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 | NAPP2127835608 |
| District RP | |
| Facility ID | |
| Application ID | |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party XTO Energy | OGRID 5380 |
| Contact Name Shelby Pennington | Contact Telephone 281-723-9353 |
| Contact email shelby.g.pennington@exxonmobil.com | Incident # *(assigned by OCD)* |
| Contact mailing address 6401 Holiday Hill Rd Bldg 5, Midland, Texas, 79707 | |

## Location of Release Source

Latitude 32.09301 Longitude -103.89244
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name Ross Ranch 33-25-30 | Site Type CTB |
| Date Release Discovered 9/21/2021 | API# *(if applicable)* |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| D | 33 | 25S | 30E | Eddy |

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

## Nature and Volume of Release

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

| | | |
|---|---|---|
| ☐ Crude Oil | Volume Released (bbls) | Volume Recovered (bbls) |
| ☒ Produced Water | Volume Released (bbls) 6.0 | Volume Recovered (bbls) 6.0 |
| | 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) |

Cause of Release: A 1/2" nipple separated from the discharge side of transfer pump, releasing fluids into lined containment. All fluids were recovered. A 48-hour liner inspection notice was sent 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 | NAPP2127835608 |
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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>N/A |

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
N/A

## Initial Response

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

- ☒ 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: Shelby Pennington
Title: Environmentl Manager
Signature: Shelby Pennington
Date: 10/5/21
email: shelby.g.pennington@exxonmobil.com
Telephone: 432-571-8276

**OCD Only**

Received by: Ramona Marcus
Date: 10/05/2021

NAPP2127835608

| | | |
|---|---|---|
| **Location:** | **Ross Ranch 33-25-30** | |
| **Spill Date:** | **9/21/2021** | |
| **Area 1** | | |
| Approximate Area = | 40.46 | cu.ft. |
| VOLUME OF LEAK | | |
| Total Crude Oil = | 0.00 | bbls |
| Total Produced Water = | 6.00 | bbls |
| **TOTAL VOLUME OF LEAK** | | |
| **Total Crude Oil =** | **0.00** | **bbls** |
| **Total Produced Water =** | **6.00** | **bbls** |
| **TOTAL VOLUME RECOVERED** | | |
| **Total Crude Oil =** | **0.00** | **bbls** |
| **Total Produced Water =** | **6.00** | **bbls** |

**District I**
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
**District II**
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
**District III**
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
**District IV**
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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



## CONDITIONS

| | |
|---|---|
| Operator:<br>XTO ENERGY, INC<br>6401 Holiday Hill Road<br>Midland, TX 79707 | OGRID:<br>5380 |
| | Action Number:<br>54030 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| rmarcus | None | 10/5/2021 |

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAPP2127835608 |
| 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? | >100 (ft bgs) |
| Did this release impact groundwater or surface water? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? | ☐ Yes ☒ No |
| Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a wetland? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying a subsurface mine? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying an unstable area such as karst geology? | ☐ Yes ☒ No |
| Are the lateral extents of the release within a 100-year floodplain? | ☐ Yes ☒ No |
| Did the release impact areas **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 | NAPP2127835608 |
| District RP | |
| Facility ID | |
| Application ID | |

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

Printed Name: Adrian Baker Title: Environmental Coordinator

Signature: Adrian Baker Date: 12/10/2021

email: Adrain.Baker@exxonmobil.com Telephone: (432)-263-3808

**OCD Only**

Received by: Date:

| | |
|---|---|
| Incident ID | NAPP2127835608 |
| District RP | |
| Facility ID | |
| Application ID | |

# Closure

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

**Closure Report Attachment Checklist**: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Adrian Baker Title: Environmental Coordinator

Signature: Adrian Baker Date: 12/10/2021

email: Adrian.Baker@exxonmobil.com Telephone: 432-263-3808

**OCD Only**

Received by: Date:

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Jennifer Nobui Date: 03/09/2022

Printed Name: Jennifer Nobui Title: Environmental Specialist A

WSP USA
3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

December 9, 2021

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

**RE: Closure Request**
**Ross Ranch 33-25-30**
**Incident Number NAPP2127835608**
**Eddy County, New Mexico**

To Whom It May Concern:

WSP USA Inc. (WSP) on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment and soil sampling activities at the Ross Ranch 33-25-30 (Site) in Unit D, Section 33, Township 25 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following a release of produced water within lined containment at the Site. Based on field observations, field screening activities, and soil sample laboratory analytical results, XTO is submitting this Closure Request and requesting no further action (NFA) for Incident Number NAPP2127835608.

**RELEASE BACKGROUND**

On September 21, 2021, a 0.5-inch nipple separated from the discharge side of the transfer pump, resulting in the release approximately 6 barrels (bbls) of produced water into the lined tank battery containment. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; all 6 bbls of the released produced water were recovered from within the lined containment. A 48-hour advance notice of liner inspection was provided via email to the New Mexico Oil Conservation Division (NMOCD) District II office. A linter 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 and submitted a Release Notification Form C-141 on October 5, 2021. The release was assigned Incident Number NAPP2127835608.

**SITE CHARACTERIZATION**

WSP characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater

well with depth to groundwater data is New Mexico Office of the State Engineer (NMOSE) well C-03782, located approximately 534 feet north of the Site. The groundwater well has a reported depth to groundwater of 277 feet bgs and a total depth of 805 feet bgs. Ground surface elevation at the groundwater well location is 3,198 feet amsl, which is approximately 1 foot higher in elevation than the Site. All wells used for depth to groundwater determination are depicted on Figure 1 and referenced well records are provided in Attachment 1.

The closest continuously flowing or significant watercourse to the Site is an intermittent riverine, located approximately 3,361 feet west of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area). Site receptors are identified on Figure 1.

**CLOSURE CRITERIA**

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)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

**SITE ASSESSMENT ACTIVITIES**

On November 8, 2021, WSP personnel visited the Site to evaluate the release and conduct site assessment activities. WSP personnel advanced one borehole (BH01) via hand-auger at the location of the tear in the liner identified during the liner integrity inspection. Three soil samples were collected from the borehole at depths of approximately 0.5 feet, 1 foot, and 2 feet bgs before encountering auger refusal. Soil from the borehole was field screened for volatile aromatic hydrocarbons and chlorides utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations from the borehole were documented on a lithologic/soil sampling log, which is included as Attachment 2. The borehole was backfilled with the soil removed and XTO repaired the liner. The borehole location is depicted on Figure 2. Photographic documentation was conducted during the Site visit. A photographic log is included in Attachment 3.

The 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.

**SOIL ANALYTICAL RESULTS**

Laboratory analytical results for delineation soil samples BH01, BH01A, and BH01B, collected at 0.5 feet, 1 foot, and 2 feet bgs indicated that benzene, BTEX, TPH-DRO/TPH-GRO, TPH, and chloride concentrations were compliant with the Closure Criteria. In addition, delineation soil samples BH01A and BH01B collected at 1 foot and 2 feet bgs were compliant with the most stringent Table 1 Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical report is included as Attachment 4.

