prepared Total TPH <50.0 U 50.0 mg/Kg 08/23/22 11:36

Method: 8015B NM - Diesel Range Organics (DRO) (GC) Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Gasoline Range Organics <50.0 U 08/22/22 13:44 50.0 08/22/22 09:31 mg/Kg (GRO)-C6-C10 <50.0 U 50.0 08/22/22 09:31 08/22/22 13:44 Diesel Range Organics (Over mg/Kg C10-C28) OII Range Organics (Over C28-C36) <50.0 U 50.0 08/22/22 09:31 08/22/22 13:44 mg/Kg %Recovery Qualifier Limits Prepared Analyzed Dil Fac Surrogate 1-Chlorooctane 66 S1-70 - 130 08/22/22 09:31 08/22/22 13:44

Method: 300.0 - Anions, Ion Chromatography - Soluble Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac 4.96 mg/Kg 08/24/22 10:38 21.9 Chloride

70 - 130

70

Client Sample ID: PH10 @ 1 Lab Sample ID: 890-2788-2

Date Collected: 08/19/22 09:15 Date Received: 08/19/22 13:46

o-Terphenyl

Method: 8021B - Volatile Organic Compounds (GC) Result Qualifier MDL Unit Analyte RL D Prepared Dil Fac Analyzed Benzene < 0.00199 U 0.00199 08/22/22 08:59 08/22/22 17:19 mg/Kg Toluene <0.00199 U 0.00199 mg/Kg 08/22/22 08:59 08/22/22 17:19 Ethylbenzene <0.00199 U 0.00199 mg/Kg 08/22/22 08:59 08/22/22 17:19 m-Xylene & p-Xylene <0.00398 U 0.00398 mg/Kg 08/22/22 08:59 08/22/22 17:19 o-Xylene <0.00199 U 0.00199 mg/Kg 08/22/22 08:59 08/22/22 17:19 Xylenes, Total mg/Kg <0.00398 U 0.00398 08/22/22 08:59 08/22/22 17:19 Qualifier Surrogate %Recovery Limits Prepared Analyzed Dil Fac 70 - 130 08/22/22 08:59 4-Bromofluorobenzene (Surr) 98 08/22/22 17:19 1,4-Difluorobenzene (Surr) 97 70 - 130 08/22/22 08:59 08/22/22 17:19

**Eurofins Carlsbad** 

**Matrix: Solid** 

08/22/22 09:31

08/22/22 13:44

# **Client Sample Results**

Client: Ensolum
Project/Site: Tucker Draw 9-4-4
SDG: Eddy County NM

Client Sample ID: PH10 @ 1

Date Collected: 08/19/22 09:15 Date Received: 08/19/22 13:46 Lab Sample ID: 890-2788-2

Matrix: Solid

<b>Method: Total BTEX - Total BTEX</b>	Calculation								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			08/22/22 18:04	
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	<49.9	U	49.9		mg/Kg			08/23/22 11:36	
Method: 8015B NM - Diesel Rang	je Organics (D	RO) (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 14:05	
(GRO)-C6-C10									
Diesel Range Organics (Over	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 14:05	
C10-C28)									
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 14:05	,
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	82		70 - 130				08/22/22 09:31	08/22/22 14:05	
o-Terphenyl	84		70 - 130				08/22/22 09:31	08/22/22 14:05	
Method: 300.0 - Anions, Ion Chro	matography -	Soluble							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22.8	-	4.95		mg/Kg			08/24/22 10:47	

Released to Imaging: 12/8/2022 12:25:26 PM

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# **Surrogate Summary**

Client: Ensolum

Job ID: 890-2788-1

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Reco
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2787-A-1-F MS	Matrix Spike	105	107	
890-2787-A-1-G MSD	Matrix Spike Duplicate	102	103	
890-2788-1	PH10 @ 0.5	100	100	
890-2788-2	PH10 @ 1	98	97	
LCS 880-32594/1-A	Lab Control Sample	105	100	
LCSD 880-32594/2-A	Lab Control Sample Dup	102	106	
MB 880-32594/5-A	Method Blank	78	117	

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

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

Matrix: Solid Prep Type: Total/NA

=			
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-2788-1	PH10 @ 0.5	66 S1-	70
890-2788-2	PH10 @ 1	82	84
890-2789-A-1-F MS	Matrix Spike	72	67 S1-
890-2789-A-1-G MSD	Matrix Spike Duplicate	62 S1-	58 S1-
LCS 880-32608/2-A	Lab Control Sample	72	74
LCSD 880-32608/3-A	Lab Control Sample Dup	86	91
MB 880-32608/1-A	Method Blank	63 S1-	68 S1-

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Ensolum

Job ID: 890-2788-1

SDG: Eddy County NM

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

Lab Sample ID: MB 880-32594/5-A

Lab Sample ID: LCS 880-32594/1-A

**Matrix: Solid** 

Analysis Batch: 32625

Project/Site: Tucker Draw 9-4-4

**Matrix: Solid** Analysis Batch: 32625 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 32594

		MB	MR							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Benzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
	Toluene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
	Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
	m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
	o-Xylene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
	Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
ı										

MB MB

MD MD

Surrogate	%Recovery Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78	70 - 130	08	8/22/22 08:59	08/22/22 15:49	1
1,4-Difluorobenzene (Surr)	117	70 - 130	08	8/22/22 08:59	08/22/22 15:49	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 32594

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1035 mg/Kg 104 70 - 130 Toluene 0.100 0.1152 mg/Kg 115 70 - 130 0.100 Ethylbenzene 0.1166 mg/Kg 117 70 - 130 0.200 0.2172 70 - 130 m-Xylene & p-Xylene mg/Kg 109 0.100 0.1148 70 - 130 o-Xylene mg/Kg 115

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	105	70 - 130
1,4-Difluorobenzene (Surr)	100	70 - 130

