# 3R-1012

# Release Report/ General Correspondence

**Enterprise RA** 

Date: Jul-Sep 2015

OIL CONS. DIV DIST. 3

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

State of New Mexico **Energy Minerals and Natural** Resources

JUL 1 3 2015

If YES, To Whom? Courtesy Notification - Cory Smith - NMOCD; Shari

Form C-141 Revised August 8, 2011

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

Oil Conservation Division

1220 S. St. Fra	ancis Dr., Sa	nta Fe, NM 87	505		South St. Fra						
				Sar	nta Fe, NM 8	7505					
		F	Releas	e Notifica	ation and (	Corrective	Acti	on			
					OPERATO	R		Initial	Report	$\boxtimes$	Final Report
Name of C	ompany:	Enterprise I	Field Sen	vices LLC	Contact:	Thomas Long					
Address: 6	14 Reilly A	Ave, Farmin	gton, NM	87401	Telephon	e No. 505-599	-2286				
Facility Na	me: Later	al K-7			Facility T	pe: Natural G	as Gat	hering F	Pipeline		
Surface Ov	wner: BLN	1		Mineral O	wner: BLM			API N	0.		
				LOCA	TION OF RE	LEASE					
Unit Letter L	Section 22	Township 26N	Range 7W	Feet from the 1295	North South Line	Feet from the 1120	Line	West	County Rio Arr		
			L		68544 Longitu		21				
				NAT	JRE OF REL	EASE					
Type of Rele	ease: Natur	al Gas and N	Natural Ga	s Liquids	A CONTRACTOR OF THE PARTY OF TH	of Release Unk of Natural Gas iids	The state of the s	Volume	Recovere	d: Non	e
Source of R	elease: Fai	led Repair				d Hour of Occur @ 1:00 p.m.	rence:		nd Hour of @ 1:30 p.		ery:

If a Watercourse was Impacted, Describe Fully.\*

☐ Yes ☐ No ☒ Not Required

☐ Yes ☒ No

Was Immediate Notice Given?

Was a Watercourse Reached?

By Whom? Thomas Long

Describe Cause of Problem and Remedial Action: On March 23, 2015, Enterprise discovered a release on the Lateral K-7 pipeline during maintenance activities. The pipeline was previously isolated, blown down, locked out and tagged out for safety and environmental concerns. The release was a result of a faulty repair of the pipeline. Remediation was completed on April 15, 2015.

Ketcham - BLM

Date and Time 3/23/15 at 3:23 p.m.

If YES, Volume Impacting the Watercourse

Describe Area Affected and Cleanup Action: The contaminant mass was removed by mechanical excavation. The final excavation measured approximately 47 feet long by 34 feet wide by18 feet deep. Approximately 854 cubic yards of hydrocarbon impacted soil were excavated and transported to a New Mexico Oil Conservation approved land farm facility. A third party corrective action report is included with this "Final" C-141.

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: Yew Freedo	OIL CONSERVATION DIVISION	7/
Printed Name: Jon E. Fields	Approved by Environmental Specialist:	
Title: Director, Environmental	Approval Date: \$/12/15 Expiration Date:	
E-mail Address:jefields@eprod.com	Conditions of Approval:	
Date: 7-9-20/5 Phone: (713)381-6684		

\* Attach Additional Sheets If Necessary

HNCS 15 12030409



OIL CONS. DIV DIST. 3
JUL 1 3 2015

#### CORRECTIVE ACTION REPORT

Property:

Lateral K-7 (3/23/2015) Pipeline Release SW 1/4, S22 T26N R7W Rio Arriba County, New Mexico

> June 23, 2015 Apex Project No. 7250415005

> > Prepared for:

Enterprise Field Services, LLC 614 Reilly Avenue Farmington, NM 87401 Attn: Mr. Thomas Long

Prepared by:

Ranee Deechilly Environmental Scientist

Kyle Summers, CPG.
Branch Manager/Senior Geologist

# TABLE OF CONTENTS

1.0	INTRO	DUCTION1									
	1.1	Site Description & Background1									
	1.2	Project Objective1									
2.0	SITE	RANKING1									
3.0		ONSE ACTIONS									
	3.1	Soil Excavation Activities									
	3.2	Soil Sampling Program									
	3.3	Laboratory Analytical Methods3									
4.0	DATA	EVALUATION 2									
4.0	4.1	EVALUATION									
	4.1	Confirmation Soil Samples									
5.0	5.0 FINDINGS AND RECOMMENDATIONS4										
0.0	· III	TOO AND RECOMMENDATIONS									
6.0	STAN	DARD OF CARE, LIMITATIONS, AND RELIANCE5									
LIST	OF AF	PPENDICES									
App	endix A										
		Figure 2 – Site Vicinity Map									
		Figure 3 – Soil Sample Location and Results									
App	endix E	3: Executed C-138 Solid Waste Acceptance Form									
A		Dhatamanhia Dagumantation									
App	endix (	Photographic Documentation									
Ann	endix E	D: Table									
Whh	CHUIX L	, Table									
App	endix E	: Laboratory Analytical Reports &									
		Chain of Custody Documentation									



#### CORRECTIVE ACTION REPORT

Lateral K-7 (3/23/2015) Pipeline Release SW 1/4, S22 T26N R7W Rio Arriba County, New Mexico

Apex Project No. 7250415005

#### 1.0 INTRODUCTION

#### 1.1 Site Description & Background

The Lateral K-7 (3/23/2015) pipeline release site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the southwest (SW) ¼ of Section 22 in Township 26 North and Range 7 West in rural Rio Arriba County, New Mexico (36.46854N, 107.56842W), referred to hereinafter as the "Site" or "subject Site". The Site is located on land managed by the United States Bureau of Land Management (BLM). The Site is surrounded by native vegetation rangeland periodically interrupted by oil and gas production and gathering facilities, including the Enterprise natural gas gathering pipeline which traverses the area from approximately north to south.

On March 23, 2015, a release of natural gas was identified at the Site. The release was discovered while replacing a historical "I-wrap" repair with a new solid section of pipeline. Enterprise subsequently initiated excavation activities to remediate hydrocarbon impact. The pipeline was repaired by replacing approximately 44 feet of the pipeline. The surface expression of the release was characterized by minor soil discoloration.

A topographic map depicting the location of the Site is included as Figure 1, and a Site Vicinity Map is included as Figure 2 in Appendix A.

#### 1.2 Project Objective

The primary objective of the corrective actions was to reduce the concentration of constituents of concern (COCs) in the on-Site soils to below the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) Remediation Action Levels (RALs) using the New Mexico EMNRD OCD's Guidelines for Remediation of Leaks, Spills and Releases as guidance.

#### 2.0 SITE RANKING

In accordance with the ENMRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Apex TITAN, Inc. (Apex) utilized the general site characteristics obtained during the completion of corrective action activities and information available from the Office of the New Mexico Office of the State Engineer (OSE) to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:



Rankin	g Criteria		Ranking Score		
	<50 feet	20			
Depth to Groundwater	50 to 99 feet	10	20		
the second second second	>100 feet	0			
Wellhead Protection Area • <1,000 feet from a water	Yes	20	0		
source, or; <200 feet from private domestic water source.	No	0			
	<200 feet	20	0 20 40		
Distance to Surface Water Body	200 to 1,000 feet	10	20		
	22 N				
Total Ran	ce, or; <200 feet from the domestic water source.  No 0 <p>Control a water source in the domestic water source water sourc</p>				

Based on Apex's evaluation of the scoring criteria, the Site would earn a maximum Total Ranking Score of "40". This ranking is based on the following:

- Based on depths to groundwater observed in groundwater monitoring wells at two other release sites located at similar proximities to the Palluche Canyon Wash at comparable elevations approximately 1 mile to the north and 2 miles to the south, respectively, depth to groundwater is estimated to be less than 50 feet below grade surface (bgs), resulting in a ranking of "20".
- No water source wells (municipal/community wells) were identified within 1,000 feet of the Site. No private domestic water sources were identified within 200 feet of the Site. These proximities result in a wellhead protection area ranking of "0".
- The release point is located within a small ephemeral wash that drains to the Palluche Canyon Wash approximately 475 feet to the east, resulting in a distance to surface water ranking of "20".

