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

February 27,2018

#5E26816- BG3

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

SUBJECT: SOIL REMEDIATION WORK PLAN FOR THE TOM MATTHEWS #203H RELEASE (2RP-4629), EDDY COUNTY, NEW MEXICO

Dear Mr. Bratcher,

On behalf of Matador Resources, Souder, Miller & Associates (SMA) has prepared this WORK PLAN that describes the assessment, initial delineation and proposed remediation for a release associated with the TOM MATTHEWS 10 24S 28E RB #203H. The site is located in UNIT I, SECTION 10, TOWNSHIP 24S, RANGE 28E, NMPM, Eddy County, New Mexico, on Private land. Figure 1 illustrates the vicinity and location of the site.

Table 1, below, summarizes information regarding the release.

Table 1: Release information and Site Ranking	
Name	TOM MATTHEWS 10 24S 28E RB #203H
Company	Matador Resources
RP Number	2RP-4629
API Number	30-015-44561
Location	32.229673°, -104.083370°
Estimated Date of Release	1/31/18
Date Reported to NMOCD	2/1/18
Land Owner	Private
Reported To	NM OCD Artesia District Office
Source of Release	Equipment Failure
Released Material	Produced Water
Released Volume	193 bbls
Recovered Volume	45 bbls
Net Release	148 bbls
Nearest Waterway	0.33 Miles from Black River
Depth to Groundwater	25’
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	20
SMA Response Dates	January 31 and February 6, 2018

1.0 Background

On January 31, 2018, a transfer Pump failed causing a release onto the Tom Matthews #203H pad. The pump was isolated, and a vacuum truck and backhoe was on site vacuuming all standing fluids. The release occurred on the pad around the tank battery and impacted an estimated impact 2,221 square yards of unlined surface area. The release is illustrated on Figure 2.

2.0 Site Ranking and Land Jurisdiction

The release site is located approximately 0.33 miles south of the Black River, with an elevation of approximately 3,020 feet above sea level. SMA searched the New Mexico State Engineer's Office (NMOSE) online water well database for water wells in the vicinity of the release. Two wells are located within a 1,000 foot radius of the site. Neither of these two wells are domestic. Well ID #C00764 is the nearest, with a depth-to-groundwater of 25 feet. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be 25 feet below ground surface (bgs).

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

Table 2.

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

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

3.0 Release Characterization

On January 31, 2018 and February 6, 2018, a SMA representative was on site for an initial site evaluation the extent of the release. Soil samples were field-screened using an EC meter and processed according to NMOCD soil sampling procedures. 7 sample locations were collected including backgrounds. Samples occurred between 0.5 feet to 3 feet bgs. The sample was sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory for analyses of chlorides by Method 300.0. A surface sample from location L3 was analyzed for volatile organics (BTEX) by Method 8021B, and MRO, DRO, and GRO by EPA Method 8015D. The sample location are depicted on Figure 2. Field screening and laboratory results are summarized in Table 3. Laboratory reports are included in Appendix C.

4.0 Soil Remediation Workplan

SMA proposes excavation and removal of contaminated soil, as illustrated in Figure 2. The release area will be excavated to 1.5 feet bgs. SMA will continuously guide the excavation and delineation activities by collecting composite soil samples for field screening with a mobile titration unit (EPA 4500). The release area will be excavated to the NMOCD Standards in Table 2 above. Confirmation samples will be collected from within the excavation. Approximately 1,225 cubic yards of contaminated soil is projected to be removed and replaced with clean backfill material in order to return the surface to previous contours. The contaminated soil will be transported for proper disposal at Lea Land, near Carlsbad, NM, an NMOCD permitted disposal facility.

