State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NAB1431650115 |
| District RP | 2RP-2595 |
| Facility ID | |
| Application ID | |

# Remediation Plan

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

- [x] Detailed description of proposed remediation technique
- [x] Scaled sitemap with GPS coordinates showing delineation points
- [x] Estimated volume of material to be remediated
- [x] Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- [x] 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: Jim Raley  Title: Environmental Professional

Signature: Jim Raley  Date: 12/29/2022

email: jim.raley@dvn.com  Telephone: 575-686-7597

**OCD Only**

Received by: Jocelyn Harimon  Date: 12/29/2022

- [ ] Approved
- [x] Approved with Attached Conditions of Approval
- [ ] Denied
- [ ] Deferral Approved

Signature:  Date: 1/24/2023

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: | nAPP2208846424 |
| District RP | |
| Facility ID | |
| Application ID | |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party: WPX Energy Permian, LLC | OGRID: 246289 |
| Contact Name: Jim Raley | Contact Telephone: 575-689-7597 |
| Contact email: jim.raley@dvn.com | Incident # *(assigned by OCD):* nAPP2208846424 |
| Contact mailing address: 5315 Buena Vista Dr, Carlsbad, NM, 88220 | |

## Location of Release Source

Latitude 32.0072937 Longitude -103.9659729
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name: Pecos Federal #001Y | Site Type: Oil Production Site |
| Date Release Discovered: 3/21/2022 | API# *(if applicable)*: 30-015-24875 |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| P | 27 | 26S | 29E | 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): 8 | Volume Recovered (bbls): 3 |
| ☐ Produced Water | Volume Released (bbls): | Volume Recovered (bbls): |
| | Is the concentration of dissolved chloride 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:
Tank overflow allowed the release of approx. 8 bbls of oil. Approx 6 bbls was released to secondary containment of which 3 bbls was recovered. Winds allowed approx. 2 bbls to impact soils offsite.

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

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID: | nAPP2208846424 |
| District RP | |
| Facility ID | |
| Application ID | |

| | |
|---|---|
| Was this a major release as defined by 19.15.29.7(A) NMAC?<br><br>☐ Yes ☒ No | If YES, for what reason(s) does the responsible party consider this a major release? |
| If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? | |

## 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:

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: Jim Raley Title: Environmental Professional

Signature: Jim Raley Date: 12/29/2022

email: jim.raley@dvn.com Telephone: 575-689-7597

**OCD Only**

Received by: _____ Date: _____

| | |
|---|---|
| Incident ID: | nAPP2208846424 |
| District RP | |
| Facility ID | |
| Application ID | |

# Site Assessment/Characterization

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

| | |
|---|---|
| What is the shallowest depth to groundwater beneath the area affected by the release? | 51-100 (ft bgs) |
| Did this release impact groundwater or surface water? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? | ☐ Yes ☒ No |
| Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a wetland? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying a subsurface mine? | ☐ Yes ☒ No |
| Are the lateral extents of the release overlying an unstable area such as karst geology? | ☒ Yes ☐ No |
| Are the lateral extents of the release within a 100-year floodplain? | ☐ Yes ☒ No |
| Did the release impact areas **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.

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State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID: | nAPP2208846424 |
| District RP | |
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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: Jim Raley Title: Environmental Professional

Signature: Jim Raley Date: 12/29/2022

email: jim.raley@dvn.com Telephone: 575-689-7597

**OCD Only**

Received by: _____ Date: _____

| | |
|---|---|
| Incident ID: | nAPP2208846424 |
| 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.
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Printed Name: Jim Raley Title: Environmental Professional

Signature: Jim Raley Date: 12/29/2022

email: jim.raley@dvn.com Telephone: 575-689-7597

**OCD Only**

Received by: _____ Date: _____

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

Signature: _____ Date: _____

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
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Energy Minerals and Natural Resources Department

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

| | |
|---|---|
| Incident ID | NAB1431650115 |
| District RP | 2RP-2595 |
| Facility ID | |
| Application ID | |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party WPX Energy, Inc. | OGRID 246289 |
| Contact Name Jim Raley | Contact Telephone (575)689-7597 |
| Contact email jim.raley@dvn.com | Incident # *(assigned by OCD)* NAB1431650115 |
| Contact mailing address 5315 Buena Vista Dr., Carlsbad, NM 88220 | |

## Location of Release Source

Latitude 32.0072945706848 Longitude -103.965986188431
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name Pecos Federal 001Y | Site Type Oil and Gas Well |
| Date Release Discovered 11/10/2014 | API# *(if applicable)* 30-015-24875 |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| P | 27 | 26S | 29E | 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) 25 | Volume Recovered (bbls) 25 |
| | Is the concentration of dissolved chloride 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

Transfer pump suction line from tank battery developed a leak and released 25 bbls of produced water to lined secondary containment. A vacuum truck was used to recover free liquids. The suction line, formerly rubber hose construction, was replaced with steel line. All fluids remained in lined secondary containment and was able to be recovered with vacuum truck.

State of New Mexico
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|---|---|
| Was this a major release as defined by 19.15.29.7(A) NMAC?<br><br>☒ Yes ☐ No | If YES, for what reason(s) does the responsible party consider this a major release? |
| If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? | |

## Initial Response

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

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- ☒ 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.
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Printed Name: Jim Raley Title: Environmental Professional

Signature: Jim Raley Date: 12/29/2022

email: jim.raley@dvn.com Telephone: 575-686-7597

**OCD Only**

Received by: Date:

| | |
|---|---|
| Incident ID | NAB1431650115 |
| District RP | 2RP-2595 |
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| Application ID | |

# Site Assessment/Characterization

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| | |
|---|---|
| What is the shallowest depth to groundwater beneath the area affected by the release? | 51-100 (ft bgs) |
| Did this release impact groundwater or surface water? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)? | ☐ Yes ☒ No |
| Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church? | ☐ Yes ☒ No |
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| Are the lateral extents of the release within 1000 feet of any other fresh water well or spring? | ☐ Yes ☒ No |
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| 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 |

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**Characterization Report Checklist**: ***Each of the following items must be included in the report.***

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- ☒ Depth to water determination
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State of New Mexico
Oil Conservation Division

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Printed Name: Jim Raley Title: Environmental Professional

Signature: Jim Raley Date: 12/29/2022

email: jim.raley@dvn.com Telephone: 575-686-7597

**OCD Only**

Received by: Jocelyn Harimon Date: 12/29/2022

State of New Mexico
Oil Conservation Division

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|---|---|
| Incident ID | NAB1431650115 |
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# Remediation Plan

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

- [x] Detailed description of proposed remediation technique
- [x] Scaled sitemap with GPS coordinates showing delineation points
- [x] Estimated volume of material to be remediated
- [x] Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
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- [ ] Extents of contamination must be fully delineated.
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Printed Name: Jim Raley  Title: Environmental Professional

Signature: Jim Raley  Date: 12/29/2022

email: jim.raley@dvn.com  Telephone: 575-686-7597

**OCD Only**

Received by: Jocelyn Harimon  Date: 12/29/2022

- [ ] Approved
- [ ] Approved with Attached Conditions of Approval
- [ ] Denied
- [ ] Deferral Approved

Signature: _____  Date: _____

ENSOLUM

# REMEDIATION WORK PLAN ADDENDUM

Site Location:

**Pecos Federal #001Y**
**Eddy County, New Mexico**
**Incident Numbers:**
**nAPP2208846424 and nAB1431650115**

December 21, 2022
Ensolum Project No. 03A1987014

Prepared for:

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

Prepared by:

Erick Herrera
Staff Geologist

Ashley Ager, MS, PG
Principal

## TABLE OF CONTENTS



## LIST OF APPENDICES

## 1.0 INTRODUCTION

Ensolum, LLC (Ensolum) has prepared this Remediation Work Plan Addendum (RWPA) to summarize supplemental delineation soil sampling activities completed by WPX Permian Energy, LLC (WPX) at the Pecos Federal #001Y (hereinafter referred to as the "Site") in Unit P, Section 27, Township 26 South, Range 30 East, in Eddy County, New Mexico (**Figure 1 in Appendix A**). The Remediation Work Plan (RWP) which was approved by the New Mexico Oil Conservation Division (NMOCD) on September 20, 2022 and issued the following condition:

*"Remediation Plan Approved with Conditions. Please address chloride concentrations in PH-13 at 2' (1,460 mg/kg)."*

WPX respectfully submits this RWPA, which includes a summary of additional soil sampling activities and proposes excavation of the area of concern (AOC) associated with north of the tank battery near PH13 and west side of the tank battery containment, followed by the installation of a 20-mil impermeable liner to act as a physical barrier to mitigate further chloride impacts into the subsurface. All previous remediation activities and soil sample analytical results can be referenced in the original RWP.

### 1.1 Site Description & Release Background

The Site is located within Eddy County, New Mexico (32.0072937°N, 103.9659729°W) and is associated with oil and gas exploration and production operations on Bureau of Land Management (BLM) Federal Land (**Figure 1 in Appendix A**). As previously documented in the RWP, the release of produced water from Incident Number nAPP2208846424 overlapped the historical release of crude oil associated with Incident Number nAB1431650115 and the corrective actions are being implemented concurrently.

Based on the results of the Site Characterization documented in the RWP, the following NMOCD Table 1 Closure Criteria (Closure Criteria) were applied:

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

## 2.0 SOIL SAMPLING AND REMEDIAL ACTIONS

WPX previously performed intial response efforts to remove immediate impacts from the secondary containment for off-Site disposal and conducted delineation soil sampling activities. During delineation soil sampling events, WPX encountered additional areas requiring soil investigation. All delineation soil sample locations from previous events are included in **Figure 2** in **Appendix A** and results were described in the RWP.

### 2.1 Continued Delineation Activities

On November 10, 2022, Ensolum continued delineation activities as specified in the approved RWP to confirm the vertical extent of impacted soil within the AOC west of the containment as compared to the Closure Criteria. Two potholes (PH11 and PH16) were advanced in existing delineation sample locations to obtain deeper samples. One pothole (PH18) was advance within the AOC to improve lateral control. Potholes were advanced with heavy equipment and soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips.