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

**Matrix: Solid** 

Analysis Batch: 32625

Lab Sample ID: LCSD 880-32594/2-A

Prep Type: Total/NA Prep Batch: 32594

	Spike	LCSD L	CSD				%Rec		RPD
Analyte	Added	Result C	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1131		mg/Kg		113	70 - 130	9	35
Toluene	0.100	0.1109		mg/Kg		111	70 - 130	4	35
Ethylbenzene	0.100	0.1069		mg/Kg		107	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1993		mg/Kg		100	70 - 130	9	35
o-Xylene	0.100	0.1077		mg/Kg		108	70 - 130	6	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1.4-Difluorobenzene (Surr)	106		70 - 130

Lab Sample ID: 890-2787-A-1-F MS

**Matrix: Solid** 

Analysis Batch: 32625

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

Prep Batch: 32594

	Sample	Sample	Spike MS MS %				%Rec			
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U	0.0998	0.1080		mg/Kg		108	70 - 130	
Toluene	< 0.00199	U	0.0998	0.1089		mg/Kg		109	70 - 130	

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1 SDG: Eddy County NM

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

Lab Sample ID: 890-2787-A-1-F MS

**Matrix: Solid** 

Analysis Batch: 32625

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 32594

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00199	U	0.0998	0.1075		mg/Kg		108	70 - 130	
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1968		mg/Kg		99	70 - 130	
o-Xylene	<0.00199	U	0.0998	0.1049		mg/Kg		105	70 - 130	

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	105	70 - 130
1,4-Difluorobenzene (Surr)	107	70 - 130

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

Prep Batch: 32594

Lab Sample ID: 890-2787-A-1-G MSD **Matrix: Solid** 

**Analysis Batch: 32625** 

	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	0.08519		mg/Kg		85	70 - 130	24	35
Toluene	<0.00199	U	0.100	0.09638		mg/Kg		96	70 - 130	12	35
Ethylbenzene	<0.00199	U	0.100	0.09512		mg/Kg		95	70 - 130	12	35
m-Xylene & p-Xylene	<0.00398	U	0.201	0.1754		mg/Kg		87	70 - 130	11	35
o-Xylene	<0.00199	U	0.100	0.09507		mg/Kg		95	70 - 130	10	35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

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

Lab Sample ID: MB 880-32608/1-A

**Matrix: Solid** 

Analysis Batch: 32586

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

Prep Batch: 32608

	IVID	IAID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1

MB MB

MR MR

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	63	S1-	70 - 130	08/22/22 09:3	08/22/22 11:08	1
o-Terphenyl	68	S1-	70 - 130	08/22/22 09:3 <sup>-</sup>	08/22/22 11:08	1

Lab Sample ID: LCS 880-32608/2-A

**Matrix: Solid** 

Analysis Batch: 32586

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

Prep Batch: 32608

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	708.2		mg/Kg		71	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	764.5		mg/Kg		76	70 - 130	
C10-C28)								

Job ID: 890-2788-1

Client: Ensolum Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

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

Lab Sample ID: LCS 880-32608/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid** 

Analysis Batch: 32586

Prep Type: Total/NA Prep Batch: 32608

LCS LCS %Recovery Qualifier Surrogate Limits 1-Chlorooctane 72 70 - 130 o-Terphenyl 74 70 - 130

Lab Sample ID: LCSD 880-32608/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

Analysis Batch: 32586

Prep Type: Total/NA

Me Me

Prep Batch: 32608

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 1000 744.7 74 70 - 1305 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 846.7 mg/Kg 85 70 - 13010 20 C10-C28)

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	86		70 - 130
o-Terphenyl	91		70 - 130

Sample Sample

Lab Sample ID: 890-2789-A-1-F MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

**Analysis Batch: 32586** 

Prep Type: Total/NA

Prep Batch: 32608

	Campic	Campic	Opino	14.0	1110				701100	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	<49.9	U	999	862.4		mg/Kg		86	70 - 130	
(GRO)-C6-C10 Diesel Range Organics (Over	<49.9	U F1	999	712.0		mg/Kg		71	70 - 130	
040,000)										

Snike

C10-C28)

MS MS %Recovery Qualifier Limits Surrogate 70 - 130 1-Chlorooctane 72 o-Terphenyl 67 S1-70 - 130

Lab Sample ID: 890-2789-A-1-G MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid** 

Analysis Batch: 32586

Prep Type: Total/NA

Prep Batch: 32608

	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	998	747.4		mg/Kg		75	70 - 130	14	20	
(GRO)-C6-C10												
Diesel Range Organics (Over	<49.9	U F1	998	626.3	F1	mg/Kg		63	70 - 130	13	20	
C10 C28)												

C10-C28)

	WISD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	62	S1-	70 - 130
o-Terphenyl	58	S1-	70 - 130

MSD MSD

# QC Sample Results

Client: Ensolum Job ID: 890-2788-1 Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-32580/1-A

**Matrix: Solid** 

Analysis Batch: 32762

Client Sample ID: Method Blank **Prep Type: Soluble** 

Dil Fac MDL Unit Analyte Result Qualifier RL D Prepared Analyzed Chloride <5.00 U 5.00 mg/Kg 08/24/22 07:34

мв мв

Lab Sample ID: LCS 880-32580/2-A Client Sample ID: Lab Control Sample **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 32762** 

Spike LCS LCS %Rec Added %Rec Analyte Result Qualifier Unit D Limits Chloride 250 237.4 mg/Kg 95 90 - 110

Lab Sample ID: LCSD 880-32580/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 32762

LCSD LCSD RPD Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 231.4 mg/Kg 90 - 110

Lab Sample ID: 890-2787-A-2-D MS Client Sample ID: Matrix Spike **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 32762

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added Qualifier %Rec Result Unit Limits Chloride 118 251 357.7 90 - 110 mg/Kg

