



**APPROVED**  
*By Olivia Yu at 11:52 am, Sep 11, 2018*

August 13, 2018

#5E26816- BG9

NMOCD District II  
Olivia Yu  
1625 N. French Drive  
Hobbs, New Mexico 88240

NMOCD approves of the additional delineation for 1RP-5099. See email correspondence regarding proposed remediation.

SUBJECT: SOIL REMEDIATION WORK PLAN FOR THE ANTELOPE RIDGE 24 SWD #001 (1RP-5099), LEA COUNTY, NEW MEXICO

Dear Olivia Yu:

On behalf of Matador Resources Company, Souder, Miller & Associates (SMA) has prepared this WORK PLAN that describes the assessment, delineation and proposed remediation for a release associated with the Antelope Ridge 24 SWD #001. The site is located in UNIT K, SECTION 24, TOWNSHIP 23S, RANGE 34E, NMPM, Lea County, New Mexico, on State land. Figure 1 illustrates the vicinity and location of the site.

Table 1, below, summarizes information regarding the release.

Table 1: Release information and Site Ranking	
Name	Antelope Ridge 24 SWD #001
Company	Matador Resources Company
RP Number	1RP-5099
API Number	30-025-26547
Location	32.288089° -103.426398°
Estimated Date of Release	6/7/18
Date Reported to NMOCD	6/8/17 incorrect
Land Owner	State of New Mexico
Reported To	Olivia Yu, NMOCD
Source of Release	Equipment Failure
Released Material	Produced Water
Released Volume	1,119 bbls
Recovered Volume	937 bbls
Net Release	182 bbls
Nearest Waterway	1 mile west of San Simon Sink
Depth to Groundwater	Greater than 200 feet
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	0
SMA Response Dates	June 9 and July 3, 2018

## **1.0 Background**

On June 7, 2018, piping on the gun barrel failed, resulting in a loss of power causing the release of approximately 1,119 barrels of produced water into secondary containment. The secondary containment overflowed, releasing produced water to the east, which pooled in the roadway and pasture. A vacuum truck recovered approximately 937 barrels of standing produced water. The impacted area was estimated to be 544 square yards. The release area is illustrated on Figure 2.

## **2.0 Site Ranking and Land Jurisdiction**

The release site is located approximately one mile west of the San Simon Sink, with an elevation of approximately 3,368 feet above sea level. SMA searched the New Mexico State Engineer's Office (NMOSE) online water well database for water wells in the vicinity of the release. Zero domestic wells are located within a 1,000-foot radius of the site. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be greater than 200 feet below ground surface (bgs).

Recommended Remediation Action Levels (RRALs) are determined by the site ranking according to the NMOCD *Guidelines for Remediation of Leaks, Spills, and Releases* (1993). Below in Table 2 are the remediation standards and the site ranking for this location. Justification for this site ranking is found in Figure 1 and Appendix B.

Table 2.

<b>Soil Remediation Standards</b>	<b>0 to 9</b>	<b>10 to 19</b>	<b>&gt;19</b>
<b>Benzene</b>	<b>10 PPM</b>	<b>10 PPM</b>	<b>10 PPM</b>
<b>BTEX</b>	<b>50 PPM</b>	<b>50 PPM</b>	<b>50 PPM</b>
<b>TPH</b>	<b>5000 PPM</b>	<b>1000 PPM</b>	<b>100 PPM</b>

<b>Depth to Groundwater</b>	<b>NMOCD Numeric Rank</b>
< 50 BGS = 20	
50' to 99' = 10	
>100' = 0	0
<b>Distance to Nearest Surface Water</b>	<b>NMOCD Numeric Rank</b>
< 200' = 20	
200' - 1000' = 10	
>1000' = 0	0
<b>Well Head Protection</b>	<b>NMOCD Numeric Rank</b>
<1000' (or <200' domestic) = 20	
> 1000' = 0	0
<b>Total Site Ranking</b>	<b>0</b>

### **3.0 Release Characterization**

On June 9, 2018, an SMA representative was on site for an initial site evaluation and to determine the extent of the release. SMA collected surface to two-feet bgs soil samples which were field-screened using an EC meter and submitted for laboratory analysis of chlorides by Method 300.0. Three surface background samples (BG1- BG3) and two sample locations (L1 and L2)

On July 3, 2018, SMA conducted a delineation of the impacted area. Soil samples were collected from L1 and L2, as well as an additional six sample locations (L3, L4, SW1-3, SW-6). Samples were collected to maximum depth of fourteen (14) feet below grade surface (bgs). At location L2, an unmarked electrical line was encountered and further delineation in that area ceased due to safety protocols.

Samples were sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory for analyses of chlorides by Method 300.0. Selected sample depths from locations L1, L3, and L4 were analyzed for volatile organics (BTEX) by Method 8021B, and MRO, DRO, and GRO by EPA Method 8015D. Sample locations, and the presumed location of the buried electrical line, are depicted on Figure 2. Laboratory results are summarized in Table 3. Laboratory reports are included in Appendix C.

