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

August 30, 2018

#5E27408-BG1

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

SUBJECT: REMEDIATION CLOSURE REPORT FOR THE ROCK ISLAND 16 STATE 1H RELEASE (2RP-4841), EDDY COUNTY, NEW MEXICO

Dear Mr. Bratcher:

On behalf of Marathon Oil Permian LLC, Souder, Miller & Associates (SMA) has prepared this REMEDIATION CLOSURE REPORT that describes the remediation of the release site located at the Rock Island State 1H site. The site is in UNIT G, SECTION 16, TOWNSHIP 18S, RANGE 26E, NMPM, Eddy County, New Mexico, on State 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	Rock Island 16 State 1H
Company	Marathon Oil Permian LLC
Incident Number	2RP-4841
API Number	30-015-38461
Location	32.748966, -104.38327
Estimated Date of Release	unknown
Date Reported to NMOCD	June 12, 2018
Land Owner	State
Reported To	NMOCD District II
Source of Release	Oil storage tank
Released Material	oil
Released Volume	Unknown
Recovered Volume	Unknown
Net Release	Unknown
NMOCD Closure Criteria	50-100’ to groundwater

1.0 Background

On June 12, 2018, the oil tank was removed for inspection. At that time light staining was discovered in the gravel and on the liner. Upon further inspection the liner was found to be breached. The liner was then removed for further soil delineation.

Figure 1 illustrates the site vicinity, Figure 2 illustrates the site location. The initial C-141 form is included in Appendix A.

2.0 Site Information and Closure Criteria

The Rock Island 16 State 1H is located approximately 1.5 miles southeast of Atoka, New Mexico on State land.

As summarized in Table 2 and illustrated in Figure 1, depth to groundwater in the area is estimated to be approximately 60 feet below grade surface (bgs). There are eleven known water sources within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database. The nearest surface water is the Rio Penasco located approximately 3000 feet to the north.

Based on this information, the applicable NMOCD Closure Criteria for this site is for groundwater depth of between 51-100 feet bgs.

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

3.0 Release Characterization Activities

On June 26, 2018, SMA personnel arrived on site in response to the release associated with Rock Island 16 State 1H. Due to the unknown nature of this release, a vertical investigation was performed first. A total of one sample location (BH1), located beneath the former oil tank, was investigated using a direct-push drill rig, to 20 feet bgs. Results of this investigation indicated that hydrocarbon contamination was present in the top three feet, and chlorides were minimal at all depths (see Table 3).

On July 24, 2018 SMA personnel returned to the site during removal of the remaining liner and to oversee the initial excavation. At this time further staining was discovered south of BH1. A second vertical delineation sample location was added (BH2), which was potholed to 10 feet bgs, with five samples collected. At this time, Marathon operations decided to remove all tanks to further inspect.

SMA guided the excavation activities by collecting soil samples for field screening for hydrocarbon impacts using a Dexsil® PetroFLAG TPH Analyzer. The walls and base were excavated until field screening results indicated clean soils. The northern end of the excavation could not be fully excavated due to remaining production tanks. Once the tanks were removed, the area was excavated, as described in Section 4.0 below.

A total of 20 samples were collected for laboratory analysis for benzene and total BTEX (benzene, toluene, ethylbenzene and total xylenes) using EPA Method 8021B; MRO, DRO, and GRO (motor, diesel and gasoline range organics, respectively) by EPA Method 8015D; and total chloride using EPA Method 300.0. Laboratory samples were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico (Appendix C).

Locations for all samples are depicted on Figure 2, and a summary of the laboratory results is displayed in Table 3. The impacted area was excavated and piled on location until removal of the northern tanks and confirmation sampling could occur.

4.0 Soil Remediation Summary

On August 16, 2018, SMA returned to the site to collect closure samples. At the request of NMSU Research Station, SMA personnel and a representative of NMSU collected confirmation samples from

the bottom of the excavation (BH1-BH3) and six sidewall locations (SW1-SW6). These samples were split between the two parties and sent to separate laboratories.

The total excavation measured approximately 30 feet by 70 feet. The northern portion of the excavation (represented by BH1 and BH3) were excavated to a depth of 3.5 feet bgs, and the southern portion (BH2) was excavated to a depth of 2.5 feet bgs.

Contaminated soils were removed and replaced with clean backfill material to return the surface to previous contours. The battery is to be rebuilt with a new, impervious containment. The contaminated soil was transported for proper disposal at an NMOCD permitted disposal facility. Sample locations are depicted on Figure 2. 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

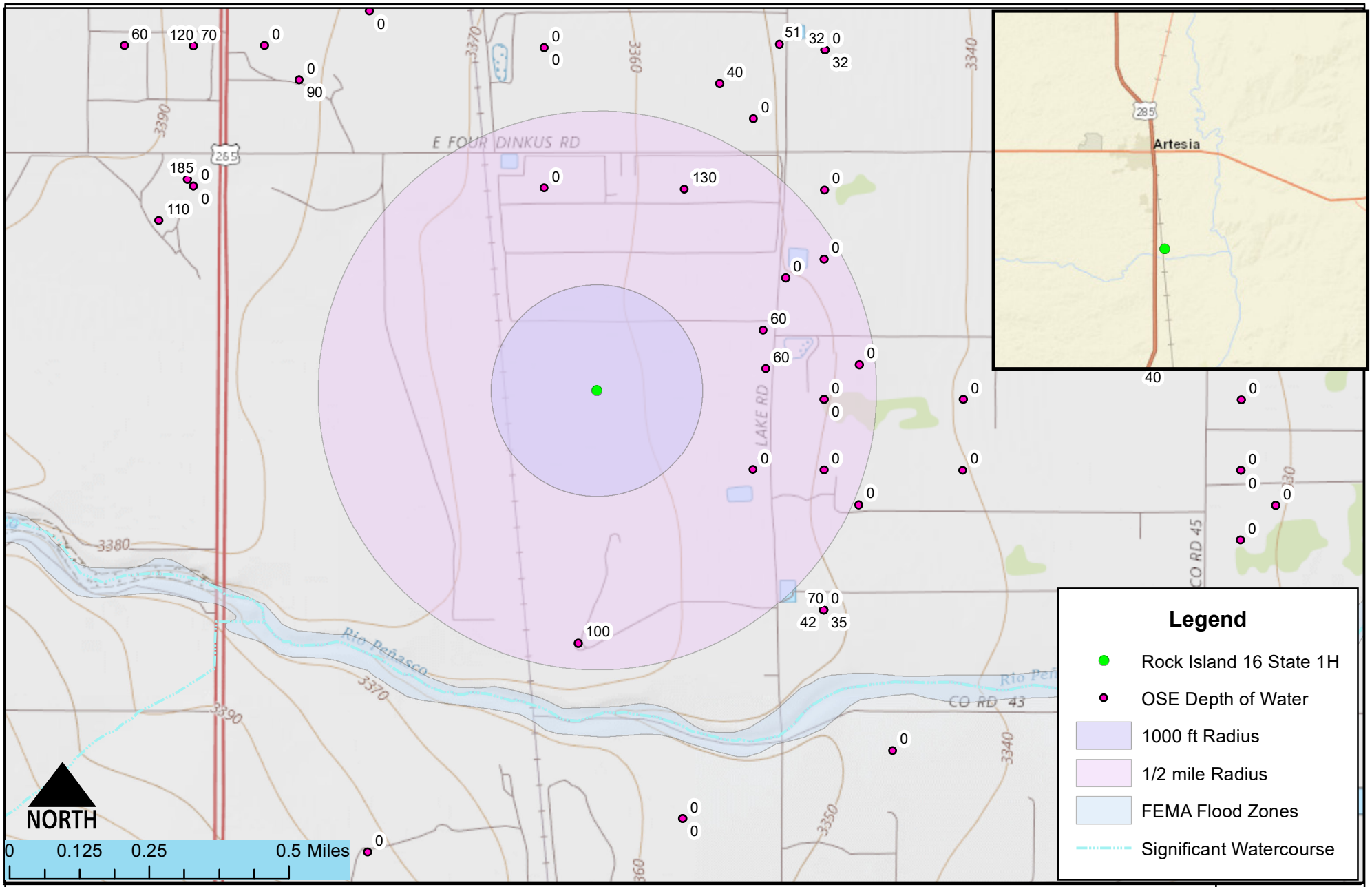
Tables:

