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

June 7, 2019

#5E27950-BG12

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

SUBJECT: Remediation Closure Report for the Sterling State TB 4H Releases (2RP-5327, 2RP-4724), Carlsbad, Eddy County, New Mexico

Dear Mr. Bratcher:

On behalf of Marathon Oil Permian LLC (Marathon), Souder, Miller & Associates (SMA) has prepared this Remediation Closure Report that describes the assessment of a release of liquids related to oil and gas production activities at the Sterling State TB 4H site. The site is in Unit O, Section 20, Township 23S, Range 27E, Eddy County, New Mexico, on state land. Figure 1 illustrates the vicinity and site location on an USGS 7.5 minute quadrangle map.

Table 1 summarizes release information and Closure Criteria.

Table 1: Release Information and Closure Criteria			
Name	Sterling State TB 4H	Company	Marathon Oil Permian LLC
API Number	30-015-44619	Location	32.28465704° -104.20827171°
Incident Number	2RP-5327, 2RP-4724		
Estimated Date of Release	March 14, 2019 April 23, 2018	Date Reported to NMOCD	March 14, 2019 April 24, 2018
Land Owner	State	Reported To	NMOCD, NMSLO
Source of Release	2RP-5327—Tank 2RP-4724—Valve		
Released Volume	2RP-5327—601 bbl 2RP-4724—1.45 bbl	Released Material	Produced Water
Recovered Volume	2RP-5327—600 bbl 2RP-4724—0 bbl	Net Release	2RP-5327—1 bbl 2RP-4724—1.45 bb
NMOCD Closure Criteria	>100 feet to groundwater (Refer to Section 2.0)		
SMA Response Dates	April 2, 2019, May 16, 2019		

1.0 Background

On March 14, 2019 the piping from the gun barrel and produced water tanks lost connection when the brackets attached to the side of the tank failed. Due to high winds at the time, fluids within the lined containment were blown onto the production pad. Crews were called to the location to scrape the affected soil, which is predominately caliche. On April 23, 2018, due to improper valve alignment and not properly flushing lines, a release of 1.45 bbl of produced water was released offsite at the southeast side of location. Crews were called to the location to scrape the affected soils. Figure 1 illustrates the vicinity and site location; Figure 2 illustrates the release locations. The C-141 forms are included in Appendix A.

2.0 Site Information and Closure Criteria

The Sterling State TB 4H is located approximately 7.5 mile south of Carlsbad, New Mexico on State land at an elevation of approximately 3,175 feet above mean sea level (amsl).

Based upon water well data (Appendix B), depth to groundwater in the area is estimated to be 103 feet below grade surface (bgs). There are several known water sources within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 4/3/2019). The nearest significant watercourse is Cass Draw, located approximately 1000 feet to the northwest. Figure 2 illustrates the site with 200 and 300-foot radii to indicate that it does not lie within a sensitive area as described in 19.15.29.12.C(4) NMAC.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of greater than 100 feet bgs. The site has been restored to meet the standards of Table I of 19.15.29.12 NMAC.

Table 2 demonstrates the Closure Criteria applicable to this location. Pertinent well data is attached in Appendix B.

3.0 Release Characterization and Remediation Activities

On April 2, 2019, SMA conducted sampling of the area impacted by the release to confirm the initial actions had remediated the release. The affected area had been scraped to approximately four inches, and no visible staining was observed. The area that had been scraped measured approximately 115 feet by 180 feet. A total of four (4) surficial soil samples (L1-L4) were collected for laboratory analysis for total chloride using EPA Method 300.0; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D. Laboratory samples were collected in accordance with the sampling protocol included in Appendix C. Samples were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico (Appendix D).

On May 16, 2019 SMA returned to the location to further excavate the area around sample location L2 and to sample the impacted area for the 2018 release (2RP-4724.) An additional area that measured 45 feet wide by 25 feet long and six inches deep (for a total of 1 foot) was excavated and removed. Two bottom hole confirmation samples (CS6 and CS7) and four sidewall samples (SW1-SW4) were collected.

On the same day, SMA evaluated the 2018 release on the east side of the pad. This was a low volume release that had been previously scraped. SMA collected five confirmation samples (CS1-CS5) to ensure initial actions adequately remediated the release. Samples were collected and processed for the laboratory methods as described above.

Figure 3 shows the extent of the visually impacted area and sample locations. Laboratory results are summarized in Table 3. Laboratory reports are included in Appendix D. All samples resulted in non-detectable concentrations. SMA recommends no further action for 2RP-5327 and 2RP-4724.

5.0 Scope and Limitations

The scope of our services included: assessment sampling; regulatory liaison; and preparing 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 Heather Patterson at 575-200-5343 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Heather Patterson
Project Scientist

Reviewed by:

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

Figure 1: Vicinity and Well Head Protection Map
Figure 2: Surface Water Radius Map
Figure 3: Site and Sample Location Map

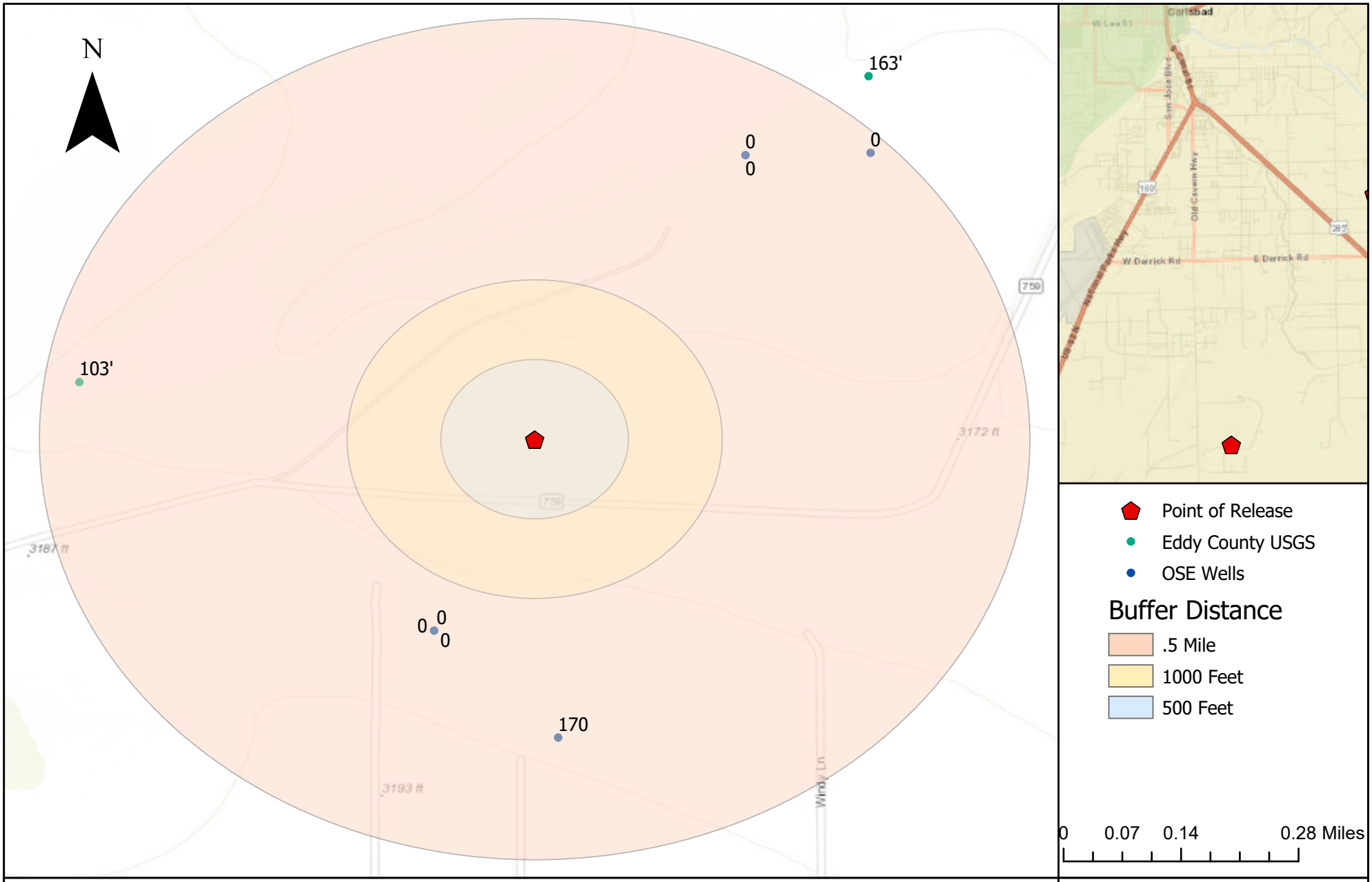
Tables:

