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

December 28, 2018

#5E26816-BG19

NMOCD District 2
Mr. Brad Billings
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

SUBJECT: Amended Remediation Closure Report for the Riser #4 Release (2RP-5113) Eddy County, New Mexico

Dear Mr. Brad Billings:

On behalf of Matador Resources, Souder, Miller & Associates (SMA) has prepared this Remediation Closure Report that describes the remediation of a release of liquids related to oil and gas production activities at the Riser #4 site. The site is in Unit D, Section 10, Township 24S, Range 28E, Eddy County, New Mexico, on private 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	Riser #4	Company	Matador Resources
API Number	N/A	Location	32.239704 -104.083173
Incident Number	2RP-5113		
Estimated Date of Release	11/4/2018	Date Reported to NMOCD	11/4/2018
Land Owner	Private (Vasquez, Guadalupe M)	Reported To	NMOCD District 2
Source of Release	Fail in the weld in an underground pipeline		
Released Volume	15 bbls	Released Material	Produced Water
Recovered Volume	0 bbls	Net Release	15 bbls
NMOCD Closure Criteria	<50 feet to groundwater		
SMA Response Dates	11/5/2018, 11/8/2018, 12/17/2018		

1.0 Background

On November 4, 2018, a release was discovered at the Riser #4 site due to a failure in the weld of a buried pipeline. Initial response activities were conducted by the operator and SMA, and included shutting in the pipeline (source elimination and site security) and the excavation of the majority of affected materials to expose and repair the pipeline, which is buried at approximately 15 feet below grade surface (bgs). Figures 1 and 2 illustrate the vicinity and wellhead protection and regional surface and groundwater features. Figure 3 illustrates the release and sample locations. The initial and final C-141 forms are included in Appendix A.

2.0 Site Information and Closure Criteria

The Riser #4 is located approximately 1.25 miles northwest of Malaga, New Mexico on privately-owned land at an elevation of approximately 3016 feet above mean sea level (amsl).

Based upon the New Mexico Office of the State Engineer (NMOSE) (Appendix B), depth to groundwater in the area is estimated to be 29 feet below grade surface (bgs). There are two known water sources within ½-mile of the location, according to the NMOSE online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 12/4/2018). The nearest significant watercourse is Black River, located approximately 1020 feet to the southwest. Figures 1 and 2 illustrate the site with Karst Potential and that lies within 1000 feet of a water well to indicate that it does 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 less than 50 feet bgs. In accordance with 19.15.29.12.B(2), a deferral is being requested for the western most sidewall (SW4), which is against a cemented canal and cannot be extended any further laterally or vertically. The remainder of 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 Activities

On November 5, 2018, SMA personnel arrived on site in response to the release associated with the Riser #4 site. SMA responded alongside the operator while the area around the pipeline was excavated and as the pipeline was being repaired. NMOCD was then notified on November 5, 2018 that closure samples were to be collected on November 8, 2018.

After the line was repaired and the initial response activities were completed, SMA returned to the site on November 8, 2018 to guide any further excavation activities by collecting soil samples for field screening. Soil samples were field screened. Screening indicated that the initial excavation efforts had removed contaminated soil to NMOCD Closure Criteria.

SMA then conducted confirmation sampling of the walls and base of the excavation, which measured approximately 25 by 30 feet. The area was excavated to a depth of 17 feet bgs, 2 feet underneath the pipelines. Confirmation samples were comprised of five-point composites of the base (BH1) and walls (SW1-SW4) and sent for laboratory analysis. A deferral is being requested for SW4 as it borders the concrete canal that runs northwest to southeast and further delineation or excavation would cause damage to the infrastructure. This canal can also be seen on Figure 2.

Figure 3 shows the extent of the excavation and sample locations. Laboratory results are summarized in Table 3. Laboratory reports are included in Appendix D.

Contaminated soils were removed and replaced with clean backfill material to return the surface to previous contours. The contaminated soil was transported and disposed of at an NMOCD permitted disposal facility.

Upon receiving this closure report, NMOCD verbally requested an additional sample point be collected on the west side of the concrete canal (SW5) to ensure lateral delineation.

5.0 Scope and Limitations

The scope of our services included: assessment sampling; verifying release stabilization; regulatory liaison; remediation; 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 Austin Weyant at 575-689-8801 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Lucas Middleton
Staff Scientist

Reviewed by:

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

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

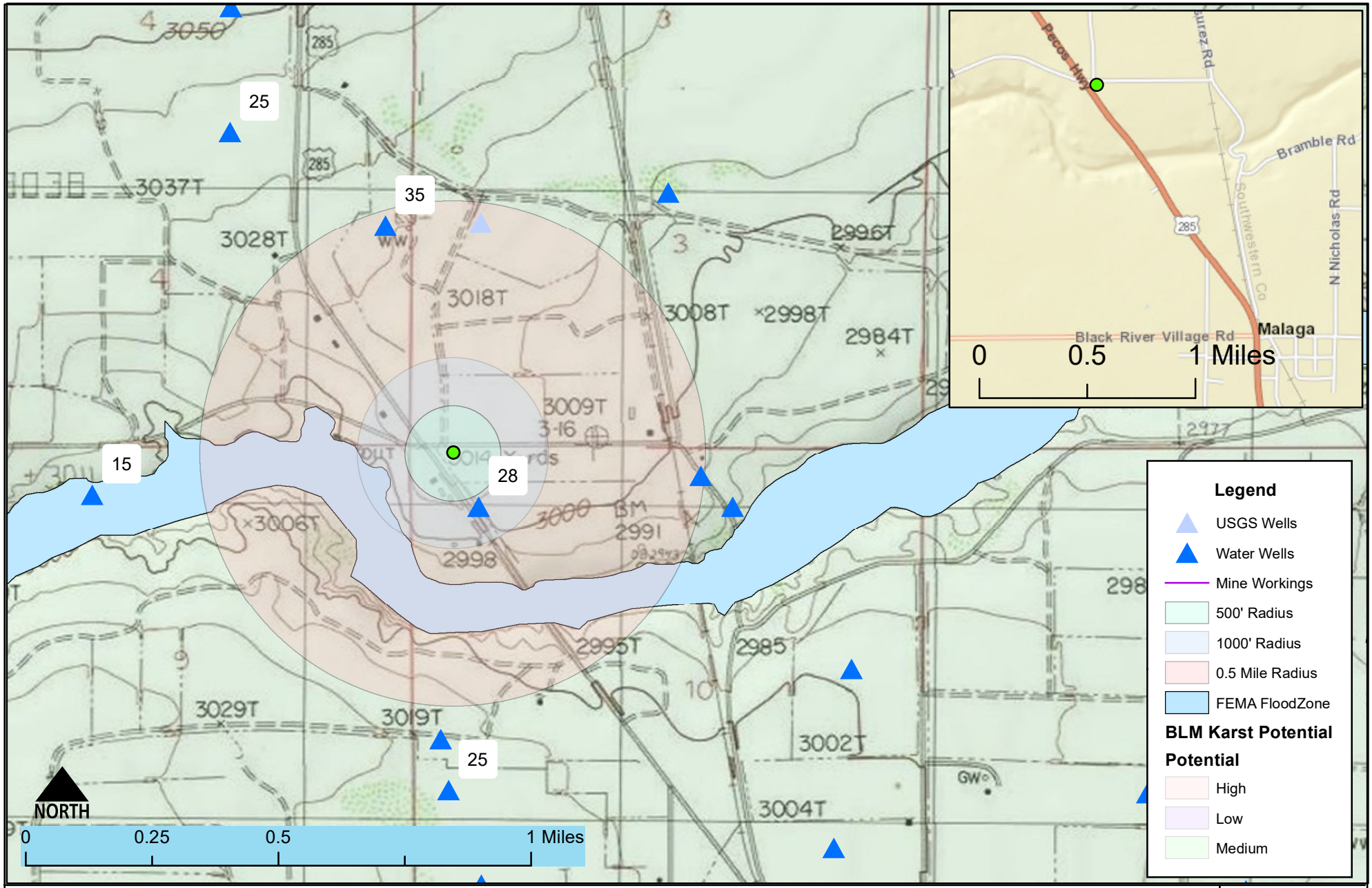
Tables:

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

Appendices:

Appendix A: C141's
Appendix B: NMOSE Wells Report
Appendix C: Field Notes
Appendix D: Laboratory Analytical Reports

FIGURES



Regional Vicinity & Wellhead Protection Map
Riser #4 - Matador Resources
S: 10 T24S R28E, Eddy County New Mexico

Figure 1

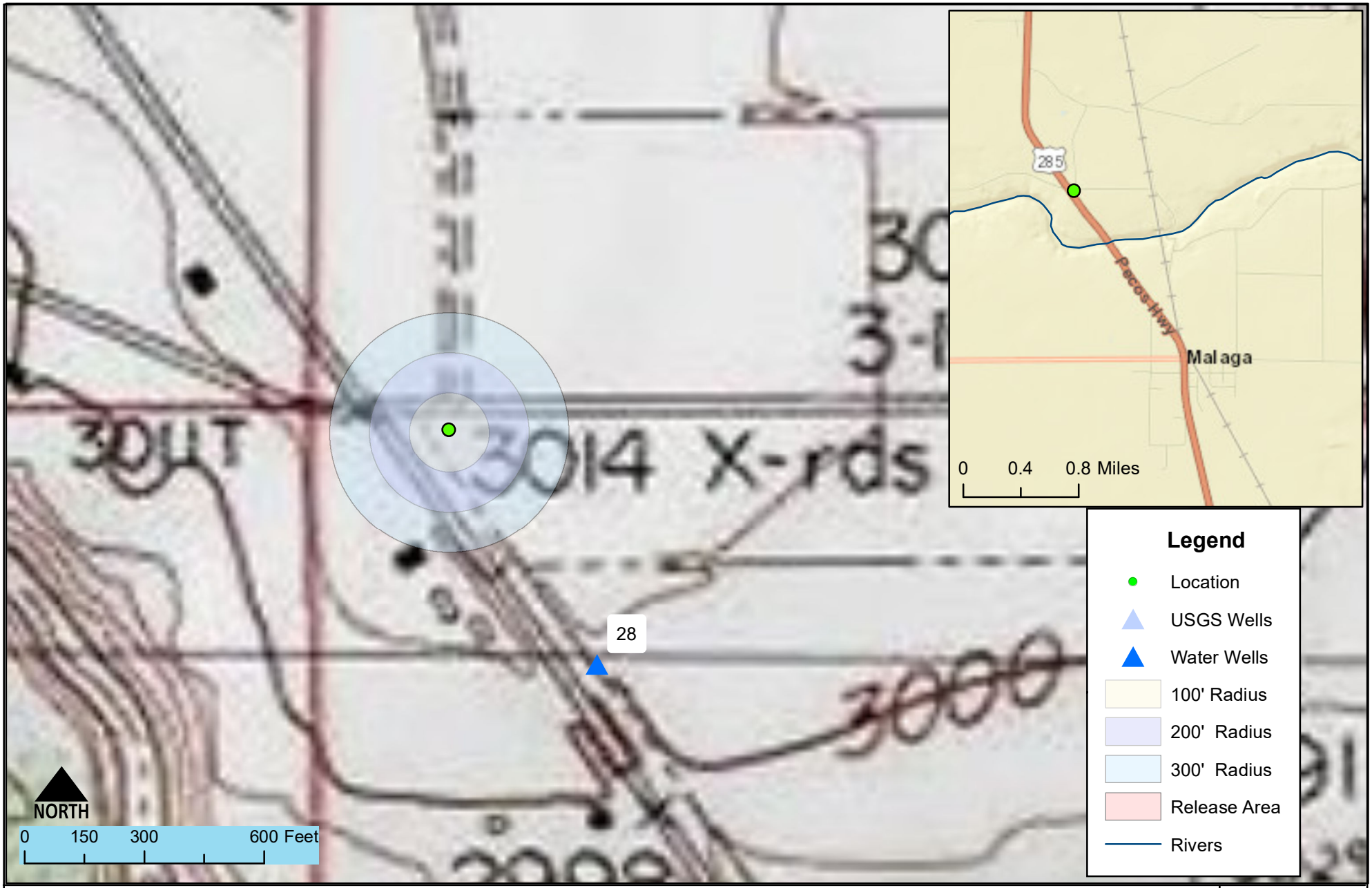
Document: C:\Users\lcm\Documents\GIS DATA\MAPS\Riser 4-Figure 1.mxd