### 3.0 RESPONSE ACTIONS

#### 3.1 Soil Excavation Activities

On March 23, 2015, a release of natural gas was identified at the Site. The release was discovered while replacing a historical "I-wrap" repair with a new solid section of pipeline. Enterprise subsequently initiated excavation activities to remediate potential hydrocarbon impact. The pipeline was repaired by replacing approximately 44 feet of the pipeline. The surface expression of the release was characterized by minor soil discoloration. During the corrective action activities, Crossfire, LLC, provided heavy equipment and labor support, and Heather Woods and Ranee Deechilly, Apex environmental professionals, provided environmental support.

Corrective action excavation began at the Site on April 6, 2015. On April 9, 2015, confirmation soil samples C-1 through C-15 were collected from the sidewalls and base of the excavation for laboratory analysis. In addition, stockpile soil samples SP-1 through SP-4 were collected to determine the potential to reuse these soils as backfill material. Based on laboratory analytical results, the upper portions (approximately 1 to 9 feet bgs) of the north and east sidewalls exhibited COC concentrations above the applicable OCD *RALs*. On April 15, 2015, the upper portions of the excavation sidewalls were extended to remove the residual hydrocarbon affected soils and confirmation soil samples C-16 through C-18 were collected.

The overall surface expression of the final remedial action excavation measured approximately 47 feet long by 34 feet wide at the maximum, with a total depth of approximately 18 feet bgs.

Enterprise Field Services LLC Corrective Action Report Lateral K-7 (3/23/2015) Pipeline Release June 23, 2015



The lithology encountered during the completion of corrective action activities consisted primarily of unconsolidated silt and silty sand with minor clays.

A total of approximately 854 cubic yards of hydrocarbon affected soils were transported to the Envirotech, Inc. (Envirotech) landfarm near Hilltop, New Mexico for disposal/remediation. The executed C-138 form is provided in Appendix B. The excavation was backfilled with clean imported fill and reusable stockpiled overburden soils (demonstrated by laboratory analysis to exhibit COC concentrations below OCD *RALs*), and contoured to surrounding grade.

Figure 3 is a site map that indicates the approximate location of the excavated area in relation to pertinent land features (Appendix A). Photographic documentation of the field activities is included in Appendix C.

#### 3.2 Soil Sampling Program

Apex screened head-space samples of Site soils utilizing a PID fitted with a 10.6 eV lamp to evaluate VOCs and aid in determining the excavation limits.

Advance notification of the sampling schedules were provided to the local BLM and OCD district offices, however, no representatives were present during the sampling activities.

Apex's soil sampling program included the collection of a total of eighteen (18) confirmation samples (C-1 through C-18) from the resulting excavation for laboratory analysis, however, C-1 and C-3 were removed by excavation. In addition, four (4) stockpile soil samples were collected to determine the potential to reuse these soils as excavation backfill. Figure 3 depicts the approximate location of the excavated area and shows the final confirmation sample locations in relation to the final excavation dimensions (Appendix A).

The samples were collected and placed in laboratory prepared glassware, labeled/sealed using the laboratory supplied labels, and placed on ice in a cooler, which was secured with a custody seal. The sample cooler and completed chain-of-custody form were relinquished to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico, for analysis.

#### 3.3 Laboratory Analytical Methods

The confirmation soil samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) utilizing Environmental Protection Agency (EPA) SW-846 Method #8021. The soil samples were also analyzed for total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO) utilizing EPA SW-846 Method #8015.

Laboratory results are summarized in Table 1, included in Appendix D. The executed chain-of-custody forms and laboratory data sheets are provided in Appendix E.

#### 4.0 DATA EVALUATION

The Site is subject to regulatory oversight by the EMNRD OCD. To address activities related to condensate releases, the EMNRD OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the OCD rules, specifically New Mexico Administrative Code 19.15.29 *Release Notification*. These guidance documents establish investigation and abatement action requirements for release sites subject to reporting and/or corrective action.



## 4.1 Confirmation Soil Samples

Apex compared the BTEX and TPH concentrations or laboratory reporting limits associated with the final confirmation samples to the OCD *RALs* for sites having a total ranking score of "40". Not included in the following discussion are confirmation soil samples C-1 and C-3 that were removed by excavation, and stockpile samples SP-1 and SP-2 which were transported to the landfarm for disposal/remediation.

- The laboratory analyses of confirmation samples collected from soils remaining in place do not indicate benzene concentrations above the laboratory reporting limits, which are below the OCD RAL of 10 milligrams per kilogram (mg/kg).
- The laboratory analyses of the confirmation samples collected from soils remaining in indicate total BTEX concentrations ranging from below the laboratory reporting limits to 0.15 mg/kg (C-13), which are below the OCD RAL of 50 mg/kg.
- The laboratory analyses of the confirmation samples collected from soils remaining in place indicate combined TPH GRO/DRO concentrations ranging from below the laboratory reporting limits to 62 mg/kg (C-13), which are below the OCD RAL of 100 mg/kg for a site ranking of "40".
- The laboratory analyses of the stockpile samples SP-3 and SP-4 did not indicate benzene or total BTEX concentrations above laboratory reporting limits, which are below the applicable OCD RALs. In addition, laboratory analyses of stockpile samples SP-3 and SP-4 indicate combined TPH GRO/DRO concentrations of below laboratory reporting limits and 12 mg/kg, respectively, which are below the OCD RAL for a site ranking of "40".

The hydrocarbon-affected stockpiled soils (including soils associated with stockpile samples SP-1 and SP-2) were transported to the Envirotech landfarm near Hilltop, New Mexico for disposal/remediation.

Confirmation sample results are provided in Table 1 in Appendix D.

#### 5.0 FINDINGS AND RECOMMENDATIONS

The Lateral K-7 (3/23/2015) pipeline release site is located within the Enterprise ROW in the SW ¼ of Section 22 in Township 26 North and Range 7 West in rural Rio Arriba County, New Mexico. The Site is located on land managed by the BLM. The Site is surrounded by native vegetation rangeland periodically interrupted by oil and gas production and gathering facilities, including the Enterprise natural gas gathering pipeline which traverses the area from approximately north to south.

On March 23, 2015, a release of natural gas was identified at the Site. The release was discovered while replacing a historical "I-wrap" repair with a new solid section of pipeline. Enterprise subsequently initiated excavation activities to remediate potential hydrocarbon impact. The pipeline was repaired by replacing approximately 44 feet of the pipeline. The surface expression of the release was characterized by minor soil discoloration.

The primary objective of the corrective actions was to reduce the concentration of COCs in the on-Site soils to below the New Mexico EMNRD OCD RALs using the New Mexico EMNRD OCD's Guidelines for Remediation of Leaks, Spills and Releases as guidance.



- The lithology encountered during the completion of corrective action activities consisted primarily of unconsolidated silt and silty sand with minor clays.
- The overall surface expression of the final remedial action excavation measured approximately 47 feet long by 34 feet wide at the maximum, with a total depth of approximately 18 feet bgs.
- A total of eighteen (18) confirmation samples (C-1 through C-18) were collected from the resulting final excavation for laboratory analyses, however C-1 and C-3 were removed by excavation. In addition, four (4) stockpile soil samples were collected to determine the potential to reuse these soils as excavation backfill. Soils associated with stockpile samples SP-1 and SP-2 were removed to the landfarm for disposal/remediation
- Based on analytical results, soils remaining in place do not exhibit COC concentrations above the OCD RALs for a site ranking of "40".
- A total of approximately 854 cubic yards of hydrocarbon affected soils were transported to the Envirotech landfarm near Hilltop, New Mexico for disposal/remediation. The excavation was backfilled with clean imported fill and reusable stockpiled overburden soils (demonstrated by laboratory analysis to exhibit COC concentrations below OCD RALs), and contoured to surrounding grade.

Based on field observations and laboratory analytical results, no additional investigation or corrective action with respect to soil impact appears warranted at this time.

# 6.0 STANDARD OF CARE, LIMITATIONS, AND RELIANCE

Apex's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Apex makes no warranties, expressed or implied, as to the services performed hereunder. Additionally, Apex does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services was performed in accordance with the scope of work agreed with the client.

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-Site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Apex cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this scope of services. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Apex's findings and recommendations are based solely upon data available to Apex at the time of these services.

