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 | NAPP2102831345 |
| District RP | |
| Facility ID | |
| Application ID | |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party XTO Energy | OGRID 5380 |
| Contact Name Kyle Littrell | Contact Telephone 432-221-7331 |
| Contact email kyle.littrell@exxonmobil.com | Incident # *(assigned by OCD)* |
| Contact mailing address 522 W. Mermod, Carlsbad, NM 88220 | |

## Location of Release Source

Latitude 32.56700 Longitude -103.77900
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name BEU 29W Vader 100H | Site Type Well Head |
| Date Release Discovered 1-14-21 | API# *(if applicable)* |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| M | 16 | 20S | 32E | Lea |

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

## Nature and Volume of Release

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

| | | |
|---|---|---|
| ☐ Crude Oil | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Produced Water | Volume Released (bbls) | Volume Recovered (bbls) |
| | Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l? | ☐ Yes ☐ No |
| ☐ Condensate | Volume Released (bbls) | Volume Recovered (bbls) |
| ☐ Natural Gas | Volume Released (Mcf) | Volume Recovered (Mcf) |
| ☒ Other (describe) | Volume/Weight Released (provide units) | Volume/Weight Recovered (provide units) |
| Recycled water | 30 bbls | 30 bbls |
| Cause of Release | During frac operations, a Catalyst frac pump suction hose failed, causing a total of 30 bbls recycled water to spill into containment. A 48-hour advance liner inspection notice was given to NMOCD District 2. Liner was inspected and determined not to be operating as designed. A third-party contractor has been retained for remediation activities. | |

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2102831345 |
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| | |
|---|---|
| Was this a major release as defined by 19.15.29.7(A) NMAC?<br>☒ Yes ☐ No | If YES, for what reason(s) does the responsible party consider this a major release?<br>A release greater than or equal to 25 barrels. |

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Yes, by Adrian Baker to Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; Venegas, Victoria, EMNRD; emily.hernandez@state.nm.us; Mann, Ryan on Friday, January 15, 2021 5:15 PM via email.

## Initial Response

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

- ☒ The source of the release has been stopped.
- ☒ The impacted area has been secured to protect human health and the environment.
- ☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:
NA

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Kyle Littrell
Title: Environmental Manager
Signature:
Date: 1-28-21
email: kyle.littrell@exxonmobil.com
Telephone: 432-221-7331

**OCD Only**

Received by: Ramona Marcus
Date: 5/3/2021

NAPP2102831345

| Location: | BEU 29 Vader 100H | |
|---|---|---|
| Spill Date: | 1/14/2021 | |
| Area 1 | | |
| Approximate Area = | 126.33 | cu. ft. |
| VOLUME OF LEAK | | |
| Total Recycled Water = | 30.00 | bbls |

| TOTAL VOLUME OF LEAK | | |
|---|---|---|
| Total Recycled Water = | 30.00 | bbls |
| TOTAL VOLUME RECOVERED | | |
| Total Recycled Water = | 30.00 | bbls |

| | |
|---|---|
| Incident ID | nAPP2102831345 |
| 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? | <50 (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 **not** 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 vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

**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 wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ 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.

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | nAPP2102831345 |
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Adrian Baker Title: Environmental Coordinator

Signature: Adrian Baker Date: 6/24/2022

email: adrian.baker@exxonmobile.com Telephone: (432) 236-3808

**OCD Only**

Received by: Date:

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | nAPP2102831345 |
| District RP | |
| Facility ID | |
| Application ID | |

# Remediation Plan

**Remediation Plan Checklist**: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only**: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: Adrian Baker Title: Environmental Coordinator

Signature: Adrian Baker Date: 6/24/2022

email: adrian.baker@exxonmobile.com Telephone: (432) 236-3808

**OCD Only**

Received by: Date:

☒ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: Jennifer Nobui Date: 07/06/2022

ENSOLUM

June 24, 2022

District 1
New Mexico Oil Conservation Division
1625 N. French Dr.
Hobbs, New Mexico 88240

**Re: Revised Remediation Work Plan**
**BEU 29W Vader 100H**
**Incident Number NAPP2102831345**
**Lea County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared the following Revised Remediation Work Plan (Work Plan) to document the site assessment activities completed to date and propose a work plan to address the impacted soil identified at the BEU 29W Vader 100H (Site) in Unit M, Section 16, Township 20 South, Range 32 East, in Lea County, New Mexico (Figure 1). The purpose of the site assessment activities was to delineate the lateral and vertical extent of impacted soil resulting from a release of recycled water at the Site. The following Work Plan proposes to excavate of the top four feet of impacted soil that exceed Site Closure Criteria and install a 20-mil impermeable liner in the floor of the excavation to address residual impacts in soil greater than four feet deep.

This Work Plan is an update to the original Remediation Work Plan submitted on May 3, 2022. This update addresses the May 23, 2022, email from the New Mexico Oil Conservation Division (NMOCD) requesting additional vertical delineation and a decision regarding the outcome of the excavated soil. The May 23, 2022, email approved an excavation confirmation sampling frequency of every 400 square feet from the floor of the excavation and approved analysis of chloride only for the confirmation samples. A copy of the email correspondence is provided as an attachment to this report.

## SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Lea County, New Mexico (32.56700° N, 103.77900° W) and is associated with oil and gas exploration and production operations on New Mexico State Land.

On January 14, 2021, during frac operations, a pump suction hose failed and resulted in the release of 30 barrels (bbls) of recycled water into the temporary lined containment. A vacuum truck was immediately dispatched to the Site to recover the free-standing fluids; approximately 30 bbls of recycled water were recovered. A 48-hour advance notice of liner inspection was provided via email to the NMOCD District I office. A liner integrity inspection was conducted by XTO personnel following the fluid recovery and upon inspection, the liner was determined to be insufficient. XTO reported the release to the NMOCD via email on January 15, 2021 and submitted a Release Notification Form C-141 on January 28, 2021. The release was assigned Incident Number NAPP2102831345.

The composition of recycled water is produced water. Produced water is recycled through filtering and separation, then mixed in a blender with friction reducer and used as hydraulic fracturing fluid during the well completion process. The safety data sheet (SDS) for friction reducer is provided as an attachment.

## SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized according to Table 1, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). 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.

Depth to groundwater at the Site is less than 50 feet below ground surface (bgs) based on the nearest groundwater well data. On October 26, 2021, a soil boring (CP-1891) was drilled at the Site utilizing a track-mounted sonic drill rig. Soil boring CP-1891 was drilled to a depth of 55 feet bgs. The location of the borehole is approximately 400 feet southeast of the release area and is depicted on Figure 1. A field geologist logged and described soils continuously. Groundwater was encountered in the soil boring at approximately 33 feet bgs. The borehole was left open for over 72 hours to allow for equilibration of groundwater levels within the temporary boring casing. After the 72-hour waiting period, it was confirmed that groundwater beneath the Site was approximately 33 feet bgs. The Well Record and Log is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is a dry wash, located approximately 370 feet northeast of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, 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 hydrocarbons (TPH): 100 mg/kg
- Chloride: 600 mg/kg

## SITE ASSESSMENT AND DELINEATION ACTIVITIES

Once drilling operations were complete, a Site visit was conducted to evaluate the release extent based on information provided on the Form C-141 and visual observations. The temporary containment had been removed at the time of the Site visit. The former containment area, which also represents the release extent, was mapped utilizing a handheld Global Positioning System (GPS) unit and is depicted on Figure 2.

Between December 13, 2021 and March 17, 2022, delineation activities were conducted at the Site to assess the lateral and vertical extent of impacted soil. Potholes PH01 through PH09 were advanced via track mounted backhoe within and around the release extent and former containment area. The potholes were advanced to depths ranging from 6 feet to 16 feet bgs. Pothole PH01 was advanced directly beneath the former containment area to delineate the vertical extent of impacted soil. Potholes PH02 through PH09 were advanced around the former containment area to delineate the lateral extent of impacted soil. Discrete delineation soil samples were collected from each pothole at depths ranging from

2 feet to 16 feet bgs. Soil from the potholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the potholes were logged on lithologic/soil sampling logs, which are included in Appendix B. The delineation soil samples were handled and analyzed as described above. The pothole delineation soil sample locations are depicted on Figure 2. Photographic documentation was completed during the Site visits and a photographic log is included in Appendix C.

The delineation soil samples were placed directly into pre-cleaned 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 (COC) procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

## LABORATORY ANALYTICAL RESULTS

Benzene, BTEX, and TPH concentrations were below laboratory detection limits in all delineation soil samples collected from potholes PH01 through PH09. No hydrocarbon impacted soil was identified as a result of the release.

Laboratory analytical results for the delineation soil samples collected from pothole PH01, advanced directly beneath the former containment, indicated that chloride concentrations exceeded the Closure Criteria at depths ranging from 2 feet to 14 feet bgs. The terminal depth sample, collected at 16 feet bgs, was compliant with the Closure Criteria and successfully defined the vertical extent of impacted soil.

Laboratory analytical results for the delineation soil samples collected from potholes PH02 through PH05 indicated that chloride concentrations exceeded the Closure Criteria at depths ranging from 2 feet to 6 feet bgs. The terminal depth samples from potholes PH03 and PH05, collected at 6 feet bgs, were compliant with the Closure Criteria.

Laboratory analytical results for the delineation soil samples collected from potholes PH06 through PH09 at depths ranging from 1-foot to 7 feet bgs, indicated that chloride concentrations were compliant with Closure Criteria and defined the lateral extent of the impacted soil. The laboratory analytical results are summarized on the attached Table 1 and the complete laboratory analytical reports are included in Appendix D.

## PROPOSED REMEDIATION WORK PLAN

The results of the delineation soil sampling suggest soil containing elevated chloride concentrations exists across a 40,000 square foot area and extends to depths ranging from 2 feet to 14 feet bgs. Based on the extent and volume of impacted soil, XTO proposes additional vertical delineation, excavation of the chloride impacted soil in the top 4 feet of the release area, and installation of a liner in the floor of the excavation to mitigate further chloride impacts to the subsurface.

XTO proposes to complete the following remediation activities:

- Vertical delineation of chloride to below 600 mg/kg at the pothole PH02 and PH04 locations.
- Excavation of chloride impacted soil to a depth of 4 feet bgs. Excavation will proceed laterally until sidewall samples confirm chloride concentrations are compliant with the Closure Criteria in the top four feet. The estimated excavation extent is shown on Figure 3.

- As approved by NMOCD, confirmation samples will be collected at a frequency of every 400 square feet from the floor of the excavation and at a frequency of every 200 square feet from the sidewalls of the excavation. The excavation samples will be analyzed for chloride only.
- Upon completion of excavation activities, a 20-mil impermeable liner will be installed over the chloride impacted soil to mitigate further chloride impacts to the subsurface. The liner will be installed at 4 feet bgs within the open excavation as shown on Figure 4.
- An estimated 6,000 cubic yards of chloride impacted soil will be excavated. The excavated soil will be transferred a New Mexico approved landfill facility for disposal.
- The excavation will be backfilled and recontoured to match pre-existing conditions.

XTO will complete vertical delineation, excavation activities, and liner installation within 90 days of the date of approval of this Work Plan by the NMOCD.

If you have any questions or comments, please contact Ms. Aimee Cole at (720) 384-7365 or acole@ensolum.com.

Sincerely,
**Ensolum, LLC**

Kalei Jennings
Senior Scientist

Aimee Cole
Senior Managing Scientist

cc: Adrian Baker, XTO
New Mexico State Land Office

Appendices:

| | |
|---|---|
| Figure 1 | Site Receptor Map |
| Figure 2 | Delineation Soil Sample Locations |
| Figure 3 | Proposed Excavation and Liner Extent |
| Table 1 | Soil Sample Analytical Results |
| Appendix A | Referenced Well Records |
| Appendix B | Lithologic / Soil Sampling Logs |
| Appendix C | Photographic Log |
| Appendix D | Laboratory Analytical Reports & Chain-of-Custody Documentation |
| Appendix E | NMOCD Notifications/Correspondence |
| Appendix F | Friction Reducer SDS |

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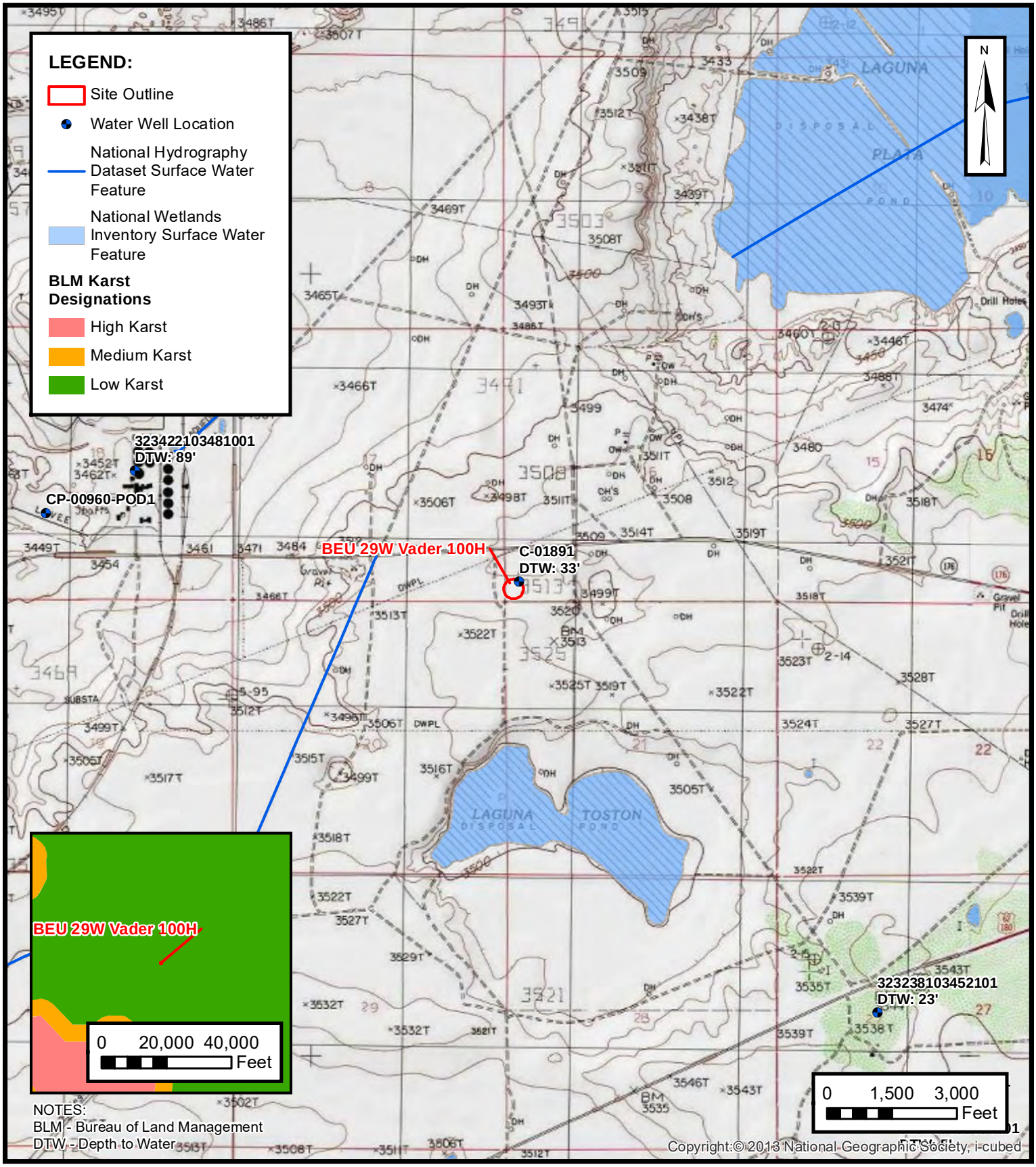
# FIGURES

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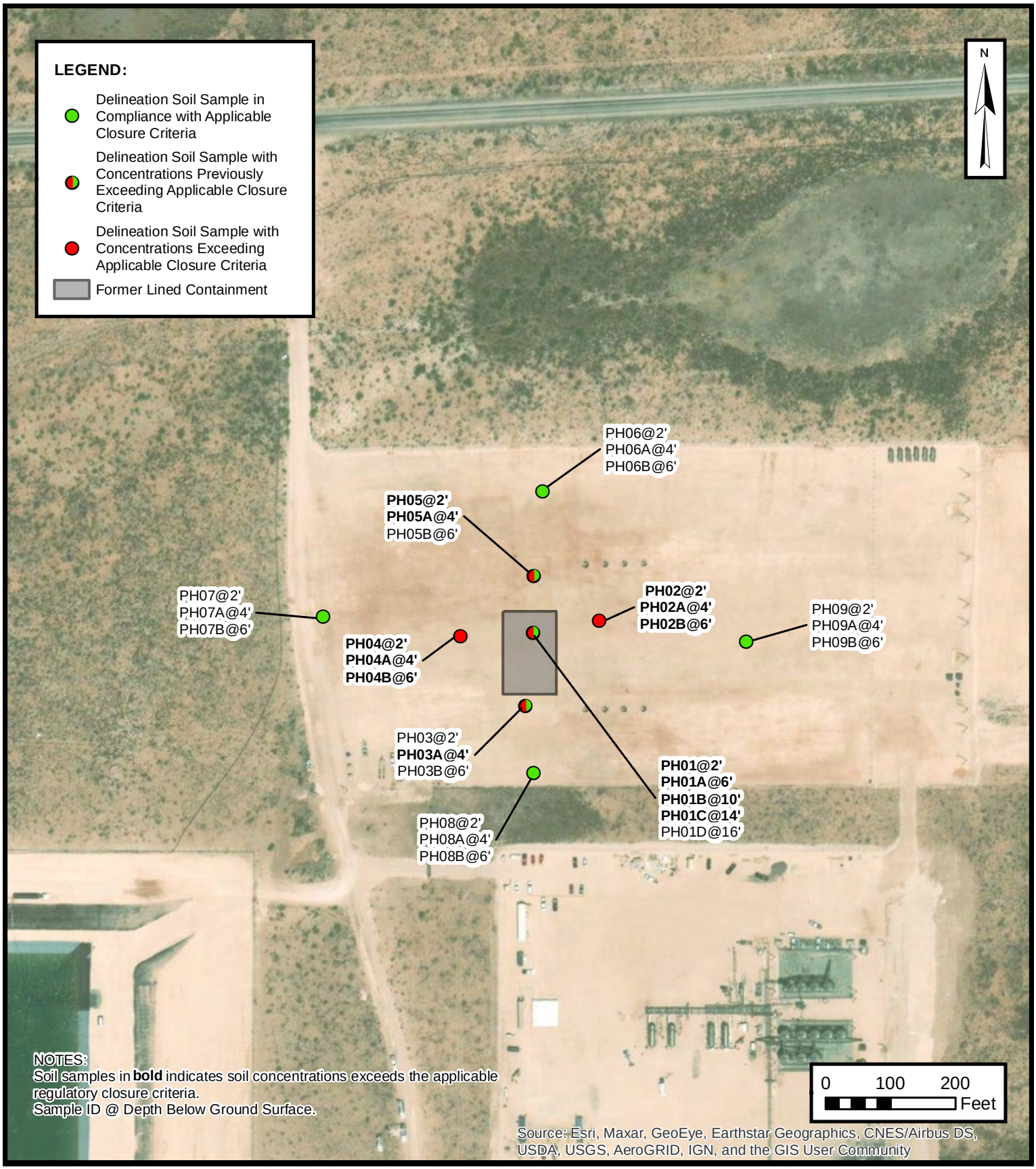
Environmental & Hydrogeologic Consultants

**SITE RECEPTOR MAP**

XTO ENERGY, INC
BEU 29W VADER 100H
nAPP2102831345
Unit M SEC 16 T20S R32E
Lea County, New Mexico

**FIGURE**
**1**

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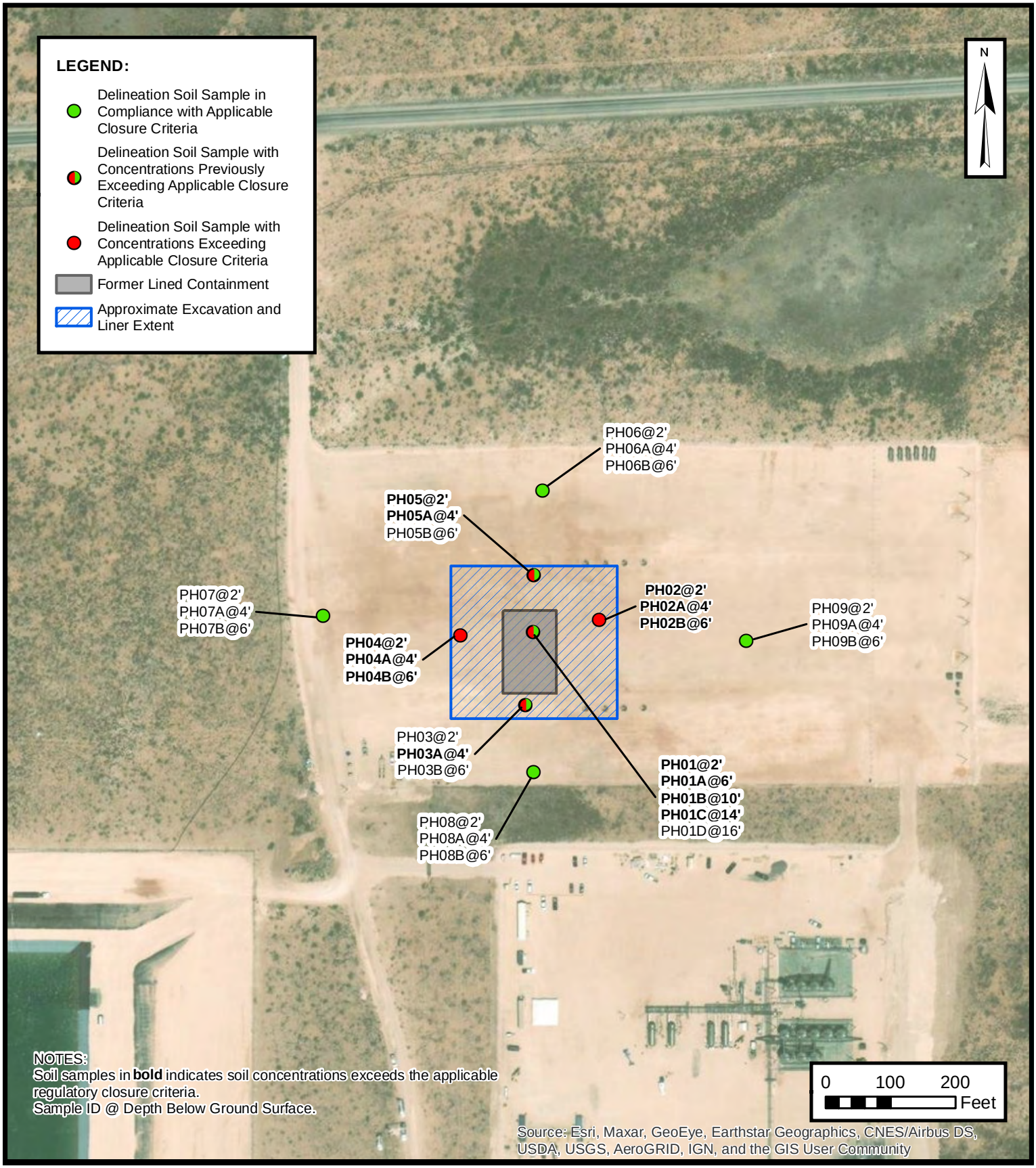
**DELINEATION SOIL SAMPLE LOCATIONS**

XTO ENERGY, INC
BEU 29W VADER 100H
nAPP2102831345
Unit M SEC 16 T20S R32E
Lea County, New Mexico

**FIGURE**
**2**

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**PROPOSED EXCAVATION AND LINER EXTENT**

XTO ENERGY, INC
BEU 29W VADER 100H
nAPP2102831345
Unit M SEC 16 T20S R32E
Lea County, New Mexico

**FIGURE**
**3**

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# TABLES

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**TABLE 1**
**SOIL SAMPLE ANALYTICAL RESULTS**
**XTO Energy, Inc. - BEU 29W Vader 100H**
**Lea County, New Mexico**

| 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 | NE | 100 | 600 |
| Delineation Soil Sample Analytical Results | | | | | | | | | | |
| PH01 | 12/13/2021 | 2 | <0.00200 | <0.00401 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | **5,900** |
| PH01A | 12/13/2021 | 6 | <0.00202 | <0.00404 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | **1,740** |
| PH01B | 12/13/2021 | 10 | <0.00201 | <0.00402 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | **1,290** |
| PH01C | 12/13/2021 | 14 | <0.00201 | <0.00402 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | **965** |
| PH01D | 12/13/2021 | 16 | <0.00200 | <0.00399 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | 359 |
| PH02 | 12/17/2021 | 2 | <0.00200 | <0.00399 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | **1,170** |
| PH02A | 12/17/2021 | 4 | <0.00202 | <0.00403 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | **1,760** |
| PH02B | 12/17/2021 | 6 | <0.00200 | <0.00399 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | **1,980** |
| PH03 | 12/17/2021 | 2 | <0.00199 | <0.00398 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 191 |
| PH03A | 12/17/2021 | 4 | <0.00200 | <0.00399 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | **1,150** |
| PH03B | 12/17/2021 | 6 | <0.00200 | <0.00400 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 318 |
| PH04 | 12/17/2021 | 2 | <0.00199 | <0.00398 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | **636** |
| PH04A | 12/17/2021 | 4 | <0.00200 | <0.00399 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | **1,650** |
| PH04B | 12/17/2021 | 6 | <0.00199 | <0.00398 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | **1,360** |
| PH05 | 12/17/2021 | 2 | <0.00202 | <0.00403 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | **962** |
| PH05A | 12/17/2021 | 4 | <0.00200 | <0.00399 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | **1,470** |
| PH05B | 12/17/2021 | 6 | <0.00199 | <0.00398 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 92.5 |
| PH06 | 03/16/2022 | 1 | <0.00200 | <0.00400 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 306 |
| PH06A | 03/16/2022 | 4 | <0.00201 | <0.00402 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 281 |
| PH06B | 03/16/2022 | 6 | <0.00200 | <0.00399 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 353 |
| PH07 | 03/16/2022 | 1 | <0.00200 | <0.00400 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 85 |
| PH07A | 03/16/2022 | 3 | <0.00199 | <0.00398 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 110 |
| PH07B | 03/16/2022 | 6 | <0.00198 | <0.00396 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | 424 |
| PH08 | 03/17/2022 | 1 | <0.00199 | <0.00398 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 193 |
| PH08A | 03/17/2022 | 3 | <0.00200 | <0.00399 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 18.2 |
| PH08B | 03/17/2022 | 6 | <0.00202 | <0.00403 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 30.7 |
| PH08C | 03/17/2022 | 7 | <0.00200 | <0.00401 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 15.4 |

ENSOLUM

**TABLE 1**
**SOIL SAMPLE ANALYTICAL RESULTS**
**XTO Energy, Inc. - BEU 29W Vader 100H**
**Lea County, New Mexico**

| 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** | **NE** | **100** | **600** |
| **Delineation Soil Sample Analytical Results** | | | | | | | | | | |
| PH09 | 03/17/2022 | 1 | <0.00202 | <0.00404 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 321 |
| PH09A | 03/17/2022 | 3 | <0.00200 | <0.00401 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 107 |
| PH09B | 03/17/2022 | 6 | <0.00200 | <0.00401 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 104 |
| PH09C | 03/17/2022 | 7 | <0.00201 | <0.00402 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 112 |

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 for Soils Impacted by a Release

ENSOLUM

# APPENDIX A

## Referenced Well Records

Atkins ENGINEERING ASSOCIATES INC.
2904 W 2nd St.
Roswell, NM 88201
voice: 575.624.2420
fax: 575.624.2421
www.atkinseng.com

11/29/2021

DII-NMOSE
1900 W 2nd Street
Roswell, NM 88201

*Hand Delivered to the DII Office of the State Engineer*

Re: Well Record CP-1891 Pod1

To whom it may concern:

Attached please find a well log & record and a plugging record, in duplicate, for a one (1) soil borings, C-1891 Pod1.