In general, a minimum of two soil samples were collected from existing or new delineation soil sample locations to fully characterize residual impacts: the sample with the highest observed field screening (ranging from 0.5 foot bgs to 4 feet bgs) and the greatest depth (8 feet bgs). The locations of the delineation soil samples are shown in **Figure 2** in **Appendix A**. Field screening results and visual observations for each delineation soil sample were recorded on lithologic/soil sampling logs (**Appendix B**). The soil samples were placed directly into a 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 6 degrees Celsius (°C), under strict chain-of-custody procedures, to Eurofins LLC (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH following EPA Method 8015M/D; and chloride following EPA Method 300.0. Photographic documentation during delineation activities is included in **Appendix C**.

## 3.0 SOIL SAMPLING RESULTS

Laboratory analytical results for the new delineation soil samples collected from PH18 indicate that vertical impacts exceeding the most stringent Closure Criteria do not exceed 8 feet bgs within the AOC and are shallower near PH11 and PH16, ending near 4 feet bgs. These results correspond to results previously obtained in PH15. Laboratory analytical results are summarized in **Table 1** included in **Appendix D**. The executed chain-of-custody forms and laboratory analytical reports are provided in **Appendix E**. **Appendix F** provides correspondence email notification receipts associated with the subject release.

## 4.0 REMEDIATION WORK PLAN

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

Based on the results documented in this and previous reports, the following findings and conclusions regarding the AOC are presented:

- Laboratory analytical results for the new delineation soil samples indicate that vertical impacts in the AOC exceeding the most stringent Closure Criteria range from 4 to 8 feet bgs;
- Based on existing soil analytical results for PH11, PH13, PH15, PH16, and PH18 and mapped extent of the AOC associated with those locations, an estimated **530 cubic yards** of impacted soil is anticipated to be removed from the Site for disposal in accordance with state and federal regulations;
- Based on existing soil analytical results for PH11 and PH18 and mapped extent of the AOC associated with those locations, an estimated **365 cubic yards** of impacted soil is anticipated to be left in place beneath the proposed 20-mil impermeable liner at 4 feet bgs in accordance with state and federal regulations; and

Based on the conclusions presented above, Ensolum proposes excavation of the AOC to 2 to 4 feet, followed by the installation of a 20-mil impermeable liner at approximately 4 feet bgs inside the proposed excavation associated with PH11 and PH18 to act as a physical barrier and mitigate further chloride impacts into the subsurface as described below:

- WPX will collect 5-point composite samples from the sidewalls of the excavations to confirm removal of residual impacts based on analysis described above;

- WPX will collect 5-point composite samples from the floors of the excavations associated with PH13, PH15 and PH16 to confirm removal of residual impacts based on analysis described above;

- Residual chloride impacts within the proposed liner area are defined by delineation soil sample PH11 and PH18, therefore no confirmation floor soil samples will be collected in that area;

- Excavated soil will then be transferred to a New Mexico approved landfill facility for disposal; and

- Once complete, WPX will backfill the area with non-waste containing soil.

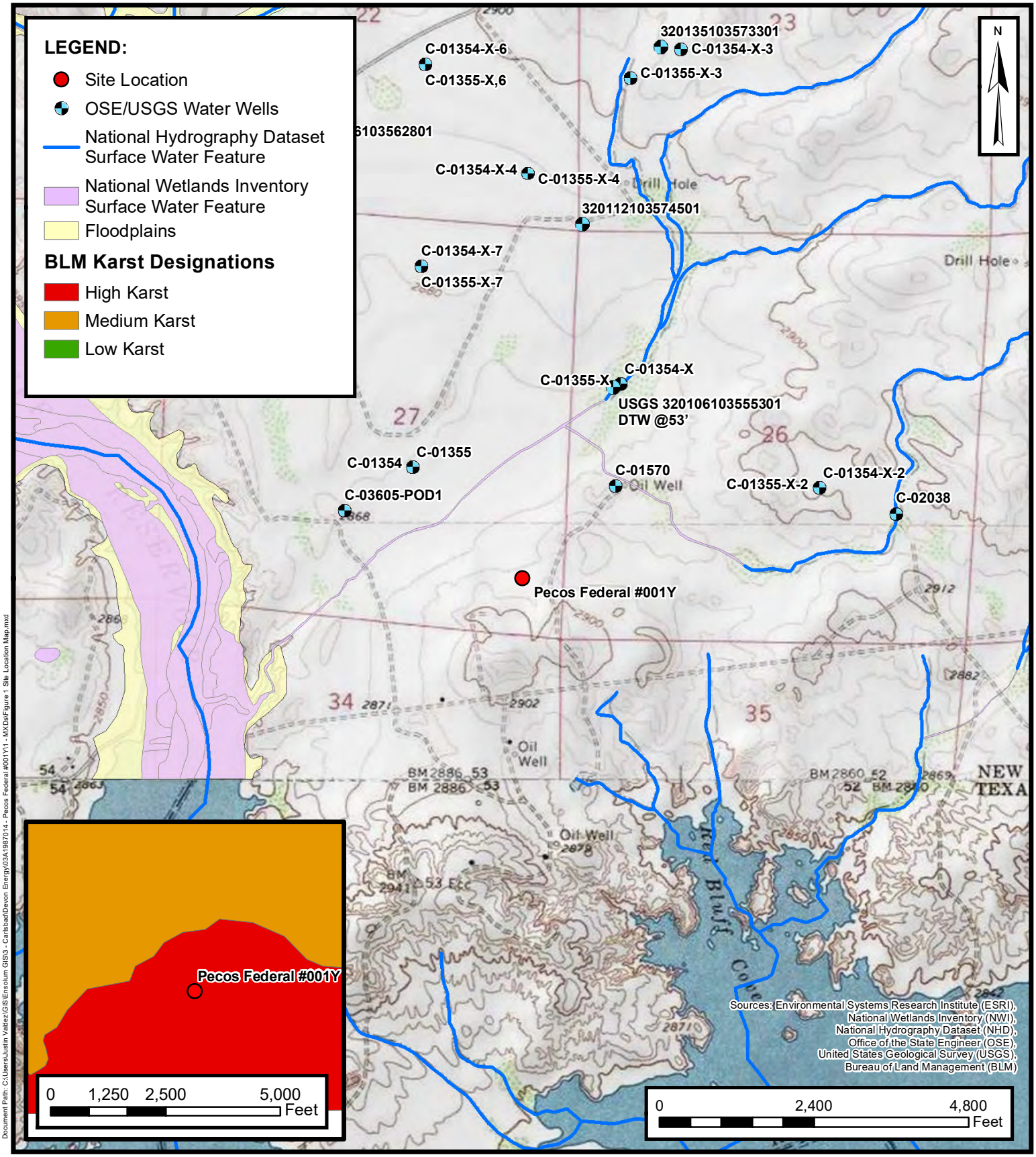
The proposed excavation (AOC) and liner extent is shown on **Figure 3** in **Appendix A.** Once excavation is completed, WPX will submit a final report, documenting remediation of impacted soil west and north of the containment and proposing deferral of delineated impacts under active production equipment (inside the containment).

WPX believes the scope of work described above will meet requirements set forth in NMAC 19.15.29.13 and be protective of human health, the environment, and groundwater. As such, WPX respectfully requests approval of this RWPA from NMOCD.

