



January 17, 2019

#5E26784-BG14

NMOCD District 2  
Mr. Mike Bratcher  
811 S First St.  
Artesia, New Mexico 88210

SUBJECT: SOIL REMEDIATION CLOSURE REPORT FOR THE POKER LAKE UNIT PLU #041  
RELEASE (2RP-5052), EDDY COUNTY, NEW MEXICO

Dear Mr. Bratcher:

On behalf of XTO Energy, Inc. (XTO), Souder, Miller & Associates (SMA) has prepared this Soil Remediation and Closure Report that describes the remediation of the release site located at the Poker Lake Unit (PLU) #041 site. The site is in UNIT G, SECTION 21, TOWNSHIP 24S, RANGE 30E, Eddy County, New Mexico, on land owned by the Bureau of Land Management (BLM). Figure 1 illustrates the vicinity and location of the site.

Table 1, below, summarizes information regarding the release.

Table 1: Release Information and Closure Criteria	
Name	Poker Lake Unit (PLU) #041
Company	XTO Energy, Inc.
Incident Number	2RP-5052
API Number	30-015-20933
Location	32.20495, -103.88387
Estimated Date of Release	10/27/2018
Date Reported to NMOCD	11/9/2018
Land Owner	BLM
Reported To	Mike Bratcher (NMOCD), Shelly Tucker (BLM)
Source of Release	Wellhead
Released Material	Oil and produced water
Released Volume	~5.5 bbl oil and produced water
Recovered Volume	~5.5 bbl oil and produced water
Net Release	~5.5 bbl oil and produced water
NMOCD Closure Criteria	>100 feet to groundwater, <500 feet to livestock watering well
SMA Response Dates	11/6/2018 – 11/9/2018 and 12/6/2018

## **1.0 Background**

On October 27, 2018, a release was discovered at the PLU #041 wellhead, resulting in an estimated release of 5.5 barrels of oil and produced water due to a stuffing box packing failure. Oil and produced water flowed on the south side of the pumpjack and then west-northwest toward a dirt road that passes through the well pad area. Initial response activities included recovering free liquids via a vacuum truck and covering the remaining impacted area with nearby soils to prevent cows from tracking through the impacted area.

Figure 1 illustrates the site vicinity and wellhead protection map, and Figure 2 illustrates the site location. The initial C-141 form is included in Appendix A. Figure 3 shows the approximate impacted area from the release.

## **2.0 Site Information and Closure Criteria**

The PLU #041 is located approximately 11 miles east of Malaga, New Mexico on BLM land.

Depth to groundwater in the area is estimated to be approximately 250 feet below grade surface (bgs), based on a nearby New Mexico Office of the State Engineer (NMOSE)–registered livestock water well, which is located 170 feet to the west-northwest.

The nearest known water source within ½-mile of the location is a livestock watering well (C-03960-POD1), according to the NMOSE online water well database. The livestock watering well pumps water to a nearby stock tank. These features are shown on Figure 2.

The nearest surface water is an unnamed arroyo located approximately 1,780 feet to the south.

Based on this information, the applicable NMOCD Closure Criteria for this site is set accordingly by the stock watering well located 170 feet northwest of the pumping unit. Additionally, the BLM has requested that chlorides are delineated to 600 mg/Kg, regardless of depth to groundwater. The site was restored to meet the standards of Table I of 19.15.29.12 NMAC and BLM's closure criteria, with the exception of the area immediately south of the wellhead (sample area SC-12), which is detailed in Section 4.0.

The attached Table 2 demonstrates the Closure Criteria justification for this location. Pertinent well data is attached in Appendix B.

## **3.0 Release Characterization Activities**

From November 6 – 9 and December 6, 2018, SMA personnel were on site in response to the release associated with the PLU #041. SMA performed site delineation activities by collecting soil samples from potholes excavated around the release site and throughout the visibly surface-stained area using a backhoe operated by a contractor. Samples were collected to a maximum depth of 8.5 feet below grade surface (bgs).

Soil samples were field-screened for chloride using an electric conductivity (EC) meter under EPA Method 4500 and for hydrocarbon impacts using a Dextsil® PetroFLAG TPH Analyzer.

Once delineation was complete, SMA directed excavation of the impacted area using a backhoe and trackhoe. Samples continued to be field-screened to ensure the extent of the contamination was reached and removed. Photos of the excavation are shown in Appendix C, and field screening results are included in Appendix D.

#### **4.0 Soil Remediation Summary**

On November 11 and December 6, 2018, SMA collected confirmation samples from the excavation, which measured approximately 120 feet long and 58 feet wide. Confirmation samples were comprised of 5-point composites from the walls (SC-2 through SC-5, SC-8 through SC-14), and base (SC-1, SC-6, SC-7, SC-10 and SC-11) of the excavation, with each composite sample representing 200 square feet. Note that samples SC-10 and SC-11 are a composite of both the walls and base within their respective area. A total of 14 composite samples were collected for laboratory analysis for benzene and total BTEX (benzene, toluene, ethylbenzene and total xylenes) using EPA Method 8021B; MRO, DRO, and GRO (motor, diesel and gasoline range organics, respectively, also referred to as total TPH) by EPA Method 8015D; and total chlorides using EPA Method 300.0. Laboratory samples were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico.

Laboratory results confirm that contamination was removed from all locations, with the exception of SC-12, which remains above the closure level for chlorides at 1,100 mg/Kg. However, further excavation could not be completed at SC-12 due to its proximity to the pumpjack unit. SMA recommends deferring the area of SC-12 until site plugging and abandonment.

Contaminated soils were removed from location and the excavation was filled with clean backfill and returned to previous surface grade. The contaminated soils were transported for proper disposal at an NMOCD-permitted disposal facility. Approximately 700 cubic yards of soil was impacted and hauled off for disposal.

Locations for samples SC-1 through SC-14 are depicted on Figure 3, and a summary of the laboratory results is displayed in Table 3. Laboratory reports are included in Appendix E.

#### **5.0 Scope and Limitations**

The scope of our services consisted of the performance of assessment sampling, verification of release stabilization, regulatory liaison, remediation, and preparation of this closure report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact either Austin Weyant at 575-689-8801 or Stephanie Hinds or Shawna Chubbuck at 505-325-7535.

Submitted by:  
SOUDER, MILLER & ASSOCIATES

Reviewed by:



Stephanie Hinds  
Staff EIT II



Shawna Chubbuck  
Senior Scientist

**ATTACHMENTS:**

**Figures:**

Figure 1: Vicinity and Wellhead Protection Map

Figure 2: Site Map

Figure 3: Sample Location Map

**Tables:**

Table 2: NMOCD Remediation Closure Criteria

Table 3: Analytical Results Summary

**Appendices:**

Appendix A: NMOCD Form C-141 Initial and Final

Appendix B: NMOSE Wells Report

Appendix C: Photolog

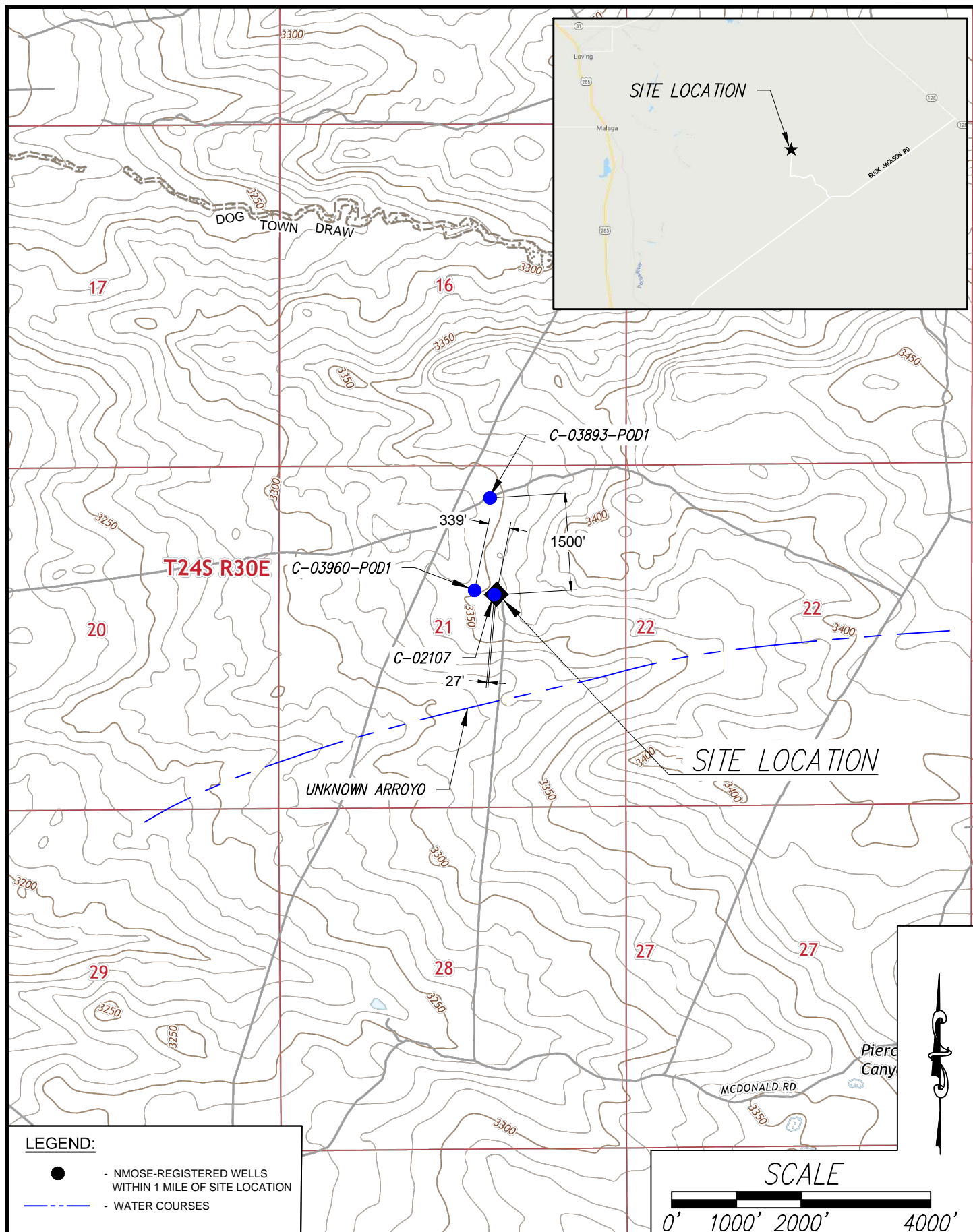
Appendix D: Field Notes


Appendix E: Laboratory Analytical Reports



**FIGURE 1**

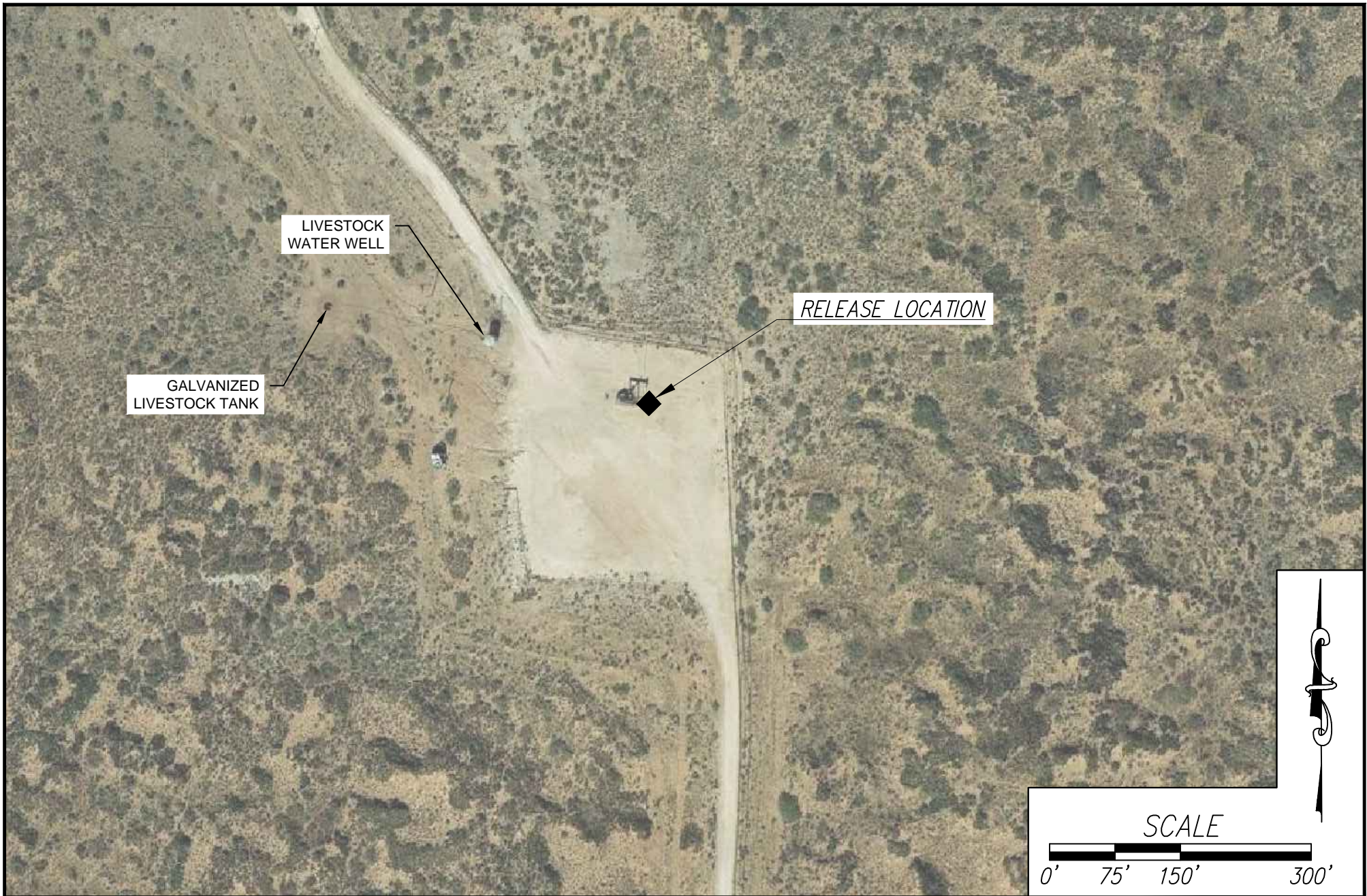
**VICINITY AND WELLHEAD  
PROTECTION MAP**




 <p><b>SMA</b> Engineering Environmental Surveying</p>	<p><b>Souder, Miller &amp; Associates</b> 401 West Broadway Avenue Farmington, NM 87401-5907 Phone (505) 325-7535 Toll-Free (800) 519-0098 Fax (505) 326-0045 www.soudermiller.com Serving the Southwest &amp; Rocky Mountains</p>		<p>XTO EDDY COUNTY, NEW MEXICO</p>		<p>Designed SAH</p>	<p>Drawn DJB</p>	<p>Checked RSA</p>
	<p><b>VICINITY and WELLHEAD PROTECTION MAP</b> PLU WELL #041 SECTION 21, T24S, R30E</p>				<p>Date: January 2019</p>		
					<p>Scale: Horiz: 1" = 2000' Vert: NA</p>		
					<p>Project No: 5E26784</p>		
					<p><b>FIGURE 1</b></p>		