Table 2: NMOCD Closure Criteria Justification
Table 3: Summary of Sample Results

Appendices:

Appendix A: Form C141
Appendix B: Water Well Data
Appendix C: Field Notes and Photo Documentation
Appendix D: Laboratory Analytical Reports

FIGURES



Regional Vicinity & Wellhead Protection Map
Sterling State TB 4H- Marathon
Sec 20 T23S R27E, New Mexico

Figure 1

\\CBO10\Projects\5-Marathon MSA 2019 (5E27950)\GIS\ARCGIS\MARATHON_MIT.aprx

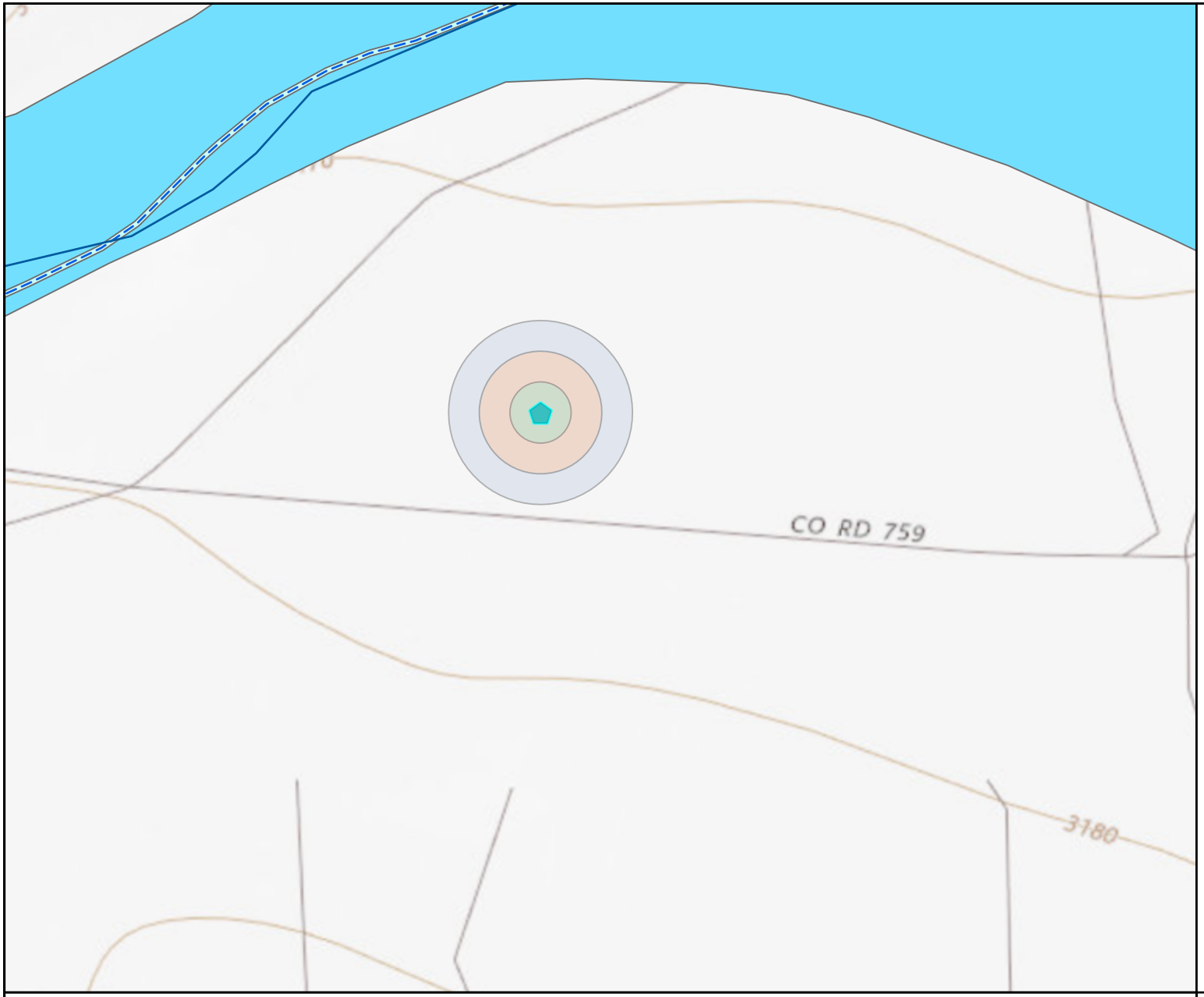
Date Saved: 4/3/2019

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

Drawn: Heather Patterson
Date: 4/3/2019
Checked: _____
Approved: _____

SMA

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



Legend

- Point of Release
- Streams Canals
- Rivers
- NM Wetlands
- Lakes Playas
- FEMA Flood Zones 2011

Buffer Distance

- 100 Feet
- 200 Feet
- 300 Feet

N

0 145 290 580 US Feet

Surface Water Protection Map
Sterling State TB 4H- Marathon
Sec 20 T23S R27E, New Mexico

Figure 2

\\CBO10\Projects\5-Marathon MSA 2019 (5E27950)\GIS\ARCGIS\MARATHON_MIT.aprx

Date Saved: 4/3/2019

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

Drawn Heather Patterson
Date 4/3/2019
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689-7040
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Legend

- Sample Locations
- Buried Lines
- Lined Tank Battery
- Release Area
- Excavated Area
- Production Pad

N

0 34.5 69 138 Feet

Site and Sample location Map
Sterling State TB 4H- Marathon Oil
S 02-T23S-R27E, New Mexico