This report has been prepared for the exclusive use of Enterprise, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the expressed written authorization of Enterprise and Apex. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and Apex's Agreement. The limitation of liability defined in the agreement is the aggregate limit of Apex's liability to the client.



APPENDIX A

Figures



Lateral K-7 (3/23/2015) **Pipeline Release** SW1/4 Sec22 T26N R7W Rural Rio Arriba County, New Mexico 36.46854N, 107.56842W

Project No. 7250415005



Apex TITAN, Inc. 606 South Rio Grande, Suite A Aztec, NM 87410 Phone: (505) 334-5200 www.apexcos.com
A Subsidiary of Apex Companies, LLC

# FIGURE 1 **Topographic Map**

Smouse Mesa, NM Quadrangle 1985



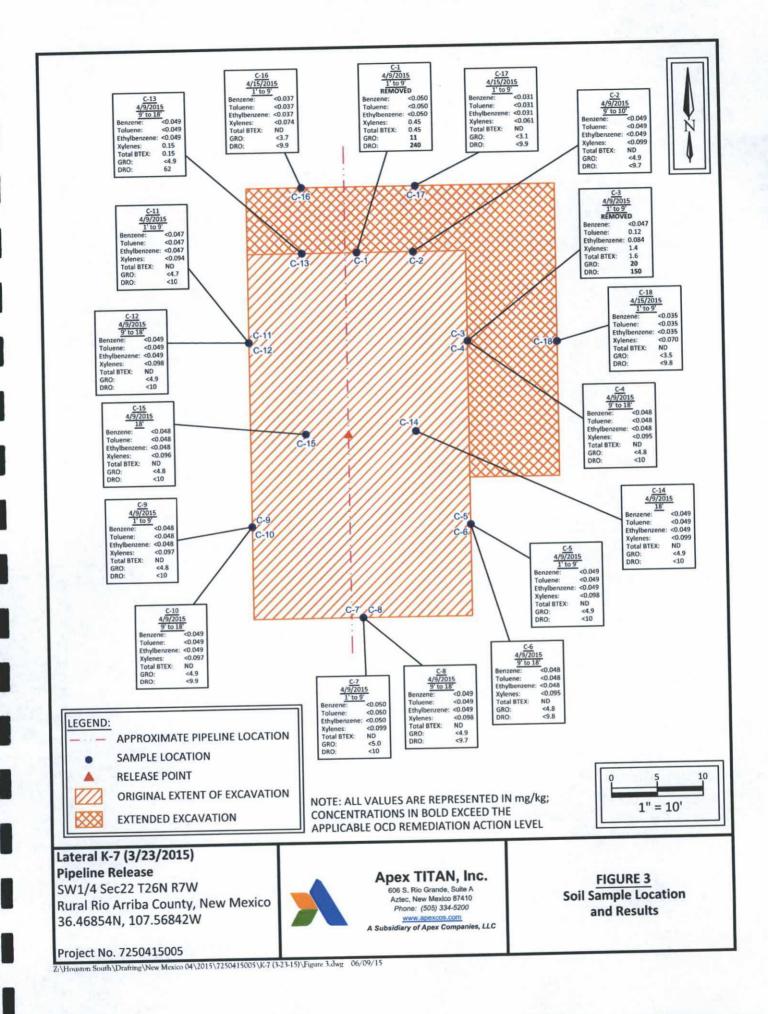
Lateral K-7 (3/23/2015) **Pipeline Release** SW1/4 Sec22 T26N R7W Rural Rio Arriba County, New Mexico 36.46854N, 107.56842W

Project No. 7250415005



Apex TITAN, Inc. 606 South Rio Grande, Suite A Aztec, NM 87410 Phone: (505) 334-5200 A Subsidiary of Apex Companies, LLC

FIGURE 2 **Site Vicinity Map** 





APPENDIX B

Executed C-138 Solid Waste Acceptance Form

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410

State of New Mexico Energy Minerals and Natural Resources 97057-0702 Oil Conservation Division

1220 South St. Francis Dr. Santa Fe, NM 87505

Form C-138 Revised 08/01/11

\*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

# District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE Generator Name and Address: Enterprise Field Services, LLC, 614 Reilly Ave, Farmington NM 87401 **Originating Site:** Lateral K-7 Pipeline Release Location of Material (Street Address, City, State or ULSTR): Unit Letter L Section 22 Township 26 North Range 7 West; 36.468542, -107.568427, Rio Arriba County Source and Description of Waste: Source: Natural Gas Gathering Line Description: Hydrocarbon impacted soil associated with a pipeline release. Estimated Volume 100 (yd) bbls Known Volume (to be entered by the operator at the end of the haul) 854 GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, Thomas Long , representative or authorized agent for Enterprise Products Operating do hereby **Generator Signature** certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with nonexempt waste. Operator Use Only: Waste Acceptance Frequency Monthly Weekly Per Load RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) ☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4) GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS 4-8-15, representative for Enterprise Products Operating authorize to complete I, Thomas Long **Generator Signature** the required testing/sign the Generator Waste Testing Certification. répresentative for do hereby certify that Envirotech, Inc. representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC. OCD Permitted Surface Waste Management Facility Baileys Name and Facility Permit #: Envirotech Inc. Soil Remediation Facility \* Permit #: NM 01-0011 Address of Facility: Hilltop, NM Method of Treatment and/or Disposal: ☐ Evaporation ☐ Injection ☐ Treating Plant ☐ Landfill ☐ Other Waste Acceptance Status: M APPROVED ■ DENIED (Must Be Maintained As Permanent Record) TITLE: Waste Coord maker DATE: 4/8/15 PRINT NAME: Kendra Runung SIGNATURE: Surface Waste Management Facility Authorized Agent



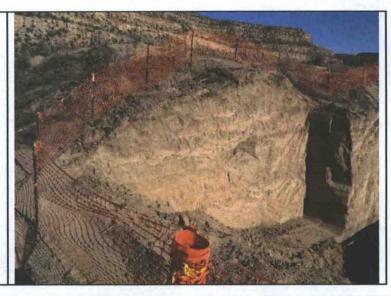
APPENDIX C

Photographic Documentation



# Photograph 1

View of the final excavation, facing southeast.



# Photograph 2

View of the final excavation, facing southwest. Soil "wall" beneath the pipeline was removed prior to backfilling the excavation.



# Photograph 3

View of the final excavation, facing south. Soil "wall" beneath the pipeline was removed prior to backfilling the excavation.





# Lateral K-7 (3/23/2015) Pipeline Release

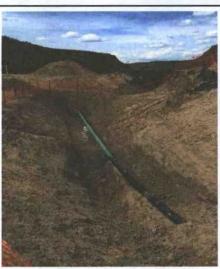
# Photograph 4

View of the partially backfilled excavation and new pipeline section, facing southwest.



# Photograph 5

View of the partially backfilled excavation and new pipeline section, facing north.





