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

June 3, 2019

#5E28273

NMOCD District 2
811 S. First St.
Artesia, NM 88210

SUBJECT: Remediation Closure Report for the Poker Lake Unit 18 BD #161H Release (2RP-5430), Eddy County, New Mexico

To Whom It May Concern:

On behalf of XTO Energy, 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 Poker Lake Unit 18 BD #161 location. The site is in Unit E, Section 18, Township 25S, Range 30E, 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	Poker Lake Unit 18 BD #161H	Company	XTO Energy
API Number	30-015-44897	Location	32.131772 -103.927206
Incident Number	2RP-5430		
Estimated Date of Release	4/27/2019	Date Reported to NMOCD	4/28/2019
Land Owner	BLM	Reported To	NMOCD & BLM
Source of Release	Failure in lay flat hose		
Released Volume	718 bbls	Released Material	Produced Water
Recovered Volume	300 bbls	Net Release	418 bbls
NMOCD Closure Criteria	>100 feet to groundwater		
SMA Response Dates	5/1/2019		

1.0 Background

On April 27, 2019, a release was discovered at the Poker Lake Unit 18 BD #161 site due to two failures in a lay flat hose near a frac location. The first failure point (Part 1) caused a small pooling area near the entrance of a frac location adjacent to an above ground riser. The second failure point (Part 2) released into a pipeline right-of-way and flowed south to edge of a lease road. Initial response activities were conducted by the operator and included source elimination and repair as well as site stabilization, which recovered approximately 300 barrels of fluid which was then hauled to and disposed of at an NMOCD approved facility. Figures 1 and 2 illustrate the vicinity and site location. Figures 3a and 3b illustrates the release location. The C-141 form is included in Appendix A.

2.0 Site Information and Closure Criteria

The Poker Lake Unit 18 BD #161 is located approximately 14 miles to the southwest of Loving, New Mexico on Federal (BLM) land at an elevation of approximately 3168 feet above mean sea level (amsl).

Based upon the New Mexico office of the State Engineer (NMOSE) online water well database, (Appendix B), depth to groundwater in the area is estimated to be greater than 200 feet below grade surface (bgs). There are no known water sources within ½-mile of the location, according to the NMOSE online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 5/20/2019). The nearest well with groundwater data (C-02371) is located 2.75 miles southwest of the release, and had a recorded depth to groundwater of 60 feet bgs. However, the elevation differential between the well and the release is more than 100 feet. The next closest well (C-03872) is located 3.25 miles southeast and reports a depth to groundwater of 277 feet bgs. This well and the release are located at the same elevation.

The nearest significant watercourse is an unnamed arroyo, located approximately 4100 feet to the south. Figure 2 illustrates the site with 200 and 300-foot radii to indicate that it does not lie within a sensitive area as described in 19.15.29.12.C(4) NMAC.

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

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

3.0 Release Characterization and Remediation Activities

On May 1, 2019, SMA personnel arrived on site in response to the release associated with Poker Lake Unit 18 BD #161. SMA performed site delineation activities by collecting soil samples around the release site and throughout the visibly stained area. Soil samples were field screened for chloride using an electrical conductivity (EC) meter.

A total of eleven sample locations (Part 1 = L1; Part 2 = L1-L10) were investigated using a hand-auger, to depths up to two feet bgs. A total of thirteen samples were collected for laboratory analysis of total chloride using EPA Method 300.0; surface samples near each failure point were additionally analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D.

Laboratory analysis from this sampling event returned contaminant levels below NMOCD closure criteria; therefor SMA recommends no further for the Poker Lake Unit 18 BD #161 release.

Figure 3 shows the extent of the release and sample locations. All field screening and laboratory results are summarized in Table 3. Laboratory reports are included in Appendix C.

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 Stephanie Hinds or Shawna Chubbuck at 505-325-7535.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Stephanie Hinds
Staff EIT II

Reviewed by:

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

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

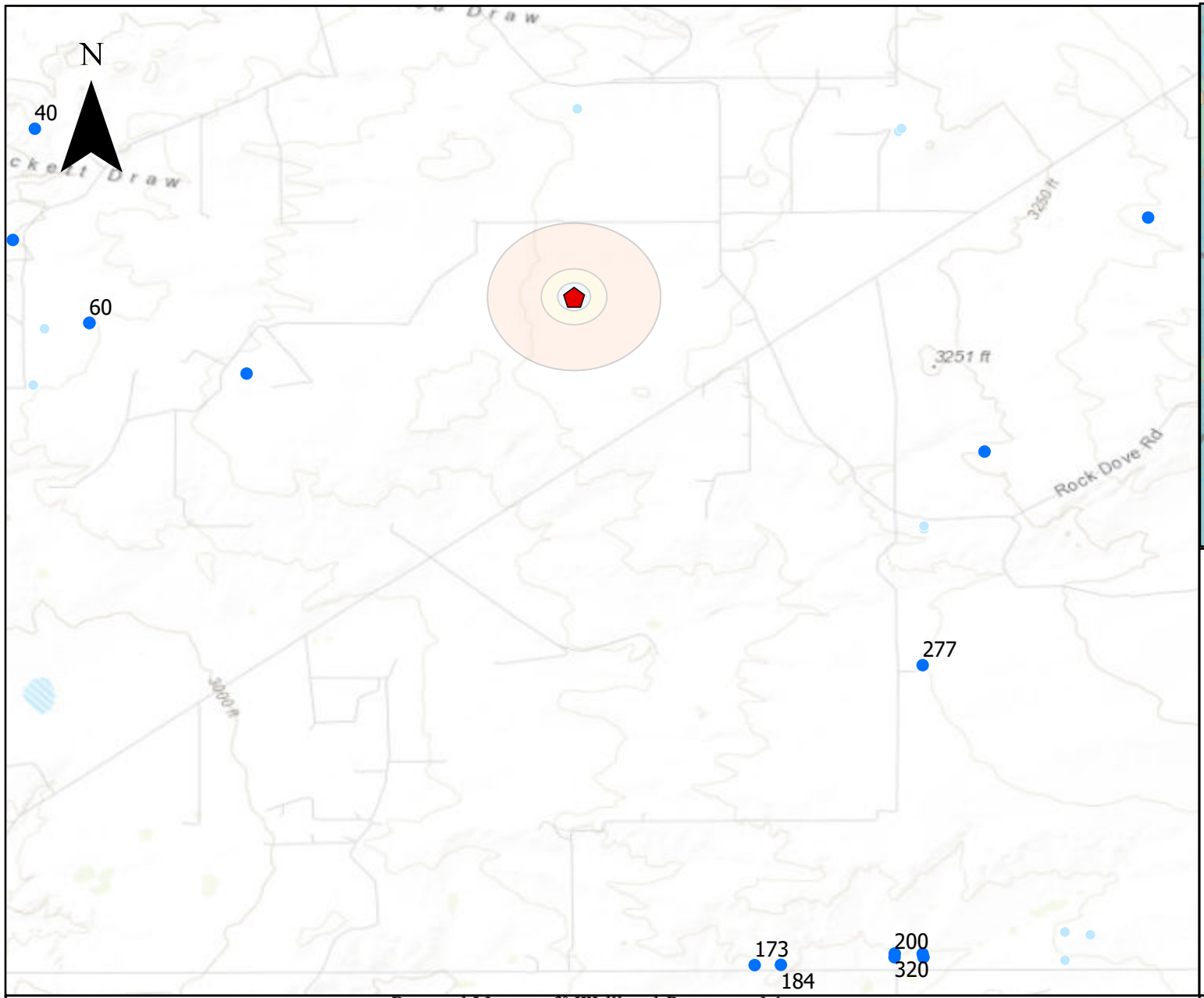
Tables:

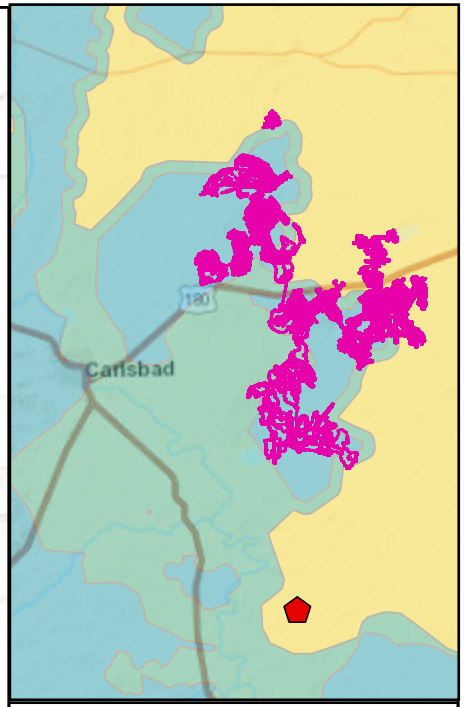
Table 2: NMOCD Closure Criteria Justification
Table 3: Summary of Sample Results

Appendices:

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

FIGURES





Legend

- Point of Release
- OSE Wells
- USGS Wells
- .5 Mile
- 1000 Feet
- 500 Feet

Karst Potential: Low, Medium, High

0 0.36 0.72 1.45 Miles

Regional Vicinity & Wellhead Protection Map
Poker Lake Unit 18 BD #161H
Sec 18 T25S R30E Eddy County, New Mexico