**FIGURE 2**  
**SITE MAP**

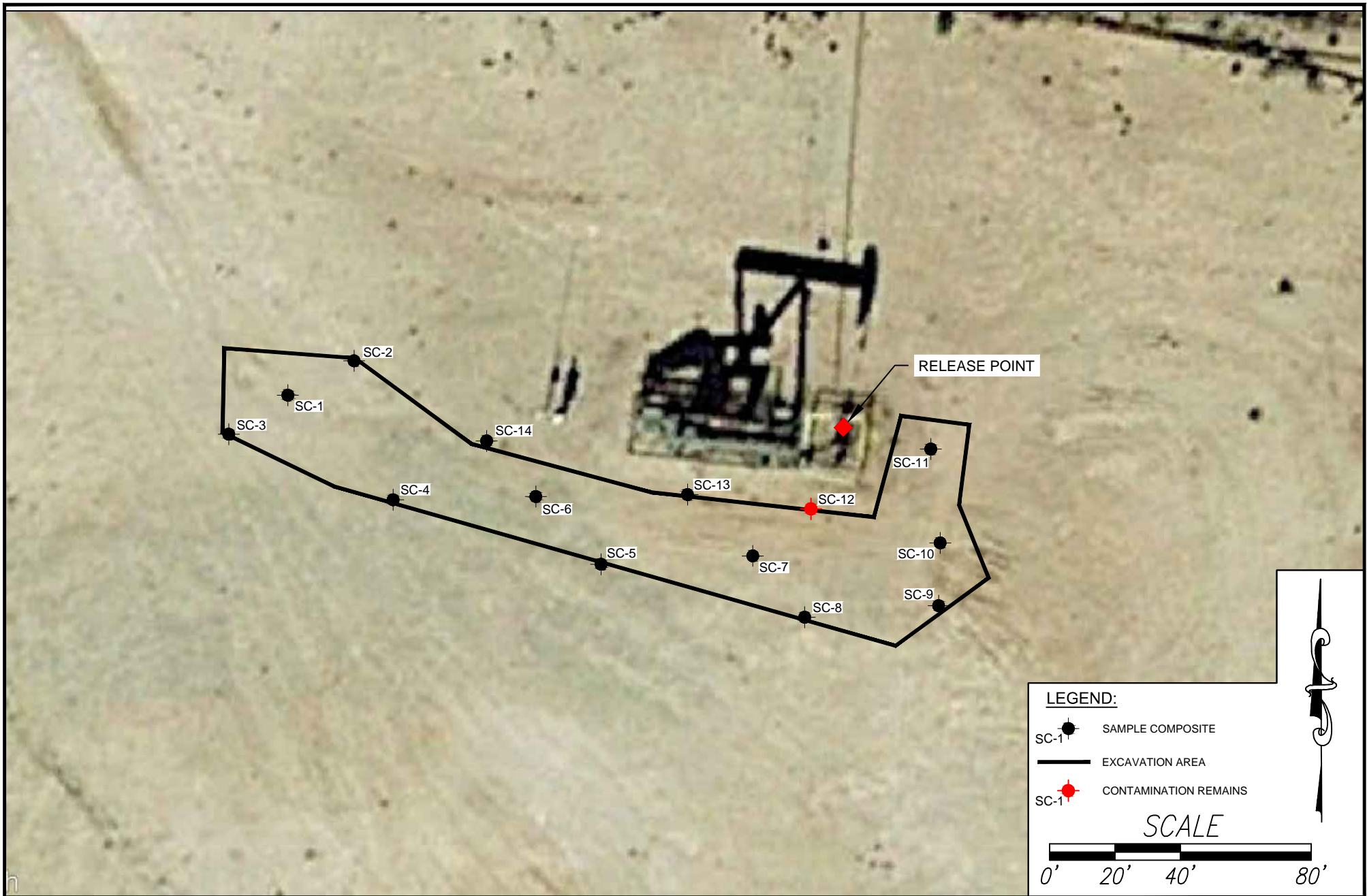




<div><p><i>Engineering Environmental Surveying</i></p></div> <div><p>THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS STAMPED, SIGNED AND DATED</p></div>	<div><p>SOUDER, MILLER &amp; ASSOCIATES</p><p>401 W. BROADWAY FARMINGTON, NM 87401</p><p>Phone (505) 325-7535 Toll-Free (800) 519-0098 Fax (505) 325-0045 www.soudermiller.com</p><p>Serving the Southwest &amp; Rocky Mountains</p><p>Albuquerque, Farmington, Las Cruces, Roswell, Santa Fe, NM - El Paso, TX Cortez - Grand Junction - Montrose, CO - Safford, AZ - Moab, UT</p></div>	<div><p>XTO</p><p>EDDY COUNTY, NEW MEXICO</p><p>Designed SAH Drawn DJB Checked RSA</p><p>Date: January 2019</p><p>Scale: Horiz: 1"=150' Vert: N/A</p><p>Project No: 5E26784</p><p>Figure 2</p></div>
	<div><p>SITE MAP</p><p>PLU WELL #041</p><p>SECTION 21, T24S, R30E</p></div>	

**FIGURE 3**  
**SAMPLE LOCATION MAP**






<div><p><b>SOUDER, MILLER &amp; ASSOCIATES</b> 401 W. BROADWAY FARMINGTON, NM 87401 Phone (505) 325-7535 Toll-Free (800) 519-0098 Fax (505) 325-0045 www.soudermiller.com Serving the Southwest &amp; Rocky Mountains Albuquerque, Farmington, Las Cruces, Roswell, Santa Fe, NM - El Paso, TX Cortez - Grand Junction - Montrose, CO - Safford, AZ - Moab, UT</p></div> <div><p>THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS STAMPED, SIGNED AND DATED</p></div>	XTO		EDDY COUNTY, NEW MEXICO		Designed SAH	Drawn DJB	Checked RSA
	SAMPLE LOCATION MAP PLU WELL #041 SECTION 21, T24S, R30E				Date: January 2019		
					Scale: Horiz: 1"=20' Vert: N/A		
					Project No: 5E26784		
					Figure 3		

TABLE 2  
NMOCD REMEDIATION CLOSURE  
CRITERIA

**Table 2. NMOCD Remediation Closure Criteria**

**PLU #041**

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	250 ft	NMOSE online water well database, C-03960-POD1 located ~170 feet to WNW
Horizontal Distance From All Water Sources Within 1/2 Mile (ft)	170 ft	NMOSE online water well database, livestock watering well C-03960-POD1
Horizontal Distance to Nearest Significant Watercourse (ft)	1780 ft	Google Earth Pro and Pierce Canyon Quad 7.5-min USGS Topo Map

Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC)						
Depth to Groundwater		Closure Criteria (units in mg/kg)				
		Chloride *numerical limit or background, whichever is greater	TPH	GRO + DRO	BTEX	Benzene
< 50' BGS		600	100		50	10
51' to 100'		10000	2500	1000	50	10
>100'	yes	20000	2500	1000	50	10
Surface Water	yes or no	if yes, then				
<300' from continuously flowing watercourse or other significant watercourse?	no	600	100		50	10
<200' from lakebed, sinkhole or playa lake?	no					
Water Well or Water Source						
<500 feet from spring or a private, domestic fresh water well used by less than 5 households for domestic or stock watering purposes?	yes					
<1000' from fresh water well or spring?	no					
Human and Other Areas						
<300' from an occupied permanent residence, school, hospital, institution or church?	no					
within incorporated municipal boundaries or within a defined municipal fresh water well field?	no					
<100' from wetland?	no					
within area overlying a subsurface mine	no					
within an unstable area?	no					
within a 100-year floodplain?	no					

SMA #



**TABLE 3**  
**ANALYTICAL RESULTS SUMMARY**

**Table 3. Analytical Results Summary**

**PLU #041**

Sample Number on	Sample Date	Depth ft bgs	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	Cl- mg/Kg
NMOCD Closure Criteria			50	10				100	600
BLM Remediation Request Standard									600
SC-1	11/9/2018	2-3	<0.22	<0.024	<4.9	<9.5	<48	<62.4	610
	12/6/2018	3-3.5	--	--	--	--	--	--	<30
SC-2	11/9/2018	0-3	<0.22	<0.024	<4.8	63	70	133	630
	12/6/2018	0-3.5	--	--	<4.7	<9.5	<47	<61.2	<30
SC-3	11/9/2018	0-3	<0.21	<0.024	<4.7	40	63	103	410
	12/6/2018	0-3.5	--	--	<4.8	<9.7	<48	<62.5	--
SC-4	11/9/2018	0-6	<0.22	<0.024	<4.9	170	87	257	450
	12/6/2018	0-7	--	--	<4.8	<9.7	<48	<62.5	--
SC-5	11/9/2018	0-6	<0.21	<0.023	<4.6	<9.9	<49	<63.5	200
SC-6	11/9/2018	6-8	<0.22	<0.025	<4.9	1200	380	1580	290
	12/6/2018	6-8.5	--	--	<5.0	<9.8	<49	<63.8	--
SC-7	11/9/2018	6-8	<0.22	<0.025	<4.9	<10	<50	<64.9	1200
	12/6/2018	6-8.5	--	--	--	--	--	--	<30
SC-8	11/9/2018	0-6	<0.22	<0.024	<4.8	<9.8	<49	<63.6	430
SC-9	11/9/2018	0-8	<0.22	<0.024	<4.9	46	<49	46	<30
SC-10	11/9/2018	0-8	<0.22	<0.025	<5.0	<9.9	<50	<64.9	<30
SC-11	11/9/2018	0-3	<0.22	<0.024	<4.8	<9.5	<47	<61.3	720
	12/6/2018	0-3.5	--	--	--	--	--	--	<30
SC-12	11/9/2018	0-8	<0.22	<0.024	<4.9	31	<49	31	1000
	12/6/2018	0-8.5	--	--	--	--	--	--	1100
SC-13	11/9/2018	0-8	<0.22	<0.025	<4.9	<9.8	<49	<63.7	530
SC-14	11/9/2018	0-8	<0.22	<0.024	<4.8	890	770	1660	260
	12/6/2018	0-8.5	--	--	<5.0	<9.8	<49	<63.8	--

SC: sample composite

APPENDIX A  
NMOCD FORM C-141  
INITIAL AND FINAL

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	NAB1832354684
District RP	2RP-5052
Facility ID	
Application ID	pAB1832354098

## Release Notification

### Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # (assigned by OCD) NAB1832354684
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

### Location of Release Source

Latitude 32.20495 Longitude -103.883872  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake Unit #041	Site Type Production Well
Date Release Discovered 10/27/2018	API# (if applicable) 30-015-20933

Unit Letter	Section	Township	Range	County
G	214 barrels	24S	30E	Eddy

Surface Owner: S 21 AB  
☐ State ☒ Federal ☐ Tribal ☐ Private (Name: BLM)

### Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 0.1	Volume Recovered (bbls) <0.1
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 5.4	Volume Recovered (bbls) 4.9
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

Fluids were released from the well head due to a stuffing box packing failure. A vacuum truck recovered free standing fluids. The packing was replaced and the well was returned to production.