APPENDIX D

Table



# TABLE 1 Lateral K-7 (3/23/2015) Pipeline Release SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department, Oil Conservation Division, Remediation Action Level		10	NE	NE	NE	50	100		
			Stoc	kpile Samples of S	Soils Removed to Land	lfarm			
SP-1	4/9/2015	Stockpile	<0.046	< 0.046	<0.046	<0.092	ND	7.1	130
SP-2	4/9/2015	Stockpile	< 0.047	< 0.047	<0.047	0.64	0.64	65	640
V TO NOT SEE	<b>有可以不正为</b>		Stockpi	le Samples of Soil	s Used As Excavation	Backfill			
SP-3	4/9/2015	Stockpile	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<10
SP-4	4/9/2015	Stockpile	<0.050	<0.050	<0.050	< 0.099	ND	<5.0	12
		No. 10 Page 10		Samples of Soils R	emoved By Excavation	n			
C-1	4/9/2015	1 to 9	<0.050	<0.050	<0.050	0.45	0.45	11	240
C-3	4/9/2015	1 to 9	<0.047	0.12	0.084	1.4	1.6	20	150
		<b>《图》</b>		Excavation Cor	nfirmation Samples		ALL OF EXPLANANCE OF	and the same	No Track to an ex-
C-2	4/9/2015	9 to 18	< 0.049	< 0.049	<0.049	<0.099	ND	<4.9	<9.7
C-4	4/9/2015	9 to 18	<0.048	<0.048	<0.048	< 0.095	ND	<4.8	<10
C-5	4/9/2015	1 to 9	<0.049	<0.049	<0.049	<0.098	ND	<4.9	<10
C-6	4/9/2015	9 to 18	<0.048	<0.048	<0.048	< 0.095	ND	<4.8	<9.8
C-7	4/9/2015	1 to 9	<0.050	<0.050	<0.050	<0.099	ND	<5.0	<10
C-8	4/9/2015	9 to 18	<0.049	<0.049	<0.049	<0.098	ND	<4.9	<9.7
C-9	4/9/2015	1 to 9	<0.048	<0.048	<0.048	<0.097	ND	<4.8	<10
C-10	4/9/2015	9 to 18	<0.049	<0.049	<0.049	<0.097	ND	<4.9	<9.9
C-11	4/9/2015	1 to 9	< 0.047	<0.047	<0.047	< 0.094	ND	<4.7	<10
C-12	4/9/2015	9 to 18	< 0.049	<0.049	<0.049	<0.098	ND	<4.9	<10
C-13	4/9/2015	9 to 18	<0.049	<0.049	<0.049	0.15	0.15	<4.9	62
C-14	4/9/2015	18	<0.049	<0.049	<0.049	<0.099	ND	<4.9	<10
C-15	4/9/2015	18	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<10
C-16	4/15/2015	1 to 9	< 0.037	<0.037	<0.037	<0.074	ND	<3.7	<9.9
C-17	4/15/2015	1 to 9	<0.031	<0.031	<0.031	<0.061	ND	<3.1	<9.9
C-18	4/15/2015	1 to 9	< 0.035	< 0.035	<0.035	< 0.070	ND	<3.5	<9.8

Note: Concentrations in **bold** and yellow exceed the applicable OCD Remediation Action Level

ND = Not Detected above the Laboratory Reporting Limits

NE = Not established



# APPENDIX E

Laboratory Analytical Reports & Chain of Custody Documentation



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

April 14, 2015

Heather Woods

**APEX TITAN** 

606 S. Rio Grande Unit A

Aztec, NM 87410

TEL: (505) 716-2787

FAX

RE: Lateral K-7

OrderNo.: 1504456

#### Dear Heather Woods:

Hall Environmental Analysis Laboratory received 15 sample(s) on 4/10/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: C-1

Project: Lateral K-7 Collection Date: 4/9/2015 4:07:00 PM

Lab ID: 1504456-001 Matrix: SOIL Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	240	10		mg/Kg	1	4/13/2015 2:43:48 PM	18609
Surr: DNOP	106	63.5-128		%REC	1	4/13/2015 2:43:48 PM	18609
EPA METHOD 8015D: GASOLINE RAI	NGE					Analyst	NSB
Gasoline Range Organics (GRO)	11	5.0		mg/Kg	1	4/11/2015 5:25:59 PM	18615
Surr: BFB	144	80-120	S	%REC	1	4/11/2015 5:25:59 PM	18615
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst	NSB
Benzene	ND	0.050		mg/Kg	1	4/11/2015 5:25:59 PM	18615
Toluene	ND	0.050		mg/Kg	1	4/11/2015 5:25:59 PM	18615
Ethylbenzene	ND	0.050		mg/Kg	1	4/11/2015 5:25:59 PM	18615
Xylenes, Total	0.45	0.10		mg/Kg	1	4/11/2015 5:25:59 PM	18615
Surr: 4-Bromofluorobenzene	115	80-120		%REC	1	4/11/2015 5:25:59 PM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 1 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Project: Lateral K-7

Lab ID: 1504456-002 Client Sample ID: C-2

Collection Date: 4/9/2015 2:25:00 PM

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	4/13/2015 3:05:10 PM	18609
Surr: DNOP	108	63.5-128	%REC	1	4/13/2015 3:05:10 PM	18609
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	4/11/2015 5:54:41 PM	18615
Surr: BFB	94.6	80-120	%REC	1	4/11/2015 5:54:41 PM	18615
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.049	mg/Kg	1	4/11/2015 5:54:41 PM	18615
Toluene	ND	0.049	mg/Kg	1	4/11/2015 5:54:41 PM	18615
Ethylbenzene	ND	0.049	mg/Kg	1	4/11/2015 5:54:41 PM	18615
Xylenes, Total	ND	0.099	mg/Kg	1	4/11/2015 5:54:41 PM	18615
Surr: 4-Bromofluorobenzene	107	80-120	%REC	1	4/11/2015 5:54:41 PM	18615

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND

Page 2 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: C-3

Project: Lateral K-7

Collection Date: 4/9/2015 2:37:00 PM

Lab ID: 1504456-003 Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS					Analyst:	JME
Diesel Range Organics (DRO)	150	9.7		mg/Kg	1	4/13/2015 3:26:28 PM	18609
Surr: DNOP	116	63.5-128		%REC	1	4/13/2015 3:26:28 PM	18609
<b>EPA METHOD 8015D: GASOLINE RAI</b>	NGE					Analyst:	NSB
Gasoline Range Organics (GRO)	20	4.7		mg/Kg	1	4/12/2015 12:36:15 AM	18615
Surr: BFB	160	80-120	S	%REC	1	4/12/2015 12:36:15 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst:	NSB
Benzene	ND	0.047		mg/Kg	1	4/12/2015 12:36:15 AM	18615
Toluene	0.12	0.047		mg/Kg	1	4/12/2015 12:36:15 AM	18615
Ethylbenzene	0.084	0.047		mg/Kg	1	4/12/2015 12:36:15 AM	18615
Xylenes, Total	1.4	0.095		mg/Kg	1	4/12/2015 12:36:15 AM	18615
Surr: 4-Bromofluorobenzene	112	80-120		%REC	1	4/12/2015 12:36:15 AM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 3 of 18

- Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: C-4

CLIENT: APEX TITAN

Project: Lateral K-7

Collection Date: 4/9/2015 2:24:00 PM

Lab ID: 1504456-004

Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	4/13/2015 3:47:57 PM	18609
Surr: DNOP	77.7	63.5-128	%REC	1	4/13/2015 3:47:57 PM	18609
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/12/2015 1:04:52 AM	18615
Surr: BFB	91.6	J80-120	%REC	1	4/12/2015 1:04:52 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.048	mg/Kg	1	4/12/2015 1:04:52 AM	18615
Toluene	ND	0.048	mg/Kg	1	4/12/2015 1:04:52 AM	18615
Ethylbenzene	ND	0.048	mg/Kg	1	4/12/2015 1:04:52 AM	18615
Xylenes, Total	ND	0.095	mg/Kg	1	4/12/2015 1:04:52 AM	18615
Surr: 4-Bromofluorobenzene	105	80-120	%REC	1	4/12/2015 1:04:52 AM	18615

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 4 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: C-5

CLIENT: APEX TITAN Project: Lateral K-7 Collection Date: 4/9/2015 2:43:00 PM

Lab ID: 1504456-005 Matrix: SOIL Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	4/13/2015 4:09:23 PM	18609
Surr: DNOP	108	63.5-128	%REC	1	4/13/2015 4:09:23 PM	18609
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	4/12/2015 1:33:34 AM	18615
Surr: BFB	91.1	80-120	%REC	1	4/12/2015 1:33:34 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	: NSB
Benzene	ND	0.049	mg/Kg	1	4/12/2015 1:33:34 AM	18615
Toluene	ND	0.049	mg/Kg	1	4/12/2015 1:33:34 AM	18615
Ethylbenzene	ND	0.049	mg/Kg	1	4/12/2015 1:33:34 AM	18615
Xylenes, Total	ND	0.098	mg/Kg	1	4/12/2015 1:33:34 AM	18615
Surr: 4-Bromofluorobenzene	105	80-120	%REC	1	4/12/2015 1:33:34 AM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 5 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: C-6

Project: Lateral K-7

Collection Date: 4/9/2015 2:40:00 PM

Lab ID: 1504456-006

Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	4/13/2015 4:30:53 PM	18609
Surr: DNOP	92.6	63.5-128	%REC	1	4/13/2015 4:30:53 PM	18609
<b>EPA METHOD 8015D: GASOLINE RAI</b>	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/12/2015 2:02:13 AM	18615
Surr: BFB	90.5	80-120	%REC	1	4/12/2015 2:02:13 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.048	mg/Kg	1	4/12/2015 2:02:13 AM	18615
Toluene	ND	0.048	mg/Kg	1	4/12/2015 2:02:13 AM	18615
Ethylbenzene	ND	0.048	mg/Kg	1	4/12/2015 2:02:13 AM	18615
Xylenes, Total	ND	0.095	mg/Kg	1	4/12/2015 2:02:13 AM	18615
Surr: 4-Bromofluorobenzene	101	80-120	%REC	1	4/12/2015 2:02:13 AM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 6 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: C-7