Figure 3

\\CBO10\Projects\5-Marathon MSA 2019 (5E27950)\GIS\ARCGIS\MARATHON_MIT.aprx

Date Saved: 6/5/2019

Revisions

By:_____ Date:_____ Descr:_____

By:_____ Date:_____ Descr:_____

Drawn *Heather Patterson*
Date 6/5/2019
Checked
Approved

SMA

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

TABLES

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	103	NMOSE and USGS
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	<1/2 mile	NMOSE and USGS
Hortizontal Distance to Nearest Significant Watercourse (ft)	1000	USGS Topo Map

Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC)						
Depth to Groundwater		**Closure Criteria (units in mg/kg)**				
		Chloride *numerical limit or background, whichever is greater	**TPH**	**GRO + DRO**	**BTEX**	**Benzene**
< 50' BGS		600	100		50	10
51' to 100'		10000	2500	1000	50	10
>100'	X	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 of Sample Results

Marathon Oil Permian LLC
Sterling State TB 4H (2RP-4724, 2RP-5327)

Sample ID	Sample Date	Depth (feet bgs)	Action Taken	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- mg/Kg
NMOCD Closure Criteria				50	10	1000			2500	20,000
Initial Sampling Event										
L1	4/2/2019	0.5	excavated	<0.23	<0.023	<4.6	670	360	1030	8700
L2	4/2/2019	0.5	in-situ	<0.23	<0.025	<5.0	67	84	151	320
L3	4/2/2019	0.5	in-situ	<0.23	<0.023	<4.7	78	120	198	200
L4	4/2/2019	0.5	in-situ	<0.23	<0.023	<4.7	<9.9	<49	<64	550
Closue Sampling Event (2RP-4724)										
CS1	5/16/2019	0.5	in-situ	<0.23	<0.025	<5.0	<9.7	<48	<63	<61
CS2	5/16/2019	0.5	in-situ	<0.23	<0.025	<5.0	<9.6	<48	<63	<60
CS3	5/16/2019	0.5	in-situ	<0.23	<0.025	<4.9	<9.8	<49	<64	<60
CS4	5/16/2019	0.5	in-situ	<0.23	<0.025	<5.0	<9.8	<49	<64	<60
CS5	5/16/2019	0.5	in-situ	<0.23	<0.025	<4.9	<9.7	<49	<64	71
Closure Sampling Event (2RP-5327)										
CS6	5/16/2019	1	in-situ	<0.23	<0.024	<4.9	<9.4	<47	<62	180
CS7	5/16/2019	1	in-situ	<0.23	<0.024	<4.9	<9.5	<47	<62	240
SW1	5/16/2019	0-1	in-situ	<0.23	<0.025	<5.0	140	140	280	160
SW2	5/16/2019	0-1	in-situ	<0.23	<0.025	<5.0	53	53	106	190
SW3	5/16/2019	0-1	in-situ	<0.23	<0.025	<5.0	<9.9	<49	<64	180
SW4	5/16/2019	0-1	in-situ	<.023	<0.025	<5.0	120	110	230	140

APPENDIX A
FORM C141

RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

MAY 01 2018
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

nAB1812234317

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Marathon Oil Permian LLC 372098	Contact Callie Karrigan
Address 5555 San Felipe Street, Houston, Texas 77056	Telephone No. 405-202-1028 (cell) 575-297-0956 (office)
Facility Name: Sterling State 23 27 20 TB 004H *	Facility Type Oil and gas production facilities

Surface: Owner: state	Mineral: Owner: state	API No. : 30-015-42731

LOCATION OF RELEASE

* 30-015-44019 AB

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	20	23S	27E	603	South	1462	east	Eddy

Latitude 32.28465704.**Longitude** -104.20827171

NATURE OF RELEASE

Type of Release: produced water	Volume of Release: 1.45 bbls	Volume Recovered: none
Source of Release: frac tank manifold	Date and Hour of Occurrence unknown	Date and Hour of Discovery 04/23/2017 7:30 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Eddy County – Mike Bratcher and Crystal Weaver	
By Whom? Callie Karrigan	Date and Hour 04/24/2018 7:11 am	
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.*
During coil tubing/rig up operations, HES advisor noticed staining and saturated soil from produced water just off the SE side of location. Approximately 1.45 bbls produced water was released offsite. Investigation found that the cause of release was due to improper valve alignment and not properly flushing lines.

Describe Area Affected and Cleanup Action Taken.*
The offsite release affected a 3 ft x 130 ft area. The area was scraped to remove saturated soils. Confirmation samples will be taken for laboratory analysis.

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:

Printed Name: Callie Karrigan

Title: HES Environmental Professional

E-mail Address: cnkarrigan@marathonoil.com

Date: 05/01/2018
Phone: 405-202-1028(cell) 575-297-0956 (office)

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Signed by Mike Bratcher

Approval Date: 5/1/18 Expiration Date: N/A

Conditions of Approval:
See attached

Attached ☐
2RP-4724

* Attach Additional Sheets If Necessary

State of New Mexico
Oil Conservation Division

Incident ID	nAB1812234317
District RP	2RP-4724
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	103 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

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

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	nAB1812234317
District RP	2RP-4724
Facility ID	
Application ID	

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

Printed Name: __Callie Karrigan_____ Title: _____HES Professional_____

Signature:_____*Callie Karrigan* _____ Date: ___6/7/2019_____

email: ___cnkarrigan@marathonoil.com_____ Telephone: ___575-297-0956_____

OCD Only

Received by: _____ Date**:** _____

State of New Mexico
Oil Conservation Division

Incident ID	nAB1812234317
District RP	2RP-4724
Facility ID	
Application ID	

Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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

Printed Name: _____Callie Karrigan_____ Title: _____HES Professional_____

Signature: *Callie Karrigan*_____ Date: __6/7/2019_____

email: __cnkarrigan@marathonoil.com_____ Telephone: _____575-297-0956_____

OCD Only

Received by: _____ Date**:** _____

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

Closure Approved by: _____ Date**:** _____

Printed Name: _____ Title: _____
__

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NAB1909140764
District RP	2RP-5327
Facility ID	
Application ID	pAB1909140499

Release Notification

Responsible Party

Responsible Party Marathon Oil Permian LLC	OGRID 372098
Contact Name Callie Karrigan	Contact Telephone 575-297-0956
Contact email cnkarrigan@marathonoil.com	Incident # *(assigned by OCD)* NAB1909140764
Contact mailing address 4111 Tidwell Road, Carlsbad New Mexico, 88220	

Location of Release Source

Latitude 32.28465704 Longitude 104.20827171
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Sterling State TB 4H	Site Type Oil and gas drilling facility
Date Release Discovered 3/14/19	API# *(if applicable)* 30-015-44619

Unit Letter	Section	Township	Range	County
O	20	23S	27E	Eddy

Surface Owner: ☑ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☑ Produced Water	Volume Released (bbls) 601	Volume Recovered (bbls) 600
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☑ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Operator reported standing fluids in containment due to damage on the water leg going into the gun barrel and produced water tanks. The mounting brackets attached to the side of the tank parted and caused the piping to shift onto the catwalk, resulting in a connection leak into lined containment. High winds the following day allowed for less than a barrel to be released from the east side of containment.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1909140764
District RP	2RP-5327
Facility ID	
Application ID	pAB1909140499