Table 2: NMOCD Closure Criteria Justification
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 Well Head Protection Map
Rock Island 16 State #1H - Marathon
S 16-T18S-R26E, New Mexico

Figure 1

Date Saved: 8/30/2018

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

Drawn Heather Patterson
Checked
Approved

SMA
201 South Halagueña 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
Rock Island 16 State #1H - Marathon
S 16-T18S-R26E, New Mexico

Figure 2

Date Saved: 8/30/2018

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

Drawn Heather Patterson
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TABLE 2

NMOCD CLOSURE CRITERIA JUSTIFICATION

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	60	NMOSE Database
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	various	Figure 1, NMOSE
Hortizontal Distance to Nearest Significant Watercourse (ft)	3000	Figure 1, USGS Topo

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

TABLE 3
SUMMARY SAMPLE RESULTS

Rock Island 16 State #1H

Table 3.

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Action	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- Laboratory mg/Kg
NMOCD Closing Criteria				50 mg/Kg	10 mg/Kg				1000/2500	10,000
BH1	6/26/2018	0.5	excavated	25.7	<0.23	380	9700	5100	**15180**	1600
	6/26/2018	2.5	excavated	--	--	150	1800	1100	**3050**	370
	8/16/2018	3.5	in-situ	<0.23	<0.025	<5.0	14	<49	14	470
	6/26/2018	5	in-situ	--	--	18	98	55	171	65
	6/26/2018	7.5	in-situ	--	--	11	62	<50	73	--
	6/26/2018	10	in-situ	--	--	10	50	<50	60	--
	6/26/2018	12.5	in-situ	0.15	<0.025	31	63	<50	94	57
	6/26/2018	15	in-situ	--	--	40	86	<50	126	--
	6/26/2018	17.5	in-situ	--	--	50	28	<49	78	260
	6/26/2018	20	in-situ	--	--	18	130	60	208	--
BH2	7/24/2018	0.5	excavated	4.08	<0.11	94	4100	1500	**5694**	<30
	7/24/2018	2.5	in-situ	--	--	<4.7	90	<49	90	<30
	8/16/2018	2.5	in-situ	<0.23	<0.024	<4.8	<9.7	<48	<63	<30
	7/24/2018	5	in-situ	--	--	<4.8	120	<47	120	<30
	7/24/2018	7.5	in-situ	--	--	<4.8	<9.2	<46	<61	<30
	7/24/2018	10	in-situ	--	--	<4.6	<9.8	<49	<64	43
BH3	8/16/2018	3.5	in-situ	<0.23	<0.024	<4.8	<9.7	<48	<63	<30
SW1	7/24/2018	sidewall	in-situ	--	--	<4.9	<8.9	<45	<59	<30
	8/16/2018	sidewall	in-situ	--	--	<4.8	190	110	300	<30
SW2	7/24/2018	sidewall	in-situ	--	--	<4.8	<9.9	<50	<65	<30
	8/16/2018	sidewall	in-situ	--	--	<4.6	<9.9	<50	<65	<30
SW3	7/24/2018	sidewall	in-situ	--	--	<5.0	<9.9	<50	<65	<30
	8/16/2018	sidewall	in-situ	--	--	<4.7	31	<48	31	<30
SW4	7/24/2018	sidewall	in-situ	--	--	<5.0	<9.6	<48	<63	<30
	8/16/2018	sidewall	in-situ	--	--	<5.0	<9.7	<48	<63	<30
SW5	8/16/2018	sidewall	in-situ	--	--	<4.8	<9.6	<48	<63	<30
SW6	7/24/2018	sidewall	in-situ	--	--	<4.7	<9.8	<49	<64	<30
	8/16/2018	sidewall	in-situ	--	--	<5.0	<9.9	<50	<65	<30

"--" = Not Analyzed

Confirmation/Closure samples

APPENDIX A
FORM C141 INITIAL AND FINAL

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 JUN 29 2018

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505
DISTRICT II-ARTESIA O.C.D.

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

nAB1819057179 372098

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Marathon Oil Permian LLC	Contact Callie Karrigan
Address 5555 San Felipe Street, Houston, Texas 77056	Telephone No. 405-202-1028 (cell) 575-297-0956 (office)
Facility Name: Rock Island 16 State 1H	Facility Type Oil and gas production facilities

Surface: Owner: state	Mineral: Owner: state	API No. : 30-015-38461

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	16	18S	26E	2260	North	1650	east	Eddy

Latitude 32.748966 **.Longitude** -104.38327

NATURE OF RELEASE

Type of Release: oil	Volume of Release: unknown	Volume Recovered: none
Source of Release: oil tank	Date and Hour of Occurrence unknown	Date and Hour of Discovery 06/12/2018
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Eddy County – Mike Bratcher and Ryan Mann	
By Whom? Callie Karrigan	Date and Hour 06/13/2018 3:50 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
Not applicable.

Describe Cause of Problem and Remedial Action Taken.*
Following removal of an oil tank from the battery, light staining on rock and the liner was observed. Staining also breached the liner.

Describe Area Affected and Cleanup Action Taken.*
The affected area is confined in containment within the foot print of the tank; however, the liner was breached. The release is currently being assessed by SMA and pending lab analysis results to develop a work plan for delineation.

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.

Callie Karrigan Signature:	OIL CONSERVATION DIVISION Approved by Environmental Specialist: Original Signed By	
Printed Name: Callie Karrigan		
Title: HES Environmental Professional	Approval Date: 7/9/18	Expiration Date: N/A
E-mail Address: cnkarrigan@marathonoil.com	Conditions of Approval: See attached	Attached ☐ 2RP-4841
Date: 06/29/2018 Phone: 405-202-1028(cell) 575-297-0956 (office)		

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 6/29/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4841 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 2 office in ARTESIA on or before 7/29/2018. 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_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