5.0 Scope and Limitations

The scope of our services consisted of the performance of assessment sampling, verification of release stabilization, regulatory liaison, and preparation of this work plan. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact either Austin Weyant at 575-689-8801 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Austin Weyant
Project Scientist

Reviewed by:

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

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

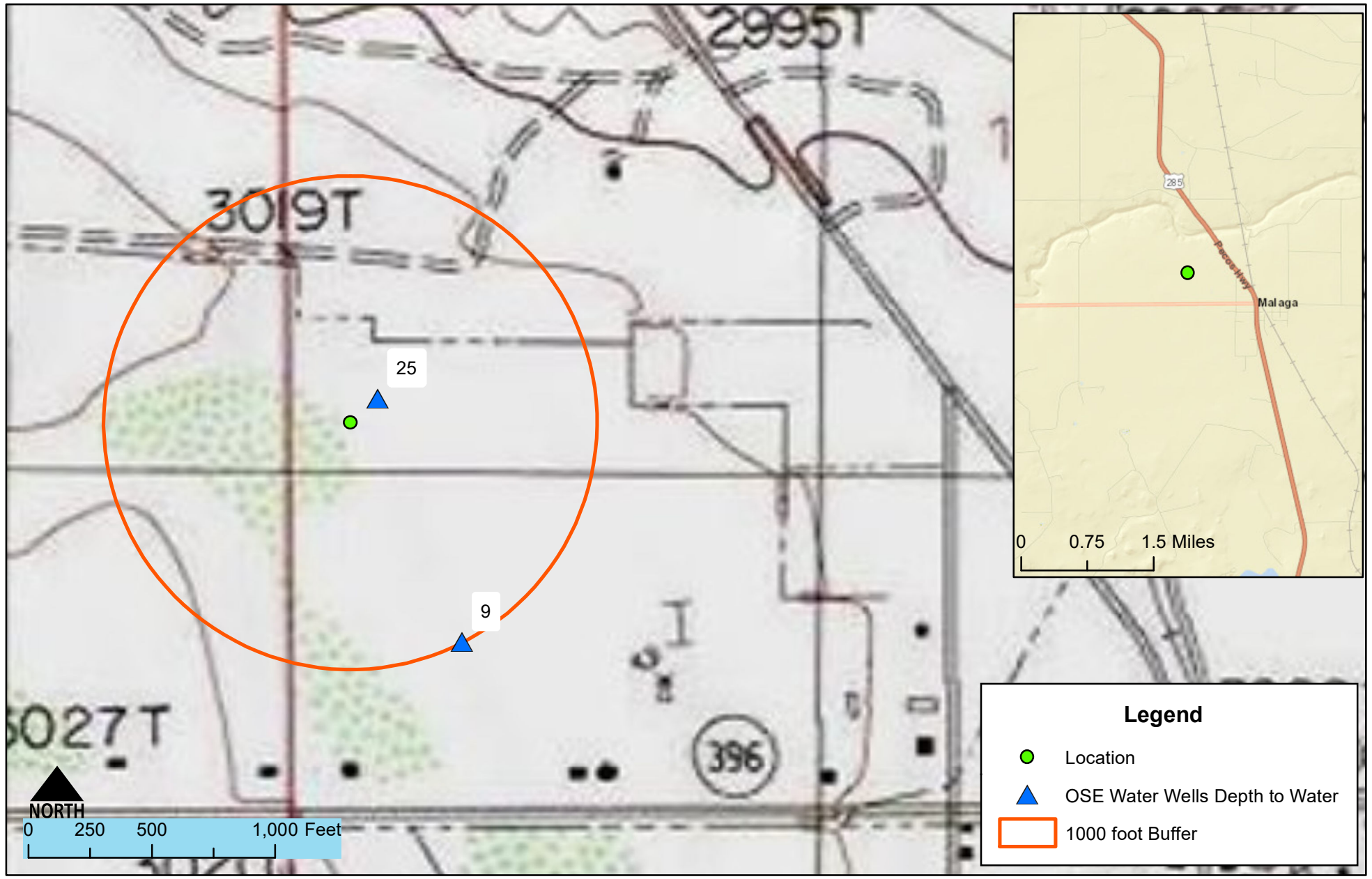
Tables:

Table 3: Summary of Sample Results

Appendices:

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

FIGURE 1
VICINITY AND NMOSE DATA MAP



VICINITY AND NMOSE DATA MAP
TOM MATTHEWS #203H - Matador Resources
S: 10T24S R28E, Eddy County New Mexico