**CLOSURE REQUEST**

Following the failed liner integrity inspection at the Site, WSP personnel advanced one borehole, (BH01), within the lined containment to assess for the presence or absence of soil impacts resulting from the September 21, 2021 produced water release within lined containment. Three delineation soil samples were collected from borehole BH01, at depths of approximately 0.5 feet, 1 foot, and 2 feet bgs. Laboratory analytical results for the delineation soil samples indicated that benzene, BTEX, TPH-DRO/TPH-GRO, TPH and chloride concentrations were compliant with the Closure Criteria. In addition, delineation soil samples BH01A and BH01B collected at 1 foot and 2 feet bgs were compliant with the most stringent Table 1 Closure Criteria. The release was contained laterally by the lined containment and all released fluids were recovered during initial response activities. The tear in the liner was subsequently repaired.

Based on initial response efforts, absence of elevated field screening results, and soil sample laboratory analytical results compliant with the Closure Criteria directly beneath the tear in the liner, XTO respectfully requests NFA for Incident Number NAPP2127835608.

If you have any questions or comments, please do not hesitate to contact Ms. Ashley Ager at (970) 385-1096.

Sincerely,

WSP USA Inc.

Kalei Jennings
Associate Consultant

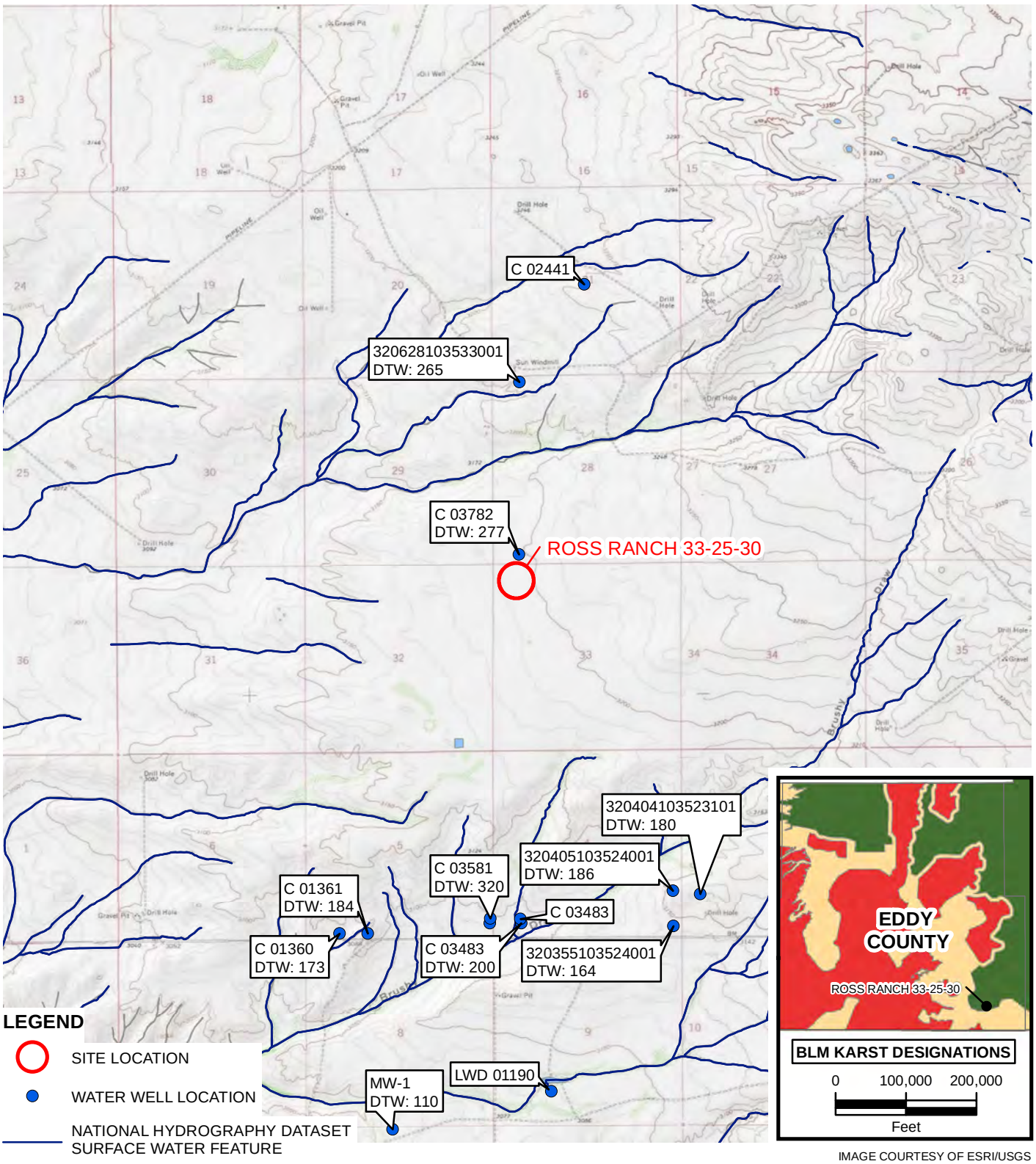
Ashley L. Ager, P.G.
Managing Director, Geologist

cc: Adrian Baker, XTO Energy, Inc.
Bureau of Land Management

Attachments:

| | |
|---|---|
| Figure 1 | Site Location Map |
| Figure 2 | Delineation Soil Sample Locations |
| Table 1 | Soil Analytical Results |
| Attachment 1 | Referenced Well Records |
| Attachment 2 | Lithologic/Sampling Log |
| Attachment 3 | Photographic Log |
| Attachment 4 | Laboratory Analytical Reports |

FIGURES




**LEGEND**

- SITE LOCATION
- WATER WELL LOCATION
- NATIONAL HYDROGRAPHY DATASET SURFACE WATER FEATURE
- NATIONAL WETLANDS INVENTORY SURFACE WATER FEATURE
- LOW KARST
- MEDIUM KARST
- HIGH KARST

DTW: DEPTH TO WATER IN FEET
BLM: BUREAU OF LAND MANAGEMENT
TD: TOTAL DEPTH IN FEET
NOTE: INCIDENT NUMBER NAPP2127835608

FIGURE 1
SITE LOCATION MAP
ROSS RANCH 33-25-30
UNIT D SEC 33 T25S R30E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC**

P:\XTO Energy\GIS\31403236.022.0129.11_ROSS RANCH 33-25-30\MXD\31403236.022.0129.11_FIG01_SL_RECEPTOR_2021.mxd


IMAGE COURTESY OF ESRI

**LEGEND**

- RELEASE LOCATION
- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- CONTAINMENT

0 50 100
Feet

N

NOTE: INCIDENT NUMBER NAPP2127835608
SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

FIGURE 2
DELINEATION SOIL SAMPLE LOCATIONS
ROSS RANCH 33-25-30
UNIT D SEC 33 T25S R30E
EDDY COUNTY, NEW MEXICO
**XTO ENERGY, INC.**

