



REVIEWED

By OCD District 1 at 3:49 pm, Sep 14, 2015

August 18, 2015

NMOCD District I
1625 N. French Drive
Hobbs, New Mexico 88240

SUBJECT: SOIL REMEDIATION WORK PLAN FOR INCIDENT 1RP-3521 PINTAIL 3 FEDERAL SWD #1, LEA COUNTY, NEW MEXICO

Dear Ms. Jones:

On behalf of COG Operating (COG), Souder Miller & Associates (SMA) is pleased to submit the attached Work Plan summarizing the planned soil remediation of the release site located on the Pintail 3 Federal SWD #1 in Lea County, New Mexico. The purpose of the work plan is to obtain approval from the New Mexico Oil Conservation Division for remediation of the release that occurred on January 17, 2015.

At the request of COG, SMA responded to assess and delineate the production fluids release associated with the Pintail 3 Federal SWD #1 well location. The release was initially reported to NMOCD by COG Operating on February 2, 2015 and was a result of an illegal dumping incident. The table below summarizes information regarding the release. Results of the assessment and delineation follow in the attached report.

Table 1: Release information and Site Ranking					
Name	Pintail 3 Federal SWD #1				
Location	Incident Number	API Number	Section, Township, Range		
	1RP-3521	30-025-41208	SW/NE (Unit J)	Section 3	T 26S, R 32E NMMPM
Estimated Date of Release	January 17, 2015				
Date Reported to NMOCD	February 2, 2015				
Reported by	Amanda Trujillo, COG Operating LLC				
Land Owner	Federal				
Reported To	NM Oil Conservation Division (NMOCD)				
Source of Release	Illegal dumping				
Released Material	Produced Water				
Released Volume	125 bbls Produced Water				

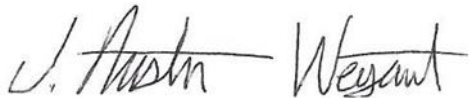


Recovered Volume	0 bbls Produced Water
Net Release	125 bbls Produced Water
Nearest Waterway	Bobcat Draw is 0.28 miles to the south of the location.
Depth to Groundwater	Estimated to be 150 feet
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	0
SMA Response Dates	Initial: May 11, 2015 Mitigation Activities: Unknown
Subcontractors	TCS
Disposal Facility	Lea Land, LLC
Estimated Yd ³ Contaminated Soil Excavated and Disposed	30

A copy of the C-141 Initial is located in Appendix B. For questions or comments pertaining to the release or the attached Work Plan, please feel free to contact either of us.

Submitted by:

SOUDER, MILLER & ASSOCIATES



Austin Weyant
Project Scientist

Reviewed by:



Cynthia Gray, CHMM
Senior Scientist



SOIL REMEDIATION WORK PLAN FOR INCIDENT 1RP-3521

COG OPERATING LLC

PINTAIL 3 FEDERAL SWD #1

API# 30-025-41208

SECTION 3, T26S R32E, NMPM

LEA COUNTY, NM



Prepared for:
COG Operating LLC
2407 Pecos Ave
Artesia, NM 88210

Prepared by:
Souder, Miller & Associates
201 S. Halagueno
Carlsbad, NM 88221
575-689-7040

August 18, 2015
SMA Reference
5B23978 BG1



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Table 1: Release Information and Site Ranking

Table 2: Summary of Laboratory Analyses

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Appendix B: Form C141 INITIAL

1.0 Introduction

On behalf of COG Operating LLC (COG), SMA has prepared this report that describes the assessment and initial delineation of a release associated with the Pintail 3 Federal SWD #1 release site. The site is located in Section 3, T 26S, R 32 E NMPM, Lea County, New Mexico, on land owned by the Bureau of Land Management (BLM). Figure 1 illustrates the vicinity and location of the site.

2.0 Site Ranking and Land Jurisdiction

The release site is located approximately 0.3 miles (> 1,000 feet) north of Bobcat Draw, in an area owned by BLM with an elevation of approximately 3,000 feet above sea level. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be greater than 150 feet below ground surface (bgs). Figure 1 depicts the site vicinity and Figure 2 depicts the site details and sample locations.

SMA searched the New Mexico State Engineer's Office online water well database for water wells in the vicinity of the release. No well is located within a 1000 foot radius of the site. Figure 1 depicts the site vicinity and Figure 2 shows the site itself. The physical location of this release is within the jurisdiction of NMOCD.

This release location has been assigned a NMOCD ranking of 0 which requires a soil remediation standard of 10 parts per million (ppm) benzene, 50 ppm combined benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 5000 ppm total petroleum hydrocarbons (TPH). Table 1 illustrates site ranking rationale.

3.0 Assessment and Initial Results

On August 13th, 2015, after receiving 811 clearance, SMA field personnel assessed the release area onsite with a backhoe, a Photo Ionization Detector (PID), and a mobile chlorides titration kit. The affected area was found to be 70 feet long and 30 feet wide. Delineation samples were taken to depths of three feet bgs. Using field screening, samples at one foot bgs were found to exhibit only background levels of all contaminants of concern. Sample locations are noted on Figure 2 Site Details and Sample Location Map. All samples were collected and processed according to NMOCD soil sampling procedures. The samples were sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory for analysis for Benzene and Total BTEX using EPA Method 8021B, DRO and GRO by EPA Method 8015D, and total Chlorides using EPA Method 300.0.