Was this a major release as defined by 19.15.29.7(A) NMAC? ☑ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Release exceeded 25 bbls.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Yes via email to Mike Bratcher, Victoria Venegas and Robert Hamlet via email 3/14/19 8:00 am

Initial Response

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

- ☑ The source of the release has been stopped.
- ☑ The impacted area has been secured to protect human health and the environment.
- ☑ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ☑ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Callie Karrigan Title: HES Professional

Signature: Callie Karrigan Date: 3/27/19

email: cnkarrigan@marathonoil.com Telephone: 575-297-0956

OCD Only

Received by: Amalia Barrameda Date: 4/1/2019

State of New Mexico
Oil Conservation Division

Incident ID	nAB1909140764
District RP	2RP-5327
Facility ID	
Application ID	pAB1909140499

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	103 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

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

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	nAB1909140764
District RP	2RP-5327
Facility ID	
Application ID	pAB1909140499

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

Printed Name: __Callie Karrigan_____ Title: _____HES Professional_____

Signature:_____*Callie Karrigan* _____ Date: ___6/7/2019_____

email: ___cnkarrigan@marathonoil.com_____ Telephone: ___575-297-0956_____

OCD Only

Received by: _____ Date**:** _____

State of New Mexico
Oil Conservation Division

Incident ID	nAB1909140764
District RP	2RP-5327
Facility ID	
Application ID	pAB1909140499

Closure

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

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

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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

Printed Name: _____Callie Karrigan_____ Title: _____HES Professional_____

Signature: *Callie Karrigan*_____ Date: __6/7/2019_____

email: __cnkarrigan@marathonoil.com_____ Telephone: _____575-297-0956_____

OCD Only

Received by: _____ Date**:** _____

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

Closure Approved by: _____ Date**:** _____

Printed Name: _____ Title: _____
__

APPENDIX B
WATER WELL DATA

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 Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02377	C	ED			2	29	23S	27E	574575	3571666*	581	232	170	62

Average Depth to Water: **170 feet**

Minimum Depth: **170 feet**

Maximum Depth: **170 feet**

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 574547.97 **Northing (Y):** 3572246.98 **Radius:** 805

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

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 321707104125701

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 321707104125701 23S.27E.20.33414

Eddy County, New Mexico
Latitude 32°17'07", Longitude 104°12'57" NAD27
Land-surface elevation 3,178 feet above NAVD88
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source o measure
1948-12-22		D	103.00			2		U		

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2019-04-03 10:48:44 EDT
0.48 0.43 nadww01

APPENDIX C

FIELD NOTES & PHOTO DOCUMENTATION

SMA Field Screening

Location Name: Sterling 4H TB

Date: 5/14/19

Sample Name:	Soil Type:	Depth (BGS)	Collection Time:	EC (ppm)	Temp (°C)	PID Reading	PF
CS1	Sandy Loam	0.5	10:34	0.13	21.7°	Pasture	
CS2	"	0.5	10:38	0.18	20.2°	"	
CS3	"	0.5	10:41	0.17	21.0°	"	
CS4	"	0.5	10:53	0.13	25.0°	"	
CS5	"	0.5	11:04	0.18	22.4°	"	
SW1	Caliche	0-1	12:04	0.28	27.9°		
SW2	"	0-1	12:10	0.39	21.8°		
SW3	"	0-1	12:16	0.34	21.5°		
CS6	"	1	12:21	0.38	21.5°		
SW4	"	0-1	12:45	0.29	26.4°		
CS7	"	1	12:48	0.37	23.2°		

Photo Log

Photo Taken May 16, 2019

Facing south

32.28462, -104.20874

Photo Taken May 16, 2019

Facing west

32.28456, -104.20831

Photo Taken May 16, 2019

Facing northwest

32.28462, -104.20874

APPENDIX D

LABORATORY ANALYTICAL REPORTS

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

April 11, 2019

Heather Patterson

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

RE: Sterling State OrderNo.: 1904279

Dear Heather Patterson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/4/2019 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: L-1
Project: Sterling State
Collection Date: 4/2/2019 1:52:00 PM
Lab ID: 1904279-001 **Matrix:** SOIL **Received Date:** 4/4/2019 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	8700	300		mg/Kg	100	4/10/2019 12:29:28 PM	44223
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	670	10		mg/Kg	1	4/9/2019 12:04:33 PM	44145
Motor Oil Range Organics (MRO)	360	50		mg/Kg	1	4/9/2019 12:04:33 PM	44145
Surr: DNOP	111	70-130		%Rec	1	4/9/2019 12:04:33 PM	44145
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/9/2019 7:06:07 PM	44122
Surr: BFB	91.8	73.8-119		%Rec	1	4/9/2019 7:06:07 PM	44122
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.023		mg/Kg	1	4/9/2019 7:06:07 PM	44122
Toluene	ND	0.046		mg/Kg	1	4/9/2019 7:06:07 PM	44122
Ethylbenzene	ND	0.046		mg/Kg	1	4/9/2019 7:06:07 PM	44122
Xylenes, Total	ND	0.093		mg/Kg	1	4/9/2019 7:06:07 PM	44122
Surr: 4-Bromofluorobenzene	88.8	80-120		%Rec	1	4/9/2019 7:06:07 PM	44122

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

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L-2
Project: Sterling State
Collection Date: 4/2/2019 2:10:00 PM
Lab ID: 1904279-002 **Matrix:** SOIL **Received Date:** 4/4/2019 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	320	60		mg/Kg	20	4/9/2019 2:08:01 PM	44223
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	67	9.9		mg/Kg	1	4/9/2019 1:17:57 PM	44145
Motor Oil Range Organics (MRO)	84	49		mg/Kg	1	4/9/2019 1:17:57 PM	44145
Surr: DNOP	85.7	70-130		%Rec	1	4/9/2019 1:17:57 PM	44145
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/9/2019 7:29:25 PM	44122
Surr: BFB	91.1	73.8-119		%Rec	1	4/9/2019 7:29:25 PM	44122
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.025		mg/Kg	1	4/9/2019 7:29:25 PM	44122
Toluene	ND	0.050		mg/Kg	1	4/9/2019 7:29:25 PM	44122
Ethylbenzene	ND	0.050		mg/Kg	1	4/9/2019 7:29:25 PM	44122
Xylenes, Total	ND	0.099		mg/Kg	1	4/9/2019 7:29:25 PM	44122
Surr: 4-Bromofluorobenzene	89.9	80-120		%Rec	1	4/9/2019 7:29:25 PM	44122

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
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 at testcode