Figure 1

Document: C:\Users\lcm.CBO\Documents\GIS DATA\MAPS\tom mathews figure 1.mxd

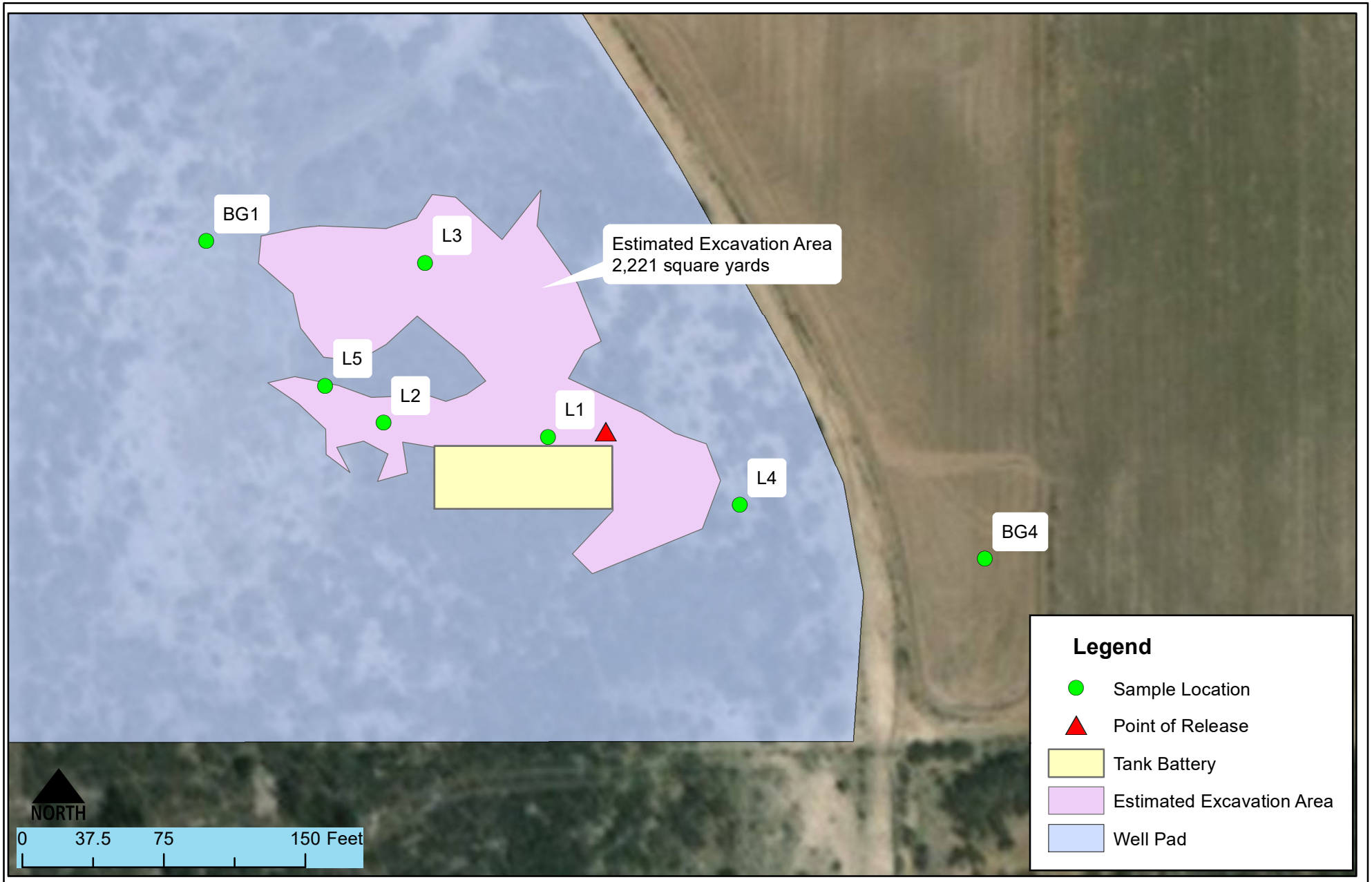
Date Saved: 2/27/2018

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

FIGURE 2
SITE AND SAMPLE LOCATION MAP



Site and Sample Location Map
Matador-TOM MATTHEWS 10 24S 28E RB #203H
S; 10 T24S R28E, New Mexico