4.0 Soil Remediation Work Plan

SMA will begin the excavation of affected soils, with approval from area utilities owners via 811 and NMOCD. SMA will continuously guide the excavation activities by collecting composite soil samples for field screening with a mobile titration unit (EPA 4500) and a calibrated PID. Excavation will occur to depths to sufficient to delineate the plume by NMOCD Division 1 standards. Final samples will be collected at final depth of excavation. Approximately 50 cubic yards of contaminated soil will be removed and replaced with clean backfill material to bring the contours to surface grade. The contaminated soil will be transported for proper disposal at Lea Land, near Carlsbad, NM.

5.0 Conclusions and Recommendations

NMOCD Guidelines for Remediation of Leaks, Spills, and Releases have established the following action levels for contaminants of concern with a site ranking of 0: 10 ppm (mg/kg) Benzene, 50 ppm total BTEX, and 5000 ppm TPH. The release consisted of produced and associated petroleum found during the initial assessment and delineation.

After the soil remediation work plan is approved by NMOCD, SMA will begin soil remediation activities on site.

Soil contaminant concentrations found during the initial delineation are illustrated in Figure 2. A summary of the laboratory analyses is included in Table 2. Laboratory reports are included in Appendix A.

6.0 Closure and Limitations

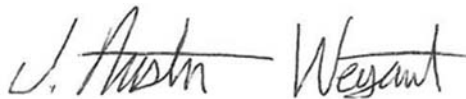
The scope of our services consisted of the performance of a preliminary spill assessment, verification of release stabilization, regulatory liaison, and preparation of this Remediation Work Plan. All work has been performed in accordance with generally accepted professional environmental consulting practices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

If there are any questions regarding this report, please contact either Austin Weyant at 575-689-7040 or Cindy Gray at 505-325-7535.

Submitted by:

Reviewed by:

SOUDER, MILLER & ASSOCIATES



Austin Weyant
Project Scientist



Cynthia Gray, CHMM
Senior Scientist

Figures:

Figure 1: Vicinity Map

Figure 2: Site Details and Sample Locations Map

Tables:

Table 1: Release Information and Site Ranking

Table 2: Summary of Laboratory Analyses

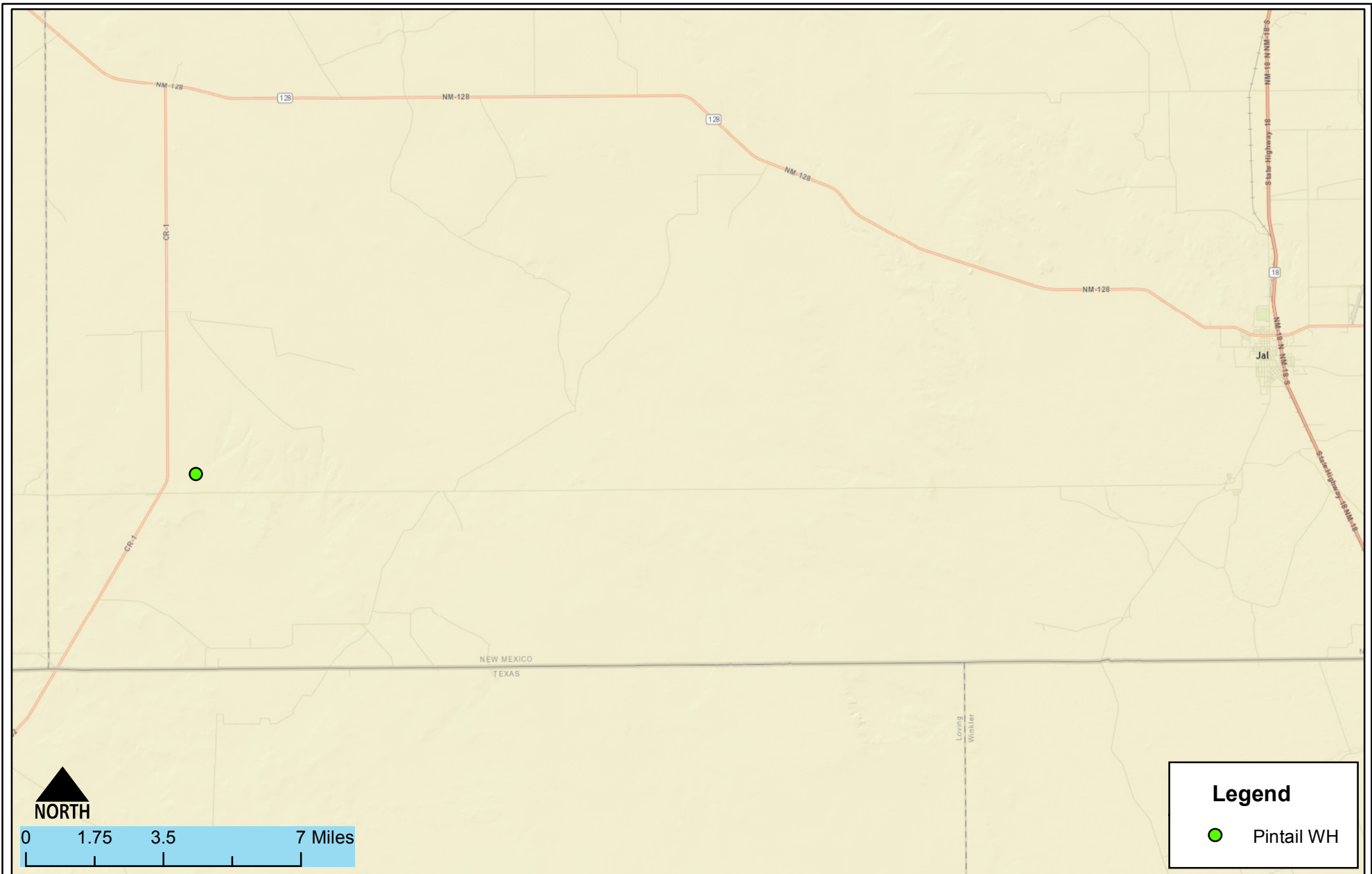
Appendices:

Appendix A: Laboratory Analytical Reports

Appendix B: Form C141 Initial

FIGURE 1

VICINITY MAP



Vicinity Map
COG- Pintail 3 Federal SWD #1
Malaga, New Mexico

Figure 1

Date Saved:
9/8/2015

By: _____ Date: _____
By: _____ Date: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved

Revisions

Descr: _____
Descr: _____

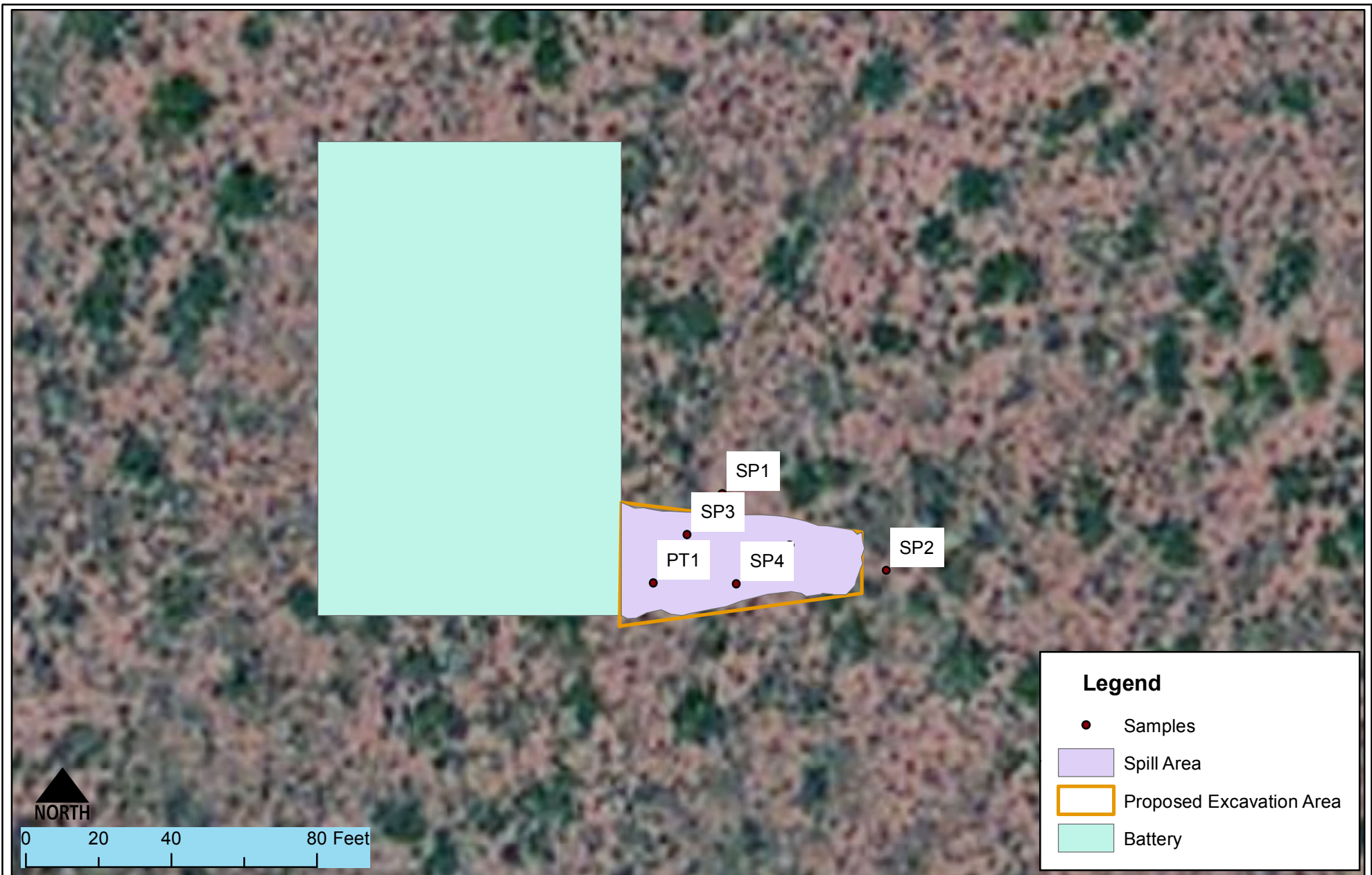
Drawn Lucas Middleton
Checked _____
Approved _____