Figure 1

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

Drawn MRS
Date 5/28/2019
Checked
Approved

SMA

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

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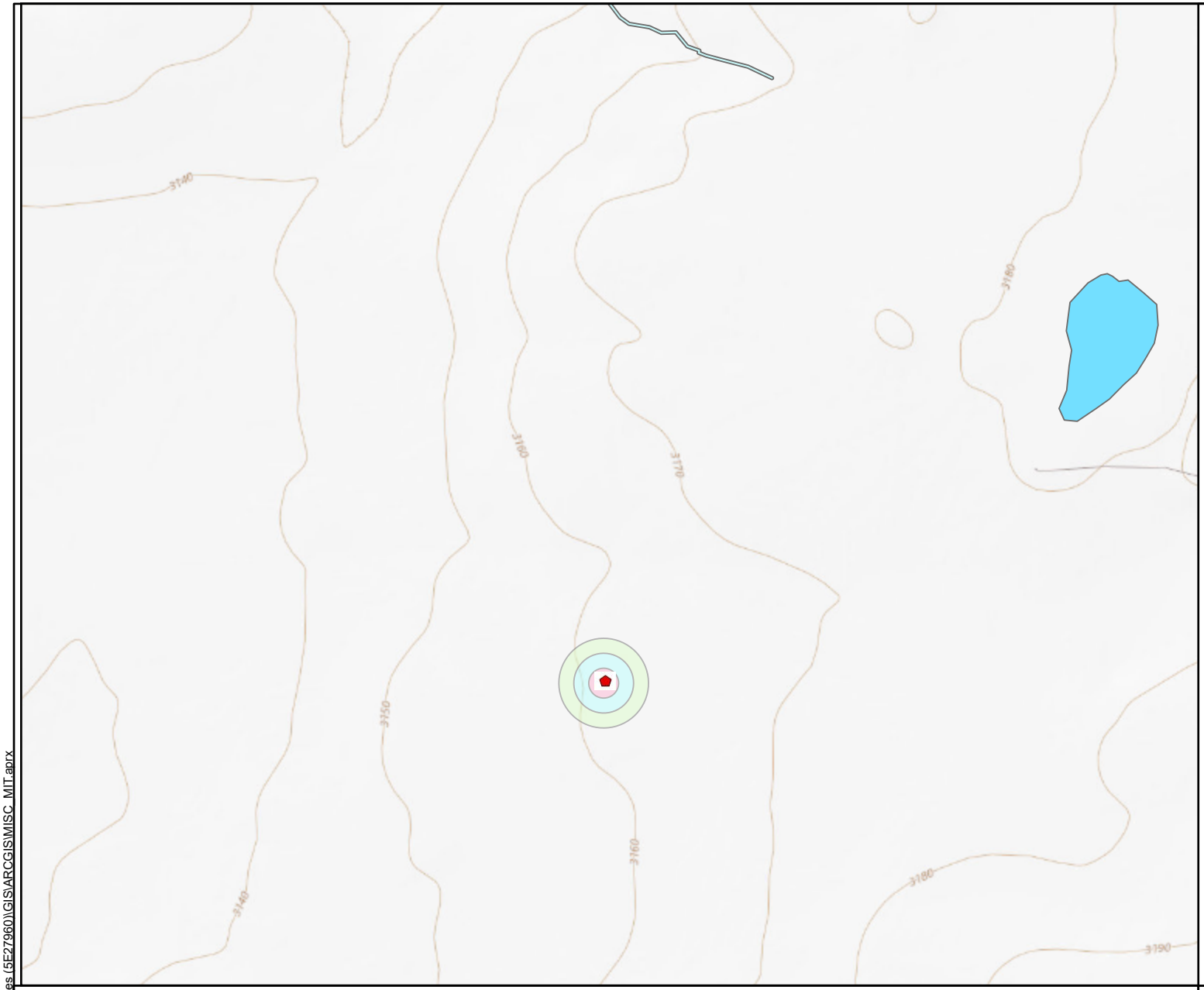
Date Saved: 5/28/2019



Point of Release
Springs & Seeps
Streams & Canals
Rivers
NM Wetlands
Lakes Playas
FEMA Flood Zones 2011

Buffer Distance
100 Feet
200 Feet
300 Feet

N

1,000
Feet

Surface Water Map
Poker Lake Unit 18 BD #161H
Sec 18 T25S R30E Eddy County, New Mexico