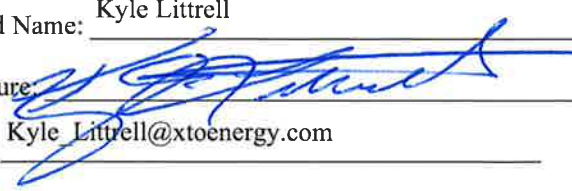

State of New Mexico  
Oil Conservation Division

Incident ID	NAB1832354684
District RP	2RP-5052
Facility ID	
Application ID	pAB1832354098

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? N/A
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: <u>Kyle Littrell</u>	Title: <u>SH&amp;E Coordinator</u>
Signature: 	Date: <u>11-9-18</u>
email: <u>Kyle.Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<b><u>OCD Only</u></b> Received by: 	
Date: <u>11/19/2018</u>	

Incident ID	NAB1832354684
District RP	2RP-5052
Facility ID	
Application ID	pAB1832354098

## Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	>100 _____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.

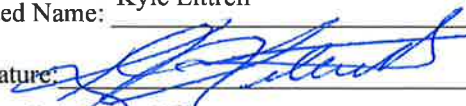
### **Characterization Report Checklist:** *Each of the following items must be included in the report.*

- ☐ 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 1/2-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.

Incident ID	NAB1832354684
District RP	2RP-5052
Facility ID	
Application ID	pAB1832354098

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

Printed Name: Kyle LittrellTitle: SH&E CoordinatorSignature: Date: 11-9-18email: Kyle\_Littrell@xtoenergy.comTelephone: 432-221-7331**OCD Only**Received by: Date: 11/19/2018

Incident ID	NAB1832354684
District RP	2RP-5052
Facility ID	
Application ID	pAB1832354098

## 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)
- Not applicable per NMAC 19.159.29.11(A). Site was remediated within 90 days of reported release. See attached Closure Report.


**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.
- Deferral for sample area SC-12 (Figure 3 of Closure Report).

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

Printed Name: Kyle Littrell

Title: SH&amp;E Coordinator

Signature: 

Date: 1-22-19

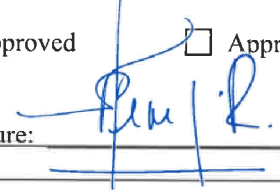
email: Kyle.Littrell@xtoenergy.com

Telephone: 432-221-7331

**OCD Only**

Received by: Victoria Venegas

Date: 01/22/2019

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

Date: 02/15/2019



Incident ID	NAB1832354684
District RP	2RP-5052
Facility ID	
Application ID	pAB1832354098

## Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell

Title: SH&E Coordinator

Signature: 

Date: 1-22-19

email: Kyle.Littrell@xtoenergy.com

Telephone: 432-221-7331

**OCD Only**

Received by: Victoria Venegas

Date: 01/22/2019

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

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

**Site deferred due to contamination left in place at sample point SC-12**

# APPENDIX B

## NMOSE WELLS REPORT



## New Mexico Office of the State Engineer

# Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)

(R=POD has been replaced  
and no longer serves this file,  
C=the file is closed)(quarters are 1=NW 2=NE 3=SW 4=SE)  
(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q q q	6416 4	Sec	Tws	Rng	X	Y	Distance	
<a href="#">C 03960</a>	C	STK	3	BUREAU OF LAND MANAGEMENT	ED	<a href="#">C 03960 POD1</a>				Shallow	1 3 2	21	24S	30E		605061	3563712	240	
<a href="#">C 02107</a>	C	DOL	0	M & M CATTLE CO.	ED	<a href="#">C 02107</a>							3 2	21	24S	30E	605174	3563706*	297
<a href="#">C 03893</a>	CUB	CPS	0	DARRELL CRASS DRILLING COMPANY	ED	<a href="#">C 03893 POD1</a>			NON		1 1 2	21	24S	30E		605162	3564162	696	

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 604967

Northing (Y): 3563492

Radius: 1600

Sorted by: Distance

\*UTM location was derived from PLSS - see Help

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

1/9/19 3:29 PM

ACTIVE &amp; INACTIVE POINTS OF DIVERSION

# APPENDIX C

## PHOTOLOG



**Site Photographs**  
**PLU #041 Site Excavation and Remediation**



*Photo 1. Pumpjack unit. Impacted soils located left of pumpjack and extending in direction of powerline.*



*Photo 2. Source of release.*





*Photo 3. Impacted soils extending northwest from pumpjack.*



*Photo 4. Delineation activities showing pothole locations.*





*Photo 5. Beginning excavation adjacent to pumpjack.*



*Photo 6. Excavation activities. Note exposed electrical line in center of photo.*





*Photo 7. Excavation area.*



*Photo 8. Scraping the walls for samples SC-12 and SC-13.*





*Photo 9. Excavation secured using 3-wire fencing.*

# APPENDIX D

## FIELD NOTES

11/6/18 -  
11/9/18

S. Hinds

11/6/2018

8:00 - onsite

8:15 - Sierra onsite. JSA, go over sampling strategy. Appears to be an electrical line running directly down spill path.

8:40 - Begin delimiting. Determine depth and step out.  
Delimitation using a backhoe, potholing down 3-5-7-9'

Very sandy soils. Contamination mostly penetrated straight down, but slight spreading.

13:30 - Placing white pin flags marking excavation boundary and depth.  
Told crew to stop and I'll have fencing tomorrow. They will place traffic cones at end of today.

15:30 - Arrive SMA office.

Purchase 3-strand wire (~1000') and 10 stakes.

11/7/2018

12:15 - onsite. Norman excavating w/ small excavator. Going down line of spill path

14:00 - exposing electrical line.

17:00 - put up fencing and depart site.

11/8/2018

10:40 - onsite. Checking excavation. Pulling composite samples to verify clean.

13:00 - off-site

11/9/2018

9:20 - onsite.

10:20 - begin sampling. No NMOCs.

11:00 - offsite

1

# Field Screening Form

Location Name

Date

XTD- PLU well 041

EC 11-06-2018

Location Name	Description	Depth (Feet BGS)	Time Collected	<del>PHD</del> Reading (ppm)	Time Screened	<del>5107</del> PetroFLAG Reading	Time Screened
* PH1-1	sandy, mod. odor/staining	1	8:49	2.15 MS	13:00	2513 / 1841	9:13
PH1-3	sandy, mild odor	3	8:52	—	—	535 / 386	9:14
PH1-6.5	sandy, no odor or staining detected	6.5	8:55	—	—	302 / 224	9:15
* PH1-8	sandy, hitting top of caliche layer	8	9:27	1.14 MS	13:02	107 / —	9:40
PH2-3	sandy	3	9:45	—	—	73 / —	—
PH3-3	" "	3	9:50	—	—	89 / —	—
PH3-5	" "	5	9:52	—	—	100 / —	—
PH4-3	" "	3	9:58	—	—	59 / —	—
PH4-5	" "	5	9:00	—	—	83 / —	—
PH5-3	" "	3	10:03	—	—	591 / —	—
PH5-5	" "	5	10:05	—	—	69 / —	—
PH5-7	" "	7	10:07	—	—	55 / —	—

Notes:

PH - pothole w/ excavator

Petroflag 5 - DRD reading

7 - mtd reading





# Field Screening Form

Location Name

Date

EC 11-6-2018

PID m3

5/7

Location Name	Description	Depth (Feet BGS)	Time Collected	PID Reading (ppm)	Time Screened	PetroFLAG Reading	Time Screened
* PH 6-4.5	Sandy	4.5	10:14	0.09	13:04	53 / -	13:21
PH 7-3	" "	3	10:19	—	—	79 / -	13:22
PH 7-6	" "	6	10:21	—	—	70 / -	13:23
PH 8-3	" "	3	10:26	—	—	48 / -	13:24
PH 8-6	" "	6	10:28	—	—	60 / -	13:25
* PH 9-3.5	" "	3.5	10:32	0.29	13:06	59 / -	13:26
PH 10-3	" "	3	10:36	—	—	912 / -	13:41
* PH 11-3	" "	3	10:45	0.34	13:08	88 / -	13:42
PH 12-3	" "	3	10:50	—	—	76 / -	13:43
PH 13-3	" "	3	10:55	—	—	85 / -	13:51
PH 14-3	" "	3	11:00	—	—	57 / -	13:52
PH 10-5	" "	5	10:37	—	—	1411 / -	13:53