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L-3
Project: Sterling State
Collection Date: 4/2/2019 2:22:00 PM
Lab ID: 1904279-003 **Matrix:** SOIL **Received Date:** 4/4/2019 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	200	60		mg/Kg	20	4/9/2019 2:20:26 PM	44223
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	78	9.1		mg/Kg	1	4/9/2019 1:42:16 PM	44145
Motor Oil Range Organics (MRO)	120	46		mg/Kg	1	4/9/2019 1:42:16 PM	44145
Surr: DNOP	94.9	70-130		%Rec	1	4/9/2019 1:42:16 PM	44145
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/9/2019 8:39:55 PM	44122
Surr: BFB	88.3	73.8-119		%Rec	1	4/9/2019 8:39:55 PM	44122
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.023		mg/Kg	1	4/9/2019 8:39:55 PM	44122
Toluene	ND	0.047		mg/Kg	1	4/9/2019 8:39:55 PM	44122
Ethylbenzene	ND	0.047		mg/Kg	1	4/9/2019 8:39:55 PM	44122
Xylenes, Total	ND	0.093		mg/Kg	1	4/9/2019 8:39:55 PM	44122
Surr: 4-Bromofluorobenzene	88.5	80-120		%Rec	1	4/9/2019 8:39:55 PM	44122

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

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L-4
Project: Sterling State
Collection Date: 4/2/2019 2:32:00 PM
Lab ID: 1904279-004 **Matrix:** SOIL **Received Date:** 4/4/2019 8:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	550	60		mg/Kg	20	4/9/2019 2:32:51 PM	44223
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/8/2019 12:01:04 PM	44148
Surr: BFB	102	70-130		%Rec	1	4/8/2019 12:01:04 PM	44148
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/8/2019 12:16:52 PM	44152
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/8/2019 12:16:52 PM	44152
Surr: DNOP	104	70-130		%Rec	1	4/8/2019 12:16:52 PM	44152
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	4/8/2019 12:01:04 PM	44148
Toluene	ND	0.047		mg/Kg	1	4/8/2019 12:01:04 PM	44148
Ethylbenzene	ND	0.047		mg/Kg	1	4/8/2019 12:01:04 PM	44148
Xylenes, Total	ND	0.094		mg/Kg	1	4/8/2019 12:01:04 PM	44148
Surr: 1,2-Dichloroethane-d4	84.5	70-130		%Rec	1	4/8/2019 12:01:04 PM	44148
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	4/8/2019 12:01:04 PM	44148
Surr: Dibromofluoromethane	91.6	70-130		%Rec	1	4/8/2019 12:01:04 PM	44148
Surr: Toluene-d8	95.3	70-130		%Rec	1	4/8/2019 12:01:04 PM	44148

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

Qualifiers:

H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
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 at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904279**

11-Apr-19

Client: Souder, Miller & Associates

Project: Sterling State

Sample ID: **MB-44223**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **44223**	RunNo: **59031**							
Prep Date: **4/9/2019**	Analysis Date: **4/9/2019**	SeqNo: **1986954**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44223**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **44223**	RunNo: **59031**							
Prep Date: **4/9/2019**	Analysis Date: **4/9/2019**	SeqNo: **1986955**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.9	90	110			

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904279**

11-Apr-19

Client: Souder, Miller & Associates

Project: Sterling State

Sample ID: **LCS-44189**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **44189**	RunNo: **58966**							
Prep Date: **4/8/2019**	Analysis Date: **4/8/2019**	SeqNo: **1983691**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		86.0	70	130			

Sample ID: **MB-44189**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **44189**	RunNo: **58966**							
Prep Date: **4/8/2019**	Analysis Date: **4/8/2019**	SeqNo: **1983692**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.6		10.00		95.6	70	130			

Sample ID: **MB-44152**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **44152**	RunNo: **58967**							
Prep Date: **4/5/2019**	Analysis Date: **4/8/2019**	SeqNo: **1983700**	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		101	70	130			

Sample ID: **LCS-44145**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **44145**	RunNo: **58966**							
Prep Date: **4/5/2019**	Analysis Date: **4/8/2019**	SeqNo: **1984035**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.8	63.9	124			
Surr: DNOP	4.5		5.000		90.4	70	130			

Sample ID: **MB-44145**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **44145**	RunNo: **58966**							
Prep Date: **4/5/2019**	Analysis Date: **4/8/2019**	SeqNo: **1984036**	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	9.7		10.00		97.0	70	130			

Sample ID: **LCS-44152**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **44152**	RunNo: **58967**							
Prep Date: **4/5/2019**	Analysis Date: **4/8/2019**	SeqNo: **1984046**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- H Holding times for preparation or analysis exceeded
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- ND Not Detected at the Reporting Limit
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904279**

11-Apr-19

Client: Souder, Miller & Associates

Project: Sterling State

Sample ID: **LCS-44152**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44152**	RunNo: **58967**
Prep Date: **4/5/2019**	Analysis Date: **4/8/2019**	SeqNo: **1984046** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.1	63.9	124			
Surr: DNOP	4.7		5.000		94.2	70	130			

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904279**

11-Apr-19

Client: Souder, Miller & Associates

Project: Sterling State

Sample ID: **MB-44122**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44122**	RunNo: **58972**
Prep Date: **4/4/2019**	Analysis Date: **4/9/2019**	SeqNo: **1984160** 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	870		1000		87.0	73.8	119			

Sample ID: **LCS-44122**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44122**	RunNo: **59017**
Prep Date: **4/4/2019**	Analysis Date: **4/9/2019**	SeqNo: **1985565** 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	90.2	80.1	123			
Surr: BFB	1000		1000		100	73.8	119			

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904279**

11-Apr-19

Client: Souder, Miller & Associates

Project: Sterling State

Sample ID: **MB-44122**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **44122**	RunNo: **58972**
Prep Date: **4/4/2019**	Analysis Date: **4/9/2019**	SeqNo: **1984207** 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	0.88		1.000		87.7	80	120			

Sample ID: **LCS-44122**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **44122**	RunNo: **58972**
Prep Date: **4/4/2019**	Analysis Date: **4/9/2019**	SeqNo: **1984209** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.0	80	120			
Toluene	0.94	0.050	1.000	0	93.7	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.6	80	120			
Surr: 4-Bromofluorobenzene	0.89		1.000		89.5	80	120			

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904279**

11-Apr-19

Client: Souder, Miller & Associates

Project: Sterling State

Sample ID: **lcs-44148** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **LCSS** Batch ID: **44148** RunNo: **58990**

Prep Date: **4/5/2019** Analysis Date: **4/8/2019** SeqNo: **1984861** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	1.000	0	81.6	70	130			
Toluene	0.98	0.050	1.000	0	98.4	70	130			
Ethylbenzene	0.99	0.050	1.000	0	99.0	70	130			
Xylenes, Total	3.0	0.10	3.000	0	99.9	70	130			
Surr: 1,2-Dichloroethane-d4	0.44		0.5000		87.6	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.48		0.5000		95.5	70	130			

Sample ID: **mb-44148** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **PBS** Batch ID: **44148** RunNo: **58990**

Prep Date: **4/5/2019** Analysis Date: **4/8/2019** SeqNo: **1984862** 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: 1,2-Dichloroethane-d4	0.43		0.5000		86.8	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.47		0.5000		93.6	70	130			

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904279**

11-Apr-19

Client: Souder, Miller & Associates

Project: Sterling State

Sample ID: **1904279-004ams**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **L-4**	Batch ID: **44148**	RunNo: **58990**
Prep Date: **4/5/2019**	Analysis Date: **4/8/2019**	SeqNo: **1984889** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.51	0	92.6	68.2	135			
Surr: BFB	500		490.2		101	70	130			