Figure 2

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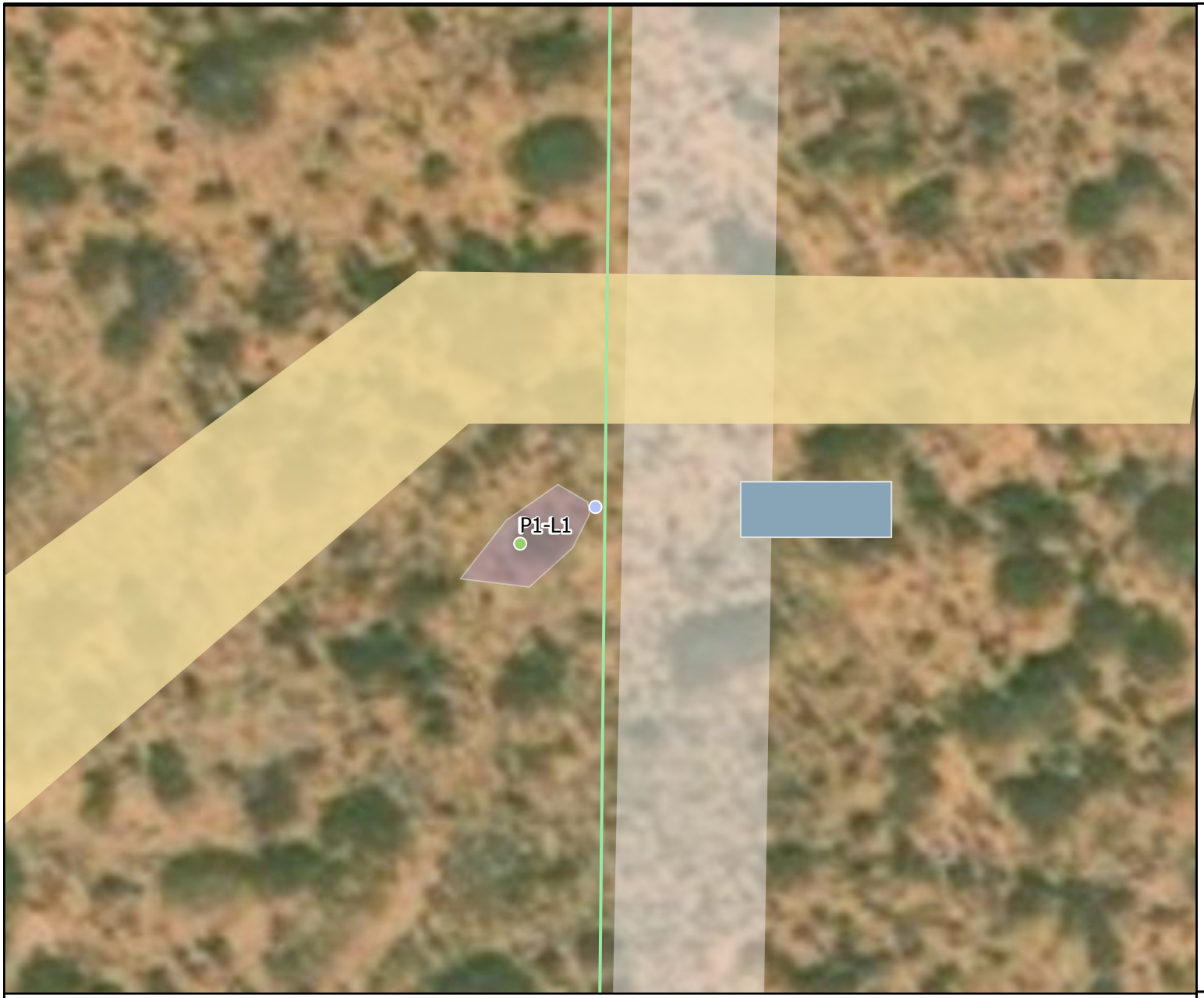
By: Date: Descr:
By: Date: Descr:

Drawn MRS
Date 5/28/2019
Checked
Approved



Sample Locations
Point of Release
12" Polyline
ROW
Release Area
Road
Riser

N

78 Feet

Release Part 1 Site and Sample Locations
Poker Lake Unit 18 BD #161H
Sec 18 T25S R30E Eddy County, New Mexico

Figure 3a

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

Drawn MRS
Date 6/3/2019
Checked
Approved

SMA

Date Saved: 6/3/2019

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Sample Locations
Point of Release
12" Polyline
ROW
Release Area
Road

N

300
Feet

Release Part 1 Site and Sample Locations
Poker Lake Unit 18 BD #161H
Sec 18 T25S R30E Eddy County, New Mexico