Lab Sample ID: 890-2787-A-2-E MSD Client Sample ID: Matrix Spike Duplicate **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 32762** 

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chloride 251 118 357.3 mg/Kg 95 90 - 110 20

# **QC Association Summary**

Client: Ensolum

Job ID: 890-2788-1 Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

### **GC VOA**

# Prep Batch: 32594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	5035	
890-2788-2	PH10 @ 1	Total/NA	Solid	5035	
MB 880-32594/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2787-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2787-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 32625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	8021B	32594
890-2788-2	PH10 @ 1	Total/NA	Solid	8021B	32594
MB 880-32594/5-A	Method Blank	Total/NA	Solid	8021B	32594
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	8021B	32594
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	32594
890-2787-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	32594
890-2787-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	32594

### Analysis Batch: 32717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	Total BTEX	
890-2788-2	PH10 @ 1	Total/NA	Solid	Total BTEX	

# GC Semi VOA

### Analysis Batch: 32586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	8015B NM	32608
890-2788-2	PH10 @ 1	Total/NA	Solid	8015B NM	32608
MB 880-32608/1-A	Method Blank	Total/NA	Solid	8015B NM	32608
LCS 880-32608/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	32608
LCSD 880-32608/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	32608
890-2789-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	32608
890-2789-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	32608

### Prep Batch: 32608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	8015NM Prep	
890-2788-2	PH10 @ 1	Total/NA	Solid	8015NM Prep	
MB 880-32608/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-32608/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-32608/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
390-2789-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2789-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### **Analysis Batch: 32776**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	8015 NM	
890-2788-2	PH10 @ 1	Total/NA	Solid	8015 NM	

# **QC Association Summary**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

# HPLC/IC

### Leach Batch: 32580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Soluble	Solid	DI Leach	
890-2788-2	PH10 @ 1	Soluble	Solid	DI Leach	
MB 880-32580/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2787-A-2-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2787-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

# Analysis Batch: 32762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Soluble	Solid	300.0	32580
890-2788-2	PH10 @ 1	Soluble	Solid	300.0	32580
MB 880-32580/1-A	Method Blank	Soluble	Solid	300.0	32580
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	300.0	32580
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	32580
890-2787-A-2-D MS	Matrix Spike	Soluble	Solid	300.0	32580
890-2787-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	32580

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### **Lab Chronicle**

Client: Ensolum

Job ID: 890-2788-1

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

Client Sample ID: PH10 @ 0.5

Date Collected: 08/19/22 09:10 Date Received: 08/19/22 13:46 Lab Sample ID: 890-2788-1

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	32594	08/22/22 08:59	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32625	08/22/22 16:59	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32717	08/22/22 18:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			32776	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 13:44	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	32580	08/21/22 19:02	SMC	EET MID
Soluble	Analysis	300.0		1			32762	08/24/22 10:38	SMC	EET MID

Client Sample ID: PH10 @ 1

Date Collected: 08/19/22 09:15

Date Received: 08/19/22 13:46

**Lab Sample ID: 890-2788-2** 

Matrix: Solid

Batch Dil Initial Final Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab 5035 Total/NA Prep 5.03 g 5 mL 32594 08/22/22 08:59 MR EET MID 8021B Total/NA 5 mL 32625 08/22/22 17:19 **EET MID** Analysis 1 5 mL MR Total/NA Total BTEX 32717 08/22/22 18:04 Analysis 1 SM **EET MID** Total/NA Analysis 8015 NM 32776 08/23/22 11:36 SM **EET MID** Total/NA 32608 Prep 8015NM Prep 10.02 g 10 mL 08/22/22 09:31 AM EET MID Total/NA Analysis 8015B NM 32586 08/22/22 14:05 SM **EET MID** Soluble Leach DI Leach 5.05 g 50 mL 32580 08/21/22 19:02 SMC **EET MID** Soluble Analysis 300.0 32762 08/24/22 10:47 SMC **EET MID** 

**Laboratory References:** 

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

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# **Accreditation/Certification Summary**

Client: Ensolum

Job ID: 890-2788-1

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

# **Laboratory: Eurofins Midland**

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

Authority	hority Program		Program		Identification Number	Expiration Date
Texas		ELAP	T104704400-22-24	06-30-23		
The following englytes	and the street and the state of a contract that					
the agency does not of	• '	it the laboratory is not certifi	ed by the governing authority. This list ma	ay include analytes for		
,	• '	t the laboratory is not certifi  Matrix	ed by the governing authority. This list ma	ay include analytes for		
the agency does not of	fer certification.	•	, , ,	ay include analytes for		

# **Method Summary**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1

SDG: Eddy County NM

Method	Method Description	Protocol	Laboratory
3021B	Volatile Organic Compounds (GC)	SW846	EET MID
otal BTEX	Total BTEX Calculation	TAL SOP	EET MID
015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
00.0	Anions, Ion Chromatography	MCAWW	EET MID
035	Closed System Purge and Trap	SW846	EET MID
015NM Prep	Microextraction	SW846	EET MID
I Leach	Deionized Water Leaching Procedure	ASTM	EET MID

#### **Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### Laboratory References:

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

# **Sample Summary**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1

ed		

SDG: Eddy County NM

Lab Sample ID Client Sample ID Matrix Collected Receiv 890-2788-1 PH10 @ 0.5 Solid 08/19/22 09:10 08/19/22 13:46 890-2788-2 PH10 @ 1 Solid 08/19/22 09:15 08/19/22 13:46

Received by OCD: 8/31/2022 3:37:11|PM

Environment Testing Xenco

# **Chain of Custody**

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

Work Order No:				
		1	1	
www.xenco.com	Page _		of	
Work Order Co	mments			
ST/PST PRP Brownf	ields 🗌 R	RC 🗌	Superfu	nd 🗌
ect.				

