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

September 9, 2020

#5E29133-BG35

NMOCD District 2
Mike Bratcher
811 S. First St.
Artesia, New Mexico 88220

SUBJECT: Remediation Closure Report for the Cotton Draw Unit #076 Release (2RP-678), Lea County, New Mexico

To Mr. Mike Bratcher,

On behalf of Devon Energy Production Company, 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 Cotton Draw Unit #076 site. The site is Section 8, Township 18S, Range 33E, Eddy County, New Mexico, on Federal 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	Cotton Draw Unit #076	Company	Devon Energy Company
API Number	30-025-30986	Location	32.1565857, -103.737999
Incident Number	2RP-678		
Estimated Date of Release	6/23/2009	Date Reported to NMOCD	6/25/2009
Land Owner	Federal	Reported To	NMOCD, BLM
Source of Release	Dump valve malfunction.		
Released Volume	8 bbls	Released Material	Produced Water
Recovered Volume	0 bbls	Net Release	8 bbls
NMOCD Closure Criteria	>100 feet to groundwater		
SMA Response Dates	8/12/2020		

1.0 Background

On June 23, 2009, a release was discovered at the Cotton Draw Unit #76 due to a 3-inch poly line developing a rupture after a dump valve malfunctioned. Initial response activities were conducted by Devon personnel, and included source elimination and site containment activities. Figure 1 illustrates the vicinity and site location; Figure 2 illustrates the release location. The C-141 form is included in Appendix A.

2.0 Site Information and Closure Criteria

The Cotton Draw Unit #76 is located approximately 20 miles from Malaga, New Mexico on Federal (BLM) land at an elevation of approximately 3,462 feet above mean sea level (amsl).

Based upon OSE well data (Appendix B), depth to groundwater in the area is estimated to be 847 feet below grade surface (bgs). There are four known water sources within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 8/31/2020). The nearest significant watercourse is an unnamed draw, located approximately 22,477 feet to the south east. Figure 2 illustrates the site with 200 and 300-foot radii to indicate that it does not lie within a sensitive area as described in 19.15.29.12.C(4) NMAC.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of greater than 100 feet bgs. Table 2 demonstrates the Closure Criteria applicable to this location. Pertinent well data is attached in Appendix B.

3.0 Release Characterization Activities and Findings

On August 12, 2020, SMA personnel arrived on site in response to the release associated with Cotton Draw Unit #076. SMA performed site delineation activities by collecting soil samples around the release site, based on figures provided by Devon personnel. Soil samples were field-screened for chloride using an electrical conductivity (EC) meter and for hydrocarbon impacts using a calibrated MiniRAE 3000 photoionization detector (PID) equipped with a 10.6 eV lamp.

A total of five (5) sample locations (S1- S5) were investigated using a hand-auger, collecting samples from the surface and 0.5 feet bgs. A total of ten (10) samples were collected for laboratory analysis for total chloride using EPA Method 300.0; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D.

As summarized in Table 3, results indicated that the areas surrounding the release meet NMOCD closure criteria, as well as reclamation requirements, and no further action is required.

4.0 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 Ashley Maxwell at 505-320-9241 or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:

Ashley Maxwell
Project Manager

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

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

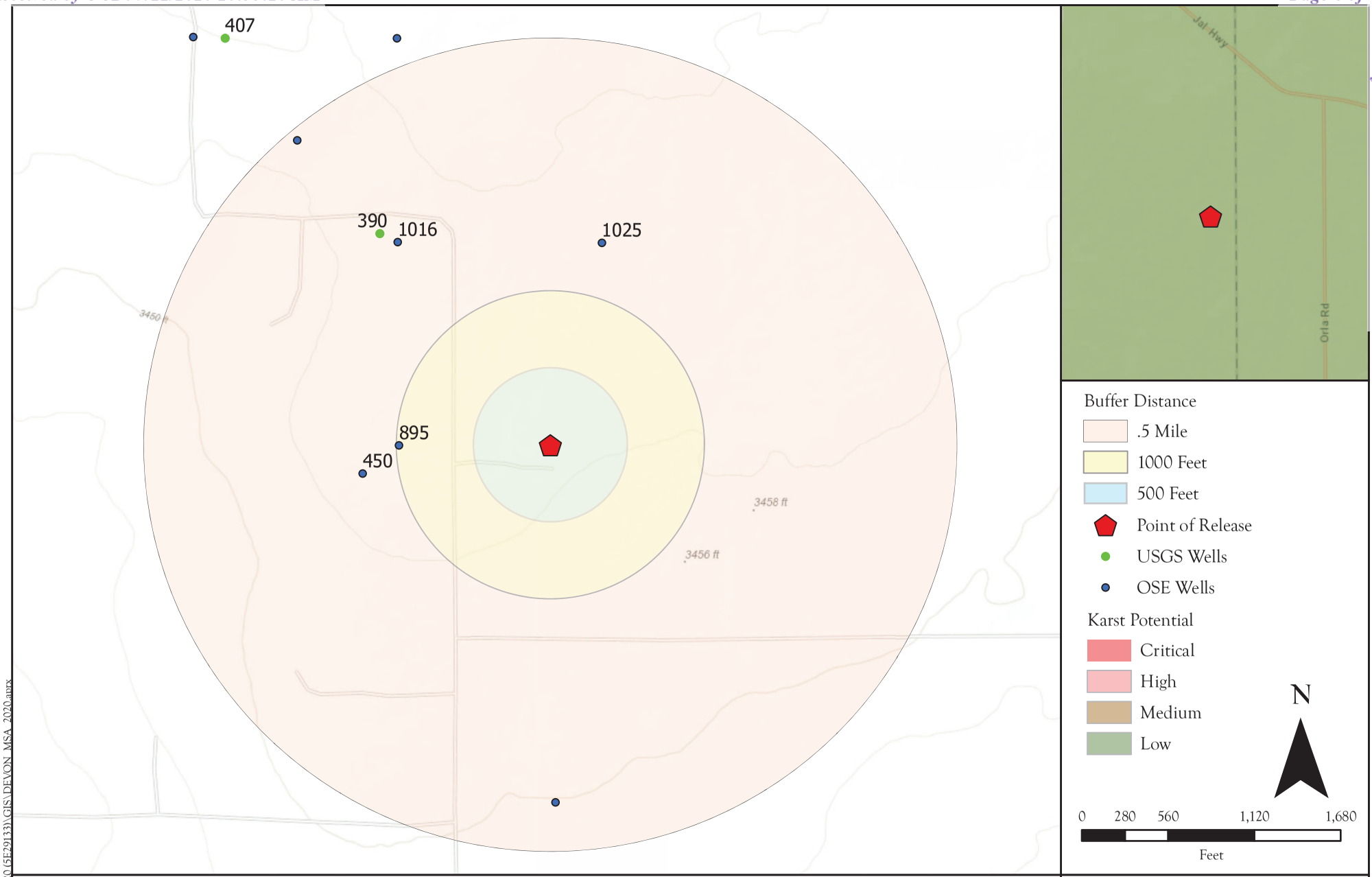
Tables:

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

Appendices:

Appendix A: Form C141
Appendix B: NMOSE Wells Report
Appendix C: Sampling Protocol
Appendix D: Laboratory Analytical Reports

FIGURES



Site Map
Cotton Draw Unit #76 - Devon Energy
32.1565857,-103.737999, Eddy County, New Mexico

Figure 1

\\CRO10\Projects\5-Devon MSA 2020 (5E29133)\GIS\DEVON_MSA_2020.aprx
Date Saved: 9/3/2020

