Souder, Miller & Associates♦201 S. Halagueno St.♦Carlsbad, NM 88220
(575) 689-8801

May 15, 2018

#5E26784-BG1

NMOCD District II
Mike Bratcher
811 S. First St.
Artesia, NM 88210

SUBJECT: SOIL REMEDIATION CLOSURE REPORT FOR THE JAMES RANCH UNIT #017 (2RP-4535), EDDY COUNTY, NEW MEXICO

Dear Mr. Bratcher:

On behalf of XTO Energy Inc (XTO), Souder, Miller & Associates (SMA) has prepared this CLOSURE REPORT that describes the assessment, delineation, and remediation for a release associated with the James Ranch Unit #017 (JRU #17). The site is located in UNIT F, SECTION 6, TOWNSHIP 23S, RANGE 31E, NMPM, Eddy County, New Mexico, on Federal land. Figure 1 illustrates the vicinity and location of the site. Table 1 summarizes information regarding the release.

Table 1: Release information and Site Ranking	
Name	James Ranch Unit #017
Company	XTO Energy Inc
Incident Number	2RP-4535
API Number	30-015-27784
Location	32.33500, -103.81921
Estimated Date of Release	12/14/2017
Date Reported to NMOCD	12/21/2017
Land Owner	BLM
Reported To	NMOCD District II
Source of Release	Buried Steel Line
Released Material	Produced Water
Released Volume	13 bbl
Recovered Volume	4 bbl
Net Release	9 bbl
Nearest Waterway	Nash Draw is approximately 6 miles west of location
Depth to Groundwater	Estimated to be 90 feet
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	10
SMA Response Dates	12/14/2017, 1/5/2018, 5/2/2018, 5/3/2018

1.0 Background

On December 14, 2017 at the JRU #17, a produced water leak formed on the steel dump line that runs from the heater treater to the produced water storage tank. The surface impact was both on location (approximately 5 feet wide and 70 feet long) and off location in the pasture (approximately 3 feet wide and 40 feet long). Approximately thirteen (13) barrels of produced water were released. Four (4) barrels were recovered using a vacuum truck during the initial response.

2.0 Site Ranking and Land Jurisdiction

The JRU #17 is located approximately 17 miles east of Loving, with an elevation of approximately 3,312 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. Several wells are located within a three-mile radius of the site. After evaluation of the site using OSE well data, aerial photography and topographic maps, depth to groundwater is estimated to be 90 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.

Soil Remediation Standards	0 to 9	10 to 19	>19
Benzene	10 PPM	10 PPM	10 PPM
BTEX	50 PPM	50 PPM	50 PPM
TPH	5000 PPM	1000 PPM	100 PPM

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

3.0 Release Characterization

On December 14, 2017, SMA field personnel assessed the release area. Soil samples were field-screened using an EC meter EPA Method 4500. Three sample locations (L1-L3) were augured by hand to a maximum depth of 3 feet bgs.

On January 5, 2018, after approval from area utilities via 811, SMA field personnel returned to the location to further delineate sample locations L1 and L3 with a backhoe. Once delineation began at sample location L1, personnel discovered an unmarked electrical line at 2 feet. At this time, delineation of L1 was ceased. Sample location L3 was successfully delineated to 8.5 feet bgs.

All samples were collected and processed according to NMOCD soil sampling procedures. The samples were sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory for analysis for MRO, DRO, and GRO by EPA Method 8015D, BTEX by EPA Method 8021, and Chlorides by Method 300. Sample locations are depicted on Figure 2. All field screening and laboratory results are summarized in Table 3. Laboratory reports are included in Appendix C.

4.0 Soil Remediation

On May 2 and 3, 2018, after approval from area utilities via 811, SMA returned to the site to guide the excavation of contaminated soil. Due to electrical lines at L1, this area could not be excavated or further delineated. This area will be deferred until site abandonment. The area around L1b, located between L1 and L2, was excavated to a depth of 3 feet bgs, L2 to 2 feet bgs, L3 and L4 to 6 feet bgs, and L5 to 3 feet bgs. In areas not previously vertically delineated, SMA collected samples (L4 and L5) from the bottom of the excavation, and an additional foot for confirmation. In addition, eight sidewall samples were collected for horizontal confirmation. SMA continuously guided the excavation activities by collecting soil samples for field screening with a mobile EC unit (EPA 4500), which were confirmed by laboratory analysis (EPA Method 300 for chlorides). All contaminated soils were removed and replaced with clean backfill material to return the surface to previous contours. The contaminated soil was transported for proper disposal at an NMOCD permitted disposal facility. Sample locations are depicted on Figure 2. All field screening and laboratory results are summarized in Table 3. Laboratory reports are included in Appendix C.

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 Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

J. Austin Weyant

Austin Weyant
Project Scientist

Reviewed by:

Shawna Chubbuck

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

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

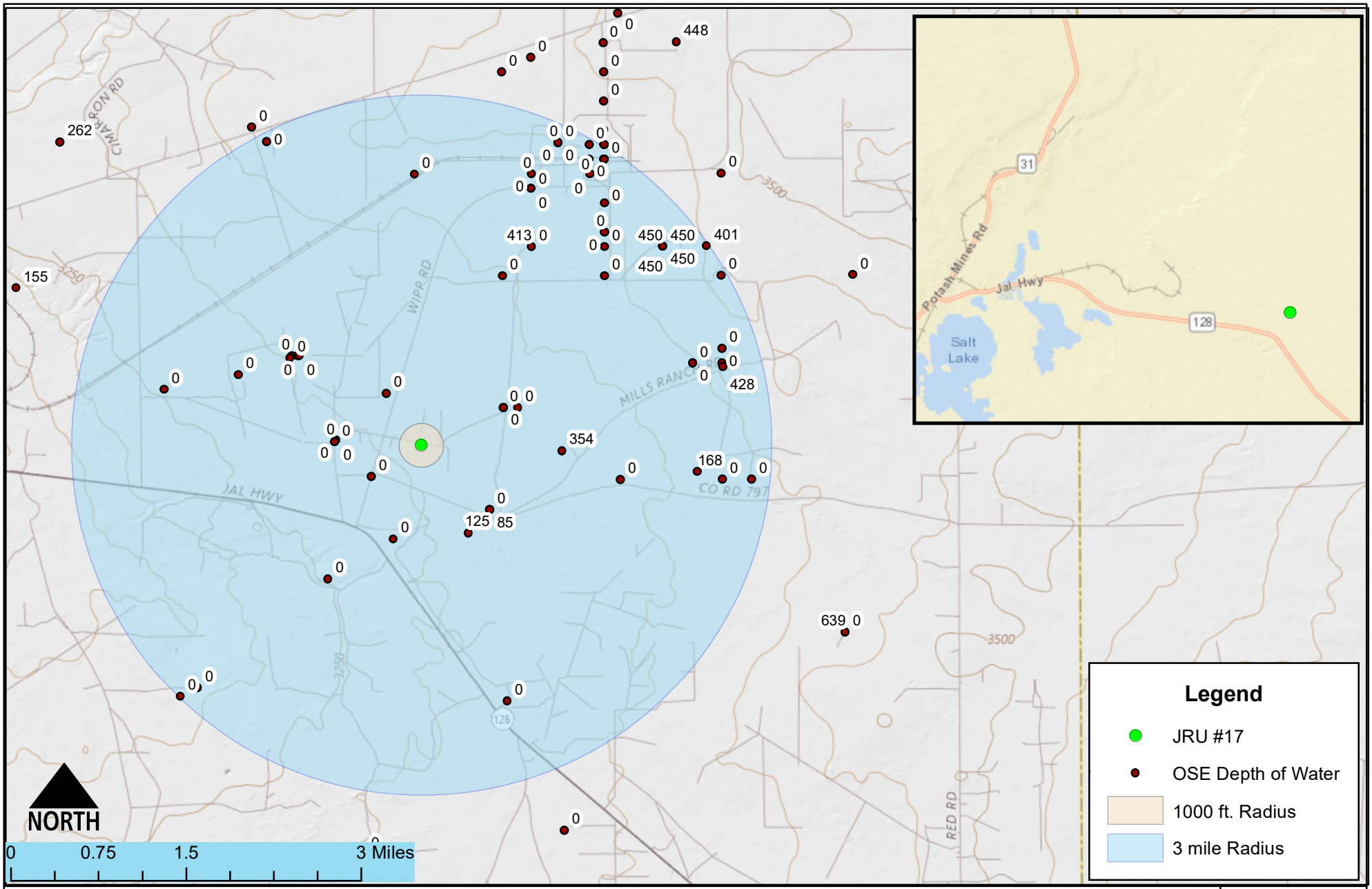
Tables:

Table 3: Summary of Sample Results

Appendices:

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

FIGURE 1
VICINITY AND NMOSE DATA MAP



Vicinity and NMOSE Wells Map
James Ranch Unit #17 - XTO
S 6-T23S-R31E, New Mexico