### **4.0 Soil Remediation Workplan**

SMA proposes the excavation and removal of contaminated soil as illustrated in Figure 2. The release area will be excavated to two (2) feet bgs around the north portion of the battery from L1 to L2. The buried electrical line will be exposed, which will allow the area around sample L2 to be further delineated, and will be further excavated if necessary. The area west of the battery, identified by L2, L3 and L4 will be excavated to four (4) feet bgs and a 40-mil liner will be placed within excavation. SMA will guide the excavation and delineation activities by collecting composite soil samples for field screening for chlorides with an electrical conductivity (EC) meter.

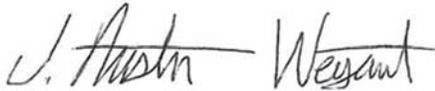
The release area will be excavated to the NMOCD Standards as identified in Table 2 listed in Section 2.0. Approximately 1,029 cubic yards of contaminated soil is projected to be removed. Confirmation samples will be collected from within the excavation. The excavation will be backfilled with clean material and contoured returning the surface to previous contours. Impacted soil will be transported for proper disposal at Lea Land Inc., near Carlsbad, New Mexico, an NMOCD permitted disposal facility.

## **5.0 Scope and Limitations**

The scope of our services consisted of the performance of assessment sampling, verification of release stabilization, regulatory liaison, and preparation of this work plan. 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 Shawna Chubbuck at 505-325-7535.

Submitted by:  
SOUDER, MILLER & ASSOCIATES



Austin Weyant  
Project Scientist

Reviewed by:



Shawna Chubbuck  
Senior Scientist

## **ATTACHMENTS:**

### **Figures:**

Figure 1: Vicinity and Well Head Protection Map  
Figure 2: Site and Sample Location Map

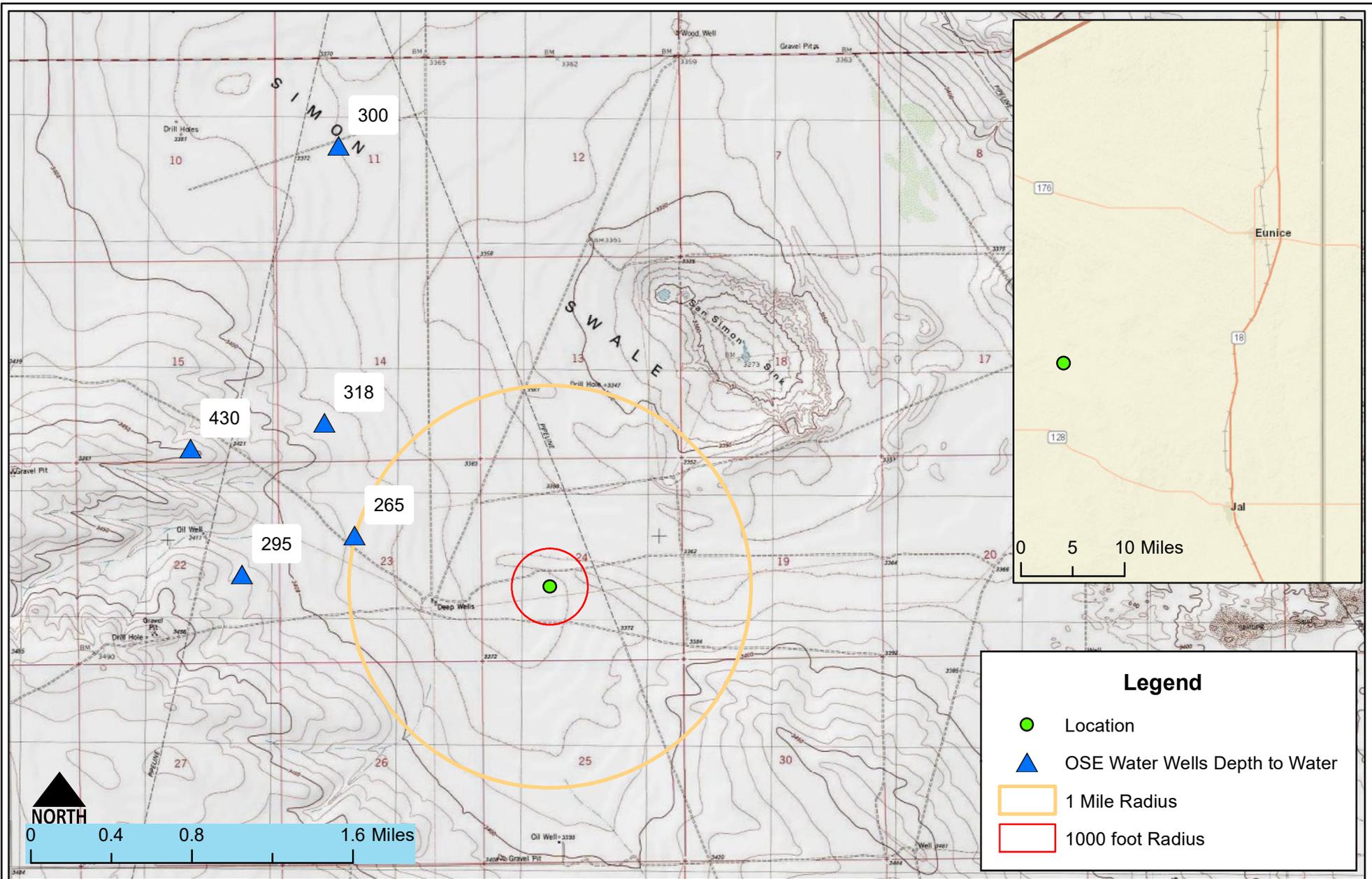
### **Tables:**

Table 3: Summary of Sample Results

### **Appendices:**

Appendix A: Form C141 Initial  
Appendix B: NMOSE Wells Report  
Appendix C: Laboratory Analytical Reports