If you have any questions, please contact me at 575.499.9244 or lucas@atkinseng.com.

Sincerely,

Lucas Middleton

Enclosures: as noted above

OSE DII NOV 29 2021 PM2:17

# WELL RECORD & LOG

## OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

**1. GENERAL AND WELL LOCATION**

| OSE POD NO. (WELL NO.) | WELL TAG ID NO. | OSE FILE NO(S). |
|---|---|---|
| POD1 (BH-01) | n/a | CP-1891 |

| WELL OWNER NAME(S) | PHONE (OPTIONAL) |
|---|---|
| XTO Energy (Adrian Baker) | |

| WELL OWNER MAILING ADDRESS | CITY | STATE | ZIP |
|---|---|---|---|
| 6401 Holiday Hill Dr. | Midland | TX | 79707 |

| WELL LOCATION (FROM GPS) | | DEGREES | MINUTES | SECONDS | |
|---|---|---|---|---|---|
| | LATITUDE | 32 | 33 | 59.48 | N |
| | LONGITUDE | 103 | 46 | 41.34 | W |

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

SE SE Unit M Sec16 T20S R32E, NMPM

**2. DRILLING & CASING INFORMATION**

| LICENSE NO. | NAME OF LICENSED DRILLER | NAME OF WELL DRILLING COMPANY |
|---|---|---|
| 1249 | Jackie D. Atkins | Atkins Engineering Associates, Inc. |

| DRILLING STARTED | DRILLING ENDED | DEPTH OF COMPLETED WELL (FT) | BORE HOLE DEPTH (FT) | DEPTH WATER FIRST ENCOUNTERED (FT) |
|---|---|---|---|---|
| 10/26/2021 | 10/26/2021 | temporary well material | 55 | ±33 |

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 33.20

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER – SPECIFY: Hollow Stem Auger

| DEPTH (feet bgl) FROM | DEPTH (feet bgl) TO | BORE HOLE DIAM (inches) | CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen) | CASING CONNECTION TYPE (add coupling diameter) | CASING INSIDE DIAM. (inches) | CASING WALL THICKNESS (inches) | SLOT SIZE (inches) |
|---|---|---|---|---|---|---|---|
| 0 | 55 | ±8.5 | Boring- HSA | -- | -- | -- | -- |
| | | | | | | | |
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**3. ANNULAR MATERIAL**

| DEPTH (feet bgl) FROM | DEPTH (feet bgl) TO | BORE HOLE DIAM. (inches) | LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL | AMOUNT (cubic feet) | METHOD OF PLACEMENT |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
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| | | | | | |

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

| FILE NO. | POD NO. | TRN NO. | |
|---|---|---|---|
| LOCATION | | WELL TAG ID NO. | PAGE 1 OF 2 |

**4. HYDROGEOLOGIC LOG OF WELL**

| DEPTH (feet bgl) FROM | DEPTH (feet bgl) TO | THICKNESS (feet) | COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units) | WATER BEARING? (YES / NO) | ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm) |
|---|---|---|---|---|---|
| 0 | 4 | 4 | Caliche, Mod. Consolidated, Tan, Dry | Y ✓N | |
| 4 | 8 | 4 | Sand, fine-very grained, poorly graded, Brown, moist | Y ✓N | |
| 8 | 16 | 8 | Sand, fine-very grained, poorly graded, with gravel Pinkish Brown, moist | Y ✓N | |
| 16 | 20 | 4 | Sand, fine-very grained, poorly graded, with clayey gravel, Light Brown, moist | Y ✓N | |
| 20 | 26 | 6 | Clayey Sand, very fine grained, poorly graded, caliche gravel, Tan , moist | Y ✓N | |
| 26 | 36 | 10 | Clayey Sand, med-fine grained, poorly graded, caliche gravel, Brown , moist | ✓Y N | |
| 36 | 49 | 13 | Sandstone, mod consolidated, with increasing clay Reddish Brown, Moist | ✓Y N | |
| 49 | 55 | 6 | Claystone, low plasticity, cohesive, Dark Brown, moist | ✓Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |
| | | | | Y N | |

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

**5. TEST; RIG SUPERVISION**

WELL TEST: TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring plugged using Type I/II neat cement from total depth to surface with augers as tremie.
Logs adapted from WSP on-site geologist.

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PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Shane Eldridge

**6. SIGNATURE**

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jack Atkins — Jackie D. Atkins — 11/16/2021

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

| FILE NO. | POD NO. | TRN NO. | |
|---|---|---|---|
| LOCATION | | WELL TAG ID NO. | PAGE 2 OF 2 |

# 2021-11-16_CP-1891_WD-OSE_Well Record and Log_-forsign

Final Audit Report 2021-11-16

| | |
|---|---|
| Created: | 2021-11-16 |
| By: | Lucas Middleton (lucas@atkinseng.com) |
| Status: | Signed |
| Transaction ID: | CBJCHBCAABAAP73aRj8R9g053z9Zi4uJLpgAhfBF15Nk |

## "2021-11-16_CP-1891_WD-OSE_Well Record and Log_-forsign" History

Document created by Lucas Middleton (lucas@atkinseng.com)
2021-11-16 - 7:01:05 PM GMT- IP address: 69.21.248.123

Document emailed to Jack Atkins (jack@atkinseng.com) for signature
2021-11-16 - 7:01:44 PM GMT

Email viewed by Jack Atkins (jack@atkinseng.com)
2021-11-16 - 10:42:21 PM GMT- IP address: 64.90.153.232

Document e-signed by Jack Atkins (jack@atkinseng.com)
Signature Date: 2021-11-16 - 10:43:29 PM GMT - Time Source: server- IP address: 64.90.153.232

Agreement completed.
2021-11-16 - 10:43:29 PM GMT

# PLUGGING RECORD

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

## I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: CP-1891 POD-1

Well owner: XTO Energy (Adrian Baker) Phone No.: _____

Mailing address: 6401 Holiday Hill Dr.

City: Midland State: Texas Zip code: 79707

## II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Jackie D. Atkins ( Atkins Engineering Associates Inc.)

2) New Mexico Well Driller License No.: 1249 Expiration Date: 04/30/23

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Shane Eldridge, Cameron Pruitt, Carmelo Travino

4) Date well plugging began: 11/01/2021 Date well plugging concluded: 11/01/2021

5) GPS Well Location: Latitude: 32 deg, 33 min, 59.48 sec
Longitude: 103 deg, 46 min, 41.34 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 56 ft below ground level (bgl), by the following manner: water level probe

7) Static water level measured at initiation of plugging: 33.20 ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 10-6-2021

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

OCD 2021 NOV 29 2021 PM2:12

Version: September 8, 2009
Page 1 of 2

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.) |
|---|---|---|---|---|---|
| | 0-53' Type I/II Neat Cement | 72 gallons | 84 gallons | Augers | |



| MULTIPLY | | BY | | AND OBTAIN |
|---|---|---|---|---|
| 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 the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Jack Atkins — Signature of Well Driller

11/16/2021 — Date

Version: September 8, 2009
Page 2 of 2

ENSOLUM

# APPENDIX B

## Lithologic / Soil Sampling Logs

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: **PH01** | Date: **12/13/2021** |
| | Site Name: **BEU 29W Vader 100H** | |
| | Incident Number: **NAPP2102831345** | |
| | Job Number: 03E1558005 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: TC | Method: **Trackhoe** |
| Coordinates: 32.56700, -103.77900 | Hole Diameter: 3x6 | Total Depth: **16'** |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| M/D | 6,171.20 | 0.2 | N | PH01 | 2 | 2 | SC/SP/CL | CALICHE Top w/large gravel, sand, tan to brown, no staining, no odor. |
| M | 1,299.20 | 0.5 | N | | | 4 | SC/SP/CL | SAA, moist. |
| M | 1,108.80 | 0.0 | N | PH01A | 6 | 6 | SC/SP/CL | SAA, large gravel w/ sand, reddish brown, moist. |
| M | 1,204 | 0.0 | N | | | 8 | SC/SP/CL | SAA |
| M | 1,108.80 | 0.0 | N | PH01B | 10 | 10 | SP/SC | SAND w/ large gravel, reddish brown, moist, no stain, no odor. |
| M/D | 856.8 | 0.0 | N | | | 12 | SP/SC | SAA, medium sized gravel. |
| M/D | 784 | 0.0 | N | PH01C | 14 | 14 | SP/SC | SAA |
| M/D | 515.2 | 0.0 | N | PH01D | 16 | 16 | SP/SC | SAA |

TD @ 16 feet bgs

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: **PH02** | Date: **12/17/2021** |
| | Site Name: **BEU 29W Vader 100H** | |
| | Incident Number: **NAPP2102831345** | |
| | Job Number: 03E1558005 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: TC | Method: **Trackhoe** |
| Coordinates: 32.56700, -103.77900 | Hole Diameter: N/A | Total Depth: **6'** |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| D | 985.6 | 0.3 | N | PH02 | 2 | 2 | CCHE | CALICHE, little silt, moderate consolidation, light brown/tan, no stain, no odor. |
| D | 1,243 | 0.3 | N | PH02A | 4 | 4 | CCHE | SAA |
| D | 1,545 | 0.3 | N | PH02B | 6 | 6 | SP | SAND w/ silt, darker brown/tan, chunks of claystgone, no stain, no odor. |

TD @ 6 feet bgs

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: **PH03** | Date: **12/17/2021** |
| | Site Name: **BEU 29W Vader 100H** | |
| | Incident Number: **NAPP2102831345** | |
| | Job Number: 03E1558005 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: TC | Method: **Trackhoe** |
| Coordinates: 32.56700, -103.77900 | Hole Diameter: N/A | Total Depth: **6'** |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| D | <162.4 | 1.2 | N | PH03 | 2 | 2 | CCHE | CALICHE, little silt, moderate consolidation, light brown/tan, no stain, no odor. |
| D | <162.4 | 1.4 | N | PH03A | 4 | 4 | CCHE | SAA |
| D | 274.4 | 2.0 | N | PH03B | 6 | 6 | SP | SAND w/ silt, darker brown/tan, chunks of claystgone, no stain, no odor. |

TD @ 6 feet bgs

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: **PH04** | Date: **12/17/2021** |
| | Site Name: **BEU 29W Vader 100H** | |
| | Incident Number: **NAPP2102831345** | |
| | Job Number: 03E1558005 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: TC | Method: **Trackhoe** |
| Coordinates: 32.56700, -103.77900 | Hole Diameter: N/A | Total Depth: **6'** |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| D | 520.8 | 0.4 | N | PH04 | 2 | 2 | CCHE | CALICHE, little silt, moderate consolidation, light brown/tan, no stain, no odor. |
| D | 1,439.2 | 0.6 | N | PH04A | 4 | 4 | CCHE | SAA |
| D | 985.6 | 0.6 | N | PH04B | 6 | 6 | SP | SAND w/ silt, darker brown/tan, chunks of claystgone, no stain, no odor. |

TD @ 6 feet bgs

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: **PH05** | Date: **12/17/2021** |
| | Site Name: **BEU 29W Vader 100H** | |
| | Incident Number: **NAPP2102831345** | |
| | Job Number: 03E1558005 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: TC | Method: **Trackhoe** |
| Coordinates: 32.56700, -103.77900 | Hole Diameter: N/A | Total Depth: **6'** |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| D | 834.4 | 0.1 | N | PH05 | 2 | 2 | CCHE | CALICHE, little silt, moderate consolidation, light brown/tan, no stain, no odor. |
| D | 1,248.8 | 0.1 | N | PH05A | 4 | 4 | CCHE | SAA |
| D | 985.6 | 0.1 | N | PH05B | 6 | 6 | SP | SAND w/ silt, darker brown/tan, chunks of claystgone, no stain, no odor. |

TD @ 6 feet bgs

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: PH06 | Date: 03/16/2022 |
| | Site Name: BEU 29W Vader 100H | |
| | Incident Number: NAPP2102831345 | |
| | Job Number: 03E1558005 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: AC | Method: Backhoe |
| Coordinates: 32.56700, -103.77900 | Hole Diameter: NA | Total Depth: 7' |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| D | 255.2 | 0.6 | N | PH06 | 1 | 1 | CCHE | CALICHE, light brown/tan, little silt, moderate consolidation, no stain, no odor. |
| D | 397.6 | 0.1 | N | | | 2 | CCHE | SAA |
| D | 683.2 | 0.2 | N | | | 3 | SP | SAND, carker brown, some silt, no stain, no odor. |
| D | 448 | 0.2 | N | PH06A | 4 | 4 | CCHE | CALICHE, light brown/tan, some silt, moderate consolidation, no stain, no odor. |
| D | 448 | 0.2 | N | | | 5 | CCHE | SAA |
| D | 504 | 0.1 | N | PH06B | 6 | 6 | CCHE | SAA |

TD @ 6 feet bgs

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: PH07 | Date: 03/16/2022 |
| | Site Name: BEU 29W Vader 100H | |
| | Incident Number: NAPP2102831345 | |
| | Job Number: 03E1558005 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: AC | Method: Backhoe |
| Coordinates: 32.56700, -103.77900 | Hole Diameter: NA | Total Depth: 7' |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| D | 168 | 0.1 | N | PH07 | 1 | 1 | CCHE | CALICHE, light brown/tan, little silt, moderate consolidation, no stain, no odor. |
| D | 235.2 | 0.1 | N | | | 2 | CCHE | SAA |
| D | 235.2 | 0.1 | N | PH07A | 3 | 3 | SP | SAA |
| D | 352.8 | 0.0 | N | | | 4 | CCHE | SAA |
| D | 268.8 | 0.0 | N | | | 5 | CCHE | SAA |
| D | 448 | 0.0 | N | PH07B | 6 | 6 | CCHE | SAA |
| D | 560 | 0.0 | N | | | 7 | CCHE | SAA |

TD @ 7 feet bgs

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: PH08 | Date: 03/17/2022 |
| | Site Name: BEU 29W Vader 100H | |
| | Incident Number: NAPP2102831345 | |
| | Job Number: 03E1558005 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: AC | Method: Backhoe |
| Coordinates: 32.56700, -103.77900 | Hole Diameter: NA | Total Depth: 7' |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| D | 179.2 | 0.0 | N | PH08 | 1 | 1 | CCHE | CALICHE, light brown/tan, little silt, moderate consolidation, no stain, no odor. |
| D | <179.2 | 0.0 | N | | | 2 | CCHE | SAA |
| D | <179.2 | 0.0 | N | PH08A | 3 | 3 | SP | SAA |
| D | <179.2 | 0.0 | N | | | 4 | CCHE | SAA |
| D | <179.2 | 0.0 | N | | | 5 | CCHE | SAA |
| D | <179.2 | 0.0 | N | PH08B | 6 | 6 | CCHE | SAA |
| D | <179.2 | 0.0 | N | PH08C | 7 | 7 | CCHE | SAA |

TD @ 7 feet bgs

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: PH09 | Date: 03/17/2022 |
| | Site Name: BEU 29W Vader 100H | |
| | Incident Number: NAPP2102831345 | |
| | Job Number: 03E1558005 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: AC | Method: Backhoe |
| Coordinates: 32.56700, -103.77900 | Hole Diameter: NA | Total Depth: 7' |

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample ID | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithologic Descriptions |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 0 | | |
| D | 268.8 | 0.1 | N | PH09 | 1 | 1 | CCHE | CALICHE, light brown/tan, little silt, moderate consolidation, no stain, no odor. |
| D | 179.2 | 0.1 | N | | | 2 | CCHE | SAA |
| D | 201.6 | 0.2 | N | PH09A | 3 | 3 | SP | SAA |
| D | 196.2 | 0.1 | N | | | 4 | CCHE | SAA |
| D | <179.2 | 0.0 | N | | | 5 | CCHE | SAA |
| D | 235.2 | 0.0 | N | PH09B | 6 | 6 | CCHE | SAA |
| D | <179.2 | 0.0 | N | PH09C | 7 | 7 | CCHE | SAA |

TD @ 7 feet bgs

ENSOLUM

# APPENDIX C

## Photographic Log

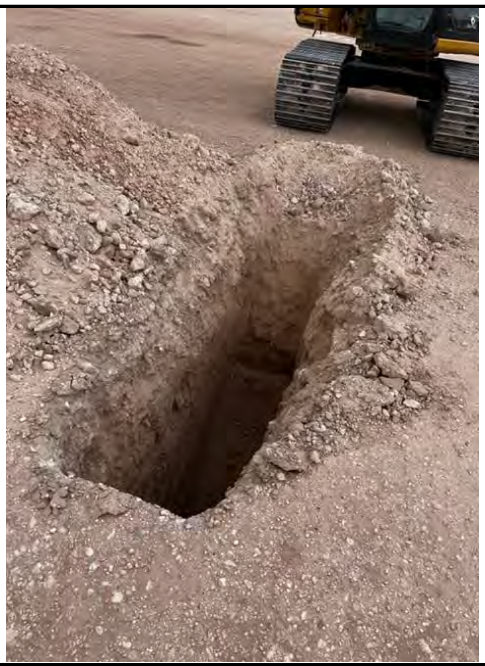
ENSOLUM

**Photographic Log**
XTO Energy, Inc.
BEU 29W Vader 100H
Incident Number NAPP2102831345

Photograph 1
Date: December 17, 2021
Description: Photo of PH02 taken during delineation.

Photograph 2
Date: December 17, 2021
Description: Photo of PH05 taken during delineation.

Photograph 3
Date: March 16, 2022
Description: Photo of PH07 taken during delineation.



Photograph 4
Date: March 17, 2022
Description: Photo of PH08 taken during delineation.

ENSOLUM

# APPENDIX D

## Laboratory Analytical Reports & Chain-of-Custody Documentation

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-1739-1
Laboratory Sample Delivery Group: TE012921044
Client Project/Site: BEU 29W VADER 100H
Revision: 1

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*3/25/2022 2:02:33 PM*

Jessica Kramer, Project Manager
(432)704-5440
jessica.kramer@eurofinset.com



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

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

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Laboratory Job ID: 890-1739-1
SDG: TE012921044

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# Definitions/Glossary

Client: WSP USA Inc. Job ID: 890-1739-1
Project/Site: BEU 29W VADER 100H SDG: TE012921044

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

## Job ID: 890-1739-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-1739-1**

REVISION

The report being provided is a revision of the original report sent on 12/28/2021. The report (revision 1) is being revised due to Per client email requesting sample ID change.

Report revision history

**Receipt**
The samples were received on 12/20/2021 3:24 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 3.8°C

**GC VOA**
Method 8021B: Surrogate recovery for the following sample was outside control limits: PH05A (890-1739-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

**HPLC/IC**
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-15364 and analytical batch 880-15438 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. The associated samples are: PH05B (890-1739-3), (880-9605-A-4-A), (880-9605-A-4-D MS) and (880-9605-A-4-E MSD).

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

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

## Client Sample ID: PH05

**Date Collected: 12/17/21 12:22**
**Date Received: 12/20/21 15:24**
**Sample Depth: 2**

**Lab Sample ID: 890-1739-1**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:44 | 1 |
| Toluene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:44 | 1 |
| Ethylbenzene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:44 | 1 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.00403 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:44 | 1 |
| o-Xylene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:44 | 1 |
| Xylenes, Total | <0.00403 | U | 0.00403 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:44 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *123* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 13:44* | *1* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 13:44* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00403 | U | 0.00403 | | mg/Kg | | | 12/23/21 19:53 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 12/28/21 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 20:12 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 20:12 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 20:12 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *103* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 20:12* | *1* |
| *o-Terphenyl* | *99* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 20:12* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **962** | | 5.00 | | mg/Kg | | | 12/22/21 15:15 | 1 |

## Client Sample ID: PH05A

**Date Collected: 12/17/21 12:27**
**Date Received: 12/20/21 15:24**
**Sample Depth: 4**

**Lab Sample ID: 890-1739-2**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:04 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:04 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:04 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:04 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:04 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:04 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *152* | *S1+* | *70 - 130* | *12/22/21 10:08* | *12/22/21 14:04* | *1* |

# Client Sample Results

Client: WSP USA Inc. Job ID: 890-1739-1
Project/Site: BEU 29W VADER 100H SDG: TE012921044

## Client Sample ID: PH05A
**Lab Sample ID: 890-1739-2**
**Date Collected: 12/17/21 12:27**
**Matrix: Solid**
**Date Received: 12/20/21 15:24**
**Sample Depth: 4**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *128* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 14:04* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | | mg/Kg | | | 12/23/21 19:53 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 12/28/21 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 20:34 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 20:34 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 20:34 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *99* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 20:34* | *1* |
| *o-Terphenyl* | *96* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 20:34* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **1470** | | 25.0 | | mg/Kg | | | 12/22/21 18:12 | 5 |

## Client Sample ID: PH05B
**Lab Sample ID: 890-1739-3**
**Date Collected: 12/17/21 12:36**
**Matrix: Solid**
**Date Received: 12/20/21 15:24**
**Sample Depth: 6**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:25 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:25 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:25 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:25 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:25 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 14:25 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *116* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 14:25* | *1* |
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 14:25* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 12/23/21 19:53 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 12/28/21 17:22 | 1 |

Eurofins Carlsbad

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

## Client Sample ID: PH05B

**Date Collected: 12/17/21 12:36**
**Date Received: 12/20/21 15:24**
**Sample Depth: 6**

## Lab Sample ID: 890-1739-3

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 20:56 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 20:56 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 20:56 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *97* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 20:56* | *1* |
| *o-Terphenyl* | *95* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 20:56* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **92.5** | | 5.03 | | mg/Kg | | | 12/23/21 10:30 | 1 |

# Surrogate Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-1739-1 | PH05 | 123 | 103 |
| 890-1739-1 MS | PH05 | 126 | 80 |
| 890-1739-1 MSD | PH05 | 117 | 80 |
| 890-1739-2 | PH05A | 152 S1+ | 128 |
| 890-1739-3 | PH05B | 116 | 101 |
| LCS 880-15329/1-A | Lab Control Sample | 107 | 107 |
| LCSD 880-15329/2-A | Lab Control Sample Dup | 106 | 105 |
| MB 880-15329/5-A | Method Blank | 104 | 100 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-1739-1 | PH05 | 103 | 99 |
| 890-1739-2 | PH05A | 99 | 96 |
| 890-1739-3 | PH05B | 97 | 95 |
| 890-1743-A-1-D MS | Matrix Spike | 92 | 87 |
| 890-1743-A-1-E MSD | Matrix Spike Duplicate | 103 | 101 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO2 | OTPH2 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| LCS 880-15317/2-A | Lab Control Sample | 110 | 115 |
| LCSD 880-15317/3-A | Lab Control Sample Dup | 119 | 114 |
| MB 880-15317/1-A | Method Blank | 115 | 120 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

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

**Lab Sample ID: MB 880-15329/5-A**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 13:22* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 13:22* | *1* |

**Lab Sample ID: LCS 880-15329/1-A**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09632 | | mg/Kg | | 96 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08900 | | mg/Kg | | 89 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.08828 | | mg/Kg | | 88 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1813 | | mg/Kg | | 91 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08868 | | mg/Kg | | 89 | 70 - 130 | | |

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

**Lab Sample ID: LCSD 880-15329/2-A**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09431 | | mg/Kg | | 94 | 70 - 130 | 2 | 35 |
| Toluene | | | 0.100 | 0.08655 | | mg/Kg | | 87 | 70 - 130 | 3 | 35 |
| Ethylbenzene | | | 0.100 | 0.08460 | | mg/Kg | | 85 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1728 | | mg/Kg | | 86 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.08727 | | mg/Kg | | 87 | 70 - 130 | 2 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *105* | | *70 - 130* |

**Lab Sample ID: 890-1739-1 MS**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: PH05**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.0996 | 0.07379 | | mg/Kg | | 73 | 70 - 130 | | |
| Toluene | <0.00202 | U | 0.0996 | 0.09570 | | mg/Kg | | 96 | 70 - 130 | | |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

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

**Lab Sample ID: 890-1739-1 MS**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: PH05**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00202 | U | 0.0996 | 0.1047 | | mg/Kg | | 105 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.199 | 0.1996 | | mg/Kg | | 100 | 70 - 130 |
| o-Xylene | <0.00202 | U | 0.0996 | 0.09489 | | mg/Kg | | 95 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *126* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *80* | | *70 - 130* |

**Lab Sample ID: 890-1739-1 MSD**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: PH05**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.0992 | 0.07689 | | mg/Kg | | 77 | 70 - 130 | 4 | 35 |
| Toluene | <0.00202 | U | 0.0992 | 0.07955 | | mg/Kg | | 80 | 70 - 130 | 18 | 35 |
| Ethylbenzene | <0.00202 | U | 0.0992 | 0.07982 | | mg/Kg | | 80 | 70 - 130 | 27 | 35 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.198 | 0.1706 | | mg/Kg | | 86 | 70 - 130 | 16 | 35 |
| o-Xylene | <0.00202 | U | 0.0992 | 0.08304 | | mg/Kg | | 83 | 70 - 130 | 13 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *117* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *80* | | *70 - 130* |

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

**Lab Sample ID: MB 880-15317/1-A**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 11:15 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 11:15 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 11:15 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *115* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 11:15* | *1* |
| *o-Terphenyl* | *120* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 11:15* | *1* |

**Lab Sample ID: LCS 880-15317/2-A**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 791.8 | | mg/Kg | | 79 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1008 | | mg/Kg | | 101 | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

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

**Lab Sample ID: LCS 880-15317/2-A**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 110 | | 70 - 130 |
| o-Terphenyl | 115 | | 70 - 130 |

**Lab Sample ID: LCSD 880-15317/3-A**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 869.0 | | mg/Kg | | 87 | 70 - 130 | 9 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1036 | | mg/Kg | | 104 | 70 - 130 | 3 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 119 | | 70 - 130 |
| o-Terphenyl | 114 | | 70 - 130 |

**Lab Sample ID: 890-1743-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 996 | 1031 | | mg/Kg | | 101 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | 126 | | 996 | 1014 | | mg/Kg | | 89 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 92 | | 70 - 130 |
| o-Terphenyl | 87 | | 70 - 130 |

**Lab Sample ID: 890-1743-A-1-E MSD**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 995 | 1002 | | mg/Kg | | 98 | 70 - 130 | 3 | 20 |
| Diesel Range Organics (Over C10-C28) | 126 | | 995 | 1192 | | mg/Kg | | 107 | 70 - 130 | 16 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 103 | | 70 - 130 |
| o-Terphenyl | 101 | | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-15277/1-A**
**Matrix: Solid**
**Analysis Batch: 15398**

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

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 12/22/21 08:00 | 1 |

**Lab Sample ID: LCS 880-15277/2-A**
**Matrix: Solid**
**Analysis Batch: 15398**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 257.3 | | mg/Kg | | 103 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-15277/3-A**
**Matrix: Solid**
**Analysis Batch: 15398**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 256.0 | | mg/Kg | | 102 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 890-1738-A-11-D MS**
**Matrix: Solid**
**Analysis Batch: 15398**

**Client Sample ID: Matrix Spike**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 28.8 | | 250 | 288.6 | | mg/Kg | | 104 | 90 - 110 | | |

**Lab Sample ID: 890-1738-A-11-E MSD**
**Matrix: Solid**
**Analysis Batch: 15398**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 28.8 | | 250 | 300.8 | | mg/Kg | | 109 | 90 - 110 | 4 | 20 |

**Lab Sample ID: MB 880-15364/1-A**
**Matrix: Solid**
**Analysis Batch: 15438**

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

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 12/23/21 03:02 | 1 |

**Lab Sample ID: LCS 880-15364/2-A**
**Matrix: Solid**
**Analysis Batch: 15438**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 253.2 | | mg/Kg | | 101 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-15364/3-A**
**Matrix: Solid**
**Analysis Batch: 15438**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 260.5 | | mg/Kg | | 104 | 90 - 110 | 3 | 20 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: 880-9605-A-4-D MS**
**Matrix: Solid**
**Analysis Batch: 15438**

**Client Sample ID: Matrix Spike**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.02 | U F1 | 251 | 293.9 | F1 | mg/Kg | | 115 | 90 - 110 | | |