ENSOLUM

# APPENDIX A

# Figures



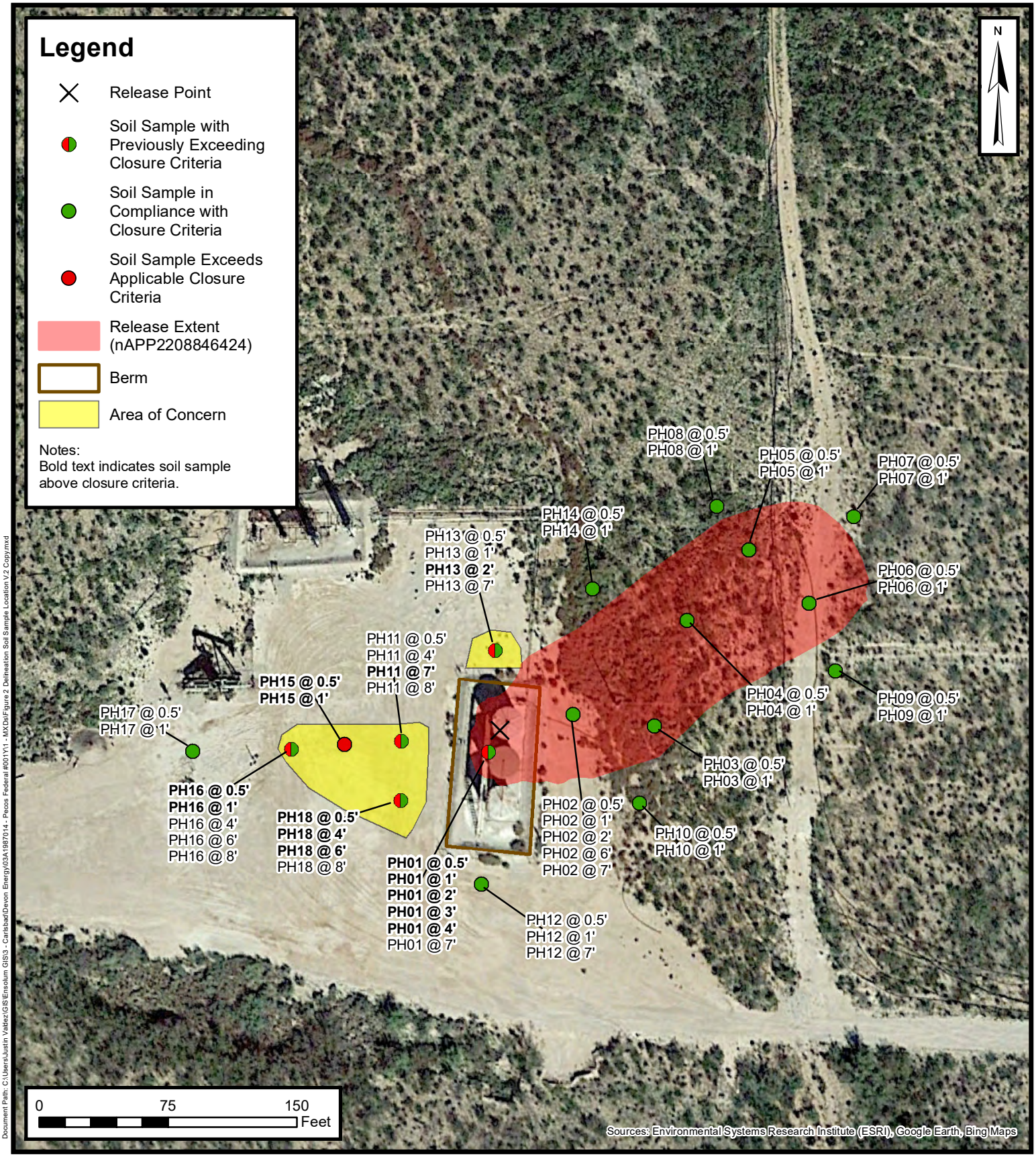

Document Path: C:\Users\Justin Vallez\GIS\Ensolum GIS\3 - Carlsbad\Devon Energy\03A1987014 - Pecos Federal #001Y\1 - MXDs\Figure 1 Site Location Map.mxd

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

# Site Map

Pecos Federal #001Y
WPX Energy Permian, LLC
Unit P, Section 27, Township 26S, Range 29E
Eddy County, New Mexico

FIGURE
1



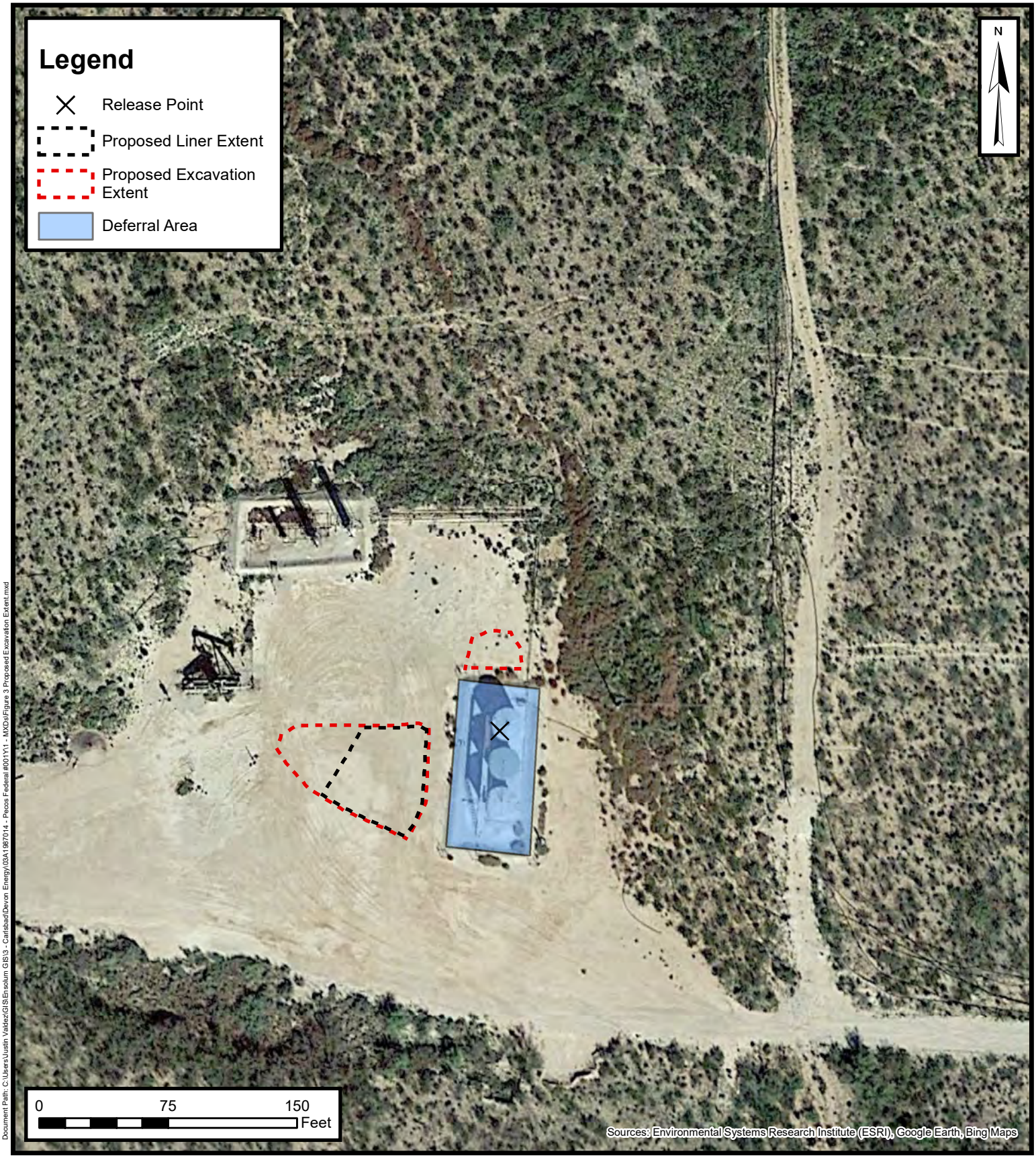

Document Path: C:\Users\Justin Vatez\GIS\Ensolum GIS\3 - Carlsbad\Devon Energy\03A1987014 - Pecos Federal #001Y\1 - MXDs\Figure 2 Delineation Soil Sample Location V.2 Copy.mxd

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

# Delineation Soil Sample Locations

Pecos Federal #001Y
WPX Energy Permian, LLC
Unit P, Section 27, Township 26S, Range 29E
Eddy County, New Mexico

FIGURE
2




Document Path: C:\Users\Justin Valdez\GIS\Ensolum GIS\3 - Carlsbad\Devon Energy\03A1987014 - Pecos Federal #001Y\1 - MXDs\Figure 3 Proposed Excavation Extent.mxd

ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

# Proposed Remediation Area

Pecos Federal #001Y
WPX Energy Permian, LLC
Unit P, Section 27, Township 26S, Range 29E
Eddy County, New Mexico

FIGURE
3

ENSOLUM

# APPENDIX B

# Lithologic Soil Sampling Logs

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: PH11 | Date: 11/10/2022 |
| | Site Name: Pecos Federal #001Y | |
| | Incident Number: nAPP2208846424 | |
| | Job Number: 03A1987014 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: KYE | Method: Backhoe |
| Coordinates: 32.0072937, -103.9659729 | Hole Diameter: N/A | Total Depth: 8' |

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 | SW-SM | (0-8') SAND, dry, brown, well graded with silt, very fine-medium, trace subround-subangular gravel, no odor, no staining. |
| | | | | | 1 | 1 | | |
| | | | | | 2 | 2 | | @3', color change to reddish-brown. |
| | | | | | 3 | 3 | | @4', color change to tan-brown. |
| D | 487 | 0.1 | N | PH11 | 4 | 4 | | |
| | | | | | 5 | 5 | | |
| | | | | | 6 | 6 | | |
| | | | | | 7 | 7 | | |
| D | 296 | 0.2 | N | PH11 | 8 | 8 | | |

Total Depth: 8 feet bgs.

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: PH16 | Date: 11/10/2022 |
| | Site Name: Pecos Federal #001Y | |
| | Incident Number: nAPP2208846424 | |
| | Job Number: 03A1987014 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: KYE | Method: Backhoe |
| Coordinates: 32.0072937, -103.9659729 | Hole Diameter: N/A | Total Depth: 8' |

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 | SP | (0-8') SAND, dry, brown, poorly graded, very fine-medium, trace subround-subangular gravel, no odor, no staining. |
| | | | | | 1 | 1 | | |
| | | | | | 2 | 2 | | |
| | | | | | 3 | 3 | | |
| D | 733 | 0.1 | N | PH16 | 4 | 4 | | |
| | | | | | 5 | 5 | | |
| D | 436 | 0.0 | N | PH16 | 6 | 6 | | |
| | | | | | 7 | 7 | | |
| D | 257 | 0.1 | N | PH16 | 8 | 8 | | |

Total Depth: 8 feet bgs.

ENSOLUM

| | | |
|---|---|---|
| | Sample Name: PH18 | Date: 11/10/2022 |
| | Site Name: Pecos Federal #001Y | |
| | Incident Number: nAPP2208846424 | |
| | Job Number: 03A1987014 | |
| **LITHOLOGIC / SOIL SAMPLING LOG** | Logged By: KYE | Method: Backhoe |
| Coordinates: 32.0072937, -103.9659729 | Hole Diameter: N/A | Total Depth: 8' |

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 |
|---|---|---|---|---|---|---|---|---|
| D | 3,404 | 0.2 | N | PH18 | 0.5 | 0 | SP | (0-8') SAND, dry, brown, poorly graded, very fine-medium, trace subround-subangular gravel, no odor, no staining. |
| | | | | | 1 | 0.5 | | |
| | | | | | | 1 | | |
| | | | | | 2 | 2 | | |
| | | | | | 3 | 3 | | |
| D | 666 | 0.1 | N | PH18 | 4 | 4 | | |
| | | | | | 5 | 5 | | |
| D | 604 | 0.0 | N | PH18 | 6 | 6 | | |
| | | | | | 7 | 7 | | |
| D | 296 | 0.0 | N | PH18 | 8 | 8 | | |

Total Depth: 8 feet bgs.