**FIGURE 1**  
**VICINITY AND NMOSE**  
**DATA MAP**



**Legend**

- Location
- ▲ OSE Water Wells Depth to Water
- 1 Mile Radius
- 1000 foot Radius

VICINITY AND NMOSE DATA MAP  
 ANTELOPE RIDGE 24 SWD #001 - Matador Resources  
 S: 24 T23S R23E, Lea County New Mexico

Figure 1

Date Saved: 7/6/2018  
 By: \_\_\_\_\_ Date: \_\_\_\_\_ Descr: \_\_\_\_\_  
 By: \_\_\_\_\_ Date: \_\_\_\_\_ Descr: \_\_\_\_\_  
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Drawn Lucas Middleton  
 Checked \_\_\_\_\_  
 Approved \_\_\_\_\_



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**FIGURE 2**  
**SITE AND SAMPLE**  
**LOCATION MAP**



Site and Sample Location Map  
 ANTELOPE RIDGE 24 SWD #001 - Matador Resources  
 S: 24 T23S R23E, Lea County New Mexico

Figure 2

Date Saved: 8/13/2018	By: _____	Date: _____	Revisions	Descr: _____
	By: _____	Date: _____		Descr: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved				

Drawn	<u>Lucas Middleton</u>
Checked	_____
Approved	_____



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**TABLE 3**  
**SUMMARY SAMPLE RESULTS**

## ANTELOPE RIDGE 24 SWD #001

**Table 3**

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Proposed Action	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	Cl- Field Screens (ppm)	Cl- Laboratory mg/Kg
NMOCD RRAL's for Site Ranking 0				50 mg/Kg	10 mg/Kg				5000 mg/Kg		
BG1	6/9/2018	Surface	In-Situ	---	---	---	---	---	---	---	<30
BG2	6/9/2018	Surface	In-Situ	---	---	---	---	---	---	---	30
BG3	6/9/2018	Surface	In-Situ	---	---	---	---	---	---	---	<30
L1	6/9/2018	Surface	Excavate	---	---	---	---	---	---	---	7600
	6/9/2018	1	Excavate	---	---	---	---	---	---	---	8600
		2	Excavate	---	---	---	---	---	---	---	---
	7/3/2018	3	In-Situ	<0.215	<0.024	<4.8	<9.8	<49	<63.6	---	580
	7/3/2018	7	In-Situ	<0.211	<0.023	<4.7	<9.9	<50	<64.6	---	<30
L2	6/9/2018	Surface	Excavate	---	---	---	---	---	---	---	8900
	7/3/2018	1	Excavate	---	---	---	---	---	---	---	1700
	6/9/2018	2	Excavate	---	---	---	---	---	---	---	8100
L3	7/3/2018	2	Excavate	<0.0945	<0.024	<4.8	<9.9	<50	<50	---	5200
	7/3/2018	3	Excavate	<0.214	<0.024	<4.8	<9.9	<50	<64.7	---	5400
		4	Excavate/Liner	---	---	---	---	---	---	---	---
	7/3/2018	5	In-Situ	---	---	---	---	---	---	---	3800
	7/3/2018	6	In-Situ	---	---	---	---	---	---	---	170
	7/3/2018	10	In-Situ	<0.215	<0.024	<4.8	<10	<50	<64.8	---	230
L4		1-4	Excavate/Liner	---	---	---	---	---	---	---	---
	7/3/2018	6	In-Situ	<0.221	<0.025	<4.9	<9.9	<50	<64.8	---	3400
	7/3/2018	7	In-Situ	---	---	---	---	---	---	---	4100
	7/3/2018	10	In-Situ	---	---	---	---	---	---	---	<30
	7/3/2018	14	In-Situ	<0.216	<0.024	<4.8	<10	<50	<64.8	---	83
SW-1	7/3/2018	1	In-Situ	---	---	---	---	---	---	190	
SW-2	7/3/2018	1	In-Situ	---	---	---	---	---	---	40	
SW-3	7/3/2018	1	In-Situ	---	---	---	---	---	---	120	
SW-6	7/3/2018	1	In-Situ	---	---	---	---	---	---	760	

--- = Not Analyzed

**APPENDIX A**  
**FORM C141 INITIAL**

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  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

Initial Report  Final Report

Name of Company Matador Resources Company	Contact John Hurt
Address 5400 LBJ Freeway, Suite 1500 Dallas, TX 75240	Telephone No. 972-371-5200
Facility Name ANTELOPE RIDGE 24 SWD #001	Facility Type Salt Water Disposal
Surface Owner State of New Mexico	Mineral Owner State of New Mexico
API No. 30-025-26547	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the 1980	North/South Line	Feet from the 1980	East/West Line	County
K	24	23S	34E		South		West	Lea