Sample ID: **1904279-004amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **L-4**	Batch ID: **44148**	RunNo: **58990**
Prep Date: **4/5/2019**	Analysis Date: **4/8/2019**	SeqNo: **1984890** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	24.88	0	90.2	68.2	135	1.14	20	
Surr: BFB	510		497.5		104	70	130	0	0	

Sample ID: **lcs-44148**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44148**	RunNo: **58990**
Prep Date: **4/5/2019**	Analysis Date: **4/8/2019**	SeqNo: **1984917** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.2	70	130			
Surr: BFB	500		500.0		100	70	130			

Sample ID: **mb-44148**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **44148**	RunNo: **58990**
Prep Date: **4/5/2019**	Analysis Date: **4/8/2019**	SeqNo: **1984918** 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	510		500.0		102	70	130			

Qualifiers:

H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode

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: 1904279 RcptNo: 1

Received By: Yazmine Garduno 4/4/2019 8:55:00 AM

Completed By: Anne Thorne 4/4/2019 11:56:09 AM

Reviewed By: DAD 4/4/19

Labeled by ID 4/4/19

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 ☐	

10

# of preserved bottles checked for pH: 4/4/19 (<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

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

Person Notified: Date

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

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Yes			
2	4.4	Good	Yes			

Chain-of-Custody Record

Client: SMA (Carlsbad)

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

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

Project Name: Sterling State

Project #:

Project Manager: H. Patterson

Sampler: DD

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 4.4, 1.7

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 Name	Container Type and #	Preservative Type	HEAL No. 1904279	(BTEX) MTBE / TMB's (8021)	(TPH) 8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
4.2.19	1:52	Soil	L-1	4oz		001	X	X					X			
4.2.19	2:10	"	L-2	"		002	X	X					X			
4.2.19	2:22	"	L-3	"		003	X	X					X			
4.2.19	2:32	"	L-4	"		004	X	X					X			

Date	Time	Relinquished by	Received by	Via	Date	Time
4/3/19	9:00	Samantha Watson			4/3/19	1400
			Kyle Cuñe		4/4/19	8:55

Remarks: Marathon

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

May 28, 2019

Heather Patterson

Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL:
FAX

RE: Sterling 4H TB OrderNo.: 1905899

Dear Heather Patterson:

Hall Environmental Analysis Laboratory received 11 sample(s) on 5/17/2019 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: Sterling 4H TB
Collection Date: 5/16/2019 12:04:00 PM
Lab ID: 1905899-001 **Matrix:** SOIL **Received Date:** 5/17/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	160	60		mg/Kg	20	5/22/2019 2:34:15 AM	45090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	140	9.6		mg/Kg	1	5/24/2019 10:05:37 AM	45162
Motor Oil Range Organics (MRO)	140	48		mg/Kg	1	5/24/2019 10:05:37 AM	45162
Surr: DNOP	101	70-130		%Rec	1	5/24/2019 10:05:37 AM	45162
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2019 12:25:55 PM	44998
Surr: BFB	105	73.8-119		%Rec	1	5/20/2019 12:25:55 PM	44998
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/20/2019 12:25:55 PM	44998
Toluene	ND	0.050		mg/Kg	1	5/20/2019 12:25:55 PM	44998
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2019 12:25:55 PM	44998
Xylenes, Total	ND	0.10		mg/Kg	1	5/20/2019 12:25:55 PM	44998
Surr: 4-Bromofluorobenzene	96.4	80-120		%Rec	1	5/20/2019 12:25:55 PM	44998

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW2
Project: Sterling 4H TB
Collection Date: 5/16/2019 12:10:00 PM
Lab ID: 1905899-002 **Matrix:** SOIL
Received Date: 5/17/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	190	60		mg/Kg	20	5/22/2019 3:11:29 AM	45090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	53	9.9		mg/Kg	1	5/24/2019 10:29:53 AM	45162
Motor Oil Range Organics (MRO)	53	49		mg/Kg	1	5/24/2019 10:29:53 AM	45162
Surr: DNOP	107	70-130		%Rec	1	5/24/2019 10:29:53 AM	45162
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2019 1:34:02 PM	44998
Surr: BFB	109	73.8-119		%Rec	1	5/20/2019 1:34:02 PM	44998
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/20/2019 1:34:02 PM	44998
Toluene	ND	0.050		mg/Kg	1	5/20/2019 1:34:02 PM	44998
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2019 1:34:02 PM	44998
Xylenes, Total	ND	0.099		mg/Kg	1	5/20/2019 1:34:02 PM	44998
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	5/20/2019 1:34:02 PM	44998

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW3
Project: Sterling 4H TB
Collection Date: 5/16/2019 12:16:00 PM
Lab ID: 1905899-003 **Matrix:** SOIL **Received Date:** 5/17/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	180	60		mg/Kg	20	5/22/2019 3:23:54 AM	45090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/21/2019 3:23:36 PM	45011
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/21/2019 3:23:36 PM	45011
Surr: DNOP	103	70-130		%Rec	1	5/21/2019 3:23:36 PM	45011
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2019 2:41:43 PM	44998
Surr: BFB	110	73.8-119		%Rec	1	5/20/2019 2:41:43 PM	44998
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/20/2019 2:41:43 PM	44998
Toluene	ND	0.050		mg/Kg	1	5/20/2019 2:41:43 PM	44998
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2019 2:41:43 PM	44998
Xylenes, Total	ND	0.10		mg/Kg	1	5/20/2019 2:41:43 PM	44998
Surr: 4-Bromofluorobenzene	98.5	80-120		%Rec	1	5/20/2019 2:41:43 PM	44998

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW4
Project: Sterling 4H TB
Collection Date: 5/16/2019 12:45:00 PM
Lab ID: 1905899-004 **Matrix:** SOIL **Received Date:** 5/17/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	140	60		mg/Kg	20	5/22/2019 3:36:18 AM	45090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	120	9.7		mg/Kg	1	5/24/2019 10:54:16 AM	45162
Motor Oil Range Organics (MRO)	110	49		mg/Kg	1	5/24/2019 10:54:16 AM	45162
Surr: DNOP	116	70-130		%Rec	1	5/24/2019 10:54:16 AM	45162
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2019 3:04:19 PM	44998
Surr: BFB	107	73.8-119		%Rec	1	5/20/2019 3:04:19 PM	44998
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/20/2019 3:04:19 PM	44998
Toluene	ND	0.050		mg/Kg	1	5/20/2019 3:04:19 PM	44998
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2019 3:04:19 PM	44998
Xylenes, Total	ND	0.10		mg/Kg	1	5/20/2019 3:04:19 PM	44998
Surr: 4-Bromofluorobenzene	96.2	80-120		%Rec	1	5/20/2019 3:04:19 PM	44998