Figure 1

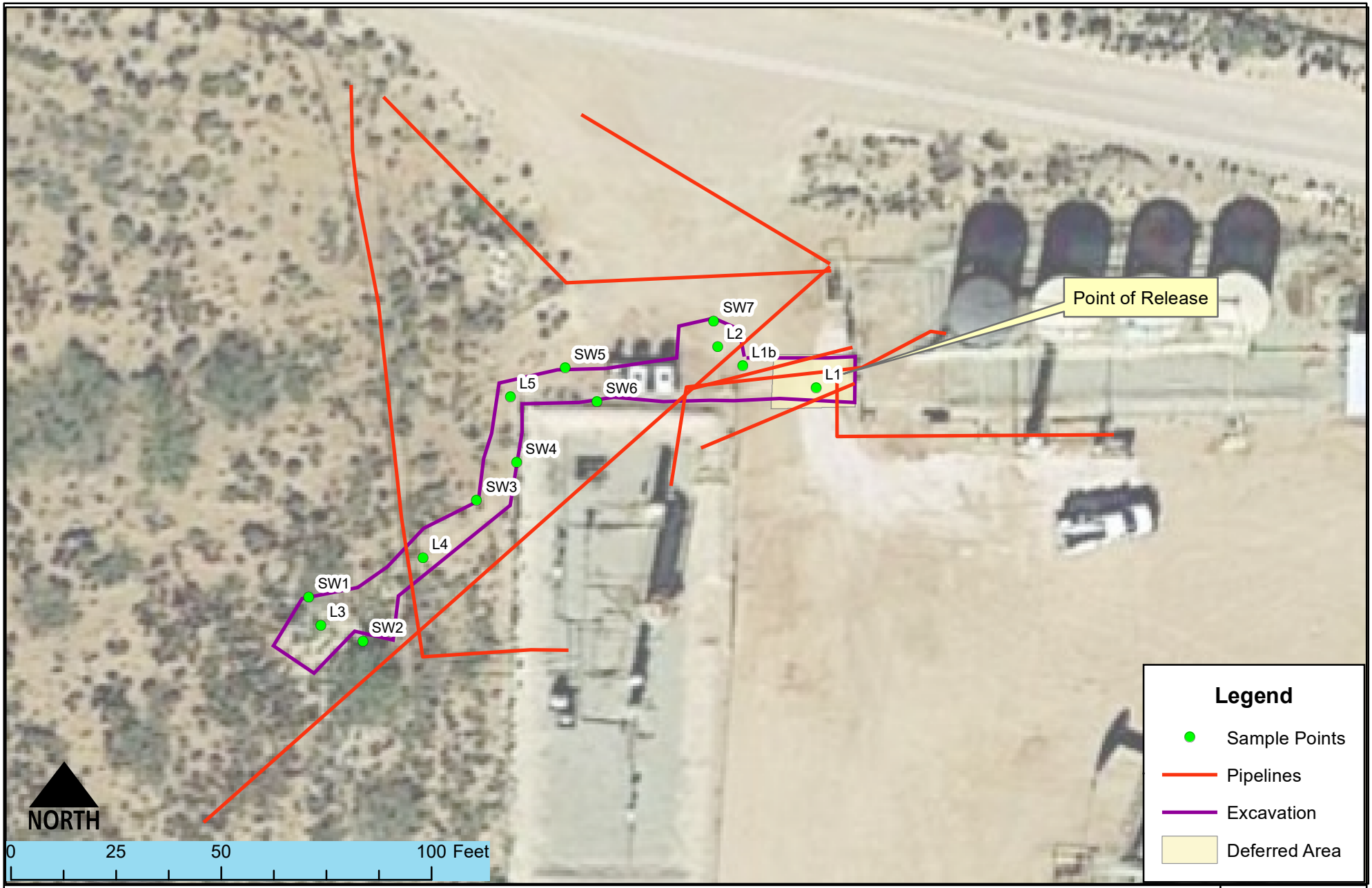
Date Saved: 12/20/2017

Revisions
By: Date: Descr:
By: Date: Descr:

Drawn Heather Patterson
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689-7040
www.soudermiller.com
Serving the Southwest & Rocky Mountains

FIGURE 2
SITE AND SAMPLE
LOCATION MAP



Site and Sample Location Map
James Ranch Unit #17 - XTO
S 6-T23S-R31E, New Mexico

Figure 2

Date Saved: 5/15/2018

Revisions
By: Date: Descr:
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TABLE 3
SUMMARY SAMPLE RESULTS

James Ranch Unit #17

Table 3.

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Action Taken	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 10				50 mg/Kg	10 mg/Kg				1000 mg/Kg		
L1	12/14/2017	0.5	in-situ	<0.23	<0.025	<5.0	27	<46	27	4902	7400
	12/14/2017	1	in-situ	--	--	--	--	--	--	--	2700
	12/14/2017	2	in-situ	--	--	--	--	--	--	--	1200
L1b	5/3/2018	1	excavated	--	--	--	--	--	--	1865	--
	5/3/2018	2	excavated	--	--	--	--	--	--	999	900
	5/3/2018	3	in-situ	--	--	--	--	--	--	249	230
L2	12/14/2017	0.5	excavated	<0.23	<0.024	<4.8	<9.7	<48	<63	5002	8100
	12/14/2017	1	excavated	--	--	--	--	--	--	2185	3400
	12/14/2017	2	in-situ	--	--	--	--	--	--	746	600
L3	12/14/2017	0.5	excavated	<0.23	<0.024	<4.7	<9.9	<50	<65	--	11000
	12/14/2017	1	excavated	--	--	--	--	--	--	9480	15000
	12/14/2017	2	excavated	--	--	--	--	--	--	8121	19000
	12/14/2017	3	excavated	--	--	--	--	--	--	7562	18000
	1/5/2018	4	excavated	--	--	--	--	--	--	5050	--
	1/5/2018	6	in-situ	--	--	--	--	--	--	<132	190
	1/5/2018	8.5	in-situ	--	--	--	--	--	--	<132	130
L4	5/2/2018	5	excavated	--	--	--	--	--	--	1923	--
	5/2/2018	6	in-situ	--	--	--	--	--	--	321	360
L5	5/3/2018	2	excavated	--	--	--	--	--	--	3366	--
	5/3/2018	3	in-situ	--	--	--	--	--	--	--	550

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Action Taken	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 10				50 mg/Kg	10 mg/Kg				1000 mg/Kg		
SW1	5/2/2018	sidewall	in-situ	--	--	--	--	--	--	<132	<30
SW2	5/2/2018	sidewall	in-situ	--	--	--	--	--	--	<132	<30
SW3	5/3/2018	sidewall	in-situ	--	--	--	--	--	--	<132	--
SW4	5/3/2018	sidewall	in-situ	--	--	--	--	--	--	<132	78
SW5	5/3/2018	sidewall	in-situ	--	--	--	--	--	--	162	210
SW6	5/3/2018	sidewall	in-situ	--	--	--	--	--	--	205	200
SW7	5/3/2018	sidewall	in-situ	--	--	--	--	--	--	162	330
SW8	5/3/2018	sidewall	in-situ	--	--	--	--	--	--	393	300

"--" = Not Analyzed

APPENDIX A
FORM C141 INITIAL AND FINAL

NM OIL CONSERVATION
ARTESIA DISTRICT
DEC 21 2017
RECEIVED

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

nAB1736138526 pAPO2160737

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: XTO Energy	Contact: Kyle Littrell
Address: 522 W. Mermod, Suite 704 Carlsbad, N.M. 88220	Telephone No: 432-221-7331
Facility Name: James Ranch Unit #017 Battery	Facility Type: Exploration and Production

Surface Owner: Federal	Mineral Owner: Federal	API No: 30-015-27784

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	6	23S	31E	1975	North	1900	West	Eddy

Latitude 32.335321° **Longitude** -103.819435° NAD83

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 13 bbls	Volume Recovered: 4 bbls
Source of Release: Buried Produced Water Line	Date and Hour of Occurrence: 12/14/2017 time unknown	Date and Hour of Discovery: 12/14/2017 7:30 am
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour: N/A	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

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

Describe Cause of Problem and Remedial Action Taken.*
Buried water line that connects the battery vessels to the fiberglass water tank developed a hole due to corrosion. The line was isolated and exposed. A new replacement line was installed above ground.

Describe Area Affected and Cleanup Action Taken.*
Area affected is approximately 5'x 70' on the location (pad) and an additional 3' x 40' off location in the surrounding pasture. A remediation contractor has been contacted to assist with the delineation and remediation effort.