Latitude 32.288089° Longitude -103.426398° NAD83

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 1,119 bbl	Volume Recovered 937 bbl
Source of Release Equipment Failure	Date and Hour of Occurrence 6/7/18 ~6:00 p.m.	Date and Hour of Discovery 6/7/18 ~8:00 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Olivia Yu	
By Whom? Lucas Middleton( SMA)	Date and Hour 6/8/18 3:08 pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*  
N/A

**RECEIVED**  
By Olivia Yu at 3:50 pm, Jun 15, 2018

Describe Cause of Problem and Remedial Action Taken.\*  
Piping on Gun barrel failed and lost of power causing the secondary containment to fill until the fluids spilled over the front of the battery running east and pooled in roadway and pasture. The location was shut down and a vacuum truck was on site vacuuming all standing fluids

Describe Area Affected and Cleanup Action Taken.\*  
The release occurred within the secondary containment and on the pad, road and pasture (~544 square yards). SMA will delineate and submit a work plan for approval of remediation actions.

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

Signature:	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: John Hurt	Approved by Environmental Specialist:	
Title: RES Specialist	Approval Date: 6/15/2018	Expiration Date:
E-mail Address: Jhurt@matadorresources.com	Conditions of Approval: see attached directive	
Date: 6-15-18 Phone: 972-371-5200	Attached <input type="checkbox"/>	

\* Attach Additional Sheets If Necessary

1RP-5099

nOY1816657191

pOY1816657512

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 6/13/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 1RP-5099 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

*The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]*

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 1 office in Hobbs on or before 7/15/2018. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

**Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.**

**Jim Griswold**

OCD Environmental Bureau Chief  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505  
505-476-3465  
jim.griswold@state.nm.us

**From:** Lucas Middleton  
**To:** [Yu, Olivia, EMNRD](#)  
**Subject:** Initial Notification ANTELOPE RIDGE 24 SWD #001, MATADOR PRODUCTION COMPANY, 30-025-26547  
**Date:** Friday, June 8, 2018 3:07:47 PM  
**Attachments:** image002.png

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Souder, Miller and Associates on behalf of Matador Resources Company is submitting an initial notification of a release that occurred on 8/7/18. The site and release details are below.

MATADOR PRODUCTION COMPANY

ANTELOPE RIDGE 24 SWD #001

30-025-26547

Salt Water Disposal

GPS Location: 32.2883301,-103.425857

Surface Land Owner: State of New Mexico

Cause of Release: Equipment failure on Gun barrel.

Pathway: The secondary containment filled until the fluids spilled over the front of the battery running east and pooled in roadway and pasture. No waterways were reached.

Estimated release area outside of containment: 544 square yards

**Estimated Date of Release: 6/7/18/18 6:00p.m.**

**Date of Discovery : 6/7/18 8:00 p.m.**

**Estimated Volume loss: 812 bbls total of Oil and Produced Water**

**Secondary Containment:~630 bbls**

**Non Secondary Containment: ~ 182 bbls**

A vacuum truck is on site to capture all standing fluid. Also heavy equipment will be onsite to remove top layer of soil within the release area.

SMA was onsite on 6/8/18 to evaluate the release that occurred.

Lucas Middleton  
Staff GeoScientist  
(575) 499-9244 (mobile)



Souder, Miller & Associates  
Engineering Environmental Surveying  
201 S. Halagueno  
Carlsbad, NM 88220  
[www.soudermiller.com](http://www.soudermiller.com)

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*attachment(s) is free of computer viruses or other harmful software. SMA does not accept liability for any damages caused by any computer virus or other harmful software transmitted herewith.*

**APPENDIX B**  
**NMOSE WELLS REPORT**



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">CP 00606</a>	CP	LE		4	1	23	23S	34E		646613	3573854*	1613	650	265	385
<a href="#">CP 00580</a>	CP	LE		3	4	3	23	23S	34E	646524	3572948*	1728	220		
<a href="#">CP 01120 POD1</a>	CP	LE				3	14	23S	34E	646366	3574753	2227	397	318	79
<a href="#">CP 00618</a>	CP	LE		1	2	4	22	23S	34E	645713	3573539*	2464	428	295	133
<a href="#">CP 00637</a>	CP	LE		3	3	4	15	23S	34E	645293	3574541*	3080	430	430	0
<a href="#">CP 01258 POD1</a>	CP	LE		1	4	3	22	23S	34E	645015	3573221	3170	25		
<a href="#">CP 01258 POD3</a>	CP	LE		1	4	3	22	23S	34E	644938	3573097	3258	25		
<a href="#">CP 01258 POD2</a>	CP	LE		1	4	3	22	23S	34E	644941	3572883	3285	65		
<a href="#">E 07616 POD1</a>	E	TO								646466	3576970	3908	500	300	200

Average Depth to Water: **321 feet**  
 Minimum Depth: **265 feet**  
 Maximum Depth: **430 feet**

**Record Count:** 9

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 648176.56

**Northing (Y):** 3573456

**Radius:** 5000

\*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.