Project Manager:	Josep	on Hernar	naez			BIH (O: (II	amerent	,	א ווווכ	aley											<del>••••</del>				
Company Name:	Enso	lum				Compan	y Name	:	Devo	Devon 5315 Buena Vista Dr. Carlsbad, NM 88220 n.com					_	Program: UST/PST   PRP   Brownfields   RRC   Superfund   State of Project: Reporting: Level    Level    PST/UST   TRRP   Level  V									
Address:	3122	National	Parks H	łwy.		Address:			5315						- 1										
City, State ZIP:	Carls	bad, NM	88220			City, Sta	te ZIP:		Carls						_										
Phone:	28170	022329			Email:	jhernan	dez@e	nsolu	m.con							Deliverables: EDD ADaPT Other:									
Project Name:		Tucker	Draw 9	-4-4	Turr	Around								ANAL	YSIS	REQ	UEST						Prese	ervativ	e Codes
Project Number:		03A	198704	6	☑ Routine	☐ Rush	)	Pres. Code														None: NO	Ţ	Ol Water: I	
Project Location:		Eddy C	County,	NM	Due Date:	24	中																Cool: Cool		меОН: Ме
Sampler's Name: PO #:	LC				s the day received by received by 4:30pm		ē							: 1	: 11					HNO <sub>3</sub> : HN NaOH: Na					
SAMPLE RECE	IPT	Temp E		(Fes No	Wet Ice:	Yes	No	nete	6		ł			- Hill									H₃PO₄: HP		
Samples Received I Cooler Custody Sea		Yès No		Thermomete Correction F		-0	Thu 00 1		PA: 300.0)											NaHSO <sub>4</sub> : NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>					
Sample Custody Seals: Yes No N/A Temperature R		e Reading:	25		2	S (E		-			890-2788 Chair			ain of Custody			Zn Acetate+NaOH: Zn								
Total Containers:				Corrected T	emperature:	25	5.4		SDE	015)	802			1	- 1			1	1			1	NaOH+Asc	orbic A	cid: SAPC
Sample Ide	ntificat	ion	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	CHLORIDES (EP	TPH (8015)	BTEX (8021												Sam	ole Co	mments
PH10 @	② 0.5'		s	8/19/22	910	0.5'	Grab/	1	х	х	х											$\perp$	Incident ID	: NAB	18123387
PH10	@ 1'		S	8/19/22	915	1'	Grab/	1	х	x	X									<u> </u>		—			. 055
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İ	Total	200.7	/ 6010	200.8	/ 6020: be analyzed
l	Circle M	ethod(s	s) and N	fetal(s) to	be analyzed

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 TCLP/SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631/245.1/7470 /7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1/1h	Anomala Estut	8/9/12 1346	2		
8			4		
5			6		Revised Date: 08/25/2020 Rev. 2020 2

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2788-1 SDG Number: Eddy County NM

List Source: Eurofins Carlsbad

Login Number: 2788 List Number: 1 Creator: Clifton, Cloe

Question Answer Comment

The cooler's custody seal, if present, is intact.

Sample custody seals, if present, are intact.

The cooler or samples do not appear to have been compromised or tampered with.

Samples were received on ice.

Cooler Temperature is acceptable.

Cooler Temperature is recorded.

COC is present.

COC is filled out in ink and legible.

COC is filled out with all pertinent information.

Is the Field Sampler's name present on COC?

There are no discrepancies between the containers received and the COC.

Samples are received within Holding Time (excluding tests with immediate

HTs)

Sample containers have legible labels.

Containers are not broken or leaking.

Sample collection date/times are provided.

Appropriate sample containers are used.

Sample bottles are completely filled.

Sample Preservation Verified.

There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs

Containers requiring zero headspace have no headspace or bubble is

<6mm (1/4").

Released to Imaging: 12/8/2022 12:25:26 PM

8/24/2022

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2788-1 SDG Number: Eddy County NM

List Source: Eurofins Midland

Login Number: 2788 List Number: 2 List Creation: 08/22/22 08:49 AM

Creator: Rodriguez, Leticia

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

Page 20 of 20

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2789-1

Laboratory Sample Delivery Group: Eddy County NM

Client Project/Site: Tucker Draw 9-4-4

For:

eurofins

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Joseph Hernandez

JURAMER

Authorized for release by: 8/24/2022 3:59:27 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

Review your project results through

····· Links ······

Have a Question?



Visit us at:

www.eurofinsus.com/Env
Released to Imaging: 12/8/2022 12:25:26 PM

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

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

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Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Laboratory Job ID: 890-2789-1
SDG: Eddy County NM

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QC Sample Results	8
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## **Definitions/Glossary**

Client: Ensolum Job ID: 890-2789-1
Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

#### **Qualifiers**

#### **GC VOA**

Qualifier Description

U Indicates the analyte was analyzed for but not detected.

#### **GC Semi VOA**

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

#### **HPLC/IC**

iption

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"

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: Ensolum

Job ID: 890-2789-1 Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

Job ID: 890-2789-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2789-1

#### Receipt

The samples were received on 8/19/2022 1:46 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 25.4°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: PH11 @ 0.5 (890-2789-1), (890-2789-A-1-F MS) and (890-2789-A-1-G MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: The surrogate recovery for the blank associated with preparation batch 880-32608 and analytical batch 880-32586 was outside the upper control limits.