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:	OIL CONSERVATION DIVISION
Printed Name: Kyle Littrell	Approved by Environmental Specialist:
Title: Environmental Coordinator	Approval Date: 12/26/17 Expiration Date: N/A
E-mail Address: Kyle_Littrell@xtoenergy.com	Conditions of Approval: see attached Attached ☒ 2RP-4535
Date: 12/21/2017 Phone: 432-221-7331	

* Attach Additional Sheets If Necessary

12/22/17 AB

Operator/Responsible Party,

The OCD has received the form C-141 you provided on **12/21/17** regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4535 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 II office in Artesia on or before 1/21/18. 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_6 thru C_{36}), 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_6 thru C_{36}), 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

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
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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 XTO Energy	Contact Kyle Littrell
Address 522 W. Mermod, Suite 704 Carlsbad, NM 88220	Telephone No. 432-221-7331
Facility Name James Ranch Unit #017 Battery	Facility Type Exploration and production

Surface Owner Federal	Mineral Owner Federal	API No. 30-015-27784

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North Line	Feet from the	West Line	County
F	6	23S	31E	1975	North	1900	West	EDDY

Latitude 32.335321 **Longitude** -103.819435 NAD83

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 13 BBL	Volume Recovered 4 bbls
Source of Release buried produced water line	Date and Hour of Occurrence 12/14/2017	Date and Hour of Discovery 12/14/2017
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

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

Describe Cause of Problem and Remedial Action Taken.*
Buried water line that connects the battery vessels to the fiberglass water tank developed a hole due to corrosion. The line was isolated and exposed. A new replacement line was installed above ground.

Describe Area Affected and Cleanup Action Taken.*

Area affected is approximately 5'x 70' on the location (pad) and an additional 3' x 40' off location in the surrounding pasture. Remediation was performed by third party in accordance with an NMOCD approved work plan.

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:	OIL CONSERVATION DIVISION	
Printed Name: Kyle Littrell	Approved by Environmental Specialist:	
Title: Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: kyle_littrell@xtoenergy.com	Conditions of Approval:	Attached ☐
Date: 5-14-2018 Phone: (432)-221-7331		

* Attach Additional Sheets If Necessary

2RP-4535

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-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 03139		ED	4	2	4	01	23S	30E	610424	3577764*	826	425		
C 03559 POD1	CUB	ED	4	3	2	01	23S	30E	609928	3578260	1199	50	0	50
C 03559 POD2	CUB	ED	4	3	2	01	23S	30E	609928	3578260	1199	25	0	25
C 03559 POD3	CUB	ED	4	3	2	01	23S	30E	609928	3578260	1199	20	0	20
C 03559 POD4	CUB	ED	4	3	2	01	23S	30E	609928	3578260	1199	25	0	25
C 03559 POD5	CUB	ED	4	3	2	01	23S	30E	609912	3578236	1214	50		
C 02725		ED	1	1	1	05	23S	31E	612240	3578731*	1233	532		
C 02775		ED	1	1	1	05	23S	31E	612240	3578731*	1233	529		
C 02492		ED	4	4	4	06	23S	31E	612056	3577320*	1279	135	85	50
C 02865		ED	4	4	4	06	23S	31E	612056	3577320*	1279	174		
C 03520 POD1	C	ED	3	1	1	07	23S	31E	610733	3576905	1352	500		
C 02492 POD2	C	ED	3	2	2	07	23S	31E	611767	3576996	1363	400	125	275
C 02776		ED	2	1	1	05	23S	31E	612440	3578731*	1416	661		
C 02664		ED	3	3	2	05	23S	31E	613049	3578138*	1923	4291	354	3937
C 03561 POD4	CUB	ED	3	2	3	36	22S	30E	609419	3579425	2101	25	0	25
C 03561 POD5	CUB	ED	3	2	3	36	22S	30E	609419	3579425	2101	20	0	20
C 03561 POD3	CUB	ED	3	2	3	36	22S	30E	609393	3579425	2122	25	0	25
C 03561 POD2	CUB	ED	3	2	3	36	22S	30E	609314	3579424	2186	25	0	25
C 03561 POD1	CUB	ED	3	2	3	36	22S	30E	609288	3579393	2191	30	0	30
C 03222 EXPLORE		ED	1	1	4	12	23S	30E	609833	3576349*	2258	365		
C 02766		ED	3	3	3	29	22S	31E	612216	3580541*	2582	589		
C 02774		ED	3	1	3	04	23S	31E	613857	3577745*	2768	1660		
C 02418		ED	3	2	3	29	22S	31E	612613	3580948*	3124	617	413	204
C 02419		ED	3	2	3	29	22S	31E	612613	3580948*	3124	225		
C 02417		ED	4	4	4	29	22S	31E	613623	3580554*	3431	681		
C 02638		ED	4	3	3	35	22S	30E	607558	3578948*	3645	528		

***UTM location was derived from PLSS - see Help**

(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-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 03207		ED	4	2	4	29	22S	31E	613618	3580956*	3715	150		
C 03221 EXPLORE		ED	1	2	1	30	22S	31E	610995	3581935*	3737	651		
C 03351	C	ED	4	1	4	04	23S	31E	614917	3577861	3805	320	168	152
C 02758		ED	3	2	1	29	22S	31E	612604	3581752*	3847	661		
C 02762		ED	3	2	1	29	22S	31E	612604	3581752*	3847	672		
C 02763		ED	3	2	1	29	22S	31E	612604	3581752*	3847	660		
C 02760		ED	2	2	4	29	22S	31E	613618	3581156*	3866	725		
C 02761		ED	2	2	4	29	22S	31E	613618	3581156*	3866	730		
C 02764		ED	2	2	4	29	22S	31E	613618	3581156*	3866	902		
C 02767		ED	4	1	4	33	22S	31E	614844	3579360*	3894	785		
C 02768		ED	4	1	4	33	22S	31E	614844	3579360*	3894	787		
C 02759		ED	1	2	1	29	22S	31E	612604	3581952*	4032	795		
C 03140		ED	4	2	4	04	23S	31E	615266	3577758*	4163	684		
C 02811		ED	2	4	2	29	22S	31E	613613	3581558*	4178	80		
C 02687		ED	4	2	4	33	22S	31E	615246	3579364*	4280	779		
C 02769 POD2	C	ED	4	2	4	33	22S	31E	615261	3579312	4281	753	428	325
C 02420		ED	4	2	3	28	22S	31E	614423	3580964*	4302	779	450	329
C 02421		ED	4	2	3	28	22S	31E	614423	3580964*	4302	786	450	336
C 02422		ED	4	2	3	28	22S	31E	614423	3580964*	4302	785	450	335
C 02423		ED	4	2	3	28	22S	31E	614423	3580964*	4302	782	450	332
C 02424		ED	4	2	3	28	22S	31E	614423	3580964*	4302	786	450	336
C 02425		ED	4	2	3	28	22S	31E	614423	3580964*	4302	788	450	338
C 02426		ED	4	2	3	28	22S	31E	614423	3580964*	4302	785	450	335
C 02769	C	ED	2	2	4	33	22S	31E	615246	3579564*	4339	765		
C 02662		ED	1	2	2	29	22S	31E	613409	3581960*	4398	856		
C 02765		ED	1	2	2	29	22S	31E	613409	3581960*	4398	856		
C 02770		ED	4	4	1	14	23S	30E	608004	3574921*	4527	286		
C 02772 POD1	C	ED	4	4	1	14	23S	30E	608043	3574840	4559	300		
C 02773		ED	4	1	3	03	23S	31E	615668	3577762*	4562	880		