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS1
Project: Sterling 4H TB
Collection Date: 5/16/2019 10:34:00 AM
Lab ID: 1905899-005 **Matrix:** SOIL **Received Date:** 5/17/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	61		mg/Kg	20	5/22/2019 3:48:43 AM	45090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/21/2019 4:07:20 PM	45011
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/21/2019 4:07:20 PM	45011
Surr: DNOP	100	70-130		%Rec	1	5/21/2019 4:07:20 PM	45011
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2019 3:26:51 PM	44998
Surr: BFB	107	73.8-119		%Rec	1	5/20/2019 3:26:51 PM	44998
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/20/2019 3:26:51 PM	44998
Toluene	ND	0.050		mg/Kg	1	5/20/2019 3:26:51 PM	44998
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2019 3:26:51 PM	44998
Xylenes, Total	ND	0.10		mg/Kg	1	5/20/2019 3:26:51 PM	44998
Surr: 4-Bromofluorobenzene	96.0	80-120		%Rec	1	5/20/2019 3:26:51 PM	44998

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS2
Project: Sterling 4H TB
Collection Date: 5/16/2019 10:38:00 AM
Lab ID: 1905899-006 **Matrix:** SOIL **Received Date:** 5/17/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	5/22/2019 4:01:07 AM	45090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/21/2019 4:29:13 PM	45011
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/21/2019 4:29:13 PM	45011
Surr: DNOP	78.5	70-130		%Rec	1	5/21/2019 4:29:13 PM	45011
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2019 3:49:31 PM	44998
Surr: BFB	104	73.8-119		%Rec	1	5/20/2019 3:49:31 PM	44998
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/20/2019 3:49:31 PM	44998
Toluene	ND	0.050		mg/Kg	1	5/20/2019 3:49:31 PM	44998
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2019 3:49:31 PM	44998
Xylenes, Total	ND	0.099		mg/Kg	1	5/20/2019 3:49:31 PM	44998
Surr: 4-Bromofluorobenzene	93.0	80-120		%Rec	1	5/20/2019 3:49:31 PM	44998

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS3
Project: Sterling 4H TB
Collection Date: 5/16/2019 10:41:00 AM
Lab ID: 1905899-007 **Matrix:** SOIL **Received Date:** 5/17/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	5/22/2019 4:13:32 AM	45090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/21/2019 4:51:10 PM	45011
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/21/2019 4:51:10 PM	45011
Surr: DNOP	95.7	70-130		%Rec	1	5/21/2019 4:51:10 PM	45011
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2019 4:12:13 PM	44998
Surr: BFB	107	73.8-119		%Rec	1	5/20/2019 4:12:13 PM	44998
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/20/2019 4:12:13 PM	44998
Toluene	ND	0.049		mg/Kg	1	5/20/2019 4:12:13 PM	44998
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2019 4:12:13 PM	44998
Xylenes, Total	ND	0.099		mg/Kg	1	5/20/2019 4:12:13 PM	44998
Surr: 4-Bromofluorobenzene	93.2	80-120		%Rec	1	5/20/2019 4:12:13 PM	44998

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS4
Project: Sterling 4H TB
Collection Date: 5/16/2019 10:53:00 AM
Lab ID: 1905899-008 **Matrix:** SOIL **Received Date:** 5/17/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	5/22/2019 4:25:57 AM	45090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/21/2019 5:13:08 PM	45011
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/21/2019 5:13:08 PM	45011
Surr: DNOP	92.4	70-130		%Rec	1	5/21/2019 5:13:08 PM	45011
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/20/2019 4:34:52 PM	44998
Surr: BFB	109	73.8-119		%Rec	1	5/20/2019 4:34:52 PM	44998
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/20/2019 4:34:52 PM	44998
Toluene	ND	0.050		mg/Kg	1	5/20/2019 4:34:52 PM	44998
Ethylbenzene	ND	0.050		mg/Kg	1	5/20/2019 4:34:52 PM	44998
Xylenes, Total	ND	0.099		mg/Kg	1	5/20/2019 4:34:52 PM	44998
Surr: 4-Bromofluorobenzene	96.5	80-120		%Rec	1	5/20/2019 4:34:52 PM	44998

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS5
Project: Sterling 4H TB
Collection Date: 5/16/2019 11:04:00 AM
Lab ID: 1905899-009 **Matrix:** SOIL **Received Date:** 5/17/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	71	60		mg/Kg	20	5/22/2019 7:08:39 PM	45118
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/21/2019 5:35:21 PM	45011
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/21/2019 5:35:21 PM	45011
Surr: DNOP	118	70-130		%Rec	1	5/21/2019 5:35:21 PM	45011
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2019 4:57:29 PM	44998
Surr: BFB	108	73.8-119		%Rec	1	5/20/2019 4:57:29 PM	44998
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	5/20/2019 4:57:29 PM	44998
Toluene	ND	0.049		mg/Kg	1	5/20/2019 4:57:29 PM	44998
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2019 4:57:29 PM	44998
Xylenes, Total	ND	0.098		mg/Kg	1	5/20/2019 4:57:29 PM	44998
Surr: 4-Bromofluorobenzene	94.7	80-120		%Rec	1	5/20/2019 4:57:29 PM	44998

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS6
Project: Sterling 4H TB
Collection Date: 5/16/2019 12:21:00 PM
Lab ID: 1905899-010 **Matrix:** SOIL
Received Date: 5/17/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	180	60		mg/Kg	20	5/22/2019 7:21:04 PM	45118
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/23/2019 8:29:55 PM	45011
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/23/2019 8:29:55 PM	45011
Surr: DNOP	98.4	70-130		%Rec	1	5/23/2019 8:29:55 PM	45011
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2019 6:05:23 PM	44998
Surr: BFB	111	73.8-119		%Rec	1	5/20/2019 6:05:23 PM	44998
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	5/20/2019 6:05:23 PM	44998
Toluene	ND	0.049		mg/Kg	1	5/20/2019 6:05:23 PM	44998
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2019 6:05:23 PM	44998
Xylenes, Total	ND	0.098		mg/Kg	1	5/20/2019 6:05:23 PM	44998
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	1	5/20/2019 6:05:23 PM	44998

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: CS7
Project: Sterling 4H TB
Collection Date: 5/16/2019 12:48:00 PM
Lab ID: 1905899-011 **Matrix:** SOIL **Received Date:** 5/17/2019 9:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	240	60		mg/Kg	20	5/22/2019 4:38:21 AM	45090
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/21/2019 6:19:42 PM	45011
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/21/2019 6:19:42 PM	45011
Surr: DNOP	87.0	70-130		%Rec	1	5/21/2019 6:19:42 PM	45011
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/20/2019 6:27:59 PM	44998
Surr: BFB	108	73.8-119		%Rec	1	5/20/2019 6:27:59 PM	44998
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	5/20/2019 6:27:59 PM	44998
Toluene	ND	0.049		mg/Kg	1	5/20/2019 6:27:59 PM	44998
Ethylbenzene	ND	0.049		mg/Kg	1	5/20/2019 6:27:59 PM	44998
Xylenes, Total	ND	0.097		mg/Kg	1	5/20/2019 6:27:59 PM	44998
Surr: 4-Bromofluorobenzene	94.6	80-120		%Rec	1	5/20/2019 6:27:59 PM	44998

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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1905899**

28-May-19

Client: Souder, Miller & Associates

Project: Sterling 4H TB

Sample ID: **MB-45090**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **45090**	RunNo: **60060**
Prep Date: **5/21/2019**	Analysis Date: **5/21/2019**	SeqNo: **2028103** Units: **mg/Kg**