Method 8015MOD NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-32608 and analytical batch 880-32586 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

#### HPLC/IC

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

# **Client Sample Results**

Client: Ensolum Job ID: 890-2789-1 Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Client Sample ID: PH11 @ 0.5

Date Collected: 08/19/22 09:30 Date Received: 08/19/22 13:46

Sample Depth: 0.5

Lab Sample ID: 890-2789-1 Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		08/22/22 08:59	08/22/22 17:39	1
Toluene	<0.00201	U	0.00201		mg/Kg		08/22/22 08:59	08/22/22 17:39	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		08/22/22 08:59	08/22/22 17:39	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		08/22/22 08:59	08/22/22 17:39	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		08/22/22 08:59	08/22/22 17:39	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		08/22/22 08:59	08/22/22 17:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130				08/22/22 08:59	08/22/22 17:39	1
1,4-Difluorobenzene (Surr)	103		70 - 130				08/22/22 08:59	08/22/22 17:39	1
- Method: Total BTEX - Total BTEX	( Calculation								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			08/22/22 18:04	1
- Method: 8015 NM - Diesel Range	Organics (DB)	0) (CC)							
Analyte	•	Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	- <del>&lt;49.9</del>		49.9		mg/Kg	=	- roparou	08/23/22 11:36	1
- · · · · · · · · · · · · · · · · · · ·									
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 12:18	1
(GRO)-C6-C10									
Diesel Range Organics (Over	<49.9	U F1	49.9		mg/Kg		08/22/22 09:31	08/22/22 12:18	1
C10-C28)	.40.0		40.0		11.6		00/00/00 00 04	00/00/00 40 40	
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 12:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	67	S1-	70 - 130				08/22/22 09:31	08/22/22 12:18	1
o-Terphenyl	71		70 - 130				08/22/22 09:31	08/22/22 12:18	1
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble							
•									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: PH11 @ 1

Date Collected: 08/19/22 09:35 Date Received: 08/19/22 13:46

Sample Depth: 1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 18:00	1
Toluene	0.00607		0.00200		mg/Kg		08/22/22 08:59	08/22/22 18:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 18:00	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		08/22/22 08:59	08/22/22 18:00	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 18:00	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		08/22/22 08:59	08/22/22 18:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130				08/22/22 08:59	08/22/22 18:00	1

**Eurofins Carlsbad** 

Lab Sample ID: 890-2789-2

**Matrix: Solid** 

Matrix: Solid

Lab Sample ID: 890-2789-2

08/24/22 11:24

# **Client Sample Results**

Client: Ensolum Job ID: 890-2789-1
Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Client Sample ID: PH11 @ 1

Date Collected: 08/19/22 09:35 Date Received: 08/19/22 13:46

Sample Depth: 1

Chloride

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	101		70 - 130				08/22/22 08:59	08/22/22 18:00	1
Method: Total BTEX - Total BTEX	( Calculation								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00607		0.00401		mg/Kg			08/22/22 18:04	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			08/23/22 11:36	1
Analyte	Result	Qualifier	RL	MDL		<u>D</u>	Prepared	Analyzed	Dil Fac
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)							
Gasoline Range Organics	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 13:22	1
(GRO)-C6-C10 Diesel Range Organics (Over	<49.9	11	49.9		mg/Kg		08/22/22 09:31	08/22/22 13:22	1
C10-C28)	<b>\45.5</b>	U	49.9		mg/rkg		00/22/22 09.51	00/22/22 13.22	'
Oll Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 13:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	77		70 - 130				08/22/22 09:31	08/22/22 13:22	1
o-Terphenyl	75		70 - 130				08/22/22 09:31	08/22/22 13:22	1
o-Terphenyl  Method: 300.0 - Anions, Ion Chro		Soluble	70 - 130				08/22/22 09:31	08/22/22 13:22	
Analyte	Desuit	Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil F

5.00

mg/Kg

484

# **Surrogate Summary**

Client: Ensolum

Job ID: 890-2789-1

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

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)	
90-2787-A-1-F MS	Matrix Spike	105	107	
390-2787-A-1-G MSD	Matrix Spike Duplicate	102	103	
390-2789-1	PH11 @ 0.5	96	103	
90-2789-2	PH11 @ 1	89	101	
CS 880-32594/1-A	Lab Control Sample	105	100	
CSD 880-32594/2-A	Lab Control Sample Dup	102	106	
MB 880-32594/5-A	Method Blank	78	117	

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

=			
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-2789-1	PH11 @ 0.5	67 S1-	71
890-2789-1 MS	PH11 @ 0.5	72	67 S1-
890-2789-1 MSD	PH11 @ 0.5	62 S1-	58 S1-
890-2789-2	PH11 @ 1	77	75
LCS 880-32608/2-A	Lab Control Sample	72	74
LCSD 880-32608/3-A	Lab Control Sample Dup	86	91
MB 880-32608/1-A	Method Blank	63 S1-	68 S1-

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

## QC Sample Results

Job ID: 890-2789-1 Client: Ensolum Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-32594/5-A

**Matrix: Solid** Analysis Batch: 32625 Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 32594

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1

MB MB

Surrogate	%Recovery Qua	alifier Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78	70 - 130	08/22/22 08:59	08/22/22 15:49	1
1,4-Difluorobenzene (Surr)	117	70 - 130	08/22/22 08:59	08/22/22 15:49	1

Spike

Added

0.100

0.100

0.100

0.200

0.100

LCS LCS

0.1035

0.1152

0.1166

0.2172

0.1148

Result Qualifier

Unit

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

Lab Sample ID: LCS 880-32594/1-A

**Matrix: Solid** 

Analyte

Benzene

Toluene

o-Xylene

Ethylbenzene

m-Xylene & p-Xylene

Analysis Batch: 32625

**Client Sample ID: Lab Control Sample** 

70 - 130

70 - 130

109

115

Prep Type: Total/NA

Prep Batch: 32594

%Rec Limits 104 70 - 130 115 70 - 130 117 70 - 130

LCS LCS

Surrogate	%Recovery Qualific	er Limits
4-Bromofluorobenzene (Surr)	105	70 - 130
1,4-Difluorobenzene (Surr)	100	70 - 130