***UTM location was derived from PLSS - see Help**

(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-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02989		ED	3	4	4	20	22S	31E	613404	3582162*	4570	54		
C 03976 POD1	CUB	ED	1	3	4	20	22S	31E	612967	3582387	4574	180		
C 03976 POD2	CUB	ED	1	3	4	20	22S	31E	612967	3582387	4574	70		
C 03976 POD3	CUB	ED	1	3	4	20	22S	31E	612967	3582387	4574	182		
C 02505		ED	4	4	4	20	22S	31E	613604	3582162*	4672	69	48	21
C 02506		ED	4	4	4	20	22S	31E	613604	3582162*	4672	69	48	21
C 02507		ED	4	4	4	20	22S	31E	613604	3582162*	4672	73	45	28
C 02752		ED	4	4	4	20	22S	31E	613604	3582162*	4672	2875		
C 02801		ED	4	4	4	20	22S	31E	613604	3582162*	4672	65		
C 02802		ED	4	4	4	20	22S	31E	613604	3582162*	4672	65		
C 02803		ED	4	4	4	20	22S	31E	613604	3582162*	4672	65		
C 02981		ED	4	4	4	20	22S	31E	613604	3582162*	4672	62		
C 02983		ED	4	4	4	20	22S	31E	613604	3582162*	4672	60		
C 02987		ED	4	4	4	20	22S	31E	613604	3582162*	4672	68		
C 02991		ED	4	4	4	20	22S	31E	613604	3582162*	4672	64		
C 02637		ED	1	3	3	24	22S	30E	608950	3582377*	4710	759		
C 02757		ED	4	4	4	28	22S	31E	615232	3580571*	4741	4057		
C 02753		ED	1	4	4	20	22S	31E	613404	3582362*	4744	851		
C 02986		ED	1	4	4	20	22S	31E	613404	3582362*	4744	71		
C 02990		ED	1	4	4	20	22S	31E	613404	3582362*	4744	71		
C 02416		ED	3	2	4	28	22S	31E	615027	3580973*	4785	800	401	399
C 02771		ED	1	2	3	14	23S	30E	607807	3574718*	4810	295		
C 02980		ED	2	4	4	20	22S	31E	613604	3582362*	4843	62		
C 02982		ED	2	4	4	20	22S	31E	613604	3582362*	4843	65		
C 02984		ED	2	4	4	20	22S	31E	613604	3582362*	4843	65		
C 02985		ED	2	4	4	20	22S	31E	613604	3582362*	4843	62		
C 02988		ED	2	4	4	20	22S	31E	613604	3582362*	4843	75		
C 02950 EXPL		ED	4	2	4	23	22S	30E	608740	3582576*	4984	845		

***UTM location was derived from PLSS - see Help**

Average Depth to Water: **202 feet**

Minimum Depth: **0 feet**

Maximum Depth: **450 feet**

Record Count: 83

UTMNAD83 Radius Search (in meters):

Easting (X): 611126.38 **Northing (Y):** 3578199.89 **Radius:** 5000

APPENDIX C

LABORATORY ANALYTICAL REPORTS

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

December 27, 2017

Austin Weyant
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL: (575) 689-7040
FAX (505) 327-1496

RE: JRV 17 XTO OrderNo.: 1712A99

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 10 sample(s) on 12/19/2017 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 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1712A99**
Date Reported: **12/27/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-0.5
Project: JRV 17 XTO
Collection Date: 12/14/2017 4:15:00 PM
Lab ID: 1712A99-001 **Matrix:** SOIL **Received Date:** 12/19/2017 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	7400	300		mg/Kg	200	12/22/2017 1:48:52 AM	35656
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	27	9.2		mg/Kg	1	12/22/2017 11:55:46 AM	35658
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/22/2017 11:55:46 AM	35658
Surr: DNOP	105	70-130		%Rec	1	12/22/2017 11:55:46 AM	35658
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/21/2017 2:16:56 PM	35639
Surr: BFB	109	15-316		%Rec	1	12/21/2017 2:16:56 PM	35639
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	12/21/2017 2:16:56 PM	35639
Benzene	ND	0.025		mg/Kg	1	12/21/2017 2:16:56 PM	35639
Toluene	ND	0.050		mg/Kg	1	12/21/2017 2:16:56 PM	35639
Ethylbenzene	ND	0.050		mg/Kg	1	12/21/2017 2:16:56 PM	35639
Xylenes, Total	ND	0.10		mg/Kg	1	12/21/2017 2:16:56 PM	35639
Surr: 4-Bromofluorobenzene	99.7	80-120		%Rec	1	12/21/2017 2:16:56 PM	35639

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 Quanitative 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