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
RA 11179 POD2	RA	ED	4	4	2	16	18S	26E	558180	3623696	447	71	60	11
RA 11179 POD1	RA	ED	2	3	2	16	18S	26E	558172	3623807	469	74	60	14
RA 11682 POD2		ED	4	2	2	16	18S	26E	558236	3623959	598	98		
RA 03421		ED	1	2	2	16	18S	26E	557942	3624213*	621	665	130	535
RA 05241		ED		3	4	16	18S	26E	557644	3622903*	728	200	100	100
RA 01446		ED		1	3	15	18S	26E	558450	3623307*	779	175		
RA 01296 S3		ED	1	3	3	15	18S	26E	558351	3623003*	873	230	70	160
RA 01296 S5		ED	1	3	3	15	18S	26E	558351	3623003*	873	223	35	188
RA 01446 CLW		ED	1	3	3	15	18S	26E	558351	3623003*	873	165	42	123
RA 02800		ED	1	3	3	15	18S	26E	558351	3623003*	873	102	30	72
RA 03326		ED		4	4	09	18S	26E	558041	3624518*	942	75	40	35
RA 11682 POD5		ED	4	2	1	16	18S	26E	558214	3624632	1113	66	51	15
RA 00010		ED	1	3	3	10	18S	26E	558344	3624616*	1160	863	32	831
RA 00010 A		ED	1	3	3	10	18S	26E	558344	3624616*	1160	863	32	831
RA 04004		ED	3	2	2	21	18S	26E	557948	3622399*	1244	140		
RA 01462 #3		ED		3	3	09	18S	26E	556830	3624520*	1275	230		
RA 06131		ED		3	3	09	18S	26E	556830	3624520*	1275	225	90	135
RA 03599		ED	2	1	1	22	18S	26E	558552	3622599*	1309	1765		
RA 00010 CLW202760	O	ED	3	1	3	10	18S	26E	558343	3624821*	1339	863	32	831
RA 00010 CLW202772	O	ED	3	1	3	10	18S	26E	558343	3624821*	1339	863	32	831
RA 00010 CLW202817	O	ED	3	1	3	10	18S	26E	558343	3624821*	1339	863	32	831
RA 00010 CLW202829	O	ED	3	1	3	10	18S	26E	558343	3624821*	1339	863	32	831
RA 02877		ED	3	1	3	10	18S	26E	558343	3624821*	1339	150		
RA 02013		ED	2	2	2	17	18S	26E	556527	3624212*	1346	136		
RA 12265 POD1		ED	2	2	2	17	18S	26E	556509	3624232	1371	330	185	145
RA 09709		ED		2	2	17	18S	26E	556428	3624113*	1398	235	110	125

***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
RA 03382		ED	1	3	3	09	18S	26E	556729	3624619*	1416	129		

Average Depth to Water: **62 feet**

Minimum Depth: **30 feet**

Maximum Depth: **185 feet**

Record Count: 27

UTMNAD83 Radius Search (in meters):

Easting (X): 557738.78 **Northing (Y):** 3623625.63 **Radius:** 1500

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

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD 2 (Site MW-4)	N/A	RA-11179

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Center of Excellence for Hazardous Materials Management	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
505 N. Main St Attn: Douglas C. Lynn	Carlsbad	NM	88220

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	44	58.5	N
	LONGITUDE	104	22	44.2	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

SE1/4NE1/4 of Section 16, T18S, R26E, N.M.P.M.

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1249	Jackie D. Atkins	Atkins Engineering Associates

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
05/03/2018	05/04/2018	71	73	60.2

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 57.9

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY: None

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER – SPECIFY: Hollow Stem Auger (HSA)

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	51	±8.0	2 INCH SCH 40 PVC Riser	n/a	2.067	0.154	n/a
51	71	±8.0	2 INCH SCH 40 PVC Screen	n/a	2.067	0.154	0.010

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	2	±8.0	5000 psi Quikrete	±0.62	from surface
2	46	±8.0	Neat Cement	±12.10	tremie hose
46	49	±8.0	Hole Plug/Bentonite Chips	±1.05	tremie through HSA
49	73	±8.0	12/20 Silica Sand Pack	±6.89	tremie through HSA

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO. RA-11179	POD NO. 2	TRN NO. 624108	
LOCATION 18S.26E.16.2.4.4	monitor	WELL TAG ID NO. N/A	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	14	14	Clay, brown, fine to medium grained sand, loose, dry	Y ✓ N	
14	22	8	Clayey gravel, medium to coarse grained sand, brown, loose, dry	Y ✓ N	
22	51	29	Clayey sand, fine to medium grained sand, brown, loose, damp	Y ✓ N	
51	73	24	Clayey sand, fine to medium grained sand, light tan, soft, wet	✓ Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☑ OTHER – SPECIFY: N/A

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Site monitoring well MW-4.

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Guadalupe Leyba, Shane Eldridge

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Jackie D. Atkins — 05/09/2018

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

FILE NO. RA-11179	POD NO. 2	TRN NO. 624108	
LOCATION 18S.26E.16.2.4.4	monitor	WELL TAG ID NO. N/A	PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER): POD1	OSE FILE NUMBER(S): RA-11682
WELL OWNER NAME(S): Lakeside Dairy	PHONE (OPTIONAL):
WELL OWNER MAILING ADDRESS: 49 E. Atoka Road	CITY: Artesia / STATE: NM / ZIP: 88210

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	45	54.63	N
LONGITUDE	104	23	12.71	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS: Monitoring Well MW-3A, on dairy property at address and Lat. Long above.

2. OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP	RANGE
¼	¼	¼	¼		☐ NORTH ☐ SOUTH	☐ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

3. DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1311	Lee Gebbert	Geoprojects International, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
6-3-2011	6-4-2011	71	74	~56

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 51.27

DRILLING FLUID: ☐ AIR ☐ MUD ☐ ADDITIVES - SPECIFY: None

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER - SPECIFY: Hollow Stem Auger

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
0	51	8.5	PVC	Threaded	2		Blank
51	71	8.5	PVC	Threaded	2		0.01

4. WATER BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)
56	68	12	Clayey Silt, tan/red, saturated sand seams	2

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO 2011 AUG -8 A 11:50

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: Estimated while hand bailing

TOTAL ESTIMATED WELL YIELD (GPM): 2

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	RA-11682	POD NUMBER	1	TRN NUMBER	472997
LOCATION	18S.26E.09.444				PAGE 1 OF 2

5. SEAL AND PUMP

TYPE OF PUMP: ☐ SUBMERSIBLE ☐ JET ☑ NO PUMP – WELL NOT EQUIPPED ☐ TURBINE ☐ CYLINDER ☐ OTHER – SPECIFY:

ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
	2	45	8.5	Cement/Bentonite (6%)		Tremie
	45	49	8.5	Bentonite Pellets		Pour inside auger
	49	74	8.5	10/20 Silica Sand		Pour inside auger

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0	3	3	Silty Sand, 25% fines, brown	☐ YES ☑ NO
3	56	50	Silty Clay, brown/red, interbedded gravels	☐ YES ☑ NO
56	68	12	Clayey Silt, tan/red, saturated seams	☑ YES ☐ NO
68	74	6	Silty Clay, 10% fine sand, red/brown	☐ YES ☑ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST — METHOD: ☐ BAILER ☐ PUMP ☐ AIR LIFT ☑ OTHER – SPECIFY: Monitoring Well - No test

TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

ADDITIONAL STATEMENTS OR EXPLANATIONS:
This well is a monitoring well for the purpose of groundwater monitoring only.

8. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

L. J. Wells — SIGNATURE OF DRILLER

7-13-11 — DATE

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO 2011 AUG -8 A 11:50

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	RA-11682	POD NUMBER	1	TRN NUMBER	472997
LOCATION	18S.26E.9.444				PAGE 2 OF 2

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

July 09, 2018

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

RE: Rock Island OrderNo.: 1806H73

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 9 sample(s) on 6/29/2018 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-0
Project: Rock Island
Collection Date: 6/26/2018 8:00:00 AM
Lab ID: 1806H73-001 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	1600	75		mg/Kg	50	7/7/2018 6:20:33 AM	39040
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	9700	200		mg/Kg	20	7/3/2018 1:18:21 PM	38981
Motor Oil Range Organics (MRO)	5100	1000		mg/Kg	20	7/3/2018 1:18:21 PM	38981
Surr: DNOP	0	70-130	S	%Rec	20	7/3/2018 1:18:21 PM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	380	46		mg/Kg	10	7/2/2018 12:05:48 PM	38979
Surr: BFB	391	15-316	S	%Rec	10	7/2/2018 12:05:48 PM	38979
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.23	D	mg/Kg	10	7/2/2018 12:05:48 PM	38979
Toluene	1.2	0.46	D	mg/Kg	10	7/2/2018 12:05:48 PM	38979
Ethylbenzene	4.5	0.46	D	mg/Kg	10	7/2/2018 12:05:48 PM	38979
Xylenes, Total	20	0.92	D	mg/Kg	10	7/2/2018 12:05:48 PM	38979
Surr: 4-Bromofluorobenzene	135	80-120	SD	%Rec	10	7/2/2018 12:05:48 PM	38979

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-2.5
Project: Rock Island
Collection Date: 6/26/2018 8:10:00 AM
Lab ID: 1806H73-002 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	370	30		mg/Kg	20	7/3/2018 11:09:42 PM	39040
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	1800	98		mg/Kg	10	7/3/2018 12:56:09 PM	38981
Motor Oil Range Organics (MRO)	1100	490		mg/Kg	10	7/3/2018 12:56:09 PM	38981
Surr: DNOP	0	70-130	S	%Rec	10	7/3/2018 12:56:09 PM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	150	4.7		mg/Kg	1	7/2/2018 1:16:05 PM	38979
Surr: BFB	1050	15-316	S	%Rec	1	7/2/2018 1:16:05 PM	38979

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-5
Project: Rock Island
Collection Date: 6/26/2018 8:20:00 AM
Lab ID: 1806H73-003 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	65	30		mg/Kg	20	7/3/2018 11:22:06 PM	39040
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	98	9.8		mg/Kg	1	7/2/2018 8:42:32 PM	38981
Motor Oil Range Organics (MRO)	55	49		mg/Kg	1	7/2/2018 8:42:32 PM	38981
Surr: DNOP	106	70-130		%Rec	1	7/2/2018 8:42:32 PM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	18	4.7		mg/Kg	1	7/2/2018 1:39:37 PM	38979
Surr: BFB	229	15-316		%Rec	1	7/2/2018 1:39:37 PM	38979

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-7.5
Project: Rock Island
Collection Date: 6/26/2018 8:20:00 AM
Lab ID: 1806H73-004 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	62	10		mg/Kg	1	7/2/2018 9:05:05 PM	38981
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/2/2018 9:05:05 PM	38981
Surr: DNOP	110	70-130		%Rec	1	7/2/2018 9:05:05 PM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	11	4.7		mg/Kg	1	7/2/2018 2:03:12 PM	38979
Surr: BFB	181	15-316		%Rec	1	7/2/2018 2:03:12 PM	38979

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-10
Project: Rock Island
Collection Date: 6/26/2018 8:30:00 AM
Lab ID: 1806H73-005 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	50	10		mg/Kg	1	7/2/2018 9:27:17 PM	38981
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/2/2018 9:27:17 PM	38981
Surr: DNOP	112	70-130		%Rec	1	7/2/2018 9:27:17 PM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	10	4.6		mg/Kg	1	7/2/2018 2:26:49 PM	38979
Surr: BFB	169	15-316		%Rec	1	7/2/2018 2:26:49 PM	38979

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-12.5
Project: Rock Island
Collection Date: 6/26/2018 8:40:00 AM
Lab ID: 1806H73-006 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	57	30		mg/Kg	20	7/3/2018 11:34:31 PM	39040
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	63	10		mg/Kg	1	7/2/2018 9:49:53 PM	38981
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/2/2018 9:49:53 PM	38981
Surr: DNOP	106	70-130		%Rec	1	7/2/2018 9:49:53 PM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	31	5.0		mg/Kg	1	7/2/2018 2:50:23 PM	38979
Surr: BFB	287	15-316		%Rec	1	7/2/2018 2:50:23 PM	38979
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	7/2/2018 2:50:23 PM	38979
Toluene	ND	0.050		mg/Kg	1	7/2/2018 2:50:23 PM	38979
Ethylbenzene	ND	0.050		mg/Kg	1	7/2/2018 2:50:23 PM	38979
Xylenes, Total	0.15	0.10		mg/Kg	1	7/2/2018 2:50:23 PM	38979
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	7/2/2018 2:50:23 PM	38979

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-15
Project: Rock Island
Collection Date: 6/26/2018 8:50:00 AM
Lab ID: 1806H73-007 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	86	10		mg/Kg	1	7/2/2018 10:12:07 PM	38981
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/2/2018 10:12:07 PM	38981
Surr: DNOP	112	70-130		%Rec	1	7/2/2018 10:12:07 PM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	40	4.8		mg/Kg	1	7/2/2018 3:14:02 PM	38979
Surr: BFB	349	15-316	S	%Rec	1	7/2/2018 3:14:02 PM	38979

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-17.5
Project: Rock Island
Collection Date: 6/26/2018 9:00:00 AM
Lab ID: 1806H73-008 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	260	30		mg/Kg	20	7/3/2018 11:46:55 PM	39040
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	28	9.8		mg/Kg	1	7/2/2018 10:34:30 PM	38981
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/2/2018 10:34:30 PM	38981
Surr: DNOP	112	70-130		%Rec	1	7/2/2018 10:34:30 PM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	50	4.6		mg/Kg	1	7/2/2018 3:37:41 PM	38979
Surr: BFB	447	15-316	S	%Rec	1	7/2/2018 3:37:41 PM	38979

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B1-20
Project: Rock Island
Collection Date: 6/26/2018 9:10:00 AM
Lab ID: 1806H73-009 **Matrix:** SOIL **Received Date:** 6/29/2018 8:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	130	9.9		mg/Kg	1	7/2/2018 10:56:38 PM	38981
Motor Oil Range Organics (MRO)	60	50		mg/Kg	1	7/2/2018 10:56:38 PM	38981
Surr: DNOP	116	70-130		%Rec	1	7/2/2018 10:56:38 PM	38981
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	18	4.9		mg/Kg	1	7/2/2018 4:01:22 PM	38979
Surr: BFB	218	15-316		%Rec	1	7/2/2018 4:01:22 PM	38979

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#: **1806H73**

09-Jul-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID	**MB-39040**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**39040**	RunNo:	**52452**					
Prep Date:	**7/3/2018**	Analysis Date:	**7/3/2018**	SeqNo:	**1720818**	Units:	**mg/Kg**			

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

Sample ID	**LCS-39040**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**39040**	RunNo:	**52452**					
Prep Date:	**7/3/2018**	Analysis Date:	**7/3/2018**	SeqNo:	**1720819**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.2	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1806H73**

09-Jul-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID	**MB-38981**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**PBS**	Batch ID:	**38981**	RunNo:	**52397**
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1719410** 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		102	70	130			

Sample ID	**LCS-38981**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**LCSS**	Batch ID:	**38981**	RunNo:	**52397**
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1719411** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.9	70	130			
Surr: DNOP	4.7		5.000		94.2	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#: **1806H73**

09-Jul-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID	**MB-38979**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**38979**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718661**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		94.5	15	316			

Sample ID	**LCS-38979**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**38979**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718662**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	75.9	131			
Surr: BFB	1000		1000		103	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#: **1806H73**