Figure 3b

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

Drawn MRS
Date 6/3/2019
Checked
Approved

SMA

Date Saved: 6/3/2019

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TABLES

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	~277	OSE Well C-03782 POD1, located 3.25 mi SE, equivalent elevati
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	none	USGS, OSE, OCD
Hortizontal Distance to Nearest Significant Watercourse (ft)	4100 ft south	Google Earth, Ross Ranch USGS Quad map, unnamed arroyo

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

Sample ID	Sample Date	Depth (feet bgs)	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	Cl- (Lab) mg/Kg	Cl- (Field screening) mg/kg
NMOCD Closure Criteria			50	10	1000			2500	20,000	
Part 1										
L1	5/1/2019	surface	<0.222	<0.025	<4.9	<9.4	<47	<61.3	3900	3900
		0.5								143
		1								<130
		2								<130
Part 2										
L1	5/1/2019	surface								2512
		0.5							3800	3220
		1								1300
		2								<130
L2		surface	<0.222	<0.025	<4.9	<9.7	<49	<63.6	7800	10000
		0.5								2432
		1								3040
		2								2260
L3		surface							4500	3980
		0.5								1370
		1								330
		2								<130
L4 (BG)		surface							<60	<130
		0.5								<130
		1							<60	<130
		2								<130
L5		surface							6600	5600
		0.5								1860
		1								2660
		2								2310
L6		surface							6100	6400
		0.5								1660
		1								<130
		2								<130
L7		surface							10,000	145,000
		0.5							4000	2500
		1								510
		1.5								280
L8		surface							9700	10500
		0.5								1200
		1								1160
L9		surface							6600	4720
		0.5								1860
		1								580
		2								330
L10		surface							5900	9300
		0.5								210
		1								<130
		2								<130

APPENDIX A
FORM C141

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NAB1914055435
District RP	2RP-5430
Facility ID	
Application ID	pAB1914054889

Release Notification

Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # *(assigned by OCD)* NAB1914055435
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.13089 Longitude -103.92659

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Poker Lake Unit 18 BD #161H	Site Type Production Well Facility
Date Release Discovered 4/27/2019	API# *(if applicable)* 30-015-44897

Unit Letter	Section	Township	Range	County
E	18	25S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* BLM)

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 718	Volume Recovered (bbls) 300
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Water transfer contract company reported a release of fluid from a lay flat hose near the frac location onto a pipeline Right-of-way. The hose had separated at a victaulic connection and also at a cracked hose end. The hose was inspected, repaired, and returned to service. Additional third party resources have been retained to assist with remediation.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914055435
District RP	2RP-5430
Facility ID	
Application ID	pAB1914054889

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? An unauthorized release of a volume of 25 barrels or more

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Notice provided by Kyle Littrell to Mike Bratcher, Rob Hamlet, Victoria Venegas, and Jim Griswold (NMOCD), Crystal Weaver and Jim Amos (BLM), on 4/28/2019 by email

Initial Response

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

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

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

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

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

Printed Name: Kyle Littrell Title: SH&E Supervisor
Signature: [signature] Date: 5/10/2019
email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: [signature] Date: 5/20/2019

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914055435
District RP	2RP-5430
Facility ID	
Application ID	pAB1914054889

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

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914055435
District RP	2RP-5430
Facility ID	
Application ID	pAB1914054889

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: Kyle Littrell Title: ~~SH&E~~ Supervisor

Signature: _____ Date: 6-21-19

email: Kyle.Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAB1914055435
District RP	2RP-5430
Facility ID	
Application ID	pAB1914054889

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) ***no excavation/backfill necessary**

☒ 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: Kyle Littrell Title: SH&E Supervisor

Signature: _____ Date: 6-21-19

email: Kyle_Littrell@xtoenergy.com Telephone: 432-221-7331

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

Location:	Poker Lake Unit 18 BD 161H (30-015-44897)	
Spill Date:	4/27/2019	

Approximate Area=	23,450	ft^2
Average Saturation (or depth) of Spill=	8.00	inches

Approximate Oil %	-	
Average Porosity Factor=	0.15	
Approximate Volume Recovered=	300	bbls

VOLUME OF LEAK		
Total Oil=	0	barrels
Total Produced Water=	718	barrels

VOLUME RECOVERED

Total Oil=	0	barrels
Total Produced Water=	300	barrels

APPENDIX B
NMOSE WELLS REPORT

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

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02459	C	ED	4	4	1	02	25S	29E	598422	3558663*	4167	150		
C 02371	C	ED		2	3	15	25S	29E	596741	3555106*	4469	200	60	140
C 02680	CUB	ED		2	3	15	25S	29E	596741	3555106*	4469	200		
C 03782 POD1	CUB	ED	4	3	3	28	25S	30E	604526	3551444	5287	805	277	528
C 01379	C	ED	4	4	3	10	25S	30E	606571	3556355*	5442	400		