Figure 2

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

Drawn Lucas Middleton
Checked
Approved

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Date Saved: 2/27/2018

Document: C:\Users\lcm.CBO\Documents\GIS DATA\MAPS\tom mathews Figure 2.mxd

TABLE 3
SUMMARY SAMPLE RESULTS

Tom Mathews 10 24S 28E RB #203H

Table 3

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Proposed Action	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- Field Screens (ppm)	Cl- Laboratory mg/Kg
NMOCD RRAL's for Site Ranking 10				50 mg/Kg	10 mg/Kg				1000 mg/Kg		
L1	1/31/2018	0.5	Excavate	---	---	---	---	---	---	2128	---
L2	1/31/2018	0.5	Excavate	---	---	---	---	---	---	2904	---
L3	2/6/2018	Surface	Excavate	<0.099	<0.025	<5	<10	<51	<51	---	21000
	2/6/2018	0.5	Excavate	---	---	---	---	---	---	---	1800
	2/6/2018	1	Excavate	---	---	---	---	---	---	---	2700
	2/6/2018	1.5	Excavate	---	---	---	---	---	---	---	2300
	2/6/2018	2	In-Situ	---	---	---	---	---	---	---	370
	2/6/2018	2.5	In-Situ	---	---	---	---	---	---	---	870
	2/6/2018	3	In-Situ	---	---	---	---	---	---	---	380
L4	2/6/2018	0.5	In-Situ	---	---	---	---	---	---	---	150
	2/6/2018	1	In-Situ	---	---	---	---	---	---	---	28
	2/6/2018	2	In-Situ	---	---	---	---	---	---	---	<30
	2/6/2018	3	In-Situ	---	---	---	---	---	---	---	98
L5	2/6/2018	0.5	Excavate	---	---	---	---	---	---	---	1800
	2/6/2018	1	Excavate	---	---	---	---	---	---	---	2400
	2/6/2018	1.5	Excavate	---	---	---	---	---	---	---	2500
	2/6/2018	2	In-Situ	---	---	---	---	---	---	---	430
	2/6/2018	2.5	In-Situ	---	---	---	---	---	---	---	80
	2/6/2018	3	In-Situ	---	---	---	---	---	---	---	89
BG1	2/6/2018	Surface	---	---	---	---	---	---	---	---	560
BG4	2/6/2018	1.5	---	---	---	---	---	---	---	---	500
	2/6/2018	3	---	---	---	---	---	---	---	---	340

--- = Not Analyzed

APPENDIX A
FORM C141 INITIAL

NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 19 2018
RECEIVED

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

nAB1805132291

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Matador Resources Company 228937	Contact Casey Snow
Address 5400 LBJ Freeway, Suite 1500 Dallas, TX 75240	Telephone No. (972) 371-5439
Facility Name TOM MATTHEWS 10 24S 28E RB #203H	Facility Type Oil well

Surface Owner Private	Mineral Owner Private	API No. 30-015-44561

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	10	24S	28E	1659	South	349	West	Eddy

Latitude 32.229673° **Longitude** -104.083370° NAD83

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 193 bbl	Volume Recovered 45 bbl
Source of Release Equipment Failure	Date and Hour of Occurrence 1/31/18 ~8:00	Date and Hour of Discovery 2/1/18 ~8:00a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher	
By Whom? Lucas Middleton(SMA)	Date and Hour 2/1/18 12:00	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*
Transfer Pump failed causing a release onto the pad. The pump was isolated and a vacuum truck and backhoe was on site vacuuming all standing fluids

Describe Area Affected and Cleanup Action Taken.*

The release occurred on the pad around the tank battery. SMA will delineate and submit a work plan for approval of remediation actions.