ENSOLUM

# APPENDIX C

# Photographic Log

ENSOLUM

**Photographic Log**
Client Name: WPX Energy Permian, LLC
Site Name: Pecos Federal #001Y

Photograph: 1 Date: 11/1/2022
Description: Initial Site assessment
View: East


Photograph: 2 Date: 11/10/2022
Description: Delineation activities, PH11
View: Northeast


Photograph: 3 Date: 11/10/2022
Description: Delineation activities, PH16
View: Northeast


Photograph: 4 Date: 11/10/2022
Description: Delineation activities, PH16
View: Northeast

ENSOLUM

# APPENDIX D

# Tables

ENSOLUM

**TABLE 1**
**SOIL SAMPLE ANALYTICAL RESULTS**
**WPX Energy Permian, LLC - Pecos Federal #001Y**
**Eddy County, New Mexico**

**Ensolum Project No. 03A1987014**

| 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) | Total TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|
| **NMOCD Table 1 Closure Criteria (NMAC 19.15.29)** | | | **10** | **50** | NE | NE | NE | **100** | **600** |
| **Delineation Soil Sample Analytical Results** | | | | | | | | | |
| PH11 | 05/18/2022 | 0.5 | <0.00200 | <0.00200 | <50.0 | 70.6 | <50.0 | 70.6 | 537 |
| PH11 | 11/10/2022 | 4 | <0.00200 | <0.00399 | <50.0 | <50.0 | <50.0 | <50.0 | 490 |
| PH11 | 05/18/2022 | 7 | <0.00199 | <0.00199 | <49.9 | <49.9 | <49.9 | <49.9 | **4,740** |
| PH11 | 11/10/2022 | 8 | <0.00199 | <0.00398 | <49.9 | <49.9 | <49.9 | <49.9 | 204 |
| PH15 | 05/18/2022 | 0.5 | <0.00200 | <0.00399 | <50.0 | <50.0 | 67.9 | **67.9** | **8,780** |
| PH15 | 05/18/2022 | 1 | <0.00198 | <0.00396 | 147 | <49.9 | <49.9 | **147** | **1,570** |
| PH16 | 05/18/2022 | 0.5 | <0.00198 | <0.00397 | 144 | <50.0 | <50.0 | **144** | **7,560** |
| PH16 | 05/18/2022 | 1 | <0.00201 | <0.00402 | <50.0 | <50.0 | <50.0 | <50.0 | **673** |
| PH16 | 11/10/2022 | 4 | <0.00199 | <0.00398 | <50.0 | <50.0 | <50.0 | <50.0 | 211 |
| PH16 | 11/10/2022 | 6 | <0.00200 | <0.00399 | <49.9 | <49.9 | <49.9 | <49.9 | 424 |
| PH16 | 11/10/2022 | 8 | <0.00201 | <0.00402 | <50.0 | <50.0 | <50.0 | <50.0 | 221 |

ENSOLUM

**TABLE 1**
**SOIL SAMPLE ANALYTICAL RESULTS**
**WPX Energy Permian, LLC - Pecos Federal #001Y**
**Eddy County, New Mexico**

**Ensolum Project No. 03A1987014**

| 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) | Total TPH (mg/kg) | Chloride (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|
| **NMOCD Table 1 Closure Criteria (NMAC 19.15.29)** | | | **10** | **50** | NE | NE | NE | **100** | **600** |
| PH18 | 11/10/2022 | 0.5 | <0.00200 | <0.00401 | <50.0 | 66.9 | 90.9 | **158** | **4,080** |
| PH18 | 11/10/2022 | 4 | <0.00201 | <0.00402 | <49.9 | <49.9 | <49.9 | <49.9 | **629** |
| PH18 | 11/10/2022 | 6 | <0.00199 | <0.00398 | <49.9 | <49.9 | <49.9 | <49.9 | **600** |
| PH18 | 11/10/2022 | 8 | <0.00199 | <0.00398 | <49.8 | <49.8 | <49.8 | <49.8 | 365 |

***Notes:***

*bgs: below ground surface*

*mg/kg: milligrams per kilogram*

*NMOCD: New Mexico Oil Conservation Division*

*BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes*

*GRO: Gasoline Range Organics*

*DRO: Diesel Range Organics*

*ORO: Oil Range Organics*

*TPH: Total Petroleum Hydrocarbon*

*Concentrations in **bold** exceed the NMOCD Table 1 Closure Criteria and/or Reclamation Standard for Soils Impacted by a Release*

ENSOLUM

# APPENDIX E

# Laboratory Analytical Reports & Chain-of-Custody Documentation

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Devon Team
Ensolum
705 W. Wadley
Suite 210
Midland Texas 79701

Generated 11/22/2022 3:23:06 PM

## JOB DESCRIPTION

Pecos Fed 1Y
SDG NUMBER Eddy County NM

## JOB NUMBER

890-3434-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Client: Ensolum
Project/Site: Pecos Fed 1Y

Laboratory Job ID: 890-3434-1
SDG: Eddy County NM

# Table of Contents

# Definitions/Glossary

Client: Ensolum Job ID: 890-3434-1
Project/Site: Pecos Fed 1Y SDG: Eddy County NM

## 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 |
|---|---|
| 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: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## Job ID: 890-3434-1

**Laboratory: Eurofins Carlsbad**

**Narrative**

**Job Narrative**
**890-3434-1**

**Receipt**
The samples were received on 11/11/2022 10:04 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 5.4°C

**Receipt Exceptions**
The following samples were received and analyzed from an unpreserved bulk soil jar: PH11 (890-3434-1), PH11 (890-3434-2), PH16 (890-3434-3), PH16 (890-3434-4), PH16 (890-3434-5), PH18 (890-3434-6), PH18 (890-3434-7), PH18 (890-3434-8) and PH18 (890-3434-9).

**GC VOA**
Method 8021B: Surrogate recovery for the following sample was outside control limits: PH11 (890-3434-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

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

# Client Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## Client Sample ID: PH11

**Lab Sample ID: 890-3434-1**
**Matrix: Solid**
**Date Collected: 11/10/22 09:10**
**Date Received: 11/11/22 10:04**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:32 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:32 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:32 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:32 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:32 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *135* | *S1+* | *70 - 130* | *11/14/22 15:47* | *11/22/22 03:32* | *1* |
| *1,4-Difluorobenzene (Surr)* | *136* | *S1+* | *70 - 130* | *11/14/22 15:47* | *11/22/22 03:32* | *1* |

### Method: TAL SOP Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | | mg/Kg | | | 11/22/22 15:30 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 11/15/22 16:29 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 14:59 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 14:59 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 14:59 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *92* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 14:59* | *1* |
| *o-Terphenyl* | *93* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 14:59* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **490** | | 4.98 | | mg/Kg | | | 11/16/22 02:40 | 1 |

## Client Sample ID: PH11

**Lab Sample ID: 890-3434-2**
**Matrix: Solid**
**Date Collected: 11/10/22 09:20**
**Date Received: 11/11/22 10:04**
**Sample Depth: 8'**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:53 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:53 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:53 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:53 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:53 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 03:53 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *122* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 03:53* | *1* |

Eurofins Carlsbad

# Client Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## Client Sample ID: PH11

**Date Collected: 11/10/22 09:20**
**Date Received: 11/11/22 10:04**
**Sample Depth: 8'**

**Lab Sample ID: 890-3434-2**
**Matrix: Solid**

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

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,4-Difluorobenzene (Surr)* | *129* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 03:53* | *1* |

### Method: TAL SOP Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 11/22/22 15:30 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 11/16/22 09:14 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 16:05 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 16:05 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 16:05 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *94* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 16:05* | *1* |
| *o-Terphenyl* | *93* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 16:05* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **204** | | 4.97 | | mg/Kg | | | 11/16/22 02:46 | 1 |

## Client Sample ID: PH16

**Date Collected: 11/10/22 09:40**
**Date Received: 11/11/22 10:04**
**Sample Depth: 4'**

**Lab Sample ID: 890-3434-3**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:13 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:13 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:13 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:13 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:13 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:13 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *116* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 04:13* | *1* |
| *1,4-Difluorobenzene (Surr)* | *106* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 04:13* | *1* |

### Method: TAL SOP Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 11/22/22 15:30 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 11/16/22 09:14 | 1 |

# Client Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## Client Sample ID: PH16

**Date Collected: 11/10/22 09:40**
**Date Received: 11/11/22 10:04**
**Sample Depth: 4'**

**Lab Sample ID: 890-3434-3**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 16:26 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 16:26 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 16:26 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *88* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 16:26* | *1* |
| *o-Terphenyl* | *88* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 16:26* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **211** | | 5.01 | | mg/Kg | | | 11/16/22 02:51 | 1 |

## Client Sample ID: PH16

**Date Collected: 11/10/22 09:50**
**Date Received: 11/11/22 10:04**
**Sample Depth: 6'**

**Lab Sample ID: 890-3434-4**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:34 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:34 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:34 | 1 |
| m-Xylene & p-Xylene | <0.00399 | U | 0.00399 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:34 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:34 | 1 |
| Xylenes, Total | <0.00399 | U | 0.00399 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:34 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *118* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 04:34* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 04:34* | *1* |

### Method: TAL SOP Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00399 | U | 0.00399 | | mg/Kg | | | 11/22/22 15:30 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 11/16/22 09:14 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 16:47 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 16:47 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 16:47 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *89* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 16:47* | *1* |
| *o-Terphenyl* | *88* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 16:47* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## Client Sample ID: PH16
**Date Collected: 11/10/22 09:50**
**Date Received: 11/11/22 10:04**
**Sample Depth: 6'**

**Lab Sample ID: 890-3434-4**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 424 | | 4.98 | | mg/Kg | | | 11/16/22 02:57 | 1 |

## Client Sample ID: PH16
**Date Collected: 11/10/22 10:00**
**Date Received: 11/11/22 10:04**
**Sample Depth: 8'**

**Lab Sample ID: 890-3434-5**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:54 | 1 |
| Toluene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:54 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:54 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:54 | 1 |
| o-Xylene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:54 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 04:54 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *117* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 04:54* | *1* |
| *1,4-Difluorobenzene (Surr)* | *107* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 04:54* | *1* |