CLIENT: APEX TITAN

Project: Lateral K-7

Collection Date: 4/9/2015 3:44:00 PM

Lab ID: 1504456-007

Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	E ORGANICS				Analyst	JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	4/13/2015 4:52:11 PM	18609
Surr: DNOP	93.9	63.5-128	%REC	1	4/13/2015 4:52:11 PM	18609
<b>EPA METHOD 8015D: GASOLINE RAI</b>	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	4/12/2015 2:30:50 AM	18615
Surr: BFB	89.0	80-120	%REC	1	4/12/2015 2:30:50 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.050	mg/Kg	1	4/12/2015 2:30:50 AM	18615
Toluene	ND	0.050	mg/Kg	1	4/12/2015 2:30:50 AM	18615
Ethylbenzene	ND	0.050	mg/Kg	1	4/12/2015 2:30:50 AM	18615
Xylenes, Total	ND	0.099	mg/Kg	1	4/12/2015 2:30:50 AM	18615
Surr: 4-Bromofluorobenzene	98.8	80-120	%REC	1	4/12/2015 2:30:50 AM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 7 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Project: Lateral K-7

Lab ID: 1504456-008

Matrix: SOIL

Client Sample ID: C-8

Collection Date: 4/9/2015 3:42:00 PM

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL (	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	SE ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/13/2015 5:13:34 PM	18609
Surr: DNOP	85.8	63.5-128		%REC	1	4/13/2015 5:13:34 PM	18609
EPA METHOD 8015D: GASOLINE RA	ANGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/12/2015 2:59:26 AM	18615
Surr: BFB	89.8	80-120		%REC	1	4/12/2015 2:59:26 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst	NSB
Benzene	ND	0.049		mg/Kg	1	4/12/2015 2:59:26 AM	18615
Toluene	ND	0.049		mg/Kg	1	4/12/2015 2:59:26 AM	18615
Ethylbenzene	ND	0.049		mg/Kg	1	4/12/2015 2:59:26 AM	18615
Xylenes, Total	ND	0.098		mg/Kg	1	4/12/2015 2:59:26 AM	18615
Surr: 4-Bromofluorobenzene	99.8	80-120		%REC	1	4/12/2015 2:59:26 AM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 8 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: C-9

CLIENT: APEX TITAN
Project: Lateral K-7

Collection Date: 4/9/2015 3:15:00 PM

Lab ID: 1504456-009

Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	: JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	4/13/2015 5:34:56 PM	18609
Surr: DNOP	85.6	63.5-128	%REC	1	4/13/2015 5:34:56 PM	18609
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/12/2015 3:28:01 AM	18615
Surr: BFB	90.5	80-120	%REC	1	4/12/2015 3:28:01 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	: NSB
Benzene	ND	0.048	mg/Kg	1	4/12/2015 3:28:01 AM	18615
Toluene	ND	0.048	mg/Kg	1	4/12/2015 3:28:01 AM	18615
Ethylbenzene	ND	0.048	mg/Kg	1	4/12/2015 3:28:01 AM	18615
Xylenes, Total	ND	0.097	mg/Kg	1	4/12/2015 3:28:01 AM	18615
Surr: 4-Bromofluorobenzene	101	80-120	%REC	1	4/12/2015 3:28:01 AM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 9 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: C-10

Project: L

Lateral K-7

Collection Date: 4/9/2015 3:28:00 PM

Lab ID: 1504456-010

Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGI	E ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/13/2015 5:56:23 PM	18609
Surr: DNOP	82.6	63.5-128		%REC	1	4/13/2015 5:56:23 PM	18609
EPA METHOD 8015D: GASOLINE RA	NGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/12/2015 3:56:42 AM	18615
Surr: BFB	90.0	80-120		%REC	1	4/12/2015 3:56:42 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst	NSB
Benzene	ND	0.049		mg/Kg	1	4/12/2015 3:56:42 AM	18615
Toluene	ND	0.049		mg/Kg	1	4/12/2015 3:56:42 AM	18615
Ethylbenzene	ND	0.049		mg/Kg	1	4/12/2015 3:56:42 AM	18615
Xylenes, Total	ND	0.097		mg/Kg	1	4/12/2015 3:56:42 AM	18615
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/12/2015 3:56:42 AM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 10 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Project: Lateral K-7

Lab ID: 1504456-011 Matrix: SOIL

Client Sample ID: C-11

Collection Date: 4/9/2015 3:21:00 PM

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 6:17:40 PM	18609
Surr: DNOP	90.2	63.5-128		%REC	1	4/13/2015 6:17:40 PM	18609
EPA METHOD 8015D: GASOLINE RAN	NGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/12/2015 4:25:23 AM	18615
Surr: BFB	89.4	80-120		%REC	1	4/12/2015 4:25:23 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst	NSB
Benzene	ND	0.047		mg/Kg	1	4/12/2015 4:25:23 AM	18615
Toluene	ND	0.047		mg/Kg	1	4/12/2015 4:25:23 AM	18615
Ethylbenzene	ND	0.047		mg/Kg	1	4/12/2015 4:25:23 AM	18615
Xylenes, Total	ND	0.094		mg/Kg	1	4/12/2015 4:25:23 AM	18615
Surr: 4-Bromofluorobenzene	99.9	80-120		%REC	1	4/12/2015 4:25:23 AM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 11 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: C-12

Project: Lateral K-7 Collection Date: 4/9/2015 3:24:00 PM

Lab ID: 1504456-012 Matrix: SOIL Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGI	E ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 6:39:09 PM	18609
Surr: DNOP	89.0	63.5-128		%REC	1	4/13/2015 6:39:09 PM	18609
EPA METHOD 8015D: GASOLINE RA	NGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/12/2015 4:54:01 AM	18615
Surr: BFB	91.0	80-120		%REC	1	4/12/2015 4:54:01 AM	18615
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst	NSB
Benzene	ND	0.049		mg/Kg	1	4/12/2015 4:54:01 AM	18615
Toluene	ND	0.049		mg/Kg	1	4/12/2015 4:54:01 AM	18615
Ethylbenzene	ND	0.049		mg/Kg	1	4/12/2015 4:54:01 AM	18615
Xylenes, Total	ND	0.098		mg/Kg	1	4/12/2015 4:54:01 AM	18615
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	4/12/2015 4:54:01 AM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 12 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: C-13

Project: La

Lateral K-7

Collection Date: 4/9/2015 4:05:00 PM

Lab ID: 1504456-013

Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	JME
Diesel Range Organics (DRO)	62	10	mg/Kg	1	4/13/2015 7:00:38 PM	18609
Surr: DNOP	81.9	63.5-128	%REC	1	4/13/2015 7:00:38 PM	18609
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	4/13/2015 3:01:45 PM	18615
Surr: BFB	105	80-120	%REC	1	4/13/2015 3:01:45 PM	18615
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.049	mg/Kg	1	4/13/2015 3:01:45 PM	18615
Toluene	ND	0.049	mg/Kg	1	4/13/2015 3:01:45 PM	18615
Ethylbenzene	ND	0.049	mg/Kg	1	4/13/2015 3:01:45 PM	18615
Xylenes, Total	0.15	0.098	mg/Kg	1	4/13/2015 3:01:45 PM	18615
Surr: 4-Bromofluorobenzene	107	80-120	%REC	1	4/13/2015 3:01:45 PM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 13 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: C-14