Date Saved: 11/7/2018

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

Drawn Lucas Middleton
Checked
Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689.7040
www.soudermiller.com
Serving the Southwest & Rocky Mountains



Surface Water Map
Riser #4 Matador Resources
S: 10 T24S R28E, Eddy County New Mexico

Figure 2

Document: C:\Users\lcm\Documents\GIS DATA\MAPS\Riser #4 -Figure 2.mxd

Date Saved: 11/7/2018

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

Drawn Lucas Middleton
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Approved

SMA
201 South Halaguena Street
Carlsbad, New Mexico 88221
(575) 689.7040
www.soudermiller.com
Serving the Southwest & Rocky Mountains

Site and Sample Location Map
Riser 4 - Matador Resources
S: 10 T24S R28E, Eddy County New Mexico

Figure 3

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

Drawn Lucas Middleton
Checked
Approved

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Date Saved: 12/28/2018

Document: C:\Users\lcm\Documents\GIS DATA\MAPS\Riser #4-Figure 3.mxd

TABLES

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	Approx. 29	OSE
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	1020; 750; 2390	Black River, OSE C00570, OSE C00573
Hortizontal Distance to Nearest Significant Watercourse (ft)	1020 Black River	USGS

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	x	600	100		50	10
51' to 100'		10000	2500	1000	50	10
>100'		20000	2500	1000	50	10
Surface Water	**yes or no**	**if yes, then**				
<300' from continuously flowing watercourse or other significant watercourse?	no	600	100		50	10
<200' from lakebed, sinkhole or playa lake?	no					
Water Well or Water Source						
<500 feet from spring or a private, domestic fresh water well used by less than 5 households for domestic or stock watering purposes?	no					
<1000' from fresh water well or spring?	yes					
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?	medium karst					
within a 100-year floodplain?	no					

Sample ID	Sample Date	Depth (feet bgs)	Completed Action	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			100	600
BH1-17	11/8/2018	17	excavated	<0.193	<0.021	<4.3	<9.8	<49	<59.1	88
SW1	11/8/2018	sidewall	in-situ	<0.22	<0.024	<4.9	<9.8	<49	<63.7	150
SW2	11/8/2018	sidewall	in-situ	<0.217	<0.024	<4.8	<9.7	<49	<63.5	180
SW3	11/8/2018	sidewall	in-situ	<0.224	<0.025	<5.0	<9.7	<48	<62.7	350
SW4	11/8/2018	sidewall	deferral	<0.216	<0.024	<4.8	<9.7	<48	<62.5	**2800**
BG1	11/8/2018		-	<0.221	<0.025	<4.9	<9.5	<47	<61.4	45
BG2	11/8/2018		-	<0.22	<0.024	<4.9	<9.9	<50	<64.8	<30
SW5	12/17/2018	sidewall	in-situ	<0.217	<0.024	<4.8	<9.7	<49	<64.8	39

"--" = Not Analyzed

APPENDIX A
C141’S

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	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Matador Resources Company	OGRID 228937
Contact Name John Hurt	Contact Telephone 972-371-5200
Contact email JHurt@matadorresources.com	Incident # *(assigned by OCD)*
Contact mailing address5400 LBJ Freeway, Suite 1500 Dallas,TX 75240	

Location of Release Source

Latitude 32.239704°_____ Longitude -104.083173°_____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Riser #4	Site Type Valve Setting
Date Release Discovered11/4/18	API# *(if applicable) N/A*

Unit Letter	Section	Township	Range	County
D	10	24S	28E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name:* VASQUEZ, GUADALUPE M_____)

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) 15	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride 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:
Weld in the pipeline caused the release of fluids. When discovered pipeline was shut in. Then excavation occurred to exposes the pipeline and repaired.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

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: No free liquid was on site so no containment was needed. No recoverable liquids to be contained, saturated soil was excavated and hauled from site.