**Lab Sample ID: 880-9605-A-4-E MSD**
**Matrix: Solid**
**Analysis Batch: 15438**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.02 | U F1 | 251 | 293.0 | F1 | mg/Kg | | 115 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

## GC VOA

### Prep Batch: 15329

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1739-1 | PH05 | Total/NA | Solid | 5035 | |
| 890-1739-2 | PH05A | Total/NA | Solid | 5035 | |
| 890-1739-3 | PH05B | Total/NA | Solid | 5035 | |
| MB 880-15329/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-15329/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-15329/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-1739-1 MS | PH05 | Total/NA | Solid | 5035 | |
| 890-1739-1 MSD | PH05 | Total/NA | Solid | 5035 | |

### Analysis Batch: 15330

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1739-1 | PH05 | Total/NA | Solid | 8021B | 15329 |
| 890-1739-2 | PH05A | Total/NA | Solid | 8021B | 15329 |
| 890-1739-3 | PH05B | Total/NA | Solid | 8021B | 15329 |
| MB 880-15329/5-A | Method Blank | Total/NA | Solid | 8021B | 15329 |
| LCS 880-15329/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 15329 |
| LCSD 880-15329/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 15329 |
| 890-1739-1 MS | PH05 | Total/NA | Solid | 8021B | 15329 |
| 890-1739-1 MSD | PH05 | Total/NA | Solid | 8021B | 15329 |

### Analysis Batch: 15505

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1739-1 | PH05 | Total/NA | Solid | Total BTEX | |
| 890-1739-2 | PH05A | Total/NA | Solid | Total BTEX | |
| 890-1739-3 | PH05B | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 15317

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1739-1 | PH05 | Total/NA | Solid | 8015NM Prep | |
| 890-1739-2 | PH05A | Total/NA | Solid | 8015NM Prep | |
| 890-1739-3 | PH05B | Total/NA | Solid | 8015NM Prep | |
| MB 880-15317/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-15317/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-15317/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-1743-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-1743-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 15328

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1739-1 | PH05 | Total/NA | Solid | 8015B NM | 15317 |
| 890-1739-2 | PH05A | Total/NA | Solid | 8015B NM | 15317 |
| 890-1739-3 | PH05B | Total/NA | Solid | 8015B NM | 15317 |
| MB 880-15317/1-A | Method Blank | Total/NA | Solid | 8015B NM | 15317 |
| LCS 880-15317/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 15317 |
| LCSD 880-15317/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 15317 |
| 890-1743-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 15317 |
| 890-1743-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 15317 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

## GC Semi VOA

### Analysis Batch: 15674

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1739-1 | PH05 | Total/NA | Solid | 8015 NM | |
| 890-1739-2 | PH05A | Total/NA | Solid | 8015 NM | |
| 890-1739-3 | PH05B | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 15277

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1739-1 | PH05 | Soluble | Solid | DI Leach | |
| 890-1739-2 | PH05A | Soluble | Solid | DI Leach | |
| MB 880-15277/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-15277/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-15277/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-1738-A-11-D MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-1738-A-11-E MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Leach Batch: 15364

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1739-3 | PH05B | Soluble | Solid | DI Leach | |
| MB 880-15364/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-15364/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-15364/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-9605-A-4-D MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 880-9605-A-4-E MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 15398

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1739-1 | PH05 | Soluble | Solid | 300.0 | 15277 |
| 890-1739-2 | PH05A | Soluble | Solid | 300.0 | 15277 |
| MB 880-15277/1-A | Method Blank | Soluble | Solid | 300.0 | 15277 |
| LCS 880-15277/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 15277 |
| LCSD 880-15277/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 15277 |
| 890-1738-A-11-D MS | Matrix Spike | Soluble | Solid | 300.0 | 15277 |
| 890-1738-A-11-E MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 15277 |

### Analysis Batch: 15438

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1739-3 | PH05B | Soluble | Solid | 300.0 | 15364 |
| MB 880-15364/1-A | Method Blank | Soluble | Solid | 300.0 | 15364 |
| LCS 880-15364/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 15364 |
| LCSD 880-15364/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 15364 |
| 880-9605-A-4-D MS | Matrix Spike | Soluble | Solid | 300.0 | 15364 |
| 880-9605-A-4-E MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 15364 |

# Lab Chronicle

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

## Client Sample ID: PH05

**Date Collected: 12/17/21 12:22**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1739-1

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 13:44 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/23/21 19:53 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15317 | 12/22/21 09:41 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15328 | 12/22/21 20:12 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15277 | 12/21/21 15:10 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 15398 | 12/22/21 15:15 | SC | XEN MID |

## Client Sample ID: PH05A

**Date Collected: 12/17/21 12:27**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1739-2

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 14:04 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/23/21 19:53 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15317 | 12/22/21 09:41 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15328 | 12/22/21 20:34 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15277 | 12/21/21 15:10 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 5 | 15398 | 12/22/21 18:12 | SC | XEN MID |

## Client Sample ID: PH05B

**Date Collected: 12/17/21 12:36**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1739-3

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 14:25 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/23/21 19:53 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15317 | 12/22/21 09:41 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15328 | 12/22/21 20:56 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15364 | 12/22/21 10:49 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 15438 | 12/23/21 10:30 | SC | XEN MID |

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

# Accreditation/Certification Summary

Client: WSP USA Inc. Job ID: 890-1739-1
Project/Site: BEU 29W VADER 100H SDG: TE012921044

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-21-22 | 06-30-22 |

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

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

# Method Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

| 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: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1739-1
SDG: TE012921044

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-1739-1 | PH05 | Solid | 12/17/21 12:22 | 12/20/21 15:24 | 2 |
| 890-1739-2 | PH05A | Solid | 12/17/21 12:27 | 12/20/21 15:24 | 4 |
| 890-1739-3 | PH05B | Solid | 12/17/21 12:36 | 12/20/21 15:24 | 6 |

# Chain of Custody

Work Order No: _____

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Kalei Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | WSP | Company Name: | XTO Energy |
| Address: | 3300 North A Street | Address: | 3104 E Green Street |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 817-683-2503 Email: | Email: | Gilbert.Moreno@wsp.com, Adrian.Baker@exxonmobil.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | BEU 29W Vader 100H | Turn Around | |
| Project Number: | TE012921044 | Routine | ☑ |
| P.O. Number: | | Rush: | |
| Sampler's Name: | Gilbert Moreno | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Temperature (°C): | 4.0/3.8 | Thermometer ID | TWM-007 |
| Received Intact: | Yes No | | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Total Containers: | |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| PH07 | S | 12.17.21 | 12:22 | 2 | 1 | x | x | x |
| PH07A | S | 12.17.21 | 12:27 | 4 | 1 | x | x | x |
| PH07B | S | 12.17.21 | 12:36 | 6 | 1 | x | x | x |

890-1739 Chain of Custody

**Work Order Notes**

CC 1568221001
AFE DC 2017 04339 CAP CMP 01
API 30-025-46515

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

**Sample Comments**

12.17.21

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



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | | | 12.20.21 1524 | 2 | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev. 2018.1

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1739-1
SDG Number: TE012921044

**Login Number: 1739**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1739-1
SDG Number: TE012921044

**Login Number: 1739**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 12/21/21 02:08 PM**

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

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-1740-1
Laboratory Sample Delivery Group: TE012921044
Client Project/Site: BEU 29W VADER 100H
Revision: 1

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*3/25/2022 2:00:12 PM*

Jessica Kramer, Project Manager
(432)704-5440
jessica.kramer@eurofinset.com



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

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

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Laboratory Job ID: 890-1740-1
SDG: TE012921044

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# Definitions/Glossary

Client: WSP USA Inc. Job ID: 890-1740-1
Project/Site: BEU 29W VADER 100H SDG: TE012921044

## Qualifiers

### GC VOA

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

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| *1 | LCS/LCSD RPD exceeds control limits. |
| S1+ | Surrogate recovery exceeds control limits, high biased. |
| U | Indicates the analyte was analyzed for but not detected. |

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

## Job ID: 890-1740-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-1740-1**

REVISION

The report being provided is a revision of the original report sent on 12/28/2021. The report (revision 1) is being revised due to Per client email requesting sample ID change.

Report revision history

**Receipt**
The samples were received on 12/20/2021 3:24 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 3.8°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 RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-15385 and analytical batch 880-15413 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10

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

**HPLC/IC**
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-15364 and analytical batch 880-15438 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. The associated samples are: PH03 (890-1740-1), PH03A (890-1740-2), (880-9605-A-4-A), (880-9605-A-4-D MS) and (880-9605-A-4-E MSD).

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

# Client Sample Results

Client: WSP USA Inc. Job ID: 890-1740-1
Project/Site: BEU 29W VADER 100H SDG: TE012921044

## Client Sample ID: PH03
**Date Collected: 12/17/21 10:05**
**Date Received: 12/20/21 15:24**
**Sample Depth: 2**

**Lab Sample ID: 890-1740-1**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 16:47 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 16:47 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 16:47 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 16:47 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 16:47 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 16:47 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *130* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 16:47* | *1* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 16:47* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 12/23/21 19:53 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 12/28/21 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U *1 | 49.9 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 21:17 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 21:17 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 21:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *105* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 21:17* | *1* |
| *o-Terphenyl* | *117* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 21:17* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **191** | | 4.99 | | mg/Kg | | | 12/23/21 10:40 | 1 |

## Client Sample ID: PH03A
**Date Collected: 12/17/21 10:11**
**Date Received: 12/20/21 15:24**
**Sample Depth: 4**

**Lab Sample ID: 890-1740-2**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:09 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:09 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:09 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:09 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:09 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:09 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *127* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 18:09* | *1* |

Eurofins Carlsbad

# Client Sample Results

Client: WSP USA Inc. Job ID: 890-1740-1
Project/Site: BEU 29W VADER 100H SDG: TE012921044

## Client Sample ID: PH03A
**Lab Sample ID: 890-1740-2**
**Date Collected: 12/17/21 10:11**
**Matrix: Solid**
**Date Received: 12/20/21 15:24**
**Sample Depth: 4**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *81* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 18:09* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | | mg/Kg | | | 12/23/21 19:53 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 12/28/21 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U *1 | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 22:17 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 22:17 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 22:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *94* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 22:17* | *1* |
| *o-Terphenyl* | *108* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 22:17* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **1150** | | 4.98 | | mg/Kg | | | 12/23/21 10:50 | 1 |

## Client Sample ID: PH03B
**Lab Sample ID: 890-1740-3**
**Date Collected: 12/17/21 10:18**
**Matrix: Solid**
**Date Received: 12/20/21 15:24**
**Sample Depth: 6**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:30 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:30 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:30 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:30 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:30 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:30 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *118* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 18:30* | *1* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 18:30* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00400 | U | 0.00400 | | mg/Kg | | | 12/23/21 19:53 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 12/28/21 17:22 | 1 |

Eurofins Carlsbad

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

## Client Sample ID: PH03B

**Date Collected: 12/17/21 10:18**
**Date Received: 12/20/21 15:24**
**Sample Depth: 6**

## Lab Sample ID: 890-1740-3

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U *1 | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 22:38 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 22:38 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 22:38 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *104* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 22:38* | *1* |
| *o-Terphenyl* | *116* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 22:38* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **318** | | 25.1 | | mg/Kg | | | 12/22/21 10:25 | 5 |

# Surrogate Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | BFB1 (70-130) | DFBZ1 (70-130) |
| 890-1739-A-1-B MS | Matrix Spike | 126 | 80 |
| 890-1739-A-1-C MSD | Matrix Spike Duplicate | 117 | 80 |
| 890-1740-1 | PH03 | 130 | 98 |
| 890-1740-2 | PH03A | 127 | 81 |
| 890-1740-3 | PH03B | 118 | 102 |
| LCS 880-15329/1-A | Lab Control Sample | 107 | 107 |
| LCSD 880-15329/2-A | Lab Control Sample Dup | 106 | 105 |
| MB 880-15329/5-A | Method Blank | 104 | 100 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | 1CO1 (70-130) | OTPH1 (70-130) |
| 890-1740-1 | PH03 | 105 | 117 |
| 890-1740-1 MS | PH03 | 96 | 97 |
| 890-1740-1 MSD | PH03 | 94 | 96 |
| 890-1740-2 | PH03A | 94 | 108 |
| 890-1740-3 | PH03B | 104 | 116 |
| LCS 880-15385/2-A | Lab Control Sample | 116 | 125 |
| LCSD 880-15385/3-A | Lab Control Sample Dup | 98 | 109 |
| MB 880-15385/1-A | Method Blank | 152 S1+ | 177 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

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

**Lab Sample ID: MB 880-15329/5-A**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 13:22* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 13:22* | *1* |

**Lab Sample ID: LCS 880-15329/1-A**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09632 | | mg/Kg | | 96 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08900 | | mg/Kg | | 89 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.08828 | | mg/Kg | | 88 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1813 | | mg/Kg | | 91 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08868 | | mg/Kg | | 89 | 70 - 130 | | |

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

**Lab Sample ID: LCSD 880-15329/2-A**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09431 | | mg/Kg | | 94 | 70 - 130 | 2 | 35 |
| Toluene | | | 0.100 | 0.08655 | | mg/Kg | | 87 | 70 - 130 | 3 | 35 |
| Ethylbenzene | | | 0.100 | 0.08460 | | mg/Kg | | 85 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1728 | | mg/Kg | | 86 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.08727 | | mg/Kg | | 87 | 70 - 130 | 2 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *105* | | *70 - 130* |

**Lab Sample ID: 890-1739-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.0996 | 0.07379 | | mg/Kg | | 73 | 70 - 130 | | |
| Toluene | <0.00202 | U | 0.0996 | 0.09570 | | mg/Kg | | 96 | 70 - 130 | | |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

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

**Lab Sample ID: 890-1739-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00202 | U | 0.0996 | 0.1047 | | mg/Kg | | 105 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.199 | 0.1996 | | mg/Kg | | 100 | 70 - 130 |
| o-Xylene | <0.00202 | U | 0.0996 | 0.09489 | | mg/Kg | | 95 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *126* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *80* | | *70 - 130* |

**Lab Sample ID: 890-1739-A-1-C MSD**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.0992 | 0.07689 | | mg/Kg | | 77 | 70 - 130 | 4 | 35 |
| Toluene | <0.00202 | U | 0.0992 | 0.07955 | | mg/Kg | | 80 | 70 - 130 | 18 | 35 |
| Ethylbenzene | <0.00202 | U | 0.0992 | 0.07982 | | mg/Kg | | 80 | 70 - 130 | 27 | 35 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.198 | 0.1706 | | mg/Kg | | 86 | 70 - 130 | 16 | 35 |
| o-Xylene | <0.00202 | U | 0.0992 | 0.08304 | | mg/Kg | | 83 | 70 - 130 | 13 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *117* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *80* | | *70 - 130* |

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

**Lab Sample ID: MB 880-15385/1-A**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 20:18 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 20:18 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 20:18 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *152* | *S1+* | *70 - 130* | *12/22/21 14:29* | *12/23/21 20:18* | *1* |
| *o-Terphenyl* | *177* | *S1+* | *70 - 130* | *12/22/21 14:29* | *12/23/21 20:18* | *1* |

**Lab Sample ID: LCS 880-15385/2-A**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 869.0 | | mg/Kg | | 87 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 826.1 | | mg/Kg | | 83 | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

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

**Lab Sample ID: LCS 880-15385/2-A**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 116 | | 70 - 130 |
| o-Terphenyl | 125 | | 70 - 130 |

**Lab Sample ID: LCSD 880-15385/3-A**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1239 | *1 | mg/Kg | | 124 | 70 - 130 | 35 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 776.5 | | mg/Kg | | 78 | 70 - 130 | 6 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 98 | | 70 - 130 |
| o-Terphenyl | 109 | | 70 - 130 |

**Lab Sample ID: 890-1740-1 MS**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: PH03**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U *1 | 996 | 1249 | | mg/Kg | | 121 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 996 | 794.6 | | mg/Kg | | 75 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 96 | | 70 - 130 |
| o-Terphenyl | 97 | | 70 - 130 |

**Lab Sample ID: 890-1740-1 MSD**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: PH03**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U *1 | 995 | 1226 | | mg/Kg | | 118 | 70 - 130 | 2 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 995 | 777.4 | | mg/Kg | | 74 | 70 - 130 | 2 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 94 | | 70 - 130 |
| o-Terphenyl | 96 | | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-15278/1-A**
**Matrix: Solid**
**Analysis Batch: 15401**

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

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 12/22/21 10:00 | 1 |

**Lab Sample ID: LCS 880-15278/2-A**
**Matrix: Solid**
**Analysis Batch: 15401**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 253.5 | | mg/Kg | | 101 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-15278/3-A**
**Matrix: Solid**
**Analysis Batch: 15401**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 247.8 | | mg/Kg | | 99 | 90 - 110 | 2 | 20 |

**Lab Sample ID: 890-1740-3 MS**
**Matrix: Solid**
**Analysis Batch: 15401**

**Client Sample ID: PH03B**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 318 | | 1260 | 1571 | | mg/Kg | | 100 | 90 - 110 | | |

**Lab Sample ID: 890-1740-3 MSD**
**Matrix: Solid**
**Analysis Batch: 15401**

**Client Sample ID: PH03B**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 318 | | 1260 | 1567 | | mg/Kg | | 99 | 90 - 110 | 0 | 20 |

**Lab Sample ID: MB 880-15364/1-A**
**Matrix: Solid**
**Analysis Batch: 15438**

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

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 12/23/21 03:02 | 1 |

**Lab Sample ID: LCS 880-15364/2-A**
**Matrix: Solid**
**Analysis Batch: 15438**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 253.2 | | mg/Kg | | 101 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-15364/3-A**
**Matrix: Solid**
**Analysis Batch: 15438**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 260.5 | | mg/Kg | | 104 | 90 - 110 | 3 | 20 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: 880-9605-A-4-D MS**
**Matrix: Solid**
**Analysis Batch: 15438**

**Client Sample ID: Matrix Spike**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.02 | U F1 | 251 | 293.9 | F1 | mg/Kg | | 115 | 90 - 110 | | |

**Lab Sample ID: 880-9605-A-4-E MSD**
**Matrix: Solid**
**Analysis Batch: 15438**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.02 | U F1 | 251 | 293.0 | F1 | mg/Kg | | 115 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

## GC VOA

### Prep Batch: 15329

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1740-1 | PH03 | Total/NA | Solid | 5035 | |
| 890-1740-2 | PH03A | Total/NA | Solid | 5035 | |
| 890-1740-3 | PH03B | Total/NA | Solid | 5035 | |
| MB 880-15329/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-15329/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-15329/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-1739-A-1-B MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-1739-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 15330

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1740-1 | PH03 | Total/NA | Solid | 8021B | 15329 |
| 890-1740-2 | PH03A | Total/NA | Solid | 8021B | 15329 |
| 890-1740-3 | PH03B | Total/NA | Solid | 8021B | 15329 |
| MB 880-15329/5-A | Method Blank | Total/NA | Solid | 8021B | 15329 |
| LCS 880-15329/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 15329 |
| LCSD 880-15329/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 15329 |
| 890-1739-A-1-B MS | Matrix Spike | Total/NA | Solid | 8021B | 15329 |
| 890-1739-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 15329 |

### Analysis Batch: 15505

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1740-1 | PH03 | Total/NA | Solid | Total BTEX | |
| 890-1740-2 | PH03A | Total/NA | Solid | Total BTEX | |
| 890-1740-3 | PH03B | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 15385

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1740-1 | PH03 | Total/NA | Solid | 8015NM Prep | |
| 890-1740-2 | PH03A | Total/NA | Solid | 8015NM Prep | |
| 890-1740-3 | PH03B | Total/NA | Solid | 8015NM Prep | |
| MB 880-15385/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-15385/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-15385/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-1740-1 MS | PH03 | Total/NA | Solid | 8015NM Prep | |
| 890-1740-1 MSD | PH03 | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 15413

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1740-1 | PH03 | Total/NA | Solid | 8015B NM | 15385 |
| 890-1740-2 | PH03A | Total/NA | Solid | 8015B NM | 15385 |
| 890-1740-3 | PH03B | Total/NA | Solid | 8015B NM | 15385 |
| MB 880-15385/1-A | Method Blank | Total/NA | Solid | 8015B NM | 15385 |
| LCS 880-15385/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 15385 |
| LCSD 880-15385/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 15385 |
| 890-1740-1 MS | PH03 | Total/NA | Solid | 8015B NM | 15385 |
| 890-1740-1 MSD | PH03 | Total/NA | Solid | 8015B NM | 15385 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

## GC Semi VOA

### Analysis Batch: 15674

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1740-1 | PH03 | Total/NA | Solid | 8015 NM | |
| 890-1740-2 | PH03A | Total/NA | Solid | 8015 NM | |
| 890-1740-3 | PH03B | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 15278

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1740-3 | PH03B | Soluble | Solid | DI Leach | |
| MB 880-15278/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-15278/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-15278/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-1740-3 MS | PH03B | Soluble | Solid | DI Leach | |
| 890-1740-3 MSD | PH03B | Soluble | Solid | DI Leach | |

### Leach Batch: 15364

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1740-1 | PH03 | Soluble | Solid | DI Leach | |
| 890-1740-2 | PH03A | Soluble | Solid | DI Leach | |
| MB 880-15364/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-15364/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-15364/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-9605-A-4-D MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 880-9605-A-4-E MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 15401

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1740-3 | PH03B | Soluble | Solid | 300.0 | 15278 |
| MB 880-15278/1-A | Method Blank | Soluble | Solid | 300.0 | 15278 |
| LCS 880-15278/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 15278 |
| LCSD 880-15278/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 15278 |
| 890-1740-3 MS | PH03B | Soluble | Solid | 300.0 | 15278 |
| 890-1740-3 MSD | PH03B | Soluble | Solid | 300.0 | 15278 |

### Analysis Batch: 15438

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1740-1 | PH03 | Soluble | Solid | 300.0 | 15364 |
| 890-1740-2 | PH03A | Soluble | Solid | 300.0 | 15364 |
| MB 880-15364/1-A | Method Blank | Soluble | Solid | 300.0 | 15364 |
| LCS 880-15364/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 15364 |
| LCSD 880-15364/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 15364 |
| 880-9605-A-4-D MS | Matrix Spike | Soluble | Solid | 300.0 | 15364 |
| 880-9605-A-4-E MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 15364 |

# Lab Chronicle

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

## Client Sample ID: PH03

**Date Collected: 12/17/21 10:05**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1740-1

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 16:47 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/23/21 19:53 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15385 | 12/22/21 14:29 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15413 | 12/23/21 21:17 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15364 | 12/22/21 10:49 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 15438 | 12/23/21 10:40 | SC | XEN MID |

## Client Sample ID: PH03A

**Date Collected: 12/17/21 10:11**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1740-2

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 18:09 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/23/21 19:53 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15385 | 12/22/21 14:29 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15413 | 12/23/21 22:17 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15364 | 12/22/21 10:49 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 15438 | 12/23/21 10:50 | SC | XEN MID |

## Client Sample ID: PH03B

**Date Collected: 12/17/21 10:18**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1740-3

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 18:30 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/23/21 19:53 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15385 | 12/22/21 14:29 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15413 | 12/23/21 22:38 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15278 | 12/21/21 15:12 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 5 | 15401 | 12/22/21 10:25 | SC | XEN MID |

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

# Accreditation/Certification Summary

Client: WSP USA Inc. Job ID: 890-1740-1
Project/Site: BEU 29W VADER 100H SDG: TE012921044

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-21-22 | 06-30-22 |

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

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

# Method Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

| 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: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1740-1
SDG: TE012921044

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-1740-1 | PH03 | Solid | 12/17/21 10:05 | 12/20/21 15:24 | 2 |
| 890-1740-2 | PH03A | Solid | 12/17/21 10:11 | 12/20/21 15:24 | 4 |
| 890-1740-3 | PH03B | Solid | 12/17/21 10:18 | 12/20/21 15:24 | 6 |

# Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Work Order No: _____

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Kalei Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | WSP | Company Name: | XTO Energy |
| Address: | 3300 North A Street | Address: | 3104 E Green Street |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 817-683-2503 Email: | Email: | Gilbert.Moreno@wsp.com, Adrian.Baker@exxonmobil.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | BEU 29W Vader 100H | Turn Around | |
| Project Number: | TE012921044 | Routine ☑ | |
| P.O. Number: | | Rush: | |
| Sampler's Name: | Gilbert Moreno | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No |
| Temperature (°C): | 4.0/3.8 | Thermometer ID | TNM-007 |
| Received Intact: | Yes No | | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No N/A | Total Containers: | |

**ANALYSIS REQUEST**

890-1740 Chain of Custody

**Work Order Notes**

CC 1568221001
AFE DD 2017 04339 CAP CMP 01
API 30-025-46515

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

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|
| PH05 | S | 12.17.21 | 10:05 | 2 | 1 | x | x | x | |
| PH05A | S | 12.17.21 | 10:11 | 4 | 1 | x | x | x | |
| PH05B | S | 12.17.21 | 10:18 | 6 | 1 | x | x | x | |

12.17.21

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to 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 | | | 12.20.21 1524 | 2 | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev. 2018.1

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1740-1
SDG Number: TE012921044

**Login Number: 1740**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1740-1
SDG Number: TE012921044

**Login Number: 1740**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 12/21/21 02:08 PM**

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

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-1741-1
Laboratory Sample Delivery Group: TE012921044
Client Project/Site: BEU 29 W VADER 100H
Revision: 1

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*3/25/2022 2:01:33 PM*

Jessica Kramer, Project Manager
(432)704-5440
jessica.kramer@eurofinset.com



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

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

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Laboratory Job ID: 890-1741-1
SDG: TE012921044

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# Definitions/Glossary

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

## Qualifiers

### GC VOA

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

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| *1 | LCS/LCSD RPD exceeds control limits. |
| S1+ | Surrogate recovery exceeds control limits, high biased. |
| U | Indicates the analyte was analyzed for but not detected. |

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

## Job ID: 890-1741-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-1741-1**

REVISION

The report being provided is a revision of the original report sent on 12/28/2021. The report (revision 1) is being revised due to Per client email requesting sample ID change.