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

FIGURE 2

SITE DETAILS AND SAMPLE LOCATIONS MAP



Detailed Site and Sample Map
COG- Pintail 3 Federal SWD #1
Malaga, New Mexico

Figure 2

TABLE 1

RELEASE INFORMATION AND SITE RANKING

Table 1: Release information and Site Ranking					
Name	Pintail 3 Federal SWD #1				
Location	Incident Number	API Number	Section, Township, Range		
	1RP-3521	30-025-41208	SW/NE (Unit J)	Section 3	T 26S, R 32E NMPM
Estimated Date of Release	January 17, 2015				
Date Reported to NMOCD	February 2, 2015				
Reported by	Amanda Trujillo, COG Operating LLC				
Land Owner	Federal				
Reported To	NM Oil Conservation Division (NMOCD)				
Source of Release	Illegal dumping				
Released Material	Produced Water				
Released Volume	125 bbls Produced Water				
Recovered Volume	0 bbls Produced Water				
Net Release	125 bbls Produced Water				
Nearest Waterway	Bobcat Draw is 0.28 miles to the south of the location.				
Depth to Groundwater	Estimated to be 150 feet				
Nearest Domestic Water Source	Greater than 1,000 feet				
NMOCD Ranking	0				
SMA Response Dates	Initial: May 11, 2015 Mitigation Activities: Unknown				
Subcontractors	TCS				
Disposal Facility	Lea Land, LLC				
Estimated Yd ³ Contaminated Soil Excavated and Disposed	30				

TABLE 2

SUMMARY OF LABORATORY ANALYSES

Table 2: Summary of Laboratory Analyses

Analytical Report- 1507652/ 1508863	Sample Number on Figure 2 Map	Sample Date	Depth	BTEX ppm	Benzene mg/Kg	TPH mg/Kg	Cl- mg/Kg
1507652-001	SP1	7/8/2015	Surface	BDL	BDL	320	150
1507652-002	SP2	7/8/2015	Surface	BDL	BDL	390	450
1507652-003	SP3	7/8/2015	Surface	BDL	BDL	8100	4,200
1507652-004	SP4	7/8/2015	Surface	N/A	N/A	N/A	1,400
1508863-001	PT1-1	8/13/2015	1'	BDL	BDL	BDL	140
1508863-002	PT1-2	8/13/2015	2'	BDL	BDL	BDL	BDL
1508863-003	PT1-3	8/13/2015	3'	BDL	BDL	BDL	BDL
1508863-004	PT2-1	8/13/2015	1'	BDL	BDL	BDL	430
1508863-005	PT2-2	8/13/2015	2'	BDL	BDL	BDL	52
1508863-006	PT2-3	8/13/2015	3'	BDL	BDL	BDL	BDL

APPENDIX A

LABORATORY ANALYTICAL REPORTS



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

July 27, 2015

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

RE: Pintail

OrderNo.: 1507652

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 4 sample(s) on 7/15/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507652**

Date Reported: **7/27/2015**

CLIENT: Souder, Miller & Associates

Client Sample ID: SP1

Project: Pintail

Collection Date: 7/8/2015 10:00:00 AM

Lab ID: 1507652-001

Matrix: SOIL

Received Date: 7/15/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH							Analyst: KJH
Petroleum Hydrocarbons, TR	320	20		mg/Kg	1	7/17/2015	20290
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	150	30		mg/Kg	20	7/20/2015 1:29:30 PM	20336
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.099		mg/Kg	1	7/17/2015 10:56:48 AM	20283
Benzene	ND	0.049		mg/Kg	1	7/17/2015 10:56:48 AM	20283
Toluene	ND	0.049		mg/Kg	1	7/17/2015 10:56:48 AM	20283
Ethylbenzene	ND	0.049		mg/Kg	1	7/17/2015 10:56:48 AM	20283
Xylenes, Total	ND	0.099		mg/Kg	1	7/17/2015 10:56:48 AM	20283
Surr: 4-Bromofluorobenzene	98.9	80-120		%REC	1	7/17/2015 10:56:48 AM	20283

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	Page 1 of 8
	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	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507652**

Date Reported: **7/27/2015**

CLIENT: Souder, Miller & Associates

Client Sample ID: SP2

Project: Pintail

Collection Date: 7/8/2015 10:00:00 AM

Lab ID: 1507652-002

Matrix: SOIL

Received Date: 7/15/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH							Analyst: KJH
Petroleum Hydrocarbons, TR	390	19		mg/Kg	1	7/17/2015	20290
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	450	30		mg/Kg	20	7/20/2015 2:06:44 PM	20336
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	7/17/2015 4:13:20 PM	20283
Benzene	ND	0.049		mg/Kg	1	7/17/2015 4:13:20 PM	20283
Toluene	ND	0.049		mg/Kg	1	7/17/2015 4:13:20 PM	20283
Ethylbenzene	ND	0.049		mg/Kg	1	7/17/2015 4:13:20 PM	20283
Xylenes, Total	ND	0.097		mg/Kg	1	7/17/2015 4:13:20 PM	20283
Surr: 4-Bromofluorobenzene	95.9	80-120		%REC	1	7/17/2015 4:13:20 PM	20283

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	Page 2 of 8
	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	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507652**

Date Reported: **7/27/2015**

CLIENT: Souder, Miller & Associates

Client Sample ID: SP3

Project: Pintail

Collection Date: 7/8/2015 10:00:00 AM

Lab ID: 1507652-003

Matrix: SOIL

Received Date: 7/15/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH							Analyst: KJH
Petroleum Hydrocarbons, TR	8100	190		mg/Kg	10	7/17/2015	20290
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	4200	150		mg/Kg	100	7/21/2015 10:40:49 AM	20336
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	7/17/2015 4:42:05 PM	20283
Benzene	ND	0.047		mg/Kg	1	7/17/2015 4:42:05 PM	20283
Toluene	ND	0.047		mg/Kg	1	7/17/2015 4:42:05 PM	20283
Ethylbenzene	ND	0.047		mg/Kg	1	7/17/2015 4:42:05 PM	20283
Xylenes, Total	ND	0.095		mg/Kg	1	7/17/2015 4:42:05 PM	20283
Surr: 4-Bromofluorobenzene	96.7	80-120		%REC	1	7/17/2015 4:42:05 PM	20283