Project: Lateral K-7

Collection Date: 4/9/2015 2:20:00 PM

Lab ID: 150

1504456-014 Matrix: SOIL

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 7:22:11 PM	18609
Surr: DNOP	80.5	63.5-128		%REC	1	4/13/2015 7:22:11 PM	18609
EPA METHOD 8015D: GASOLINE RA	NGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/13/2015 3:30:28 PM	18615
Surr: BFB	89.5	80-120		%REC	1	4/13/2015 3:30:28 PM	18615
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst	NSB
Benzene	ND	0.049		mg/Kg	1	4/13/2015 3:30:28 PM	18615
Toluene	ND	0.049		mg/Kg	1	4/13/2015 3:30:28 PM	18615
Ethylbenzene	ND	0.049		mg/Kg	1	4/13/2015 3:30:28 PM	18615
Xylenes, Total	ND	0.099		mg/Kg	1	4/13/2015 3:30:28 PM	18615
Surr: 4-Bromofluorobenzene	105	80-120		%REC	1	4/13/2015 3:30:28 PM	18615

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 14 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504456

Date Reported: 4/14/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Lateral K-7

TITAN Client Sample ID: C-15

Lab ID: 1504456-015

Project:

Matrix: SOIL

**Collection Date:** 4/9/2015 3:11:00 PM **Received Date:** 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS					Analyst	JME
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2015 7:43:38 PM	18609
Surr: DNOP	79.6	63.5-128		%REC	1	4/13/2015 7:43:38 PM	18609
EPA METHOD 8015D: GASOLINE RA	NGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/13/2015 4:28:37 PM	18615
Surr: BFB	92.8	80-120		%REC	1	4/13/2015 4:28:37 PM	18615
EPA METHOD 8021B: VOLATILES						Analyst	NSB
Benzene	ND	0.048		mg/Kg	1	4/13/2015 4:28:37 PM	18615
Toluene	ND	0.048		mg/Kg	1	4/13/2015 4:28:37 PM	18615
Ethylbenzene	ND	0.048		mg/Kg	1	4/13/2015 4:28:37 PM	18615
Xylenes, Total	ND	0.096		mg/Kg	1	4/13/2015 4:28:37 PM	18615
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	4/13/2015 4:28:37 PM	18615

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

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 15 of 18

- P Sample pH Not In Range
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1504456

14-Apr-15

Client:

APEX TITAN

Project:

Lateral K-7

Sample ID MB-18609	Samp	ype: ME	BLK	Tes	tCode: El	PA Method	8015D: Dies	el Range (	Organics	
Client ID: PBS	Batc	n ID: 18	609	F	RunNo: 2	5459				
Prep Date: 4/10/2015	Analysis [	ate: 4/	13/2015	S	SeqNo: 7	53898	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	12		10.00		123	63.5	128			

Sample ID LCS-18609 SampType: LCS				TestCode: EPA Method 8015D: Diesel Range Organics								
Client ID: LCSS	Batcl	h ID: 18	609	F	RunNo: 2	5459						
Prep Date: 4/10/2015	Analysis D	Date: 4/	13/2015	8	SeqNo: 7	54238	Units: mg/F	<b>(</b> g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Diesel Range Organics (DRO)	49	10	50.00	0	97.8	67.8	130					
Surr: DNOP	5.6		5.000		113	63.5	128					

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Page 16 of 18

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1504456

14-Apr-15

Client:

APEX TITAN

Project:

Lateral K-7

Sample ID MB-18613

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS

Batch ID: 18613

RunNo: 25449

Prep Date: 4/10/2015

Analysis Date: 4/11/2015

SeqNo: 753290

Units: %REC

HighLimit

Analyte

SPK value SPK Ref Val 1000

%REC

%RPD

Qual

Surr: BFB

890

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

Sample ID LCS-18613

Client ID: LCSS

Batch ID: 18613

RunNo: 25449

96.3

Prep Date: 4/10/2015

Analysis Date: 4/11/2015

SeqNo: 753291

Units: %REC

Qual

Analyte

PQL

SPK value SPK Ref Val %REC LowLimit

80

%RPD HighLimit 120

**RPDLimit** 

Surr: BFB

Sample ID MB-18615

960

TestCode: EPA Method 8015D: Gasoline Range

**RPDLimit** 

Client ID: PBS

SampType: MBLK Batch ID: 18615

SPK value SPK Ref Val %REC LowLimit

RunNo: 25449

Units: mg/Kg

120

Analyte

Prep Date: 4/10/2015

Analysis Date: 4/11/2015

SampType: LCS

Batch ID: 18615

SeqNo: 753308

Gasoline Range Organics (GRO)

ND

Result

1000

80

HighLimit %RPD **RPDLimit** Qual

Surr: BFB

Client ID: LCSS

Sample ID LCS-18615

910

90.7

TestCode: EPA Method 8015D: Gasoline Range

RunNo: 25449

Analyte

Prep Date: 4/10/2015

Analysis Date: 4/11/2015

PQL

5.0

SeqNo: 753309

Units: mg/Kg

%RPD

**RPDLimit** Qual

Gasoline Range Organics (GRO) Surr: BFB

25 980 5.0

25.00 1000

SPK value SPK Ref Val

%REC 102 97.8

80

LowLimit

130 120

**HighLimit** 

# Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range E
- Analyte detected below quantitation limits 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit P Sample pH Not In Range
- Reporting Detection Limit

Page 17 of 18

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1504456

14-Apr-15

Client:

APEX TITAN

Project:

Lateral K-7

Sample ID I	MB-18613
-------------	----------

SampType: MBLK

TestCode: EPA Method 8021B: Volatiles

LowLimit

Client ID: PBS Batch ID: 18613

RunNo: 25449

Prep Date: 4/10/2015 Analysis Date: 4/11/2015

SeqNo: 753332

Units: %REC

Analyte

Result

Surr: 4-Bromofluorobenzene

1.0

SPK value SPK Ref Val %REC HighLimit

%RPD

%RPD

Qual

Sample ID LCS-18613

SampType: LCS

TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS

Batch ID: 18613

RunNo: 25449

Units: %REC

Prep Date: 4/10/2015 Analysis Date: 4/11/2015

PQL

SeqNo: 753333

**RPDLimit** 

Result

SPK value SPK Ref Val

1.000

%REC LowLimit

SeqNo: 753339

HighLimit 120 **RPDLimit** 

Qual

Surr: 4-Bromofluorobenzene

1.1

1.000

107

SampType: MBLK

TestCode: EPA Method 8021B: Volatiles

80

Sample ID MB-18615 Client ID: PBS

Batch ID: 18615 Analysis Date: 4/11/2015 RunNo: 25449

Units: mg/Kg

Analyte

Prep Date:

4/10/2015

Result ND 0.050

SPK value SPK Ref Val %REC LowLimit

HighLimit %RPD **RPDLimit** 

Qual

Benzene

Toluene Ethylbenzene

Xylenes, Total

ND 0.050 ND 0.050 ND

1.0

0.97

0.10

1.000

105

120

80

Sample ID LCS-18615

Surr: 4-Bromofluorobenzene

SampType: LCS

TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS Prep Date: 4/10/2015

Batch ID: 18615

Analysis Date: 4/11/2015

RunNo: 25449

Units: mg/Kg

**RPDLimit** Qual

Analyte Benzene Toluene Ethylbenzene

PQL Result 1.1 0.050 0.050

SPK value SPK Ref Val 1.000

0

0

%REC LowLimit 106 97.5

SeqNo: 753340

76.6 75

HighLimit

%RPD 128

124 126

Xylenes, Total Surr: 4-Bromofluorobenzene

0.050 1.0 3.2 0.10 1.1

1.000 3.000

1.000

1.000

0

RL

0 104 106 108

79.5 78.8 80

124 120

Qualifiers:

Spike Recovery outside accepted recovery limits

Value exceeds Maximum Contaminant Level. E Value above quantitation range

Analyte detected below quantitation limits

0 RSD is greater than RSDlimit R RPD outside accepted recovery limits B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit

P Sample pH Not In Range Reporting Detection Limit Page 18 of 18



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: APEX AZTEC Work Order Num	ber: 1504456		RcptNo;	1
Received by/date: 2/10/15  Logged By: Lindsay Mangin 4/10/2015 6:00:00  Completed By: Lindsay Mangin 4/10/2015 8:25:07		O-4Mgo		
Chain of Custody	2			
1 Custody seals intact on sample bottles?	Yes	No L	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 L	
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 🗸	# of preserved	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗹	No 🗆	bottles checked for pH: (<2 or	>12 unless noted
13. Are matrices correctly identified on Chain of Custody?	Yes 🗹	No 🗌	Adjusted?	
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 🗌	Checked by:	
Special Handling (if applicable)				
16. Was client notified of all discrepancies with this order?	Yes 🗌	No 🗆	NA 🗷	
Person Notified: Dat  By Whom: Via:  Regarding:  Client Instructions:		Phone Fax	☐ In Person	
17. Additional remarks				
18. Cooler Information  Cooler No   Temp °C   Condition   Seal Intact   Seal No	Seal Date	Signed By	1	