### Method: TAL SOP Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00402 | U | 0.00402 | | mg/Kg | | | 11/22/22 15:30 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <50.0 | U | 50.0 | | mg/Kg | | | 11/16/22 09:14 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 17:08 | 1 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 17:08 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 17:08 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *100* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 17:08* | *1* |
| *o-Terphenyl* | *99* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 17:08* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 221 | | 5.03 | | mg/Kg | | | 11/16/22 03:02 | 1 |

# Client Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## Client Sample ID: PH18

**Lab Sample ID: 890-3434-6**
**Matrix: Solid**
**Date Collected: 11/10/22 10:20**
**Date Received: 11/11/22 10:04**
**Sample Depth: 0.5'**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:15 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:15 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:15 | 1 |
| m-Xylene & p-Xylene | <0.00401 | U | 0.00401 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:15 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:15 | 1 |
| Xylenes, Total | <0.00401 | U | 0.00401 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:15 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *127* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 05:15* | *1* |
| *1,4-Difluorobenzene (Surr)* | *108* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 05:15* | *1* |

### Method: TAL SOP Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00401 | U | 0.00401 | | mg/Kg | | | 11/22/22 15:30 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **158** | | 50.0 | | mg/Kg | | | 11/16/22 09:14 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 17:28 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **66.9** | | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 17:28 | 1 |
| **Oil Range Organics (Over C28-C36)** | **90.9** | | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 17:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *100* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 17:28* | *1* |
| *o-Terphenyl* | *99* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 17:28* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **4080** | | 50.2 | | mg/Kg | | | 11/16/22 03:19 | 10 |

## Client Sample ID: PH18

**Lab Sample ID: 890-3434-7**
**Matrix: Solid**
**Date Collected: 11/10/22 10:30**
**Date Received: 11/11/22 10:04**
**Sample Depth: 4'**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:36 | 1 |
| Toluene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:36 | 1 |
| Ethylbenzene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:36 | 1 |
| m-Xylene & p-Xylene | <0.00402 | U | 0.00402 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:36 | 1 |
| o-Xylene | <0.00201 | U | 0.00201 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:36 | 1 |
| Xylenes, Total | <0.00402 | U | 0.00402 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:36 | 1 |

# Client Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## Client Sample ID: PH18

**Lab Sample ID: 890-3434-7**
**Matrix: Solid**
**Date Collected: 11/10/22 10:30**
**Date Received: 11/11/22 10:04**
**Sample Depth: 4'**

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *121* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 05:36* | *1* |
| *1,4-Difluorobenzene (Surr)* | *104* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 05:36* | *1* |

### Method: TAL SOP Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00402 | U | 0.00402 | | mg/Kg | | | 11/22/22 15:30 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 11/16/22 09:14 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 17:49 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 17:49 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 17:49 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *86* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 17:49* | *1* |
| *o-Terphenyl* | *85* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 17:49* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **629** | | 5.04 | | mg/Kg | | | 11/16/22 03:25 | 1 |

## Client Sample ID: PH18

**Lab Sample ID: 890-3434-8**
**Matrix: Solid**
**Date Collected: 11/10/22 10:40**
**Date Received: 11/11/22 10:04**
**Sample Depth: 6'**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:56 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:56 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:56 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:56 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:56 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 05:56 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *121* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 05:56* | *1* |
| *1,4-Difluorobenzene (Surr)* | *106* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 05:56* | *1* |

### Method: TAL SOP Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 11/22/22 15:30 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.9 | U | 49.9 | | mg/Kg | | | 11/16/22 09:14 | 1 |

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# Client Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## Client Sample ID: PH18
**Date Collected: 11/10/22 10:40**
**Date Received: 11/11/22 10:04**
**Sample Depth: 6'**

**Lab Sample ID: 890-3434-8**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 18:10 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 18:10 | 1 |
| OII Range Organics (Over C28-C36) | <49.9 | U | 49.9 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 18:10 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *78* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 18:10* | *1* |
| *o-Terphenyl* | *76* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 18:10* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **600** | | 4.97 | | mg/Kg | | | 11/16/22 03:42 | 1 |

## Client Sample ID: PH18
**Date Collected: 11/10/22 10:50**
**Date Received: 11/11/22 10:04**
**Sample Depth: 8'**

**Lab Sample ID: 890-3434-9**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 06:17 | 1 |
| Toluene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 06:17 | 1 |
| Ethylbenzene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 06:17 | 1 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.00398 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 06:17 | 1 |
| o-Xylene | <0.00199 | U | 0.00199 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 06:17 | 1 |
| Xylenes, Total | <0.00398 | U | 0.00398 | | mg/Kg | | 11/14/22 15:47 | 11/22/22 06:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *124* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 06:17* | *1* |
| *1,4-Difluorobenzene (Surr)* | *111* | | *70 - 130* | *11/14/22 15:47* | *11/22/22 06:17* | *1* |

### Method: TAL SOP Total BTEX - Total BTEX Calculation

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total BTEX | <0.00398 | U | 0.00398 | | mg/Kg | | | 11/22/22 15:30 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <49.8 | U | 49.8 | | mg/Kg | | | 11/16/22 09:14 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <49.8 | U | 49.8 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 18:31 | 1 |
| Diesel Range Organics (Over C10-C28) | <49.8 | U | 49.8 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 18:31 | 1 |
| OII Range Organics (Over C28-C36) | <49.8 | U | 49.8 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 18:31 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *85* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 18:31* | *1* |
| *o-Terphenyl* | *83* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 18:31* | *1* |

# Client Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

**Client Sample ID: PH18**
**Date Collected: 11/10/22 10:50**
**Date Received: 11/11/22 10:04**
**Sample Depth: 8'**

**Lab Sample ID: 890-3434-9**
**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 365 | | 25.3 | | mg/Kg | | | 11/16/22 03:48 | 5 |

# Surrogate Summary

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | |
|---|---|---|---|
| | | BFB1 | DFBZ1 |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) |
| 890-3423-A-1-D MS | Matrix Spike | 104 | 94 |
| 890-3423-A-1-E MSD | Matrix Spike Duplicate | 113 | 87 |
| 890-3434-1 | PH11 | 135 S1+ | 136 S1+ |
| 890-3434-2 | PH11 | 122 | 129 |
| 890-3434-3 | PH16 | 116 | 106 |
| 890-3434-4 | PH16 | 118 | 108 |
| 890-3434-5 | PH16 | 117 | 107 |
| 890-3434-6 | PH18 | 127 | 108 |
| 890-3434-7 | PH18 | 121 | 104 |
| 890-3434-8 | PH18 | 121 | 106 |
| 890-3434-9 | PH18 | 124 | 111 |
| LCS 880-39546/1-A | Lab Control Sample | 91 | 82 |
| LCSD 880-39546/2-A | Lab Control Sample Dup | 99 | 93 |
| MB 880-39546/5-A | Method Blank | 112 | 92 |
| MB 880-40068/5-A | Method Blank | 101 | 92 |

**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) |
| 890-3432-A-1-E MS | Matrix Spike | 88 | 75 |
| 890-3432-A-1-F MSD | Matrix Spike Duplicate | 87 | 74 |
| 890-3434-1 | PH11 | 92 | 93 |
| 890-3434-2 | PH11 | 94 | 93 |
| 890-3434-3 | PH16 | 88 | 88 |
| 890-3434-4 | PH16 | 89 | 88 |
| 890-3434-5 | PH16 | 100 | 99 |
| 890-3434-6 | PH18 | 100 | 99 |
| 890-3434-7 | PH18 | 86 | 85 |
| 890-3434-8 | PH18 | 78 | 76 |
| 890-3434-9 | PH18 | 85 | 83 |
| LCS 880-39516/2-A | Lab Control Sample | 84 | 81 |
| LCSD 880-39516/3-A | Lab Control Sample Dup | 84 | 81 |
| MB 880-39516/1-A | Method Blank | 107 | 110 |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

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

**Lab Sample ID: MB 880-39546/5-A**
**Matrix: Solid**
**Analysis Batch: 40037**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 39546**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/21/22 22:20 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/21/22 22:20 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/21/22 22:20 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/14/22 15:47 | 11/21/22 22:20 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/14/22 15:47 | 11/21/22 22:20 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/14/22 15:47 | 11/21/22 22:20 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *112* | | *70 - 130* | *11/14/22 15:47* | *11/21/22 22:20* | *1* |
| *1,4-Difluorobenzene (Surr)* | *92* | | *70 - 130* | *11/14/22 15:47* | *11/21/22 22:20* | *1* |

**Lab Sample ID: LCS 880-39546/1-A**
**Matrix: Solid**
**Analysis Batch: 40037**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 39546**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 0.100 | 0.06955 | | mg/Kg | | 70 | 70 - 130 |
| Toluene | 0.100 | 0.08190 | | mg/Kg | | 82 | 70 - 130 |
| Ethylbenzene | 0.100 | 0.08788 | | mg/Kg | | 88 | 70 - 130 |
| m-Xylene & p-Xylene | 0.200 | 0.1753 | | mg/Kg | | 88 | 70 - 130 |
| o-Xylene | 0.100 | 0.1027 | | mg/Kg | | 103 | 70 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *91* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *82* | | *70 - 130* |

**Lab Sample ID: LCSD 880-39546/2-A**
**Matrix: Solid**
**Analysis Batch: 40037**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 39546**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.100 | 0.07665 | | mg/Kg | | 77 | 70 - 130 | 10 | 35 |
| Toluene | 0.100 | 0.08944 | | mg/Kg | | 89 | 70 - 130 | 9 | 35 |
| Ethylbenzene | 0.100 | 0.09524 | | mg/Kg | | 95 | 70 - 130 | 8 | 35 |
| m-Xylene & p-Xylene | 0.200 | 0.1909 | | mg/Kg | | 95 | 70 - 130 | 9 | 35 |
| o-Xylene | 0.100 | 0.1111 | | mg/Kg | | 111 | 70 - 130 | 8 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *99* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *93* | | *70 - 130* |