Analytical Report
Lab Order **1712A99**
Date Reported: **12/27/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-1
Project: JRV 17 XTO
Collection Date: 12/14/2017 4:20:00 PM
Lab ID: 1712A99-002 **Matrix:** SOIL **Received Date:** 12/19/2017 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	2700	150		mg/Kg	100	12/22/2017 2:01:16 AM	35656

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 Quanitative 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

Analytical Report
Lab Order **1712A99**
Date Reported: **12/27/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-2
Project: JRV 17 XTO
Collection Date: 12/14/2017 4:25:00 PM
Lab ID: 1712A99-003 **Matrix:** SOIL **Received Date:** 12/19/2017 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	1200	75		mg/Kg	50	12/22/2017 2:13:41 AM	35656

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 Quanitative 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

Analytical Report
Lab Order **1712A99**
Date Reported: **12/27/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-0.5
Project: JRV 17 XTO
Collection Date: 12/14/2017 4:30:00 PM
Lab ID: 1712A99-004 **Matrix:** SOIL **Received Date:** 12/19/2017 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	8100	300		mg/Kg	200	12/22/2017 2:26:05 AM	35656
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/22/2017 12:20:10 PM	35658
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/22/2017 12:20:10 PM	35658
Surr: DNOP	102	70-130		%Rec	1	12/22/2017 12:20:10 PM	35658
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2017 2:40:54 PM	35639
Surr: BFB	109	15-316		%Rec	1	12/21/2017 2:40:54 PM	35639
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.096		mg/Kg	1	12/21/2017 2:40:54 PM	35639
Benzene	ND	0.024		mg/Kg	1	12/21/2017 2:40:54 PM	35639
Toluene	ND	0.048		mg/Kg	1	12/21/2017 2:40:54 PM	35639
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2017 2:40:54 PM	35639
Xylenes, Total	ND	0.096		mg/Kg	1	12/21/2017 2:40:54 PM	35639
Surr: 4-Bromofluorobenzene	99.0	80-120		%Rec	1	12/21/2017 2:40:54 PM	35639

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 Quanitative 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

Analytical Report
Lab Order **1712A99**
Date Reported: **12/27/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-1
Project: JRV 17 XTO
Collection Date: 12/14/2017 4:40:00 PM
Lab ID: 1712A99-005 **Matrix:** SOIL **Received Date:** 12/19/2017 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	3400	150		mg/Kg	100	12/22/2017 2:38:30 AM	35656

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 Quanitative 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

Analytical Report
Lab Order **1712A99**
Date Reported: **12/27/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-2
Project: JRV 17 XTO
Collection Date: 12/14/2017 4:50:00 PM
Lab ID: 1712A99-006 **Matrix:** SOIL **Received Date:** 12/19/2017 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	600	30		mg/Kg	20	12/21/2017 4:05:42 PM	35656

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 Quanitative 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

Analytical Report
Lab Order **1712A99**
Date Reported: **12/27/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-0.5
Project: JRV 17 XTO
Collection Date: 12/14/2017 5:00:00 PM
Lab ID: 1712A99-007 **Matrix:** SOIL **Received Date:** 12/19/2017 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	11000	750		mg/Kg	500	12/22/2017 2:50:54 AM	35656
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/22/2017 12:44:29 PM	35658
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/22/2017 12:44:29 PM	35658
Surr: DNOP	104	70-130		%Rec	1	12/22/2017 12:44:29 PM	35658
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/21/2017 3:04:47 PM	35639
Surr: BFB	104	15-316		%Rec	1	12/21/2017 3:04:47 PM	35639
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	12/21/2017 3:04:47 PM	35639
Benzene	ND	0.024		mg/Kg	1	12/21/2017 3:04:47 PM	35639
Toluene	ND	0.047		mg/Kg	1	12/21/2017 3:04:47 PM	35639
Ethylbenzene	ND	0.047		mg/Kg	1	12/21/2017 3:04:47 PM	35639
Xylenes, Total	ND	0.095		mg/Kg	1	12/21/2017 3:04:47 PM	35639
Surr: 4-Bromofluorobenzene	95.0	80-120		%Rec	1	12/21/2017 3:04:47 PM	35639

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 Quanitative 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

Analytical Report
Lab Order **1712A99**
Date Reported: **12/27/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-1
Project: JRV 17 XTO
Collection Date: 12/14/2017 5:05:00 PM
Lab ID: 1712A99-008 **Matrix:** SOIL **Received Date:** 12/19/2017 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	15000	750		mg/Kg	500	12/22/2017 3:03:19 AM	35656

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 Quanitative 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

Analytical Report
Lab Order **1712A99**
Date Reported: **12/27/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-2
Project: JRV 17 XTO
Collection Date: 12/14/2017 5:10:00 PM
Lab ID: 1712A99-009
Matrix: SOIL
Received Date: 12/19/2017 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	19000	750		mg/Kg	500	12/22/2017 3:15:43 AM	35656

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 Quanitative 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

Analytical Report
Lab Order **1712A99**
Date Reported: **12/27/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-3
Project: JRV 17 XTO
Collection Date: 12/14/2017 5:15:00 PM
Lab ID: 1712A99-010 **Matrix:** SOIL **Received Date:** 12/19/2017 9:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	18000	750		mg/Kg	500	12/22/2017 3:28:08 AM	35656

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 Quanitative 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#: **1712A99**

27-Dec-17

Client: Souder, Miller & Associates

Project: JRV 17 XTO

Sample ID	**MB-35656**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**35656**	RunNo:	**47960**					
Prep Date:	**12/21/2017**	Analysis Date:	**12/21/2017**	SeqNo:	**1537422**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-35656**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**35656**	RunNo:	**47960**					
Prep Date:	**12/21/2017**	Analysis Date:	**12/21/2017**	SeqNo:	**1537423**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.9	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 Quanitative 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#: **1712A99**