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

Drawn Phil R. Smith
Date 9/3/2020
Checked
Approved

201 South Halaguena Street
Carlsbad, New Mexico 88221
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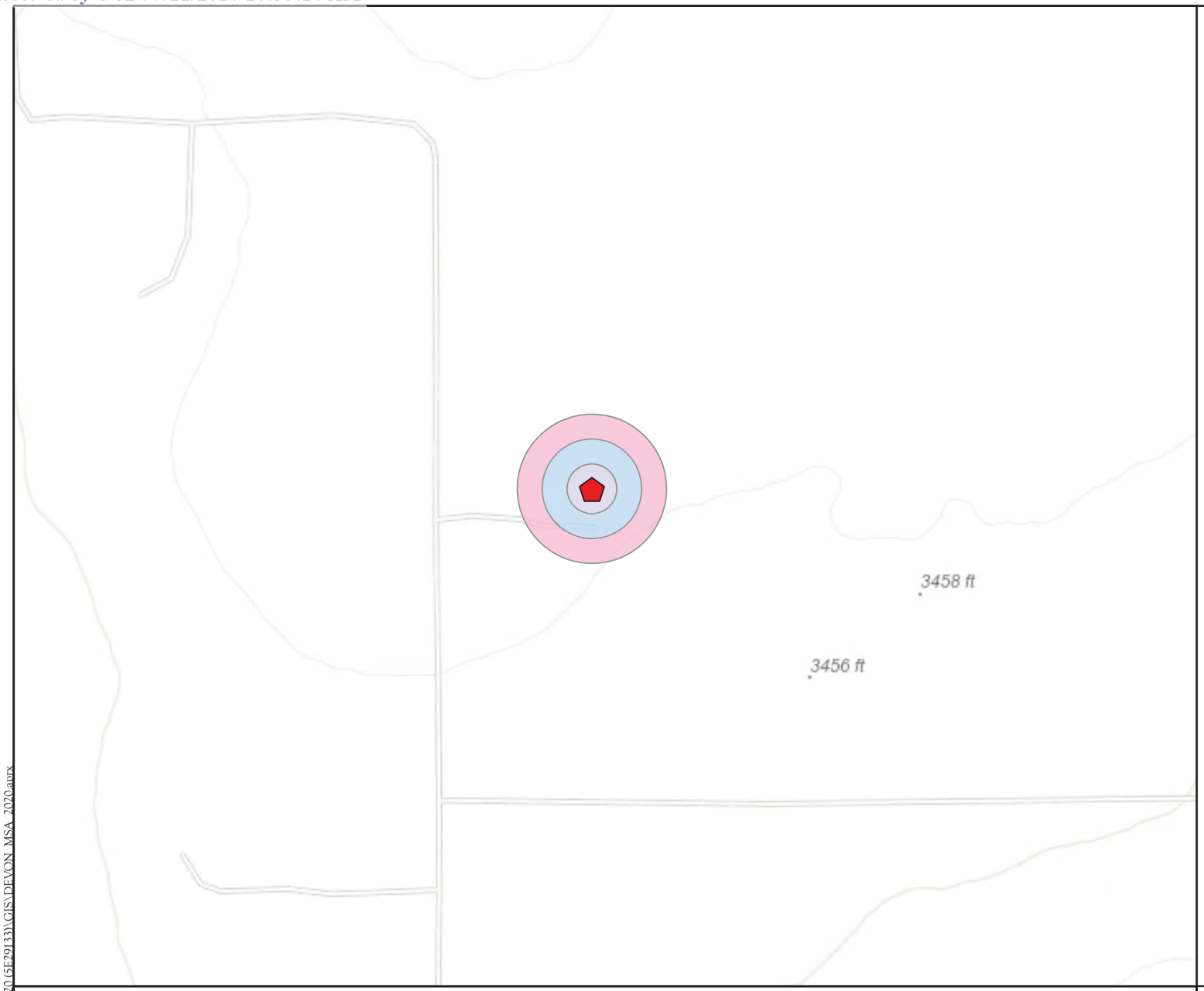

Legend:

- Buffer Distance
- 300 Feet
- 200 Feet
- 100 Feet
- Springs & Seeps
- Streams & Canals
- Rivers
- Flowlines SENM
- NM Wetlands
- Lakes & Playas
- FEMA Flood Zones 2011
- Point of Release

N

0 195 390 780 1,170

Feet

Surface Water Protection Map
Cotton Draw Unit #76 - Devon Energy
32.1565857,-103.737999, Eddy County, New Mexico

Figure 2

\\CRO10\Projects\5-Devon MSA 2020\(5E29133)\GIS\DEVON_MSA_2020.aprx
Date Saved: 9/3/2020

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

Drawn Phil R. Smith
Date 9/3/2020
Checked
Approved

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Legend

Pipelines

Sample Points

Initial Soil Samples

Point of Release

N

0 5 10 20 30

Feet

Site and Sample Location Map
Cotton Draw Unit #076 - Devon Energy
32.1565857,-103.737999, Eddy, New Mexico

Figure 3

\\CBO1\Projects\5-Devon MSA 2020\(5E29133)\GIS\DEVON_MSA_2020.mxd
Date Saved: 9/3/2020

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

Drawn Alicia A. Lopez
Date 9/3/2020
Checked
Approved

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TABLES

Table 2:
NMOCD Closure Criteria

CLIENT NAME
SITE NAME

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	847	New Mexico Office of the State Engineer
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	N/A	United States Geological Survey Topo Map
Hortizontal Distance to Nearest Significant Watercourse (ft)	22,548	Intermitten Stream/Canal Southeast of Cotton Draw Unit #76

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

SMA #

Table 3:
Sample Results

Devon Energy Production Company
Cotton Draw Unit # 076

Sample ID	Sample Date	Depth of Sample (feet bgs)	Action Taken	Method 8021B		Method 8015D				Method 300.0
				BTEX	Benzene	GRO	DRO	MRO	Total TPH	Cl-
				mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
NMOCD Reclamation Requirement (0-4 ft)				50	10	--	--	--	100	600
NMOCD Closure Criteria (>4 ft)				50	10	1000			2,500	20,000
S1	8/12/2020	0	In- Situ	<0.222	<0.025	<4.9	<9.7	<48	<62.6	250
		0.5	In- Situ	<0.220	<0.024	<4.9	<10	<50	<64.9	<60
S2		0	In- Situ	<0.206	<0.023	<4.6	<9.5	<48	<62.1	170
		0.5	In- Situ	<0.207	<0.024	<4.8	<9.2	<46	<60	<60
S3		0	In- Situ	<0.211	<0.023	<4.7	<9.3	53	53	190
		0.5	In- Situ	<0.213	<0.024	<4.7	<9.3	<46	<60	<60
S4		0	In- Situ	<0.213	<0.024	<4.7	<9.0	<45	<58.7	210
		0.5	In- Situ	<0.210	<0.023	<4.7	<9.6	50	50	100
S5		0	In- Situ	<0.224	<0.025	<5.0	<9.8	76	76	170
		0.5	In- Situ	<0.206	<0.023	<4.6	<8.8	69	69	<61