Report revision history

**Receipt**
The samples were received on 12/20/2021 3:24 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 3.8°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 RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-15385 and analytical batch 880-15413 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10

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: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

## Client Sample ID: PH04

**Date Collected: 12/17/21 10:32**
**Date Received: 12/20/21 15:24**
**Sample Depth: 2**

**Lab Sample ID: 890-1741-1**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:50 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:50 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:50 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:50 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:50 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 18:50 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *126* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 18:50* | *1* |
| *1,4-Difluorobenzene (Surr)* | *109* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 18:50* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 12/23/21 19:53 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 12/28/21 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U *1 | 49.9 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 22:57 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 22:57 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 22:57 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *103* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 22:57* | *1* |
| *o-Terphenyl* | *119* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 22:57* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **636** | | 5.05 | | mg/Kg | | | 12/22/21 10:50 | 1 |

## Client Sample ID: PH04A

**Date Collected: 12/17/21 10:45**
**Date Received: 12/20/21 15:24**
**Sample Depth: 4**

**Lab Sample ID: 890-1741-2**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:11 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:11 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:11 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:11 | 1 |
| **o-Xylene** | **0.00202** | | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:11 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:11 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *112* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 19:11* | *1* |

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# Client Sample Results

Client: WSP USA Inc. Job ID: 890-1741-1
Project/Site: BEU 29 W VADER 100H SDG: TE012921044

## Client Sample ID: PH04A
**Lab Sample ID: 890-1741-2**
**Date Collected: 12/17/21 10:45**
**Matrix: Solid**
**Date Received: 12/20/21 15:24**
**Sample Depth: 4**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 19:11* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | mg/Kg | | | 12/23/21 19:53 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | mg/Kg | | | 12/28/21 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | mg/Kg | | 12/22/21 09:41 | 12/22/21 21:17 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | mg/Kg | | 12/22/21 09:41 | 12/22/21 21:17 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | mg/Kg | | 12/22/21 09:41 | 12/22/21 21:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *102* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 21:17* | *1* |
| *o-Terphenyl* | *100* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 21:17* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **1650** | | 49.7 | mg/Kg | | | 12/22/21 10:58 | 10 |

## Client Sample ID: PH04B
**Lab Sample ID: 890-1741-3**
**Date Collected: 12/17/21 10:54**
**Matrix: Solid**
**Date Received: 12/20/21 15:24**
**Sample Depth: 6**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:31 | 1 |
| Toluene | <0.00199 | U | 0.00199 | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:31 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:31 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:31 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:31 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:31 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *128* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 19:31* | *1* |
| *1,4-Difluorobenzene (Surr)* | *105* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 19:31* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | mg/Kg | | | 12/28/21 08:41 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | mg/Kg | | | 12/28/21 17:22 | 1 |

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

## Client Sample ID: PH04B

**Date Collected: 12/17/21 10:54**
**Date Received: 12/20/21 15:24**
**Sample Depth: 6**

## Lab Sample ID: 890-1741-3

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 12/23/21 14:53 | 12/24/21 23:39 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 12/23/21 14:53 | 12/24/21 23:39 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 12/23/21 14:53 | 12/24/21 23:39 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *101* | | *70 - 130* | *12/23/21 14:53* | *12/24/21 23:39* | *1* |
| *o-Terphenyl* | *92* | | *70 - 130* | *12/23/21 14:53* | *12/24/21 23:39* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **1360** | | 49.5 | | mg/Kg | | | 12/22/21 11:07 | 10 |

# Surrogate Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-1739-A-1-B MS | Matrix Spike | 126 | 80 |
| 890-1739-A-1-C MSD | Matrix Spike Duplicate | 117 | 80 |
| 890-1741-1 | PH04 | 126 | 109 |
| 890-1741-2 | PH04A | 112 | 97 |
| 890-1741-3 | PH04B | 128 | 105 |
| LCS 880-15329/1-A | Lab Control Sample | 107 | 107 |
| LCSD 880-15329/2-A | Lab Control Sample Dup | 106 | 105 |
| MB 880-15329/5-A | Method Blank | 104 | 100 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-9652-A-1-F MS | Matrix Spike | 92 | 86 |
| 880-9652-A-1-G MSD | Matrix Spike Duplicate | 92 | 87 |
| 890-1740-A-1-D MS | Matrix Spike | 96 | 97 |
| 890-1740-A-1-E MSD | Matrix Spike Duplicate | 94 | 96 |
| 890-1741-1 | PH04 | 103 | 119 |
| 890-1741-2 | PH04A | 102 | 100 |
| 890-1741-3 | PH04B | 101 | 92 |
| 890-1743-A-1-D MS | Matrix Spike | 92 | 87 |
| 890-1743-A-1-E MSD | Matrix Spike Duplicate | 103 | 101 |
| LCS 880-15385/2-A | Lab Control Sample | 116 | 125 |
| LCSD 880-15385/3-A | Lab Control Sample Dup | 98 | 109 |
| MB 880-15385/1-A | Method Blank | 152 S1+ | 177 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO2 | OTPH2 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| LCS 880-15317/2-A | Lab Control Sample | 110 | 115 |
| LCS 880-15481/2-A | Lab Control Sample | 112 | 110 |
| LCSD 880-15317/3-A | Lab Control Sample Dup | 119 | 114 |
| LCSD 880-15481/3-A | Lab Control Sample Dup | 130 | 129 |
| MB 880-15317/1-A | Method Blank | 115 | 120 |
| MB 880-15481/1-A | Method Blank | 122 | 119 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

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

### Lab Sample ID: MB 880-15329/5-A
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 13:22* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 13:22* | *1* |

### Lab Sample ID: LCS 880-15329/1-A
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09632 | | mg/Kg | | 96 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08900 | | mg/Kg | | 89 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.08828 | | mg/Kg | | 88 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1813 | | mg/Kg | | 91 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08868 | | mg/Kg | | 89 | 70 - 130 | | |

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

### Lab Sample ID: LCSD 880-15329/2-A
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09431 | | mg/Kg | | 94 | 70 - 130 | 2 | 35 |
| Toluene | | | 0.100 | 0.08655 | | mg/Kg | | 87 | 70 - 130 | 3 | 35 |
| Ethylbenzene | | | 0.100 | 0.08460 | | mg/Kg | | 85 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1728 | | mg/Kg | | 86 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.08727 | | mg/Kg | | 87 | 70 - 130 | 2 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *105* | | *70 - 130* |

### Lab Sample ID: 890-1739-A-1-B MS
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.0996 | 0.07379 | | mg/Kg | | 73 | 70 - 130 | | |
| Toluene | <0.00202 | U | 0.0996 | 0.09570 | | mg/Kg | | 96 | 70 - 130 | | |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

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

**Lab Sample ID: 890-1739-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00202 | U | 0.0996 | 0.1047 | | mg/Kg | | 105 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.199 | 0.1996 | | mg/Kg | | 100 | 70 - 130 |
| o-Xylene | <0.00202 | U | 0.0996 | 0.09489 | | mg/Kg | | 95 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *126* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *80* | | *70 - 130* |

**Lab Sample ID: 890-1739-A-1-C MSD**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.0992 | 0.07689 | | mg/Kg | | 77 | 70 - 130 | 4 | 35 |
| Toluene | <0.00202 | U | 0.0992 | 0.07955 | | mg/Kg | | 80 | 70 - 130 | 18 | 35 |
| Ethylbenzene | <0.00202 | U | 0.0992 | 0.07982 | | mg/Kg | | 80 | 70 - 130 | 27 | 35 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.198 | 0.1706 | | mg/Kg | | 86 | 70 - 130 | 16 | 35 |
| o-Xylene | <0.00202 | U | 0.0992 | 0.08304 | | mg/Kg | | 83 | 70 - 130 | 13 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *117* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *80* | | *70 - 130* |

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

**Lab Sample ID: MB 880-15317/1-A**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 11:15 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 11:15 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 09:41 | 12/22/21 11:15 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *115* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 11:15* | *1* |
| *o-Terphenyl* | *120* | | *70 - 130* | *12/22/21 09:41* | *12/22/21 11:15* | *1* |

**Lab Sample ID: LCS 880-15317/2-A**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 791.8 | | mg/Kg | | 79 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1008 | | mg/Kg | | 101 | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

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

**Lab Sample ID: LCS 880-15317/2-A**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 110 | | 70 - 130 |
| o-Terphenyl | 115 | | 70 - 130 |

**Lab Sample ID: LCSD 880-15317/3-A**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 869.0 | | mg/Kg | | 87 | 70 - 130 | 9 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1036 | | mg/Kg | | 104 | 70 - 130 | 3 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 119 | | 70 - 130 |
| o-Terphenyl | 114 | | 70 - 130 |

**Lab Sample ID: 890-1743-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 996 | 1031 | | mg/Kg | | 101 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | 126 | | 996 | 1014 | | mg/Kg | | 89 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 92 | | 70 - 130 |
| o-Terphenyl | 87 | | 70 - 130 |

**Lab Sample ID: 890-1743-A-1-E MSD**
**Matrix: Solid**
**Analysis Batch: 15328**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 15317**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 995 | 1002 | | mg/Kg | | 98 | 70 - 130 | 3 | 20 |
| Diesel Range Organics (Over C10-C28) | 126 | | 995 | 1192 | | mg/Kg | | 107 | 70 - 130 | 16 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 103 | | 70 - 130 |
| o-Terphenyl | 101 | | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

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

**Lab Sample ID: MB 880-15385/1-A**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 20:18 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 20:18 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 20:18 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *152* | *S1+* | *70 - 130* | *12/22/21 14:29* | *12/23/21 20:18* | *1* |
| *o-Terphenyl* | *177* | *S1+* | *70 - 130* | *12/22/21 14:29* | *12/23/21 20:18* | *1* |

**Lab Sample ID: LCS 880-15385/2-A**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 869.0 | | mg/Kg | | 87 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 826.1 | | mg/Kg | | 83 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *116* | | *70 - 130* |
| *o-Terphenyl* | *125* | | *70 - 130* |

**Lab Sample ID: LCSD 880-15385/3-A**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1239 | *1 | mg/Kg | | 124 | 70 - 130 | 35 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 776.5 | | mg/Kg | | 78 | 70 - 130 | 6 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *98* | | *70 - 130* |
| *o-Terphenyl* | *109* | | *70 - 130* |

**Lab Sample ID: 890-1740-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U *1 | 996 | 1249 | | mg/Kg | | 121 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 996 | 794.6 | | mg/Kg | | 75 | 70 - 130 | | |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

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

**Lab Sample ID: 890-1740-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 96 | | 70 - 130 |
| o-Terphenyl | 97 | | 70 - 130 |

**Lab Sample ID: 890-1740-A-1-E MSD**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U *1 | 995 | 1226 | | mg/Kg | | 118 | 70 - 130 | 2 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 995 | 777.4 | | mg/Kg | | 74 | 70 - 130 | 2 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 94 | | 70 - 130 |
| o-Terphenyl | 96 | | 70 - 130 |

**Lab Sample ID: MB 880-15481/1-A**
**Matrix: Solid**
**Analysis Batch: 15426**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 15481**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 237.1 | | 50.0 | | mg/Kg | | 12/23/21 14:53 | 12/24/21 16:42 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/23/21 14:53 | 12/24/21 16:42 | 1 |
| Oll Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/23/21 14:53 | 12/24/21 16:42 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 122 | | 70 - 130 | 12/23/21 14:53 | 12/24/21 16:42 | 1 |
| o-Terphenyl | 119 | | 70 - 130 | 12/23/21 14:53 | 12/24/21 16:42 | 1 |

**Lab Sample ID: LCS 880-15481/2-A**
**Matrix: Solid**
**Analysis Batch: 15426**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15481**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 872.6 | | mg/Kg | | 87 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 955.9 | | mg/Kg | | 96 | 70 - 130 | | |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 112 | | 70 - 130 |
| o-Terphenyl | 110 | | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

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

**Lab Sample ID: LCSD 880-15481/3-A**
**Matrix: Solid**
**Analysis Batch: 15426**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 15481**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 945.9 | | mg/Kg | | 95 | 70 - 130 | 8 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1054 | | mg/Kg | | 105 | 70 - 130 | 10 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *130* | | *70 - 130* |
| *o-Terphenyl* | *129* | | *70 - 130* |

**Lab Sample ID: 880-9652-A-1-F MS**
**Matrix: Solid**
**Analysis Batch: 15426**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15481**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 996 | 1030 | | mg/Kg | | 103 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 996 | 1238 | | mg/Kg | | 122 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *92* | | *70 - 130* |
| *o-Terphenyl* | *86* | | *70 - 130* |

**Lab Sample ID: 880-9652-A-1-G MSD**
**Matrix: Solid**
**Analysis Batch: 15426**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 15481**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 995 | 1041 | | mg/Kg | | 105 | 70 - 130 | 1 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 995 | 1250 | | mg/Kg | | 123 | 70 - 130 | 1 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *92* | | *70 - 130* |
| *o-Terphenyl* | *87* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-15278/1-A**
**Matrix: Solid**
**Analysis Batch: 15401**

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

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 12/22/21 10:00 | 1 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

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

**Lab Sample ID: LCS 880-15278/2-A**
**Matrix: Solid**
**Analysis Batch: 15401**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 253.5 | | mg/Kg | | 101 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-15278/3-A**
**Matrix: Solid**
**Analysis Batch: 15401**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 247.8 | | mg/Kg | | 99 | 90 - 110 | 2 | 20 |

**Lab Sample ID: 890-1740-A-3-B MS**
**Matrix: Solid**
**Analysis Batch: 15401**

**Client Sample ID: Matrix Spike**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 318 | | 1260 | 1571 | | mg/Kg | | 100 | 90 - 110 | | |

**Lab Sample ID: 890-1740-A-3-C MSD**
**Matrix: Solid**
**Analysis Batch: 15401**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 318 | | 1260 | 1567 | | mg/Kg | | 99 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 890-1743-A-4-B MS**
**Matrix: Solid**
**Analysis Batch: 15401**

**Client Sample ID: Matrix Spike**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 6560 | | 2500 | 9222 | | mg/Kg | | 107 | 90 - 110 | | |

**Lab Sample ID: 890-1743-A-4-C MSD**
**Matrix: Solid**
**Analysis Batch: 15401**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 6560 | | 2500 | 9214 | | mg/Kg | | 106 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

## GC VOA

### Prep Batch: 15329

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-1 | PH04 | Total/NA | Solid | 5035 | |
| 890-1741-2 | PH04A | Total/NA | Solid | 5035 | |
| 890-1741-3 | PH04B | Total/NA | Solid | 5035 | |
| MB 880-15329/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-15329/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-15329/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-1739-A-1-B MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-1739-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 15330

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-1 | PH04 | Total/NA | Solid | 8021B | 15329 |
| 890-1741-2 | PH04A | Total/NA | Solid | 8021B | 15329 |
| 890-1741-3 | PH04B | Total/NA | Solid | 8021B | 15329 |
| MB 880-15329/5-A | Method Blank | Total/NA | Solid | 8021B | 15329 |
| LCS 880-15329/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 15329 |
| LCSD 880-15329/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 15329 |
| 890-1739-A-1-B MS | Matrix Spike | Total/NA | Solid | 8021B | 15329 |
| 890-1739-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 15329 |

### Analysis Batch: 15505

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-1 | PH04 | Total/NA | Solid | Total BTEX | |
| 890-1741-2 | PH04A | Total/NA | Solid | Total BTEX | |
| 890-1741-3 | PH04B | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 15317

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-2 | PH04A | Total/NA | Solid | 8015NM Prep | |
| MB 880-15317/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-15317/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-15317/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-1743-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-1743-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 15328

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-2 | PH04A | Total/NA | Solid | 8015B NM | 15317 |
| MB 880-15317/1-A | Method Blank | Total/NA | Solid | 8015B NM | 15317 |
| LCS 880-15317/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 15317 |
| LCSD 880-15317/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 15317 |
| 890-1743-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 15317 |
| 890-1743-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 15317 |

### Prep Batch: 15385

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-1 | PH04 | Total/NA | Solid | 8015NM Prep | |
| MB 880-15385/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-15385/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

## GC Semi VOA (Continued)

### Prep Batch: 15385 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCSD 880-15385/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-1740-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-1740-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 15413

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-1 | PH04 | Total/NA | Solid | 8015B NM | 15385 |
| MB 880-15385/1-A | Method Blank | Total/NA | Solid | 8015B NM | 15385 |
| LCS 880-15385/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 15385 |
| LCSD 880-15385/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 15385 |
| 890-1740-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 15385 |
| 890-1740-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 15385 |

### Analysis Batch: 15426

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-3 | PH04B | Total/NA | Solid | 8015B NM | 15481 |
| MB 880-15481/1-A | Method Blank | Total/NA | Solid | 8015B NM | 15481 |
| LCS 880-15481/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 15481 |
| LCSD 880-15481/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 15481 |
| 880-9652-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015B NM | 15481 |
| 880-9652-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 15481 |

### Prep Batch: 15481

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-3 | PH04B | Total/NA | Solid | 8015NM Prep | |
| MB 880-15481/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-15481/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-15481/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-9652-A-1-F MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 880-9652-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 15674

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-1 | PH04 | Total/NA | Solid | 8015 NM | |
| 890-1741-2 | PH04A | Total/NA | Solid | 8015 NM | |
| 890-1741-3 | PH04B | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 15278

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-1 | PH04 | Soluble | Solid | DI Leach | |
| 890-1741-2 | PH04A | Soluble | Solid | DI Leach | |
| 890-1741-3 | PH04B | Soluble | Solid | DI Leach | |
| MB 880-15278/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-15278/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-15278/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-1740-A-3-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-1740-A-3-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |
| 890-1743-A-4-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-1743-A-4-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

## HPLC/IC

### Analysis Batch: 15401

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1741-1 | PH04 | Soluble | Solid | 300.0 | 15278 |
| 890-1741-2 | PH04A | Soluble | Solid | 300.0 | 15278 |
| 890-1741-3 | PH04B | Soluble | Solid | 300.0 | 15278 |
| MB 880-15278/1-A | Method Blank | Soluble | Solid | 300.0 | 15278 |
| LCS 880-15278/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 15278 |
| LCSD 880-15278/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 15278 |
| 890-1740-A-3-B MS | Matrix Spike | Soluble | Solid | 300.0 | 15278 |
| 890-1740-A-3-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 15278 |
| 890-1743-A-4-B MS | Matrix Spike | Soluble | Solid | 300.0 | 15278 |
| 890-1743-A-4-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 15278 |

# Lab Chronicle

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

## Client Sample ID: PH04

**Date Collected: 12/17/21 10:32**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1741-1

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 18:50 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/23/21 19:53 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15385 | 12/22/21 14:29 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15413 | 12/23/21 22:57 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15278 | 12/21/21 15:12 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 15401 | 12/22/21 10:50 | SC | XEN MID |

## Client Sample ID: PH04A

**Date Collected: 12/17/21 10:45**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1741-2

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 19:11 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/23/21 19:53 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15317 | 12/22/21 09:41 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15328 | 12/22/21 21:17 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15278 | 12/21/21 15:12 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 10 | 15401 | 12/22/21 10:58 | SC | XEN MID |

## Client Sample ID: PH04B

**Date Collected: 12/17/21 10:54**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1741-3

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 19:31 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/28/21 08:41 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15481 | 12/23/21 14:53 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15426 | 12/24/21 23:39 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15278 | 12/21/21 15:12 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 10 | 15401 | 12/22/21 11:07 | SC | XEN MID |

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

# Accreditation/Certification Summary

Client: WSP USA Inc. Job ID: 890-1741-1
Project/Site: BEU 29 W VADER 100H SDG: TE012921044

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-21-22 | 06-30-22 |

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

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

# Method Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

| 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: WSP USA Inc.
Project/Site: BEU 29 W VADER 100H

Job ID: 890-1741-1
SDG: TE012921044

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-1741-1 | PH04 | Solid | 12/17/21 10:32 | 12/20/21 15:24 | 2 |
| 890-1741-2 | PH04A | Solid | 12/17/21 10:45 | 12/20/21 15:24 | 4 |
| 890-1741-3 | PH04B | Solid | 12/17/21 10:54 | 12/20/21 15:24 | 6 |

# Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

Work Order No: _____

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| | | | |
|---|---|---|---|
| Project Manager: | Kalei Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | WSP | Company Name: | XTO Energy |
| Address: | 3300 North A Street | Address: | 3104 E Green Street |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 817-683-2503 Email: | Email: | Gilbert.Moreno@wsp.com, Adrian.Baker@exxonmobil.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | BEU 29W Vader 100H | Turn Around | |
| Project Number: | TE012921044 | Routine | ☑ |
| P.O. Number: | | Rush: | |
| Sampler's Name: | Gilbert Moreno | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 4.0/3.8 | Thermometer ID | IR M-007 |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No (N/A) | Total Containers: | |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| PH06 | S | 12.17.21 | 10:32 | 2 | 1 | x | x | x |
| PH06A | S | 12.17.21 | 10:45 | 4 | 1 | x | x | x |
| PH06B | S | 12.17.21 | 10:54 | 6 | 1 | x | x | x |

890-1741 Chain of Custody

**Work Order Notes**

CC 1568221001
nFE DD 2017 04339 CAP CMF 01
API 30-025-46515

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

**Sample Comments**

12.17.21

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to 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 | | 12.20.21 1524 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev 2018 1

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1741-1
SDG Number: TE012921044

**Login Number: 1741**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1741-1
SDG Number: TE012921044

**Login Number: 1741**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 12/21/21 02:08 PM**

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

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-1742-1
Laboratory Sample Delivery Group: TE012921044
Client Project/Site: BEU 29W VADER 100H
Revision: 1

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*3/25/2022 1:59:04 PM*

Jessica Kramer, Project Manager
(432)704-5440
jessica.kramer@eurofinset.com



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

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

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Laboratory Job ID: 890-1742-1
SDG: TE012921044

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# Definitions/Glossary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

## Qualifiers

### GC VOA

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

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| *1 | LCS/LCSD RPD exceeds control limits. |
| S1+ | Surrogate recovery exceeds control limits, high biased. |
| U | Indicates the analyte was analyzed for but not detected. |

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

## Job ID: 890-1742-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-1742-1**

REVISION

The report being provided is a revision of the original report sent on 12/28/2021. The report (revision 1) is being revised due to Per client email requesting sample ID change.

Report revision history

**Receipt**
The samples were received on 12/20/2021 3:24 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 3.8°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 RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-15385 and analytical batch 880-15413 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10

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: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

## Client Sample ID: PH02

**Date Collected: 12/17/21 09:12**
**Date Received: 12/20/21 15:24**
**Sample Depth: 2**

**Lab Sample ID: 890-1742-1**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:51 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:51 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:51 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:51 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:51 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 19:51 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *129* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 19:51* | *1* |
| *1,4-Difluorobenzene (Surr)* | *80* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 19:51* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | | mg/Kg | | | 12/28/21 08:41 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.8 | U | 49.8 | | mg/Kg | | | 12/28/21 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.8 | U *1 | 49.8 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 23:17 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.8 | U | 49.8 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 23:17 | 1 |
| Oil Range Organics (Over C28-C36) | <49.8 | U | 49.8 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 23:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *106* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 23:17* | *1* |
| *o-Terphenyl* | *124* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 23:17* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **1170** | | 50.4 | | mg/Kg | | | 12/22/21 11:15 | 10 |

## Client Sample ID: PH02A

**Date Collected: 12/17/21 09:20**
**Date Received: 12/20/21 15:24**
**Sample Depth: 4**

**Lab Sample ID: 890-1742-2**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:12 | 1 |
| Toluene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:12 | 1 |
| Ethylbenzene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:12 | 1 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.00403 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:12 | 1 |
| o-Xylene | <0.00202 | U | 0.00202 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:12 | 1 |
| Xylenes, Total | <0.00403 | U | 0.00403 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:12 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *115* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 20:12* | *1* |

Eurofins Carlsbad

# Client Sample Results

Client: WSP USA Inc. Job ID: 890-1742-1
Project/Site: BEU 29W VADER 100H SDG: TE012921044

## Client Sample ID: PH02A
**Lab Sample ID: 890-1742-2**
**Date Collected: 12/17/21 09:20**
**Matrix: Solid**
**Date Received: 12/20/21 15:24**
**Sample Depth: 4**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *73* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 20:12* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00403 | U | 0.00403 | mg/Kg | | | 12/28/21 08:41 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | mg/Kg | | | 12/28/21 17:22 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U *1 | 49.9 | mg/Kg | | 12/22/21 14:29 | 12/23/21 23:37 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | mg/Kg | | 12/22/21 14:29 | 12/23/21 23:37 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | mg/Kg | | 12/22/21 14:29 | 12/23/21 23:37 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *100* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 23:37* | *1* |
| *o-Terphenyl* | *118* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 23:37* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **1760** | | 49.9 | mg/Kg | | | 12/22/21 12:00 | 10 |

## Client Sample ID: PH02B
**Lab Sample ID: 890-1742-3**
**Date Collected: 12/17/21 09:20**
**Matrix: Solid**
**Date Received: 12/20/21 15:24**
**Sample Depth: 6**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:32 | 1 |
| Toluene | <0.00200 | U | 0.00200 | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:32 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:32 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:32 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:32 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | mg/Kg | | 12/22/21 10:08 | 12/22/21 20:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *123* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 20:32* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 20:32* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | mg/Kg | | | 12/28/21 08:41 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | mg/Kg | | | 12/28/21 17:22 | 1 |

Eurofins Carlsbad

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

## Client Sample ID: PH02B

**Date Collected: 12/17/21 09:20**
**Date Received: 12/20/21 15:24**
**Sample Depth: 6**

## Lab Sample ID: 890-1742-3

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U *1 | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 23:57 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 23:57 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 23:57 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *100* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 23:57* | *1* |
| *o-Terphenyl* | *120* | | *70 - 130* | *12/22/21 14:29* | *12/23/21 23:57* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **1980** | | 24.9 | | mg/Kg | | | 12/22/21 12:10 | 5 |

# Surrogate Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | BFB1 (70-130) | DFBZ1 (70-130) |
| 890-1739-A-1-B MS | Matrix Spike | 126 | 80 |
| 890-1739-A-1-C MSD | Matrix Spike Duplicate | 117 | 80 |
| 890-1742-1 | PH02 | 129 | 80 |
| 890-1742-2 | PH02A | 115 | 73 |
| 890-1742-3 | PH02B | 123 | 108 |
| LCS 880-15329/1-A | Lab Control Sample | 107 | 107 |
| LCSD 880-15329/2-A | Lab Control Sample Dup | 106 | 105 |
| MB 880-15329/5-A | Method Blank | 104 | 100 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | 1CO1 (70-130) | OTPH1 (70-130) |
| 890-1740-A-1-D MS | Matrix Spike | 96 | 97 |
| 890-1740-A-1-E MSD | Matrix Spike Duplicate | 94 | 96 |
| 890-1742-1 | PH02 | 106 | 124 |
| 890-1742-2 | PH02A | 100 | 118 |
| 890-1742-3 | PH02B | 100 | 120 |
| LCS 880-15385/2-A | Lab Control Sample | 116 | 125 |
| LCSD 880-15385/3-A | Lab Control Sample Dup | 98 | 109 |
| MB 880-15385/1-A | Method Blank | 152 S1+ | 177 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

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

**Lab Sample ID: MB 880-15329/5-A**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 12/22/21 10:08 | 12/22/21 13:22 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 13:22* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *12/22/21 10:08* | *12/22/21 13:22* | *1* |

**Lab Sample ID: LCS 880-15329/1-A**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09632 | | mg/Kg | | 96 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08900 | | mg/Kg | | 89 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.08828 | | mg/Kg | | 88 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1813 | | mg/Kg | | 91 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08868 | | mg/Kg | | 89 | 70 - 130 | | |

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

**Lab Sample ID: LCSD 880-15329/2-A**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09431 | | mg/Kg | | 94 | 70 - 130 | 2 | 35 |
| Toluene | | | 0.100 | 0.08655 | | mg/Kg | | 87 | 70 - 130 | 3 | 35 |
| Ethylbenzene | | | 0.100 | 0.08460 | | mg/Kg | | 85 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1728 | | mg/Kg | | 86 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.08727 | | mg/Kg | | 87 | 70 - 130 | 2 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *105* | | *70 - 130* |

**Lab Sample ID: 890-1739-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.0996 | 0.07379 | | mg/Kg | | 73 | 70 - 130 | | |
| Toluene | <0.00202 | U | 0.0996 | 0.09570 | | mg/Kg | | 96 | 70 - 130 | | |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

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

**Lab Sample ID: 890-1739-A-1-B MS**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00202 | U | 0.0996 | 0.1047 | | mg/Kg | | 105 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.199 | 0.1996 | | mg/Kg | | 100 | 70 - 130 |
| o-Xylene | <0.00202 | U | 0.0996 | 0.09489 | | mg/Kg | | 95 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *126* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *80* | | *70 - 130* |

**Lab Sample ID: 890-1739-A-1-C MSD**
**Matrix: Solid**
**Analysis Batch: 15330**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 15329**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.0992 | 0.07689 | | mg/Kg | | 77 | 70 - 130 | 4 | 35 |
| Toluene | <0.00202 | U | 0.0992 | 0.07955 | | mg/Kg | | 80 | 70 - 130 | 18 | 35 |
| Ethylbenzene | <0.00202 | U | 0.0992 | 0.07982 | | mg/Kg | | 80 | 70 - 130 | 27 | 35 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.198 | 0.1706 | | mg/Kg | | 86 | 70 - 130 | 16 | 35 |
| o-Xylene | <0.00202 | U | 0.0992 | 0.08304 | | mg/Kg | | 83 | 70 - 130 | 13 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *117* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *80* | | *70 - 130* |

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

**Lab Sample ID: MB 880-15385/1-A**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 20:18 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 20:18 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 12/22/21 14:29 | 12/23/21 20:18 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *152* | *S1+* | *70 - 130* | *12/22/21 14:29* | *12/23/21 20:18* | *1* |
| *o-Terphenyl* | *177* | *S1+* | *70 - 130* | *12/22/21 14:29* | *12/23/21 20:18* | *1* |

**Lab Sample ID: LCS 880-15385/2-A**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 869.0 | | mg/Kg | | 87 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 826.1 | | mg/Kg | | 83 | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