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: John Hurt Title: RES Specialist

Signature: Date: 11/20/18

email: JHurt@matadorresources.com Telephone: 972-371-5200

OCD Only

Received by: Date:

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
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Release Notification

Responsible Party

Responsible Party Matador Resources	OGRID 228937
Contact Name John Hurt	Contact Telephone 972-371-5200
Contact email JHurt@matadorresources.com	Incident # *(assigned by OCD)*
Contact mailing address 5400 LBJ Freeway, Suite 1500 Dallas, TX 75240	

Location of Release Source

Latitude 32.239704° Longitude -104.083173°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Riser #4	Site Type Valve Setting
Date Release Discovered 11/4/2018	API# *(if applicable) N/A*

Unit Letter	Section	Township	Range	County
D	10	24S	28E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name:* VASQUEZ, GUADALUPE M)

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) 15	Volume Recovered (bbls)
	Is the concentration of dissolved chloride 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
Weld in the pipeline caused the release of fluids. When discovered pipeline was shut in. Then excavation occurred to exposes the pipeline and repaired.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, by SMA to district II on 11/5/18 by email	

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:

No free liquid was on site, so no containment was needed. Saturated soil was excavated and hauled from site.

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: John Hurt Title: RES Specialist

Signature: Date: 12/13/18

email: JHurt@matadorresources.com Telephone: 972-371-5200

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
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?	Approx. 29 (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? – medium karst	☒ 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	
District RP	
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: John Hurt Title: RES Specialist

Signature: Date: 12/13/18

email: JHurt@matadorresources.com Telephone: 972-371-5200

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Deferral

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☒ Extents of contamination must be fully delineated.

☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: John Hurt Title: RES Specialist

Signature: Date: 12/13/18

email: JHurt@matadorresources.com Telephone: 972-371-5200

OCD Only

Received by: Date:

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
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: John Hurt Title: RES Specialist

Signature: Date: 12/13/18

email: JHurt@matadorresources.com Telephone: 972-371-5200

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
NMOSE WELLS REPORT

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 00570	CUB	ED		1	1	10	24S	28E	586490	3567195*	213	100	28	72
C 00573	CUB	ED	2	2	4	04	24S	28E	586188	3568087*	736	250	35	215

Average Depth to Water: **31 feet**

Minimum Depth: **28 feet**

Maximum Depth: **35 feet**

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 586374.8 **Northing (Y):** 3567374.3 **Radius:** 825

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

APPENDIX C
FIELD NOTES
& PHOTO

SUBJECT Ogden / 285 Valve setting PROJECT PAGE

CLIENT Matador DATE 10-5-18 BY LCM

CHECKED BY

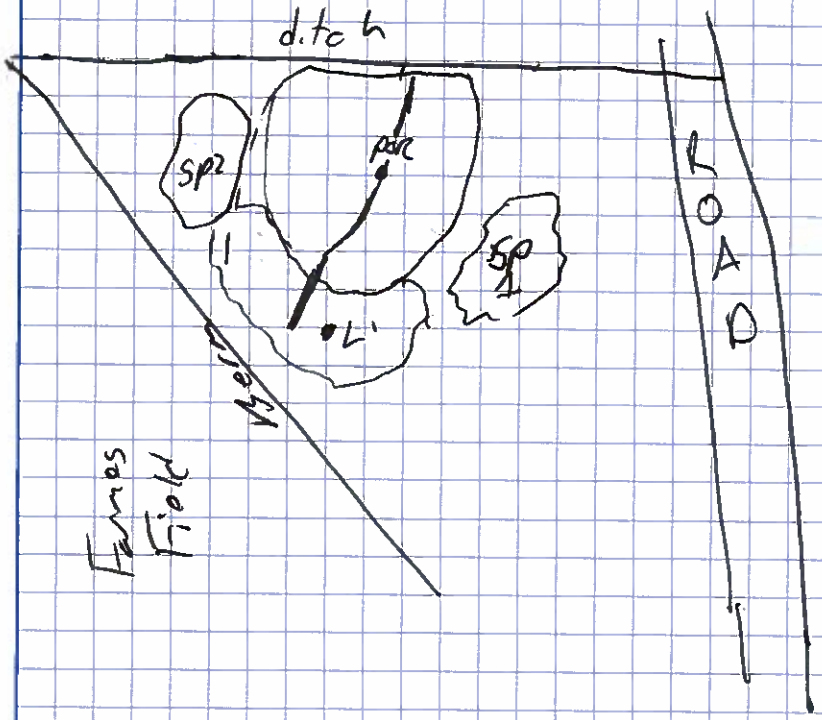
onsite 1:47 pm

excavation has occur up to 15' BGS

pipe exposed bore by elbow

Does not show visual that displaced moved on surface to field to the east

~ 20' depth



From excavation

SP1 - @29.8

SP2 @29

L1 4.02

excavated 1' 7.53@28

Surface - 1'

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

November 19, 2018

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

RE: Riser 4 OrderNo.: 1811884

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 1 sample(s) on 11/16/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: BH 1-17'
Project: Riser 4
Collection Date: 11/8/2018 8:05:00 AM
Lab ID: 1811884-001
Matrix: MEOH (SOIL)
Received Date: 11/16/2018 8:40:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	88	30		mg/Kg	20	11/16/2018 1:01:50 PM	41591
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/16/2018 11:06:48 AM	41576
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/16/2018 11:06:48 AM	41576
Surr: DNOP	94.8	50.6-138		%Rec	1	11/16/2018 11:06:48 AM	41576
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	11/16/2018 11:07:57 AM	41574
Surr: BFB	104	73.8-119		%Rec	1	11/16/2018 11:07:57 AM	41574
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.021		mg/Kg	1	11/16/2018 11:07:57 AM	41574
Toluene	ND	0.043		mg/Kg	1	11/16/2018 11:07:57 AM	41574
Ethylbenzene	ND	0.043		mg/Kg	1	11/16/2018 11:07:57 AM	41574
Xylenes, Total	ND	0.086		mg/Kg	1	11/16/2018 11:07:57 AM	41574
Surr: 4-Bromofluorobenzene	116	80-120		%Rec	1	11/16/2018 11:07:57 AM	41574