CHAIN OF CUSTODY RECORD Lab use only ANALYSIS Due Date: REQUESTED Laboratory: Hall Environmental APEX Address: Albuquerque, NM Temp, of coolers when received (C°): Z Office Location Aztec, NM Contact: Andy Freeman Phone: PO/SO#: Direct Bill to Enterprise Project Manager Heather Woods Sampler's Signature Sampler's Name BUZI BTEX Steather M. Woo Heather Woods Project Name Proj. No. No/Type of Containers Lateral K-7 7250415005 Start Depth End Depth A/G 1LL Class Jar P/O Identifying Marks of Sample(s) Matrix Date Time Lab Sample ID (Lab Use Only) 4/15/15 1607 504456 -00 C-1 X 4/9/15 1425 C-2 X 1 4/9/15 1437 C-3 X C-4 4/9/15 1424 X X 1 4/9/15 1443 C-5 X -100 4/9/15 1440 C-6 8 X 4/9/15 1544 C-7 X 4/9/15 1542 C -8 X X 4/9/15 1515 X X C - 9 -OIC C - 10 X 4/9/15 1528 X ☐ 25% Rush Turn around time XNormal ☐ 50% Rush ☐ 100% Rush Relinquished by (Signature) Received by: (Signature) Date: Time: Direct Bill to Enterprise 1944 x418/15/ 1/9/15 iem Attn. Tom Long / Johnny Sandowel Received by: (Signature) Relinquished by (Signature) Date: Time: Time: Date: Non- AFE: N20591 Received/by: (Signature) Time: Relinquished by (Signature) Date: Time: Date: Received by: (Signature) Date: Time: Relinquished by (Signature) Date: Time: O - Oil A - Air Bag C - Charcoal tube SL - sludge WW - Wastewater W - Water S - Soil SD - Solid L - Liquid Matrix 250 ml - Glass wide mouth P/O - Plastic or other VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter

Container

																		CH	AIN OF	CUSTODY RECORD
Proje	PEX e Locatio  ect Manager's Name	n Azteo		ě		Laboratory: Address: A Contact: 4 Phone: PO/SO#: 1 Sampler's Sign Heath	Andy Direct	Fr. Bill	eema to E	a Enter				RE	ALYSI: QUES	1 1 1				Lab use only Due Date:  Temp. of coolers when received (C*): Z, I  1 2 3 4 5  Page 2 of 2
Proj. N			Proje	ect Na	ame	Leave	<i>V</i> -1.	00		pe of C	Contair	ners	_		87	7 / / /	//	/	/	
7250	415005				il K-7										J n		/ /	/ /		
Matrix	Date	Time	CoEp	Grab	Identifying M.	arks of Sample(s)	Start	End	VOA	A/G	250 ml	Glass	P/O	8	BOLS TO					Sample ID (Lab Use Only)
5	4/9/15	1521			C-il							1		X	X				150	X4156-011
5	4/9/15	1524			C-12							1		X	X					-012
5	4/9/15	1605			C-13							1		X	x					-013
	4/9/15				C-14							1		X	×					-014
	4/9/15				C-15							1		Х	x					-015
														-			-			
					1413	++6-2								-						
								=												
	round time	(Signatura)			25% Rush Date:		100% red by:		eture)		T	Date	- 1 .	Т	ime:	NOTES:				
Ho	duished by	Woo.	2	i	4/9/15 19	144	XL				1	241	CH	50	400	NOTES: Direct	B:# 4	to En	terprise	4
Relina	quished by	(Signature)	)		Date:	Time: Receiv	ved by:	(Signa	ature)			Date	e: ` j	T	ime:	Atin.	Tom L	ong /	<b>Johnn</b>	y Sandovel
Relino	quished by	(Signature)	)		Date:	Time: Recei	ved by:	(Signa	ature)			Date	e:	Т	īme:	Non-	AFE:	NZ	0591	
Relino	quished by	(Signature	)		Date:	Time: Recei	ved by:	(Signa	ature)		1	Date	e:	Т	īme:					
Matrix Contai		V - Wastewa A - 40 ml vi			W - Water A/G - Amber /	S - Soil SD - So Or Glass 1 Liter		L - Liqui 250 ml -	d A	- Air B	ag outh			rcoal t	tube or other_	SL - siudge	- Oil		-	



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

April 17, 2015

Heather Woods
APEX TITAN
606 S. Rio Grande Unit A
Aztec, NM 87410

TEL: (505) 716-2787

FAX

RE: Lateral K-7

OrderNo.: 1504687

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/16/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1504687

Date Reported: 4/17/2015

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: C-16

Project:

Lateral K-7

Collection Date: 4/15/2015 4:40:00 PM

Lab ID: 1504687-001

Matrix: MEOH (SOIL)

Received Date: 4/16/2015 8:00:00 AM

Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGI	E ORGANICS		7 1 1		Analyst:	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	4/16/2015 9:54:57 AM	18708
Surr: DNOP	78.9	57.9-140	%REC	1	4/16/2015 9:54:57 AM	18708
EPA METHOD 8015D: GASOLINE RAI	NGE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	3.7	mg/Kg	1	4/16/2015 11:19:17 AM	18710
Surr: BFB	91.1	80-120	%REC	1	4/16/2015 11:19:17 AM	18710
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.037	mg/Kg	1	4/16/2015 11:19:17 AM	18710
Toluene	ND	0.037	mg/Kg	1	4/16/2015 11:19:17 AM	18710
Ethylbenzene	ND	0.037	mg/Kg	1	4/16/2015 11:19:17 AM	18710
Xylenes, Total	ND	0.074	mg/Kg	1	4/16/2015 11:19:17 AM	18710
Surr: 4-Bromofluorobenzene	96.8	80-120	%REC	1	4/16/2015 11:19:17 AM	18710

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

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 1 of 6

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504687

Date Reported: 4/17/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Client Sample ID: C-17

Project: Lateral K-7 Collection Date: 4/15/2015 2:40:00 PM

Lab ID: 1504687-002 Matrix: MEOH (SOIL) Received Date: 4/16/2015 8:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	4/16/2015 10:16:30 AM	18708
Surr: DNOP	86.2	57.9-140	%REC	1	4/16/2015 10:16:30 AM	18708
EPA METHOD 8015D: GASOLINE RAN	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	3.1	mg/Kg	1	4/16/2015 11:48:06 AM	18710
Surr: BFB	89.4	80-120	%REC	1	4/16/2015 11:48:06 AM	18710
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.031	mg/Kg	1	4/16/2015 11:48:06 AM	18710
Toluene	ND	0.031	mg/Kg	1	4/16/2015 11:48:06 AM	18710
Ethylbenzene	ND	0.031	mg/Kg	1	4/16/2015 11:48:06 AM	18710
Xylenes, Total	ND	0.061	mg/Kg	1	4/16/2015 11:48:06 AM	18710
Surr: 4-Bromofluorobenzene	96.3	80-120	%REC	1	4/16/2015 11:48:06 AM	18710

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 2 of 6

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504687

Date Reported: 4/17/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Project: Lateral K-7

Lab ID: 1504687-003

Client Sample ID: C-18

Collection Date: 4/15/2015 3:45:00 PM

Matrix: MEOH (SOIL) Received Date: 4/16/2015 8:00:00 AM

Analyses	Result	RL Qu	nal Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst:	BCN
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	4/16/2015 10:37:57 AM	18708
Surr: DNOP	82.2	57.9-140	%REC	1	4/16/2015 10:37:57 AM	18708
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	3.5	mg/Kg	1	4/16/2015 12:16:53 PM	18710
Surr: BFB	87.3	80-120	%REC	1	4/16/2015 12:16:53 PM	18710
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst:	NSB
Benzene	ND	0.035	mg/Kg	1	4/16/2015 12:16:53 PM	18710
Toluene	ND	0.035	mg/Kg	1	4/16/2015 12:16:53 PM	18710
Ethylbenzene	ND	0.035	mg/Kg	1	4/16/2015 12:16:53 PM	18710
Xylenes, Total	ND	0.070	mg/Kg	1	4/16/2015 12:16:53 PM	18710
Surr: 4-Bromofluorobenzene	93.6	80-120	%REC	1	4/16/2015 12:16:53 PM	18710