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	Page 3 of 8
	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	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1507652**

Date Reported: 7/27/2015

CLIENT: Souder, Miller & Associates

Client Sample ID: SP4

Project: Pintail

Collection Date: 7/8/2015 10:00:00 AM

Lab ID: 1507652-004

Matrix: SOIL

Received Date: 7/15/2015 9:13:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	1400	75		mg/Kg	50	7/21/2015 10:53:14 AM	20336

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	Page 4 of 8
	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	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507652

27-Jul-15

Client: Souder, Miller & Associates

Project: Pintail

Sample ID	MB-20336		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	20336		RunNo:	27627				
Prep Date:	7/20/2015		Analysis Date:	7/20/2015		SeqNo:	829641		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-20336		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 20336		RunNo: 27627					
Prep Date:	7/20/2015		Analysis Date: 7/20/2015		SeqNo: 829642		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.4	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
R RPD outside accepted recovery limits
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 Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507652

27-Jul-15

Client: Souder, Miller & Associates

Project: Pintail

Sample ID	MB-20290		SampType: MBLK		TestCode: EPA Method 418.1: TPH					
Client ID:	PBS		Batch ID: 20290		RunNo: 27575					
Prep Date:	7/16/2015		Analysis Date: 7/17/2015		SeqNo: 827846		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	LCS-20290		SampType: LCS		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS		Batch ID: 20290		RunNo: 27575					
Prep Date:	7/16/2015		Analysis Date: 7/17/2015		SeqNo: 827847		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	88	20	100.0	0	87.7	83.6	116			

Sample ID	LCSD-20290		SampType: LCSD		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS02		Batch ID: 20290		RunNo: 27575					
Prep Date:	7/16/2015		Analysis Date: 7/17/2015		SeqNo: 827848		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	101	83.6	116	14.3	20	

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
R RPD outside accepted recovery limits
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 Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507652

27-Jul-15

Client: Souder, Miller & Associates

Project: Pintail

Sample ID MB-20283	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 20283		RunNo: 27583							
Prep Date: 7/16/2015	Analysis Date: 7/17/2015		SeqNo: 828181		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.98		1.000		98.0	80	120			

Sample ID LCS-20283	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 20283		RunNo: 27583							
Prep Date: 7/16/2015	Analysis Date: 7/17/2015		SeqNo: 828182		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.96	0.10	1.000	0	96.5	69.8	143			
Benzene	1.0	0.050	1.000	0	99.5	76.6	128			
Toluene	0.96	0.050	1.000	0	95.7	75	124			
Ethylbenzene	1.0	0.050	1.000	0	100	79.5	126			
Xylenes, Total	3.0	0.10	3.000	0	101	78.8	124			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID 1507652-001AMS	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: SP1	Batch ID: 20283		RunNo: 27583							
Prep Date: 7/16/2015	Analysis Date: 7/17/2015		SeqNo: 828184		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.99	0.098	0.9843	0	100	53.6	133			
Benzene	1.0	0.049	0.9843	0	104	69.6	136			
Toluene	0.99	0.049	0.9843	0	100	76.2	134			
Ethylbenzene	1.0	0.049	0.9843	0	104	75.8	137			
Xylenes, Total	3.1	0.098	2.953	0	105	78.9	133			
Surr: 4-Bromofluorobenzene	1.0		0.9843		104	80	120			

Sample ID 1507652-001AMSD	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: SP1	Batch ID: 20283		RunNo: 27583							
Prep Date: 7/16/2015	Analysis Date: 7/17/2015		SeqNo: 828185		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.91	0.099	0.9862	0	92.1	53.6	133	8.53	20	
Benzene	0.97	0.049	0.9862	0	98.7	69.6	136	5.27	20	
Toluene	0.94	0.049	0.9862	0	94.9	76.2	134	5.47	20	
Ethylbenzene	0.98	0.049	0.9862	0	99.5	75.8	137	4.55	20	

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 |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507652

27-Jul-15

Client: Souder, Miller & Associates

Project: Pintail

Sample ID 1507652-001AMSD		SampType: MSD			TestCode: EPA Method 8021B: Volatiles					
Client ID: SP1	Batch ID: 20283			RunNo: 27583						
Prep Date: 7/16/2015	Analysis Date: 7/17/2015			SeqNo: 828185		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	2.9	0.099	2.959	0	99.6	78.9	133	4.86	20	
Surr: 4-Bromofluorobenzene	1.0		0.9862		103	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
R RPD outside accepted recovery limits
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 Detection Limit

Sample Log-In Check List

Client Name: SMA-CARLSBAD

Work Order Number: 1507652

RcptNo: 1

Received by/date:

Logged By:

Lindsay Mangin

7/15/2015 9:13:00 AM

Completed By:

Lindsay Mangin

7/15/2015 2:09:44 PM

Reviewed By:

CS

07/15/15

Chain of Custody

1. Custody seal's intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

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

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

16. 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:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			



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

August 26, 2015

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

RE: Pintail

OrderNo.: 1508863

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 6 sample(s) on 8/18/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1508863**