Lab Sample ID: LCSD 880-32594/2-A

**Matrix: Solid** 

Analysis Batch: 32625

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

Prep Type: Total/NA

Prep Batch: 32594

	Spike	LCSD L	CSD				%Rec		RPD
Analyte	Added	Result C	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1131		mg/Kg		113	70 - 130	9	35
Toluene	0.100	0.1109		mg/Kg		111	70 - 130	4	35
Ethylbenzene	0.100	0.1069		mg/Kg		107	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1993		mg/Kg		100	70 - 130	9	35
o-Xylene	0.100	0.1077		mg/Kg		108	70 - 130	6	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1.4-Difluorobenzene (Surr)	106		70 - 130

Lab Sample ID: 890-2787-A-1-F MS

**Matrix: Solid** 

Analysis Batch: 32625

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

Prep Batch: 32594

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00199	U	0.0998	0.1080		mg/Kg	_	108	70 - 130	
Toluene	< 0.00199	U	0.0998	0.1089		mg/Kg		109	70 - 130	

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1

SDG: Eddy County NM

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

Lab Sample ID: 890-2787-A-1-F MS

Lab Sample ID: 890-2787-A-1-G MSD

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 32625

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

Prep Batch: 32594

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene < 0.00199 U 0.0998 0.1075 108 70 - 130 mg/Kg m-Xylene & p-Xylene <0.00398 U 0.200 0.1968 mg/Kg 99 70 - 130 <0.00199 U 0.0998 o-Xylene 0.1049 105 70 - 130 mg/Kg

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	105	70 - 130
1,4-Difluorobenzene (Surr)	107	70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 32594

RPD

**Analysis Batch: 32625** Sample Sample Spike MSD MSD Result Qualifier Added Result Qualifier RPD Limit Analyte Unit %Rec Limits 0.100 Benzene <0.00199 U 0.08519 mg/Kg 85 70 - 130 24 35 Toluene <0.00199 0.100 0.09638 mg/Kg 96 70 - 130 12 35 Ethylbenzene <0.00199 U 0.100 0.09512 95 70 - 130 12 35 mg/Kg 0.201 87 70 - 130 m-Xylene & p-Xylene <0.00398 U 0.1754 mg/Kg 11 35 <0.00199 U 0.100 0.09507 95 70 - 130 o-Xylene mg/Kg 10

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

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

Lab Sample ID: MB 880-32608/1-A

**Matrix: Solid** 

Analysis Batch: 32586

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 32608

	IIID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1

MB MB

MR MR

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1-Chlorooctane	63	S1-	70 - 130	08.	3/22/22 09:31	08/22/22 11:08	1
o-Terphenyl	68	S1-	70 - 130	08.	3/22/22 09:31	08/22/22 11:08	1

Lab Sample ID: LCS 880-32608/2-A

**Matrix: Solid** 

Analysis Batch: 32586

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 32608

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	708.2		mg/Kg		71	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	764.5		mg/Kg		76	70 - 130	
C10-C28)								

Job ID: 890-2789-1 Client: Ensolum Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

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

LCS LCS

LCSD LCSD

%Recovery Qualifier

72

Lab Sample ID: LCS 880-32608/2-A **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

Surrogate

1-Chlorooctane

Analysis Batch: 32586

Prep Type: Total/NA

Prep Batch: 32608

o-Terphenyl 74 70 - 130

Limits

70 - 130

Lab Sample ID: LCSD 880-32608/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid** Prep Type: Total/NA

Prep Batch: 32608

Analysis Batch: 32586 Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits **RPD** Limit 1000 744.7 74 70 - 1305 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 846.7 mg/Kg 85 70 - 13010 20

C10-C28)

Surrogate %Recovery Qualifier Limits 70 - 130 1-Chlorooctane 86 91 70 - 130 o-Terphenyl

Lab Sample ID: 890-2789-1 MS Client Sample ID: PH11 @ 0.5

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

Analysis Batch: 32586 Prep Batch: 32608 Sample Sample MS MS Spike

Analyte Added Result Qualifier Result Qualifier Unit D %Rec Limits Gasoline Range Organics <49.9 U 999 862.4 mg/Kg 86 70 - 130 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 UF1 999 712.0 mg/Kg 71 70 - 130

C10-C28)

MS MS %Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 72 67 S1o-Terphenyl 70 - 130

Lab Sample ID: 890-2789-1 MSD Client Sample ID: PH11 @ 0.5

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 32586 Prep Batch: 32608

Spike MSD MSD RPD Sample Sample %Rec

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	<49.9	U	998	747.4		mg/Kg		75	70 - 130	14	20
(GRO)-C6-C10											
Diesel Range Organics (Over	<49.9	U F1	998	626.3	F1	mg/Kg		63	70 - 130	13	20
C10-C28)											

MSD MSD %Recovery Qualifier Surrogate Limits

1-Chlorooctane 62 S1-70 - 130 58 S1-70 - 130 o-Terphenyl

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

Client Sample ID: Lab Control Sample Dup

Client Sample ID: Matrix Spike Duplicate

**Prep Type: Soluble** 

Client Sample ID: Matrix Spike

## **QC Sample Results**

Client: Ensolum Job ID: 890-2789-1
Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

**Method: 300.0 - Anions, Ion Chromatography** 

Lab Sample ID: MB 880-32580/1-A

Matrix: Solid

Analysis Batch: 32762

MB MB

Analyte	Result	Qualifier	RL	MDL	Unit	I	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg				08/24/22 07:34	1

Lab Sample ID: LCS 880-32580/2-A

Matrix: Solid

Analysis Batch: 32762

Spike LCS LCS %Rec Added Result Qualifier Analyte Unit D %Rec Limits Chloride 250 237.4 mg/Kg 95 90 - 110

Lab Sample ID: LCSD 880-32580/3-A

Matrix: Solid

Analysis Batch: 32762

LCSD LCSD %Rec RPD Spike Analyte Added Result Qualifier Unit Limits **RPD** Limit Chloride 250 231.4 90 - 110 mg/Kg