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

Sample ID: **LCS-45090**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **45090**	RunNo: **60060**
Prep Date: **5/21/2019**	Analysis Date: **5/21/2019**	SeqNo: **2028104** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.9	90	110			

Sample ID: **MB-45118**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **45118**	RunNo: **60098**
Prep Date: **5/22/2019**	Analysis Date: **5/22/2019**	SeqNo: **2029813** Units: **mg/Kg**

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

Sample ID: **LCS-45118**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **45118**	RunNo: **60098**
Prep Date: **5/22/2019**	Analysis Date: **5/22/2019**	SeqNo: **2029814** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.1	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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1905899**

28-May-19

Client: Souder, Miller & Associates

Project: Sterling 4H TB

Sample ID: **MB-45011**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **45011**	RunNo: **60017**
Prep Date: **5/17/2019**	Analysis Date: **5/21/2019**	SeqNo: **2026814** 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	12		10.00		119	70	130			

Sample ID: **LCS-45011**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **45011**	RunNo: **60017**
Prep Date: **5/17/2019**	Analysis Date: **5/22/2019**	SeqNo: **2027290** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	71	10	50.00	0	141	63.9	124			S
Surr: DNOP	5.1		5.000		103	70	130			

Sample ID: **LCS-45021**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **45021**	RunNo: **60017**
Prep Date: **5/20/2019**	Analysis Date: **5/21/2019**	SeqNo: **2027291** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		86.1	70	130			

Sample ID: **MB-45021**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **45021**	RunNo: **60017**
Prep Date: **5/20/2019**	Analysis Date: **5/21/2019**	SeqNo: **2027292** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.8		10.00		97.8	70	130			

Sample ID: **LCS-45063**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **45063**	RunNo: **60057**
Prep Date: **5/21/2019**	Analysis Date: **5/22/2019**	SeqNo: **2028025** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		88.8	70	130			

Sample ID: **MB-45063**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **45063**	RunNo: **60057**
Prep Date: **5/21/2019**	Analysis Date: **5/22/2019**	SeqNo: **2028027** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.4		10.00		93.6	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1905899**
28-May-19

Client: Souder, Miller & Associates
Project: Sterling 4H TB

Sample ID: **MB-45162**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **45162**	RunNo: **60130**
Prep Date: **5/23/2019**	Analysis Date: **5/24/2019**	SeqNo: **2031736** 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		101	70	130			

Sample ID: **LCS-45162**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **45162**	RunNo: **60130**
Prep Date: **5/23/2019**	Analysis Date: **5/24/2019**	SeqNo: **2031737** 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	93.0	63.9	124			
Surr: DNOP	4.6		5.000		91.8	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1905899**

28-May-19

Client: Souder, Miller & Associates

Project: Sterling 4H TB

Sample ID: **MB-44998** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **44998** RunNo: **60008**

Prep Date: **5/17/2019** Analysis Date: **5/20/2019** SeqNo: **2025459** 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	1000		1000		102	73.8	119			

Sample ID: **LCS-44998** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **44998** RunNo: **60008**

Prep Date: **5/17/2019** Analysis Date: **5/20/2019** SeqNo: **2025460** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	104	80.1	123			
Surr: BFB	1100		1000		112	73.8	119			

Sample ID: **1905899-001AMS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **SW1** Batch ID: **44998** RunNo: **60008**

Prep Date: **5/17/2019** Analysis Date: **5/20/2019** SeqNo: **2025462** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	24.93	0	101	69.1	142			
Surr: BFB	1200		997.0		121	73.8	119			S

Sample ID: **1905899-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **SW1** Batch ID: **44998** RunNo: **60008**

Prep Date: **5/17/2019** Analysis Date: **5/20/2019** SeqNo: **2025463** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.9	24.37	0	108	69.1	142	4.77	20	
Surr: BFB	1200		974.7		122	73.8	119	0	0	S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1905899**

28-May-19

Client: Souder, Miller & Associates

Project: Sterling 4H TB

Sample ID: **MB-44998** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **44998** RunNo: **60008**

Prep Date: **5/17/2019** Analysis Date: **5/20/2019** SeqNo: **2025494** 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	0.94		1.000		94.0	80	120			

Sample ID: **LCS-44998** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **44998** RunNo: **60008**

Prep Date: **5/17/2019** Analysis Date: **5/20/2019** SeqNo: **2025495** 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	107	80	120			
Toluene	1.1	0.050	1.000	0	106	80	120			
Ethylbenzene	1.1	0.050	1.000	0	106	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Sample ID: **1905899-002AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **SW2** Batch ID: **44998** RunNo: **60008**

Prep Date: **5/17/2019** Analysis Date: **5/20/2019** SeqNo: **2025498** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	0.9881	0	98.7	63.9	127			
Toluene	1.0	0.049	0.9881	0.004286	103	69.9	131			
Ethylbenzene	1.0	0.049	0.9881	0	103	71	132			
Xylenes, Total	3.0	0.099	2.964	0	99.6	71.8	131			
Surr: 4-Bromofluorobenzene	1.1		0.9881		107	80	120			

Sample ID: **1905899-002AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **SW2** Batch ID: **44998** RunNo: **60008**

Prep Date: **5/17/2019** Analysis Date: **5/20/2019** SeqNo: **2025499** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9671	0	105	63.9	127	4.21	20	
Toluene	1.0	0.048	0.9671	0.004286	105	69.9	131	0.232	20	
Ethylbenzene	1.0	0.048	0.9671	0	104	71	132	0.898	20	
Xylenes, Total	2.9	0.097	2.901	0	101	71.8	131	1.05	20	
Surr: 4-Bromofluorobenzene	1.0		0.9671		104	80	120	0	0	

Qualifiers:

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

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: **1905899** RcptNo: **1**

Received By: **Jevon Campisi** **5/17/2019 9:00:00 AM** Jevon Campisi

Completed By: **Isaiah Ortiz** **5/17/2019 10:16:37 AM** I-Ox

Reviewed By: ENM 5/17/19

CB: DAD 5/17/19

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: DAD 5/17/19

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good	Yes			
2	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: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

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

Project Name: Sterling 4H TB

Project #:

Project Manager: H. Patterson

Sampler: HMP

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 0.7°c / 1.4°c - 0.1CF = 0.6°c / 1.3°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1905899	Analysis Request: BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
5/16/19	12:04	soil	SW1	4oz		-001	X	X					X			
	12:10		SW2			-002	X	X					X			
	12:16		SW3			-003	X	X					X			
	12:45		SW4			-004	X	X					X			
	10:34		CS1			-005	X	X					X			
	10:38		CS2			-006	X	X					X			
	10:41		CS3			-007	X	X					X			
	10:53		CS4			-008	X	X					X			
	11:04		CS5			-009	X	X					X			
	12:21		CS6			-010	X	X					X			
	12:48		CS7			-011	X	X					X			

Date	Time	Relinquished by	Received by	Via	Date	Time
5/16/19	1:00	Samantha Watson			5/16/19	1400
5/16/19	1900			Courier	5-17-19	8:00

Remarks:
Marathon
please cc Ashley.Maxwell@soodermiller.com w/ results

Thanks! -SW