Average Depth to Water: **168 feet**

Minimum Depth: **60 feet**

Maximum Depth: **277 feet**

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 601189 **Northing (Y):** 3555546 **Radius:** 6000

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

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

May 13, 2019

Stephanie Hinds

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

RE: Bushy Draw OrderNo.: 1905159

Dear Stephanie Hinds:

Hall Environmental Analysis Laboratory received 25 sample(s) on 5/3/2019 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: P1-L1-Sur
Project: Bushy Draw
Collection Date: 5/1/2019 10:00:00 AM
Lab ID: 1905159-001 **Matrix:** SOIL
Received Date: 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	3900	150		mg/Kg	50	5/9/2019 1:01:26 AM	44754
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/8/2019 3:58:05 PM	44745
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/8/2019 3:58:05 PM	44745
Surr: DNOP	90.6	70-130		%Rec	1	5/8/2019 3:58:05 PM	44745
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/7/2019 6:16:22 PM	44717
Surr: BFB	96.2	73.8-119		%Rec	1	5/7/2019 6:16:22 PM	44717
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/7/2019 6:16:22 PM	44717
Toluene	ND	0.049		mg/Kg	1	5/7/2019 6:16:22 PM	44717
Ethylbenzene	ND	0.049		mg/Kg	1	5/7/2019 6:16:22 PM	44717
Xylenes, Total	ND	0.099		mg/Kg	1	5/7/2019 6:16:22 PM	44717
Surr: 4-Bromofluorobenzene	92.1	80-120		%Rec	1	5/7/2019 6:16:22 PM	44717

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: P2-L1-0.5
Project: Bushy Draw
Collection Date: 5/1/2019 10:12:00 AM
Lab ID: 1905159-002 **Matrix:** SOIL **Received Date:** 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	3800	150		mg/Kg	50	5/6/2019 6:35:10 PM	44716

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-Sur
Project: Bushy Draw
Collection Date: 5/1/2019 10:20:00 AM
Lab ID: 1905159-003 **Matrix:** SOIL **Received Date:** 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	7800	300		mg/Kg	100	5/9/2019 1:13:50 AM	44754
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/8/2019 4:46:58 PM	44745
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/8/2019 4:46:58 PM	44745
Surr: DNOP	91.2	70-130		%Rec	1	5/8/2019 4:46:58 PM	44745
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/7/2019 7:24:25 PM	44717
Surr: BFB	91.8	73.8-119		%Rec	1	5/7/2019 7:24:25 PM	44717
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.025		mg/Kg	1	5/7/2019 7:24:25 PM	44717
Toluene	ND	0.049		mg/Kg	1	5/7/2019 7:24:25 PM	44717
Ethylbenzene	ND	0.049		mg/Kg	1	5/7/2019 7:24:25 PM	44717
Xylenes, Total	ND	0.099		mg/Kg	1	5/7/2019 7:24:25 PM	44717
Surr: 4-Bromofluorobenzene	88.3	80-120		%Rec	1	5/7/2019 7:24:25 PM	44717

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-Sur
Project: Bushy Draw
Collection Date: 5/1/2019 10:30:00 AM
Lab ID: 1905159-004
Matrix: SOIL
Received Date: 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	4500	150		mg/Kg	50	5/6/2019 6:47:35 PM	44716

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-Sur (BG)
Project: Bushy Draw
Collection Date: 5/1/2019 10:40:00 AM
Lab ID: 1905159-005 **Matrix:** SOIL **Received Date:** 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	5/7/2019 1:51:26 PM	44754

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-1 (BG)
Project: Bushy Draw
Collection Date: 5/1/2019 10:44:00 AM
Lab ID: 1905159-006 **Matrix:** SOIL **Received Date:** 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	60		mg/Kg	20	5/7/2019 2:03:51 PM	44754

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L5-Sur
Project: Bushy Draw
Collection Date: 5/1/2019 10:50:00 AM
Lab ID: 1905159-007
Matrix: SOIL
Received Date: 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	6600	300		mg/Kg	100	5/9/2019 1:26:15 AM	44754

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L6-Sur
Project: Bushy Draw
Collection Date: 5/1/2019 11:00:00 AM
Lab ID: 1905159-008
Matrix: SOIL
Received Date: 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	6100	300		mg/Kg	100	5/9/2019 1:38:40 AM	44754

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L7-Sur
Project: Bushy Draw
Collection Date: 5/1/2019 11:10:00 AM
Lab ID: 1905159-009
Matrix: SOIL
Received Date: 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	10000	600		mg/Kg	200	5/9/2019 1:51:04 AM	44754