"--" = Not Analyzed
BG: Background sample

SMA #

APPENDIX A
FORM C141

JUN -8 2009

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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 March 17, 1999

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

30-015-29252

nKMW 1108956328

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Devon Energy	Contact Roger Hernandez
Address P. O. Box 250 Artesia, NM 88211	Telephone No. 575-748-5238
Facility Name Cotton Draw Unit #76	Facility Type Gas Well

Surface Owner	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	1	25S	31E	1650	South	660	West	Eddy County

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 8 bbls	Volume Recovered 0 bbls
Source of Release Split in 3" poly line	Date and Hour of Occurrence 6-23-09 12:01 PM	Date and Hour of Discovery 6-23-09 12:01 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Trish BadBear (BLM – Lea County)	
By Whom? Ernie Duran, Asst. Production Foreman	Date and Hour 6-25-09 12:15 PM	
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.*

3" produced poly water line off the production separator over to SWD station had split on pipe releasing produced water. Root cause was a dump valve malfunctioned over pressuring the line resulting in the leak and over spray of vegetation and terrain. Spill was approximately 8 bbls.

Describe Area Affected and Cleanup Action Taken.*
Sprayed an area about 40'x50' but there was not standing water as it was spraying a fine mist. Raked area, tiled, and fertized.

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: Roger Hernandez	OIL CONSERVATION DIVISION Signed By Mike Bratcher
Printed Name: Roger Hernandez	Approved by District Supervisor:
Title: Production Foreman	Approval Date: 3/30/11 Expiration Date:
Date: June 25, 2009 Phone: 575-748-5238	Conditions of Approval: Attached ☐

* Attach Additional Sheets If Necessary

2RP-678

REMEDIATION per OCD Rules and Guidelines. SUBMIT REMEDIATION PROPOSAL BY: 4/30/11

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-678
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?	847 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-678
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: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 9/9/2020

email: tom.bynum@dvn.com Telephone: 575-748-2663

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	2RP-678
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: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 9/9/2020

email: tom.bynum@dvn.com Telephone: 575-748-2663

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: Brittany Hall Date: 1/25/2023

Printed Name: Brittany Hall Title: Environmental Specialist

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02570		CUB	ED	4	2	4	02	25S	31E	618704	3558489*	299	895		
C 03830 POD1		CUB	ED	4	2	4	02	25S	31E	618632	3558432	375	450		
C 02568		CUB	ED	4	3	1	01	25S	31E	619103	3558892*	414	1025		
C 02569		CUB	ED	4	4	2	02	25S	31E	618699	3558891*	503	1016		
C 02573		CUB	ED	1	4	2	02	25S	31E	618499	3559091*	785			

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 619003.91 **Northing (Y):** 3558489.9 **Radius:** 805

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

8/31/20 8:58 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- **NOTICE:** The NWIS Mapper issue has been addressed. Thank you for your patience.
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 320932103443801

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

USGS 320932103443801 25S.31E.02.23441

Eddy County, New Mexico
Latitude 32°09'37.4", Longitude 103°44'29.6" NAD83
Land-surface elevation 3,460.00 feet above NGVD29
The depth of the well is 1,016 feet below land surface.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source o measure
1966-08-18		D	400.00			2		U		
1976-01-28		D	390.27			2		U		

Explanation

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

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help

Data Tips
Explanation of terms
Subscribe for system changes
News

U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2020-09-03 15:06:54 EDT
0.27 0.25 nadww01

APPENDIX C
SAMPLING PROTOCOL & FIELD NOTES

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

Sampling Protocol

The soil samples were collected in laboratory supplied containers in accordance with this sampling protocol, immediately placed on ice and sent under standard chain-of-custody protocols to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for analysis. A total of ten (10) samples were collected for laboratory analysis for total chloride using EPA Method 300.0; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D.

Sampling Analysis Field Quality Assurance Procedures

A unique sample numbering was used to identify each sample collected and designated for on-site and off-site laboratory analysis. The purpose of this numbering scheme was to provide a tracking system for the retrieval of analytical and field data on each sample. Sample identification numbers were recorded on sample labels or tags, field notes, chain-of-custody records (COC) and all other applicable documentation used during the project. Sample labels were affixed to all sample containers during sampling activities. Information was recorded on each sample container label at the time of sample collection. The information recorded on the labels were as follows: sample identification number; sample type (discrete or composite); site name and area/location number; analysis to be performed; type of chemical preservative present in container; date and time of sample collection; and sample collector's name and initials. All samples were packed in ice in an approved rigid body container, custody sealed signed and shipped to the appropriate laboratory via insured currier service.