APPENDIX C  
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)

July 05, 2018

Austin Weyant  
Souder, Miller & Associates  
201 S Halagueno  
Carlsbad, NM 88221  
TEL: (575) 689-7040  
FAX

RE: Antelop Ridge 24

OrderNo.: 1806D09

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 7 sample(s) on 6/21/2018 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 white background.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Souder, Miller & Associates**Lab Order:** 1806D09**Project:** Antelop Ridge 24**Lab ID:** 1806D09-001**Collection Date:** 6/9/2018 1:00:00 PM**Client Sample ID:** B61**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	ND	30		mg/Kg	20	6/27/2018 12:34:48 PM	38916
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**Lab ID:** 1806D09-002**Collection Date:** 6/9/2018 1:20:00 PM**Client Sample ID:** B62**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	30	30		mg/Kg	20	6/27/2018 12:47:12 PM	38916
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**Lab ID:** 1806D09-003**Collection Date:** 6/9/2018 1:30:00 PM**Client Sample ID:** B63**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	ND	30		mg/Kg	20	6/27/2018 12:59:36 PM	38916
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**Lab ID:** 1806D09-004**Collection Date:** 6/9/2018 1:45:00 PM**Client Sample ID:** L1-Surface**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	7600	300		mg/Kg	200	7/3/2018 4:20:11 PM	38916
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**Lab ID:** 1806D09-005**Collection Date:** 6/9/2018 2:00:00 PM**Client Sample ID:** L1-1**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	8600	300		mg/Kg	200	7/3/2018 4:32:36 PM	38916
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Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**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

- 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

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Souder, Miller & Associates

**Lab Order:** 1806D09

**Project:** Antelop Ridge 24

**Lab ID:** 1806D09-006

**Collection Date:** 6/9/2018 2:05:00 PM

**Client Sample ID:** L2-Surface

**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	8900	300		mg/Kg	200	7/3/2018 4:45:01 PM	38916
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**Lab ID:** 1806D09-007

**Collection Date:** 6/9/2018 2:20:00 PM

**Client Sample ID:** L2-2

**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	8100	300		mg/Kg	200	7/3/2018 4:57:25 PM	38916
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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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1806D09

05-Jul-18

**Client:** Souder, Miller & Associates

**Project:** Antelop Ridge 24

Sample ID	<b>MB-38916</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>38916</b>	RunNo:	<b>52281</b>					
Prep Date:	<b>6/27/2018</b>	Analysis Date:	<b>6/27/2018</b>	SeqNo:	<b>1714260</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	<b>LCS-38916</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>38916</b>	RunNo:	<b>52281</b>					
Prep Date:	<b>6/27/2018</b>	Analysis Date:	<b>6/27/2018</b>	SeqNo:	<b>1714261</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.0	90	110			

**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 |

**Sample Log-In Check List**

Client Name: SMA-CARLSBAD

Work Order Number: 1806D09

RcptNo: 1

Received By: Mandy Woods 6/21/2018 8:35:00 AM

Completed By: Michelle Garcia 6/21/2018 9:59:38 AM

Reviewed By: ENM 6/21/18

*MW*

*Michelle Garcia*

Labeled by:  
 MW 6/21/18

**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? (Note discrepancies on chain of custody) Yes  No
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? (If no, notify customer for authorization.) Yes  No

# of preserved bottles checked for pH: \_\_\_\_\_  
 Adjusted *(6/21/18)*  
 Checked by: *MW*

**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:

**Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.3	Good	Yes			

# Chain-of-Custody Record

Client: SMA  
Carbony  
 Mailing Address:  
 Phone #:  
 email or Fax#:  
 QA/QC Package:  
 Standard  Level 4 (Full Validation)  
 Accreditation  
 NELAP  Other \_\_\_\_\_  
 EDD (Type) \_\_\_\_\_

Turn-Around Time:  
 Standard  Rush Sdy  
 Project Name:  
Arctop Ridge 24  
 Project #:

Project Manager:  
Arsh West  
 Sampler:  
 On Ice:  Yes  No  
 Sample Temperature: 0.3°

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
6-9-18	1:00	Soil	B61			1806D09
	1:20		B62			001
	1:30		B63			002
	1:45		L1-Surface			003
	2:00		L1-1			004
	2:05		L2-Surface			005
	2:20		L2-2			006
						007

Date: \_\_\_\_\_ Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Date: 6/20/18 Time: 1400  
 Received by: [Signature]  
 Date: 6/20/18 Time: 0835  
 Received by: [Signature]



**HALL ENVIRONMENTAL ANALYSIS LABORATORY**  
 www.hallenvironmental.com  
 4901 Hawkins NE - Albuquerque, NM 87109  
 Tel. 505-345-3975 Fax 505-345-4107

**Analysis Request**

BTEX + MTBE + TMB's (8021)	
BTEX + MTBE + TPH (Gas only)	
TPH 8015B (GRO / DRO / MRO)	
TPH (Method 418.1)	
EDB (Method 504.1)	
PAH's (8310 or 8270 SIMS)	
RCRA 8 Metals	
Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	X
8081 Pesticides / 8082 PCB's	
8260B (VOA)	
8270 (Semi-VOA)	
Air Bubbles (Y or N)	

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.