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L7-0.5
Project: Bushy Draw
Collection Date: 5/1/2019 11:12:00 AM
Lab ID: 1905159-010 **Matrix:** SOIL **Received Date:** 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	4000	150		mg/Kg	50	5/9/2019 2:03:28 AM	44754

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L8-Sur
Project: Bushy Draw
Collection Date: 5/1/2019 11:20:00 AM
Lab ID: 1905159-011
Matrix: SOIL
Received Date: 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	9700	300		mg/Kg	100	5/9/2019 2:40:41 AM	44755

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L9-Sur
Project: Bushy Draw
Collection Date: 5/1/2019 11:30:00 AM
Lab ID: 1905159-012
Matrix: SOIL
Received Date: 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	6600	300		mg/Kg	100	5/9/2019 2:53:06 AM	44755

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L10-Sur
Project: Bushy Draw
Collection Date: 5/1/2019 11:40:00 AM
Lab ID: 1905159-013
Matrix: SOIL
Received Date: 5/3/2019 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	5900	300		mg/Kg	100	5/9/2019 3:05:31 AM	44755

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#: **1905159**
13-May-19

Client: Souder, Miller & Associates
Project: Bushy Draw

Sample ID: **MB-44716**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **44716**	RunNo: **59642**							
Prep Date: **5/3/2019**	Analysis Date: **5/3/2019**	SeqNo: **2010555**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44716**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **44716**	RunNo: **59642**							
Prep Date: **5/3/2019**	Analysis Date: **5/3/2019**	SeqNo: **2010556**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.1	90	110			

Sample ID: **MB-44754**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **44754**	RunNo: **59711**							
Prep Date: **5/7/2019**	Analysis Date: **5/7/2019**	SeqNo: **2013288**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44754**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **44754**	RunNo: **59711**							
Prep Date: **5/7/2019**	Analysis Date: **5/7/2019**	SeqNo: **2013289**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.6	90	110			

Sample ID: **MB-44754**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **44754**	RunNo: **59714**							
Prep Date: **5/7/2019**	Analysis Date: **5/7/2019**	SeqNo: **2013414**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-44754**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **44754**	RunNo: **59714**							
Prep Date: **5/7/2019**	Analysis Date: **5/7/2019**	SeqNo: **2013415**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.1	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#: **1905159**

13-May-19

Client: Souder, Miller & Associates

Project: Bushy Draw

Sample ID: **LCS-44778**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **44778**	RunNo: **59708**							
Prep Date: **5/8/2019**	Analysis Date: **5/8/2019**	SeqNo: **2013264**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		5.000		84.4	70	130			

Sample ID: **MB-44778**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **44778**	RunNo: **59708**							
Prep Date: **5/8/2019**	Analysis Date: **5/8/2019**	SeqNo: **2013265**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		100	70	130			

Sample ID: **MB-44745**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **44745**	RunNo: **59713**							
Prep Date: **5/6/2019**	Analysis Date: **5/7/2019**	SeqNo: **2013457**	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	11		10.00		106	70	130			

Sample ID: **LCS-44745**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **44745**	RunNo: **59713**							
Prep Date: **5/6/2019**	Analysis Date: **5/7/2019**	SeqNo: **2013472**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	101	63.9	124			
Surr: DNOP	4.6		5.000		92.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1905159**

13-May-19

Client: Souder, Miller & Associates

Project: Bushy Draw

Sample ID: **LCS-44717**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44717**	RunNo: **59700**
Prep Date: **5/3/2019**	Analysis Date: **5/7/2019**	SeqNo: **2012793** 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	101	80.1	123			
Surr: BFB	1100		1000		107	73.8	119			

Sample ID: **MB-44717**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44717**	RunNo: **59700**
Prep Date: **5/3/2019**	Analysis Date: **5/7/2019**	SeqNo: **2014337** 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	900		1000		90.1	73.8	119			

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#: **1905159**

13-May-19

Client: Souder, Miller & Associates

Project: Bushy Draw

Sample ID: **LCS-44717** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **44717** RunNo: **59700**

Prep Date: **5/3/2019** Analysis Date: **5/7/2019** SeqNo: **2012799** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	117	80	120			
Toluene	1.0	0.050	1.000	0	102	80	120			
Ethylbenzene	1.0	0.050	1.000	0	100	80	120			
Xylenes, Total	3.0	0.10	3.000	0	98.4	80	120			
Surr: 4-Bromofluorobenzene	0.97		1.000		97.2	80	120			

Sample ID: **MB-44717** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **44717** RunNo: **59700**

Prep Date: **5/3/2019** Analysis Date: **5/7/2019** SeqNo: **2012801** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.88		1.000		88.0	80	120			