Lab Sample ID: 890-2787-A-2-D MS

Matrix: Solid

**Analysis Batch: 32762** 

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	118		251	357.7		mg/Kg		96	90 - 110	

Lab Sample ID: 890-2787-A-2-E MSD

**Matrix: Solid** 

**Analysis Batch: 32762** 

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	118		251	357.3		mg/Kg		95	90 - 110	0	20

# **QC Association Summary**

Client: Ensolum Project/Site: Tucker Draw 9-4-4 Job ID: 890-2789-1

SDG: Eddy County NM

### **GC VOA**

## Prep Batch: 32594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	5035	_
890-2789-2	PH11 @ 1	Total/NA	Solid	5035	
MB 880-32594/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2787-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2787-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 32625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	8021B	32594
890-2789-2	PH11 @ 1	Total/NA	Solid	8021B	32594
MB 880-32594/5-A	Method Blank	Total/NA	Solid	8021B	32594
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	8021B	32594
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	32594
890-2787-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	32594
890-2787-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	32594

### Analysis Batch: 32718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	Total BTEX	
890-2789-2	PH11 @ 1	Total/NA	Solid	Total BTEX	

### **GC Semi VOA**

#### Analysis Batch: 32586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	8015B NM	32608
890-2789-2	PH11 @ 1	Total/NA	Solid	8015B NM	32608
MB 880-32608/1-A	Method Blank	Total/NA	Solid	8015B NM	32608
LCS 880-32608/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	32608
LCSD 880-32608/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	32608
890-2789-1 MS	PH11 @ 0.5	Total/NA	Solid	8015B NM	32608
890-2789-1 MSD	PH11 @ 0.5	Total/NA	Solid	8015B NM	32608

### Prep Batch: 32608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	8015NM Prep	
890-2789-2	PH11 @ 1	Total/NA	Solid	8015NM Prep	
MB 880-32608/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-32608/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-32608/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2789-1 MS	PH11 @ 0.5	Total/NA	Solid	8015NM Prep	
890-2789-1 MSD	PH11 @ 0.5	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 32775**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	8015 NM	
890-2789-2	PH11 @ 1	Total/NA	Solid	8015 NM	

# **QC Association Summary**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

## HPLC/IC

### Leach Batch: 32580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Soluble	Solid	DI Leach	
890-2789-2	PH11 @ 1	Soluble	Solid	DI Leach	
MB 880-32580/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2787-A-2-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2787-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 32762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Soluble	Solid	300.0	32580
890-2789-2	PH11 @ 1	Soluble	Solid	300.0	32580
MB 880-32580/1-A	Method Blank	Soluble	Solid	300.0	32580
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	300.0	32580
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	32580
890-2787-A-2-D MS	Matrix Spike	Soluble	Solid	300.0	32580
890-2787-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	32580

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## **Lab Chronicle**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

Client Sample ID: PH11 @ 0.5

Date Collected: 08/19/22 09:30 Date Received: 08/19/22 13:46 Lab Sample ID: 890-2789-1

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			4.97 g	5 mL	32594	08/22/22 08:59	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32625	08/22/22 17:39	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32718	08/22/22 18:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			32775	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 12:18	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	32580	08/21/22 19:02	SMC	EET MID
Soluble	Analysis	300.0		5			32762	08/24/22 11:15	SMC	EET MID

Client Sample ID: PH11 @ 1

Date Collected: 08/19/22 09:35

Date Received: 08/19/22 13:46

**Lab Sample ID: 890-2789-2** 

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	32594	08/22/22 08:59	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32625	08/22/22 18:00	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32718	08/22/22 18:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			32775	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 13:22	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	32580	08/21/22 19:02	SMC	EET MID
Soluble	Analysis	300.0		1			32762	08/24/22 11:24	SMC	EET MID

**Laboratory References:** 

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

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# **Accreditation/Certification Summary**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

SDG: Eddy County NM

### **Laboratory: Eurofins Midland**

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

Authority Texas		ogram	Identification Number	Expiration Date 06-30-23	
		ELAP	T104704400-22-24		
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	
the agency does not of	fer certification.	•	, , ,	.,	
the agency does not of Analysis Method	fer certification .  Prep Method	Matrix	Analyte	-,	
0 ,		Matrix Solid	Analyte Total TPH		

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## **Method Summary**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1

SDG: Eddy County NM

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

#### **Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### Laboratory References:

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

# **Sample Summary**

Client: Ensolum

Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1

SDG: Eddy Co

day County NM	

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2789-1	PH11 @ 0.5	Solid	08/19/22 09:30	08/19/22 13:46	0.5
890-2789-2	PH11 @ 1	Solid	08/19/22 09:35	08/19/22 13:46	1

Received by OCD: 8/31/2022 3:37:14 PM

Joseph Hernandez

Project Manager:

Environment Testing Xenco

# **Chain of Custody**

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

Jim Raley

Bill to: (if different)

Work Order No: _				
		1	1	
www.xenco.com	Page _		of	
Work Order Co	mments			
ST/PST   PRP Brownfi	eids 🗌 R	RC 🗌 S	Superfun	d 🗌
ect:				
🗀 🗆 por#	CT D T	оо П	Lovell	$\Box$