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)

July 17, 2018

Austin Weyant  
Souder, Miller & Associates  
201 S Halagueno  
Carlsbad, NM 88221  
TEL: (575) 689-7040  
FAX

RE: Antelope Ridge

OrderNo.: 1807268

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 18 sample(s) on 7/7/2018 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 in a cursive style.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** SW-1

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 9:15:00 AM

**Lab ID:** 1807268-001

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	190	30		mg/Kg	20	7/12/2018 11:36:22 AM	39174

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L1-3

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 9:25:00 AM

**Lab ID:** 1807268-002

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	580	30		mg/Kg	20	7/12/2018 11:48:47 AM	39174
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/11/2018 4:20:00 PM	39124
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/11/2018 4:20:00 PM	39124
Surr: DNOP	103	70-130		%Rec	1	7/11/2018 4:20:00 PM	39124
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/10/2018 9:35:33 AM	39103
Surr: BFB	93.2	15-316		%Rec	1	7/10/2018 9:35:33 AM	39103
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	7/10/2018 9:35:33 AM	39103
Benzene	ND	0.024		mg/Kg	1	7/10/2018 9:35:33 AM	39103
Toluene	ND	0.048		mg/Kg	1	7/10/2018 9:35:33 AM	39103
Ethylbenzene	ND	0.048		mg/Kg	1	7/10/2018 9:35:33 AM	39103
Xylenes, Total	ND	0.095		mg/Kg	1	7/10/2018 9:35:33 AM	39103
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	7/10/2018 9:35:33 AM	39103

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

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, Inc.

Analytical Report

Lab Order 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L1-7

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 9:35:00 AM

**Lab ID:** 1807268-003

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	ND	30		mg/Kg	20	7/12/2018 12:01:11 PM	39174
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/11/2018 5:26:39 PM	39124
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/11/2018 5:26:39 PM	39124
Surr: DNOP	74.0	70-130		%Rec	1	7/11/2018 5:26:39 PM	39124
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/10/2018 10:45:23 AM	39103
Surr: BFB	93.2	15-316		%Rec	1	7/10/2018 10:45:23 AM	39103
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.094		mg/Kg	1	7/10/2018 10:45:23 AM	39103
Benzene	ND	0.023		mg/Kg	1	7/10/2018 10:45:23 AM	39103
Toluene	ND	0.047		mg/Kg	1	7/10/2018 10:45:23 AM	39103
Ethylbenzene	ND	0.047		mg/Kg	1	7/10/2018 10:45:23 AM	39103
Xylenes, Total	ND	0.094		mg/Kg	1	7/10/2018 10:45:23 AM	39103
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	7/10/2018 10:45:23 AM	39103

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** SW-3

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 9:45:00 AM

**Lab ID:** 1807268-004

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	120	30		mg/Kg	20	7/12/2018 12:38:25 PM	39174

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** SW-4

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 9:55:00 AM

**Lab ID:** 1807268-005

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	340	30		mg/Kg	20	7/12/2018 12:50:50 PM	39174

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L2-1

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 10:05:00 AM

**Lab ID:** 1807268-006

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	1700	75		mg/Kg	50	7/14/2018 4:16:14 AM	39174

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L3-2

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 10:15:00 AM

**Lab ID:** 1807268-007

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	5200	300		mg/Kg	200	7/14/2018 4:28:39 AM	39174

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L3-3

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 10:25:00 AM

**Lab ID:** 1807268-008

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	5400	300		mg/Kg	200	7/14/2018 4:41:03 AM	39174
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/11/2018 5:49:04 PM	39124
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/11/2018 5:49:04 PM	39124
Surr: DNOP	74.9	70-130		%Rec	1	7/11/2018 5:49:04 PM	39124
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/10/2018 11:55:27 AM	39103
Surr: BFB	93.9	15-316		%Rec	1	7/10/2018 11:55:27 AM	39103
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	7/10/2018 11:55:27 AM	39103
Benzene	ND	0.024		mg/Kg	1	7/10/2018 11:55:27 AM	39103
Toluene	ND	0.048		mg/Kg	1	7/10/2018 11:55:27 AM	39103
Ethylbenzene	ND	0.048		mg/Kg	1	7/10/2018 11:55:27 AM	39103
Xylenes, Total	ND	0.095		mg/Kg	1	7/10/2018 11:55:27 AM	39103
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	7/10/2018 11:55:27 AM	39103

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L3-5

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 10:35:00 AM

**Lab ID:** 1807268-009

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	3800	150		mg/Kg	100	7/14/2018 4:53:27 AM	39174

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L3-6

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 10:45:00 AM

**Lab ID:** 1807268-010

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	170	30		mg/Kg	20	7/12/2018 2:17:44 PM	39174

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L3-10

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 10:55:00 AM

**Lab ID:** 1807268-011

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	230	30		mg/Kg	20	7/12/2018 2:30:09 PM	39174
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/11/2018 6:11:24 PM	39124
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/11/2018 6:11:24 PM	39124
Surr: DNOP	72.8	70-130		%Rec	1	7/11/2018 6:11:24 PM	39124
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/10/2018 12:18:49 PM	39103
Surr: BFB	93.9	15-316		%Rec	1	7/10/2018 12:18:49 PM	39103
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	7/10/2018 12:18:49 PM	39103
Benzene	ND	0.024		mg/Kg	1	7/10/2018 12:18:49 PM	39103
Toluene	ND	0.048		mg/Kg	1	7/10/2018 12:18:49 PM	39103
Ethylbenzene	ND	0.048		mg/Kg	1	7/10/2018 12:18:49 PM	39103
Xylenes, Total	ND	0.095		mg/Kg	1	7/10/2018 12:18:49 PM	39103
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	7/10/2018 12:18:49 PM	39103

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

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, Inc.