Sample ID: **1905159-001AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **P1-L1-Sur** Batch ID: **44717** RunNo: **59700**

Prep Date: **5/3/2019** Analysis Date: **5/7/2019** SeqNo: **2013778** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.024	0.9756	0	92.1	63.9	127			
Toluene	0.80	0.049	0.9756	0	81.5	69.9	131			
Ethylbenzene	0.77	0.049	0.9756	0	78.8	71	132			
Xylenes, Total	2.3	0.098	2.927	0	77.2	71.8	131			
Surr: 4-Bromofluorobenzene	0.92		0.9756		93.9	80	120			

Sample ID: **1905159-001AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **P1-L1-Sur** Batch ID: **44717** RunNo: **59700**

Prep Date: **5/3/2019** Analysis Date: **5/7/2019** SeqNo: **2013779** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	0.9833	0	99.3	63.9	127	8.34	20	
Toluene	0.86	0.049	0.9833	0	87.8	69.9	131	8.24	20	
Ethylbenzene	0.85	0.049	0.9833	0	86.1	71	132	9.62	20	
Xylenes, Total	2.5	0.098	2.950	0	83.6	71.8	131	8.71	20	
Surr: 4-Bromofluorobenzene	0.95		0.9833		96.9	80	120	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **SMA-CARLSBAD** Work Order Number: **1905159** RcptNo: **1**

Received By: **Yazmine Garduno** **5/3/2019 8:45:00 AM** Yazmine Garduno

Completed By: **Michelle Garcia** **5/3/2019 10:52:05 AM** Michelle Garcia

Reviewed By: DAD 5/3/19

Labeled By: JC 5-3-19

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: 5-3-19

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.7	Good	Yes			

Chain-of-Custody Record

Client: SMA - Carlsbad

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

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

Project Name: Bushy Draw

Project #:

Project Manager: S. Hinds

Sampler: JVH & MRS

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 2.9°C + 0.1CF = 3.0°C
2.6°C + 0.1CF = 2.7°C

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1905159	Analysis Request: (BTEX) MTBE / TMB's (8021)	TPH 8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	(Cl), F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
5-1-19	10:00	soil	P1 - L1 - Sur	4oz		001	X	X					X			
	10:10		P2 - L1 - 0.5			002							X			
	10:20		L2 - Sur			003	X	X					X			
	10:30		L3 - Sur			004							X			
	10:40		L4 - Sur (BG)			005							X			
	10:44		L4 - 1 (BG)			006							X			
	10:50		L5 - Sur			007							X			
	11:00		L6 - Sur			008							X			
	11:10		L7 - Sur			009							X			
	11:12		L7 - 0.5			010							X			
	11:20		L8 - Sur			011							X			
	11:30		L9 - Sur			012							X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5-2-19	1000	Samantha Watson			5/2/19	1500
5/2/19	1900			carrier	5/3/19	8:45

Remarks: Terra

1 of 2

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: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

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

Project Name: Bushy Draw

Project #:

Project Manager: S. Hinds

Sampler: JVH & MRS

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 2.9C+0.1CF=3.0C 2.6+0.1CF=2.7C

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1905159	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
5.1.19	11:40	soil	L10 - Sur	4oz		013							X			

Analysis Request

Relinquished by:	Received by:	Via:	Date	Time
Samantha Watson			5.2.19	10:00
			5/2/19	1900

Received by:	Via:	Date	Time
		5/2/19	1500
JVH	courier	5/3/19	8:45

Remarks: Terra

Please hold for possible further analysis

Chain-of-Custody Record

Client: SMA Carlsbad

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: Bushy Draw

Project #:

Project Manager: S. Hinds

Sampler: MRS & JVH

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 2.9 + 0.1CF = 3.0c

2.6 + 0.1CF = 2.7c

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1905159
5.1.19	10:04	soil	P1-L1-1	4oz		014
	10:16		P2-L1-2			015
	10:26		L2-2			016
	10:34		L3-1			017
	10:36		L3-2			018
	10:56		L5-2			019
	11:04		L6-1			020
	11:14		L7-1			021
	11:16		L7-1.5			022
	11:24		L8-1			023
	11:36		L9-1			024
↓	11:44	↓	L10-1	↓		025

Analysis Request

BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)						

Date: 5.2.19 Time: 11:00 Relinquished by: Samantha Watson

Received by: Via: Date: 5/2/19 Time: 1500

Date: 5/2/19 Time: 1900 Relinquished by:

Received by: Via: Date: 5/3/19 Time: 6:45

Remarks: Terra 3 of 3

☆ Please hold all for possible further analysis ☆

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.