Notes:



# Field Screening Form

Location Name				Date			
				EC <del>pos</del> /cm			
Location Name	Description	Depth (Feet BGS)	Time Collected	PID Reading (ppm)	Time Screened	PetroFLAG Reading	Time Screened
PH10-7	Sandy	7	10:38	—	—	1972	12:40
PH10-8	" "	8	10:39	—	—	269	12:52
PH10-9	" "	9	10:40 <del>10:38</del>	0.25	13:10	59	12:55
PH9-5	" "	5	10:34	3 —	—	—	—
PH11-5	" "	5	10:46	—	—	—	—
Blank	" "	—	12:00	(MS) 75	12:22	—	—
BG-1	" "	0	12:10	(MS) 81.5	12:24	—	—
SC-1	" " Base, east side	2-3	11:00	0.37	11:18	—	—
SC-2	" " S-SW wall, east side	0-3	11:03	0.36	11:18	—	—
SC-3	" " N, NE wall, east side	0-3	11:06	0.28	11:19	—	—
SC-4	" " South wall	0-6	11:09	0.31	11:19	—	—
SC-5	" " South wall	0-6	11:12	0.21	11:20	—	—

Notes: SC - sample composite (5pt)



# Field Screening Form

Location Name				Date			
Location Name	Description	Depth (Feet BGS)	Time Collected	<del>PID</del> EC Reading (ppm)	Time Screened	PetroFLAG Reading	Time Screened
SC-6	Sandy <del>base</del> base	6-8	11:39	0.31	11:52	—	—
SC-7	Sandy, some Caliche, base	6-8	11:42	0.46	11:54	—	—
SC-8	" " <del>base</del> S wall	0-6	11:45	0.24	11:56	—	—
SC-9	SE wall + base	0-8	12:18	0.09	12:33	—	—
SC-10	E wall + base	0-8	12:21	0.09	12:35	—	—
SC-11	N wall + base	0-3	12:25	0.41	12:36	—	—
SC-1	base, east side	2-3	10:20	—	—	—	—
SC-2	S-SW wall	0-3	10:22	—	—	—	—
SC-3	N-NE wall	0-3	10:25	—	—	—	—
SC-4	S wall	0-6	10:27	—	—	—	—
SC-5	S wall	0-6	10:30	—	—	—	—
SC-6	base	6-8	10:32	—	—	—	—

Notes:

\* SC-1 through SC-11 re-sampled for confirmation sampling.

\* SC-12 through SC-14 also for confirmation sampling

\* All confirmation samples were 5-pt composites



11-9-18

# Field Screening Form

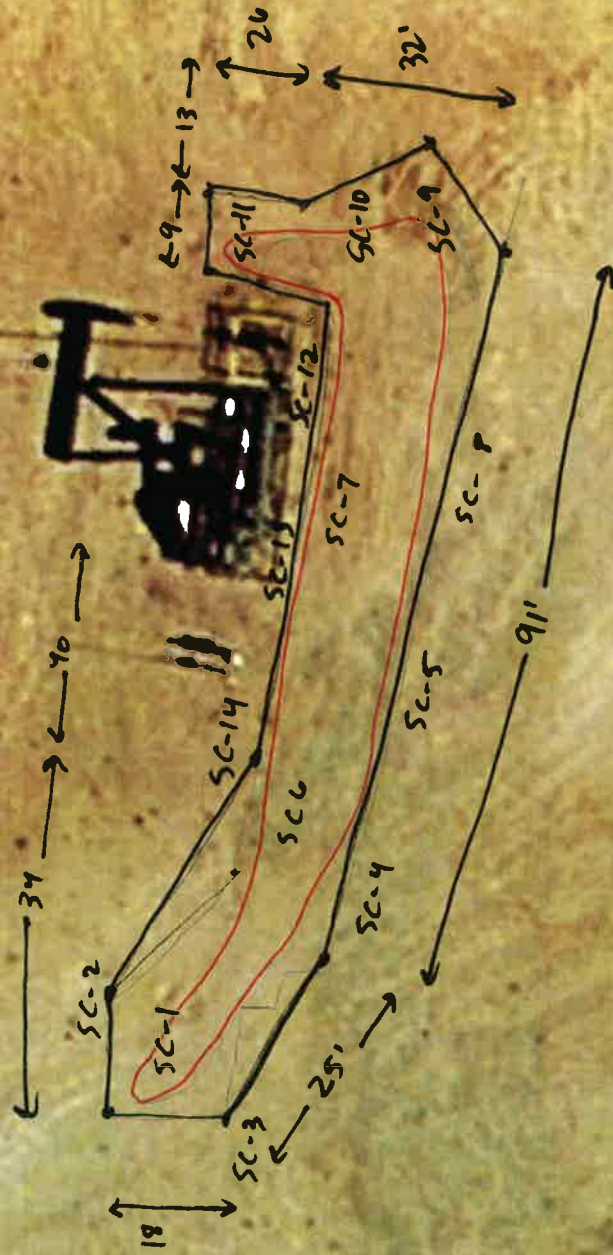
Location Name				Date			
Location Name	Description	Depth (Feet BGS)	Time Collected	PID Reading (ppm)	Time Screened	PetroFLAG Reading	Time Screened
SC-7	base	0-8	10:35	—	—	—	—
SC-8	S wall	0-6	10:37	—	—	—	—
SC-9	SE wall + base	0-8	10:40	—	—	—	—
SC-10	E wall + base	0-8	10:42	—	—	—	—
SC-11	N wall + base	0-3	10:44	—	—	—	—
SC-12	N wall	0-8	10:47	—	—	—	—
SC-13	N wall	0-8	10:50	—	—	—	—
SC-14	N wall	0-8	10:52	—	—	—	—

Notes:





— surface staining  
— excavation area



# Field Screening Form

Location Name				Date			
PLU 41				12/6/2018			
Location Name	Description	Depth (Feet BGS)	Time Collected	PDEEC Reading (ppm)	Time Screened	DRO PetroFLAG Reading	Time Screened
SC-12	—	—	10:40	382	—	—	—
SC-11	—	—	10:48	165	—	—	—
SC-14	some staining	0-8	11:05	—	—	555	11:36
SC-1	—	—	11:20	110	—	—	—
SC-2	—	—	11:24	111	—	62	11:42
SC-3	—	—	11:30	—	—	59	11:45
SC-4	—	—	11:50	—	—	42	12:10
SC-14	some staining old spill? along power cord	0-8	12:20	—	—	156	12:41
SC-6	caliche	10	12:29	—	—	89	12:52
SC-7	caliche	10	12:39	789	—	<del>789</del>	—
SC-14	wall	0-8	12:58	—	—	51	13:26
SC-7	caliche	11	13:04	210	—	<del>210</del>	<del>13:26</del>

Notes:  
 ~100 yds excavated, excavation sloped to stabilize pumpjack.

°C

20.3

19.5

19.5

19.5

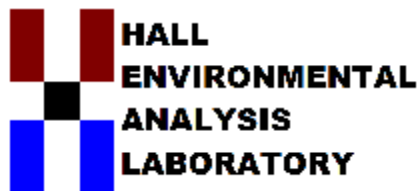
18.2

18.9



APPENDIX E  
LABORATORY ANALYTICAL  
REPORTS





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

November 26, 2018

Stephanie Hinds

Souder, Miller and Associates

401 W. Broadway

Farmington, NM 87401

TEL: (505) 325-5667

FAX (505) 327-1496

RE: PLU 41

OrderNo.: 1811709

Dear Stephanie Hinds:

Hall Environmental Analysis Laboratory received 14 sample(s) on 11/14/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-1

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:20:00 AM

**Lab ID:** 1811709-001

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	610	30		mg/Kg	20	11/15/2018 4:11:04 PM	41557
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/19/2018 11:07:49 AM	41566
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/19/2018 11:07:49 AM	41566
Surr: DNOP	106	50.6-138		%Rec	1	11/19/2018 11:07:49 AM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2018 12:44:20 PM	41539
Surr: BFB	102	73.8-119		%Rec	1	11/15/2018 12:44:20 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2018 12:44:20 PM	41539
Toluene	ND	0.049		mg/Kg	1	11/15/2018 12:44:20 PM	41539
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2018 12:44:20 PM	41539
Xylenes, Total	ND	0.098		mg/Kg	1	11/15/2018 12:44:20 PM	41539
Surr: 4-Bromofluorobenzene	115	80-120		%Rec	1	11/15/2018 12:44:20 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-2