Date Reported: **8/26/2015**

CLIENT: Souder, Miller & Associates

Client Sample ID: PT1-1

Project: Pintail

Collection Date: 8/13/2015 3:00:00 PM

Lab ID: 1508863-001

Matrix: SOIL

Received Date: 8/18/2015 9:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	140	30		mg/Kg	20	8/22/2015 2:07:34 AM	20926
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/24/2015 4:42:22 PM	20909
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/24/2015 4:42:22 PM	20909
Surr: DNOP	89.0	57.9-140		%REC	1	8/24/2015 4:42:22 PM	20909
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/21/2015 8:10:47 PM	20870
Surr: BFB	79.5	75.4-113		%REC	1	8/21/2015 8:10:47 PM	20870
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	8/21/2015 8:10:47 PM	20870
Benzene	ND	0.050		mg/Kg	1	8/21/2015 8:10:47 PM	20870
Toluene	ND	0.050		mg/Kg	1	8/21/2015 8:10:47 PM	20870
Ethylbenzene	ND	0.050		mg/Kg	1	8/21/2015 8:10:47 PM	20870
Xylenes, Total	ND	0.10		mg/Kg	1	8/21/2015 8:10:47 PM	20870
Surr: 4-Bromofluorobenzene	90.1	80-120		%REC	1	8/21/2015 8:10:47 PM	20870

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1508863**

Date Reported: **8/26/2015**

CLIENT: Souder, Miller & Associates

Client Sample ID: PT1-2

Project: Pintail

Collection Date: 8/13/2015 3:00:00 PM

Lab ID: 1508863-002

Matrix: SOIL

Received Date: 8/18/2015 9:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	8/22/2015 2:19:58 AM	20926
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/24/2015 5:51:02 PM	20909
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/24/2015 5:51:02 PM	20909
Surr: DNOP	85.1	57.9-140		%REC	1	8/24/2015 5:51:02 PM	20909
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/21/2015 8:35:36 PM	20870
Surr: BFB	79.9	75.4-113		%REC	1	8/21/2015 8:35:36 PM	20870
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	8/21/2015 8:35:36 PM	20870
Benzene	ND	0.048		mg/Kg	1	8/21/2015 8:35:36 PM	20870
Toluene	ND	0.048		mg/Kg	1	8/21/2015 8:35:36 PM	20870
Ethylbenzene	ND	0.048		mg/Kg	1	8/21/2015 8:35:36 PM	20870
Xylenes, Total	ND	0.097		mg/Kg	1	8/21/2015 8:35:36 PM	20870
Surr: 4-Bromofluorobenzene	93.0	80-120		%REC	1	8/21/2015 8:35:36 PM	20870

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1508863**Date Reported: **8/26/2015****CLIENT:** Souder, Miller & Associates**Client Sample ID:** PT1-3**Project:** Pintail**Collection Date:** 8/13/2015 3:00:00 PM**Lab ID:** 1508863-003**Matrix:** SOIL**Received Date:** 8/18/2015 9:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	8/22/2015 2:32:22 AM	20926
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/24/2015 6:12:34 PM	20909
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/24/2015 6:12:34 PM	20909
Surr: DNOP	86.0	57.9-140		%REC	1	8/24/2015 6:12:34 PM	20909
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/21/2015 9:00:22 PM	20870
Surr: BFB	79.0	75.4-113		%REC	1	8/21/2015 9:00:22 PM	20870
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	8/21/2015 9:00:22 PM	20870
Benzene	ND	0.048		mg/Kg	1	8/21/2015 9:00:22 PM	20870
Toluene	ND	0.048		mg/Kg	1	8/21/2015 9:00:22 PM	20870
Ethylbenzene	ND	0.048		mg/Kg	1	8/21/2015 9:00:22 PM	20870
Xylenes, Total	ND	0.097		mg/Kg	1	8/21/2015 9:00:22 PM	20870
Surr: 4-Bromofluorobenzene	92.5	80-120		%REC	1	8/21/2015 9:00:22 PM	20870

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1508863**Date Reported: **8/26/2015****CLIENT:** Souder, Miller & Associates**Client Sample ID:** PT2-1**Project:** Pintail**Collection Date:** 8/13/2015 3:00:00 PM**Lab ID:** 1508863-004**Matrix:** SOIL**Received Date:** 8/18/2015 9:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	430	30		mg/Kg	20	8/22/2015 2:44:47 AM	20926
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/24/2015 6:34:14 PM	20909
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/24/2015 6:34:14 PM	20909
Surr: DNOP	77.1	57.9-140		%REC	1	8/24/2015 6:34:14 PM	20909
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/21/2015 9:25:15 PM	20870
Surr: BFB	79.4	75.4-113		%REC	1	8/21/2015 9:25:15 PM	20870
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	8/21/2015 9:25:15 PM	20870
Benzene	ND	0.048		mg/Kg	1	8/21/2015 9:25:15 PM	20870
Toluene	ND	0.048		mg/Kg	1	8/21/2015 9:25:15 PM	20870
Ethylbenzene	ND	0.048		mg/Kg	1	8/21/2015 9:25:15 PM	20870
Xylenes, Total	ND	0.097		mg/Kg	1	8/21/2015 9:25:15 PM	20870
Surr: 4-Bromofluorobenzene	92.1	80-120		%REC	1	8/21/2015 9:25:15 PM	20870