P:\XTO Energy\GIS\31403236.022.0129.11_ROSS RANCH 33-25-30\MXD\31403236.022.0129.11_FIG02_DELINEATION_2021.mxd

TABLES

**Table 1**

**Soil Analytical Results**
**Ross Ranch 33-25-30**
**Incident Number NAPP2127835608**
**Eddy County, New Mexico**

| Sample ID | Sample Date | Sample Depth (ft bgs) | Benzene (mg/kg) | BTEX (mg/kg) | TPH-DRO (mg/kg) | TPH-GRO (mg/kg) | TPH-ORO (mg/kg) | Total GRO+DRO (mg/kg) | TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|---|
| **NMOCD Table 1 Closure Criteria (NMAC 19.15.29)** | | | 10 | 50 | NE | NE | NE | 1,000 | 2,500 | 20,000 |
| **Delineation Soil Samples** | | | | | | | | | | |
| BH01 | 11/08/2021 | 0.5 | <0.00201 | <0.00402 | <49.8 | <49.8 | <49.8 | <49.8 | <49.8 | 855 |
| BH01A | 11/08/2021 | 1 | <0.00198 | <0.00397 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | 92.2 |
| BH01B | 11/08/2021 | 2 | <0.00198 | <0.00397 | <49.9 | <49.9 | <49.9 | <49.9 | <49.9 | 36.3 |

**Notes:**

ft - feet/foot
mg/kg - milligrams per kilograms
BTEX - benzene, toluene, ethylbenzene, and total xylenes
TPH - total petroleum hydrocarbons
DRO - diesel range organics
GRO - gasoline range organics
ORO - oil range organics
NMOCD - New Mexico Oil Conservation Division
NMAC - New Mexico Administrative Code
< - indicates result is less than the stated laboratory method practical quantitation limit
NE - Not Established
**BOLD -** indicates results exceed the higher of the background sample result or applicable regulatory standard

ATTACHMENT 1: REFERENCED WELL RECORD

# New Mexico Office of the State Engineer
# Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

| Well Tag | POD Number | Q64 | Q16 | Q4 | Sec | Twn | Rng | X | Y |
|---|---|---|---|---|---|---|---|---|---|
| | C 03782 POD1 | 4 | 3 | 3 | 28 | 25S | 30E | 604526 | 3551444 |

**Driller License:** 331
**Driller Company:** SBQ2, LLC DBA STEWART BROTHERS DRILLING CO.
**Driller Name:**

**Drill Start Date:** 01/16/2015
**Drill Finish Date:** 01/17/2015
**Plug Date:**
**Log File Date:** 02/19/2015
**PCW Rcv Date:**
**Source:** Artesian
**Pump Type:**
**Pipe Discharge Size:**
**Estimated Yield:**
**Casing Size:** 8.63
**Depth Well:** 805 feet
**Depth Water:** 277 feet

**Water Bearing Stratifications:**

| Top | Bottom | Description |
|---|---|---|
| 260 | 320 | Sandstone/Gravel/Conglomerate |
| 320 | 380 | Sandstone/Gravel/Conglomerate |
| 380 | 410 | Sandstone/Gravel/Conglomerate |
| 410 | 530 | Shale/Mudstone/Siltstone |
| 530 | 590 | Shale/Mudstone/Siltstone |
| 590 | 600 | Shale/Mudstone/Siltstone |
| 600 | 630 | Shale/Mudstone/Siltstone |
| 630 | 650 | Shale/Mudstone/Siltstone |
| 650 | 700 | Shale/Mudstone/Siltstone |
| 700 | 710 | Shale/Mudstone/Siltstone |
| 710 | 760 | Shale/Mudstone/Siltstone |
| 760 | 770 | Shale/Mudstone/Siltstone |
| 770 | 780 | Shale/Mudstone/Siltstone |
| 780 | 790 | Shale/Mudstone/Siltstone |
| 790 | 805 | Shale/Mudstone/Siltstone |

**Casing Perforations:**

| Top | Bottom |
|---|---|
| 270 | 805 |

ATTACHMENT 2: LITHOLOGIC/SAMPLING LOG

WSP USA
508 West Stevens Street
Carlsbad, New Mexico 88220

| | |
|---|---|
| BH or PH Name: BH01 | Date: 11/08/2021 |
| Site Name: Ross Ranch 33-25-30 | |
| RP or Incident Number: NAPP2127835608 | |
| WSP Job Number: 31403236.022.0129 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: EL / Method: Hand auger |
| Lat/Long: 32.092966, -103.892479 / Field Screening: Hach chloride strips, PID | Hole Diameter: 3 inches / Total Depth: 2 feet bgs |

Comments: All chloride field screenings include a 40% correction factor
M-moist; D-dry; Y-yes; N-no

| Moisture Content | Chloride (ppm) | Vapor (ppm) | Staining | Sample # | Sample Depth (ft bgs) | Depth (ft bgs) | USCS/Rock Symbol | Lithology/Remarks |
|---|---|---|---|---|---|---|---|---|
| M | 845 | 0.3 | Y | BH01 | 0.5' | 0.5' | SW | SAND, TAN, SILTY, F-M GRAIN, WELL GRADED, ABUNDANT CALICHE GRAVEL, NO ODOR |
| M | 196 | 0.3 | N | BH01A | 1' | 1' | SM | SAND, REDDISH BROWN, FINE GRAIN, POORLY GRADED, SOME CALICHE GRAVEL, SOME CLAY, NON COHESIVE, LOW PLASTICITY, TRACE SILT, NO ODOR |
| M | 163 | 0.2 | N | BH01B | 2' | 2' | SM | SAND, REDDISH BROWN, FINE GRAIN, POORLY GRADED, SOME CALICHE GRAVEL, SOME CLAY, NON COHESIVE, LOW PLASTICITY, TRACE SILT, NO ODOR |
| | | | | | | | | Auger Refusal |

TD @ 2 ft bgs

ATTACHMENT 3: PHOTOGRAPHIC LOG

| PHOTOGRAPHIC LOG | | |
|---|---|---|
| XTO Energy, Inc. | ROSS RANCH 33-25-30<br>Eddy County, New Mexico | NAPP2127835608 |

| Photo No. | Date |
|---|---|
| 1 | November 8, 2021 |

View of tear in liner prior to delineation activities.

| Photo No. | Date |
|---|---|
| 2 | November 8, 2021 |

View of tear in liner for delineation activities.

| PHOTOGRAPHIC LOG | | |
|---|---|---|
| XTO Energy, Inc. | ROSS RANCH 33-25-30<br>Eddy County, New Mexico | NAPP2127835608 |

| Photo No. | Date |
|---|---|
| 3 | November 8, 2021 |

View of borehole delineation activties.

| Photo No. | Date |
|---|---|
| 4 | October 12,2021 |

View of completed delineation activities.