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:22:00 AM

**Lab ID:** 1811709-002

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	630	30		mg/Kg	20	11/15/2018 4:23:29 PM	41557
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	63	9.2		mg/Kg	1	11/19/2018 11:32:11 AM	41566
Motor Oil Range Organics (MRO)	70	46		mg/Kg	1	11/19/2018 11:32:11 AM	41566
Surr: DNOP	118	50.6-138		%Rec	1	11/19/2018 11:32:11 AM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2018 1:54:28 PM	41539
Surr: BFB	100	73.8-119		%Rec	1	11/15/2018 1:54:28 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2018 1:54:28 PM	41539
Toluene	ND	0.048		mg/Kg	1	11/15/2018 1:54:28 PM	41539
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2018 1:54:28 PM	41539
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2018 1:54:28 PM	41539
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	11/15/2018 1:54:28 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-3

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:25:00 AM

**Lab ID:** 1811709-003

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	410	30		mg/Kg	20	11/15/2018 5:00:43 PM	41557
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	40	9.4		mg/Kg	1	11/19/2018 11:56:20 AM	41566
Motor Oil Range Organics (MRO)	63	47		mg/Kg	1	11/19/2018 11:56:20 AM	41566
Surr: DNOP	105	50.6-138		%Rec	1	11/19/2018 11:56:20 AM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/15/2018 2:17:44 PM	41539
Surr: BFB	97.7	73.8-119		%Rec	1	11/15/2018 2:17:44 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2018 2:17:44 PM	41539
Toluene	ND	0.047		mg/Kg	1	11/15/2018 2:17:44 PM	41539
Ethylbenzene	ND	0.047		mg/Kg	1	11/15/2018 2:17:44 PM	41539
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2018 2:17:44 PM	41539
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	11/15/2018 2:17:44 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-4

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:27:00 AM

**Lab ID:** 1811709-004

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	450	30		mg/Kg	20	11/15/2018 5:13:08 PM	41557
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	170	10		mg/Kg	1	11/19/2018 12:20:38 PM	41566
Motor Oil Range Organics (MRO)	87	50		mg/Kg	1	11/19/2018 12:20:38 PM	41566
Surr: DNOP	106	50.6-138		%Rec	1	11/19/2018 12:20:38 PM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2018 2:41:01 PM	41539
Surr: BFB	100	73.8-119		%Rec	1	11/15/2018 2:41:01 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2018 2:41:01 PM	41539
Toluene	ND	0.049		mg/Kg	1	11/15/2018 2:41:01 PM	41539
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2018 2:41:01 PM	41539
Xylenes, Total	ND	0.097		mg/Kg	1	11/15/2018 2:41:01 PM	41539
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	11/15/2018 2:41:01 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-5

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:30:00 AM

**Lab ID:** 1811709-005

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	200	30		mg/Kg	20	11/15/2018 5:25:32 PM	41557
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/19/2018 12:44:58 PM	41566
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/19/2018 12:44:58 PM	41566
Surr: DNOP	99.5	50.6-138		%Rec	1	11/19/2018 12:44:58 PM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/15/2018 4:37:34 PM	41539
Surr: BFB	100	73.8-119		%Rec	1	11/15/2018 4:37:34 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.023		mg/Kg	1	11/15/2018 4:37:34 PM	41539
Toluene	ND	0.046		mg/Kg	1	11/15/2018 4:37:34 PM	41539
Ethylbenzene	ND	0.046		mg/Kg	1	11/15/2018 4:37:34 PM	41539
Xylenes, Total	ND	0.091		mg/Kg	1	11/15/2018 4:37:34 PM	41539
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	11/15/2018 4:37:34 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-6

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:32:00 AM

**Lab ID:** 1811709-006

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	290	30		mg/Kg	20	11/15/2018 5:37:57 PM	41557
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	1200	20		mg/Kg	2	11/19/2018 1:09:18 PM	41566
Motor Oil Range Organics (MRO)	380	99		mg/Kg	2	11/19/2018 1:09:18 PM	41566
Surr: DNOP	108	50.6-138		%Rec	2	11/19/2018 1:09:18 PM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2018 5:01:02 PM	41539
Surr: BFB	96.5	73.8-119		%Rec	1	11/15/2018 5:01:02 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.025		mg/Kg	1	11/15/2018 5:01:02 PM	41539
Toluene	ND	0.049		mg/Kg	1	11/15/2018 5:01:02 PM	41539
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2018 5:01:02 PM	41539
Xylenes, Total	ND	0.099		mg/Kg	1	11/15/2018 5:01:02 PM	41539
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	11/15/2018 5:01:02 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-7

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:35:00 AM

**Lab ID:** 1811709-007

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	1200	75		mg/Kg	50	11/19/2018 10:12:16 AM	41557
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/19/2018 2:22:31 PM	41566
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/19/2018 2:22:31 PM	41566
Surr: DNOP	114	50.6-138		%Rec	1	11/19/2018 2:22:31 PM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2018 5:24:30 PM	41539
Surr: BFB	98.9	73.8-119		%Rec	1	11/15/2018 5:24:30 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.025		mg/Kg	1	11/15/2018 5:24:30 PM	41539
Toluene	ND	0.049		mg/Kg	1	11/15/2018 5:24:30 PM	41539
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2018 5:24:30 PM	41539
Xylenes, Total	ND	0.098		mg/Kg	1	11/15/2018 5:24:30 PM	41539
Surr: 4-Bromofluorobenzene	114	80-120		%Rec	1	11/15/2018 5:24:30 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-8

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:37:00 AM

**Lab ID:** 1811709-008

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	430	30		mg/Kg	20	11/20/2018 3:43:15 PM	41648
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>lrm</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/19/2018 2:47:00 PM	41566
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/19/2018 2:47:00 PM	41566
Surr: DNOP	99.9	50.6-138		%Rec	1	11/19/2018 2:47:00 PM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2018 5:47:50 PM	41539
Surr: BFB	99.0	73.8-119		%Rec	1	11/15/2018 5:47:50 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2018 5:47:50 PM	41539
Toluene	ND	0.048		mg/Kg	1	11/15/2018 5:47:50 PM	41539
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2018 5:47:50 PM	41539
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2018 5:47:50 PM	41539
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	11/15/2018 5:47:50 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-9

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:40:00 AM

**Lab ID:** 1811709-009

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	ND	30		mg/Kg	20	11/20/2018 4:20:28 PM	41648
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>lrm</b>
Diesel Range Organics (DRO)	46	9.7		mg/Kg	1	11/19/2018 3:11:23 PM	41566
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/19/2018 3:11:23 PM	41566
Surr: DNOP	98.7	50.6-138		%Rec	1	11/19/2018 3:11:23 PM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2018 6:11:04 PM	41539
Surr: BFB	99.2	73.8-119		%Rec	1	11/15/2018 6:11:04 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2018 6:11:04 PM	41539
Toluene	ND	0.049		mg/Kg	1	11/15/2018 6:11:04 PM	41539
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2018 6:11:04 PM	41539
Xylenes, Total	ND	0.097		mg/Kg	1	11/15/2018 6:11:04 PM	41539
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	11/15/2018 6:11:04 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-10

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:42:00 AM

**Lab ID:** 1811709-010

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	ND	30		mg/Kg	20	11/21/2018 11:24:09 AM	41648
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>lrm</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/19/2018 3:35:54 PM	41566
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/19/2018 3:35:54 PM	41566
Surr: DNOP	94.8	50.6-138		%Rec	1	11/19/2018 3:35:54 PM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/15/2018 6:34:27 PM	41539
Surr: BFB	99.1	73.8-119		%Rec	1	11/15/2018 6:34:27 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.025		mg/Kg	1	11/15/2018 6:34:27 PM	41539
Toluene	ND	0.050		mg/Kg	1	11/15/2018 6:34:27 PM	41539
Ethylbenzene	ND	0.050		mg/Kg	1	11/15/2018 6:34:27 PM	41539
Xylenes, Total	ND	0.099		mg/Kg	1	11/15/2018 6:34:27 PM	41539
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	11/15/2018 6:34:27 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-11

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:44:00 AM

**Lab ID:** 1811709-011

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	720	30		mg/Kg	20	11/21/2018 9:44:55 AM	41648
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>lrm</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/19/2018 4:26:21 PM	41566
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/19/2018 4:26:21 PM	41566
Surr: DNOP	95.6	50.6-138		%Rec	1	11/19/2018 4:26:21 PM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2018 6:57:55 PM	41539
Surr: BFB	98.4	73.8-119		%Rec	1	11/15/2018 6:57:55 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2018 6:57:55 PM	41539
Toluene	ND	0.048		mg/Kg	1	11/15/2018 6:57:55 PM	41539
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2018 6:57:55 PM	41539
Xylenes, Total	ND	0.095		mg/Kg	1	11/15/2018 6:57:55 PM	41539
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	11/15/2018 6:57:55 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-12