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

**Lab Sample ID: LCS 880-15385/2-A**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 116 | | 70 - 130 |
| o-Terphenyl | 125 | | 70 - 130 |

**Lab Sample ID: LCSD 880-15385/3-A**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1239 | *1 | mg/Kg | | 124 | 70 - 130 | 35 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 776.5 | | mg/Kg | | 78 | 70 - 130 | 6 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 98 | | 70 - 130 |
| o-Terphenyl | 109 | | 70 - 130 |

**Lab Sample ID: 890-1740-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U *1 | 996 | 1249 | | mg/Kg | | 121 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 996 | 794.6 | | mg/Kg | | 75 | 70 - 130 | | |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 96 | | 70 - 130 |
| o-Terphenyl | 97 | | 70 - 130 |

**Lab Sample ID: 890-1740-A-1-E MSD**
**Matrix: Solid**
**Analysis Batch: 15413**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 15385**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U *1 | 995 | 1226 | | mg/Kg | | 118 | 70 - 130 | 2 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 995 | 777.4 | | mg/Kg | | 74 | 70 - 130 | 2 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 94 | | 70 - 130 |
| o-Terphenyl | 96 | | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-15278/1-A**
**Matrix: Solid**
**Analysis Batch: 15401**

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

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 12/22/21 10:00 | 1 |

**Lab Sample ID: LCS 880-15278/2-A**
**Matrix: Solid**
**Analysis Batch: 15401**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 253.5 | | mg/Kg | | 101 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-15278/3-A**
**Matrix: Solid**
**Analysis Batch: 15401**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 247.8 | | mg/Kg | | 99 | 90 - 110 | 2 | 20 |

**Lab Sample ID: 890-1740-A-3-B MS**
**Matrix: Solid**
**Analysis Batch: 15401**

**Client Sample ID: Matrix Spike**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 318 | | 1260 | 1571 | | mg/Kg | | 100 | 90 - 110 | | |

**Lab Sample ID: 890-1740-A-3-C MSD**
**Matrix: Solid**
**Analysis Batch: 15401**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 318 | | 1260 | 1567 | | mg/Kg | | 99 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 890-1743-A-4-B MS**
**Matrix: Solid**
**Analysis Batch: 15401**

**Client Sample ID: Matrix Spike**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 6560 | | 2500 | 9222 | | mg/Kg | | 107 | 90 - 110 | | |

**Lab Sample ID: 890-1743-A-4-C MSD**
**Matrix: Solid**
**Analysis Batch: 15401**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 6560 | | 2500 | 9214 | | mg/Kg | | 106 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

## GC VOA

### Prep Batch: 15329

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1742-1 | PH02 | Total/NA | Solid | 5035 | |
| 890-1742-2 | PH02A | Total/NA | Solid | 5035 | |
| 890-1742-3 | PH02B | Total/NA | Solid | 5035 | |
| MB 880-15329/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-15329/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-15329/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-1739-A-1-B MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-1739-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 15330

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1742-1 | PH02 | Total/NA | Solid | 8021B | 15329 |
| 890-1742-2 | PH02A | Total/NA | Solid | 8021B | 15329 |
| 890-1742-3 | PH02B | Total/NA | Solid | 8021B | 15329 |
| MB 880-15329/5-A | Method Blank | Total/NA | Solid | 8021B | 15329 |
| LCS 880-15329/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 15329 |
| LCSD 880-15329/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 15329 |
| 890-1739-A-1-B MS | Matrix Spike | Total/NA | Solid | 8021B | 15329 |
| 890-1739-A-1-C MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 15329 |

### Analysis Batch: 15505

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1742-1 | PH02 | Total/NA | Solid | Total BTEX | |
| 890-1742-2 | PH02A | Total/NA | Solid | Total BTEX | |
| 890-1742-3 | PH02B | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 15385

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1742-1 | PH02 | Total/NA | Solid | 8015NM Prep | |
| 890-1742-2 | PH02A | Total/NA | Solid | 8015NM Prep | |
| 890-1742-3 | PH02B | Total/NA | Solid | 8015NM Prep | |
| MB 880-15385/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-15385/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-15385/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-1740-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-1740-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 15413

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1742-1 | PH02 | Total/NA | Solid | 8015B NM | 15385 |
| 890-1742-2 | PH02A | Total/NA | Solid | 8015B NM | 15385 |
| 890-1742-3 | PH02B | Total/NA | Solid | 8015B NM | 15385 |
| MB 880-15385/1-A | Method Blank | Total/NA | Solid | 8015B NM | 15385 |
| LCS 880-15385/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 15385 |
| LCSD 880-15385/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 15385 |
| 890-1740-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 15385 |
| 890-1740-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 15385 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

## GC Semi VOA

### Analysis Batch: 15674

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1742-1 | PH02 | Total/NA | Solid | 8015 NM | |
| 890-1742-2 | PH02A | Total/NA | Solid | 8015 NM | |
| 890-1742-3 | PH02B | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 15278

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1742-1 | PH02 | Soluble | Solid | DI Leach | |
| 890-1742-2 | PH02A | Soluble | Solid | DI Leach | |
| 890-1742-3 | PH02B | Soluble | Solid | DI Leach | |
| MB 880-15278/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-15278/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-15278/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-1740-A-3-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-1740-A-3-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |
| 890-1743-A-4-B MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-1743-A-4-C MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 15401

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1742-1 | PH02 | Soluble | Solid | 300.0 | 15278 |
| 890-1742-2 | PH02A | Soluble | Solid | 300.0 | 15278 |
| 890-1742-3 | PH02B | Soluble | Solid | 300.0 | 15278 |
| MB 880-15278/1-A | Method Blank | Soluble | Solid | 300.0 | 15278 |
| LCS 880-15278/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 15278 |
| LCSD 880-15278/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 15278 |
| 890-1740-A-3-B MS | Matrix Spike | Soluble | Solid | 300.0 | 15278 |
| 890-1740-A-3-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 15278 |
| 890-1743-A-4-B MS | Matrix Spike | Soluble | Solid | 300.0 | 15278 |
| 890-1743-A-4-C MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 15278 |

# Lab Chronicle

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

## Client Sample ID: PH02

**Date Collected: 12/17/21 09:12**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1742-1

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 19:51 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/28/21 08:41 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15385 | 12/22/21 14:29 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15413 | 12/23/21 23:17 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15278 | 12/21/21 15:12 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 10 | 15401 | 12/22/21 11:15 | SC | XEN MID |

## Client Sample ID: PH02A

**Date Collected: 12/17/21 09:20**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1742-2

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 20:12 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/28/21 08:41 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15385 | 12/22/21 14:29 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15413 | 12/23/21 23:37 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15278 | 12/21/21 15:12 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 10 | 15401 | 12/22/21 12:00 | SC | XEN MID |

## Client Sample ID: PH02B

**Date Collected: 12/17/21 09:20**
**Date Received: 12/20/21 15:24**

## Lab Sample ID: 890-1742-3

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 15329 | 12/22/21 10:08 | MR | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 15330 | 12/22/21 20:32 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 15505 | 12/28/21 08:41 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 15674 | 12/28/21 17:22 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 15385 | 12/22/21 14:29 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 15413 | 12/23/21 23:57 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 15278 | 12/21/21 15:12 | CA | XEN MID |
| Soluble | Analysis | 300.0 | | 5 | 15401 | 12/22/21 12:10 | SC | XEN MID |

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

# Accreditation/Certification Summary

Client: WSP USA Inc. Job ID: 890-1742-1
Project/Site: BEU 29W VADER 100H SDG: TE012921044

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-21-22 | 06-30-22 |

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

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

# Method Summary

Client: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

| 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: WSP USA Inc.
Project/Site: BEU 29W VADER 100H

Job ID: 890-1742-1
SDG: TE012921044

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-1742-1 | PH02 | Solid | 12/17/21 09:12 | 12/20/21 15:24 | 2 |
| 890-1742-2 | PH02A | Solid | 12/17/21 09:20 | 12/20/21 15:24 | 4 |
| 890-1742-3 | PH02B | Solid | 12/17/21 09:20 | 12/20/21 15:24 | 6 |

# Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

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**Work Order No:** _____

| | | | |
|---|---|---|---|
| Project Manager: | Kalei Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | WSP | Company Name: | XTO Energy |
| Address: | 3300 North A Street | Address: | 3104 E Green Street |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone | 817-683-2503 Email | Email | Gilbert.Moreno@wsp.com, Adrian.Baker@exxonmobil.com |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | BEU 29W Vader 100H | Turn Around | Routine ☑ |
| Project Number: | TE012921044 | | Rush: |
| P.O. Number: | | | Due Date: |
| Sampler's Name: | Gilbert Moreno | | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No | |
| Temperature (°C): | 4.8/3.8 | Thermometer ID | | |
| Received Intact: | Yes No | TWN-0077 | | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No N/A | Total Containers: | | |

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 0=8021) | Chloride (EPA 300.0) |
|---|---|---|---|---|---|---|---|---|
| PH04 | S | 12.17.21 | 09:12 | 2 | 1 | x | x | x |
| PH04A | S | 12.17.21 | 09:20 | 4 | 1 | x | x | x |
| PH04B | S | 12.17.21 | 09:28 | 6 | 1 | x | x | x |

**ANALYSIS REQUEST**

890-1742 Chain of Custody

**Work Order Notes**

CC 1568221001
AFE DD 2017 04339 CAP CMP 01
API 30-025-46515

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

**Sample Comments**

12.17.21

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to 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 | | 12.20.21 1524 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev. 2018 1

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1742-1
SDG Number: TE012921044

**Login Number: 1742**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1742-1
SDG Number: TE012921044

**Login Number: 1742**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 12/21/21 02:08 PM**

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

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-2106-1
Laboratory Sample Delivery Group: TE01291044
Client Project/Site: BEU 29 W Vedar 100H

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*3/28/2022 2:27:45 PM*

Jessica Kramer, Project Manager
(432)704-5440
jessica.kramer@eurofinset.com



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

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

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Laboratory Job ID: 890-2106-1
SDG: TE01291044

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# Definitions/Glossary

Client: WSP USA Inc. Job ID: 890-2106-1
Project/Site: BEU 29 W Vedar 100H SDG: TE01291044

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

## Job ID: 890-2106-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-2106-1**

**Receipt**
The samples were received on 3/18/2022 1:03 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C

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

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

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

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

## Client Sample ID: PH08

**Date Collected: 03/17/22 09:45**
**Date Received: 03/18/22 13:03**
**Sample Depth: 1**

**Lab Sample ID: 890-2106-1**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U F2 F1 | 0.00199 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 05:16 | 1 |
| Toluene | <0.00199 | U F2 F1 | 0.00199 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 05:16 | 1 |
| Ethylbenzene | <0.00199 | U F2 F1 | 0.00199 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 05:16 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U F2 F1 | 0.00398 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 05:16 | 1 |
| o-Xylene | <0.00199 | U F2 F1 | 0.00199 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 05:16 | 1 |
| Xylenes, Total | <0.00398 | U F2 F1 | 0.00398 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 05:16 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *106* | | *70 - 130* | *03/24/22 10:00* | *03/26/22 05:16* | *1* |
| *1,4-Difluorobenzene (Surr)* | *106* | | *70 - 130* | *03/24/22 10:00* | *03/26/22 05:16* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 03/28/22 12:32 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 03/22/22 10:41 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 16:48 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 16:48 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 16:48 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *83* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 16:48* | *1* |
| *o-Terphenyl* | *98* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 16:48* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **193** | | 5.00 | | mg/Kg | | | 03/25/22 22:23 | 1 |

## Client Sample ID: PH08A

**Date Collected: 03/17/22 10:00**
**Date Received: 03/18/22 13:03**
**Sample Depth: 3**

**Lab Sample ID: 890-2106-2**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 11:53 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 11:53 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 11:53 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 11:53 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 11:53 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 11:53 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *116* | | *70 - 130* | *03/24/22 10:00* | *03/26/22 11:53* | *1* |

# Client Sample Results

Client: WSP USA Inc. Job ID: 890-2106-1
Project/Site: BEU 29 W Vedar 100H SDG: TE01291044

## Client Sample ID: PH08A
**Lab Sample ID: 890-2106-2**
**Date Collected: 03/17/22 10:00** **Matrix: Solid**
**Date Received: 03/18/22 13:03**
**Sample Depth: 3**

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

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* | *03/24/22 10:00* | *03/26/22 11:53* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | mg/Kg | | | 03/28/22 12:32 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | mg/Kg | | | 03/22/22 10:41 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | mg/Kg | | 03/21/22 09:09 | 03/21/22 17:09 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | mg/Kg | | 03/21/22 09:09 | 03/21/22 17:09 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | mg/Kg | | 03/21/22 09:09 | 03/21/22 17:09 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *87* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 17:09* | *1* |
| *o-Terphenyl* | *106* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 17:09* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **18.2** | | 4.99 | mg/Kg | | | 03/25/22 22:50 | 1 |

## Client Sample ID: PH08B
**Lab Sample ID: 890-2106-3**
**Date Collected: 03/17/22 10:40** **Matrix: Solid**
**Date Received: 03/18/22 13:03**
**Sample Depth: 6**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.00202 | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:14 | 1 |
| Toluene | <0.00202 | U | 0.00202 | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:14 | 1 |
| Ethylbenzene | <0.00202 | U | 0.00202 | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:14 | 1 |
| m-Xylene & p-Xylene | <0.00403 | U | 0.00403 | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:14 | 1 |
| o-Xylene | <0.00202 | U | 0.00202 | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:14 | 1 |
| Xylenes, Total | <0.00403 | U | 0.00403 | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:14 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* | *03/24/22 10:00* | *03/26/22 12:14* | *1* |
| *1,4-Difluorobenzene (Surr)* | *105* | | *70 - 130* | *03/24/22 10:00* | *03/26/22 12:14* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00403 | U | 0.00403 | mg/Kg | | | 03/28/22 12:32 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | mg/Kg | | | 03/22/22 10:41 | 1 |

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# Client Sample Results

Client: WSP USA Inc. Job ID: 890-2106-1
Project/Site: BEU 29 W Vedar 100H SDG: TE01291044

## Client Sample ID: PH08B — Lab Sample ID: 890-2106-3

**Date Collected: 03/17/22 10:40** **Matrix: Solid**
**Date Received: 03/18/22 13:03**
**Sample Depth: 6**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 17:29 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 17:29 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 17:29 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *81* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 17:29* | *1* |
| *o-Terphenyl* | *98* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 17:29* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **30.7** | | 4.98 | | mg/Kg | | | 03/25/22 22:59 | 1 |

## Client Sample ID: PH08C — Lab Sample ID: 890-2106-4

**Date Collected: 03/17/22 10:50** **Matrix: Solid**
**Date Received: 03/18/22 13:03**
**Sample Depth: 7**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:34 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:34 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:34 | 1 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.00401 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:34 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:34 | 1 |
| Xylenes, Total | <0.00401 | U | 0.00401 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 12:34 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* | *03/24/22 10:00* | *03/26/22 12:34* | *1* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* | *03/24/22 10:00* | *03/26/22 12:34* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00401 | U | 0.00401 | | mg/Kg | | | 03/28/22 12:32 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 03/22/22 10:41 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 17:50 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 17:50 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 17:50 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *86* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 17:50* | *1* |
| *o-Terphenyl* | *108* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 17:50* | *1* |

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

**Client Sample ID: PH08C**
**Date Collected: 03/17/22 10:50**
**Date Received: 03/18/22 13:03**
**Sample Depth: 7**

**Lab Sample ID: 890-2106-4**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 15.4 | | 4.95 | | mg/Kg | | | 03/25/22 23:25 | 1 |

# Surrogate Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-2106-1 | PH08 | 106 | 106 |
| 890-2106-1 MS | PH08 | 81 | 78 |
| 890-2106-1 MSD | PH08 | 105 | 105 |
| 890-2106-2 | PH08A | 116 | 97 |
| 890-2106-3 | PH08B | 109 | 105 |
| 890-2106-4 | PH08C | 105 | 102 |
| LCS 880-22073/1-A | Lab Control Sample | 94 | 103 |
| LCSD 880-22073/2-A | Lab Control Sample Dup | 100 | 105 |
| MB 880-22073/5-B | Method Blank | 99 | 100 |
| MB 880-22332/8 | Method Blank | 97 | 100 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-2104-A-3-D MS | Matrix Spike | 74 | 80 |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | 76 | 82 |
| 890-2106-1 | PH08 | 83 | 98 |
| 890-2106-2 | PH08A | 87 | 106 |
| 890-2106-3 | PH08B | 81 | 98 |
| 890-2106-4 | PH08C | 86 | 108 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO2 | OTPH2 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| LCS 880-21982/2-A | Lab Control Sample | 94 | 111 |
| LCSD 880-21982/3-A | Lab Control Sample Dup | 96 | 116 |
| MB 880-21982/1-A | Method Blank | 85 | 105 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

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

**Lab Sample ID: MB 880-22073/5-B**
**Matrix: Solid**
**Analysis Batch: 22332**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 22073**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 04:47 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 04:47 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 04:47 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 04:47 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 04:47 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 03/24/22 10:00 | 03/26/22 04:47 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* | *03/24/22 10:00* | *03/26/22 04:47* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *03/24/22 10:00* | *03/26/22 04:47* | *1* |

**Lab Sample ID: LCS 880-22073/1-A**
**Matrix: Solid**
**Analysis Batch: 22332**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 22073**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.07627 | | mg/Kg | | 76 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.07501 | | mg/Kg | | 75 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.07727 | | mg/Kg | | 77 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1770 | | mg/Kg | | 89 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.08902 | | mg/Kg | | 89 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* |

**Lab Sample ID: LCSD 880-22073/2-A**
**Matrix: Solid**
**Analysis Batch: 22332**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 22073**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.08611 | | mg/Kg | | 86 | 70 - 130 | 12 | 35 |
| Toluene | | | 0.100 | 0.08509 | | mg/Kg | | 85 | 70 - 130 | 13 | 35 |
| Ethylbenzene | | | 0.100 | 0.08818 | | mg/Kg | | 88 | 70 - 130 | 13 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2022 | | mg/Kg | | 101 | 70 - 130 | 13 | 35 |
| o-Xylene | | | 0.100 | 0.1011 | | mg/Kg | | 101 | 70 - 130 | 13 | 35 |

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

**Lab Sample ID: 890-2106-1 MS**
**Matrix: Solid**
**Analysis Batch: 22332**

**Client Sample ID: PH08**
**Prep Type: Total/NA**
**Prep Batch: 22073**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U F2 F1 | 0.100 | 0.02974 | F1 | mg/Kg | | 30 | 70 - 130 | | |
| Toluene | <0.00199 | U F2 F1 | 0.100 | 0.03585 | F1 | mg/Kg | | 36 | 70 - 130 | | |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

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

**Lab Sample ID: 890-2106-1 MS**
**Matrix: Solid**
**Analysis Batch: 22332**

**Client Sample ID: PH08**
**Prep Type: Total/NA**
**Prep Batch: 22073**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00199 | U F2 F1 | 0.100 | 0.04098 | F1 | mg/Kg | | 41 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00398 | U F2 F1 | 0.201 | 0.1044 | F1 | mg/Kg | | 52 | 70 - 130 |
| o-Xylene | <0.00199 | U F2 F1 | 0.100 | 0.04741 | F1 | mg/Kg | | 47 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *81* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *78* | | *70 - 130* |

**Lab Sample ID: 890-2106-1 MSD**
**Matrix: Solid**
**Analysis Batch: 22332**

**Client Sample ID: PH08**
**Prep Type: Total/NA**
**Prep Batch: 22073**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U F2 F1 | 0.0992 | 0.07852 | F2 | mg/Kg | | 79 | 70 - 130 | 90 | 35 |
| Toluene | <0.00199 | U F2 F1 | 0.0992 | 0.07735 | F2 | mg/Kg | | 78 | 70 - 130 | 73 | 35 |
| Ethylbenzene | <0.00199 | U F2 F1 | 0.0992 | 0.07991 | F2 | mg/Kg | | 81 | 70 - 130 | 64 | 35 |
| m-Xylene & p-Xylene | <0.00398 | U F2 F1 | 0.198 | 0.1900 | F2 | mg/Kg | | 96 | 70 - 130 | 58 | 35 |
| o-Xylene | <0.00199 | U F2 F1 | 0.0992 | 0.09568 | F2 | mg/Kg | | 96 | 70 - 130 | 67 | 35 |

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

**Lab Sample ID: MB 880-22332/8**
**Matrix: Solid**
**Analysis Batch: 22332**

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

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | mg/Kg | | | 03/25/22 17:11 | 1 |
| Toluene | <0.00200 | U | 0.00200 | mg/Kg | | | 03/25/22 17:11 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | mg/Kg | | | 03/25/22 17:11 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | mg/Kg | | | 03/25/22 17:11 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | mg/Kg | | | 03/25/22 17:11 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | mg/Kg | | | 03/25/22 17:11 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* | | *03/25/22 17:11* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | | *03/25/22 17:11* | *1* |

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

**Lab Sample ID: MB 880-21982/1-A**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | MB Result | MB Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

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

**Lab Sample ID: MB 880-21982/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 21983** — **Prep Batch: 21982**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *85* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 10:51* | *1* |
| *o-Terphenyl* | *105* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 10:51* | *1* |

**Lab Sample ID: LCS 880-21982/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 21983** — **Prep Batch: 21982**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 852.9 | | mg/Kg | | 85 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 924.6 | | mg/Kg | | 92 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *94* | | *70 - 130* |
| *o-Terphenyl* | *111* | | *70 - 130* |

**Lab Sample ID: LCSD 880-21982/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 21983** — **Prep Batch: 21982**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 990.5 | | mg/Kg | | 99 | 70 - 130 | 15 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1045 | | mg/Kg | | 105 | 70 - 130 | 12 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *96* | | *70 - 130* |
| *o-Terphenyl* | *116* | | *70 - 130* |

**Lab Sample ID: 890-2104-A-3-D MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 21983** — **Prep Batch: 21982**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 998 | 809.3 | | mg/Kg | | 79 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 998 | 723.2 | F1 | mg/Kg | | 69 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *74* | | *70 - 130* |
| *o-Terphenyl* | *80* | | *70 - 130* |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

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

**Lab Sample ID: 890-2104-A-3-E MSD**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 836.1 | | mg/Kg | | 81 | 70 - 130 | 3 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 999 | 747.9 | | mg/Kg | | 71 | 70 - 130 | 3 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *76* | | *70 - 130* |
| *o-Terphenyl* | *82* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-22263/1-A**
**Matrix: Solid**
**Analysis Batch: 22386**

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

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 03/25/22 19:53 | 1 |

**Lab Sample ID: LCS 880-22263/2-A**
**Matrix: Solid**
**Analysis Batch: 22386**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 249.9 | | mg/Kg | | 100 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-22263/3-A**
**Matrix: Solid**
**Analysis Batch: 22386**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 248.2 | | mg/Kg | | 99 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 890-2106-1 MS**
**Matrix: Solid**
**Analysis Batch: 22386**

**Client Sample ID: PH08**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 193 | | 250 | 427.7 | | mg/Kg | | 94 | 90 - 110 | | |

**Lab Sample ID: 890-2106-1 MSD**
**Matrix: Solid**
**Analysis Batch: 22386**

**Client Sample ID: PH08**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 193 | | 250 | 427.5 | | mg/Kg | | 94 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

## GC VOA

### Prep Batch: 22073

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2106-1 | PH08 | Total/NA | Solid | 5035 | |
| 890-2106-2 | PH08A | Total/NA | Solid | 5035 | |
| 890-2106-3 | PH08B | Total/NA | Solid | 5035 | |
| 890-2106-4 | PH08C | Total/NA | Solid | 5035 | |
| MB 880-22073/5-B | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-22073/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-22073/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-2106-1 MS | PH08 | Total/NA | Solid | 5035 | |
| 890-2106-1 MSD | PH08 | Total/NA | Solid | 5035 | |

### Analysis Batch: 22332

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2106-1 | PH08 | Total/NA | Solid | 8021B | 22073 |
| 890-2106-2 | PH08A | Total/NA | Solid | 8021B | 22073 |
| 890-2106-3 | PH08B | Total/NA | Solid | 8021B | 22073 |
| 890-2106-4 | PH08C | Total/NA | Solid | 8021B | 22073 |
| MB 880-22073/5-B | Method Blank | Total/NA | Solid | 8021B | 22073 |
| MB 880-22332/8 | Method Blank | Total/NA | Solid | 8021B | |
| LCS 880-22073/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 22073 |
| LCSD 880-22073/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 22073 |
| 890-2106-1 MS | PH08 | Total/NA | Solid | 8021B | 22073 |
| 890-2106-1 MSD | PH08 | Total/NA | Solid | 8021B | 22073 |

### Analysis Batch: 22484

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2106-1 | PH08 | Total/NA | Solid | Total BTEX | |
| 890-2106-2 | PH08A | Total/NA | Solid | Total BTEX | |
| 890-2106-3 | PH08B | Total/NA | Solid | Total BTEX | |
| 890-2106-4 | PH08C | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 21982

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2106-1 | PH08 | Total/NA | Solid | 8015NM Prep | |
| 890-2106-2 | PH08A | Total/NA | Solid | 8015NM Prep | |
| 890-2106-3 | PH08B | Total/NA | Solid | 8015NM Prep | |
| 890-2106-4 | PH08C | Total/NA | Solid | 8015NM Prep | |
| MB 880-21982/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-21982/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-21982/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2104-A-3-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 21983

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2106-1 | PH08 | Total/NA | Solid | 8015B NM | 21982 |
| 890-2106-2 | PH08A | Total/NA | Solid | 8015B NM | 21982 |
| 890-2106-3 | PH08B | Total/NA | Solid | 8015B NM | 21982 |
| 890-2106-4 | PH08C | Total/NA | Solid | 8015B NM | 21982 |
| MB 880-21982/1-A | Method Blank | Total/NA | Solid | 8015B NM | 21982 |

# QC Association Summary

Client: WSP USA Inc. Job ID: 890-2106-1
Project/Site: BEU 29 W Vedar 100H SDG: TE01291044

## GC Semi VOA (Continued)

### Analysis Batch: 21983 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCS 880-21982/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 21982 |
| LCSD 880-21982/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 21982 |
| 890-2104-A-3-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 21982 |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 21982 |

### Analysis Batch: 22137

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2106-1 | PH08 | Total/NA | Solid | 8015 NM | |
| 890-2106-2 | PH08A | Total/NA | Solid | 8015 NM | |
| 890-2106-3 | PH08B | Total/NA | Solid | 8015 NM | |
| 890-2106-4 | PH08C | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 22263

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2106-1 | PH08 | Soluble | Solid | DI Leach | |
| 890-2106-2 | PH08A | Soluble | Solid | DI Leach | |
| 890-2106-3 | PH08B | Soluble | Solid | DI Leach | |
| 890-2106-4 | PH08C | Soluble | Solid | DI Leach | |
| MB 880-22263/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-22263/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-22263/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-2106-1 MS | PH08 | Soluble | Solid | DI Leach | |
| 890-2106-1 MSD | PH08 | Soluble | Solid | DI Leach | |

### Analysis Batch: 22386

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2106-1 | PH08 | Soluble | Solid | 300.0 | 22263 |
| 890-2106-2 | PH08A | Soluble | Solid | 300.0 | 22263 |
| 890-2106-3 | PH08B | Soluble | Solid | 300.0 | 22263 |
| 890-2106-4 | PH08C | Soluble | Solid | 300.0 | 22263 |
| MB 880-22263/1-A | Method Blank | Soluble | Solid | 300.0 | 22263 |
| LCS 880-22263/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 22263 |
| LCSD 880-22263/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 22263 |
| 890-2106-1 MS | PH08 | Soluble | Solid | 300.0 | 22263 |
| 890-2106-1 MSD | PH08 | Soluble | Solid | 300.0 | 22263 |

# Lab Chronicle

Client: WSP USA Inc. Job ID: 890-2106-1
Project/Site: BEU 29 W Vedar 100H SDG: TE01291044

## Client Sample ID: PH08 Lab Sample ID: 890-2106-1

**Date Collected: 03/17/22 09:45** **Matrix: Solid**
**Date Received: 03/18/22 13:03**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 22073 | 03/24/22 10:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 22332 | 03/26/22 05:16 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22484 | 03/28/22 12:32 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22137 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 16:48 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/25/22 22:23 | CH | XEN MID |