**Lab Sample ID: 890-3423-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 40037**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 39546**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.0998 | 0.07603 | | mg/Kg | | 76 | 70 - 130 |
| Toluene | <0.00199 | U | 0.0998 | 0.08510 | | mg/Kg | | 85 | 70 - 130 |

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# QC Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

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

**Lab Sample ID: 890-3423-A-1-D MS**
**Matrix: Solid**
**Analysis Batch: 40037**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 39546**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.00199 | U | 0.0998 | 0.08975 | | mg/Kg | | 90 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.200 | 0.1800 | | mg/Kg | | 90 | 70 - 130 |
| o-Xylene | <0.00199 | U | 0.0998 | 0.1033 | | mg/Kg | | 103 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *94* | | *70 - 130* |

**Lab Sample ID: 890-3423-A-1-E MSD**
**Matrix: Solid**
**Analysis Batch: 40037**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 39546**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00199 | U | 0.0996 | 0.07504 | | mg/Kg | | 75 | 70 - 130 | 1 | 35 |
| Toluene | <0.00199 | U | 0.0996 | 0.08927 | | mg/Kg | | 90 | 70 - 130 | 5 | 35 |
| Ethylbenzene | <0.00199 | U | 0.0996 | 0.09882 | | mg/Kg | | 99 | 70 - 130 | 10 | 35 |
| m-Xylene & p-Xylene | <0.00398 | U | 0.199 | 0.1954 | | mg/Kg | | 98 | 70 - 130 | 8 | 35 |
| o-Xylene | <0.00199 | U | 0.0996 | 0.1117 | | mg/Kg | | 112 | 70 - 130 | 8 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *113* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *87* | | *70 - 130* |

**Lab Sample ID: MB 880-40068/5-A**
**Matrix: Solid**
**Analysis Batch: 40037**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 40068**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/21/22 09:48 | 11/21/22 11:40 | 1 |
| Toluene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/21/22 09:48 | 11/21/22 11:40 | 1 |
| Ethylbenzene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/21/22 09:48 | 11/21/22 11:40 | 1 |
| m-Xylene & p-Xylene | <0.00400 | U | 0.00400 | | mg/Kg | | 11/21/22 09:48 | 11/21/22 11:40 | 1 |
| o-Xylene | <0.00200 | U | 0.00200 | | mg/Kg | | 11/21/22 09:48 | 11/21/22 11:40 | 1 |
| Xylenes, Total | <0.00400 | U | 0.00400 | | mg/Kg | | 11/21/22 09:48 | 11/21/22 11:40 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* | *11/21/22 09:48* | *11/21/22 11:40* | *1* |
| *1,4-Difluorobenzene (Surr)* | *92* | | *70 - 130* | *11/21/22 09:48* | *11/21/22 11:40* | *1* |

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

**Lab Sample ID: MB 880-39516/1-A**
**Matrix: Solid**
**Analysis Batch: 39567**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 39516**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 08:37 | 1 |

# QC Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

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

**Lab Sample ID: MB 880-39516/1-A**
**Matrix: Solid**
**Analysis Batch: 39567**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 39516**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 08:37 | 1 |
| OII Range Organics (Over C28-C36) | <50.0 | U | 50.0 | | mg/Kg | | 11/14/22 14:27 | 11/15/22 08:37 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *107* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 08:37* | *1* |
| *o-Terphenyl* | *110* | | *70 - 130* | *11/14/22 14:27* | *11/15/22 08:37* | *1* |

**Lab Sample ID: LCS 880-39516/2-A**
**Matrix: Solid**
**Analysis Batch: 39567**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 39516**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 801.1 | | mg/Kg | | 80 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 802.2 | | mg/Kg | | 80 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *84* | | *70 - 130* |
| *o-Terphenyl* | *81* | | *70 - 130* |

**Lab Sample ID: LCSD 880-39516/3-A**
**Matrix: Solid**
**Analysis Batch: 39567**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 39516**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 805.9 | | mg/Kg | | 81 | 70 - 130 | 1 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 801.6 | | mg/Kg | | 80 | 70 - 130 | 0 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *84* | | *70 - 130* |
| *o-Terphenyl* | *81* | | *70 - 130* |

**Lab Sample ID: 890-3432-A-1-E MS**
**Matrix: Solid**
**Analysis Batch: 39567**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 39516**

| 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 | 1121 | | mg/Kg | | 110 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 997 | 818.0 | | mg/Kg | | 80 | 70 - 130 | | |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *88* | | *70 - 130* |
| *o-Terphenyl* | *75* | | *70 - 130* |

# QC Sample Results

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

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

**Lab Sample ID: 890-3432-A-1-F MSD**
**Matrix: Solid**
**Analysis Batch: 39567**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 39516**

| 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 | 999 | 1119 | | mg/Kg | | 110 | 70 - 130 | 0 | 20 |
| Diesel Range Organics (Over C10-C28) | <50.0 | U | 999 | 826.5 | | mg/Kg | | 81 | 70 - 130 | 1 | 20 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *87* | | *70 - 130* |
| *o-Terphenyl* | *74* | | *70 - 130* |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-39449/1-A**
**Matrix: Solid**
**Analysis Batch: 39642**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <5.00 | U | 5.00 | | mg/Kg | | | 11/16/22 01:26 | 1 |

**Lab Sample ID: LCS 880-39449/2-A**
**Matrix: Solid**
**Analysis Batch: 39642**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Chloride | 250 | 274.3 | | mg/Kg | | 110 | 90 - 110 |

**Lab Sample ID: LCSD 880-39449/3-A**
**Matrix: Solid**
**Analysis Batch: 39642**

**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 | 274.5 | | mg/Kg | | 110 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 890-3434-5 MS**
**Matrix: Solid**
**Analysis Batch: 39642**

**Client Sample ID: PH16**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 221 | | 252 | 478.7 | | mg/Kg | | 102 | 90 - 110 |

**Lab Sample ID: 890-3434-5 MSD**
**Matrix: Solid**
**Analysis Batch: 39642**

**Client Sample ID: PH16**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 221 | | 252 | 472.1 | | mg/Kg | | 100 | 90 - 110 | 1 | 20 |

# QC Association Summary

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## GC VOA

### Prep Batch: 39546

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3434-1 | PH11 | Total/NA | Solid | 5035 | |
| 890-3434-2 | PH11 | Total/NA | Solid | 5035 | |
| 890-3434-3 | PH16 | Total/NA | Solid | 5035 | |
| 890-3434-4 | PH16 | Total/NA | Solid | 5035 | |
| 890-3434-5 | PH16 | Total/NA | Solid | 5035 | |
| 890-3434-6 | PH18 | Total/NA | Solid | 5035 | |
| 890-3434-7 | PH18 | Total/NA | Solid | 5035 | |
| 890-3434-8 | PH18 | Total/NA | Solid | 5035 | |
| 890-3434-9 | PH18 | Total/NA | Solid | 5035 | |
| MB 880-39546/5-A | Method Blank | Total/NA | Solid | 5035 | |
| LCS 880-39546/1-A | Lab Control Sample | Total/NA | Solid | 5035 | |
| LCSD 880-39546/2-A | Lab Control Sample Dup | Total/NA | Solid | 5035 | |
| 890-3423-A-1-D MS | Matrix Spike | Total/NA | Solid | 5035 | |
| 890-3423-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 5035 | |

### Analysis Batch: 40037

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3434-1 | PH11 | Total/NA | Solid | 8021B | 39546 |
| 890-3434-2 | PH11 | Total/NA | Solid | 8021B | 39546 |
| 890-3434-3 | PH16 | Total/NA | Solid | 8021B | 39546 |
| 890-3434-4 | PH16 | Total/NA | Solid | 8021B | 39546 |
| 890-3434-5 | PH16 | Total/NA | Solid | 8021B | 39546 |
| 890-3434-6 | PH18 | Total/NA | Solid | 8021B | 39546 |
| 890-3434-7 | PH18 | Total/NA | Solid | 8021B | 39546 |
| 890-3434-8 | PH18 | Total/NA | Solid | 8021B | 39546 |
| 890-3434-9 | PH18 | Total/NA | Solid | 8021B | 39546 |
| MB 880-39546/5-A | Method Blank | Total/NA | Solid | 8021B | 39546 |
| MB 880-40068/5-A | Method Blank | Total/NA | Solid | 8021B | 40068 |
| LCS 880-39546/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 39546 |
| LCSD 880-39546/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 39546 |
| 890-3423-A-1-D MS | Matrix Spike | Total/NA | Solid | 8021B | 39546 |
| 890-3423-A-1-E MSD | Matrix Spike Duplicate | Total/NA | Solid | 8021B | 39546 |

### Prep Batch: 40068

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-40068/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Analysis Batch: 40234

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3434-1 | PH11 | Total/NA | Solid | Total BTEX | |
| 890-3434-2 | PH11 | Total/NA | Solid | Total BTEX | |
| 890-3434-3 | PH16 | Total/NA | Solid | Total BTEX | |
| 890-3434-4 | PH16 | Total/NA | Solid | Total BTEX | |
| 890-3434-5 | PH16 | Total/NA | Solid | Total BTEX | |
| 890-3434-6 | PH18 | Total/NA | Solid | Total BTEX | |
| 890-3434-7 | PH18 | Total/NA | Solid | Total BTEX | |
| 890-3434-8 | PH18 | Total/NA | Solid | Total BTEX | |
| 890-3434-9 | PH18 | Total/NA | Solid | Total BTEX | |