COC procedures implemented for the project provided documentation of the handling of each sample from the time of collection until completion of laboratory analysis. A COC form serves as a legal record of possession of the sample. A sample is considered to be under custody if one or more of the following criteria are met: the sample is in the sampler's possession; the sample is in the sampler's view after being in possession; the sample was in the sampler's possession and then was placed into a locked area to prevent tampering; and/or the sample is in a designated secure area. Custody was documented throughout the project field sampling activities by a chain-of custody form initiated each day during which samples are collected. Container custody seals placed on either individual samples or on the rigid body container were used to ensure that no sample tampering occurs between the time the samples are placed into the containers and the time the containers are opened for analysis at the laboratory. Container custody seals were signed and dated by the individual responsible for completing the COC form contained within the container.

APPENDIX D

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: clients.hallenvironmental.com

August 20, 2020

Lynn A. Acosta
Souder, Miller & Associates
201 S Halagueno
Carlsbad, NM 88221
TEL:
FAX:

RE: CDU 76 OrderNo.: 2008880

Dear Lynn A. Acosta:

Hall Environmental Analysis Laboratory received 10 sample(s) on 8/14/2020 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 **2008880**
Date Reported: **8/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: S1
Project: CDU 76
Collection Date: 8/12/2020 9:00:00 AM
Lab ID: 2008880-001 **Matrix:** SOIL **Received Date:** 8/14/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	250	60		mg/Kg	20	8/19/2020 1:22:40 PM	54531
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/19/2020 8:06:15 PM	54512
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/19/2020 8:06:15 PM	54512
Surr: DNOP	73.4	30.4-154		%Rec	1	8/19/2020 8:06:15 PM	54512
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/18/2020 4:40:41 PM	54485
Surr: BFB	98.4	75.3-105		%Rec	1	8/18/2020 4:40:41 PM	54485
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/18/2020 4:40:41 PM	54485
Toluene	ND	0.049		mg/Kg	1	8/18/2020 4:40:41 PM	54485
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2020 4:40:41 PM	54485
Xylenes, Total	ND	0.099		mg/Kg	1	8/18/2020 4:40:41 PM	54485
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	8/18/2020 4:40:41 PM	54485

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

Qualifiers:

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

Analytical Report
Lab Order **2008880**
Date Reported: **8/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: S1-0.5'
Project: CDU 76
Collection Date: 8/12/2020 9:50:00 AM
Lab ID: 2008880-002 **Matrix:** SOIL **Received Date:** 8/14/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CAS**
Chloride	ND	60		mg/Kg	20	8/19/2020 1:35:00 PM	54531
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/19/2020 8:16:25 PM	54512
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/19/2020 8:16:25 PM	54512
Surr: DNOP	94.4	30.4-154		%Rec	1	8/19/2020 8:16:25 PM	54512
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/18/2020 5:51:24 PM	54485
Surr: BFB	95.4	75.3-105		%Rec	1	8/18/2020 5:51:24 PM	54485
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	8/18/2020 5:51:24 PM	54485
Toluene	ND	0.049		mg/Kg	1	8/18/2020 5:51:24 PM	54485
Ethylbenzene	ND	0.049		mg/Kg	1	8/18/2020 5:51:24 PM	54485
Xylenes, Total	ND	0.098		mg/Kg	1	8/18/2020 5:51:24 PM	54485
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	8/18/2020 5:51:24 PM	54485

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

Qualifiers:

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

Analytical Report
Lab Order **2008880**
Date Reported: **8/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: S2-
Project: CDU 76
Collection Date: 8/12/2020 9:10:00 AM
Lab ID: 2008880-003 **Matrix:** SOIL **Received Date:** 8/14/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	170	60		mg/Kg	20	8/19/2020 1:47:21 PM	54531
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/19/2020 8:26:38 PM	54512
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/19/2020 8:26:38 PM	54512
Surr: DNOP	83.5	30.4-154		%Rec	1	8/19/2020 8:26:38 PM	54512
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/18/2020 7:02:03 PM	54485
Surr: BFB	99.3	75.3-105		%Rec	1	8/18/2020 7:02:03 PM	54485
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	8/18/2020 7:02:03 PM	54485
Toluene	ND	0.046		mg/Kg	1	8/18/2020 7:02:03 PM	54485
Ethylbenzene	ND	0.046		mg/Kg	1	8/18/2020 7:02:03 PM	54485
Xylenes, Total	ND	0.091		mg/Kg	1	8/18/2020 7:02:03 PM	54485
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/18/2020 7:02:03 PM	54485