## Client Sample ID: PH08A Lab Sample ID: 890-2106-2

**Date Collected: 03/17/22 10:00** **Matrix: Solid**
**Date Received: 03/18/22 13:03**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 22073 | 03/24/22 10:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 22332 | 03/26/22 11:53 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22484 | 03/28/22 12:32 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22137 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 17:09 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/25/22 22:50 | CH | XEN MID |

## Client Sample ID: PH08B Lab Sample ID: 890-2106-3

**Date Collected: 03/17/22 10:40** **Matrix: Solid**
**Date Received: 03/18/22 13:03**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 22073 | 03/24/22 10:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 22332 | 03/26/22 12:14 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22484 | 03/28/22 12:32 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22137 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 17:29 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/25/22 22:59 | CH | XEN MID |

## Client Sample ID: PH08C Lab Sample ID: 890-2106-4

**Date Collected: 03/17/22 10:50** **Matrix: Solid**
**Date Received: 03/18/22 13:03**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 22073 | 03/24/22 10:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 22332 | 03/26/22 12:34 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22484 | 03/28/22 12:32 | AJ | XEN MID |

Eurofins Carlsbad

# Lab Chronicle

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

## Client Sample ID: PH08C

**Date Collected: 03/17/22 10:50**
**Date Received: 03/18/22 13:03**

## Lab Sample ID: 890-2106-4

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8015 NM | | 1 | 22137 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 17:50 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/25/22 23:25 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-21-22 | 06-30-22 |

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

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

# Method Summary

Client: WSP USA Inc. Job ID: 890-2106-1
Project/Site: BEU 29 W Vedar 100H SDG: TE01291044

| 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: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2106-1
SDG: TE01291044

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2106-1 | PH08 | Solid | 03/17/22 09:45 | 03/18/22 13:03 | 1 |
| 890-2106-2 | PH08A | Solid | 03/17/22 10:00 | 03/18/22 13:03 | 3 |
| 890-2106-3 | PH08B | Solid | 03/17/22 10:40 | 03/18/22 13:03 | 6 |
| 890-2106-4 | PH08C | Solid | 03/17/22 10:50 | 03/18/22 13:03 | 7 |

# Chain of Custody

Work Order No: _____

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Kalie Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | WSP USA Inc., Permian office | Company Name: | XTO Energy |
| Address: | 3300 North A St. Bldg 1, Unit 222 | Address: | 3104 E Greene St. |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM |
| Phone: | 781-702-2329 | Email: | travis.casey@wsp.com, kalei.jennings@wsp.com, dan.moir@ws |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | BEU 29 W Vedar 100H | Turn Around | |
| Project Number: | TE01291044 | Routine | X |
| P.O. Number: | | Rush: | |
| Sampler's Name: | Ali Catsro | Due Date: | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No | |
| Temperature (°C): | 0.8/0.4 | Thermometer ID | TWM-007 | |
| Received Intact: | (Yes) No | | | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No (N/A) | Total Containers: | | |

**ANALYSIS REQUEST**

890-2106 Chain of Custody

**Work Order Notes**

IN nAPP210831345
CC:
AFE:

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

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|
| PH03 | S | 3/17/2022 | 9:45 | 1 | 1 | x | x | x | Composite |
| PH03A | S | 3/17/2022 | 10:00 | 3 | 1 | x | x | x | Composite |
| PH03B | S | 3/17/2022 | 10:40 | 6 | 1 | x | x | x | Composite |
| PHO3C | S | 3/17/2022 | 10:50 | 7 | 1 | x | x | x | Composite |

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

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

**Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to 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 | | 3/8/22 1309 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev. 2018.1

**Eurofins Carlsbad**
1089 N Canal St
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

# Chain of Custody Record

eurofins | Environment Testing America

| Client Information (Sub Contract Lab) | Sampler | Lab PM: Kramer, Jessica | Carrier Tracking No(s). | COC No: 890-675 1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: jessica kramer@eurofinset.com | State of Origin: New Mexico | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing South Centr | | Accreditations Required (See note): NELAP - Louisiana, NELAP - Texas | | Job #: 890-2106-1 |
| Address: 1211 W Florida Ave, | Due Date Requested: 3/24/2022 | | | |
| City: Midland | TAT Requested (days): | | | |
| State, Zip: TX, 79701 | | | | |
| Phone: 432-704-5440(Tel) | PO #: | | | |
| Email | WO #: | | | |
| Project Name: BEU 29 W VEDAR 100H | Project #: 89000004 | | | |
| Site | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes**

| | |
|---|---|
| A HCL | M Hexane |
| B - NaOH | N - None |
| C - Zn Acetate | O - AsNaO2 |
| D Nitric Acid | P Na2O4S |
| E - NaHSO4 | Q - Na2SO3 |
| F MeOH | R Na2S2O3 |
| G Amchlor | S - H2SO4 |
| H Ascorbic Acid | T - TSP Dodecahydrate |
| I - Ice | U Acetone |
| J - Di Water | V - MCAA |
| K EDTA | W pH 4-5 |
| L - EDA | Z - other (specify) |

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8015MOD_NM/8015NM_S_Prep (MOD) Full TPH | 8015MOD_Calc | 300_ORGFM_28D/DI_LEACH Chloride | 8021B/5035FP_Calc (MOD) BTEX | Total_BTEX_GCV | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | | |
| PH03 (890-2106-1) | 3/17/22 | 09 45 Mountain | | Solid | | | X | X | X | X | X | 1 | |
| PH03A (890-2106-2) | 3/17/22 | 10 00 Mountain | | Solid | | | X | X | X | X | X | 1 | |
| PH03B (890-2106-3) | 3/17/22 | 10 40 Mountain | | Solid | | | X | X | X | X | X | 1 | |
| PH03C (890-2106-4) | 3/17/22 | 10 50 Mountain | | Solid | | | X | X | X | X | X | 1 | |

Note Since laboratory accreditations are subject to change Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC.

| Possible Hazard Identification | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) |
|---|---|
| Unconfirmed | ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
| Deliverable Requested I, II III IV, Other (specify) Primary Deliverable Rank. 2 | Special Instructions/QC Requirements |

| Empty Kit Relinquished by: | Date | Time: | Method of Shipment: |
|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Relinquished by: Cue Cap 31822 | Date/Time: | Company | Received by: | Date/Time: 3/21/22 800 | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time | Company |

| Custody Seals Intact. Δ Yes Δ No | Custody Seal No | Cooler Temperature(s) °C and Other Remarks. |
|---|---|---|

Ver: 06/08/2021

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2106-1
SDG Number: TE01291044

**Login Number: 2106**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2106-1
SDG Number: TE01291044

**Login Number: 2106**
**List Number: 2**
**Creator: Lowe, Katie**

**List Source: Eurofins Midland**
**List Creation: 03/21/22 08:55 AM**

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

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-2108-1
Laboratory Sample Delivery Group: TE01291044
Client Project/Site: BEU 29 W Vedar 100H

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*3/28/2022 9:27:54 AM*

Jessica Kramer, Project Manager
(432)704-5440
jessica.kramer@eurofinset.com



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

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

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Laboratory Job ID: 890-2108-1
SDG: TE01291044

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# Definitions/Glossary

Client: WSP USA Inc. Job ID: 890-2108-1
Project/Site: BEU 29 W Vedar 100H SDG: TE01291044

## 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. |
| U | Indicates the analyte was analyzed for but not detected. |

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

## Job ID: 890-2108-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-2108-1**

**Receipt**
The samples were received on 3/18/2022 1:03 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C

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

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

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

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

## Client Sample ID: PH07

**Lab Sample ID: 890-2108-1**
**Matrix: Solid**

**Date Collected: 03/16/22 15:10**
**Date Received: 03/18/22 13:03**
**Sample Depth: 1**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:23 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:23 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:23 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:23 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:23 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:23 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* | *03/21/22 16:00* | *03/22/22 03:23* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *03/21/22 16:00* | *03/22/22 03:23* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00400 | U | 0.00400 | | mg/Kg | | | 03/22/22 15:04 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 03/22/22 10:41 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 18:11 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 18:11 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 18:11 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *80* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 18:11* | *1* |
| *o-Terphenyl* | *96* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 18:11* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **85.0** | | 5.04 | | mg/Kg | | | 03/25/22 23:34 | 1 |

## Client Sample ID: PH07A

**Lab Sample ID: 890-2108-2**
**Matrix: Solid**

**Date Collected: 03/16/22 15:30**
**Date Received: 03/18/22 13:03**
**Sample Depth: 3**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:43 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:43 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:43 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:43 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:43 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 03/21/22 16:00 | 03/22/22 03:43 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* | *03/21/22 16:00* | *03/22/22 03:43* | *1* |

# Client Sample Results

Client: WSP USA Inc. Job ID: 890-2108-1
Project/Site: BEU 29 W Vedar 100H SDG: TE01291044

## Client Sample ID: PH07A — Lab Sample ID: 890-2108-2

**Date Collected: 03/16/22 15:30** **Matrix: Solid**
**Date Received: 03/18/22 13:03**
**Sample Depth: 3**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *03/21/22 16:00* | *03/22/22 03:43* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | mg/Kg | | | 03/22/22 15:04 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | mg/Kg | | | 03/22/22 10:41 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | mg/Kg | | 03/21/22 09:09 | 03/21/22 18:31 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | mg/Kg | | 03/21/22 09:09 | 03/21/22 18:31 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | mg/Kg | | 03/21/22 09:09 | 03/21/22 18:31 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *83* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 18:31* | *1* |
| *o-Terphenyl* | *101* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 18:31* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **110** | | 5.01 | mg/Kg | | | 03/25/22 23:43 | 1 |

## Client Sample ID: PH07B — Lab Sample ID: 890-2108-3

**Date Collected: 03/16/22 16:00** **Matrix: Solid**
**Date Received: 03/18/22 13:03**
**Sample Depth: 6**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00198 | U | 0.00198 | mg/Kg | | 03/21/22 16:00 | 03/22/22 04:03 | 1 |
| Toluene | <0.00198 | U | 0.00198 | mg/Kg | | 03/21/22 16:00 | 03/22/22 04:03 | 1 |
| Ethylbenzene | <0.00198 | U | 0.00198 | mg/Kg | | 03/21/22 16:00 | 03/22/22 04:03 | 1 |
| m-Xylene & p-Xylene | <0.00396 | U | 0.00396 | mg/Kg | | 03/21/22 16:00 | 03/22/22 04:03 | 1 |
| o-Xylene | <0.00198 | U | 0.00198 | mg/Kg | | 03/21/22 16:00 | 03/22/22 04:03 | 1 |
| Xylenes, Total | <0.00396 | U | 0.00396 | mg/Kg | | 03/21/22 16:00 | 03/22/22 04:03 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* | *03/21/22 16:00* | *03/22/22 04:03* | *1* |
| *1,4-Difluorobenzene (Surr)* | *109* | | *70 - 130* | *03/21/22 16:00* | *03/22/22 04:03* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00396 | U | 0.00396 | mg/Kg | | | 03/22/22 15:04 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.8 | U | 49.8 | mg/Kg | | | 03/22/22 10:41 | 1 |

Eurofins Carlsbad

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

## Client Sample ID: PH07B

**Date Collected: 03/16/22 16:00**
**Date Received: 03/18/22 13:03**
**Sample Depth: 6**

## Lab Sample ID: 890-2108-3

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.8 | U | 49.8 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 18:52 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.8 | U | 49.8 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 18:52 | 1 |
| Oil Range Organics (Over C28-C36) | <49.8 | U | 49.8 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 18:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *83* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 18:52* | *1* |
| *o-Terphenyl* | *101* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 18:52* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **424** | | 4.98 | | mg/Kg | | | 03/25/22 23:52 | 1 |

# Surrogate Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 880-12519-A-1-F MS | Matrix Spike | 109 | 112 |
| 880-12519-A-1-G MSD | Matrix Spike Duplicate | 105 | 110 |
| 890-2108-1 | PH07 | 103 | 108 |
| 890-2108-2 | PH07A | 103 | 108 |
| 890-2108-3 | PH07B | 107 | 109 |
| LCS 880-21997/1-A | Lab Control Sample | 98 | 109 |
| LCSD 880-21997/2-A | Lab Control Sample Dup | 104 | 111 |
| MB 880-21977/5-A | Method Blank | 101 | 103 |
| MB 880-21997/5-A | Method Blank | 101 | 103 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-2104-A-3-D MS | Matrix Spike | 74 | 80 |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | 76 | 82 |
| 890-2108-1 | PH07 | 80 | 96 |
| 890-2108-2 | PH07A | 83 | 101 |
| 890-2108-3 | PH07B | 83 | 101 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO2 | OTPH2 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| LCS 880-21982/2-A | Lab Control Sample | 94 | 111 |
| LCSD 880-21982/3-A | Lab Control Sample Dup | 96 | 116 |
| MB 880-21982/1-A | Method Blank | 85 | 105 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

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

**Lab Sample ID: MB 880-21977/5-A**
**Matrix: Solid**
**Analysis Batch: 21978**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 21977**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 07:44 | 03/21/22 11:19 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 07:44 | 03/21/22 11:19 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 07:44 | 03/21/22 11:19 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 03/21/22 07:44 | 03/21/22 11:19 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 07:44 | 03/21/22 11:19 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 03/21/22 07:44 | 03/21/22 11:19 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* | *03/21/22 07:44* | *03/21/22 11:19* | *1* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* | *03/21/22 07:44* | *03/21/22 11:19* | *1* |

**Lab Sample ID: MB 880-21997/5-A**
**Matrix: Solid**
**Analysis Batch: 21978**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 21997**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 16:00 | 03/21/22 22:14 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 16:00 | 03/21/22 22:14 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 16:00 | 03/21/22 22:14 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 03/21/22 16:00 | 03/21/22 22:14 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/21/22 16:00 | 03/21/22 22:14 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 03/21/22 16:00 | 03/21/22 22:14 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* | *03/21/22 16:00* | *03/21/22 22:14* | *1* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* | *03/21/22 16:00* | *03/21/22 22:14* | *1* |

**Lab Sample ID: LCS 880-21997/1-A**
**Matrix: Solid**
**Analysis Batch: 21978**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 21997**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09622 | | mg/Kg | | 96 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.09423 | | mg/Kg | | 94 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09459 | | mg/Kg | | 95 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1942 | | mg/Kg | | 97 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.09694 | | mg/Kg | | 97 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *109* | | *70 - 130* |

**Lab Sample ID: LCSD 880-21997/2-A**
**Matrix: Solid**
**Analysis Batch: 21978**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 21997**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1016 | | mg/Kg | | 102 | 70 - 130 | 5 | 35 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

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

**Lab Sample ID: LCSD 880-21997/2-A**
**Matrix: Solid**
**Analysis Batch: 21978**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 21997**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Toluene | | | 0.100 | 0.09957 | | mg/Kg | | 100 | 70 - 130 | 6 | 35 |
| Ethylbenzene | | | 0.100 | 0.1019 | | mg/Kg | | 102 | 70 - 130 | 7 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2105 | | mg/Kg | | 105 | 70 - 130 | 8 | 35 |
| o-Xylene | | | 0.100 | 0.1042 | | mg/Kg | | 104 | 70 - 130 | 7 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* |

**Lab Sample ID: 880-12519-A-1-F MS**
**Matrix: Solid**
**Analysis Batch: 21978**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 21997**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U F1 | 0.0992 | 0.08131 | | mg/Kg | | 82 | 70 - 130 | | |
| Toluene | <0.00200 | U F1 | 0.0992 | 0.07485 | | mg/Kg | | 75 | 70 - 130 | | |
| Ethylbenzene | <0.00200 | U F1 | 0.0992 | 0.06772 | F1 | mg/Kg | | 68 | 70 - 130 | | |
| m-Xylene & p-Xylene | <0.00400 | U F1 | 0.198 | 0.1379 | F1 | mg/Kg | | 69 | 70 - 130 | | |
| o-Xylene | <0.00200 | U F1 | 0.0992 | 0.06810 | F1 | mg/Kg | | 68 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *109* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *112* | | *70 - 130* |

**Lab Sample ID: 880-12519-A-1-G MSD**
**Matrix: Solid**
**Analysis Batch: 21978**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 21997**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U F1 | 0.0994 | 0.05992 | F1 | mg/Kg | | 60 | 70 - 130 | 30 | 35 |
| Toluene | <0.00200 | U F1 | 0.0994 | 0.05565 | F1 | mg/Kg | | 55 | 70 - 130 | 29 | 35 |
| Ethylbenzene | <0.00200 | U F1 | 0.0994 | 0.05106 | F1 | mg/Kg | | 51 | 70 - 130 | 28 | 35 |
| m-Xylene & p-Xylene | <0.00400 | U F1 | 0.199 | 0.1057 | F1 | mg/Kg | | 53 | 70 - 130 | 26 | 35 |
| o-Xylene | <0.00200 | U F1 | 0.0994 | 0.05340 | F1 | mg/Kg | | 53 | 70 - 130 | 24 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *110* | | *70 - 130* |

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

**Lab Sample ID: MB 880-21982/1-A**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

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

**Lab Sample ID: MB 880-21982/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 21983** — **Prep Batch: 21982**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *85* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 10:51* | *1* |
| *o-Terphenyl* | *105* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 10:51* | *1* |

**Lab Sample ID: LCS 880-21982/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 21983** — **Prep Batch: 21982**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 852.9 | | mg/Kg | | 85 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 924.6 | | mg/Kg | | 92 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *94* | | *70 - 130* |
| *o-Terphenyl* | *111* | | *70 - 130* |

**Lab Sample ID: LCSD 880-21982/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 21983** — **Prep Batch: 21982**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 990.5 | | mg/Kg | | 99 | 70 - 130 | 15 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1045 | | mg/Kg | | 105 | 70 - 130 | 12 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *96* | | *70 - 130* |
| *o-Terphenyl* | *116* | | *70 - 130* |

**Lab Sample ID: 890-2104-A-3-D MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 21983** — **Prep Batch: 21982**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 998 | 809.3 | | mg/Kg | | 79 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 998 | 723.2 | F1 | mg/Kg | | 69 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *74* | | *70 - 130* |
| *o-Terphenyl* | *80* | | *70 - 130* |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

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

**Lab Sample ID: 890-2104-A-3-E MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 21983** — **Prep Batch: 21982**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 836.1 | | mg/Kg | | 81 | 70 - 130 | 3 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 999 | 747.9 | | mg/Kg | | 71 | 70 - 130 | 3 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *76* | | *70 - 130* |
| *o-Terphenyl* | *82* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-22263/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 22386**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 03/25/22 19:53 | 1 |

**Lab Sample ID: LCS 880-22263/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 22386**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 249.9 | | mg/Kg | | 100 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-22263/3-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 22386**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 248.2 | | mg/Kg | | 99 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 890-2106-A-1-O MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 22386**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 193 | | 250 | 427.7 | | mg/Kg | | 94 | 90 - 110 | | |

**Lab Sample ID: 890-2106-A-1-P MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Soluble**
**Analysis Batch: 22386**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 193 | | 250 | 427.5 | | mg/Kg | | 94 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

## GC VOA

### Prep Batch: 21977

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-21977/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Analysis Batch: 21978

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2108-1 | PH07 | Total/NA | Solid | 8021B | 21997 |
| 890-2108-2 | PH07A | Total/NA | Solid | 8021B | 21997 |
| 890-2108-3 | PH07B | Total/NA | Solid | 8021B | 21997 |
| MB 880-21977/5-A | Method Blank | Total/NA | Solid | 8021B | 21977 |
| MB 880-21997/5-A | Method Blank | Total/NA | Solid | 8021B | 21997 |
| LCS 880-21997/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 21997 |
| LCSD 880-21997/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 21997 |
| 880-12519-A-1-F MS | Matrix Spike | Total/NA | Solid | 8021B | 21997 |
| 880-12519-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 21997 |

### Prep Batch: 21997

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2108-1 | PH07 | Total/NA | Solid | 5035 | |
| 890-2108-2 | PH07A | Total/NA | Solid | 5035 | |
| 890-2108-3 | PH07B | Total/NA | Solid | 5035 | |
| MB 880-21997/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-21997/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-21997/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-12519-A-1-F MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-12519-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 22150

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2108-1 | PH07 | Total/NA | Solid | Total BTEX | |
| 890-2108-2 | PH07A | Total/NA | Solid | Total BTEX | |
| 890-2108-3 | PH07B | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 21982

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2108-1 | PH07 | Total/NA | Solid | 8015NM Prep | |
| 890-2108-2 | PH07A | Total/NA | Solid | 8015NM Prep | |
| 890-2108-3 | PH07B | Total/NA | Solid | 8015NM Prep | |
| MB 880-21982/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-21982/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-21982/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2104-A-3-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 21983

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2108-1 | PH07 | Total/NA | Solid | 8015B NM | 21982 |
| 890-2108-2 | PH07A | Total/NA | Solid | 8015B NM | 21982 |
| 890-2108-3 | PH07B | Total/NA | Solid | 8015B NM | 21982 |
| MB 880-21982/1-A | Method Blank | Total/NA | Solid | 8015B NM | 21982 |
| LCS 880-21982/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 21982 |

# QC Association Summary

Client: WSP USA Inc. Job ID: 890-2108-1
Project/Site: BEU 29 W Vedar 100H SDG: TE01291044

## GC Semi VOA (Continued)

### Analysis Batch: 21983 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCSD 880-21982/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 21982 |
| 890-2104-A-3-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 21982 |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 21982 |

### Analysis Batch: 22138

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2108-1 | PH07 | Total/NA | Solid | 8015 NM | |
| 890-2108-2 | PH07A | Total/NA | Solid | 8015 NM | |
| 890-2108-3 | PH07B | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 22263

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2108-1 | PH07 | Soluble | Solid | DI Leach | |
| 890-2108-2 | PH07A | Soluble | Solid | DI Leach | |
| 890-2108-3 | PH07B | Soluble | Solid | DI Leach | |
| MB 880-22263/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-22263/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-22263/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-2106-A-1-O MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-2106-A-1-P MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 22386

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2108-1 | PH07 | Soluble | Solid | 300.0 | 22263 |
| 890-2108-2 | PH07A | Soluble | Solid | 300.0 | 22263 |
| 890-2108-3 | PH07B | Soluble | Solid | 300.0 | 22263 |
| MB 880-22263/1-A | Method Blank | Soluble | Solid | 300.0 | 22263 |
| LCS 880-22263/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 22263 |
| LCSD 880-22263/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 22263 |
| 890-2106-A-1-O MS | Matrix Spike | Soluble | Solid | 300.0 | 22263 |
| 890-2106-A-1-P MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 22263 |

# Lab Chronicle

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

## Client Sample ID: PH07

**Date Collected: 03/16/22 15:10**
**Date Received: 03/18/22 13:03**

**Lab Sample ID: 890-2108-1**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 21997 | 03/21/22 16:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 21978 | 03/22/22 03:23 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22150 | 03/22/22 15:04 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22138 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 18:11 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/25/22 23:34 | CH | XEN MID |

## Client Sample ID: PH07A

**Date Collected: 03/16/22 15:30**
**Date Received: 03/18/22 13:03**

**Lab Sample ID: 890-2108-2**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 21997 | 03/21/22 16:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 21978 | 03/22/22 03:43 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22150 | 03/22/22 15:04 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22138 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 18:31 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/25/22 23:43 | CH | XEN MID |

## Client Sample ID: PH07B

**Date Collected: 03/16/22 16:00**
**Date Received: 03/18/22 13:03**

**Lab Sample ID: 890-2108-3**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 21997 | 03/21/22 16:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 21978 | 03/22/22 04:03 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22150 | 03/22/22 15:04 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22138 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 18:52 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/25/22 23:52 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-21-22 | 06-30-22 |

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

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

# Method Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

| 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: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2108-1
SDG: TE01291044

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2108-1 | PH07 | Solid | 03/16/22 15:10 | 03/18/22 13:03 | 1 |
| 890-2108-2 | PH07A | Solid | 03/16/22 15:30 | 03/18/22 13:03 | 3 |
| 890-2108-3 | PH07B | Solid | 03/16/22 16:00 | 03/18/22 13:03 | 6 |

# Chain of Custody

Work Order No: _____

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
www.xenco.com Page 1 of 1



| | | | |
|---|---|---|---|
| Project Manager: | Kalie Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | WSP USA Inc., Permian office | Company Name: | XTO Energy |
| Address: | 3300 North A St. Bldg 1, Unit 222 | Address: | 3104 E Greene St. |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM |
| Phone: | 781-702-2329 | Email: | travis.casey@wsp.com, kalei.jennings@wsp.com, dan.moir@ws |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | BEU 29 W Vedar 100H | Turn Around | |
| Project Number: | TE01291044 | Routine | X |
| P.O. Number: | | Rush: | |
| Sampler's Name: | Ali Catsro | Due Date: | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Temperature (°C): | 0.8/0.4 | Thermometer ID | TRM-007 |
| Received Intact: | (Yes) No | | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No (N/A) | Total Containers: | |

**ANALYSIS REQUEST**

890-2108 Chain of Custody

**Work Order Notes**

IN nAPP210831345
CC:
AFE:

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

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|
| PH02 | S | 3/16/2022 | 15:10 | 1 | 1 | x | x | x | Composite |
| PH02A | S | 3/16/2022 | 15:30 | 3 | 1 | x | x | x | Composite |
| PH02B | S | 3/16/2022 | 16:00 | 6 | 1 | x | x | x | Composite |

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

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

**Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to 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 | | 31822 1303 | | | |
| 2 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev. 2018.1

**Eurofins Carlsbad**
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

# Chain of Custody Record

eurofins | Environment Testing America

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Kramer, Jessica | Carrier Tracking No(s): | COC No: 890-675 1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: jessica.kramer@eurofinset.com | State of Origin: New Mexico | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing South Centr | | Accreditations Required (See note): NELAP - Louisiana, NELAP - Texas | | Job #: 890-2108-1 |
| Address: 1211 W Florida Ave, , | Due Date Requested: 3/24/2022 | | | |
| City: Midland | TAT Requested (days): | | | |
| State Zip: TX, 79701 | | | | |
| Phone: 432-704-5440(Tel) | PO #: | | | |
| Email | WO #: | | | |
| Project Name: BEU 29 W VEDAR 100H | Project #: 89000004 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes**

| | |
|---|---|
| A HCL | M Hexane |
| B - NaOH | N - None |
| C Zn Acetate | O - AsNaO2 |
| D Nitric Acid | P Na2O4S |
| E NaHSO4 | Q - Na2SO3 |
| F MeOH | R Na2S2O3 |
| G - Amchlor | S - H2SO4 |
| H Ascorbic Acid | T - TSP Dodecahydrate |
| I Ice | U Acetone |
| J DI Water | V - MCAA |
| K EDTA | W pH 4-5 |
| L EDA | Z - other (specify) |

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8015MOD_NM/8015NM_S_Prep (MOD) Full TPH | 8015MOD_Calc | 300_ORGFM_28D/DI_LEACH Chloride | 8021B/5035FP_Calc (MOD) BTEX | Total_BTEX_GCV | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | | |
| PH02 (890-2108-1) | 3/16/22 | 15 10 Mountain | | Solid | | | X | X | X | X | X | 1 | |
| PH02A (890-2108-2) | 3/16/22 | 15 30 Mountain | | Solid | | | X | X | X | X | X | 1 | |
| PH02B (890-2108-3) | 3/16/22 | 16 00 Mountain | | Solid | | | X | X | X | X | X | 1 | |

Note Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC.

| Possible Hazard Identification | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) |
|---|---|
| Unconfirmed | ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
| Deliverable Requested I II, III IV, Other (specify) Primary Deliverable Rank 2 | Special Instructions/QC Requirements |

| Empty Kit Relinquished by: | Date | Time: | Method of Shipment: |
|---|---|---|---|

| | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|---|
| 1 | Que 3 18 22 | | | KJ | 3/21/22 8:00 | |
| 2 | Relinquished by: | Date/Time | Company | Received by: | Date/Time: | Company |
| 3 | Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No | Cooler Temperature(s) °C and Other Remarks |
|---|---|---|