# QC Association Summary

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## GC Semi VOA

### Prep Batch: 39516

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3434-1 | PH11 | Total/NA | Solid | 8015NM Prep | |
| 890-3434-2 | PH11 | Total/NA | Solid | 8015NM Prep | |
| 890-3434-3 | PH16 | Total/NA | Solid | 8015NM Prep | |
| 890-3434-4 | PH16 | Total/NA | Solid | 8015NM Prep | |
| 890-3434-5 | PH16 | Total/NA | Solid | 8015NM Prep | |
| 890-3434-6 | PH18 | Total/NA | Solid | 8015NM Prep | |
| 890-3434-7 | PH18 | Total/NA | Solid | 8015NM Prep | |
| 890-3434-8 | PH18 | Total/NA | Solid | 8015NM Prep | |
| 890-3434-9 | PH18 | Total/NA | Solid | 8015NM Prep | |
| MB 880-39516/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-39516/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-39516/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 890-3432-A-1-E MS | Matrix Spike | Total/NA | Solid | 8015NM Prep | |
| 890-3432-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 39567

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3434-1 | PH11 | Total/NA | Solid | 8015B NM | 39516 |
| 890-3434-2 | PH11 | Total/NA | Solid | 8015B NM | 39516 |
| 890-3434-3 | PH16 | Total/NA | Solid | 8015B NM | 39516 |
| 890-3434-4 | PH16 | Total/NA | Solid | 8015B NM | 39516 |
| 890-3434-5 | PH16 | Total/NA | Solid | 8015B NM | 39516 |
| 890-3434-6 | PH18 | Total/NA | Solid | 8015B NM | 39516 |
| 890-3434-7 | PH18 | Total/NA | Solid | 8015B NM | 39516 |
| 890-3434-8 | PH18 | Total/NA | Solid | 8015B NM | 39516 |
| 890-3434-9 | PH18 | Total/NA | Solid | 8015B NM | 39516 |
| MB 880-39516/1-A | Method Blank | Total/NA | Solid | 8015B NM | 39516 |
| LCS 880-39516/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 39516 |
| LCSD 880-39516/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 39516 |
| 890-3432-A-1-E MS | Matrix Spike | Total/NA | Solid | 8015B NM | 39516 |
| 890-3432-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B NM | 39516 |

### Analysis Batch: 39646

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3434-1 | PH11 | Total/NA | Solid | 8015 NM | |
| 890-3434-2 | PH11 | Total/NA | Solid | 8015 NM | |
| 890-3434-3 | PH16 | Total/NA | Solid | 8015 NM | |
| 890-3434-4 | PH16 | Total/NA | Solid | 8015 NM | |
| 890-3434-5 | PH16 | Total/NA | Solid | 8015 NM | |
| 890-3434-6 | PH18 | Total/NA | Solid | 8015 NM | |
| 890-3434-7 | PH18 | Total/NA | Solid | 8015 NM | |
| 890-3434-8 | PH18 | Total/NA | Solid | 8015 NM | |
| 890-3434-9 | PH18 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 39449

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3434-1 | PH11 | Soluble | Solid | DI Leach | |
| 890-3434-2 | PH11 | Soluble | Solid | DI Leach | |
| 890-3434-3 | PH16 | Soluble | Solid | DI Leach | |

# QC Association Summary

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## HPLC/IC (Continued)

### Leach Batch: 39449 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3434-4 | PH16 | Soluble | Solid | DI Leach | |
| 890-3434-5 | PH16 | Soluble | Solid | DI Leach | |
| 890-3434-6 | PH18 | Soluble | Solid | DI Leach | |
| 890-3434-7 | PH18 | Soluble | Solid | DI Leach | |
| 890-3434-8 | PH18 | Soluble | Solid | DI Leach | |
| 890-3434-9 | PH18 | Soluble | Solid | DI Leach | |
| MB 880-39449/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-39449/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-39449/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 890-3434-5 MS | PH16 | Soluble | Solid | DI Leach | |
| 890-3434-5 MSD | PH16 | Soluble | Solid | DI Leach | |

### Analysis Batch: 39642

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 890-3434-1 | PH11 | Soluble | Solid | 300.0 | 39449 |
| 890-3434-2 | PH11 | Soluble | Solid | 300.0 | 39449 |
| 890-3434-3 | PH16 | Soluble | Solid | 300.0 | 39449 |
| 890-3434-4 | PH16 | Soluble | Solid | 300.0 | 39449 |
| 890-3434-5 | PH16 | Soluble | Solid | 300.0 | 39449 |
| 890-3434-6 | PH18 | Soluble | Solid | 300.0 | 39449 |
| 890-3434-7 | PH18 | Soluble | Solid | 300.0 | 39449 |
| 890-3434-8 | PH18 | Soluble | Solid | 300.0 | 39449 |
| 890-3434-9 | PH18 | Soluble | Solid | 300.0 | 39449 |
| MB 880-39449/1-A | Method Blank | Soluble | Solid | 300.0 | 39449 |
| LCS 880-39449/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 39449 |
| LCSD 880-39449/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 39449 |
| 890-3434-5 MS | PH16 | Soluble | Solid | 300.0 | 39449 |
| 890-3434-5 MSD | PH16 | Soluble | Solid | 300.0 | 39449 |

# Lab Chronicle

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## Client Sample ID: PH11
**Date Collected: 11/10/22 09:10**
**Date Received: 11/11/22 10:04**

## Lab Sample ID: 890-3434-1
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.01 g | 5 mL | 39546 | 11/14/22 15:47 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40037 | 11/22/22 03:32 | SM | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40234 | 11/22/22 15:30 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 39646 | 11/15/22 16:29 | AJ | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 39516 | 11/14/22 14:27 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 39567 | 11/15/22 14:59 | AJ | EET MID |
| Soluble | Leach | DI Leach | | | 5.02 g | 50 mL | 39449 | 11/14/22 11:43 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 39642 | 11/16/22 02:40 | CH | EET MID |

## Client Sample ID: PH11
**Date Collected: 11/10/22 09:20**
**Date Received: 11/11/22 10:04**

## Lab Sample ID: 890-3434-2
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.02 g | 5 mL | 39546 | 11/14/22 15:47 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40037 | 11/22/22 03:53 | SM | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40234 | 11/22/22 15:30 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 39646 | 11/16/22 09:14 | AJ | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 39516 | 11/14/22 14:27 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 39567 | 11/15/22 16:05 | AJ | EET MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 39449 | 11/14/22 11:43 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 39642 | 11/16/22 02:46 | CH | EET MID |

## Client Sample ID: PH16
**Date Collected: 11/10/22 09:40**
**Date Received: 11/11/22 10:04**

## Lab Sample ID: 890-3434-3
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.03 g | 5 mL | 39546 | 11/14/22 15:47 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40037 | 11/22/22 04:13 | SM | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40234 | 11/22/22 15:30 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 39646 | 11/16/22 09:14 | AJ | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.00 g | 10 mL | 39516 | 11/14/22 14:27 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 39567 | 11/15/22 16:26 | AJ | EET MID |
| Soluble | Leach | DI Leach | | | 4.99 g | 50 mL | 39449 | 11/14/22 11:43 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 39642 | 11/16/22 02:51 | CH | EET MID |

## Client Sample ID: PH16
**Date Collected: 11/10/22 09:50**
**Date Received: 11/11/22 10:04**

## Lab Sample ID: 890-3434-4
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.01 g | 5 mL | 39546 | 11/14/22 15:47 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40037 | 11/22/22 04:34 | SM | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40234 | 11/22/22 15:30 | SM | EET MID |

# Lab Chronicle

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## Client Sample ID: PH16
**Date Collected: 11/10/22 09:50**
**Date Received: 11/11/22 10:04**

## Lab Sample ID: 890-3434-4
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8015 NM | | 1 | | | 39646 | 11/16/22 09:14 | AJ | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 39516 | 11/14/22 14:27 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 39567 | 11/15/22 16:47 | AJ | EET MID |
| Soluble | Leach | DI Leach | | | 5.02 g | 50 mL | 39449 | 11/14/22 11:43 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 39642 | 11/16/22 02:57 | CH | EET MID |

## Client Sample ID: PH16
**Date Collected: 11/10/22 10:00**
**Date Received: 11/11/22 10:04**

## Lab Sample ID: 890-3434-5
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.97 g | 5 mL | 39546 | 11/14/22 15:47 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40037 | 11/22/22 04:54 | SM | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40234 | 11/22/22 15:30 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 39646 | 11/16/22 09:14 | AJ | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 39516 | 11/14/22 14:27 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 39567 | 11/15/22 17:08 | AJ | EET MID |
| Soluble | Leach | DI Leach | | | 4.97 g | 50 mL | 39449 | 11/14/22 11:43 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 39642 | 11/16/22 03:02 | CH | EET MID |

## Client Sample ID: PH18
**Date Collected: 11/10/22 10:20**
**Date Received: 11/11/22 10:04**

## Lab Sample ID: 890-3434-6
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.99 g | 5 mL | 39546 | 11/14/22 15:47 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40037 | 11/22/22 05:15 | SM | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40234 | 11/22/22 15:30 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 39646 | 11/16/22 09:14 | AJ | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 39516 | 11/14/22 14:27 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 39567 | 11/15/22 17:28 | AJ | EET MID |
| Soluble | Leach | DI Leach | | | 4.98 g | 50 mL | 39449 | 11/14/22 11:43 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 10 | | | 39642 | 11/16/22 03:19 | CH | EET MID |

## Client Sample ID: PH18
**Date Collected: 11/10/22 10:30**
**Date Received: 11/11/22 10:04**

## Lab Sample ID: 890-3434-7
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 4.98 g | 5 mL | 39546 | 11/14/22 15:47 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40037 | 11/22/22 05:36 | SM | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40234 | 11/22/22 15:30 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 39646 | 11/16/22 09:14 | AJ | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 39516 | 11/14/22 14:27 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 39567 | 11/15/22 17:49 | AJ | EET MID |

Eurofins Carlsbad

# Lab Chronicle

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## Client Sample ID: PH18
**Date Collected: 11/10/22 10:30**
**Date Received: 11/11/22 10:04**

**Lab Sample ID: 890-3434-7**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 4.96 g | 50 mL | 39449 | 11/14/22 11:43 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 39642 | 11/16/22 03:25 | CH | EET MID |