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811884**

19-Nov-18

Client: Souder, Miller & Associates

Project: Riser 4

Sample ID	**MB-41591**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**41591**	RunNo:	**55707**					
Prep Date:	**11/16/2018**	Analysis Date:	**11/16/2018**	SeqNo:	**1857442**	Units:	**mg/Kg**			

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

Sample ID	**LCS-41591**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**41591**	RunNo:	**55707**					
Prep Date:	**11/16/2018**	Analysis Date:	**11/16/2018**	SeqNo:	**1857443**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	99.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811884**

19-Nov-18

Client: Souder, Miller & Associates

Project: Riser 4

Sample ID **MB-41576**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **41576**	RunNo: **55694**
Prep Date: **11/16/2018**	Analysis Date: **11/16/2018**	SeqNo: **1855696** 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	9.3		10.00		92.8	50.6	138			

Sample ID **LCS-41576**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **41576**	RunNo: **55694**
Prep Date: **11/16/2018**	Analysis Date: **11/16/2018**	SeqNo: **1856499** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	86.9	70	130			
Surr: DNOP	4.4		5.000		88.3	50.6	138			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811884**

19-Nov-18

Client: Souder, Miller & Associates

Project: Riser 4

Sample ID	**LCS-41574**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**41574**		RunNo:	**55685**				
Prep Date:	**11/15/2018**	Analysis Date:	**11/16/2018**		SeqNo:	**1855553**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	107	80.1	123			
Surr: BFB	1100		1000		112	73.8	119			

Sample ID	**MB-41574**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**PBS**	Batch ID:	**41574**		RunNo:	**55685**				
Prep Date:	**11/15/2018**	Analysis Date:	**11/16/2018**		SeqNo:	**1856063**	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	980		1000		98.4	73.8	119			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811884**

19-Nov-18

Client: Souder, Miller & Associates

Project: Riser 4

Sample ID **LCS-41574**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **41574**	RunNo: **55685**
Prep Date: **11/15/2018**	Analysis Date: **11/16/2018**	SeqNo: **1855669** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	89.2	80	120			
Toluene	0.94	0.050	1.000	0	93.8	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.2	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.2	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		114	80	120			

Sample ID **MB-41574**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **41574**	RunNo: **55685**
Prep Date: **11/15/2018**	Analysis Date: **11/16/2018**	SeqNo: **1856064** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **SMA-CARLSBAD** Work Order Number: **1811884** RcptNo: **1**

Received By: **Jazzmine Burkhead** **11/16/2018 8:40:00 AM**

Completed By: **Erin Melendrez** **11/16/2018 8:53:29 AM**

Reviewed By: JO 11/16/18

LB: ENM 11/16/18

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	ENM 11/16/18
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	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	4.5	Good	Yes			

Chain-of-Custody Record

Results Friday 11/16

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:
☐ Standard X Rush 1 day

Project Name: Riser #4

Project #:

Project Manager: A Weyant

Sampler: JAW

On Ice: ☑ Yes ☐ No

# of Coolers: 1 CF=0

Cooler Temp (including CF): 4.5

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. 1811884	(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)						
11/8	8:05	Soil	BH1-17'	4oz		-001	X	X					X									

Date	Time	Relinquished by:	Received by:	Via:	Date Time	Remarks:
11/15	10:24	Samantha Watson			11/15/18 1300	Matador
11/15/18	1900				11/16/18 08:40	Cooler
					11/16/18 07:55	

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.

SAB 11/16/18

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

December 05, 2018

Austin Weyant

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

RE: River 4 OrderNo.: 1811507

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 7 sample(s) on 11/9/2018 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued November 13, 2018.

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. 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. All samples are reported as received unless otherwise indicated.

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

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: River 4
Collection Date: 11/8/2018 8:15:00 AM
Lab ID: 1811507-002
Matrix: SOIL
Received Date: 11/9/2018 8:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	150	30		mg/Kg	20	11/10/2018 12:43:05 AM	41452
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/12/2018 1:37:11 PM	41448
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/12/2018 1:37:11 PM	41448
Surr: DNOP	104	50.6-138		%Rec	1	11/12/2018 1:37:11 PM	41448
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/12/2018 11:13:08 AM	41447
Surr: BFB	102	73.8-119		%Rec	1	11/12/2018 11:13:08 AM	41447
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/12/2018 11:13:08 AM	41447
Toluene	ND	0.049		mg/Kg	1	11/12/2018 11:13:08 AM	41447
Ethylbenzene	ND	0.049		mg/Kg	1	11/12/2018 11:13:08 AM	41447
Xylenes, Total	ND	0.098		mg/Kg	1	11/12/2018 11:13:08 AM	41447
Surr: 4-Bromofluorobenzene	117	80-120		%Rec	1	11/12/2018 11:13:08 AM	41447