27-Dec-17

Client: Souder, Miller & Associates

Project: JRV 17 XTO

Sample ID	**LCS-35658**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**35658**		RunNo:	**47980**				
Prep Date:	**12/21/2017**	Analysis Date:	**12/22/2017**		SeqNo:	**1537164**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	73.2	114			
Surr: DNOP	4.8		5.000		96.7	70	130			

Sample ID	**MB-35658**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**35658**		RunNo:	**47980**				
Prep Date:	**12/21/2017**	Analysis Date:	**12/22/2017**		SeqNo:	**1537165**	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	10		10.00		99.7	70	130			

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 Quanitative 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#: **1712A99**

27-Dec-17

Client: Souder, Miller & Associates

Project: JRV 17 XTO

Sample ID	**MB-35639**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**35639**	RunNo:	**47973**					
Prep Date:	**12/20/2017**	Analysis Date:	**12/21/2017**	SeqNo:	**1536898**	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	1100		1000		109	15	316			

Sample ID	**LCS-35639**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**35639**	RunNo:	**47973**					
Prep Date:	**12/20/2017**	Analysis Date:	**12/21/2017**	SeqNo:	**1536899**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	31	5.0	25.00	0	122	75.9	131			
Surr: BFB	1200		1000		122	15	316			

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 Quanitative 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#: **1712A99**

27-Dec-17

Client: Souder, Miller & Associates

Project: JRV 17 XTO

Sample ID	**MB-35639**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**35639**	RunNo:	**47973**					
Prep Date:	**12/20/2017**	Analysis Date:	**12/21/2017**	SeqNo:	**1536927**	Units:	**mg/Kg**			

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	0.98		1.000		98.5	80	120			

Sample ID	**LCS-35639**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**35639**	RunNo:	**47973**					
Prep Date:	**12/20/2017**	Analysis Date:	**12/21/2017**	SeqNo:	**1536928**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.87	0.10	1.000	0	86.7	70.1	121			
Benzene	0.91	0.025	1.000	0	91.1	77.3	128			
Toluene	0.93	0.050	1.000	0	92.7	79.2	125			
Ethylbenzene	0.91	0.050	1.000	0	91.0	80.7	127			
Xylenes, Total	2.7	0.10	3.000	0	90.2	81.6	129			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

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 Quanitative 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

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: 1712A99 RcptNo: 1

Received By: Erin Melendrez 12/19/2017 9:50:00 AM

Completed By: Michelle Garcia 12/19/2017 10:37:24 AM Michelle Garcia

Reviewed By: ENM 12/19/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. 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:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.5	Good	Yes			

Chain-of-Custody Record

Client: SMA

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time: 5 day turn
☐ Standard ☑ Rush

Project Name: JRU 17 XTO

Project #:

Project Manager: Austin Weygant

Sampler: Heather Patterson

On Ice: ☑ Yes ☐ No

Sample Temperature: 3.5

HEAL No. 1712A99

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
~~12/8/17~~	4:15pm	Soil	L1-0.5	4oz		001
12/14/17	4:20		L1-1			002
	4:25		L1-2			003
	4:30		L2-0.5			004
	4:40		L2-1			005
	4:50		L2-2			006
	5:00		L3-0.5			007
	5:05		L3-1			008
	5:10		L3-2			009
	5:15		L3-3			010

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_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
X		X					X				
							X				
							X				
X		X					X				
							X				
							X				
X		X					X				
							X				
							X				
							X				

Date	Time	Relinquished by:	Received by:	Date	Time
12/8/17	1430			12/8/17	1430
12/8/17	1900			12/9/17	0950

Remarks: XTO - 5 day Turn

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

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January 17, 2018

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

RE: JRU 17 OrderNo.: 1801682

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/12/2018 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 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **1801682**
Date Reported: **1/17/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Project: JRU 17
Lab Order: 1801682

Lab ID: 1801682-001 **Collection Date:** 1/5/2018 11:00:00 AM
Client Sample ID: L3-6 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	190	30		mg/Kg	20	1/15/2018 9:25:07 PM	36027

Lab ID: 1801682-002 **Collection Date:** 1/5/2018 11:15:00 AM
Client Sample ID: L3-8 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	130	30		mg/Kg	20	1/15/2018 9:37:32 PM	36027

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 Quanitative 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#: **1801682**

17-Jan-18

Client: Souder, Miller & Associates

Project: JRU 17

Sample ID	**MB-36027**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**36027**	RunNo:	**48473**					
Prep Date:	**1/15/2018**	Analysis Date:	**1/15/2018**	SeqNo:	**1558148**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-36027**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**36027**	RunNo:	**48473**					
Prep Date:	**1/15/2018**	Analysis Date:	**1/15/2018**	SeqNo:	**1558149**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.2	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 Quanitative 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

Hall Environmental Analysis Laboratory
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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: 1801682 RcptNo: 1

Received By: Ashley Gallegos 1/12/2018 9:37:00 AM

Completed By: Ashley Gallegos 1/12/2018 10:21:41 AM

Reviewed By: DDS 1/12/18

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: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

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:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.7	Good	Yes			

Chain-of-Custody Record

Client: SMA Carlsbad

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush 5 dy

Project Name: JRU #17

Project #:

Project Manager: Austin Weyant

Sampler: LM

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.6-0.9(CF)=0.7

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	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_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
1-5-18	11:00	Soil	L3-6	4oz		1801682-001								X								
1-5-18	11:15	—	L3-8	—		-002								X								

Date:	Time:	Relinquished by:	Received by:	Date	Time
				1/10/18	0900
Date:	Time:	Relinquished by:	Received by:	Date	Time
1/11/18	1900		via Courier	01/12/18	0937

Remarks: X to U

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

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

May 14, 2018

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

RE: JRV17 OrderNo.: 1805423

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 11 sample(s) on 5/8/2018 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 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 #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1805423**
Date Reported: **5/14/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-6
Project: JRV17
Collection Date: 5/2/2018 11:58:00 AM
Lab ID: 1805423-001 **Matrix:** SOIL **Received Date:** 5/8/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	360	30		mg/Kg	20	5/10/2018 9:30:11 PM	38062