## Client Sample ID: PH18
**Date Collected: 11/10/22 10:40**
**Date Received: 11/11/22 10:04**

**Lab Sample ID: 890-3434-8**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.02 g | 5 mL | 39546 | 11/14/22 15:47 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40037 | 11/22/22 05:56 | SM | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40234 | 11/22/22 15:30 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 39646 | 11/16/22 09:14 | AJ | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.03 g | 10 mL | 39516 | 11/14/22 14:27 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 39567 | 11/15/22 18:10 | AJ | EET MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 39449 | 11/14/22 11:43 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 39642 | 11/16/22 03:42 | CH | EET MID |

## Client Sample ID: PH18
**Date Collected: 11/10/22 10:50**
**Date Received: 11/11/22 10:04**

**Lab Sample ID: 890-3434-9**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5035 | | | 5.03 g | 5 mL | 39546 | 11/14/22 15:47 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 40037 | 11/22/22 06:17 | SM | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 40234 | 11/22/22 15:30 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 39646 | 11/16/22 09:14 | AJ | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.04 g | 10 mL | 39516 | 11/14/22 14:27 | DM | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 39567 | 11/15/22 18:31 | AJ | EET MID |
| Soluble | Leach | DI Leach | | | 4.95 g | 50 mL | 39449 | 11/14/22 11:43 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 5 | | | 39642 | 11/16/22 03:48 | CH | EET MID |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

## 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 | T104704400-22-24 | 06-30-23 |

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: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

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

**Protocol References:**

ASTM = ASTM International

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

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

# Sample Summary

Client: Ensolum
Project/Site: Pecos Fed 1Y

Job ID: 890-3434-1
SDG: Eddy County NM

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received | Depth |
|---|---|---|---|---|---|
| 890-3434-1 | PH11 | Solid | 11/10/22 09:10 | 11/11/22 10:04 | 4' |
| 890-3434-2 | PH11 | Solid | 11/10/22 09:20 | 11/11/22 10:04 | 8' |
| 890-3434-3 | PH16 | Solid | 11/10/22 09:40 | 11/11/22 10:04 | 4' |
| 890-3434-4 | PH16 | Solid | 11/10/22 09:50 | 11/11/22 10:04 | 6' |
| 890-3434-5 | PH16 | Solid | 11/10/22 10:00 | 11/11/22 10:04 | 8' |
| 890-3434-6 | PH18 | Solid | 11/10/22 10:20 | 11/11/22 10:04 | 0.5' |
| 890-3434-7 | PH18 | Solid | 11/10/22 10:30 | 11/11/22 10:04 | 4' |
| 890-3434-8 | PH18 | Solid | 11/10/22 10:40 | 11/11/22 10:04 | 6' |
| 890-3434-9 | PH18 | Solid | 11/10/22 10:50 | 11/11/22 10:04 | 8' |

eurofins | Environment Testing Xenco

# Chain of Custody

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

www.xenco.com Page 1 of 1

**Work Order No:** _____

| | | | |
|---|---|---|---|
| Project Manager: | Ben Belill | Bill to: (if different) | Jim Raley |
| Company Name: | Ensolum | Company Name: | WPX |
| Address: | 3122 National Parks HWY | Address: | 5315 Buena Vista Dr. |
| City, State ZIP: | Carlsbad, NM 88220 | City, State ZIP: | Carlsbad, NM 88220 |
| Phone: | 989-854-0852 | Email: | BBelill@Ensolum.com, jim.raley@dvn.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: | Pecos Fed 1Y | Turn Around | ☑ Routine ☐ Rush |
| Project Number: | 03A1987014 | Due Date: | 5 Day TAT |
| Project Location: | Eddy County, NM | TAT starts the day received by the lab, if received by 4:30pm | |
| Sampler's Name: | Yocoly Edyte Konan | | |
| CC #: | 1061084701 | | |

| SAMPLE RECEIPT | | | |
|---|---|---|---|
| Temp Blank: | (Yes) No | Wet Ice: | (Yes) No |
| Samples Received Intact: | (Yes) No | Thermometer ID: | TNM-00 |
| Cooler Custody Seals: | Yes No (N/A) | Correction Factor: | -0.2 |
| Sample Custody Seals: | Yes No (N/A) | Temperature Reading: | 5.6 |
| Total Containers: | | Corrected Temperature: | 5.4 |

**Preservative Codes**

None: NO | DI Water: $H_2O$
Cool: Cool | MeOH: Me
HCL: HC | $HNO_3$: HN
$H_2SO_4$: $H_2$ | NaOH: Na
$H_3PO_4$: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

890-3434 Chain of Custody

| Sample Identification | Matrix | Date Sampled | Time Sampled | Depth | Grab/ Comp | # of Cont | CHLORIDES (EPA: 300.0) | TPH (8015) | BTEX (8021) | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| PH11 | S | 11.10.22 | 9:10 | 4' | G | 1 | X | X | X | |
| PH11 | S | 11.10.22 | 9:20 | 8' | G | 1 | X | X | X | |
| PH16 | S | 11.10.22 | 9:40 | 4' | G | 1 | X | X | X | Incident Numbers |
| PH16 | S | 11.10.22 | 9:50 | 6' | G | 1 | X | X | X | nAPP2208846424 |
| PH16 | S | 11.10.22 | 10:00 | 8' | G | 1 | X | X | X | |
| PH18 | S | 11.10.22 | 10:20 | 0.5' | G | 1 | X | X | X | |
| PH18 | S | 11.10.22 | 10:30 | 4' | G | 1 | X | X | X | |
| PH18 | S | 11.10.22 | 10:40 | 6' | G | 1 | X | X | X | |
| PH18 | S | 11.10.22 | 10:50 | 8' | G | 1 | X | X | X | |

**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 $SiO_2$ 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 Hg: 1631 / 245.1 / 7470 / 7471

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

| Relinquished by: (Signature) | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| 1 | Amanda Stuff | 11/11/22 1009 | 2 | | |
| 3 | | | 4 | | |
| 5 | | | 6 | | |

Revised Date: 08/25/2020 Rev. 2020.2

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3434-1
SDG Number: Eddy County NM

**Login Number: 3434**
**List Number: 1**
**Creator: Stutzman, Amanda**

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

# Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-3434-1
SDG Number: Eddy County NM

**Login Number: 3434**
**List Number: 2**
**Creator: Rodriguez, Leticia**

**List Source: Eurofins Midland**
**List Creation: 11/14/22 08:39 AM**

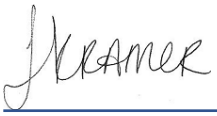
| Question | Answer | Comment |
|---|---|---|
| The cooler's custody seal, if present, is intact. | N/A | |
| Sample custody seals, if present, are intact. | N/A | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| 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 Carlsbad

## Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

## Authorization



Generated
11/22/2022 3:23:06 PM

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

ENSOLUM

# APPENDIX F

# Email Correspondence

**From:** Erick Herrera
**To:** Joseph Hernandez
**Subject:** FW: [EXTERNAL] WPX Site Sampling Activity Update (11/7 - 11/11)
**Date:** Tuesday, December 20, 2022 4:46:57 PM
**Attachments:** image001.png
image002.png
image003.png
image004.png

---

**Erick Herrera**
Staff Geologist
281-777-4152
**Ensolum, LLC**

**From:** Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
**Sent:** Wednesday, November 2, 2022 3:58 PM
**To:** Erick Herrera <eherrera@ensolum.com>
**Cc:** Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>
**Subject:** FW: [EXTERNAL] WPX Site Sampling Activity Update (11/7 - 11/11)

[ **EXTERNAL EMAIL**]

Erick

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thanks,
Jennifer Nobui

**From:** Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
**Sent:** Wednesday, November 2, 2022 11:54 AM
**To:** Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
**Subject:** FW: [EXTERNAL] WPX Site Sampling Activity Update (11/7 - 11/11)

**Jocelyn Harimon** ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@state.nm.us
http:// **www.emnrd.nm.gov**

**From:** Erick Herrera <eherrera@ensolum.com>
**Sent:** Wednesday, November 2, 2022 11:52 AM
**To:** Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>; 'CFO_Spill, BLM_NM' <blm_nm_cfo_spill@blm.gov>
**Cc:** Raley, Jim <jim.raley@dvn.com>; Devon-Team <Devon-Team@ensolum.com>
**Subject:** [EXTERNAL] WPX Site Sampling Activity Update (11/7 - 11/11)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good afternoon,

WPX anticipates conducting confirmation soil sampling activities at the following sites between November 7th – November 11th, 2022:

Site Name: LVP #001
API: 30-015-42234
Incident Number: nAPP2135033453

Site Name: RDX 21-44
API: 30-015-41193
Incident Number: nAPP2115533694

Site Name: UCBH WW ROW
API: 30-015-24451, 30-015-24034
Incident Numbers: nAB1805133508, nAB1501655607, nAB1522341642, nAB1621453181, nAB1633639499

Site Name: Ross Draw Unit #034
API: 30-015-41578
Incident Numbers: nAPP2107554265, NAB1736055339, and NAB1528240224

Site Name: Yates Federal #001
API: 30-015-24602
Incident Number: NRM2011138650 and NAB1428734057

Site Name: Pecos Federal #001Y
API: 30-015-24875

Incident Number: nAPP2208846424

Site Name: MWJ Federal 1
API: 30-015-24262
Incident Numbers: nAB1503440420, nAB1524652333, and nAB1719940724

**Erick Hererra**
Staff Geologist
281-777-4152
**Ensolum, LLC**

**PLEASE NOTE OUR NEW CORPORATE ADDRESS:**
Ensolum, LLC
8330 LBJ Freeway, Ste. B830
Dallas, TX 75243

**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 171046

## CONDITIONS

| Operator: | OGRID: |
|---|---|
| WPX Energy Permian, LLC<br>Devon Energy - Regulatory<br>Oklahoma City, OK 73102 | 246289 |
| | Action Number:<br>171046 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| jnobui | Remediation Plan Approved with Conditions. Variance for Liner installation at 4' is approved. | 1/24/2023 |