09-Jul-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID	**MB-38979**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**38979**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718709**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID	**LCS-38979**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**38979**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718710**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.3	77.3	128			
Toluene	0.98	0.050	1.000	0	97.6	79.2	125			
Ethylbenzene	0.98	0.050	1.000	0	97.6	80.7	127			
Xylenes, Total	3.0	0.10	3.000	0	99.3	81.6	129			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID	**1806H73-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**B1-0**	Batch ID:	**38979**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718714**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.23	0.9200	0	88.1	68.5	133			
Toluene	2.0	0.46	0.9200	1.212	81.8	75	130			
Ethylbenzene	5.3	0.46	0.9200	4.510	81.2	79.4	128			
Xylenes, Total	22	0.92	2.760	19.78	69.7	77.3	131			S
Surr: 4-Bromofluorobenzene	12		9.200		134	80	120			S

Sample ID	**1806H73-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**B1-0**	Batch ID:	**38979**	RunNo:	**52429**					
Prep Date:	**6/29/2018**	Analysis Date:	**7/2/2018**	SeqNo:	**1718715**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.25	0.9843	0	86.5	68.5	133	4.92	20	
Toluene	1.9	0.49	0.9843	1.212	72.1	75	130	2.21	20	S
Ethylbenzene	5.4	0.49	0.9843	4.510	94.2	79.4	128	3.37	20	
Xylenes, Total	22	0.98	2.953	19.78	85.3	77.3	131	2.71	20	
Surr: 4-Bromofluorobenzene	13		9.843		132	80	120	0	0	S

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: 1806H73 RcptNo: 1

Received By: Erin Melendrez 6/29/2018 8:45:00 AM

Completed By: Erin Melendrez 6/29/2018 9:48:25 AM

Reviewed By: ENM 6/29/18

LB; JAB 06/29/18

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: JAB 06/29/18

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	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 day

Project Name:

Project #:
Rock Island

Project Manager:
Austin Weyant

Sampler: LCM

On Ice: ☑ Yes ☐ No

Sample Temperature: 2.3-1.0(CF)=1.3

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. 1806H73	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)
6/26/18	8:00	Soil	B1-0	4oz		-001	X		X					X								
6/26/18	8:10		B1-2.5			-002			X					X								
6/26/18	8:20		B1-5			-003			X					X								
6/26/18	8:20		B1-7.5			-004			X					X								
6/26/18	8:30		B1-10			-005			X													
6/26/18	8:40		B1-12.5			-006	X		X					X								
6/26/18	8:50		B1-15			-007			X													
6/26/18	9:00		B1-17.5			-008			X					X								
6/26/18	9:10		B1-20			-009			X													

Date	Time	Relinquished by:	Received by:	Date	Time
6/26/18	1300			6/28/18	1300
6/28/18	1900		Courier	6/29/18	0845

Remarks: Marathon oil

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
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 03, 2018

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

RE: Rock Island OrderNo.: 1807E40

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 10 sample(s) on 7/26/2018 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW1
Project: Rock Island
Collection Date: 7/24/2018 1:15:00 AM
Lab ID: 1807E40-001 **Matrix:** SOIL **Received Date:** 7/26/2018 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	7/30/2018 11:33:34 AM	39477
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	8/1/2018 3:41:57 AM	39489
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/1/2018 3:41:57 AM	39489
Surr: DNOP	90.1	50.6-138		%Rec	1	8/1/2018 3:41:57 AM	39489
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/30/2018 8:34:04 PM	39454
Surr: BFB	87.8	15-316		%Rec	1	7/30/2018 8:34:04 PM	39454

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW2
Project: Rock Island
Collection Date: 7/24/2018 2:00:00 AM
Lab ID: 1807E40-002 **Matrix:** SOIL **Received Date:** 7/26/2018 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	7/30/2018 12:10:47 PM	39477
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/1/2018 4:04:02 AM	39489
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/1/2018 4:04:02 AM	39489
Surr: DNOP	110	50.6-138		%Rec	1	8/1/2018 4:04:02 AM	39489
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/30/2018 8:57:26 PM	39454
Surr: BFB	91.1	15-316		%Rec	1	7/30/2018 8:57:26 PM	39454

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW3
Project: Rock Island
Collection Date: 7/24/2018 1:37:00 AM
Lab ID: 1807E40-003 **Matrix:** SOIL **Received Date:** 7/26/2018 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	7/30/2018 12:48:00 PM	39477
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/1/2018 9:18:22 PM	39489
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/1/2018 9:18:22 PM	39489
Surr: DNOP	75.1	50.6-138		%Rec	1	8/1/2018 9:18:22 PM	39489
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/30/2018 9:20:45 PM	39454
Surr: BFB	90.0	15-316		%Rec	1	7/30/2018 9:20:45 PM	39454

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW4
Project: Rock Island
Collection Date: 7/24/2018 1:45:00 AM
Lab ID: 1807E40-004 **Matrix:** SOIL **Received Date:** 7/26/2018 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	7/30/2018 1:00:25 PM	39477
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/1/2018 9:40:37 PM	39489
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/1/2018 9:40:37 PM	39489
Surr: DNOP	66.8	50.6-138		%Rec	1	8/1/2018 9:40:37 PM	39489
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/30/2018 9:44:07 PM	39454
Surr: BFB	88.4	15-316		%Rec	1	7/30/2018 9:44:07 PM	39454

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW6
Project: Rock Island
Collection Date: 7/24/2018 2:05:00 AM
Lab ID: 1807E40-005 **Matrix:** SOIL **Received Date:** 7/26/2018 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	7/30/2018 1:12:49 PM	39477
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/1/2018 10:02:52 PM	39489
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2018 10:02:52 PM	39489
Surr: DNOP	101	50.6-138		%Rec	1	8/1/2018 10:02:52 PM	39489
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/30/2018 10:07:23 PM	39454
Surr: BFB	91.6	15-316		%Rec	1	7/30/2018 10:07:23 PM	39454

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH2 Surface
Project: Rock Island
Collection Date: 7/24/2018 10:00:00 AM
Lab ID: 1807E40-006 **Matrix:** SOIL
Received Date: 7/26/2018 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	7/30/2018 1:25:13 PM	39477
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	4100	94		mg/Kg	10	8/1/2018 5:32:05 AM	39489
Motor Oil Range Organics (MRO)	1500	470		mg/Kg	10	8/1/2018 5:32:05 AM	39489
Surr: DNOP	0	50.6-138	S	%Rec	10	8/1/2018 5:32:05 AM	39489
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	94	23		mg/Kg	5	7/31/2018 11:50:23 AM	39454
Surr: BFB	248	15-316		%Rec	5	7/31/2018 11:50:23 AM	39454
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.11		mg/Kg	5	7/31/2018 11:50:23 AM	39454
Toluene	0.28	0.23		mg/Kg	5	7/31/2018 11:50:23 AM	39454
Ethylbenzene	1.0	0.23		mg/Kg	5	7/31/2018 11:50:23 AM	39454
Xylenes, Total	2.8	0.46		mg/Kg	5	7/31/2018 11:50:23 AM	39454
Surr: 4-Bromofluorobenzene	121	80-120	S	%Rec	5	7/31/2018 11:50:23 AM	39454