Ver: 06/08/2021

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2108-1
SDG Number: TE01291044

**Login Number: 2108**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2108-1
SDG Number: TE01291044

**Login Number: 2108**
**List Number: 2**
**Creator: Lowe, Katie**

**List Source: Eurofins Midland**
**List Creation: 03/21/22 08:56 AM**

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

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-2110-1
Laboratory Sample Delivery Group: TE01291044
Client Project/Site: BEU 29 W Vedar 100H

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*3/28/2022 9:27:52 AM*

Jessica Kramer, Project Manager
(432)704-5440
jessica.kramer@eurofinset.com



*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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# Definitions/Glossary

Client: WSP USA Inc. Job ID: 890-2110-1
Project/Site: BEU 29 W Vedar 100H SDG: TE01291044

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

## Job ID: 890-2110-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-2110-1**

**Receipt**
The samples were received on 3/18/2022 1:03 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C

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

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

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

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

## Client Sample ID: PH06

**Lab Sample ID: 890-2110-1**
**Matrix: Solid**
**Date Collected: 03/16/22 09:20**
**Date Received: 03/18/22 13:03**
**Sample Depth: 1**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:01 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:01 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:01 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:01 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:01 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:01 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *118* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 16:01* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 16:01* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00400 | U | 0.00400 | | mg/Kg | | | 03/24/22 16:34 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 03/22/22 10:41 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 19:13 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 19:13 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 19:13 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *83* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 19:13* | *1* |
| *o-Terphenyl* | *99* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 19:13* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **306** | | 4.99 | | mg/Kg | | | 03/26/22 00:01 | 1 |

## Client Sample ID: PH06A

**Lab Sample ID: 890-2110-2**
**Matrix: Solid**
**Date Collected: 03/16/22 10:30**
**Date Received: 03/18/22 13:03**
**Sample Depth: 4**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.00201 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:22 | 1 |
| Toluene | <0.00201 | U | 0.00201 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:22 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:22 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:22 | 1 |
| o-Xylene | <0.00201 | U | 0.00201 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:22 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:22 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *124* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 16:22* | *1* |

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# Client Sample Results

Client: WSP USA Inc. Job ID: 890-2110-1
Project/Site: BEU 29 W Vedar 100H SDG: TE01291044

## Client Sample ID: PH06A — Lab Sample ID: 890-2110-2

**Date Collected: 03/16/22 10:30** **Matrix: Solid**
**Date Received: 03/18/22 13:03**
**Sample Depth: 4**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 16:22* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00402 | U | 0.00402 | mg/Kg | | | 03/24/22 16:34 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | mg/Kg | | | 03/22/22 10:41 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | mg/Kg | | 03/21/22 09:09 | 03/21/22 19:33 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | mg/Kg | | 03/21/22 09:09 | 03/21/22 19:33 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | mg/Kg | | 03/21/22 09:09 | 03/21/22 19:33 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *87* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 19:33* | *1* |
| *o-Terphenyl* | *101* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 19:33* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **281** | | 5.03 | mg/Kg | | | 03/26/22 00:10 | 1 |

## Client Sample ID: PH06B — Lab Sample ID: 890-2110-3

**Date Collected: 03/16/22 12:15** **Matrix: Solid**
**Date Received: 03/18/22 13:03**
**Sample Depth: 6**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:42 | 1 |
| Toluene | <0.00200 | U | 0.00200 | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:42 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:42 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:42 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:42 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | mg/Kg | | 03/23/22 10:00 | 03/23/22 16:42 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *134* | *S1+* | *70 - 130* | *03/23/22 10:00* | *03/23/22 16:42* | *1* |
| *1,4-Difluorobenzene (Surr)* | *103* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 16:42* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | mg/Kg | | | 03/24/22 16:34 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | mg/Kg | | | 03/22/22 10:41 | 1 |

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# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

## Client Sample ID: PH06B

**Date Collected: 03/16/22 12:15**
**Date Received: 03/18/22 13:03**
**Sample Depth: 6**

## Lab Sample ID: 890-2110-3

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 19:54 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 19:54 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 19:54 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *82* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 19:54* | *1* |
| *o-Terphenyl* | *99* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 19:54* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **353** | | 5.04 | | mg/Kg | | | 03/26/22 00:19 | 1 |

# Surrogate Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-2105-A-1-F MS | Matrix Spike | 52 S1- | 104 |
| 890-2105-A-1-G MSD | Matrix Spike Duplicate | 98 | 109 |
| 890-2110-1 | PH06 | 118 | 100 |
| 890-2110-2 | PH06A | 124 | 101 |
| 890-2110-3 | PH06B | 134 S1+ | 103 |
| LCS 880-21853/1-A | Lab Control Sample | 98 | 102 |
| LCSD 880-21853/2-A | Lab Control Sample Dup | 100 | 107 |
| MB 880-21853/5-A | Method Blank | 120 | 96 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO1 | OTPH1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-2104-A-3-D MS | Matrix Spike | 74 | 80 |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | 76 | 82 |
| 890-2110-1 | PH06 | 83 | 99 |
| 890-2110-2 | PH06A | 87 | 101 |
| 890-2110-3 | PH06B | 82 | 99 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | 1CO2 | OTPH2 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| LCS 880-21982/2-A | Lab Control Sample | 94 | 111 |
| LCSD 880-21982/3-A | Lab Control Sample Dup | 96 | 116 |
| MB 880-21982/1-A | Method Blank | 85 | 105 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

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

**Lab Sample ID: MB 880-21853/5-A**
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *120* | | *70 - 130* | *03/23/22 07:30* | *03/23/22 11:09* | *1* |
| *1,4-Difluorobenzene (Surr)* | *96* | | *70 - 130* | *03/23/22 07:30* | *03/23/22 11:09* | *1* |

**Lab Sample ID: LCS 880-21853/1-A**
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1060 | | mg/Kg | | 106 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08963 | | mg/Kg | | 90 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09757 | | mg/Kg | | 98 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2096 | | mg/Kg | | 105 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1034 | | mg/Kg | | 103 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: LCSD 880-21853/2-A**
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1111 | | mg/Kg | | 111 | 70 - 130 | 5 | 35 |
| Toluene | | | 0.100 | 0.08944 | | mg/Kg | | 89 | 70 - 130 | 0 | 35 |
| Ethylbenzene | | | 0.100 | 0.09503 | | mg/Kg | | 95 | 70 - 130 | 3 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2047 | | mg/Kg | | 102 | 70 - 130 | 2 | 35 |
| o-Xylene | | | 0.100 | 0.1019 | | mg/Kg | | 102 | 70 - 130 | 1 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *107* | | *70 - 130* |

**Lab Sample ID: 890-2105-A-1-F MS**
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.0996 | 0.09756 | | mg/Kg | | 98 | 70 - 130 | | |
| Toluene | <0.00202 | U | 0.0996 | 0.08866 | | mg/Kg | | 89 | 70 - 130 | | |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

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

**Lab Sample ID: 890-2105-A-1-F MS**
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00202 | U | 0.0996 | 0.1010 | | mg/Kg | | 101 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00404 | U | 0.199 | 0.2233 | | mg/Kg | | 112 | 70 - 130 |
| o-Xylene | <0.00202 | U | 0.0996 | 0.1109 | | mg/Kg | | 111 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *52* | *S1-* | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *104* | | *70 - 130* |

**Lab Sample ID: 890-2105-A-1-G MSD**
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.100 | 0.1038 | | mg/Kg | | 103 | 70 - 130 | 6 | 35 |
| Toluene | <0.00202 | U | 0.100 | 0.08314 | | mg/Kg | | 83 | 70 - 130 | 6 | 35 |
| Ethylbenzene | <0.00202 | U | 0.100 | 0.08960 | | mg/Kg | | 90 | 70 - 130 | 12 | 35 |
| m-Xylene & p-Xylene | <0.00404 | U | 0.200 | 0.1934 | | mg/Kg | | 97 | 70 - 130 | 14 | 35 |
| o-Xylene | <0.00202 | U | 0.100 | 0.09686 | | mg/Kg | | 97 | 70 - 130 | 14 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *109* | | *70 - 130* |

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

**Lab Sample ID: MB 880-21982/1-A**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *85* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 10:51* | *1* |
| *o-Terphenyl* | *105* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 10:51* | *1* |

**Lab Sample ID: LCS 880-21982/2-A**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 852.9 | | mg/Kg | | 85 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 924.6 | | mg/Kg | | 92 | 70 - 130 |

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# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

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

**Lab Sample ID: LCS 880-21982/2-A**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 94 | | 70 - 130 |
| o-Terphenyl | 111 | | 70 - 130 |

**Lab Sample ID: LCSD 880-21982/3-A**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 990.5 | | mg/Kg | | 99 | 70 - 130 | 15 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1045 | | mg/Kg | | 105 | 70 - 130 | 12 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 96 | | 70 - 130 |
| o-Terphenyl | 116 | | 70 - 130 |

**Lab Sample ID: 890-2104-A-3-D MS**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 998 | 809.3 | | mg/Kg | | 79 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 998 | 723.2 | F1 | mg/Kg | | 69 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 74 | | 70 - 130 |
| o-Terphenyl | 80 | | 70 - 130 |

**Lab Sample ID: 890-2104-A-3-E MSD**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 836.1 | | mg/Kg | | 81 | 70 - 130 | 3 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 999 | 747.9 | | mg/Kg | | 71 | 70 - 130 | 3 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 76 | | 70 - 130 |
| o-Terphenyl | 82 | | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-22263/1-A**
**Matrix: Solid**
**Analysis Batch: 22386**

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

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 03/25/22 19:53 | 1 |

**Lab Sample ID: LCS 880-22263/2-A**
**Matrix: Solid**
**Analysis Batch: 22386**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 249.9 | | mg/Kg | | 100 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-22263/3-A**
**Matrix: Solid**
**Analysis Batch: 22386**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 248.2 | | mg/Kg | | 99 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 890-2106-A-1-O MS**
**Matrix: Solid**
**Analysis Batch: 22386**

**Client Sample ID: Matrix Spike**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 193 | | 250 | 427.7 | | mg/Kg | | 94 | 90 - 110 | | |

**Lab Sample ID: 890-2106-A-1-P MSD**
**Matrix: Solid**
**Analysis Batch: 22386**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 193 | | 250 | 427.5 | | mg/Kg | | 94 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

## GC VOA

### Prep Batch: 21853

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2110-1 | PH06 | Total/NA | Solid | 5035 | |
| 890-2110-2 | PH06A | Total/NA | Solid | 5035 | |
| 890-2110-3 | PH06B | Total/NA | Solid | 5035 | |
| MB 880-21853/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-21853/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-21853/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-2105-A-1-F MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-2105-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 22182

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2110-1 | PH06 | Total/NA | Solid | 8021B | 21853 |
| 890-2110-2 | PH06A | Total/NA | Solid | 8021B | 21853 |
| 890-2110-3 | PH06B | Total/NA | Solid | 8021B | 21853 |
| MB 880-21853/5-A | Method Blank | Total/NA | Solid | 8021B | 21853 |
| LCS 880-21853/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 21853 |
| LCSD 880-21853/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 21853 |
| 890-2105-A-1-F MS | Matrix Spike | Total/NA | Solid | 8021B | 21853 |
| 890-2105-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 21853 |

### Analysis Batch: 22297

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2110-1 | PH06 | Total/NA | Solid | Total BTEX | |
| 890-2110-2 | PH06A | Total/NA | Solid | Total BTEX | |
| 890-2110-3 | PH06B | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 21982

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2110-1 | PH06 | Total/NA | Solid | 8015NM Prep | |
| 890-2110-2 | PH06A | Total/NA | Solid | 8015NM Prep | |
| 890-2110-3 | PH06B | Total/NA | Solid | 8015NM Prep | |
| MB 880-21982/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-21982/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-21982/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2104-A-3-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 21983

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2110-1 | PH06 | Total/NA | Solid | 8015B NM | 21982 |
| 890-2110-2 | PH06A | Total/NA | Solid | 8015B NM | 21982 |
| 890-2110-3 | PH06B | Total/NA | Solid | 8015B NM | 21982 |
| MB 880-21982/1-A | Method Blank | Total/NA | Solid | 8015B NM | 21982 |
| LCS 880-21982/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 21982 |
| LCSD 880-21982/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 21982 |
| 890-2104-A-3-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 21982 |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 21982 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

## GC Semi VOA

### Analysis Batch: 22139

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2110-1 | PH06 | Total/NA | Solid | 8015 NM | |
| 890-2110-2 | PH06A | Total/NA | Solid | 8015 NM | |
| 890-2110-3 | PH06B | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 22263

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2110-1 | PH06 | Soluble | Solid | DI Leach | |
| 890-2110-2 | PH06A | Soluble | Solid | DI Leach | |
| 890-2110-3 | PH06B | Soluble | Solid | DI Leach | |
| MB 880-22263/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-22263/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-22263/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-2106-A-1-O MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-2106-A-1-P MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 22386

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2110-1 | PH06 | Soluble | Solid | 300.0 | 22263 |
| 890-2110-2 | PH06A | Soluble | Solid | 300.0 | 22263 |
| 890-2110-3 | PH06B | Soluble | Solid | 300.0 | 22263 |
| MB 880-22263/1-A | Method Blank | Soluble | Solid | 300.0 | 22263 |
| LCS 880-22263/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 22263 |
| LCSD 880-22263/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 22263 |
| 890-2106-A-1-O MS | Matrix Spike | Soluble | Solid | 300.0 | 22263 |
| 890-2106-A-1-P MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 22263 |

# Lab Chronicle

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

## Client Sample ID: PH06

**Date Collected: 03/16/22 09:20**
**Date Received: 03/18/22 13:03**

## Lab Sample ID: 890-2110-1

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 21853 | 03/23/22 10:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 22182 | 03/23/22 16:01 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22297 | 03/24/22 16:34 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22139 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 19:13 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/26/22 00:01 | CH | XEN MID |

## Client Sample ID: PH06A

**Date Collected: 03/16/22 10:30**
**Date Received: 03/18/22 13:03**

## Lab Sample ID: 890-2110-2

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 21853 | 03/23/22 10:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 22182 | 03/23/22 16:22 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22297 | 03/24/22 16:34 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22139 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 19:33 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/26/22 00:10 | CH | XEN MID |

## Client Sample ID: PH06B

**Date Collected: 03/16/22 12:15**
**Date Received: 03/18/22 13:03**

## Lab Sample ID: 890-2110-3

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 21853 | 03/23/22 10:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 22182 | 03/23/22 16:42 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22297 | 03/24/22 16:34 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22139 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 19:54 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/26/22 00:19 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-21-22 | 06-30-22 |

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

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

# Method Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

| 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: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2110-1
SDG: TE01291044

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2110-1 | PH06 | Solid | 03/16/22 09:20 | 03/18/22 13:03 | 1 |
| 890-2110-2 | PH06A | Solid | 03/16/22 10:30 | 03/18/22 13:03 | 4 |
| 890-2110-3 | PH06B | Solid | 03/16/22 12:15 | 03/18/22 13:03 | 6 |

# Chain of Custody

Work Order No: _____

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)
www.xenco.com Page 1 of 1



| | | | |
|---|---|---|---|
| Project Manager: | Kalie Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | WSP USA Inc., Permian office | Company Name: | XTO Energy |
| Address: | 3300 North A St. Bldg 1, Unit 222 | Address: | 3104 E Greene St. |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM |
| Phone: | 781-702-2329 Email: | travis.casey@wsp.com, kalei.jennings@wsp.com, dan.moir@ws | |

**Work Order Comments**

Program: UST/PST PRP Brownfields RRC Superfund

State of Project: NM

Reporting:Level II Level III PST/UST TRRP Level IV

Deliverables: EDD ADaPT Other:

| | | | |
|---|---|---|---|
| Project Name: | BEU 29 W Vedar 100H | Turn Around | |
| Project Number: | TE01291044 | Routine X | |
| P.O. Number: | | Rush: | |
| Sampler's Name: | Ali Catsro | Due Date: | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No | |
| Temperature (°C): | 0.8/2.6 | Thermometer ID | TNM-007 | |
| Received Intact: | (Yes) No | | | |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No (N/A) | Total Containers: | | |

**ANALYSIS REQUEST**

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|
| PH01 | S | 3/16/2022 | 9:20 | 1 | 1 | x | x | x | Composite |
| PH01A | S | 3/16/2022 | 10:30 | 4 | 1 | x | x | x | Composite |
| PH01B | S | 3/16/2022 | 12:15 | 6 | 1 | x | x | x | Composite |

890-2110 Chain of Custody

**Work Order Notes**

IN nAPP210831345

CC:

AFE:

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

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

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



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | | | 3.15.22 1303 | | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev. 2018.1

**Eurofins Carlsbad**
1089 N Canal St.
Carlsbad, NM 88220
Phone 575-988-3199 Fax 575-988-3199

# Chain of Custody Record

eurofins | Environment Testing America

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Kramer, Jessica | Carrier Tracking No(s): | COC No: 890-675 1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: jessica.kramer@eurofinset.com | State of Origin: New Mexico | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing South Centr | | Accreditations Required (See note): NELAP - Louisiana, NELAP - Texas | | Job #: 890-2110-1 |
| Address: 1211 W Florida Ave, , | Due Date Requested: 3/24/2022 | | | |
| City: Midland | TAT Requested (days): | | | |
| State Zip: TX, 79701 | | | | |
| Phone: 432-704-5440(Tel) | PO #: | | | |
| Email | WO #: | | | |
| Project Name: BEU 29 W VEDAR 100H | Project #: 89000004 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes**

A HCL, B NaOH, C - Zn Acetate, D Nitric Acid, E NaHSO4, F - MeOH, G Amchlor, H - Ascorbic Acid, I Ice, J DI Water, K EDTA, L - EDA, M - Hexane, N None, O AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S H2SO4, T TSP Dodecahydrate, U - Acetone, V MCAA, W - pH 4-5, Z other (specify)

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8016MOD_NM/8015NM_S_Prep (MOD) Full TPH | 8016MOD_Calc | 300_ORGFM_28D/DI_LEACH Chloride | 8021B/5035FP_Calc (MOD) BTEX | Total_BTEX_GCV | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | | |
| PH01 (890-2110-1) | 3/16/22 | 09 20 Mountain | | Solid | | | X | X | X | X | X | 1 | |
| PH01A (890-2110-2) | 3/16/22 | 10 30 Mountain | | Solid | | | X | X | X | X | X | 1 | |
| PH01B (890-2110-3) | 3/16/22 | 12 15 Mountain | | Solid | | | X | X | X | X | X | 1 | |

Note Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC.

| Possible Hazard Identification | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) |
|---|---|
| Unconfirmed | ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
| Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank. 2 | Special Instructions/QC Requirements |

| Empty Kit Relinquished by: | Date | Time. | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Clw 3 16 22 | | | | 3/21/22 8:00 | |
| Relinquished by: | Date/Time. | Company | Received by: | Date/Time | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact. Δ Yes Δ No | Custody Seal No | Cooler Temperature(s) °C and Other Remarks: |
|---|---|---|

Ver: 06/08/2021

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2110-1
SDG Number: TE01291044

**Login Number: 2110**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2110-1
SDG Number: TE01291044

**Login Number: 2110**
**List Number: 2**
**Creator: Lowe, Katie**

**List Source: Eurofins Midland**
**List Creation: 03/21/22 08:56 AM**

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

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-2105-1
Laboratory Sample Delivery Group: te01291044
Client Project/Site: BEU 29 W Vedar 100H

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*3/28/2022 4:44:33 PM*

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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.*

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Laboratory Job ID: 890-2105-1
SDG: te01291044

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# Definitions/Glossary

Client: WSP USA Inc. Job ID: 890-2105-1
Project/Site: BEU 29 W Vedar 100H SDG: te01291044

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

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

## Glossary

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

# Case Narrative

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

## Job ID: 890-2105-1

### Laboratory: Eurofins Carlsbad

**Narrative**

**Job Narrative**
**890-2105-1**

**Receipt**
The samples were received on 3/18/2022 1:08 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 0.6°C

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

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

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

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

## Client Sample ID: PH09

**Date Collected: 03/17/22 13:50**
**Date Received: 03/18/22 13:08**
**Sample Depth: 1**

**Lab Sample ID: 890-2105-1**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.00202 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:31 | 1 |
| Toluene | <0.00202 | U | 0.00202 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:31 | 1 |
| Ethylbenzene | <0.00202 | U | 0.00202 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:31 | 1 |
| m-Xylene & p-Xylene | <0.00404 | U | 0.00404 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:31 | 1 |
| o-Xylene | <0.00202 | U | 0.00202 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:31 | 1 |
| Xylenes, Total | <0.00404 | U | 0.00404 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:31 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 11:31* | *1* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 11:31* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00404 | U | 0.00404 | | mg/Kg | | | 03/23/22 14:43 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 03/22/22 10:41 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 15:04 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 15:04 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 15:04 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *83* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 15:04* | *1* |
| *o-Terphenyl* | *101* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 15:04* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **321** | | 5.05 | | mg/Kg | | | 03/25/22 21:48 | 1 |

## Client Sample ID: PH09A

**Date Collected: 03/17/22 14:05**
**Date Received: 03/18/22 13:08**
**Sample Depth: 3**

**Lab Sample ID: 890-2105-2**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:52 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:52 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:52 | 1 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.00401 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:52 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:52 | 1 |
| Xylenes, Total | <0.00401 | U | 0.00401 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 11:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *107* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 11:52* | *1* |

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# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

## Client Sample ID: PH09A

**Date Collected: 03/17/22 14:05**
**Date Received: 03/18/22 13:08**
**Sample Depth: 3**

**Lab Sample ID: 890-2105-2**
**Matrix: Solid**

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

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *109* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 11:52* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00401 | U | 0.00401 | mg/Kg | | | 03/23/22 14:43 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | mg/Kg | | | 03/22/22 10:41 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | mg/Kg | | 03/21/22 09:09 | 03/21/22 15:25 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | mg/Kg | | 03/21/22 09:09 | 03/21/22 15:25 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | mg/Kg | | 03/21/22 09:09 | 03/21/22 15:25 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *76* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 15:25* | *1* |
| *o-Terphenyl* | *90* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 15:25* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **107** | | 4.98 | mg/Kg | | | 03/25/22 21:57 | 1 |

## Client Sample ID: PH09B

**Date Collected: 03/17/22 14:45**
**Date Received: 03/18/22 13:08**
**Sample Depth: 6**

**Lab Sample ID: 890-2105-3**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:13 | 1 |
| Toluene | <0.00200 | U | 0.00200 | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:13 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:13 | 1 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.00401 | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:13 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:13 | 1 |
| Xylenes, Total | <0.00401 | U | 0.00401 | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:13 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *116* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 12:13* | *1* |
| *1,4-Difluorobenzene (Surr)* | *113* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 12:13* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00401 | U | 0.00401 | mg/Kg | | | 03/23/22 14:43 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | mg/Kg | | | 03/22/22 10:41 | 1 |

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# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

## Client Sample ID: PH09B

**Lab Sample ID: 890-2105-3**
**Matrix: Solid**
**Date Collected: 03/17/22 14:45**
**Date Received: 03/18/22 13:08**
**Sample Depth: 6**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 15:46 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 15:46 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 15:46 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *80* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 15:46* | *1* |
| *o-Terphenyl* | *97* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 15:46* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **104** | | 4.98 | | mg/Kg | | | 03/28/22 14:13 | 1 |

## Client Sample ID: PH09C

**Lab Sample ID: 890-2105-4**
**Matrix: Solid**
**Date Collected: 03/17/22 14:55**
**Date Received: 03/18/22 13:08**
**Sample Depth: 7**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.00201 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:33 | 1 |
| Toluene | <0.00201 | U | 0.00201 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:33 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:33 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:33 | 1 |
| o-Xylene | <0.00201 | U | 0.00201 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:33 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 03/23/22 10:00 | 03/23/22 12:33 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *115* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 12:33* | *1* |
| *1,4-Difluorobenzene (Surr)* | *113* | | *70 - 130* | *03/23/22 10:00* | *03/23/22 12:33* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00402 | U | 0.00402 | | mg/Kg | | | 03/23/22 14:43 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 03/22/22 10:41 | 1 |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 16:06 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 16:06 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 16:06 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *41* | *S1-* | *70 - 130* | *03/21/22 09:09* | *03/21/22 16:06* | *1* |
| *o-Terphenyl* | *50* | *S1-* | *70 - 130* | *03/21/22 09:09* | *03/21/22 16:06* | *1* |

# Client Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

## Client Sample ID: PH09C

**Date Collected: 03/17/22 14:55**
**Date Received: 03/18/22 13:08**
**Sample Depth: 7**

## Lab Sample ID: 890-2105-4

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 112 | | 5.05 | | mg/Kg | | | 03/28/22 14:22 | 1 |

# Surrogate Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | BFB1 (70-130) | DFBZ1 (70-130) |
| 890-2105-1 | PH09 | 108 | 111 |
| 890-2105-1 MS | PH09 | 52 S1- | 104 |
| 890-2105-1 MSD | PH09 | 98 | 109 |
| 890-2105-2 | PH09A | 107 | 109 |
| 890-2105-3 | PH09B | 116 | 113 |
| 890-2105-4 | PH09C | 115 | 113 |
| LCS 880-21853/1-A | Lab Control Sample | 98 | 102 |
| LCSD 880-21853/2-A | Lab Control Sample Dup | 100 | 107 |
| MB 880-21853/5-A | Method Blank | 120 | 96 |

**Surrogate Legend**

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

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | 1CO1 (70-130) | OTPH1 (70-130) |
| 890-2104-A-3-D MS | Matrix Spike | 74 | 80 |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | 76 | 82 |
| 890-2105-1 | PH09 | 83 | 101 |
| 890-2105-2 | PH09A | 76 | 90 |
| 890-2105-3 | PH09B | 80 | 97 |
| 890-2105-4 | PH09C | 41 S1- | 50 S1- |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | 1CO2 (70-130) | OTPH2 (70-130) |
| LCS 880-21982/2-A | Lab Control Sample | 94 | 111 |
| LCSD 880-21982/3-A | Lab Control Sample Dup | 96 | 116 |
| MB 880-21982/1-A | Method Blank | 85 | 105 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

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

### Lab Sample ID: MB 880-21853/5-A
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 03/23/22 07:30 | 03/23/22 11:09 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *120* | | *70 - 130* | *03/23/22 07:30* | *03/23/22 11:09* | *1* |
| *1,4-Difluorobenzene (Surr)* | *96* | | *70 - 130* | *03/23/22 07:30* | *03/23/22 11:09* | *1* |

### Lab Sample ID: LCS 880-21853/1-A
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1060 | | mg/Kg | | 106 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08963 | | mg/Kg | | 90 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.09757 | | mg/Kg | | 98 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2096 | | mg/Kg | | 105 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1034 | | mg/Kg | | 103 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

### Lab Sample ID: LCSD 880-21853/2-A
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.1111 | | mg/Kg | | 111 | 70 - 130 | 5 | 35 |
| Toluene | | | 0.100 | 0.08944 | | mg/Kg | | 89 | 70 - 130 | 0 | 35 |
| Ethylbenzene | | | 0.100 | 0.09503 | | mg/Kg | | 95 | 70 - 130 | 3 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2047 | | mg/Kg | | 102 | 70 - 130 | 2 | 35 |
| o-Xylene | | | 0.100 | 0.1019 | | mg/Kg | | 102 | 70 - 130 | 1 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *107* | | *70 - 130* |

### Lab Sample ID: 890-2105-1 MS
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: PH09**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.0996 | 0.09756 | | mg/Kg | | 98 | 70 - 130 | | |
| Toluene | <0.00202 | U | 0.0996 | 0.08866 | | mg/Kg | | 89 | 70 - 130 | | |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

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

**Lab Sample ID: 890-2105-1 MS**
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: PH09**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00202 | U | 0.0996 | 0.1010 | | mg/Kg | | 101 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00404 | U | 0.199 | 0.2233 | | mg/Kg | | 112 | 70 - 130 |
| o-Xylene | <0.00202 | U | 0.0996 | 0.1109 | | mg/Kg | | 111 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *52* | *S1-* | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *104* | | *70 - 130* |