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW2
Project: River 4
Collection Date: 11/8/2018 8:30:00 AM
Lab ID: 1811507-003
Matrix: SOIL
Received Date: 11/9/2018 8:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	180	30		mg/Kg	20	11/10/2018 12:55:30 AM	41452
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/12/2018 2:01:29 PM	41448
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/12/2018 2:01:29 PM	41448
Surr: DNOP	103	50.6-138		%Rec	1	11/12/2018 2:01:29 PM	41448
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/12/2018 12:23:36 PM	41447
Surr: BFB	102	73.8-119		%Rec	1	11/12/2018 12:23:36 PM	41447
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/12/2018 12:23:36 PM	41447
Toluene	ND	0.048		mg/Kg	1	11/12/2018 12:23:36 PM	41447
Ethylbenzene	ND	0.048		mg/Kg	1	11/12/2018 12:23:36 PM	41447
Xylenes, Total	ND	0.097		mg/Kg	1	11/12/2018 12:23:36 PM	41447
Surr: 4-Bromofluorobenzene	115	80-120		%Rec	1	11/12/2018 12:23:36 PM	41447

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW3
Project: River 4
Collection Date: 11/8/2018 8:45:00 AM
Lab ID: 1811507-004 **Matrix:** SOIL **Received Date:** 11/9/2018 8:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	350	30		mg/Kg	20	11/10/2018 1:07:54 AM	41452
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/12/2018 2:25:43 PM	41448
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/12/2018 2:25:43 PM	41448
Surr: DNOP	105	50.6-138		%Rec	1	11/12/2018 2:25:43 PM	41448
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/12/2018 12:47:05 PM	41447
Surr: BFB	105	73.8-119		%Rec	1	11/12/2018 12:47:05 PM	41447
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/12/2018 12:47:05 PM	41447
Toluene	ND	0.050		mg/Kg	1	11/12/2018 12:47:05 PM	41447
Ethylbenzene	ND	0.050		mg/Kg	1	11/12/2018 12:47:05 PM	41447
Xylenes, Total	ND	0.099		mg/Kg	1	11/12/2018 12:47:05 PM	41447
Surr: 4-Bromofluorobenzene	120	80-120		%Rec	1	11/12/2018 12:47:05 PM	41447

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW4
Project: River 4
Collection Date: 11/8/2018 9:00:00 AM
Lab ID: 1811507-005
Matrix: SOIL
Received Date: 11/9/2018 8:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2800	150		mg/Kg	100	11/12/2018 10:16:06 AM	41452
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/12/2018 2:50:02 PM	41448
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/12/2018 2:50:02 PM	41448
Surr: DNOP	107	50.6-138		%Rec	1	11/12/2018 2:50:02 PM	41448
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/12/2018 1:10:32 PM	41447
Surr: BFB	104	73.8-119		%Rec	1	11/12/2018 1:10:32 PM	41447
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/12/2018 1:10:32 PM	41447
Toluene	ND	0.048		mg/Kg	1	11/12/2018 1:10:32 PM	41447
Ethylbenzene	ND	0.048		mg/Kg	1	11/12/2018 1:10:32 PM	41447
Xylenes, Total	ND	0.096		mg/Kg	1	11/12/2018 1:10:32 PM	41447
Surr: 4-Bromofluorobenzene	119	80-120		%Rec	1	11/12/2018 1:10:32 PM	41447

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B61
Project: River 4
Collection Date: 11/8/2018 8:00:00 AM
Lab ID: 1811507-006 **Matrix:** SOIL **Received Date:** 11/9/2018 8:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	45	30		mg/Kg	20	11/10/2018 1:32:44 AM	41452
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/12/2018 2:59:49 PM	41448
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/12/2018 2:59:49 PM	41448
Surr: DNOP	95.6	50.6-138		%Rec	1	11/12/2018 2:59:49 PM	41448
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/12/2018 1:33:59 PM	41447
Surr: BFB	104	73.8-119		%Rec	1	11/12/2018 1:33:59 PM	41447
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/12/2018 1:33:59 PM	41447
Toluene	ND	0.049		mg/Kg	1	11/12/2018 1:33:59 PM	41447
Ethylbenzene	ND	0.049		mg/Kg	1	11/12/2018 1:33:59 PM	41447
Xylenes, Total	ND	0.098		mg/Kg	1	11/12/2018 1:33:59 PM	41447
Surr: 4-Bromofluorobenzene	119	80-120		%Rec	1	11/12/2018 1:33:59 PM	41447

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B62
Project: River 4
Collection Date: 11/8/2018 8:00:00 AM
Lab ID: 1811507-007
Matrix: SOIL
Received Date: 11/9/2018 8:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	11/10/2018 1:45:08 AM	41452
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/12/2018 2:37:50 PM	41448
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/12/2018 2:37:50 PM	41448
Surr: DNOP	85.4	50.6-138		%Rec	1	11/12/2018 2:37:50 PM	41448
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/12/2018 1:57:28 PM	41447
Surr: BFB	103	73.8-119		%Rec	1	11/12/2018 1:57:28 PM	41447
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/12/2018 1:57:28 PM	41447
Toluene	ND	0.049		mg/Kg	1	11/12/2018 1:57:28 PM	41447
Ethylbenzene	ND	0.049		mg/Kg	1	11/12/2018 1:57:28 PM	41447
Xylenes, Total	ND	0.098		mg/Kg	1	11/12/2018 1:57:28 PM	41447
Surr: 4-Bromofluorobenzene	116	80-120		%Rec	1	11/12/2018 1:57:28 PM	41447

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811507**

05-Dec-18

Client: Souder, Miller & Associates

Project: River 4

Sample ID	**MB-41452**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**41452**	RunNo:	**55558**					
Prep Date:	**11/9/2018**	Analysis Date:	**11/9/2018**	SeqNo:	**1850186**	Units:	**mg/Kg**			

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

Sample ID	**LCS-41452**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**41452**	RunNo:	**55558**					
Prep Date:	**11/9/2018**	Analysis Date:	**11/9/2018**	SeqNo:	**1850187**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.0	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811507**