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:47:00 AM

**Lab ID:** 1811709-012

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	1000	30		mg/Kg	20	11/21/2018 9:57:19 AM	41648
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>lrm</b>
Diesel Range Organics (DRO)	31	9.8		mg/Kg	1	11/19/2018 4:50:48 PM	41566
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/19/2018 4:50:48 PM	41566
Surr: DNOP	106	50.6-138		%Rec	1	11/19/2018 4:50:48 PM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2018 7:21:23 PM	41539
Surr: BFB	99.9	73.8-119		%Rec	1	11/15/2018 7:21:23 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2018 7:21:23 PM	41539
Toluene	ND	0.049		mg/Kg	1	11/15/2018 7:21:23 PM	41539
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2018 7:21:23 PM	41539
Xylenes, Total	ND	0.097		mg/Kg	1	11/15/2018 7:21:23 PM	41539
Surr: 4-Bromofluorobenzene	114	80-120		%Rec	1	11/15/2018 7:21:23 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-13

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:50:00 AM

**Lab ID:** 1811709-013

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	530	30		mg/Kg	20	11/21/2018 10:09:44 AM	41648
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>lrm</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/19/2018 5:15:14 PM	41566
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/19/2018 5:15:14 PM	41566
Surr: DNOP	99.3	50.6-138		%Rec	1	11/19/2018 5:15:14 PM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/15/2018 7:44:54 PM	41539
Surr: BFB	99.5	73.8-119		%Rec	1	11/15/2018 7:44:54 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.025		mg/Kg	1	11/15/2018 7:44:54 PM	41539
Toluene	ND	0.049		mg/Kg	1	11/15/2018 7:44:54 PM	41539
Ethylbenzene	ND	0.049		mg/Kg	1	11/15/2018 7:44:54 PM	41539
Xylenes, Total	ND	0.098		mg/Kg	1	11/15/2018 7:44:54 PM	41539
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	11/15/2018 7:44:54 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1811709

Date Reported: 11/26/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-14

**Project:** PLU 41

**Collection Date:** 11/9/2018 10:52:00 AM

**Lab ID:** 1811709-014

**Matrix:** SOIL

**Received Date:** 11/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	260	30		mg/Kg	20	11/21/2018 10:22:07 AM	41648
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>lrm</b>
Diesel Range Organics (DRO)	890	9.7		mg/Kg	1	11/19/2018 5:39:31 PM	41566
Motor Oil Range Organics (MRO)	770	48		mg/Kg	1	11/19/2018 5:39:31 PM	41566
Surr: DNOP	118	50.6-138		%Rec	1	11/19/2018 5:39:31 PM	41566
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/15/2018 8:08:08 PM	41539
Surr: BFB	97.9	73.8-119		%Rec	1	11/15/2018 8:08:08 PM	41539
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	11/15/2018 8:08:08 PM	41539
Toluene	ND	0.048		mg/Kg	1	11/15/2018 8:08:08 PM	41539
Ethylbenzene	ND	0.048		mg/Kg	1	11/15/2018 8:08:08 PM	41539
Xylenes, Total	ND	0.096		mg/Kg	1	11/15/2018 8:08:08 PM	41539
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	11/15/2018 8:08:08 PM	41539

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1811709

26-Nov-18

Client: Souder, Miller and Associates

Project: PLU 41

Sample ID	MB-41557		SampType: mblk		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 41557		RunNo: 55668					
Prep Date:	11/15/2018		Analysis Date: 11/15/2018		SeqNo: 1855558		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-41557		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 41557		RunNo: 55668					
Prep Date:	11/15/2018		Analysis Date: 11/15/2018		SeqNo: 1855559		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.3	90	110			

Sample ID	MB-41648		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	41648		RunNo:	55776				
Prep Date:	11/20/2018		Analysis Date:	11/20/2018		SeqNo:	1860349		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-41648		SampType:	LCS		TestCode:	EPA Method 300.0: Anions				
Client ID:	LCSS		Batch ID:	41648		RunNo:	55776				
Prep Date:	11/20/2018		Analysis Date:	11/20/2018		SeqNo:	1860350		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	15	1.5	15.00	0	97.4	90	110				

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1811709

26-Nov-18

Client: Souder, Miller and Associates

Project: PLU 41

Sample ID	LCS-41566		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 41566		RunNo: 55741					
Prep Date:	11/15/2018		Analysis Date: 11/19/2018		SeqNo: 1857750		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.3	70	130			
Surr: DNOP	4.2		5.000		84.9	50.6	138			

Sample ID	MB-41566		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 41566		RunNo: 55741					
Prep Date:	11/15/2018		Analysis Date: 11/19/2018		SeqNo: 1857751		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.6		10.00		85.6	50.6	138			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1811709

26-Nov-18

Client: Souder, Miller and Associates

Project: PLU 41

Sample ID	LCS-41539		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 41539		RunNo: 55658					
Prep Date:	11/14/2018		Analysis Date: 11/15/2018		SeqNo: 1853982		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	104	80.1	123			
Surr: BFB	1100		1000		106	73.8	119			

Sample ID	MB-41539		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 41539		RunNo: 55658					
Prep Date:	11/14/2018		Analysis Date: 11/15/2018		SeqNo: 1854519		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		95.0	73.8	119			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1811709

26-Nov-18

Client: Souder, Miller and Associates

Project: PLU 41

Sample ID	LCS-41539		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 41539		RunNo: 55658					
Prep Date:	11/14/2018		Analysis Date: 11/15/2018		SeqNo: 1853984		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.8	80	120			
Toluene	0.94	0.050	1.000	0	94.0	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.7	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.5	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		110	80	120			

Sample ID	MB-41539		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 41539		RunNo: 55658					
Prep Date:	11/14/2018		Analysis Date: 11/15/2018		SeqNo: 1854521		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID	1811709-001AMS		SampType: MS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	SC-1		Batch ID: 41539		RunNo: 55658					
Prep Date:	11/14/2018		Analysis Date: 11/15/2018		SeqNo: 1855354		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9434	0	94.8	68.5	133			
Toluene	0.94	0.047	0.9434	0.01064	98.8	75	130			
Ethylbenzene	0.96	0.047	0.9434	0	102	79.4	128			
Xylenes, Total	2.9	0.094	2.830	0	103	77.3	131			
Surr: 4-Bromofluorobenzene	1.1		0.9434		116	80	120			

Sample ID	1811709-001AMSD		SampType: MSD		TestCode: EPA Method 8021B: Volatiles					
Client ID:	SC-1		Batch ID: 41539		RunNo: 55658					
Prep Date:	11/14/2018		Analysis Date: 11/15/2018		SeqNo: 1855355		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9461	0	93.9	68.5	133	0.596	20	
Toluene	0.93	0.047	0.9461	0.01064	97.3	75	130	1.28	20	
Ethylbenzene	0.95	0.047	0.9461	0	101	79.4	128	0.567	20	
Xylenes, Total	2.9	0.095	2.838	0	103	77.3	131	0.0109	20	
Surr: 4-Bromofluorobenzene	1.1		0.9461		115	80	120	0	0	

### Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: SMA-FARM

Work Order Number: 1811709

RcptNo: 1

Received By: Anne Thorne

11/14/2018 7:00:00 AM

*Anne Thorne*

Completed By: Anne Thorne

11/14/2018 10:45:44 AM

*Anne Thorne*

Reviewed By: ENM

11/14/18

*Labeled by: DAD 11/14/18*

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐

2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐

4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐

5. Sample(s) in proper container(s)? Yes ☒ No ☐

6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐

7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐

8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐

9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒

10. Were any sample containers received broken? Yes ☐ No ☒

11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐

13. Is it clear what analyses were requested? Yes ☒ No ☐

14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: *DAD 11/14/18*

### Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

16. Additional remarks: *\*Samples were open prior to lab extraction due to lab error. DAD 11/14/18*

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			









Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

December 18, 2018

Stephanie Hinds

Souder, Miller and Associates

401 W. Broadway

Farmington, NM 87401

TEL: (505) 325-5667

FAX (505) 327-1496

RE: PLU 41

OrderNo.: 1812719

Dear Stephanie Hinds:

Hall Environmental Analysis Laboratory received 9 sample(s) on 12/12/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1812719**

Date Reported: **12/18/2018**

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-1

**Project:** PLU 41

**Collection Date:** 12/6/2018 11:20:00 AM

**Lab ID:** 1812719-001

**Matrix:** SOIL

**Received Date:** 12/12/2018 8:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	ND	30		mg/Kg	20	12/17/2018 8:42:34 PM	42155