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

Qualifiers:

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

Analytical Report
Lab Order **2008880**
Date Reported: **8/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: S2-0.5'
Project: CDU 76
Collection Date: 8/12/2020 10:00:00 AM
Lab ID: 2008880-004 **Matrix:** SOIL **Received Date:** 8/14/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CAS**
Chloride	ND	60		mg/Kg	20	8/19/2020 1:59:42 PM	54531
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	8/19/2020 8:36:50 PM	54512
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/19/2020 8:36:50 PM	54512
Surr: DNOP	70.4	30.4-154		%Rec	1	8/19/2020 8:36:50 PM	54512
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/18/2020 8:12:30 PM	54485
Surr: BFB	97.9	75.3-105		%Rec	1	8/18/2020 8:12:30 PM	54485
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	8/18/2020 8:12:30 PM	54485
Toluene	ND	0.048		mg/Kg	1	8/18/2020 8:12:30 PM	54485
Ethylbenzene	ND	0.048		mg/Kg	1	8/18/2020 8:12:30 PM	54485
Xylenes, Total	ND	0.096		mg/Kg	1	8/18/2020 8:12:30 PM	54485
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/18/2020 8:12:30 PM	54485

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

Qualifiers:

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

Analytical Report
Lab Order **2008880**
Date Reported: **8/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: S3
Project: CDU 76
Collection Date: 8/12/2020 9:20:00 AM
Lab ID: 2008880-005 **Matrix:** SOIL **Received Date:** 8/14/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	190	60		mg/Kg	20	8/19/2020 2:12:03 PM	54531
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/19/2020 8:46:59 PM	54512
Motor Oil Range Organics (MRO)	53	47		mg/Kg	1	8/19/2020 8:46:59 PM	54512
Surr: DNOP	97.3	30.4-154		%Rec	1	8/19/2020 8:46:59 PM	54512
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/18/2020 8:35:56 PM	54485
Surr: BFB	96.6	75.3-105		%Rec	1	8/18/2020 8:35:56 PM	54485
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	8/18/2020 8:35:56 PM	54485
Toluene	ND	0.047		mg/Kg	1	8/18/2020 8:35:56 PM	54485
Ethylbenzene	ND	0.047		mg/Kg	1	8/18/2020 8:35:56 PM	54485
Xylenes, Total	ND	0.094		mg/Kg	1	8/18/2020 8:35:56 PM	54485
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	8/18/2020 8:35:56 PM	54485

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

Qualifiers:

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

Analytical Report
Lab Order **2008880**
Date Reported: **8/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: S3-0.5'
Project: CDU 76
Collection Date: 8/12/2020 10:10:00 AM
Lab ID: 2008880-006 **Matrix:** SOIL
Received Date: 8/14/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	8/19/2020 2:24:24 PM	54531
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/19/2020 8:57:12 PM	54512
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	8/19/2020 8:57:12 PM	54512
Surr: DNOP	87.2	30.4-154		%Rec	1	8/19/2020 8:57:12 PM	54512
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/18/2020 8:59:20 PM	54485
Surr: BFB	96.3	75.3-105		%Rec	1	8/18/2020 8:59:20 PM	54485
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	8/18/2020 8:59:20 PM	54485
Toluene	ND	0.047		mg/Kg	1	8/18/2020 8:59:20 PM	54485
Ethylbenzene	ND	0.047		mg/Kg	1	8/18/2020 8:59:20 PM	54485
Xylenes, Total	ND	0.095		mg/Kg	1	8/18/2020 8:59:20 PM	54485
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	8/18/2020 8:59:20 PM	54485

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

Qualifiers:

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

Analytical Report
Lab Order **2008880**
Date Reported: **8/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: S4
Project: CDU 76
Collection Date: 8/12/2020 9:30:00 AM
Lab ID: 2008880-007 **Matrix:** SOIL **Received Date:** 8/14/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	210	60		mg/Kg	20	8/19/2020 3:01:25 PM	54531
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	8/19/2020 9:07:17 PM	54512
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/19/2020 9:07:17 PM	54512
Surr: DNOP	83.2	30.4-154		%Rec	1	8/19/2020 9:07:17 PM	54512
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/18/2020 9:22:47 PM	54485
Surr: BFB	98.5	75.3-105		%Rec	1	8/18/2020 9:22:47 PM	54485
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	8/18/2020 9:22:47 PM	54485
Toluene	ND	0.047		mg/Kg	1	8/18/2020 9:22:47 PM	54485
Ethylbenzene	ND	0.047		mg/Kg	1	8/18/2020 9:22:47 PM	54485
Xylenes, Total	ND	0.095		mg/Kg	1	8/18/2020 9:22:47 PM	54485
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	8/18/2020 9:22:47 PM	54485