Analytical Report

Lab Order 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** SW-5

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 11:50:00 AM

**Lab ID:** 1807268-012

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	ND	30		mg/Kg	20	7/12/2018 3:07:23 PM	39174

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** SW-6

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 11:59:00 AM

**Lab ID:** 1807268-013

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	760	30		mg/Kg	20	7/12/2018 3:19:47 PM	39174

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L4-6

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 12:10:00 PM

**Lab ID:** 1807268-014

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	3400	150		mg/Kg	100	7/14/2018 5:05:52 AM	39174
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/13/2018 5:41:25 PM	39124
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/13/2018 5:41:25 PM	39124
Surr: DNOP	93.9	70-130		%Rec	1	7/13/2018 5:41:25 PM	39124
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/10/2018 12:42:15 PM	39103
Surr: BFB	92.7	15-316		%Rec	1	7/10/2018 12:42:15 PM	39103
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.098		mg/Kg	1	7/10/2018 12:42:15 PM	39103
Benzene	ND	0.025		mg/Kg	1	7/10/2018 12:42:15 PM	39103
Toluene	ND	0.049		mg/Kg	1	7/10/2018 12:42:15 PM	39103
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2018 12:42:15 PM	39103
Xylenes, Total	ND	0.098		mg/Kg	1	7/10/2018 12:42:15 PM	39103
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	7/10/2018 12:42:15 PM	39103

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

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, Inc.

CLIENT: Souder, Miller & Associates

Client Sample ID: L4-7

Project: Antelope Ridge

Collection Date: 7/3/2018 12:20:00 PM

Lab ID: 1807268-015

Matrix: SOIL

Received Date: 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: MRA
Chloride	4100	150		mg/Kg	100	7/14/2018 5:18:16 AM	39174

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 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L4-10

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 12:30:00 PM

**Lab ID:** 1807268-016

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	ND	30		mg/Kg	20	7/12/2018 3:56:59 PM	39174

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 1807268

Date Reported: 7/17/2018

CLIENT: Souder, Miller & Associates

Client Sample ID: L4-14

Project: Antelope Ridge

Collection Date: 7/3/2018 12:45:00 PM

Lab ID: 1807268-017

Matrix: SOIL

Received Date: 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	83	30		mg/Kg	20	7/12/2018 4:09:24 PM	39174
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>Irm</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/11/2018 6:55:56 PM	39124
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/11/2018 6:55:56 PM	39124
Surr: DNOP	70.4	70-130		%Rec	1	7/11/2018 6:55:56 PM	39124
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/10/2018 1:05:43 PM	39103
Surr: BFB	93.3	15-316		%Rec	1	7/10/2018 1:05:43 PM	39103
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.096		mg/Kg	1	7/10/2018 1:05:43 PM	39103
Benzene	ND	0.024		mg/Kg	1	7/10/2018 1:05:43 PM	39103
Toluene	ND	0.048		mg/Kg	1	7/10/2018 1:05:43 PM	39103
Ethylbenzene	ND	0.048		mg/Kg	1	7/10/2018 1:05:43 PM	39103
Xylenes, Total	ND	0.096		mg/Kg	1	7/10/2018 1:05:43 PM	39103
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	7/10/2018 1:05:43 PM	39103

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

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, Inc.

Analytical Report

Lab Order 1807268

Date Reported: 7/17/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** SW-2

**Project:** Antelope Ridge

**Collection Date:** 7/3/2018 1:05:00 PM

**Lab ID:** 1807268-018

**Matrix:** SOIL

**Received Date:** 7/7/2018 10:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>CJS</b>
Chloride	40	30		mg/Kg	20	7/12/2018 4:21:49 PM	39174

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#: 1807268

17-Jul-18

**Client:** Souder, Miller & Associates

**Project:** Antelope Ridge

Sample ID <b>MB-39174</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>39174</b>		RunNo: <b>52645</b>							
Prep Date: <b>7/12/2018</b>	Analysis Date: <b>7/12/2018</b>		SeqNo: <b>1729031</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID <b>LCS-39174</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>39174</b>		RunNo: <b>52645</b>							
Prep Date: <b>7/12/2018</b>	Analysis Date: <b>7/12/2018</b>		SeqNo: <b>1729032</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.5	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#: 1807268

17-Jul-18

**Client:** Souder, Miller & Associates

**Project:** Antelope Ridge

Sample ID <b>MB-39124</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>39124</b>		RunNo: <b>52615</b>							
Prep Date: <b>7/10/2018</b>	Analysis Date: <b>7/11/2018</b>		SeqNo: <b>1727495</b>		Units: <b>mg/Kg</b>					
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	9.8		10.00		98.3	70	130			

Sample ID <b>LCS-39124</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>39124</b>		RunNo: <b>52615</b>							
Prep Date: <b>7/10/2018</b>	Analysis Date: <b>7/11/2018</b>		SeqNo: <b>1727497</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.2	70	130			
Surr: DNOP	4.9		5.000		97.2	70	130			

Sample ID <b>1807268-002AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>L1-3</b>	Batch ID: <b>39124</b>		RunNo: <b>52615</b>							
Prep Date: <b>7/10/2018</b>	Analysis Date: <b>7/11/2018</b>		SeqNo: <b>1727499</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.10	0	107	62	120			
Surr: DNOP	4.6		5.010		91.2	70	130			