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1812719**

Date Reported: **12/18/2018**

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-2

**Project:** PLU 41

**Collection Date:** 12/6/2018 11:24:00 AM

**Lab ID:** 1812719-002

**Matrix:** SOIL

**Received Date:** 12/12/2018 8:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	ND	30		mg/Kg	20	12/17/2018 9:19:48 PM	42155
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/17/2018 12:01:35 PM	42113
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/17/2018 12:01:35 PM	42113
Surr: DNOP	81.0	50.6-138		%Rec	1	12/17/2018 12:01:35 PM	42113
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/14/2018 1:13:08 PM	42100
Surr: BFB	97.6	73.8-119		%Rec	1	12/14/2018 1:13:08 PM	42100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1812719

Date Reported: 12/18/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-3

**Project:** PLU 41

**Collection Date:** 12/6/2018 11:30:00 AM

**Lab ID:** 1812719-003

**Matrix:** SOIL

**Received Date:** 12/12/2018 8:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/17/2018 12:25:57 PM	42113
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/17/2018 12:25:57 PM	42113
Surr: DNOP	78.9	50.6-138		%Rec	1	12/17/2018 12:25:57 PM	42113
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/14/2018 1:36:37 PM	42100
Surr: BFB	95.6	73.8-119		%Rec	1	12/14/2018 1:36:37 PM	42100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1812719

Date Reported: 12/18/2018

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-4

**Project:** PLU 41

**Collection Date:** 12/6/2018 11:50:00 AM

**Lab ID:** 1812719-004

**Matrix:** SOIL

**Received Date:** 12/12/2018 8:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/17/2018 12:50:18 PM	42113
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/17/2018 12:50:18 PM	42113
Surr: DNOP	89.7	50.6-138		%Rec	1	12/17/2018 12:50:18 PM	42113
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/14/2018 1:59:55 PM	42100
Surr: BFB	99.5	73.8-119		%Rec	1	12/14/2018 1:59:55 PM	42100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1812719**

Date Reported: **12/18/2018**

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-6

**Project:** PLU 41

**Collection Date:** 12/6/2018 12:29:00 PM

**Lab ID:** 1812719-005

**Matrix:** SOIL

**Received Date:** 12/12/2018 8:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/17/2018 1:14:50 PM	42113
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/17/2018 1:14:50 PM	42113
Surr: DNOP	85.3	50.6-138		%Rec	1	12/17/2018 1:14:50 PM	42113
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/14/2018 2:23:22 PM	42100
Surr: BFB	99.8	73.8-119		%Rec	1	12/14/2018 2:23:22 PM	42100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1812719**

Date Reported: **12/18/2018**

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-7

**Project:** PLU 41

**Collection Date:** 12/6/2018 1:04:00 PM

**Lab ID:** 1812719-006

**Matrix:** SOIL

**Received Date:** 12/12/2018 8:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	ND	30		mg/Kg	20	12/17/2018 9:32:13 PM	42155

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1812719**

Date Reported: **12/18/2018**

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-11

**Project:** PLU 41

**Collection Date:** 12/6/2018 10:48:00 AM

**Lab ID:** 1812719-007

**Matrix:** SOIL

**Received Date:** 12/12/2018 8:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	ND	30		mg/Kg	20	12/17/2018 9:44:37 PM	42155

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1812719**

Date Reported: **12/18/2018**

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-12

**Project:** PLU 41

**Collection Date:** 12/6/2018 10:40:00 AM

**Lab ID:** 1812719-008

**Matrix:** SOIL

**Received Date:** 12/12/2018 8:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>smb</b>	
Chloride	1100	30		mg/Kg	20	12/17/2018 9:57:02 PM	42155

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1812719**

Date Reported: **12/18/2018**

**CLIENT:** Souder, Miller and Associates

**Client Sample ID:** SC-14

**Project:** PLU 41

**Collection Date:** 12/6/2018 12:58:00 PM

**Lab ID:** 1812719-009

**Matrix:** SOIL

**Received Date:** 12/12/2018 8:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/17/2018 1:39:07 PM	42113
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/17/2018 1:39:07 PM	42113
Surr: DNOP	84.4	50.6-138		%Rec	1	12/17/2018 1:39:07 PM	42113
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/14/2018 2:47:01 PM	42100
Surr: BFB	97.4	73.8-119		%Rec	1	12/14/2018 2:47:01 PM	42100

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1812719

18-Dec-18

Client: Souder, Miller and Associates

Project: PLU 41

Sample ID	MB-42155		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	42155		RunNo:	56385				
Prep Date:	12/17/2018		Analysis Date:	12/17/2018		SeqNo:	1886027		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-42155		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 42155		RunNo: 56385					
Prep Date:	12/17/2018		Analysis Date: 12/17/2018		SeqNo: 1886028		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.6	90	110			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1812719

18-Dec-18

Client: Souder, Miller and Associates

Project: PLU 41

Sample ID	LCS-42113		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 42113		RunNo: 56382					
Prep Date:	12/14/2018		Analysis Date: 12/17/2018		SeqNo: 1885014		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.2	70	130			
Surr: DNOP	4.6		5.000		92.8	50.6	138			

Sample ID	MB-42113		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 42113		RunNo: 56382					
Prep Date:	12/14/2018		Analysis Date: 12/17/2018		SeqNo: 1885015		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		95.5	50.6	138			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1812719

18-Dec-18

Client: Souder, Miller and Associates

Project: PLU 41

Sample ID	MB-42100		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 42100		RunNo: 56353					
Prep Date:	12/13/2018		Analysis Date: 12/14/2018		SeqNo: 1884432		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		92.0	73.8	119			

Sample ID	LCS-42100		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 42100		RunNo: 56353					
Prep Date:	12/13/2018		Analysis Date: 12/14/2018		SeqNo: 1884434		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.2	80.1	123			
Surr: BFB	1100		1000		106	73.8	119			

Sample ID	MB-42099		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 42099		RunNo: 56353					
Prep Date:	12/13/2018		Analysis Date: 12/14/2018		SeqNo: 1884458		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	950		1000		95.2	73.8	119			

Sample ID	LCS-42099		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 42099		RunNo: 56353					
Prep Date:	12/13/2018		Analysis Date: 12/14/2018		SeqNo: 1884460		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		107	73.8	119			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# Sample Log-In Check List

Client Name: **SMA-FARM**

Work Order Number: **1812719**

RcptNo: 1

Received By: **Victoria Zellar** 12/12/2018 8:40:00 AM

Completed By: **Erin Melendrez** 12/13/2018 8:21:16 AM

Reviewed By: **LB: DAD 12/13/18**
*Victoria Zellar*  
*EM*

## Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

## Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels? Yes ☒ No ☐  
(Note discrepancies on chain of custody)
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met? Yes ☒ No ☐  
(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: **DAD 12/13/18**

## Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

16. Additional remarks:

## 17. Cooler Information

Cooler No.	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			

Chain-of-Custody Record									
Client: SMA									
Mailing Address: 401 W. Broadway Farmington, NM 87401									
Phone #: 505-325-7535									
email or Fax#: Stephanie-hinds @ Souder- miller.com									
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation) QA/QC Package:									
Accreditation: <input type="checkbox"/> AZ Compliance <input type="checkbox"/> NELAC <input type="checkbox"/> Other									
<input type="checkbox"/> EDD (Type)									
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.			
12-6-19	11:20	Soil	SC-1	(1) 402	cool	-001			
	11:24		SC-2			-002			
	11:30		SC-3			-003			
	11:50		SC-4			-004			
	12:29		SC-6			-005			
	13:04		SC-7			-006			
	10:48		SC-11			-007			
	10:40		SC-12			-008			
	12:58		SC-14			-009			
Relinquished by: <i>Stephanie Hinds</i> Date: 12/6/19      Time: 15:00									
Relinquished by: <i>[Signature]</i> Date: 12/11/19      Time: 19:00									

Turn-Around Time:		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush	
Project Name:		PLU 41	
Project #:		5E26784 B614	
Project Manager:		Stephanie Hands	
Sampler: SM			
On Ice:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
# of Coolers:		1 CF = -10	
Cooler Temp (including CF):		28°C	
Container Type and #	Preservative Type	HEAL No.	
(A) 402	cool	1812719	
		-001	
		-002	
		-003	
		-004	
		-005	
		-006	
		-007	
		-008	
		-009	
Received by:		Via:	Date Time
[Signature]			12/1/18 15:40
Received by:		Via:	Date Time
[Signature]			12/1/18 15:40



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

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4901 Hawkins NE - Albuquerque, NM 87109  
Tel. 505-345-3975 Fax 505-345-4107

[illegible]

Remarks:

Date:	Time:	Relinquished by:	Received by:	Via:	Date:	Time:
12/11/18	1940	<i>[Signature]</i>	<i>[Signature]</i>	Courier	12/11/18	1500
Date:	Time:	Relinquished by:	Received by:	Via:	Date:	Time:
12/11/18	1940	<i>[Signature]</i>	<i>[Signature]</i>	Courier	12/11/18	1500

if necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.