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

Qualifiers:

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

Analytical Report
Lab Order **2008880**
Date Reported: **8/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Project: CDU 76
Lab ID: 2008880-008 **Matrix:** SOIL

Client Sample ID: S4-0.5'
Collection Date: 8/12/2020 10:20:00 AM
Received Date: 8/14/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CAS**
Chloride	100	59		mg/Kg	20	8/19/2020 3:13:46 PM	54531
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/19/2020 9:17:27 PM	54512
Motor Oil Range Organics (MRO)	50	48		mg/Kg	1	8/19/2020 9:17:27 PM	54512
Surr: DNOP	78.3	30.4-154		%Rec	1	8/19/2020 9:17:27 PM	54512
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/18/2020 9:46:11 PM	54485
Surr: BFB	94.3	75.3-105		%Rec	1	8/18/2020 9:46:11 PM	54485
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.023		mg/Kg	1	8/18/2020 9:46:11 PM	54485
Toluene	ND	0.047		mg/Kg	1	8/18/2020 9:46:11 PM	54485
Ethylbenzene	ND	0.047		mg/Kg	1	8/18/2020 9:46:11 PM	54485
Xylenes, Total	ND	0.093		mg/Kg	1	8/18/2020 9:46:11 PM	54485
Surr: 4-Bromofluorobenzene	99.9	80-120		%Rec	1	8/18/2020 9:46:11 PM	54485

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

Qualifiers:

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

Analytical Report
Lab Order **2008880**
Date Reported: **8/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: S5
Project: CDU 76
Collection Date: 8/12/2020 9:40:00 AM
Lab ID: 2008880-009 **Matrix:** SOIL **Received Date:** 8/14/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	170	59		mg/Kg	20	8/19/2020 3:26:07 PM	54531
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/19/2020 9:27:33 PM	54512
Motor Oil Range Organics (MRO)	76	49		mg/Kg	1	8/19/2020 9:27:33 PM	54512
Surr: DNOP	86.6	30.4-154		%Rec	1	8/19/2020 9:27:33 PM	54512
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/18/2020 10:09:35 PM	54485
Surr: BFB	97.4	75.3-105		%Rec	1	8/18/2020 10:09:35 PM	54485
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/18/2020 10:09:35 PM	54485
Toluene	ND	0.050		mg/Kg	1	8/18/2020 10:09:35 PM	54485
Ethylbenzene	ND	0.050		mg/Kg	1	8/18/2020 10:09:35 PM	54485
Xylenes, Total	ND	0.099		mg/Kg	1	8/18/2020 10:09:35 PM	54485
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	8/18/2020 10:09:35 PM	54485

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

Qualifiers:

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

Analytical Report
Lab Order **2008880**
Date Reported: **8/20/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Project: CDU 76
Lab ID: 2008880-010 **Matrix:** SOIL

Client Sample ID: S5-0.5'
Collection Date: 8/12/2020 10:30:00 AM
Received Date: 8/14/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	61		mg/Kg	20	8/19/2020 3:38:27 PM	54531
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	8/19/2020 9:37:37 PM	54512
Motor Oil Range Organics (MRO)	69	44		mg/Kg	1	8/19/2020 9:37:37 PM	54512
Surr: DNOP	102	30.4-154		%Rec	1	8/19/2020 9:37:37 PM	54512
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/18/2020 10:32:57 PM	54485
Surr: BFB	96.2	75.3-105		%Rec	1	8/18/2020 10:32:57 PM	54485
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	8/18/2020 10:32:57 PM	54485
Toluene	ND	0.046		mg/Kg	1	8/18/2020 10:32:57 PM	54485
Ethylbenzene	ND	0.046		mg/Kg	1	8/18/2020 10:32:57 PM	54485
Xylenes, Total	ND	0.091		mg/Kg	1	8/18/2020 10:32:57 PM	54485
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	8/18/2020 10:32:57 PM	54485

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2008880**

20-Aug-20

Client: Souder, Miller & Associates

Project: CDU 76

Sample ID: **MB-54531**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **54531**	RunNo: **71209**							
Prep Date: **8/19/2020**	Analysis Date: **8/19/2020**	SeqNo: **2484201**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-54531**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **54531**	RunNo: **71209**							
Prep Date: **8/19/2020**	Analysis Date: **8/19/2020**	SeqNo: **2484202**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2008880**

20-Aug-20

Client: Souder, Miller & Associates

Project: CDU 76

Sample ID: **LCS-54512**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **54512**	RunNo: **71197**
Prep Date: **8/18/2020**	Analysis Date: **8/19/2020**	SeqNo: **2483610** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	70	130			
Surr: DNOP	4.7		5.000		93.2	30.4	154			