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH2-2.5'
Project: Rock Island
Collection Date: 7/24/2018 10:10:00 AM
Lab ID: 1807E40-007 **Matrix:** SOIL **Received Date:** 7/26/2018 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	7/30/2018 1:37:38 PM	39477
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	90	9.7		mg/Kg	1	8/1/2018 6:16:06 AM	39489
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2018 6:16:06 AM	39489
Surr: DNOP	86.4	50.6-138		%Rec	1	8/1/2018 6:16:06 AM	39489
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/30/2018 10:53:56 PM	39454
Surr: BFB	97.0	15-316		%Rec	1	7/30/2018 10:53:56 PM	39454

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH2-5'
Project: Rock Island
Collection Date: 7/24/2018 10:20:00 AM
Lab ID: 1807E40-008 **Matrix:** SOIL **Received Date:** 7/26/2018 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	7/30/2018 1:50:01 PM	39477
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	120	9.3		mg/Kg	1	8/1/2018 6:38:03 AM	39489
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/1/2018 6:38:03 AM	39489
Surr: DNOP	83.2	50.6-138		%Rec	1	8/1/2018 6:38:03 AM	39489
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/30/2018 11:17:12 PM	39454
Surr: BFB	94.3	15-316		%Rec	1	7/30/2018 11:17:12 PM	39454

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH2-7.5'
Project: Rock Island
Collection Date: 7/24/2018 10:40:00 AM
Lab ID: 1807E40-009 **Matrix:** SOIL **Received Date:** 7/26/2018 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	7/30/2018 2:02:26 PM	39477
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	8/1/2018 7:00:06 AM	39489
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/1/2018 7:00:06 AM	39489
Surr: DNOP	71.9	50.6-138		%Rec	1	8/1/2018 7:00:06 AM	39489
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/30/2018 11:40:28 PM	39454
Surr: BFB	91.4	15-316		%Rec	1	7/30/2018 11:40:28 PM	39454

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH2-10'
Project: Rock Island
Collection Date: 7/24/2018 10:45:00 AM
Lab ID: 1807E40-010 **Matrix:** SOIL
Received Date: 7/26/2018 11:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	43	30		mg/Kg	20	7/30/2018 2:14:51 PM	39477
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/1/2018 7:22:11 AM	39489
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2018 7:22:11 AM	39489
Surr: DNOP	87.6	50.6-138		%Rec	1	8/1/2018 7:22:11 AM	39489
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/30/2018 11:32:17 AM	39455
Surr: BFB	91.4	15-316		%Rec	1	7/30/2018 11:32:17 AM	39455

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#: **1807E40**

03-Aug-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID	**MB-39477**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**39477**	RunNo:	**53089**					
Prep Date:	**7/30/2018**	Analysis Date:	**7/30/2018**	SeqNo:	**1746592**	Units:	**mg/Kg**			

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

Sample ID	**LCS-39477**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**39477**	RunNo:	**53089**					
Prep Date:	**7/30/2018**	Analysis Date:	**7/30/2018**	SeqNo:	**1746593**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.6	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#: **1807E40**

03-Aug-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID	**MB-39489**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**39489**		RunNo:	**53063**				
Prep Date:	**7/30/2018**	Analysis Date:	**8/1/2018**		SeqNo:	**1747164**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.5		10.00		85.0	50.6	138			

Sample ID	**LCS-39489**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**39489**		RunNo:	**53063**				
Prep Date:	**7/30/2018**	Analysis Date:	**8/1/2018**		SeqNo:	**1747165**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.7	70	130			
Surr: DNOP	4.0		5.000		79.6	50.6	138			

Sample ID	**MB-39527**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**39527**		RunNo:	**53063**				
Prep Date:	**8/1/2018**	Analysis Date:	**8/1/2018**		SeqNo:	**1747393**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	7.7		10.00		76.8	50.6	138			

Sample ID	**LCS-39527**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**39527**		RunNo:	**53063**				
Prep Date:	**8/1/2018**	Analysis Date:	**8/1/2018**		SeqNo:	**1747708**	Units:	**%Rec**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.3		5.000		66.4	50.6	138			

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#: **1807E40**

03-Aug-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID	**MB-39454**	SampType:	**MBLK**			TestCode:	**EPA Method 8015D: Gasoline Range**			
Client ID:	**PBS**	Batch ID:	**39454**			RunNo:	**53075**			
Prep Date:	**7/27/2018**	Analysis Date:	**7/30/2018**			SeqNo:	**1745875**	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	910		1000		91.4	15	316			

Sample ID	**LCS-39454**	SampType:	**LCS**			TestCode:	**EPA Method 8015D: Gasoline Range**			
Client ID:	**LCSS**	Batch ID:	**39454**			RunNo:	**53075**			
Prep Date:	**7/27/2018**	Analysis Date:	**7/30/2018**			SeqNo:	**1745876**	Units:	**mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	110	75.9	131			
Surr: BFB	1000		1000		104	15	316			

Sample ID	**MB-39455**	SampType:	**MBLK**			TestCode:	**EPA Method 8015D: Gasoline Range**			
Client ID:	**PBS**	Batch ID:	**39455**			RunNo:	**53075**			
Prep Date:	**7/27/2018**	Analysis Date:	**7/30/2018**			SeqNo:	**1745897**	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	940		1000		94.1	15	316			

Sample ID	**LCS-39455**	SampType:	**LCS**			TestCode:	**EPA Method 8015D: Gasoline Range**			
Client ID:	**LCSS**	Batch ID:	**39455**			RunNo:	**53075**			
Prep Date:	**7/27/2018**	Analysis Date:	**7/30/2018**			SeqNo:	**1745898**	Units:	**mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	114	75.9	131			
Surr: BFB	1100		1000		108	15	316			

Sample ID	**1807E40-010AMS**	SampType:	**MS**			TestCode:	**EPA Method 8015D: Gasoline Range**			
Client ID:	**BH2-10'**	Batch ID:	**39455**			RunNo:	**53075**			
Prep Date:	**7/27/2018**	Analysis Date:	**7/30/2018**			SeqNo:	**1745900**	Units:	**mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	24.88	0	107	77.8	128			
Surr: BFB	1000		995.0		103	15	316			

Sample ID	**1807E40-010AMSD**	SampType:	**MSD**			TestCode:	**EPA Method 8015D: Gasoline Range**			
Client ID:	**BH2-10'**	Batch ID:	**39455**			RunNo:	**53075**			
Prep Date:	**7/27/2018**	Analysis Date:	**7/30/2018**			SeqNo:	**1745901**	Units:	**mg/Kg**	

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

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#: **1807E40**
03-Aug-18

Client: Souder, Miller & Associates
Project: Rock Island

Sample ID **1807E40-010AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH2-10'** Batch ID: **39455** RunNo: **53075**
Prep Date: **7/27/2018** Analysis Date: **7/30/2018** SeqNo: **1745901** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.8	24.13	0	93.0	77.8	128	16.6	20	
Surr: BFB	980		965.3		102	15	316	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical 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#: **1807E40**

03-Aug-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID	**MB-39454**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**39454**	RunNo:	**53075**					
Prep Date:	**7/27/2018**	Analysis Date:	**7/30/2018**	SeqNo:	**1745919**	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	1.0		1.000		102	80	120			