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

Signature:

Printed Name: Casey Snow

Title: Manager Regulatory, Environmental, & Safety

E-mail Address: csnow@matadorresources.com

Date: Phone: (972) 371-5439

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Signed By

Approval Date: 2/19/18 Expiration Date: N/A

Conditions of Approval: See attached

Attached ☐ 209-4629

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 2/19/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4039 has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 3/19/2018. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

- Nominal detection limits for field and laboratory analyses must be provided.

- Composite sampling is not generally allowed.

- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

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

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

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

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

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

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

APPENDIX B
NMOSE WELLS REPORT

New Mexico Office of the State Engineer
Water Right Summary

WR File Number: C 00764 **Subbasin:** - **Cross Reference:** -

Primary Purpose: IRR IRRIGATION

Primary Status: LIC LICENSED

Total Acres: 39.3 **Subfile:** 24 28 10 A

Total Diversion: 117.9 **Cause/Case:** -

Owner: MIKE M. VASQUEZ

Documents on File

Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
245357	COWNP	2002-10-29	PMT	APR	C 00764 A	F	6.8	20.4	
228783	COWNF	2002-03-18	CHG	PRC	C 00764	T	0	0	
156621	LIC	1963-11-22	LIC	PRC	C-764	T	46.1	138.3	
156619	CLWPP	1958-08-11	PMT	APR	C-764	T	0	0	
156619	CLWPP	1958-08-11	PMT	APR	C-764	F	0	0	
156446	ALTD	1957-05-09	PMT	PBU	6 & C-764	T	57	171	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Source	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Other Location Desc
C 00764	Shallow	3	1	3	10	24S	28E	586399	3566292*	
SP 00006		4	1	3	12	21S	26E	570265	3595078	AVALON DAM GATE TO CID MAIN CA
SP 01927				4	12	24S	27E	581032	3566097*	BLACK RIVER

***An (*) after northing value indicates UTM location was derived from PLSS - see Help**

Priority Summary

Priority	Status	Acres	Diversion	Pod Number	Source
03/22/1957	LIC	39.3	117.9	C 00764	Shallow
				SP 00006	
				SP 01927	

Place of Use

Q 256	Q 64	Q 16	Q 4	Sec	Tws	Rng	Acres	Diversion	CU	Use	Priority	Status	Other Location Desc
			3	10	24S	28E	16.4	19.2		IRR	03/22/1957	LIC	
	1	1	3	10	24S	28E	2.2	6.6		IRR	03/22/1957	LIC	
	1	4	3	10	24S	28E	4.4	13.2		IRR	03/22/1957	LIC	
	2	1	3	10	24S	28E	2.6	7.8		IRR	03/22/1957	LIC	
	2	4	3	10	24S	28E	6.6	19.8		IRR	03/22/1957	LIC	
	3	1	3	10	24S	28E	1.7	5.1		IRR	03/22/1957	LIC	
	4	1	3	10	24S	28E	9.8	29.4		IRR	03/22/1957	LIC	

Source

Acres	Diversion	CU	Use	Priority	Source Description

- -

24 28 10 A

-

Source

Acres	Diversion	CU	Use	Priority	Source	Description
46.1	138.3		IRR	03/22/1957	GW	
39.3	117.9		IRR	03/22/1957	GW	

APPENDIX C

LABORATORY ANALYTICAL REPORTS

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 16, 2018

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

RE: Tom Mathews 202 OrderNo.: 1802499

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 22 sample(s) on 2/8/2018 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1802499**
Date Reported: **2/16/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: B61
Project: Tom Mathews 202
Collection Date: 2/6/2018 11:05:00 AM
Lab ID: 1802499-001 **Matrix:** SOIL **Received Date:** 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	560	30		mg/Kg	20	2/9/2018 1:33:22 PM	36450

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: Tom Mathews 202
Collection Date: 2/6/2018 11:22:00 AM
Lab ID: 1802499-002 **Matrix:** SOIL **Received Date:** 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	3500	150		mg/Kg	100	2/12/2018 4:59:54 PM	36450