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1508863**Date Reported: **8/26/2015****CLIENT:** Souder, Miller & Associates**Client Sample ID:** PT2-2**Project:** Pintail**Collection Date:** 8/13/2015 3:00:00 PM**Lab ID:** 1508863-005**Matrix:** SOIL**Received Date:** 8/18/2015 9:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	52	30		mg/Kg	20	8/22/2015 2:57:12 AM	20926
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/24/2015 6:55:39 PM	20909
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/24/2015 6:55:39 PM	20909
Surr: DNOP	78.7	57.9-140		%REC	1	8/24/2015 6:55:39 PM	20909
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/21/2015 9:50:09 PM	20870
Surr: BFB	80.4	75.4-113		%REC	1	8/21/2015 9:50:09 PM	20870
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	8/21/2015 9:50:09 PM	20870
Benzene	ND	0.048		mg/Kg	1	8/21/2015 9:50:09 PM	20870
Toluene	ND	0.048		mg/Kg	1	8/21/2015 9:50:09 PM	20870
Ethylbenzene	ND	0.048		mg/Kg	1	8/21/2015 9:50:09 PM	20870
Xylenes, Total	ND	0.095		mg/Kg	1	8/21/2015 9:50:09 PM	20870
Surr: 4-Bromofluorobenzene	93.3	80-120		%REC	1	8/21/2015 9:50:09 PM	20870

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1508863**

Date Reported: **8/26/2015**

CLIENT: Souder, Miller & Associates

Client Sample ID: PT2-3

Project: Pintail

Collection Date: 8/13/2015 3:00:00 PM

Lab ID: 1508863-006

Matrix: SOIL

Received Date: 8/18/2015 9:18:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	8/22/2015 3:09:37 AM	20926
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/24/2015 7:17:13 PM	20909
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/24/2015 7:17:13 PM	20909
Surr: DNOP	81.0	57.9-140		%REC	1	8/24/2015 7:17:13 PM	20909
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/21/2015 10:15:02 PM	20870
Surr: BFB	79.7	75.4-113		%REC	1	8/21/2015 10:15:02 PM	20870
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.096		mg/Kg	1	8/21/2015 10:15:02 PM	20870
Benzene	ND	0.048		mg/Kg	1	8/21/2015 10:15:02 PM	20870
Toluene	ND	0.048		mg/Kg	1	8/21/2015 10:15:02 PM	20870
Ethylbenzene	ND	0.048		mg/Kg	1	8/21/2015 10:15:02 PM	20870
Xylenes, Total	ND	0.096		mg/Kg	1	8/21/2015 10:15:02 PM	20870
Surr: 4-Bromofluorobenzene	92.8	80-120		%REC	1	8/21/2015 10:15:02 PM	20870

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
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508863

26-Aug-15

Client: Souder, Miller & Associates

Project: Pintail

Sample ID	MB-20926		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	20926		RunNo:	28397				
Prep Date:	8/21/2015		Analysis Date:	8/21/2015		SeqNo:	857826		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-20926		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 20926		RunNo: 28397					
Prep Date:	8/21/2015		Analysis Date: 8/21/2015		SeqNo: 857827		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
R RPD outside accepted recovery limits
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 Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508863

26-Aug-15

Client: Souder, Miller & Associates

Project: Pintail

Sample ID	MB-20909		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 20909		RunNo: 28400					
Prep Date:	8/21/2015		Analysis Date: 8/24/2015		SeqNo: 859302		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		95.9	57.9	140			

Sample ID	LCS-20909		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 20909		RunNo: 28400					
Prep Date:	8/21/2015		Analysis Date: 8/24/2015		SeqNo: 859303		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	57.4	139			
Surr: DNOP	4.7		5.000		94.7	57.9	140			

Sample ID	1508863-001AMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PT1-1		Batch ID: 20909		RunNo: 28400					
Prep Date:	8/21/2015		Analysis Date: 8/24/2015		SeqNo: 859305		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.9	49.55	0	87.7	42.3	146			
Surr: DNOP	4.0		4.955		81.4	57.9	140			

Sample ID	1508863-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PT1-1		Batch ID:	20909		RunNo:	28400				
Prep Date:	8/21/2015		Analysis Date:	8/24/2015		SeqNo:	859306		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	44	9.9	49.46	0	88.4	42.3	146	0.656	28.9		
Surr: DNOP	4.1		4.946		82.0	57.9	140	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
R RPD outside accepted recovery limits
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 Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508863

26-Aug-15

Client: Souder, Miller & Associates

Project: Pintail

Sample ID	MB-20870		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 20870		RunNo: 28350					
Prep Date:	8/19/2015		Analysis Date: 8/20/2015		SeqNo: 856333		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	850		1000		84.9	75.4	113			

Sample ID	LCS-20870		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 20870		RunNo: 28350					
Prep Date:	8/19/2015		Analysis Date: 8/20/2015		SeqNo: 856334		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	98.9	79.6	122			
Surr: BFB	900		1000		90.1	75.4	113			

Sample ID	1508863-002AMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PT1-2		Batch ID: 20870		RunNo: 28350					
Prep Date:	8/19/2015		Analysis Date: 8/20/2015		SeqNo: 856335		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.7	23.65	0	108	62.5	151			
Surr: BFB	870		946.1		92.3	75.4	113			

Sample ID	1508863-002AMSD		SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PT1-2		Batch ID:	20870		RunNo:	28350				
Prep Date:	8/19/2015		Analysis Date:	8/20/2015		SeqNo:	856336		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	27	4.7	23.54	0	114	62.5	151	5.36	22.1		
Surr: BFB	880		941.6		93.8	75.4	113	0	0		

Sample ID	MB-20899		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 20899		RunNo: 28388					
Prep Date:	8/20/2015		Analysis Date: 8/21/2015		SeqNo: 857409		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	800		1000		80.1	75.4	113			