Sample ID	**LCS-39454**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**39454**	RunNo:	**53075**					
Prep Date:	**7/27/2018**	Analysis Date:	**7/30/2018**	SeqNo:	**1745920**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.86	0.10	1.000	0	86.1	70.1	121			
Benzene	0.94	0.025	1.000	0	94.0	77.3	128			
Toluene	0.98	0.050	1.000	0	97.9	79.2	125			
Ethylbenzene	0.94	0.050	1.000	0	94.3	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	96.9	81.6	129			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	**MB-39455**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**39455**	RunNo:	**53075**					
Prep Date:	**7/27/2018**	Analysis Date:	**7/30/2018**	SeqNo:	**1745932**	Units:	**%Rec**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	**LCS-39455**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**39455**	RunNo:	**53075**					
Prep Date:	**7/27/2018**	Analysis Date:	**7/30/2018**	SeqNo:	**1745933**	Units:	**%Rec**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		106	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: 1807E40 | RcptNo: 1

Received By: Isaiah Ortiz 7/26/2018 11:00:00 AM IO

Completed By: Ashley Gallegos 7/26/2018 5:14:15 PM AG

Reviewed By: LacM 7/27/18 Labeled by: ENM 7/27/18

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: _____

ENM 7/27/18

Special Handling (if applicable)

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

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.2	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 day

Project Name: Rock Island

Project #:

Project Manager: Austin Weyant

Sampler: MRS

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.2 - 1.0 (CF) 2.2

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. 1807E40	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)
7/24/18	1:15	Soil	SW1	402		-001			✓					✓								
	2:00		SW2			-002			✓					✓								
	1:37		SW3			-003			✓					✓								
	1:45		SW4			-004			✓					✓								
	2:05		SW6			-005			✓					✓								
	10:00		BH2 Surface			-006	✓		✓					✓								
	10:10		BH2 -2.5'			-007			✓					✓								
	10:20		BH2 - 5'			-008			✓					✓								
	10:40		BH2 - 7.5'			-009			✓					✓								
↓	10:45	↓	BH2 - 10'	↓		-010			✓					✓								

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/25/18	1300			7/25/18	1300
7/25/18	1900		Courier	7/26/18	11:00

Remarks: Marathon.

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

August 24, 2018

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

RE: Rock Island OrderNo.: 1808C67

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 9 sample(s) on 8/21/2018 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 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW6
Project: Rock Island
Collection Date: 8/16/2018 3:42:00 PM
Lab ID: 1808C67-001 **Matrix:** SOIL **Received Date:** 8/21/2018 12:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	8/23/2018 1:51:54 PM	39962
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/23/2018 6:16:45 PM	39939
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/23/2018 6:16:45 PM	39939
Surr: DNOP	107	50.6-138		%Rec	1	8/23/2018 6:16:45 PM	39939
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/23/2018 12:39:38 PM	39931
Surr: BFB	89.8	15-316		%Rec	1	8/23/2018 12:39:38 PM	39931

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW4
Project: Rock Island
Collection Date: 8/16/2018 4:01:00 PM
Lab ID: 1808C67-002 **Matrix:** SOIL **Received Date:** 8/21/2018 12:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	8/23/2018 2:29:08 PM	39962
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/23/2018 6:41:22 PM	39939
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/23/2018 6:41:22 PM	39939
Surr: DNOP	105	50.6-138		%Rec	1	8/23/2018 6:41:22 PM	39939
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/23/2018 7:40:57 PM	39931
Surr: BFB	88.0	15-316		%Rec	1	8/23/2018 7:40:57 PM	39931

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW3
Project: Rock Island
Collection Date: 8/16/2018 3:55:00 PM
Lab ID: 1808C67-003 **Matrix:** SOIL **Received Date:** 8/21/2018 12:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	8/23/2018 2:41:32 PM	39962
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	31	9.6		mg/Kg	1	8/23/2018 7:05:48 PM	39939
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/23/2018 7:05:48 PM	39939
Surr: DNOP	107	50.6-138		%Rec	1	8/23/2018 7:05:48 PM	39939
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/23/2018 8:04:13 PM	39931
Surr: BFB	95.3	15-316		%Rec	1	8/23/2018 8:04:13 PM	39931

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW2
Project: Rock Island
Collection Date: 8/16/2018 4:03:00 PM
Lab ID: 1808C67-004 **Matrix:** SOIL **Received Date:** 8/21/2018 12:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	8/23/2018 2:53:57 PM	39962
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/23/2018 7:30:20 PM	39939
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/23/2018 7:30:20 PM	39939
Surr: DNOP	76.6	50.6-138		%Rec	1	8/23/2018 7:30:20 PM	39939
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/23/2018 8:50:40 PM	39931
Surr: BFB	91.2	15-316		%Rec	1	8/23/2018 8:50:40 PM	39931

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW1
Project: Rock Island
Collection Date: 8/16/2018 3:49:00 PM
Lab ID: 1808C67-005 **Matrix:** SOIL **Received Date:** 8/21/2018 12:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	8/23/2018 3:06:22 PM	39962
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	190	10		mg/Kg	1	8/23/2018 7:54:48 PM	39939
Motor Oil Range Organics (MRO)	110	50		mg/Kg	1	8/23/2018 7:54:48 PM	39939
Surr: DNOP	106	50.6-138		%Rec	1	8/23/2018 7:54:48 PM	39939
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/23/2018 9:13:58 PM	39931
Surr: BFB	91.4	15-316		%Rec	1	8/23/2018 9:13:58 PM	39931

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW5
Project: Rock Island
Collection Date: 8/16/2018 4:26:00 PM
Lab ID: 1808C67-006 **Matrix:** SOIL
Received Date: 8/21/2018 12:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	8/23/2018 3:18:47 PM	39962
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/23/2018 8:19:23 PM	39939
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/23/2018 8:19:23 PM	39939
Surr: DNOP	107	50.6-138		%Rec	1	8/23/2018 8:19:23 PM	39939
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/23/2018 10:00:29 PM	39931
Surr: BFB	87.7	15-316		%Rec	1	8/23/2018 10:00:29 PM	39931

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH1
Project: Rock Island
Collection Date: 8/16/2018 4:22:00 PM
Lab ID: 1808C67-007 **Matrix:** SOIL **Received Date:** 8/21/2018 12:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	470	30		mg/Kg	20	8/23/2018 3:56:00 PM	39962
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	14	9.8		mg/Kg	1	8/23/2018 9:32:43 PM	39939
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/23/2018 9:32:43 PM	39939
Surr: DNOP	106	50.6-138		%Rec	1	8/23/2018 9:32:43 PM	39939
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/23/2018 1:49:44 PM	39931
Surr: BFB	93.2	15-316		%Rec	1	8/23/2018 1:49:44 PM	39931
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/23/2018 1:49:44 PM	39931
Toluene	ND	0.050		mg/Kg	1	8/23/2018 1:49:44 PM	39931
Ethylbenzene	ND	0.050		mg/Kg	1	8/23/2018 1:49:44 PM	39931
Xylenes, Total	ND	0.10		mg/Kg	1	8/23/2018 1:49:44 PM	39931
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	8/23/2018 1:49:44 PM	39931

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH2
Project: Rock Island
Collection Date: 8/16/2018 4:16:00 PM
Lab ID: 1808C67-008 **Matrix:** SOIL **Received Date:** 8/21/2018 12:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	8/23/2018 4:08:24 PM	39962
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	11		mg/Kg	1	8/23/2018 10:21:37 PM	39939
Motor Oil Range Organics (MRO)	ND	54		mg/Kg	1	8/23/2018 10:21:37 PM	39939
Surr: DNOP	114	50.6-138		%Rec	1	8/23/2018 10:21:37 PM	39939
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/23/2018 3:23:29 PM	39931
Surr: BFB	93.8	15-316		%Rec	1	8/23/2018 3:23:29 PM	39931
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	8/23/2018 3:23:29 PM	39931
Toluene	ND	0.048		mg/Kg	1	8/23/2018 3:23:29 PM	39931
Ethylbenzene	ND	0.048		mg/Kg	1	8/23/2018 3:23:29 PM	39931
Xylenes, Total	ND	0.096		mg/Kg	1	8/23/2018 3:23:29 PM	39931
Surr: 4-Bromofluorobenzene	116	80-120		%Rec	1	8/23/2018 3:23:29 PM	39931