ATTACHMENT 4: LABORATORY ANALYTICAL RESULTS

eurofins | Environment Testing America

# ANALYTICAL REPORT

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

Laboratory Job ID: 890-1551-1
Laboratory Sample Delivery Group: 31403236.022.0129
Client Project/Site: Ross Ranch 33-25-30

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

Attn: Kalei Jennings

JKramer

*Authorized for release by:*
*11/17/2021 12:12:47 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: Ross Ranch 33-25-30

Laboratory Job ID: 890-1551-1
SDG: 31403236.022.0129

# Table of Contents

# Definitions/Glossary

Client: WSP USA Inc. Job ID: 890-1551-1
Project/Site: Ross Ranch 33-25-30 SDG: 31403236.022.0129

## Qualifiers

### GC VOA

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

### GC Semi VOA

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

### HPLC/IC

| Qualifier | Qualifier Description |
|---|---|
| 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. Job ID: 890-1551-1
Project/Site: Ross Ranch 33-25-30 SDG: 31403236.022.0129

## Job ID: 890-1551-1

**Laboratory: Eurofins Xenco, Carlsbad**

**Narrative**

**Job Narrative**
**890-1551-1**

**Receipt**
The samples were received on 11/9/2021 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.8°C

**GC VOA**
Method 8021B: Surrogate recovery for the following samples were outside control limits: BH01 (890-1551-1) and (MB 880-11824/5-A). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

**GC Semi VOA**
Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-11991 and analytical batch 880-11994 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: BH01 (890-1551-1) and (890-1557-A-1-F). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (MB 880-11991/1-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: BH01A (890-1551-2) and (MB 880-12340/1-A). Evidence of matrix interferences is not obvious.

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

**HPLC/IC**
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-12129 and analytical batch 880-12200 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

# Client Sample Results

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

## Client Sample ID: BH01

**Date Collected: 11/08/21 11:10**
**Date Received: 11/09/21 09:30**
**Sample Depth: 0.5**

**Lab Sample ID: 890-1551-1**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 18:43 | 1 |
| Toluene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 18:43 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 18:43 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 18:43 | 1 |
| o-Xylene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 18:43 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 18:43 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *55* | *S1-* | *70 - 130* | *11/10/21 09:30* | *11/10/21 18:43* | *1* |
| *1,4-Difluorobenzene (Surr)* | *75* | | *70 - 130* | *11/10/21 09:30* | *11/10/21 18:43* | *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 | | | 11/15/21 14:00 | 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 | | | 11/15/21 16:10 | 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 | 49.8 | | mg/Kg | | 11/11/21 08:22 | 11/11/21 20:00 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.8 | U | 49.8 | | mg/Kg | | 11/11/21 08:22 | 11/11/21 20:00 | 1 |
| Oil Range Organics (Over C28-C36) | <49.8 | U | 49.8 | | mg/Kg | | 11/11/21 08:22 | 11/11/21 20:00 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *126* | | *70 - 130* | *11/11/21 08:22* | *11/11/21 20:00* | *1* |
| *o-Terphenyl* | *145* | *S1+* | *70 - 130* | *11/11/21 08:22* | *11/11/21 20:00* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **855** | | 5.04 | | mg/Kg | | | 11/14/21 03:17 | 1 |

## Client Sample ID: BH01A

**Date Collected: 11/08/21 11:20**
**Date Received: 11/09/21 09:30**
**Sample Depth: 1**

**Lab Sample ID: 890-1551-2**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00198 | U | 0.00198 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:17 | 1 |
| Toluene | <0.00198 | U | 0.00198 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:17 | 1 |
| Ethylbenzene | <0.00198 | U | 0.00198 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:17 | 1 |
| m-Xylene & p-Xylene | <0.00397 | U | 0.00397 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:17 | 1 |
| o-Xylene | <0.00198 | U | 0.00198 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:17 | 1 |
| Xylenes, Total | <0.00397 | U | 0.00397 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *71* | | *70 - 130* | *11/15/21 10:53* | *11/16/21 18:17* | *1* |

# Client Sample Results

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

## Client Sample ID: BH01A

**Date Collected: 11/08/21 11:20**
**Date Received: 11/09/21 09:30**
**Sample Depth: 1**

**Lab Sample ID: 890-1551-2**
**Matrix: Solid**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *76* | | *70 - 130* | *11/15/21 10:53* | *11/16/21 18:17* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00397 | U | 0.00397 | mg/Kg | | | 11/15/21 14:00 | 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 | | | 11/15/21 16:10 | 1 |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | mg/Kg | | 11/15/21 14:49 | 11/15/21 16:34 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | mg/Kg | | 11/15/21 14:49 | 11/15/21 16:34 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | mg/Kg | | 11/15/21 14:49 | 11/15/21 16:34 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *135* | *S1+* | *70 - 130* | *11/15/21 14:49* | *11/15/21 16:34* | *1* |
| *o-Terphenyl* | *145* | *S1+* | *70 - 130* | *11/15/21 14:49* | *11/15/21 16:34* | *1* |

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | **92.2** | | 4.95 | mg/Kg | | | 11/16/21 17:48 | 1 |

## Client Sample ID: BH01B

**Date Collected: 11/08/21 11:27**
**Date Received: 11/09/21 09:30**
**Sample Depth: 2**

**Lab Sample ID: 890-1551-3**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00198 | U | 0.00198 | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:37 | 1 |
| Toluene | <0.00198 | U | 0.00198 | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:37 | 1 |
| Ethylbenzene | <0.00198 | U | 0.00198 | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:37 | 1 |
| m-Xylene & p-Xylene | <0.00397 | U | 0.00397 | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:37 | 1 |
| o-Xylene | <0.00198 | U | 0.00198 | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:37 | 1 |
| Xylenes, Total | <0.00397 | U | 0.00397 | mg/Kg | | 11/15/21 10:53 | 11/16/21 18:37 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *121* | | *70 - 130* | *11/15/21 10:53* | *11/16/21 18:37* | *1* |
| *1,4-Difluorobenzene (Surr)* | *86* | | *70 - 130* | *11/15/21 10:53* | *11/16/21 18:37* | *1* |

### Method: Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00397 | U | 0.00397 | mg/Kg | | | 11/15/21 14:00 | 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 | | | 11/15/21 16:10 | 1 |

# Client Sample Results

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

## Client Sample ID: BH01B

**Date Collected: 11/08/21 11:27**
**Date Received: 11/09/21 09:30**
**Sample Depth: 2**

## Lab Sample ID: 890-1551-3

**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 | | 11/15/21 14:49 | 11/15/21 17:41 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 11/15/21 14:49 | 11/15/21 17:41 | 1 |
| Oil Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 11/15/21 14:49 | 11/15/21 17:41 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *116* | | *70 - 130* | *11/15/21 14:49* | *11/15/21 17:41* | *1* |
| *o-Terphenyl* | *128* | | *70 - 130* | *11/15/21 14:49* | *11/15/21 17:41* | *1* |

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

| Analyte | Result | Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **36.3** | | 5.00 | | mg/Kg | | | 11/16/21 17:55 | 1 |

# Surrogate Summary

Client: WSP USA Inc. Job ID: 890-1551-1
Project/Site: Ross Ranch 33-25-30 SDG: 31403236.022.0129