Company Name:	Ensol	um				Compan	y Name	:	Devo	n						Program: UST/PST PRP Brownfields RRC Superfu				perfund [	П				
Address:	3122	National	Parks H	wy.	-	Address			5315	Buena	Vista I	Dr.					State of Project:					_	1		
City, State ZIP:	Carls	bad, NM	88220			City, Sta	te ZIP:		Carls	bad, N	M 8822	20									☐ PS	I/UST 🗌 TR	RP 🗌	Level IV	
Phone:	28170	22329			Email:	jhernan	dez@e	nsolu	m.cor	<u>n</u>							elivera	bles:	EDD [		ADaP	r 🗆 Ot	her:		
Project Name:		Tucker	Draw 9	4-4	Turn	Around								ANAL	YSIS	REQU	EST					Prese	rvative C	odes	
Project Number:		03A	1987046	3	☑ Routine	Rush	8	Pres. Code														None: NO	DI V	Vater: H₂C	
Project Location:		Eddy (	County, I	NM	Due Date:	7	142															Cool: Cool	Me	DH: Me	
Sampler's Name: PO #:			LC		TAT starts the		ived by						1	 	 	 	 	) Olerania	l			HCL: HC H <sub>2</sub> S0 <sub>4</sub> : H <sub>2</sub>		O₃: HN )H: Na	
SAMPLE RECEI Samples Received In		Temp	Blank: No	Yes No Thermomete	Wet Ice: er ID:	(Dr.		Parameters	(EPA: 300.0)													H₃PO₄: HP NaHSO₄: NA			
Cooler Custody Seal	s:	Yes N	O NA	Correction F	actor:	-0		à	Α̈́				HIM	HIMMAN								Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : Na			1
Sample Custody Sea	als:	Yes No	o (N/A	Temperature		25			S		-		890	-2789	Chair	of Cus	tody		_	- 1		Zn Acetate+			1
Total Containers:				Corrected T	emperature:	25	.4	-	RIDES	(8015)	802		1	1	1	1	1	1	1	1		NaOH+Asco	Proic Acid:	SAPC	1
Sample Iden	ntificati	lon	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp		임	1РН (8	BTEX (8021											Samp	le Comn	nents	
PH11@	0.5		s	8/19/22	930	0.5'	Grab/	1	х	х	х											Incident ID	NAB18	12338789	1
PH11 (	@ 1'		s	8/19/22	935	1'	Grab/	1	х	х	х														
																	_		$\perp$			Cost Cente	r: 106	12550	7
A			-								-						$\dashv$	+	+		+				1
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Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed 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 TCLP/SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631/245.1/7470 /7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
·MN	Amenda Stut	8119122 1346	2		
3			4		
5			6		
L				F	Revised Date: 08/25/2020 Rev.

## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2789-1 SDG Number: Eddy County NM

List Source: Eurofins Carlsbad

Login Number: 2789 List Number: 1 Creator: Clifton, Cloe

Question Answer Comment

The cooler's custody seal, if present, is intact.

Sample custody seals, if present, are intact.

The cooler or samples do not appear to have been compromised or tampered with.

Samples were received on ice.

Cooler Temperature is acceptable.

Cooler Temperature is recorded.

COC is present.

COC is filled out in ink and legible.

COC is filled out with all pertinent information.

Is the Field Sampler's name present on COC?

There are no discrepancies between the containers received and the COC.

Samples are received within Holding Time (excluding tests with immediate HTs)

Sample containers have legible labels.

Containers are not broken or leaking.

Sample collection date/times are provided.

Appropriate sample containers are used.

Sample bottles are completely filled.

Sample Preservation Verified.

There is sufficient vol. for all requested analyses, incl. any requested

MS/MSDs

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

Released to Imaging: 12/8/2022 12:25:26 PM

## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2789-1 SDG Number: Eddy County NM

List Source: Eurofins Midland

List Creation: 08/22/22 08:49 AM

Login Number: 2789 List Number: 2

Creator: Rodriguez, Leticia

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

Released to Imaging: 12/8/2022 12:25:26 PM



**APPENDIX G** 

**Email Correspondence** 

From: <u>Joseph Hernandez</u>

To: ocd.enviro@state.nm.us; "CFO Spill, BLM NM"

Cc: Raley, Jim; Devon-Team

**Subject:** WPX Site Sampling Activity Update (7/18-7/22/22)

**Date:** Friday, July 15, 2022 9:01:00 AM

Attachments: image001.png

image002.png image003.png image004.png

#### Good morning,

WPX anticipates conducting final confirmation soil sampling activities at the following sites between July 18 through July 22, 2022:

Site: RDX Federal 21 #044

API: 30-015-41193

Incident Number: nAPP2115533694

Site: Tucker Draw 9-4-4 API: 30-015-44487

Incident Number: nAB1812338789

Site: C-17 State #001H API: 30-015-44534

Incident Number: NRM2003533617



From: <u>Joseph Hernandez</u>

To: ocd.enviro@state.nm.us; "CFO Spill, BLM NM"

Cc: Raley, Jim; Devon-Team

**Subject:** WPX Site Sampling Activity Update (8/16-8/19/22)

**Date:** Monday, August 15, 2022 8:51:00 AM

Attachments: image001.pnq

image002.png image003.png image004.png

#### Good morning,

WPX anticipates conducting confirmation soil sampling activities at the following sites between August 16 through August 19, 2022:

<u>Site: Tucker Draw 9-4-4</u> API: 30-015-44487

Incident Number: nAB1812338789

Site: EP USA #005 API: 30-015-25020

Incident Number: NMAP1826970471



Joseph S. Hernandez

Senior Geologist 281-702-2329 Ensolum, LLC

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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** 

COMMENTS

Action 139987

#### **COMMENTS**

Operator:	OGRID:
WPX Energy Permian, LLC	246289
Devon Energy - Regulatory	Action Number:
Oklahoma City, OK 73102	139987
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### COMMENTS

C E		Comment	Comment Date
	nvelez	Variance request would be the proper alternative method to apply for closure under the current conditions.	12/8/2022

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 139987

#### **CONDITIONS**

Operator:	OGRID:
WPX Energy Permian, LLC	246289
Devon Energy - Regulatory	Action Number:
Oklahoma City, OK 73102	139987
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

_		Condition
Ву		Date
nvelez	See "OCD approval was based on the following;" within the incident event details.	12/8/2022