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: B63
Project: Tom Mathews 202
Collection Date: 2/6/2018 11:30:00 AM
Lab ID: 1802499-003
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2300	75		mg/Kg	50	2/12/2018 5:37:08 PM	36450

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: B64-1.5
Project: Tom Mathews 202
Collection Date: 2/6/2018 12:59:00 PM
Lab ID: 1802499-004
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	500	30		mg/Kg	20	2/9/2018 2:35:24 PM	36450

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: B64-3
Project: Tom Mathews 202
Collection Date: 2/6/2018 1:03:00 PM
Lab ID: 1802499-005
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	340	30		mg/Kg	20	2/9/2018 3:12:38 PM	36450

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: L3-Surface
Project: Tom Mathews 202
Collection Date: 2/6/2018 12:05:00 PM
Lab ID: 1802499-006 **Matrix:** SOIL **Received Date:** 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	21000	1500		mg/Kg	1E	2/15/2018 1:32:28 PM	36522
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/13/2018 9:37:12 AM	36466
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	2/13/2018 9:37:12 AM	36466
Surr: DNOP	108	70-130		%Rec	1	2/13/2018 9:37:12 AM	36466
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/9/2018 12:55:09 PM	36440
Surr: BFB	133	15-316		%Rec	1	2/9/2018 12:55:09 PM	36440
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.099		mg/Kg	1	2/9/2018 12:55:09 PM	36440
Benzene	ND	0.025		mg/Kg	1	2/9/2018 12:55:09 PM	36440
Toluene	ND	0.050		mg/Kg	1	2/9/2018 12:55:09 PM	36440
Ethylbenzene	ND	0.050		mg/Kg	1	2/9/2018 12:55:09 PM	36440
Xylenes, Total	ND	0.099		mg/Kg	1	2/9/2018 12:55:09 PM	36440
Surr: 4-Bromofluorobenzene	135	80-120	S	%Rec	1	2/9/2018 12:55:09 PM	36440

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: L3-0.5
Project: Tom Mathews 202
Collection Date: 2/6/2018 12:10:00 PM
Lab ID: 1802499-007 **Matrix:** SOIL **Received Date:** 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1800	75		mg/Kg	50	2/12/2018 5:49:32 PM	36450

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: L3-1
Project: Tom Mathews 202
Collection Date: 2/6/2018 12:21:00 PM
Lab ID: 1802499-008 **Matrix:** SOIL **Received Date:** 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2700	75		mg/Kg	50	2/12/2018 6:01:57 PM	36450

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: L3-1.5
Project: Tom Mathews 202
Collection Date: 2/6/2018 12:28:00 PM
Lab ID: 1802499-009
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2300	75		mg/Kg	50	2/12/2018 6:14:22 PM	36450

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: L3-2
Project: Tom Mathews 202
Collection Date: 2/6/2018 12:30:00 PM
Lab ID: 1802499-010
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	370	30		mg/Kg	20	2/9/2018 4:02:16 PM	36450

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: L3-2.5
Project: Tom Mathews 202
Collection Date: 2/6/2018 12:34:00 PM
Lab ID: 1802499-011
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	870	30		mg/Kg	20	2/9/2018 4:14:41 PM	36450

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: L3-3
Project: Tom Mathews 202
Collection Date: 2/6/2018 12:40:00 PM
Lab ID: 1802499-012
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	380	30		mg/Kg	20	2/9/2018 1:10:01 PM	36451

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: L4-0.5
Project: Tom Mathews 202
Collection Date: 2/6/2018 1:15:00 PM
Lab ID: 1802499-013
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	150	30		mg/Kg	20	2/9/2018 1:47:15 PM	36451

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: L4-1
Project: Tom Mathews 202
Collection Date: 2/6/2018 1:30:00 PM
Lab ID: 1802499-014
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	280	30		mg/Kg	20	2/9/2018 1:59:40 PM	36451

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: L4-2
Project: Tom Mathews 202
Collection Date: 2/6/2018 1:32:00 PM
Lab ID: 1802499-015 **Matrix:** SOIL **Received Date:** 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	2/9/2018 2:12:04 PM	36451