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| Lab Sample ID | Client Sample ID | BFB1 (70-130) | DFBZ1 (70-130) |
| 880-8100-A-21-A MS | Matrix Spike | 113 | 102 |
| 880-8100-A-21-B MSD | Matrix Spike Duplicate | 117 | 104 |
| 890-1551-1 | BH01 | 55 S1- | 75 |
| 890-1551-2 | BH01A | 71 | 76 |
| 890-1551-3 | BH01B | 121 | 86 |
| 890-1568-A-5-E MS | Matrix Spike | 180 S1+ | 114 |
| 890-1568-A-5-F MSD | Matrix Spike Duplicate | 127 | 102 |
| LCS 880-11824/1-A | Lab Control Sample | 112 | 102 |
| LCS 880-12275/1-A | Lab Control Sample | 111 | 95 |
| LCSD 880-11824/2-A | Lab Control Sample Dup | 108 | 101 |
| LCSD 880-12275/2-A | Lab Control Sample Dup | 121 | 98 |
| MB 880-11824/5-A | Method Blank | 62 S1- | 111 |
| MB 880-12275/5-A | Method Blank | 125 | 108 |

**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) |
| 890-1551-1 | BH01 | 126 | 145 S1+ |
| 890-1551-2 | BH01A | 135 S1+ | 145 S1+ |
| 890-1551-2 MS | BH01A | 129 | 125 |
| 890-1551-2 MSD | BH01A | 108 | 106 |
| 890-1551-3 | BH01B | 116 | 128 |
| 890-1557-A-1-D MS | Matrix Spike | 117 | 118 |
| 890-1557-A-1-E MSD | Matrix Spike Duplicate | 118 | 119 |
| LCS 880-11991/2-A | Lab Control Sample | 79 | 84 |
| LCS 880-12340/2-A | Lab Control Sample | 99 | 109 |
| LCSD 880-11991/3-A | Lab Control Sample Dup | 89 | 96 |
| LCSD 880-12340/3-A | Lab Control Sample Dup | 100 | 110 |
| MB 880-11991/1-A | Method Blank | 121 | 143 S1+ |
| MB 880-12340/1-A | Method Blank | 129 | 146 S1+ |

**Surrogate Legend**

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

# QC Sample Results

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

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

**Lab Sample ID: MB 880-11824/5-A**
**Matrix: Solid**
**Analysis Batch: 11888**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 11824**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 12:41 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 12:41 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 12:41 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 12:41 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 12:41 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/10/21 09:30 | 11/10/21 12:41 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *62* | *S1-* | *70 - 130* | *11/10/21 09:30* | *11/10/21 12:41* | *1* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* | *11/10/21 09:30* | *11/10/21 12:41* | *1* |

**Lab Sample ID: LCS 880-11824/1-A**
**Matrix: Solid**
**Analysis Batch: 11888**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 11824**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09671 | | mg/Kg | | 97 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.1024 | | mg/Kg | | 102 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.1078 | | mg/Kg | | 108 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.2145 | | mg/Kg | | 107 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.1036 | | mg/Kg | | 104 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *112* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: LCSD 880-11824/2-A**
**Matrix: Solid**
**Analysis Batch: 11888**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 11824**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09531 | | mg/Kg | | 95 | 70 - 130 | 1 | 35 |
| Toluene | | | 0.100 | 0.1010 | | mg/Kg | | 101 | 70 - 130 | 1 | 35 |
| Ethylbenzene | | | 0.100 | 0.1067 | | mg/Kg | | 107 | 70 - 130 | 1 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2085 | | mg/Kg | | 104 | 70 - 130 | 3 | 35 |
| o-Xylene | | | 0.100 | 0.1005 | | mg/Kg | | 100 | 70 - 130 | 3 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* |

**Lab Sample ID: 880-8100-A-21-A MS**
**Matrix: Solid**
**Analysis Batch: 11888**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 11824**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.0998 | 0.08923 | | mg/Kg | | 89 | 70 - 130 | | |
| Toluene | <0.00200 | U | 0.0998 | 0.09624 | | mg/Kg | | 95 | 70 - 130 | | |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

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

**Lab Sample ID: 880-8100-A-21-A MS**
**Matrix: Solid**
**Analysis Batch: 11888**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 11824**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00200 | U | 0.0998 | 0.1020 | | mg/Kg | | 102 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.200 | 0.1997 | | mg/Kg | | 99 | 70 - 130 |
| o-Xylene | <0.00200 | U | 0.0998 | 0.09858 | | mg/Kg | | 98 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *113* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *102* | | *70 - 130* |

**Lab Sample ID: 880-8100-A-21-B MSD**
**Matrix: Solid**
**Analysis Batch: 11888**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 11824**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.100 | 0.08626 | | mg/Kg | | 86 | 70 - 130 | 3 | 35 |
| Toluene | <0.00200 | U | 0.100 | 0.09392 | | mg/Kg | | 93 | 70 - 130 | 2 | 35 |
| Ethylbenzene | <0.00200 | U | 0.100 | 0.09454 | | mg/Kg | | 95 | 70 - 130 | 8 | 35 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.200 | 0.1841 | | mg/Kg | | 91 | 70 - 130 | 8 | 35 |
| o-Xylene | <0.00200 | U | 0.100 | 0.08863 | | mg/Kg | | 88 | 70 - 130 | 11 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *117* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *104* | | *70 - 130* |

**Lab Sample ID: MB 880-12275/5-A**
**Matrix: Solid**
**Analysis Batch: 12413**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 12275**

| Analyte | MB Result | MB Qualifier | RL | | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 12:14 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 12:14 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 12:14 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 12:14 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 12:14 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/15/21 10:53 | 11/16/21 12:14 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *125* | | *70 - 130* | *11/15/21 10:53* | *11/16/21 12:14* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *11/15/21 10:53* | *11/16/21 12:14* | *1* |

**Lab Sample ID: LCS 880-12275/1-A**
**Matrix: Solid**
**Analysis Batch: 12413**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 12275**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 0.100 | 0.08564 | | mg/Kg | | 86 | 70 - 130 |
| Toluene | 0.100 | 0.08933 | | mg/Kg | | 89 | 70 - 130 |
| Ethylbenzene | 0.100 | 0.09956 | | mg/Kg | | 100 | 70 - 130 |
| m-Xylene & p-Xylene | 0.200 | 0.1887 | | mg/Kg | | 94 | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

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

**Lab Sample ID: LCS 880-12275/1-A**
**Matrix: Solid**
**Analysis Batch: 12413**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 12275**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| o-Xylene | | | 0.100 | 0.09021 | | mg/Kg | | 90 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *111* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *95* | | *70 - 130* |

**Lab Sample ID: LCSD 880-12275/2-A**
**Matrix: Solid**
**Analysis Batch: 12413**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 12275**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09333 | | mg/Kg | | 93 | 70 - 130 | 9 | 35 |
| Toluene | | | 0.100 | 0.1017 | | mg/Kg | | 102 | 70 - 130 | 13 | 35 |
| Ethylbenzene | | | 0.100 | 0.1012 | | mg/Kg | | 101 | 70 - 130 | 2 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2020 | | mg/Kg | | 101 | 70 - 130 | 7 | 35 |
| o-Xylene | | | 0.100 | 0.09711 | | mg/Kg | | 97 | 70 - 130 | 7 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *121* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* |