Sample ID: **MB-54512**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **54512**	RunNo: **71197**
Prep Date: **8/18/2020**	Analysis Date: **8/19/2020**	SeqNo: **2483614** 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	30.4	154			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2008880**

20-Aug-20

Client: Souder, Miller & Associates

Project: CDU 76

Sample ID: **mb-54485**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **54485**	RunNo: **71140**
Prep Date: **8/17/2020**	Analysis Date: **8/18/2020**	SeqNo: **2481489** 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		99.6	75.3	105			

Sample ID: **lcs-54485**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **54485**	RunNo: **71140**
Prep Date: **8/17/2020**	Analysis Date: **8/18/2020**	SeqNo: **2481490** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	88.6	72.5	106			
Surr: BFB	1100		1000		110	75.3	105			S

Sample ID: **2008880-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S1**	Batch ID: **54485**	RunNo: **71140**
Prep Date: **8/17/2020**	Analysis Date: **8/18/2020**	SeqNo: **2481492** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.7	23.54	0	86.6	61.3	114			
Surr: BFB	1000		941.6		106	75.3	105			S

Sample ID: **2008880-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S1**	Batch ID: **54485**	RunNo: **71140**
Prep Date: **8/17/2020**	Analysis Date: **8/18/2020**	SeqNo: **2481493** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.6	23.21	0	90.2	61.3	114	2.58	20	
Surr: BFB	1000		928.5		109	75.3	105	0	0	S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2008880**

20-Aug-20

Client: Souder, Miller & Associates
Project: CDU 76

Sample ID: **mb-54485**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **54485**	RunNo: **71140**
Prep Date: **8/17/2020**	Analysis Date: **8/18/2020**	SeqNo: **2481537** 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	1.0		1.000		102	80	120			

Sample ID: **LCS-54485**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **54485**	RunNo: **71140**
Prep Date: **8/17/2020**	Analysis Date: **8/18/2020**	SeqNo: **2481538** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	92.0	80	120			
Toluene	0.93	0.050	1.000	0	93.3	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.5	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.9	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID: **2008880-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S1-0.5'**	Batch ID: **54485**	RunNo: **71140**
Prep Date: **8/17/2020**	Analysis Date: **8/18/2020**	SeqNo: **2481541** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.024	0.9625	0	95.5	76.3	120			
Toluene	0.94	0.048	0.9625	0.01114	96.1	78.5	120			
Ethylbenzene	0.95	0.048	0.9625	0	99.0	78.1	124			
Xylenes, Total	2.9	0.096	2.887	0.01603	98.5	79.3	125			
Surr: 4-Bromofluorobenzene	0.98		0.9625		102	80	120			

Sample ID: **2008880-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S1-0.5'**	Batch ID: **54485**	RunNo: **71140**
Prep Date: **8/17/2020**	Analysis Date: **8/18/2020**	SeqNo: **2481542** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.023	0.9390	0	98.8	76.3	120	0.945	20	
Toluene	0.94	0.047	0.9390	0.01114	99.1	78.5	120	0.597	20	
Ethylbenzene	0.95	0.047	0.9390	0	102	78.1	124	0.0612	20	
Xylenes, Total	2.9	0.094	2.817	0.01603	101	79.3	125	0.0529	20	
Surr: 4-Bromofluorobenzene	0.98		0.9390		104	80	120	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Souder, Miller & Associates**

Work Order Number: **2008880**

RcptNo: 1

8.14.20 0800 SC

Received By: **Cheyenne Cason** ~~8/13/2020 11:30:00 AM~~ 8.17.20

Completed By: **Leah Baca** 8/17/2020 1:11:21 PM Leah SBaca

Reviewed By: EM 8/17/20

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. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
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: SPA 8.17.20

Special Handling (if applicable)

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

Person Notified: Date:

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

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

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

Chain-of-Custody Record

Client: SMH - Carlsbad

Mailing Address:

Phone #:

email or Fax#: Lynn.Acosta@Sandemiller.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

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

Project Name: CDU #76

Project #:

Project Manager: Lynn Acosta

Sampler: AAL

On Ice: ☑ Yes ☐ No

# of Coolers:

Cooler Temp(Including CF): 1.3+0=1.3 (°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. 2008880	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)
8/12/20	900	Soil	S1	4oz	Ice	-001	X	X					X			
	~~905~~ 850		S1-0.5			-002										
	910		S2-			-003										
	1000		S2-0.5			-004										
	920		S3			-005										
	1010		S3-0.5			-006										
	930		S4			-007										
	1020		S4-0.5			-008										
	940		S5			-009										
	1030		S5-0.5			-010										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					8/13/20	1130
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			CMC courier		8/14/20	0800

Remarks: Direct Bill: Devon
Lupe.Carrasco@dvn.com

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

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

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

CONDITIONS

Action 10304

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 10304
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	None	1/25/2023