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: L4-3
Project: Tom Mathews 202
Collection Date: 2/6/2018 1:45:00 PM
Lab ID: 1802499-016
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	98	30		mg/Kg	20	2/9/2018 2:24:29 PM	36451

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: L5-0.5
Project: Tom Mathews 202
Collection Date: 2/6/2018 1:50:00 PM
Lab ID: 1802499-017
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1800	75		mg/Kg	50	2/12/2018 6:26:47 PM	36451

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: L5-1
Project: Tom Mathews 202
Collection Date: 2/6/2018 1:55:00 PM
Lab ID: 1802499-018
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2400	75		mg/Kg	50	2/12/2018 6:39:12 PM	36451

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: L5-1.5
Project: Tom Mathews 202
Collection Date: 2/6/2018 2:11:00 PM
Lab ID: 1802499-019
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	2500	75		mg/Kg	50	2/12/2018 6:51:37 PM	36451

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: L5-2
Project: Tom Mathews 202
Collection Date: 2/6/2018 2:18:00 PM
Lab ID: 1802499-020
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	430	30		mg/Kg	20	2/9/2018 3:38:57 PM	36451

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: L5-2.5
Project: Tom Mathews 202
Collection Date: 2/6/2018 2:30:00 PM
Lab ID: 1802499-021
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	80	30		mg/Kg	20	2/9/2018 3:51:21 PM	36451

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: L5-3
Project: Tom Mathews 202
Collection Date: 2/6/2018 2:25:00 PM
Lab ID: 1802499-022
Matrix: SOIL
Received Date: 2/8/2018 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	89	30		mg/Kg	20	2/9/2018 4:03:45 PM	36451

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#: **1802499**

16-Feb-18

Client: Souder, Miller & Associates

Project: Tom Mathews 202

Sample ID	**MB-36450**	SampType:	**mblk**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**36450**		RunNo:	**49015**				
Prep Date:	**2/9/2018**	Analysis Date:	**2/9/2018**		SeqNo:	**1578602**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-36450**	SampType:	**lcs**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**36450**		RunNo:	**49015**				
Prep Date:	**2/9/2018**	Analysis Date:	**2/9/2018**		SeqNo:	**1578603**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	90	110			

Sample ID	**MB-36451**	SampType:	**mblk**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**36451**		RunNo:	**49016**				
Prep Date:	**2/9/2018**	Analysis Date:	**2/9/2018**		SeqNo:	**1578762**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-36451**	SampType:	**lcs**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**36451**		RunNo:	**49016**				
Prep Date:	**2/9/2018**	Analysis Date:	**2/9/2018**		SeqNo:	**1578763**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

Sample ID	**MB-36522**	SampType:	**mblk**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**36522**		RunNo:	**49121**				
Prep Date:	**2/14/2018**	Analysis Date:	**2/14/2018**		SeqNo:	**1584649**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-36522**	SampType:	**lcs**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**36522**		RunNo:	**49121**				
Prep Date:	**2/14/2018**	Analysis Date:	**2/14/2018**		SeqNo:	**1584650**	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:

*	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#: **1802499**

16-Feb-18

Client: Souder, Miller & Associates

Project: Tom Mathews 202

Sample ID	**1802499-006AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**L3-Surface**	Batch ID:	**36466**		RunNo:	**49070**				
Prep Date:	**2/12/2018**	Analysis Date:	**2/13/2018**		SeqNo:	**1579507**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.6	48.12	2.127	87.0	55.8	125			
Surr: DNOP	4.5		4.812		94.5	70	130			

Sample ID	**LCS-36466**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**36466**		RunNo:	**49070**				
Prep Date:	**2/12/2018**	Analysis Date:	**2/13/2018**		SeqNo:	**1579508**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.4	70	130			
Surr: DNOP	4.4		5.000		87.9	70	130			

Sample ID	**MB-36466**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**36466**		RunNo:	**49070**				
Prep Date:	**2/12/2018**	Analysis Date:	**2/13/2018**		SeqNo:	**1579509**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		102	70	130			