**Lab Sample ID: 890-1568-A-5-E MS**
**Matrix: Solid**
**Analysis Batch: 12413**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 12275**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00198 | U F2 | 0.101 | 0.1033 | | mg/Kg | | 102 | 70 - 130 | | |
| Toluene | <0.00198 | U F1 F2 | 0.101 | 0.1733 | F1 | mg/Kg | | 171 | 70 - 130 | | |
| Ethylbenzene | <0.00198 | U F2 | 0.101 | 0.1068 | | mg/Kg | | 106 | 70 - 130 | | |
| m-Xylene & p-Xylene | <0.00397 | U F1 | 0.202 | 0.1796 | | mg/Kg | | 89 | 70 - 130 | | |
| o-Xylene | <0.00198 | U F1 F2 | 0.101 | 0.1016 | | mg/Kg | | 100 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *180* | *S1+* | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *114* | | *70 - 130* |

**Lab Sample ID: 890-1568-A-5-F MSD**
**Matrix: Solid**
**Analysis Batch: 12413**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 12275**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00198 | U F2 | 0.0998 | 0.07033 | F2 | mg/Kg | | 70 | 70 - 130 | 38 | 35 |
| Toluene | <0.00198 | U F1 F2 | 0.0998 | 0.07670 | F2 | mg/Kg | | 76 | 70 - 130 | 77 | 35 |
| Ethylbenzene | <0.00198 | U F2 | 0.0998 | 0.07422 | F2 | mg/Kg | | 74 | 70 - 130 | 36 | 35 |
| m-Xylene & p-Xylene | <0.00397 | U F1 | 0.200 | 0.1371 | F1 | mg/Kg | | 69 | 70 - 130 | 27 | 35 |
| o-Xylene | <0.00198 | U F1 F2 | 0.0998 | 0.04809 | F1 F2 | mg/Kg | | 47 | 70 - 130 | 71 | 35 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

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

**Lab Sample ID: 890-1568-A-5-F MSD**
**Matrix: Solid**
**Analysis Batch: 12413**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 12275**

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 127 | | 70 - 130 |
| 1,4-Difluorobenzene (Surr) | 102 | | 70 - 130 |

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

**Lab Sample ID: MB 880-11991/1-A**
**Matrix: Solid**
**Analysis Batch: 11994**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 11991**

| 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 | | 11/11/21 08:22 | 11/11/21 09:47 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 11/11/21 08:22 | 11/11/21 09:47 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/11/21 08:22 | 11/11/21 09:47 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 121 | | 70 - 130 | 11/11/21 08:22 | 11/11/21 09:47 | 1 |
| o-Terphenyl | 143 | S1+ | 70 - 130 | 11/11/21 08:22 | 11/11/21 09:47 | 1 |

**Lab Sample ID: LCS 880-11991/2-A**
**Matrix: Solid**
**Analysis Batch: 11994**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 11991**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1281 | | mg/Kg | | 128 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 1011 | | mg/Kg | | 101 | 70 - 130 | | |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 79 | | 70 - 130 |
| o-Terphenyl | 84 | | 70 - 130 |

**Lab Sample ID: LCSD 880-11991/3-A**
**Matrix: Solid**
**Analysis Batch: 11994**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 11991**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1216 | | mg/Kg | | 122 | 70 - 130 | 5 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 943.3 | | mg/Kg | | 94 | 70 - 130 | 7 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 89 | | 70 - 130 |
| o-Terphenyl | 96 | | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

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

**Lab Sample ID: 890-1557-A-1-D MS** — **Client Sample ID: Matrix Spike**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 11994** — **Prep Batch: 11991**

| 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 F1 | 997 | 1600 | F1 | mg/Kg | | 160 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 997 | 1097 | | mg/Kg | | 106 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *117* | | *70 - 130* |
| *o-Terphenyl* | *118* | | *70 - 130* |

**Lab Sample ID: 890-1557-A-1-E MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 11994** — **Prep Batch: 11991**

| 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 F1 | 998 | 1611 | F1 | mg/Kg | | 161 | 70 - 130 | 1 | 20 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 998 | 1109 | | mg/Kg | | 107 | 70 - 130 | 1 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *118* | | *70 - 130* |
| *o-Terphenyl* | *119* | | *70 - 130* |

**Lab Sample ID: MB 880-12340/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 12232** — **Prep Batch: 12340**

| 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 | | 11/15/21 14:49 | 11/15/21 15:28 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 11/15/21 14:49 | 11/15/21 15:28 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/15/21 14:49 | 11/15/21 15:28 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *129* | | *70 - 130* | *11/15/21 14:49* | *11/15/21 15:28* | *1* |
| *o-Terphenyl* | *146* | *S1+* | *70 - 130* | *11/15/21 14:49* | *11/15/21 15:28* | *1* |

**Lab Sample ID: LCS 880-12340/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 12232** — **Prep Batch: 12340**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 1000 | 1048 | | mg/Kg | | 105 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | 1000 | 922.2 | | mg/Kg | | 92 | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

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

**Lab Sample ID: LCS 880-12340/2-A**
**Matrix: Solid**
**Analysis Batch: 12232**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 12340**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 99 | | 70 - 130 |
| o-Terphenyl | 109 | | 70 - 130 |

**Lab Sample ID: LCSD 880-12340/3-A**
**Matrix: Solid**
**Analysis Batch: 12232**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 12340**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 1092 | | mg/Kg | | 109 | 70 - 130 | 4 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 941.2 | | mg/Kg | | 94 | 70 - 130 | 2 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 100 | | 70 - 130 |
| o-Terphenyl | 110 | | 70 - 130 |

**Lab Sample ID: 890-1551-2 MS**
**Matrix: Solid**
**Analysis Batch: 12232**

**Client Sample ID: BH01A**
**Prep Type: Total/NA**
**Prep Batch: 12340**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 997 | 1182 | | mg/Kg | | 119 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 997 | 1218 | | mg/Kg | | 120 | 70 - 130 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 129 | | 70 - 130 |
| o-Terphenyl | 125 | | 70 - 130 |

**Lab Sample ID: 890-1551-2 MSD**
**Matrix: Solid**
**Analysis Batch: 12232**

**Client Sample ID: BH01A**
**Prep Type: Total/NA**
**Prep Batch: 12340**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 998 | 1118 | | mg/Kg | | 112 | 70 - 130 | 6 | 20 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 998 | 1036 | | mg/Kg | | 102 | 70 - 130 | 16 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 108 | | 70 - 130 |
| o-Terphenyl | 106 | | 70 - 130 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-12129/1-A**
**Matrix: Solid**
**Analysis Batch: 12200**

**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 | | | 11/14/21 01:05 | 1 |

**Lab Sample ID: LCS 880-12129/2-A**
**Matrix: Solid**
**Analysis Batch: 12200**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 247.4 | | mg/Kg | | 99 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-12129/3-A**
**Matrix: Solid**
**Analysis Batch: 12200**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 249.3 | | mg/Kg | | 100 | 90 - 110 | 1 | 20 |