Sample ID <b>1807268-002AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>L1-3</b>	Batch ID: <b>39124</b>		RunNo: <b>52615</b>							
Prep Date: <b>7/10/2018</b>	Analysis Date: <b>7/11/2018</b>		SeqNo: <b>1727500</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	49.80	0	106	62	120	1.22	20	
Surr: DNOP	5.1		4.980		101	70	130	0	0	

**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#: 1807268

17-Jul-18

**Client:** Souder, Miller & Associates

**Project:** Antelope Ridge

Sample ID <b>MB-39103</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>39103</b>		RunNo: <b>52591</b>							
Prep Date: <b>7/9/2018</b>	Analysis Date: <b>7/10/2018</b>		SeqNo: <b>1725737</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		93.0	15	316			

Sample ID <b>LCS-39103</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>39103</b>		RunNo: <b>52591</b>							
Prep Date: <b>7/9/2018</b>	Analysis Date: <b>7/10/2018</b>		SeqNo: <b>1725738</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	110	75.9	131			
Surr: BFB	1000		1000		102	15	316			

Sample ID <b>1807268-002AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>L1-3</b>	Batch ID: <b>39103</b>		RunNo: <b>52591</b>							
Prep Date: <b>7/9/2018</b>	Analysis Date: <b>7/10/2018</b>		SeqNo: <b>1725740</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	34	4.8	24.06	0	141	77.8	128			S
Surr: BFB	1000		962.5		105	15	316			

Sample ID <b>1807268-002AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>L1-3</b>	Batch ID: <b>39103</b>		RunNo: <b>52591</b>							
Prep Date: <b>7/9/2018</b>	Analysis Date: <b>7/10/2018</b>		SeqNo: <b>1725741</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	4.8	24.02	0	126	77.8	128	11.5	20	
Surr: BFB	1000		960.6		106	15	316	0	0	

**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#: 1807268

17-Jul-18

**Client:** Souder, Miller & Associates

**Project:** Antelope Ridge

Sample ID <b>MB-39103</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>39103</b>		RunNo: <b>52591</b>							
Prep Date: <b>7/9/2018</b>	Analysis Date: <b>7/10/2018</b>		SeqNo: <b>1725764</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID <b>LCS-39103</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>39103</b>		RunNo: <b>52591</b>							
Prep Date: <b>7/9/2018</b>	Analysis Date: <b>7/10/2018</b>		SeqNo: <b>1725765</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.90	0.10	1.000	0	90.4	70.1	121			
Benzene	0.97	0.025	1.000	0	96.8	77.3	128			
Toluene	1.0	0.050	1.000	0	100	79.2	125			
Ethylbenzene	0.98	0.050	1.000	0	98.0	80.7	127			
Xylenes, Total	3.0	0.10	3.000	0	100	81.6	129			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID <b>1807268-003AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>L1-7</b>	Batch ID: <b>39103</b>		RunNo: <b>52591</b>							
Prep Date: <b>7/9/2018</b>	Analysis Date: <b>7/10/2018</b>		SeqNo: <b>1725768</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.92	0.097	0.9728	0	94.9	56.9	130			
Benzene	1.0	0.024	0.9728	0	103	68.5	133			
Toluene	1.0	0.049	0.9728	0	106	75	130			
Ethylbenzene	1.0	0.049	0.9728	0	106	79.4	128			
Xylenes, Total	3.1	0.097	2.918	0	108	77.3	131			
Surr: 4-Bromofluorobenzene	1.0		0.9728		106	80	120			

Sample ID <b>1807268-003AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>L1-7</b>	Batch ID: <b>39103</b>		RunNo: <b>52591</b>							
Prep Date: <b>7/9/2018</b>	Analysis Date: <b>7/10/2018</b>		SeqNo: <b>1725769</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.1	0.098	0.9823	0	107	56.9	130	13.3	20	
Benzene	1.1	0.025	0.9823	0	116	68.5	133	13.2	20	
Toluene	1.2	0.049	0.9823	0	120	75	130	13.0	20	
Ethylbenzene	1.2	0.049	0.9823	0	120	79.4	128	13.3	20	

**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#: 1807268

17-Jul-18

**Client:** Souder, Miller & Associates

**Project:** Antelope Ridge

Sample ID	1807268-003AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	L1-7	Batch ID:	39103	RunNo:	52591					
Prep Date:	7/9/2018	Analysis Date:	7/10/2018	SeqNo:	1725769	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	3.6	0.098	2.947	0	122	77.3	131	13.4	20	
Surr: 4-Bromofluorobenzene	1.0		0.9823		104	80	120	0	0	

**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
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- P Sample pH Not In Range
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- 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-CARLSBAD      Work Order Number: 1807268      RcptNo: 1

Received By: Anne Thorne      7/7/2018 10:50:00 AM      *Anne Thorne*  
 Completed By: Isaiah Ortiz      7/9/2018 7:34:53 AM      *IO*  
 Reviewed By: *IO*      *7/9/18*

LB: ENM 7/9/18  
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: 7/9/18  
 (2 or >2 unless noted)  
 Adjusted? \_\_\_\_\_  
 Checked by: \_\_\_\_\_

Special Handling (if applicable)

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

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

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.8	Good	Yes			
2	13.1	Good	Yes			