Sample ID	**1802499-006AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**L3-Surface**	Batch ID:	**36466**		RunNo:	**49070**				
Prep Date:	**2/12/2018**	Analysis Date:	**2/13/2018**		SeqNo:	**1580359**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	9.9	49.26	2.127	89.4	55.8	125	4.89	20	
Surr: DNOP	4.7		4.926		96.0	70	130	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#: **1802499**

16-Feb-18

Client: Souder, Miller & Associates

Project: Tom Mathews 202

Sample ID	**MB-36440**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**PBS**	Batch ID:	**36440**		RunNo:	**49018**				
Prep Date:	**2/8/2018**	Analysis Date:	**2/9/2018**		SeqNo:	**1578201**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		110	15	316			

Sample ID	**LCS-36440**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**36440**		RunNo:	**49018**				
Prep Date:	**2/8/2018**	Analysis Date:	**2/9/2018**		SeqNo:	**1578202**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	102	75.9	131			
Surr: BFB	1200		1000		116	15	316			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1802499**

16-Feb-18

Client: Souder, Miller & Associates

Project: Tom Mathews 202

Sample ID **MB-36440**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **36440**	RunNo: **49018**
Prep Date: **2/8/2018**	Analysis Date: **2/9/2018**	SeqNo: **1578215** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		115	80	120			

Sample ID **LCS-36440**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **36440**	RunNo: **49018**
Prep Date: **2/8/2018**	Analysis Date: **2/9/2018**	SeqNo: **1578216** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.92	0.10	1.000	0	92.3	70.1	121			
Benzene	1.0	0.025	1.000	0	103	77.3	128			
Toluene	1.0	0.050	1.000	0	104	79.2	125			
Ethylbenzene	1.0	0.050	1.000	0	104	80.7	127			
Xylenes, Total	3.2	0.10	3.000	0	107	81.6	129			
Surr: 4-Bromofluorobenzene	1.2		1.000		116	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: 1802499 RcptNo: 1

Received By: Sophia Campuzano 2/8/2018 10:00:00 AM

Completed By: Dennis Suazo 2/8/2018 12:29:01 PM

Reviewed By: SRE 02/08/17

Labeled By Amy

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.3	Good	Not Present			

Chain-of-Custody Record

Client: SMA
Envirotech

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 5 day

Project Name: Tom Mathews 202 (1/2)

Project #:

Project Manager:

Sampler: CM

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.3 - 1.0(CF) = 0.3

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1802499	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
2/07	per AW		02108/18															
1-6-18	11:05	Soil	B61	4oz		001								X				
	11:22		B62			002								X				
	11:30		B63			003								X				
	1259		B64 - 1.5			004								X				
	1:03		B64 - 3			005								X				
	12:05		L3 - Surface			006	X		X					X				
	1210		L3 - 0.5			007								X				
	1221		L3 - 1			008								X				
	1224		L3 - 1.5			009								X				
	1230		L3 - 2			010								X				
	1234		L3 - 2.5			011								X				
	1240		L3 - 3			012								X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
1-7-18	2:00			2/7/18	1400
2/7/18	1902		courier	02108/18	1000

Remarks: Metals

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.

Chain-of-Custody Record

Client: SMA Carlsbad

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

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

Project Name: (2/2) Tom Mather 202

Project #:

Project Manager: Austin Weyant

Sampler: Cam

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.3-1.0(CF) = 0.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
2 per AW 2/08/18						1802499												
1/8	1:15	Soil	L4-0.5	4oz		013								X				
	1:30		L4-1			014								X				
	1:32		L4-2			015								X				
	1:45		L4-3			016								X				
	1:50		LS-0.5			017								X				
	1:55		LS-1			018								X				
	2:11		LS-1.5			019								X				
	2:16		LS-2			020								X				
	2:30		LS-2.5			021								X				
	2:25		LS-3			022								X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
1-7-18	2:00			1/7/18	1430
2/7/18	1900		courier	02/08/18	1000

Remarks: Matador

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.