**Lab Sample ID: 890-1547-A-6-J MS**
**Matrix: Solid**
**Analysis Batch: 12200**

**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 | 191 | F1 | 249 | 408.1 | F1 | mg/Kg | | 87 | 90 - 110 | | |

**Lab Sample ID: 890-1547-A-6-K MSD**
**Matrix: Solid**
**Analysis Batch: 12200**

**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 | 191 | F1 | 249 | 416.5 | | mg/Kg | | 91 | 90 - 110 | 2 | 20 |

**Lab Sample ID: MB 880-12431/1-A**
**Matrix: Solid**
**Analysis Batch: 12477**

**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 | | | 11/16/21 15:08 | 1 |

**Lab Sample ID: LCS 880-12431/2-A**
**Matrix: Solid**
**Analysis Batch: 12477**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 262.2 | | mg/Kg | | 105 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-12431/3-A**
**Matrix: Solid**
**Analysis Batch: 12477**

**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 | 262.8 | | mg/Kg | | 105 | 90 - 110 | 0 | 20 |

# QC Sample Results

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: 890-1551-3 MS**
**Matrix: Solid**
**Analysis Batch: 12477**

**Client Sample ID: BH01B**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 36.3 | | 250 | 303.9 | | mg/Kg | | 107 | 90 - 110 | | |

**Lab Sample ID: 890-1551-3 MSD**
**Matrix: Solid**
**Analysis Batch: 12477**

**Client Sample ID: BH01B**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 36.3 | | 250 | 300.1 | | mg/Kg | | 106 | 90 - 110 | 1 | 20 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

## GC VOA

### Prep Batch: 11824

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-1 | BH01 | Total/NA | Solid | 5035 | |
| MB 880-11824/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-11824/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-11824/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 880-8100-A-21-A MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 880-8100-A-21-B MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 11888

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-1 | BH01 | Total/NA | Solid | 8021B | 11824 |
| MB 880-11824/5-A | Method Blank | Total/NA | Solid | 8021B | 11824 |
| LCS 880-11824/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 11824 |
| LCSD 880-11824/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 11824 |
| 880-8100-A-21-A MS | Matrix Spike | Total/NA | Solid | 8021B | 11824 |
| 880-8100-A-21-B MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 11824 |

### Prep Batch: 12275

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-2 | BH01A | Total/NA | Solid | 5035 | |
| 890-1551-3 | BH01B | Total/NA | Solid | 5035 | |
| MB 880-12275/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-12275/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-12275/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-1568-A-5-E MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-1568-A-5-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 12338

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-1 | BH01 | Total/NA | Solid | Total BTEX | |
| 890-1551-2 | BH01A | Total/NA | Solid | Total BTEX | |
| 890-1551-3 | BH01B | Total/NA | Solid | Total BTEX | |

### Analysis Batch: 12413

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-2 | BH01A | Total/NA | Solid | 8021B | 12275 |
| 890-1551-3 | BH01B | Total/NA | Solid | 8021B | 12275 |
| MB 880-12275/5-A | Method Blank | Total/NA | Solid | 8021B | 12275 |
| LCS 880-12275/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 12275 |
| LCSD 880-12275/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 12275 |
| 890-1568-A-5-E MS | Matrix Spike | Total/NA | Solid | 8021B | 12275 |
| 890-1568-A-5-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 12275 |

## GC Semi VOA

### Prep Batch: 11991

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-1 | BH01 | Total/NA | Solid | 8015NM Prep | |
| MB 880-11991/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-11991/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-11991/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-1557-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |

# QC Association Summary

Client: WSP USA Inc. Job ID: 890-1551-1
Project/Site: Ross Ranch 33-25-30 SDG: 31403236.022.0129

## GC Semi VOA (Continued)

### Prep Batch: 11991 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1557-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 11994

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-1 | BH01 | Total/NA | Solid | 8015B NM | 11991 |
| MB 880-11991/1-A | Method Blank | Total/NA | Solid | 8015B NM | 11991 |
| LCS 880-11991/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 11991 |
| LCSD 880-11991/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 11991 |
| 890-1557-A-1-D MS | Matrix Spike | Total/NA | Solid | 8015B NM | 11991 |
| 890-1557-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 11991 |

### Analysis Batch: 12045

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-1 | BH01 | Total/NA | Solid | 8015 NM | |
| 890-1551-2 | BH01A | Total/NA | Solid | 8015 NM | |
| 890-1551-3 | BH01B | Total/NA | Solid | 8015 NM | |

### Analysis Batch: 12232

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-2 | BH01A | Total/NA | Solid | 8015B NM | 12340 |
| 890-1551-3 | BH01B | Total/NA | Solid | 8015B NM | 12340 |
| MB 880-12340/1-A | Method Blank | Total/NA | Solid | 8015B NM | 12340 |
| LCS 880-12340/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 12340 |
| LCSD 880-12340/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 12340 |
| 890-1551-2 MS | BH01A | Total/NA | Solid | 8015B NM | 12340 |
| 890-1551-2 MSD | BH01A | Total/NA | Solid | 8015B NM | 12340 |

### Prep Batch: 12340

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-2 | BH01A | Total/NA | Solid | 8015NM Prep | |
| 890-1551-3 | BH01B | Total/NA | Solid | 8015NM Prep | |
| MB 880-12340/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-12340/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-12340/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-1551-2 MS | BH01A | Total/NA | Solid | 8015NM Prep | |
| 890-1551-2 MSD | BH01A | Total/NA | Solid | 8015NM Prep | |

## HPLC/IC

### Leach Batch: 12129

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-1 | BH01 | Soluble | Solid | DI Leach | |
| MB 880-12129/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-12129/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-12129/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-1547-A-6-J MS | Matrix Spike | Soluble | Solid | DI Leach | |
| 890-1547-A-6-K MSD | Matrix Spike Duplicate | Soluble | Solid | DI Leach | |

### Analysis Batch: 12200

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-1 | BH01 | Soluble | Solid | 300.0 | 12129 |

# QC Association Summary

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

## HPLC/IC (Continued)

### Analysis Batch: 12200 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-12129/1-A | Method Blank | Soluble | Solid | 300.0 | 12129 |
| LCS 880-12129/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 12129 |
| LCSD 880-12129/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 12129 |
| 890-1547-A-6-J MS | Matrix Spike | Soluble | Solid | 300.0 | 12129 |
| 890-1547-A-6-K MSD | Matrix Spike Duplicate | Soluble | Solid | 300.0 | 12129 |

### Leach Batch: 12431

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-2 | BH01A | Soluble | Solid | DI Leach | |
| 890-1551-3 | BH01B | Soluble | Solid | DI Leach | |
| MB 880-12431/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-12431/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-12431/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-1551-3 MS | BH01B | Soluble | Solid | DI Leach | |
| 890-1551-3 MSD | BH01B | Soluble | Solid | DI Leach | |

### Analysis Batch: 12477

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-1551-2 | BH01A | Soluble | Solid | 300.0 | 12431 |
| 890-1551-3 | BH01B | Soluble | Solid | 300.0 | 12431 |
| MB 880-12431/1-A | Method Blank | Soluble | Solid | 300.0 | 12431 |
| LCS 880-12431/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 12431 |
| LCSD 880-12431/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 12431 |
| 890-1551-3 MS | BH01B | Soluble | Solid | 300.0 | 12431 |
| 890-1551-3 MSD | BH01B | Soluble | Solid | 300.0 | 12431 |