05-Dec-18

Client: Souder, Miller & Associates

Project: River 4

Sample ID	**LCS-41448**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**41448**		RunNo:	**55579**				
Prep Date:	**11/9/2018**	Analysis Date:	**11/12/2018**		SeqNo:	**1850760**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.9	70	130			
Surr: DNOP	4.7		5.000		94.5	50.6	138			

Sample ID	**MB-41448**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**41448**		RunNo:	**55579**				
Prep Date:	**11/9/2018**	Analysis Date:	**11/12/2018**		SeqNo:	**1850761**	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		104	50.6	138			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811507**

05-Dec-18

Client: Souder, Miller & Associates

Project: River 4

Sample ID	**1811507-001AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**BH 1-17**	Batch ID:	**41447**		RunNo:	**55580**					
Prep Date:	**11/9/2018**	Analysis Date:	**11/12/2018**		SeqNo:	**1850786**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	26	4.7	23.52	0	109	77.8	128				
Surr: BFB	1200		940.7		123	73.8	119			S	

Sample ID	**1811507-001AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**BH 1-17**	Batch ID:	**41447**		RunNo:	**55580**					
Prep Date:	**11/9/2018**	Analysis Date:	**11/12/2018**		SeqNo:	**1850787**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	25	4.6	22.94	0	110	77.8	128	1.38	20		
Surr: BFB	1100		917.4		121	73.8	119	0	0	S	

Sample ID	**MB-41447**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**41447**		RunNo:	**55580**					
Prep Date:	**11/9/2018**	Analysis Date:	**11/12/2018**		SeqNo:	**1851079**	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		101	73.8	119				

Sample ID	**LCS-41447**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**41447**		RunNo:	**55580**					
Prep Date:	**11/9/2018**	Analysis Date:	**11/12/2018**		SeqNo:	**1851080**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	27	5.0	25.00	0	107	80.1	123				
Surr: BFB	1100		1000		113	73.8	119				

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811507**

05-Dec-18

Client: Souder, Miller & Associates

Project: River 4

Sample ID	**1811507-002AMS**	SampType:	**MS**		TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**SW1**	Batch ID:	**41447**		RunNo:	**55580**					
Prep Date:	**11/9/2018**	Analysis Date:	**11/12/2018**		SeqNo:	**1850798**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.85	0.025	0.9881	0	85.7	68.5	133				
Toluene	0.89	0.049	0.9881	0.01037	89.3	75	130				
Ethylbenzene	0.92	0.049	0.9881	0	92.8	79.4	128				
Xylenes, Total	2.8	0.099	2.964	0	95.0	77.3	131				
Surr: 4-Bromofluorobenzene	1.2		0.9881		120	80	120				

Sample ID	**1811507-002AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**SW1**	Batch ID:	**41447**		RunNo:	**55580**					
Prep Date:	**11/9/2018**	Analysis Date:	**11/12/2018**		SeqNo:	**1850799**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.83	0.024	0.9579	0	86.2	68.5	133	2.62	20		
Toluene	0.88	0.048	0.9579	0.01037	90.5	75	130	1.80	20		
Ethylbenzene	0.89	0.048	0.9579	0	92.5	79.4	128	3.37	20		
Xylenes, Total	2.7	0.096	2.874	0	94.3	77.3	131	3.85	20		
Surr: 4-Bromofluorobenzene	1.1		0.9579		118	80	120	0	0		

Sample ID	**MB-41447**	SampType:	**MBLK**		TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**41447**		RunNo:	**55580**					
Prep Date:	**11/9/2018**	Analysis Date:	**11/12/2018**		SeqNo:	**1851093**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	ND	0.025									
Toluene	ND	0.050									
Ethylbenzene	ND	0.050									
Xylenes, Total	ND	0.10									
Surr: 4-Bromofluorobenzene	1.2		1.000		116	80	120				

Sample ID	**LCS-41447**	SampType:	**LCS**		TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**41447**		RunNo:	**55580**					
Prep Date:	**11/9/2018**	Analysis Date:	**11/12/2018**		SeqNo:	**1851094**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.91	0.025	1.000	0	91.1	80	120				
Toluene	0.96	0.050	1.000	0	95.6	80	120				
Ethylbenzene	0.95	0.050	1.000	0	95.2	80	120				
Xylenes, Total	2.9	0.10	3.000	0	96.9	80	120				
Surr: 4-Bromofluorobenzene	1.4		1.000		138	80	120				S

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: SMA-CARLSBAD Work Order Number: 1811507 RcptNo: 1

Received By: Victoria Zellar 11/9/2018 8:50:00 AM Victoria Zellar

Completed By: Ashley Gallegos 11/9/2018 9:29:28 AM

Reviewed By: 11/09/18 Labeled by: JAB 11/09/18

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: JAB 11/09/18

Special Handling (if applicable)

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

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.1	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:
☐ Standard ☒ Rush Monday

Project Name: Riser #4

Project #:

Project Manager: Austin Weyd

Sampler: LCM

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.1

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. 1811507	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)
~~11-8-18~~	~~8:05~~	~~Soil~~	~~BH1 17'~~	4oz	~~HP~~ 8015	-001	X	X					X			
	8:15		SW1			-002										
	8:30		SW2		as per Samantha	-003										
	8:45		SW3			-004										
	9:00		SW4			-005										
	8:00		BG1			-006										
	6:00		BG2			-007										

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11-8-18	3:02				11/8/18	1500
11/8/18	1900		Madonna Bolton	Courier	11/9/18	8:50