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 Quanitative 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

Analytical Report
Lab Order **1805423**
Date Reported: **5/14/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW2
Project: JRV17
Collection Date: 5/2/2018 2:38:00 PM
Lab ID: 1805423-002 **Matrix:** SOIL **Received Date:** 5/8/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	5/10/2018 10:07:26 PM	38062

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 Quanitative 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

Analytical Report
Lab Order **1805423**
Date Reported: **5/14/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW1
Project: JRV17
Collection Date: 5/2/2018 3:10:00 PM
Lab ID: 1805423-003 **Matrix:** SOIL **Received Date:** 5/8/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	5/10/2018 10:19:50 PM	38062

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 Quanitative 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

Analytical Report
Lab Order **1805423**
Date Reported: **5/14/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW4
Project: JRV17
Collection Date: 5/3/2018 9:32:00 AM
Lab ID: 1805423-004 **Matrix:** SOIL **Received Date:** 5/8/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	78	30		mg/Kg	20	5/10/2018 10:32:15 PM	38062

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 Quanitative 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

Analytical Report
Lab Order **1805423**
Date Reported: **5/14/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW5
Project: JRV17
Collection Date: 5/3/2018 9:50:00 AM
Lab ID: 1805423-005 **Matrix:** SOIL **Received Date:** 5/8/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	210	30		mg/Kg	20	5/10/2018 10:44:40 PM	38062

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 Quanitative 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

Analytical Report
Lab Order **1805423**
Date Reported: **5/14/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW6
Project: JRV17
Collection Date: 5/3/2018 10:40:00 AM
Lab ID: 1805423-006 **Matrix:** SOIL **Received Date:** 5/8/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	200	30		mg/Kg	20	5/10/2018 10:57:05 PM	38062

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 Quanitative 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

Analytical Report
Lab Order **1805423**
Date Reported: **5/14/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW7
Project: JRV17
Collection Date: 5/3/2018 11:21:00 AM
Lab ID: 1805423-007 **Matrix:** SOIL **Received Date:** 5/8/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	330	30		mg/Kg	20	5/10/2018 11:09:30 PM	38062

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 Quanitative 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

Analytical Report
Lab Order **1805423**
Date Reported: **5/14/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW8
Project: JRV17
Collection Date: 5/3/2018 12:18:00 PM
Lab ID: 1805423-008 **Matrix:** SOIL **Received Date:** 5/8/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	300	30		mg/Kg	20	5/10/2018 11:46:45 PM	38062

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 Quanitative 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

Analytical Report
Lab Order **1805423**
Date Reported: **5/14/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1b-2
Project: JRV17
Collection Date: 5/3/2018 12:38:00 PM
Lab ID: 1805423-009 **Matrix:** SOIL **Received Date:** 5/8/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	900	30		mg/Kg	20	5/10/2018 11:59:09 PM	38062

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 Quanitative 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

Analytical Report
Lab Order **1805423**
Date Reported: **5/14/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1b-3
Project: JRV17
Collection Date: 5/3/2018 12:49:00 PM
Lab ID: 1805423-010 **Matrix:** SOIL **Received Date:** 5/8/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	230	30		mg/Kg	20	5/11/2018 12:36:23 AM	38062

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 Quanitative 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

Analytical Report
Lab Order **1805423**
Date Reported: **5/14/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L5-3
Project: JRV17
Collection Date: 5/3/2018 10:30:00 AM
Lab ID: 1805423-011 **Matrix:** SOIL **Received Date:** 5/8/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	550	30		mg/Kg	20	5/11/2018 12:48:47 AM	38062

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 Quanitative 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#: **1805423**

14-May-18

Client: Souder, Miller & Associates

Project: JRV17

Sample ID	**MB-38062**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**38062**	RunNo:	**51177**					
Prep Date:	**5/10/2018**	Analysis Date:	**5/10/2018**	SeqNo:	**1664132**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-38062**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**38062**	RunNo:	**51177**					
Prep Date:	**5/10/2018**	Analysis Date:	**5/10/2018**	SeqNo:	**1664133**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.4	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 Quanitative 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

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: 1805423 RcptNo: 1

Received By: Isaiah Ortiz 5/8/2018 9:15:00 AM IO

Completed By: Ashley Gallegos 5/8/2018 10:58:24 AM AG

Reviewed By: 05/08/18 labeled by: JB 05/08/18

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 ☑

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: _____
05/08/18

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 ☐

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:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes			

Chain-of-Custody Record

Client: SMA - C'bad

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day turn
☐ Standard ☐ Rush

Project Name: JRU 17

Project #:

Project Manager: Austin Weyant

Sampler: Heather Patterson

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.2

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1805423	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 ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
5/2/18	11:58	Soil	L4-C6	4 oz		-001								X								
5	2:38		SW2			-002								X								
	3:10		SW1			-003								X								
5/3/18	9:32		SW4			-004								X								
	9:50		SW5			-005								X								
	10:40		SW6			-006								X								
	11:21		SW7			-007								X								
	12:18		SW8			-008								X								
	12:38		L1b-2			-009								X								
	12:49		L1b-3			-010								X								
5/3	1030		LS-3			-011								X								

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
5/4/18	1500			5/4/18	1500	
5/8/18	1900		Courier	5/8/18	915	

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.

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

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

COMMENTS

Action 199107

COMMENTS

Operator: BOPCO, L.P. 6401 Holiday Hill Rd Midland, TX 79707	OGRID: 260737
	Action Number: 199107
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

COMMENTS

Created By	Comment	Comment Date
amaxwell	Historical document upload	3/21/2023

District I
1625 N. French Dr., Hobbs, NM 88240
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State of New Mexico
Energy, Minerals and Natural Resources
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Santa Fe, NM 87505

CONDITIONS

Action 199107

CONDITIONS

Operator: BOPCO, L.P. 6401 Holiday Hill Rd Midland, TX 79707	OGRID: 260737
	Action Number: 199107
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	3/21/2023