# Lab Chronicle

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

## Client Sample ID: BH01

**Date Collected: 11/08/21 11:10**
**Date Received: 11/09/21 09:30**

**Lab Sample ID: 890-1551-1**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 11824 | 11/10/21 09:30 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 11888 | 11/10/21 18:43 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 12338 | 11/15/21 14:00 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 12045 | 11/15/21 16:10 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 11991 | 11/11/21 08:22 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 11994 | 11/11/21 20:00 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 12129 | 11/12/21 12:28 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 12200 | 11/14/21 03:17 | CH | XEN MID |

## Client Sample ID: BH01A

**Date Collected: 11/08/21 11:20**
**Date Received: 11/09/21 09:30**

**Lab Sample ID: 890-1551-2**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 12275 | 11/15/21 10:53 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 12413 | 11/16/21 18:17 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 12338 | 11/15/21 14:00 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 12045 | 11/15/21 16:10 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 12340 | 11/15/21 14:49 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 12232 | 11/15/21 16:34 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 12431 | 11/16/21 12:00 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 12477 | 11/16/21 17:48 | CH | XEN MID |

## Client Sample ID: BH01B

**Date Collected: 11/08/21 11:27**
**Date Received: 11/09/21 09:30**

**Lab Sample ID: 890-1551-3**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 12275 | 11/15/21 10:53 | KL | XEN MID |
| Total/NA | Analysis | 8021B | | 1 | 12413 | 11/16/21 18:37 | MR | XEN MID |
| Total/NA | Analysis | Total BTEX | | 1 | 12338 | 11/15/21 14:00 | AJ | XEN MID |
| Total/NA | Analysis | 8015 NM | | 1 | 12045 | 11/15/21 16:10 | AJ | XEN MID |
| Total/NA | Prep | 8015NM Prep | | | 12340 | 11/15/21 14:49 | DM | XEN MID |
| Total/NA | Analysis | 8015B NM | | 1 | 12232 | 11/15/21 17:41 | AJ | XEN MID |
| Soluble | Leach | DI Leach | | | 12431 | 11/16/21 12:00 | CH | XEN MID |
| Soluble | Analysis | 300.0 | | 1 | 12477 | 11/16/21 17:55 | CH | XEN MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: WSP USA Inc.
Job ID: 890-1551-1
Project/Site: Ross Ranch 33-25-30
SDG: 31403236.022.0129

## Laboratory: Eurofins Xenco, Midland

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

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Texas | 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: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: WSP USA Inc.
Project/Site: Ross Ranch 33-25-30

Job ID: 890-1551-1
SDG: 31403236.022.0129

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-1551-1 | BH01 | Solid | 11/08/21 11:10 | 11/09/21 09:30 | 0.5 |
| 890-1551-2 | BH01A | Solid | 11/08/21 11:20 | 11/09/21 09:30 | 1 |
| 890-1551-3 | BH01B | Solid | 11/08/21 11:27 | 11/09/21 09:30 | 2 |

# 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





| | | | |
|---|---|---|---|
| Project Manager: | Dan Moir | Bill to: (if different) | Adrian Baker |
| Company Name: | WSP Permian office | 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: | (432) 236-3849 | Email: | Elliot.Lee@wsp.com, Kalei.Jennings@wsp.com |

**Work Order Comments**

Program: UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Superfund ☐

State of Project:

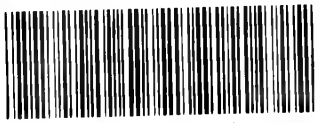
Reporting:Level II ☐ Level III ☐ ST/UST ☐ TRRP ☐ Level IV ☐

Deliverables: EDD ☐ ADaPT ☐ Other:

| | | | |
|---|---|---|---|
| Project Name: | Ross Ranch 33-25-30 | Turn Around | |
| Project Number: | 31403236.022.0129 | Routine | X |
| P.O. Number: | | Rush: | |
| Sampler's Name: | Elliot Lee | Due Date: | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No | |
| Temperature (°C): | 6.0/5.8 | Thermometer ID | | |
| Received Intact: | (Yes) No | TWM-007 | | |
| Cooler Custody Seals: | Yes No N/A | Correction Factor: | -0.2 | |
| Sample Custody Seals: | Yes (No) N/A | Total Containers: | | |

**ANALYSIS REQUEST**



890-1551 Chain of Custody

**Work Order Notes**

Cost Center # 1081111001

Incident # NAPP2127835608

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 |
|---|---|---|---|---|---|---|---|---|---|
| BH01 | S | 11/8/2021 | 11:10 | 0.5' | 1 | X | X | X | Discrete |
| BH01A | S | 11/8/2021 | 11:20 | 1' | 1 | X | X | X | Discrete |
| BH01B | S | 11/8/2021 | 11:27 | 2' | 1 | X | X | X | Discrete |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |



**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 | | | 11.9.21 0930 | 2 | | |
| 3 | | | | 4 | | |
| 5 | | | | 6 | | |

Revised Date 051418 Rev 2018 1

# 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

11/17/2021

| | | | |
|---|---|---|---|
| Project Manager: | Dan Moir | Bill to: (if different) | Adrian Baker |
| Company Name: | WSP Permian office | 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: | (432) 236-3849 | Email: | Elliot.Lee@wsp.com, Kalei.Jennings@wsp.com |

**Work Order Comments**

Program: UST/PST ☐ RP ☐ Brownfields ☐ RC ☐ Superfund ☐

State of Project:

Reporting:Level II ☐ Level III ☐ ST/UST ☐ RP ☐ Level IV ☐

Deliverables: EDD ☐ ADaPT ☐ Other:

| | | | |
|---|---|---|---|
| Project Name: | Ross Ranch 33-25-30 | Turn Around | |
| Project Number: | 31403236.022.0129 | Routine | X |
| P.O. Number: | | Rush: | |
| Sampler's Name: | Elliot Lee | Due Date: | |

| SAMPLE RECEIPT | | | | |
|---|---|---|---|---|
| Temp Blank: | Yes No | Wet Ice: | Yes No | |
| Temperature (°C): | 6.0/5.8 | Thermometer ID | | |
| Received Intact: | Yes No | TWM-007 | | |
| 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) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|
| BH01 | S | 11/8/2021 | 11:10 | 0.5' | 1 | X | X | X | Discrete |
| BH01A | S | 11/8/2021 | 11:20 | 1' | 1 | X | X | X | Discrete |
| BH01B | S | 11/8/2021 | 11:27 | 2' | 1 | X | X | X | Discrete |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |

890-1551 Chain of Custody

**Work Order Notes**

Cost Center # 1081111001

Incident # NAPP2127835608

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

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 | | 11.9.21 0930 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date 051418 Rev. 2018.1

**District I**
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
**District II**
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
**District III**
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
**District IV**
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 66246

## CONDITIONS

| | |
|---|---|
| Operator:<br>XTO ENERGY, INC<br>6401 Holiday Hill Road<br>Midland, TX 79707 | OGRID:<br>5380 |
| | Action Number:<br>66246 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| jnobui | Closure Report Approved. Going forward, please submit with Closure Report photos of intact liner. | 3/9/2022 |