Remarks: Matrix

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

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

December 28, 2018

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

RE: Riser 4 OrderNo.: 1812A55

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/19/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1812A55**
Date Reported: **12/28/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW5
Project: Riser 4
Collection Date: 12/17/2018 3:00:00 PM
Lab ID: 1812A55-001 **Matrix:** SOIL **Received Date:** 12/19/2018 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	39	30		mg/Kg	20	12/27/2018 12:52:57 PM	42333
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/21/2018 2:51:08 PM	42209
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/21/2018 2:51:08 PM	42209
Surr: DNOP	111	50.6-138		%Rec	1	12/21/2018 2:51:08 PM	42209
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2018 12:35:00 AM	42210
Surr: BFB	86.9	73.8-119		%Rec	1	12/21/2018 12:35:00 AM	42210
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/21/2018 12:35:00 AM	42210
Toluene	ND	0.048		mg/Kg	1	12/21/2018 12:35:00 AM	42210
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2018 12:35:00 AM	42210
Xylenes, Total	ND	0.097		mg/Kg	1	12/21/2018 12:35:00 AM	42210
Surr: 4-Bromofluorobenzene	91.1	80-120		%Rec	1	12/21/2018 12:35:00 AM	42210

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1812A55**

28-Dec-18

Client: Souder, Miller & Associates

Project: Riser 4

Sample ID	**MB-42333**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**42333**	RunNo:	**56621**					
Prep Date:	**12/27/2018**	Analysis Date:	**12/27/2018**	SeqNo:	**1895320**	Units:	**mg/Kg**			

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

Sample ID	**LCS-42333**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**42333**	RunNo:	**56621**					
Prep Date:	**12/27/2018**	Analysis Date:	**12/27/2018**	SeqNo:	**1895321**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1812A55**

28-Dec-18

Client: Souder, Miller & Associates

Project: Riser 4

Sample ID **MB-42209**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **42209**	RunNo: **56431**
Prep Date: **12/19/2018**	Analysis Date: **12/20/2018**	SeqNo: **1890230** 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		118	50.6	138			

Sample ID **LCS-42209**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **42209**	RunNo: **56431**
Prep Date: **12/19/2018**	Analysis Date: **12/20/2018**	SeqNo: **1890231** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	60	10	50.00	0	119	70	130			
Surr: DNOP	5.4		5.000		109	50.6	138			

Sample ID **LCS-42209**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **42209**	RunNo: **56431**
Prep Date: **12/19/2018**	Analysis Date: **12/21/2018**	SeqNo: **1890696** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58	10	50.00	0	116	70	130			
Surr: DNOP	5.9		5.000		118	50.6	138			

Sample ID **1812A55-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SW5**	Batch ID: **42209**	RunNo: **56510**
Prep Date: **12/19/2018**	Analysis Date: **12/22/2018**	SeqNo: **1892479** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	9.7	48.26	4.605	73.2	53.5	126			
Surr: DNOP	4.6		4.826		95.4	50.6	138			

Sample ID **1812A55-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SW5**	Batch ID: **42209**	RunNo: **56510**
Prep Date: **12/19/2018**	Analysis Date: **12/22/2018**	SeqNo: **1892480** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.8	48.88	4.605	77.6	53.5	126	6.31	21.7	
Surr: DNOP	4.7		4.888		96.2	50.6	138	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1812A55**

28-Dec-18

Client: Souder, Miller & Associates

Project: Riser 4

Sample ID	**MB-42210**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**42210**	RunNo:	**56489**					
Prep Date:	**12/19/2018**	Analysis Date:	**12/20/2018**	SeqNo:	**1889749**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	880		1000		87.8	73.8	119			

Sample ID	**LCS-42210**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**42210**	RunNo:	**56489**					
Prep Date:	**12/19/2018**	Analysis Date:	**12/20/2018**	SeqNo:	**1889750**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	112	80.1	123			
Surr: BFB	1000		1000		104	73.8	119			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1812A55**

28-Dec-18

Client: Souder, Miller & Associates

Project: Riser 4

Sample ID **MB-42210**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **42210**	RunNo: **56489**
Prep Date: **12/19/2018**	Analysis Date: **12/20/2018**	SeqNo: **1889786** 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	0.92		1.000		91.6	80	120			

Sample ID **LCS-42210**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **42210**	RunNo: **56489**
Prep Date: **12/19/2018**	Analysis Date: **12/20/2018**	SeqNo: **1889787** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	80	120			
Toluene	1.0	0.050	1.000	0	105	80	120			
Ethylbenzene	1.1	0.050	1.000	0	105	80	120			
Xylenes, Total	3.2	0.10	3.000	0	107	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: SMA-CARLSBAD Work Order Number: 1812A55 RcptNo: 1

Received By: **Victoria Zellar** 12/19/2018 9:05:00 AM Victoria Zellar

Completed By: **Isaiah Ortiz** 12/19/2018 9:43:35 AM I-OK

Reviewed By: IO 12-19-18

CB: JAB 12/19/18

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: ____ (<2 or >12 unless noted)
Adjusted? ____
Checked by: JAB 12/19/18

Special Handling (if applicable)

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

Person Notified: ____ Date: ____
By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: ____
Client Instructions: ____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	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:
☐ Standard ☑ Rush 5day

Project Name: Riser #4

Project #:

Project Manager: Austin Wright

Sampler: LCA

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 1.9°C

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. 1812ASS	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)
12-17-18	300	soil	SW5	4oz		-001	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time	Remarks:
12-17-18					12/18/18	1600	
12/18/18	1944		Victoria Gallan	Courier	12/19/18	9:05	Courier VIC 12/19/18

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