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH3
Project: Rock Island
Collection Date: 8/16/2018 4:20:00 PM
Lab ID: 1808C67-009 **Matrix:** SOIL **Received Date:** 8/21/2018 12:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	8/23/2018 4:20:48 PM	39962
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/23/2018 10:46:07 PM	39939
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/23/2018 10:46:07 PM	39939
Surr: DNOP	100	50.6-138		%Rec	1	8/23/2018 10:46:07 PM	39939
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/23/2018 3:47:00 PM	39931
Surr: BFB	90.5	15-316		%Rec	1	8/23/2018 3:47:00 PM	39931
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	8/23/2018 3:47:00 PM	39931
Toluene	ND	0.048		mg/Kg	1	8/23/2018 3:47:00 PM	39931
Ethylbenzene	ND	0.048		mg/Kg	1	8/23/2018 3:47:00 PM	39931
Xylenes, Total	ND	0.097		mg/Kg	1	8/23/2018 3:47:00 PM	39931
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	8/23/2018 3:47:00 PM	39931

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#: **1808C67**

24-Aug-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID	**MB-39962**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**39962**	RunNo:	**53687**					
Prep Date:	**8/23/2018**	Analysis Date:	**8/23/2018**	SeqNo:	**1770896**	Units:	**mg/Kg**			

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

Sample ID	**LCS-39962**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**39962**	RunNo:	**53687**					
Prep Date:	**8/23/2018**	Analysis Date:	**8/23/2018**	SeqNo:	**1770897**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.2	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808C67**

24-Aug-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID	**LCS-39939**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**LCSS**	Batch ID:	**39939**		RunNo:	**53657**					
Prep Date:	**8/22/2018**	Analysis Date:	**8/23/2018**		SeqNo:	**1770197**	Units:	**mg/Kg**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		45	10	50.00	0	91.0	70	130			
Surr: DNOP		4.9		5.000		98.5	50.6	138			

Sample ID	**MB-39939**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID:	**39939**		RunNo:	**53657**					
Prep Date:	**8/22/2018**	Analysis Date:	**8/23/2018**		SeqNo:	**1770198**	Units:	**mg/Kg**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		ND	10								
Motor Oil Range Organics (MRO)		ND	50								
Surr: DNOP		9.8		10.00		97.5	50.6	138			

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#: **1808C67**

24-Aug-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID **MB-39931**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **39931**	RunNo: **53673**
Prep Date: **8/22/2018**	Analysis Date: **8/23/2018**	SeqNo: **1769982** 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	880		1000		87.8	15	316			

Sample ID **LCS-39931**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **39931**	RunNo: **53673**
Prep Date: **8/22/2018**	Analysis Date: **8/23/2018**	SeqNo: **1769983** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.4	75.9	131			
Surr: BFB	1000		1000		101	15	316			

Sample ID **1808C67-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SW6**	Batch ID: **39931**	RunNo: **53673**
Prep Date: **8/22/2018**	Analysis Date: **8/23/2018**	SeqNo: **1769985** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	24.95	0	109	77.8	128			
Surr: BFB	1000		998.0		105	15	316			

Sample ID **1808C67-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SW6**	Batch ID: **39931**	RunNo: **53673**
Prep Date: **8/22/2018**	Analysis Date: **8/23/2018**	SeqNo: **1769986** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.9	24.58	0	106	77.8	128	4.68	20	
Surr: BFB	1000		983.3		104	15	316	0	0	

Qualifiers:

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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#: **1808C67**

24-Aug-18

Client: Souder, Miller & Associates

Project: Rock Island

Sample ID	**MB-39931**	SampType: **MBLK**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID: **39931**		RunNo: **53673**					
Prep Date:	**8/22/2018**	Analysis Date: **8/23/2018**		SeqNo: **1770004**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID	**LCS-39931**	SampType: **LCS**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID: **39931**		RunNo: **53673**					
Prep Date:	**8/22/2018**	Analysis Date: **8/23/2018**		SeqNo: **1770005**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	105	77.3	128			
Toluene	1.1	0.050	1.000	0	108	79.2	125			
Ethylbenzene	1.1	0.050	1.000	0	108	80.7	127			
Xylenes, Total	3.3	0.10	3.000	0	109	81.6	129			
Surr: 4-Bromofluorobenzene	1.1		1.000		110	80	120			

Sample ID	**1808C67-007AMS**	SampType: **MS**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**BH1**	Batch ID: **39931**		RunNo: **53673**					
Prep Date:	**8/22/2018**	Analysis Date: **8/23/2018**		SeqNo: **1770007**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9643	0	116	68.5	133			
Toluene	1.2	0.048	0.9643	0.006972	122	75	130			
Ethylbenzene	1.2	0.048	0.9643	0.007769	123	79.4	128			
Xylenes, Total	3.7	0.096	2.893	0.02002	125	77.3	131			
Surr: 4-Bromofluorobenzene	1.0		0.9643		109	80	120			

Sample ID	**1808C67-007AMSD**	SampType: **MSD**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**BH1**	Batch ID: **39931**		RunNo: **53673**					
Prep Date:	**8/22/2018**	Analysis Date: **8/23/2018**		SeqNo: **1770008**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	0.9911	0	117	68.5	133	3.76	20	
Toluene	1.2	0.050	0.9911	0.006972	123	75	130	4.09	20	
Ethylbenzene	1.3	0.050	0.9911	0.007769	126	79.4	128	4.73	20	
Xylenes, Total	3.8	0.099	2.973	0.02002	127	77.3	131	3.85	20	
Surr: 4-Bromofluorobenzene	1.1		0.9911		114	80	120	0	0	

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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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: 1808C67 RcptNo: 1

Received By: **Ashley Gallegos** 8/21/2018 12:15:00 PM

Completed By: **Ashley Gallegos** 8/21/2018 2:07:57 PM

Reviewed By: JAB 08/22/18 labeled by: IO 08/22/2018

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: IO
(<2 or >12 unless noted)
Adjusted?
08/22/18
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	5.6	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: 2 day JNB 8/22/18
☐ Standard ☑ Rush 8 day

Project Name: Rock Island

Project #:

Project Manager: Austin Weyant

Sampler: tmp

On Ice: ☑ Yes ☐ No

Sample Temperature: 5.6

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. 1808C107	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)
8/16/18	3:42	Soil	SW6	4oz		-001			X					X				
	4:01		SW4			-002			X					X				
	3:55		SW3			-003			X					X				
	4:03		SW2			-004			X					X				
	3:49		SW1			-005			X					X				
	4:20		SW5			-006			X					X				
	4:22		BH1			-007	X		X					X				
	4:16		BH2			-008	X		X					X				
	4:20		BH3			-009	X		X					X				

Date	Time	Relinquished by:	Received by:	Date	Time
8/20/18	0830			8/20/18	0830
8/20/18	1900			08/21/18	1215

Remarks: Per Heather, change to a 2 day rush. JNB 8/22/18

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.

Open Excavation photo taken August 16, 2018 at 10:40 am.

Location: 32.748892°, -104.384172°

Direction: North