**Lab Sample ID: 890-2105-1 MSD**
**Matrix: Solid**
**Analysis Batch: 22182**

**Client Sample ID: PH09**
**Prep Type: Total/NA**
**Prep Batch: 21853**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00202 | U | 0.100 | 0.1038 | | mg/Kg | | 103 | 70 - 130 | 6 | 35 |
| Toluene | <0.00202 | U | 0.100 | 0.08314 | | mg/Kg | | 83 | 70 - 130 | 6 | 35 |
| Ethylbenzene | <0.00202 | U | 0.100 | 0.08960 | | mg/Kg | | 90 | 70 - 130 | 12 | 35 |
| m-Xylene & p-Xylene | <0.00404 | U | 0.200 | 0.1934 | | mg/Kg | | 97 | 70 - 130 | 14 | 35 |
| o-Xylene | <0.00202 | U | 0.100 | 0.09686 | | mg/Kg | | 97 | 70 - 130 | 14 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *109* | | *70 - 130* |

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

**Lab Sample ID: MB 880-21982/1-A**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |
| Oil Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 03/21/22 09:09 | 03/21/22 10:51 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *85* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 10:51* | *1* |
| *o-Terphenyl* | *105* | | *70 - 130* | *03/21/22 09:09* | *03/21/22 10:51* | *1* |

**Lab Sample ID: LCS 880-21982/2-A**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 852.9 | | mg/Kg | | 85 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 924.6 | | mg/Kg | | 92 | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

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

**Lab Sample ID: LCS 880-21982/2-A**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 94 | | 70 - 130 |
| o-Terphenyl | 111 | | 70 - 130 |

**Lab Sample ID: LCSD 880-21982/3-A**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 990.5 | | mg/Kg | | 99 | 70 - 130 | 15 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1045 | | mg/Kg | | 105 | 70 - 130 | 12 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 96 | | 70 - 130 |
| o-Terphenyl | 116 | | 70 - 130 |

**Lab Sample ID: 890-2104-A-3-D MS**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 998 | 809.3 | | mg/Kg | | 79 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 998 | 723.2 | F1 | mg/Kg | | 69 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 74 | | 70 - 130 |
| o-Terphenyl | 80 | | 70 - 130 |

**Lab Sample ID: 890-2104-A-3-E MSD**
**Matrix: Solid**
**Analysis Batch: 21983**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 21982**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 999 | 836.1 | | mg/Kg | | 81 | 70 - 130 | 3 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U F1 | 999 | 747.9 | | mg/Kg | | 71 | 70 - 130 | 3 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 76 | | 70 - 130 |
| o-Terphenyl | 82 | | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-22263/1-A**
**Matrix: Solid**
**Analysis Batch: 22386**

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

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 03/25/22 19:53 | 1 |

**Lab Sample ID: LCS 880-22263/2-A**
**Matrix: Solid**
**Analysis Batch: 22386**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 249.9 | | mg/Kg | | 100 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-22263/3-A**
**Matrix: Solid**
**Analysis Batch: 22386**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 248.2 | | mg/Kg | | 99 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 880-12550-A-8-K MS**
**Matrix: Solid**
**Analysis Batch: 22386**

**Client Sample ID: Matrix Spike**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 5.71 | | 249 | 250.1 | | mg/Kg | | 98 | 90 - 110 | | |

**Lab Sample ID: 880-12550-A-8-L MSD**
**Matrix: Solid**
**Analysis Batch: 22386**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 5.71 | | 249 | 255.7 | | mg/Kg | | 100 | 90 - 110 | 2 | 20 |

**Lab Sample ID: 890-2106-A-1-O MS**
**Matrix: Solid**
**Analysis Batch: 22386**

**Client Sample ID: Matrix Spike**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 193 | | 250 | 427.7 | | mg/Kg | | 94 | 90 - 110 | | |

**Lab Sample ID: 890-2106-A-1-P MSD**
**Matrix: Solid**
**Analysis Batch: 22386**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 193 | | 250 | 427.5 | | mg/Kg | | 94 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

## GC VOA

### Prep Batch: 21853

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2105-1 | PH09 | Total/NA | Solid | 5035 | |
| 890-2105-2 | PH09A | Total/NA | Solid | 5035 | |
| 890-2105-3 | PH09B | Total/NA | Solid | 5035 | |
| 890-2105-4 | PH09C | Total/NA | Solid | 5035 | |
| MB 880-21853/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-21853/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-21853/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-2105-1 MS | PH09 | Total/NA | Solid | 5035 | |
| 890-2105-1 MSD | PH09 | Total/NA | Solid | 5035 | |

### Analysis Batch: 22182

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2105-1 | PH09 | Total/NA | Solid | 8021B | 21853 |
| 890-2105-2 | PH09A | Total/NA | Solid | 8021B | 21853 |
| 890-2105-3 | PH09B | Total/NA | Solid | 8021B | 21853 |
| 890-2105-4 | PH09C | Total/NA | Solid | 8021B | 21853 |
| MB 880-21853/5-A | Method Blank | Total/NA | Solid | 8021B | 21853 |
| LCS 880-21853/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 21853 |
| LCSD 880-21853/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 21853 |
| 890-2105-1 MS | PH09 | Total/NA | Solid | 8021B | 21853 |
| 890-2105-1 MSD | PH09 | Total/NA | Solid | 8021B | 21853 |

### Analysis Batch: 22224

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2105-1 | PH09 | Total/NA | Solid | Total BTEX | |
| 890-2105-2 | PH09A | Total/NA | Solid | Total BTEX | |
| 890-2105-3 | PH09B | Total/NA | Solid | Total BTEX | |
| 890-2105-4 | PH09C | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 21982

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2105-1 | PH09 | Total/NA | Solid | 8015NM Prep | |
| 890-2105-2 | PH09A | Total/NA | Solid | 8015NM Prep | |
| 890-2105-3 | PH09B | Total/NA | Solid | 8015NM Prep | |
| 890-2105-4 | PH09C | Total/NA | Solid | 8015NM Prep | |
| MB 880-21982/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-21982/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-21982/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-2104-A-3-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 21983

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2105-1 | PH09 | Total/NA | Solid | 8015B NM | 21982 |
| 890-2105-2 | PH09A | Total/NA | Solid | 8015B NM | 21982 |
| 890-2105-3 | PH09B | Total/NA | Solid | 8015B NM | 21982 |
| 890-2105-4 | PH09C | Total/NA | Solid | 8015B NM | 21982 |
| MB 880-21982/1-A | Method Blank | Total/NA | Solid | 8015B NM | 21982 |
| LCS 880-21982/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 21982 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

## GC Semi VOA (Continued)

### Analysis Batch: 21983 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCSD 880-21982/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 21982 |
| 890-2104-A-3-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 21982 |
| 890-2104-A-3-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 21982 |

### Analysis Batch: 22136

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2105-1 | PH09 | Total/NA | Solid | 8015 NM | |
| 890-2105-2 | PH09A | Total/NA | Solid | 8015 NM | |
| 890-2105-3 | PH09B | Total/NA | Solid | 8015 NM | |
| 890-2105-4 | PH09C | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 22263

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2105-1 | PH09 | Soluble | Solid | DI Leach | |
| 890-2105-2 | PH09A | Soluble | Solid | DI Leach | |
| 890-2105-3 | PH09B | Soluble | Solid | DI Leach | |
| 890-2105-4 | PH09C | Soluble | Solid | DI Leach | |
| MB 880-22263/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-22263/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-22263/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-12550-A-8-K MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 880-12550-A-8-L MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |
| 890-2106-A-1-O MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-2106-A-1-P MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 22386

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-2105-1 | PH09 | Soluble | Solid | 300.0 | 22263 |
| 890-2105-2 | PH09A | Soluble | Solid | 300.0 | 22263 |
| 890-2105-3 | PH09B | Soluble | Solid | 300.0 | 22263 |
| 890-2105-4 | PH09C | Soluble | Solid | 300.0 | 22263 |
| MB 880-22263/1-A | Method Blank | Soluble | Solid | 300.0 | 22263 |
| LCS 880-22263/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 22263 |
| LCSD 880-22263/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 22263 |
| 880-12550-A-8-K MS | Matrix Spike | Soluble | Solid | 300.0 | 22263 |
| 880-12550-A-8-L MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 22263 |
| 890-2106-A-1-O MS | Matrix Spike | Soluble | Solid | 300.0 | 22263 |
| 890-2106-A-1-P MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 22263 |

# Lab Chronicle

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

## Client Sample ID: PH09
**Date Collected: 03/17/22 13:50**
**Date Received: 03/18/22 13:08**

## Lab Sample ID: 890-2105-1
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 21853 | 03/23/22 10:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 22182 | 03/23/22 11:31 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22224 | 03/23/22 14:43 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22136 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 15:04 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/25/22 21:48 | CH | XEN MID |

## Client Sample ID: PH09A
**Date Collected: 03/17/22 14:05**
**Date Received: 03/18/22 13:08**

## Lab Sample ID: 890-2105-2
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 21853 | 03/23/22 10:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 22182 | 03/23/22 11:52 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22224 | 03/23/22 14:43 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22136 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 15:25 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/25/22 21:57 | CH | XEN MID |

## Client Sample ID: PH09B
**Date Collected: 03/17/22 14:45**
**Date Received: 03/18/22 13:08**

## Lab Sample ID: 890-2105-3
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 21853 | 03/23/22 10:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 22182 | 03/23/22 12:13 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22224 | 03/23/22 14:43 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 22136 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 15:46 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/28/22 14:13 | CH | XEN MID |

## Client Sample ID: PH09C
**Date Collected: 03/17/22 14:55**
**Date Received: 03/18/22 13:08**

## Lab Sample ID: 890-2105-4
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 21853 | 03/23/22 10:00 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 22182 | 03/23/22 12:33 | KL | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 22224 | 03/23/22 14:43 | AJ | XEN MID |

Eurofins Carlsbad

# Lab Chronicle

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

## Client Sample ID: PH09C
**Date Collected: 03/17/22 14:55**
**Date Received: 03/18/22 13:08**

## Lab Sample ID: 890-2105-4
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8015 NM | | 1 | 22136 | 03/22/22 10:41 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 21982 | 03/21/22 09:09 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 21983 | 03/21/22 16:06 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 22263 | 03/24/22 10:27 | SC | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 22386 | 03/28/22 14:22 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: WSP USA Inc. Job ID: 890-2105-1
Project/Site: BEU 29 W Vedar 100H SDG: te01291044

## Laboratory: Eurofins Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | NELAP | T104704400-21-22 | 06-30-22 |

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

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

# Method Summary

Client: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

| 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: WSP USA Inc.
Project/Site: BEU 29 W Vedar 100H

Job ID: 890-2105-1
SDG: te01291044

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-2105-1 | PH09 | Solid | 03/17/22 13:50 | 03/18/22 13:08 | 1 |
| 890-2105-2 | PH09A | Solid | 03/17/22 14:05 | 03/18/22 13:08 | 3 |
| 890-2105-3 | PH09B | Solid | 03/17/22 14:45 | 03/18/22 13:08 | 6 |
| 890-2105-4 | PH09C | Solid | 03/17/22 14:55 | 03/18/22 13:08 | 7 |

# Chain of Custody

Work Order No: _____

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 1 of 1

| | | | |
|---|---|---|---|
| Project Manager: | Kalie Jennings | Bill to: (if different) | Adrian Baker |
| Company Name: | WSP USA Inc., Permian office | Company Name: | XTO Energy |
| Address: | 3300 North A St. Bldg 1, Unit 222 | Address: | 3104 E Greene St. |
| City, State ZIP: | Midland, TX 79705 | City, State ZIP: | Carlsbad, NM |
| Phone: | 781-702-2329 | Email: | travis.casey@wsp.com, kalei.jennings@wsp.com, dan.moir@ws |

**Work Order Comments**

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

| | | | |
|---|---|---|---|
| Project Name: | BEU 29 W Vedar 100H | Turn Around | |
| Project Number: | TE01291044 | Routine | X |
| P.O. Number: | | Rush: | |
| Sampler's Name: | Ali Catsro | Due Date: | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No | |
| Temperature (°C): | 0.8/0.6 | Thermometer ID | TM-307 | |
| Received Intact: | (Yes) No | | | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes No (N/A) | Total Containers: | | |

**ANALYSIS REQUEST**

890-2105 Chain of Custody

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Number of Containers | TPH (EPA 8015) | BTEX (EPA 8021) | Chloride (EPA 300.0) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|
| PH04 | S | 3/17/2022 | 13:50 | 1 | 1 | x | x | x | Composite |
| PH04A | S | 3/17/2022 | 14:05 | 3 | 1 | x | x | x | Composite |
| PH04B | S | 3/17/2022 | 14:45 | 6 | 1 | x | x | x | Composite |
| PHO4C | S | 3/17/2022 | 14:55 | 7 | 1 | x | x | x | Composite |

**Work Order Notes**

IN nAPP210831345
CC:
AFE:

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

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



| | Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|
| 1 | | | 3.18.22 1305 | | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev 2018 1

**Eurofins Carlsbad**
1089 N Canal St.
Carlsbad NM 88220
Phone: 575-988-3199 Fax 575-988-3199

# Chain of Custody Record

eurofins | Environment Testing America

| Client Information (Sub Contract Lab) | Sampler | Lab PM: Kramer, Jessica | Carrier Tracking No(s) | COC No: 890-675 1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone | E-Mail: jessica.kramer@eurofinset.com | State of Origin: New Mexico | Page: Page 1 of 1 |
| Company: Eurofins Environment Testing South Centr | | Accreditations Required (See note): NELAP - Louisiana, NELAP - Texas | | Job #: 890-2105-1 |
| Address: 1211 W Florida Ave, , | Due Date Requested: 3/24/2022 | | | |
| City: Midland | TAT Requested (days): | | | |
| State, Zip: TX, 79701 | | | | |
| Phone: 432-704-5440(Tel) | PO #: | | | |
| Email | WO #: | | | |
| Project Name: BEU 29 W Vedar 100h | Project #: 89000004 | | | |
| Site | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes**

A HCL — M - Hexane
B - NaOH — N - None
C Zn Acetate — O AsNaO2
D - Nitric Acid — P - Na2O4S
E - NaHSO4 — Q Na2SO3
F MeOH — R - Na2S2O3
G - Amchlor — S - H2SO4
H Ascorbic Acid — T TSP Dodecahydrate
I Ice — U - Acetone
J DI Water — V MCAA
K EDTA — W - pH 4-5
L - EDA — Z - other (specify)

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8015MOD_NM/8015NM_S_Prep (MOD) Full TPH | 8016MOD_Calc | 300_ORGFM_28D/DI_LEACH Chloride | 8021B/5035FP_Calc (MOD) BTEX | Total_BTEX_GCV | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | | | | |
| PH04 (890-2105-1) | 3/17/22 | 13 50 Mountain | | Solid | | | X | X | X | X | X | 1 | |
| PH04A (890-2105-2) | 3/17/22 | 14 05 Mountain | | Solid | | | X | X | X | X | X | 1 | |
| PH04B (890-2105-3) | 3/17/22 | 14 45 Mountain | | Solid | | | X | X | X | X | X | 1 | |
| PH04C (890-2105-4) | 3/17/22 | 14 55 Mountain | | Solid | | | X | X | X | X | X | 1 | |

Note Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing South Central LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing South Central LLC.

| Possible Hazard Identification | Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) |
|---|---|
| Unconfirmed | ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months |
| Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank. 2 | Special Instructions/QC Requirements |

| Empty Kit Relinquished by: | Date | Time: | Method of Shipment: |
|---|---|---|---|

| | Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
|---|---|---|---|---|---|---|
| 1 | Clue Cap 31821 | | | KJ | 3/21/22 8:00 | |
| 2 | Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
| 3 | Relinquished by | Date/Time | Company | Received by | Date/Time: | Company |

| Custody Seals Intact. Δ Yes Δ No | Custody Seal No | Cooler Temperature(s) °C and Other Remarks. |
|---|---|---|

Ver: 06/08/2021

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2105-1
SDG Number: te01291044

**Login Number: 2105**
**List Number: 1**
**Creator: Clifton, Cloe**

**List Source: Eurofins Carlsbad**

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

# Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2105-1
SDG Number: te01291044

**Login Number: 2105**
**List Number: 2**
**Creator: Lowe, Katie**

**List Source: Eurofins Midland**
**List Creation: 03/21/22 08:55 AM**

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

ENSOLUM

# APPENDIX E

## NMOCD Notifications

## Baker, Adrian

**From:** Baker, Adrian
**Sent:** Monday, January 25, 2021 8:52 AM
**To:** 'Bratcher, Mike, EMNRD'; Hamlet, Robert, EMNRD; Venegas, Victoria, EMNRD; 'Mann, Ryan'
**Cc:** Littrell, Kyle; 'Garrett Green (Garrett_Green@xtoenergy.com)'
**Subject:** 48 hour liner notification - BEU 29W Vader 100H release date 1-14-21

Good morning,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at BEU 29W Vader 100H (release date 1-14-21) on Wednesday, January 27, 2021, at 9am MST. A 24 hour release notification was sent out on Friday, January 15, 2020 at 5:15 PM since the release was greater than 25 barrels in volume. Please call us with any questions or concerns.

GPS Coordinates: 32.567, -103.779

**Please note the email change below.**

**Thank you**

**Adrian Baker**
Environmental Coordinator
Permian Business Unit

XTO Energy Inc.
6401 N. Holiday Hill Dr.
Midland, Tx 79707
Mobile:(432)-236-3808
adrian.baker@exxonmobil.com

## Aimee Cole

**Subject:** FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 103588
**Attachments:** image002.jpg; image015.jpg; image016.png; image008.png; image011.png; image012.png; image017.png; BEU 29W Vader 100H - Summary

**From:** OCDOnline@state.nm.us [mailto:OCDOnline@state.nm.us]
**Sent:** Monday, May 23, 2022 2:00 PM
**To:** Collins, Melanie <melanie.collins@exxonmobil.com>
**Subject:** The Oil Conservation Division (OCD) has rejected the application, Application ID: 103588

**External Email - Think Before You Click**

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

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2102831345,
for the following reasons:

- **Remediation Plan Denied. Release has not been sufficiently vertically delineated. Vertical delineation must be delineated with more than one boring. Please make a decision prior to Remediation Plan submittal the outcome of excavated soil. If ex-situ is chosen, please provide a detailed work plan describing protocols and methodology to be utilized in the process. Composite confirmation samples will be collected from the bottom of the excavation from areas representing no more than four hundred (400) square feet. Your request to only analyze for chloride has been approved. Please resubmit a revised Remediation Plan by June 24, 2022.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 103588.
Please review and make the required correction(s) prior to resubmitting.
If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,
Jennifer Nobui
Environmental Specialist-Advanced
505-476-3441
Jennifer.Nobui@state.nm.us

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

## Aimee Cole

**Subject:** FW: [EXTERNAL] FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 103588

**From:** Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>
**Sent:** Wednesday, June 15, 2022 1:40 PM
**To:** Baker, Adrian <adrian.baker@exxonmobil.com>
**Cc:** Aimee Cole <acole@ensolum.com>; Green, Garrett J <garrett.green@exxonmobil.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
**Subject:** RE: [EXTERNAL] FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 103588

[ **EXTERNAL EMAIL**]

Hi Adrian,

Based on 19.15.29 NMAC, you have to vertically delineate the site. While vertical delineation was achieved at PH01, PH03, and PH05, it was not at PH02 and PH04. The sensitivity with this case comes with groundwater being at 33'. In addition, the former lined containment (gray area), based on the scale is 125' x 75', is too large of an area to have just one boring. But you can state in the revised Remediation Plan that during excavation activities, delineation will be completed at locations PH02 and PH04. As you are requesting a liner at 4ft and groundwater is shallow at this location, OCD needs to know what is going to be left in place below the liner and how deep it extends, so that is why a second delineation boring was needed in the gray area and why we were more concerned with vertical delineation. Let me know if you would like to discuss this further.

Thanks,

**Jennifer Nobui, PG** ● Environmental Specialist A
Environmental Bureau
EMNRD - Oil Conservation Division
5200 Oakland Avenue N.E Suite 100 | Albuquerque, NM 87113
505.470-3407 | Jennifer.Nobui@state.nm.us
http://www.emnrd.state.nm.us/OCD/

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# APPENDIX F

## Friction Reducer SDS

PFP INDUSTRIES

# SAFETY DATA SHEET

**Issuing Date** 01-Aug-2019 **Revision Date** 01-Aug-2019 **Revision Number** 1

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product identifier**

**Product Name** POLYglide Xcel-200

**Other means of identification**

**Product Code(s)** 10497

**Synonyms** None

**Recommended use of the chemical and restrictions on use**

**Recommended Use** No information available

**Uses advised against** No information available

**Details of the supplier of the safety data sheet**

**Supplier Address**
PfP Industries
29738 Goynes Rd.
Katy, TX 77493

**Manufacturer Address**
PfP Industries
29738 Goynes Rd.
Katy, TX 77493

**Emergency telephone number**

**Company Phone Number** 281-371-2000

**Emergency Telephone** Chemtrec 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|---|---|
| Flammable liquids | Category 4 |

**Hazards not otherwise classified (HNOC)**
Not applicable

**Label elements**

**Warning**

Combustible liquid

**Appearance** Opaque **Physical state** Liquid **Odor** Mineral Oil

**Precautionary Statements - Prevention**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response**

In case of fire: Use CO2, dry chemical, or foam for extinction

**Precautionary Statements - Storage**
Store in a well-ventilated place. Keep cool

**Precautionary Statements - Disposal**
Dispose of contents/container to an approved waste disposal plant

**Other Information**
May be harmful in contact with skin
Harmful to aquatic life

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance**

| Chemical name | CAS No | Weight-% | Trade secret |
|---|---|---|---|
| Petroleum distillates, hydrotreated light | 64742-47-8 | 40 - 70 | |

*The exact percentage (concentration) of composition has been withheld as a trade secret.

## 4. FIRST AID MEASURES

**Description of first aid measures**

**Inhalation** Remove to fresh air.

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

**Ingestion** Clean mouth with water and drink afterwards plenty of water.

**Self-protection of the first aider** Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8).

**Most important symptoms and effects, both acute and delayed**

**Symptoms** No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media** Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

**Unsuitable extinguishing media** CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical** Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray.

**Explosion data**
**Sensitivity to Mechanical Impact** None.
**Sensitivity to Static Discharge** None.

**Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Take precautionary measures against static discharges. Do not touch or walk through spilled material.

**Environmental precautions**

**Environmental precautions** Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so.

**Methods and material for containment and cleaning up**

**Methods for containment** Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up** Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on safe handling** Use personal protection equipment. Do not breathe vapor or mist. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use with local exhaust ventilation.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Store in accordance with the particular national regulations. Store in accordance with local regulations.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Limits** The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

**Appropriate engineering controls**

**Engineering controls** Showers
Eyewash stations
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Tight sealing safety goggles.

**Skin and body protection** No special protective equipment required.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**General hygiene considerations** Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Opaque |
| **Color** | Milky white to yellow |
| **Odor** | Mineral Oil |
| **Odor threshold** | No information available |

| Property | Values | Remarks • Method |
|---|---|---|
| **pH** | No data available | None known |
| **Melting point / freezing point** | No data available | None known |
| **Boiling point / boiling range** | No data available | None known |
| **Flash point** | >= 67 °C / 153 °F | |
| **Evaporation rate** | No data available | None known |
| **Flammability (solid, gas)** | No data available | None known |
| **Flammability Limit in Air** | | None known |
| **Upper flammability limit:** | No data available | |
| **Lower flammability limit:** | No data available | |
| **Vapor pressure** | No data available | None known |
| **Vapor density** | No data available | None known |
| **Relative density** | 0.97 - 1.03 | |
| **Water solubility** | Miscible in water | |
| **Solubility in other solvents** | No data available | None known |
| **Partition coefficient** | No data available | None known |
| **Autoignition temperature** | No data available | None known |
| **Decomposition temperature** | No data available | None known |
| **Kinematic viscosity** | ≥150 mm²/s | |
| **Dynamic viscosity** | No data available | None known |
| **Explosive properties** | No information available | |
| **Oxidizing properties** | No information available | |

**Other Information**

| | |
|---|---|
| **Softening point** | No information available |
| **Molecular weight** | No information available |
| **VOC Content (%)** | No information available |
| **Liquid Density** | No information available |
| **Bulk density** | No information available |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | No information available. |
| **Chemical stability** | Stable under normal conditions. |
| **Possibility of hazardous reactions** | None under normal processing. |
| **Conditions to avoid** | Heat, flames and sparks. |
| **Incompatible materials** | None known based on information supplied. |
| **Hazardous decomposition products** | None known based on information supplied. |

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Product Information**

| | |
|---|---|
| **Inhalation** | Specific test data for the substance or mixture is not available. |
| **Eye contact** | Specific test data for the substance or mixture is not available. |
| **Skin contact** | Specific test data for the substance or mixture is not available. |
| **Ingestion** | Specific test data for the substance or mixture is not available. |

**Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** No information available.

**Numerical measures of toxicity**

**Acute toxicity**

**The following values are calculated based on chapter 3.1 of the GHS document.**

| | |
|---|---|
| **ATEmix (oral)** | 5,005.00 mg/kg |
| **ATEmix (dermal)** | 2,002.00 mg/kg |
| **ATEmix (inhalation-dust/mist)** | 5.20 mg/l |

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Petroleum distillates, hydrotreated light 64742-47-8 | > 5000 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 5.2 mg/L ( Rat ) 4 h |

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** No information available.

**Serious eye damage/eye irritation** No information available.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** No information available.

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

| Chemical name | Algae/aquatic plants | Fish | Toxicity to microorganisms | Crustacea |
|---|---|---|---|---|
| Petroleum distillates, hydrotreated light 64742-47-8 | - | 2.4: 96 h Oncorhynchus mykiss mg/L LC50 static 45: 96 h Pimephales promelas mg/L LC50 flow-through 2.2: 96 h Lepomis macrochirus mg/L LC50 static | - | 4720: 96 h Den-dronereides heteropoda mg/L LC50 |

**Persistence and degradability** No information available.

**Bioaccumulation** There is no data for this product.

**Other adverse effects** No information available.

## 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

## 14. TRANSPORT INFORMATION

**DOT** Not regulated. Product does not sustain combustion (49 CFR 173.120(b)(3))

## 15. REGULATORY INFORMATION

**International Inventories**

| | |
|---|---|
| **TSCA** | Complies |
| **DSL/NDSL** | Complies |
| **EINECS/ELINCS** | Complies |
| **ENCS** | Does not comply |
| **IECSC** | Complies |
| **KECL** | Complies |

| | |
|---|---|
| **PICCS** | Complies |
| **AICS** | Complies |

**Legend:**
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
**ENCS** - Japan Existing and New Chemical Substances
**IECSC** - China Inventory of Existing Chemical Substances
**KECL** - Korean Existing and Evaluated Chemical Substances
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances
**AICS** - Australian Inventory of Chemical Substances

**US Federal Regulations**

**SARA 313**
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

| | |
|---|---|
| **Acute health hazard** | No |
| **Chronic Health Hazard** | No |
| **Fire hazard** | Yes |
| **Sudden release of pressure hazard** | No |
| **Reactive Hazard** | No |

**CWA (Clean Water Act)**
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**CERCLA**
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**US State Regulations**

**California Proposition 65**
This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

**US State Regulations** This product does not contain any substances regulated by state right-to-know regulations

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

## 16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| NFPA | Health hazards | 2 | Flammability | 2 | Instability | 0 | Physical and chemical properties - |
| HMIS | Health hazards | 2 | Flammability | 2 | Physical hazards | 0 | Personal protection X |

| | |
|---|---|
| **Issuing Date** | 01-Aug-2019 |
| **Revision Date** | 01-Aug-2019 |
| **Revision Note** | No information available. |

**Disclaimer**

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**End of Safety Data Sheet**

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**District IV**
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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 120265

## CONDITIONS

| | |
|---|---|
| Operator:<br>XTO ENERGY, INC<br>6401 Holiday Hill Road<br>Midland, TX 79707 | OGRID:<br>5380 |
| | Action Number:<br>120265 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| jnobui | Revised Remediation Plan Approved. Liner Installation Request Approved. | 7/6/2022 |