Sample ID	LCS-20899		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 20899		RunNo: 28388					
Prep Date:	8/20/2015		Analysis Date: 8/21/2015		SeqNo: 857410		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	950		1000		94.7	75.4	113			

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
R RPD outside accepted recovery limits
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 Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508863

26-Aug-15

Client: Souder, Miller & Associates

Project: Pintail

Sample ID MB-20870	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 20870		RunNo: 28350							
Prep Date: 8/19/2015	Analysis Date: 8/20/2015		SeqNo: 856345		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.050								
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-20870	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 20870		RunNo: 28350							
Prep Date: 8/19/2015	Analysis Date: 8/20/2015		SeqNo: 856346		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.80	0.10	1.000	0	79.7	69.8	143			
Benzene	0.96	0.050	1.000	0	96.3	76.6	128			
Toluene	0.98	0.050	1.000	0	97.8	75	124			
Ethylbenzene	1.0	0.050	1.000	0	99.7	79.5	126			
Xylenes, Total	2.9	0.10	3.000	0	96.1	78.8	124			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID 1508863-001AMS	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: PT1-1	Batch ID: 20870		RunNo: 28350							
Prep Date: 8/19/2015	Analysis Date: 8/20/2015		SeqNo: 856347		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.79	0.098	0.9823	0	80.3	53.6	133			
Benzene	0.95	0.049	0.9823	0	96.2	69.6	136			
Toluene	0.96	0.049	0.9823	0.02336	95.2	76.2	134			
Ethylbenzene	1.0	0.049	0.9823	0.01875	99.7	75.8	137			
Xylenes, Total	2.9	0.098	2.947	0.03586	96.6	78.9	133			
Surr: 4-Bromofluorobenzene	1.0		0.9823		102	80	120			

Sample ID 1508863-001AMSD	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: PT1-1	Batch ID: 20870		RunNo: 28350							
Prep Date: 8/19/2015	Analysis Date: 8/20/2015		SeqNo: 856348		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.79	0.095	0.9515	0	82.6	53.6	133	0.328	20	
Benzene	0.91	0.048	0.9515	0	96.1	69.6	136	3.29	20	
Toluene	0.95	0.048	0.9515	0.02336	97.2	76.2	134	1.06	20	
Ethylbenzene	0.97	0.048	0.9515	0.01875	100	75.8	137	2.52	20	

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 |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508863

26-Aug-15

Client: Souder, Miller & Associates

Project: Pintail

Sample ID	1508863-001AMSD			SampType:	MSD		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PT1-1		Batch ID:		20870		RunNo:	28350			
Prep Date:	8/19/2015		Analysis Date:		8/20/2015		SeqNo:	856348		Units:	mg/Kg
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Xylenes, Total	2.9	0.095	2.854	0.03586	99.0	78.9	133	0.647	20		
Surr: 4-Bromofluorobenzene	0.98		0.9515		103	80	120	0	0		

Sample ID	MB-20899	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	20899	RunNo:	28388					
Prep Date:	8/20/2015	Analysis Date:	8/21/2015	SeqNo:	857443	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.94		1.000		93.8	80	120			

Sample ID	LCS-20899	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	20899	RunNo:	28388					
Prep Date:	8/20/2015	Analysis Date:	8/21/2015	SeqNo:	857444	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

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
R RPD outside accepted recovery limits
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 Detection Limit



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: 1508863

RcptNo: 1

Received by/date:

CS

08/18/15

Logged By: Ashley Gallegos

8/18/2015 9:18:00 AM

Ag

Completed By: Ashley Gallegos

8/18/2015 5:18:58 PM

Ag

Reviewed By:

CS

08/19/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. 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: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

APPENDIX B

FORM C141 INITIAL

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-230-0077
Facility Name: Pintail 3 Federal SWD #1	Facility Type: Battery

Surface Owner: Federal	Mineral Owner:	API No. 30-025-41208
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	3	26S	32E	2500	South	1400	East	Lea

Latitude 32.0719317402384 Longitude -103.658744163143

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 125 bbls	Volume Recovered: 0 bbls
Source of Release: Illegal Dumping	Date and Hour of Occurrence: 1/17/2015 10:00 am	Date and Hour of Discovery: 1/17/2015 10:00 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Dr. Oberding – NMOCD / Mr. Amos – BLM	
By Whom? Lupe Carrasco	Date and Hour: 1/19/2015 12:32 pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*


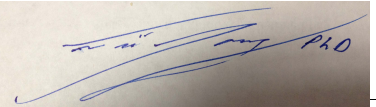
Describe Cause of Problem and Remedial Action Taken.*

This release was caused by an illegal dumping of produced water by water hauler. A fence was knocked down in the incident.

Describe Area Affected and Cleanup Action Taken.*

The impacted area was confined to the pad area. Concho will have the spill site sampled to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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: 	OIL CONSERVATION DIVISION Hydrologist	
Printed Name: Amanda Trujillo	Approved by  Environmental Specialist:	
Title: Senior Environmental Coordinator	Approval Date: 02/03/2015	Expiration Date: 04/03/2015
E-mail Address: atrujillo@concho.com	Conditions of Approval: Site samples required. Delineate and remediate are as per NMOCD	Attached <input type="checkbox"/> 1RP-3521
Date: February 2, 2015 Phone: 575-748-6940		

* Attach Additional Sheets If Necessary

guides.
Submit final C-141 by 04/03/2015

nTO1503426996
pTO1503427166

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