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 3 of 6

- P Sample pH Not In Range
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1504687

17-Apr-15

Client:

APEX TITAN

Project:

Lateral K-7

Sample ID MB-18708	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015D: Dies	el Range (	Organics	
Client ID: PBS	Batcl	h ID: 18	708	F	RunNo: 2	5548				
Prep Date: 4/15/2015	Analysis D	Date: 4/	16/2015	S	SeqNo: 7	56791	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	8.9		10.00		88.9	63.5	128			

Sample ID LCS-18708	SampType: LCS			TestCode: EPA Method 8015D: Diesel Range Organics								
Client ID: LCSS	Batch	ID: 18	708	R	RunNo: 25548							
Prep Date: 4/15/2015	Analysis D	ate: 4/	16/2015	S	SeqNo: 7	56805	Units: mg/k	<b>(</b> g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Diesel Range Organics (DRO)	47	10	50.00	0	93.0	67.8	130					
Surr: DNOP	4.7		5.000		93.5	57.9	140					

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Η
- ND Not Detected at the Reporting Limit

Page 4 of 6

- P Sample pH Not In Range
- Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1504687

17-Apr-15

Client:

APEX TITAN

Project:

Lateral K-7

Sample ID MB-18710	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batcl	n ID: 18	710	F	tunNo: 2	5555						
Prep Date: 4/15/2015	Analysis D	ate: 4/	16/2015	8	eqNo: 7	57273	Units: mg/k	(g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Range Organics (GRO)	ND	5.0										
Surr: BFB	930		1000		93.2	80	120					

Sample ID LCS-18710	Samp	Type: LC	s	Tes	tCode: E	PA Method	8015D: Gaso	oline Rang	е	
Client ID: LCSS	Batc	h ID: 18	710	R	RunNo: 2	5555				
Prep Date: 4/15/2015	Analysis [	Date: 4/	16/2015	S	SeqNo: 7	57274	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	100	64	130			
Surr: BFB	960		1000		95.8	80	120			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Page 5 of 6

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1504687

17-Apr-15

Client:

APEX TITAN

Project:

Lateral K-7

Sample ID MB-18710	Samp	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batc	h ID: 18	710	F	RunNo: 2	5555				
Prep Date: 4/15/2015	Analysis [	Date: 4/	16/2015	8	SeqNo: 7	57283	Units: mg/M	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.92		1.000		92.4	80	120			

Sample ID LCS-18710	Sampl	ype: LC	s	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batcl	h ID: 18	710	F	RunNo: 2	5555				
Prep Date: 4/15/2015	Analysis D	Date: 4/	16/2015	8	SeqNo: 7	57284	Units: mg/F	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	109	76.6	128			
Toluene	1.0	0.050	1.000	0	102	75	124			
Ethylbenzene	1.1	0.050	1.000	0	107	79.5	126			
Xylenes, Total	3.2	0.10	3.000	0	106	78.8	124			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Page 6 of 6



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: APEX AZTEC Work Order Number	r. 1504687		RcptNo: 1
Received by/date: Ashley Gallegos 4/16/2015 8:00:00 Al Completed By: Ashley Gallegos 4/16/2015 8:24:56 Al Reviewed By: OS 04/16/15		A	
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			
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?	Yes 🗹	No 🗆	# of preserved bottles checked for pH: (<2 or >12 unless note
(Note discrepancies on chain of custody)  13. Are matrices correctly identified on Chain of Custody?	Yes 🗹	No 🗆	Adjusted?
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 🗌	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: Regarding: Client Instructions:	eMail	Phone  Fax	_ In Person
17. Additional remarks:			
18. Cooler Information  Cooler No Temp °C Condition Seal Intact Seal No 1 1 1.0 Good Yes	Seal Date	Signed By	

C	hain-	of-Cu	stody Record	Turn-Around	Time:	(5)							-	NER.		-	BIB	AEI	NT.		
lient:	Apex 7	ITAN .	Int	☐ Standard	Rush	Same Day				A	N	AL	YS	<b>SIS</b>	S L	AE	30		TO		- 1
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				Project #:				Te	l. 50	5-34	5-39	75	F	ax	505-	345-	4107			107	
hone #	<b>#</b> :			725041	5005							Α	naly	sis	Req	uest			-		
mail or	Fax#:			Project Mana	ger:		1	nly)	3					04)	"						
A/QC F	Package: dard		□ Level 4 (Full Validation)	Heathe	r Wood	24	MP(8021)	TPH (Gas only)	30/10			SIMS)		PO4,S	PCB's						
\ccredi		□ Othe	er	Sampler: H				+ TPH	30 / DF	18.1)	04.1)	8270		J <sub>3</sub> ,NO <sub>2</sub>	1 8082		(A	1			or N)
] EDD	(Type)_			Sample Temp		· D	+ ABB	BE	(G	4 0	Q 22	ō	tals	N.	ides	8	9	1			3
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		BTEX + LO	BTEX + MTBE	TPH 8015B (GRO / DRO /	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,CI,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
115/15	1640	Soil	C-16	MUCH KILL	Me OH/	-001	X	-	X									T			
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Date: 15/15 Date:	Time: 1945 Time:	Relinquish Relinquish	the M. Woods	Received by:	mga	Date Time 04/16/15	Rer	nark	A A	ive i	AF	ill om l E:	You You	En 3/20	kerp Jol 150	rix nnn	ily s	Sanc	dova	ę	



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

April 22, 2015

Heather Woods **APEX TITAN** 606 S. Rio Grande Unit A Aztec, NM 87410

TEL: (505) 716-2787

FAX

RE: Lateral K-7

OrderNo.: 1504521

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/10/2015 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1504521

Date Reported: 4/22/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT: APEX TITAN** 

Project: Lateral K-7

Lab ID: 1504521-001

Client Sample ID: SP-1

Collection Date: 4/9/2015 3:49:00 PM

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS					Analyst	BCN
Diesel Range Organics (DRO)	130	9.7		mg/Kg	1	4/14/2015 2:49:08 PM	18641
Surr: DNOP	106	63.5-128		%REC	1	4/14/2015 2:49:08 PM	18641
EPA METHOD 8015D: GASOLINE RAI	NGE					Analyst	NSB
Gasoline Range Organics (GRO)	7.1	4.6		mg/Kg	1	4/16/2015 11:45:34 PM	18657
Surr: BFB	144	80-120	S	%REC	1	4/16/2015 11:45:34 PM	18657
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst	NSB
Benzene	ND	0.046		mg/Kg	1	4/16/2015 12:17:42 AM	18657
Toluene	ND	0.046		mg/Kg	1	4/16/2015 12:17:42 AM	18657
Ethylbenzene	ND	0.046		mg/Kg	1	4/16/2015 12:17:42 AM	18657
Xylenes, Total	ND	0.092		mg/Kg	1	4/16/2015 12:17:42 AM	18657
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/16/2015 12:17:42 AM	18657

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 1 of 8

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504521

Date Reported: 4/22/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Project: Lateral K-7

Lab ID: 1504521-002

Client Sample ID: SP-2

Collection Date: 4/9/2015 3:54:00 PM

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS					Analyst	BCN
Diesel Range Organics (DRO)	640	10		mg/Kg	1	4/14/2015 4:49:07 PM	18641
Surr: DNOP	117	63.5-128		%REC	1	4/14/2015 4:49:07 PM	18641
<b>EPA METHOD 8015D: GASOLINE RAI</b>	NGE					Analyst:	NSB
Gasoline Range Organics (GRO)	65	23		mg/Kg	5	4/17/2015 12:14:19 AM	18657
Surr: BFB	172	80-120	S	%REC	5	4/17/2015 12:14:19 AM	18657
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst:	NSB
Benzene	ND	0.047		mg/Kg	1	4/16/2015 12:46:23 AM	18657
Toluene	ND	0.047		mg/Kg	1	4/16/2015 12:46:23 AM	18657
Ethylbenzene	ND	0.047		mg/Kg	1	4/16/2015 12:46:23 AM	18657
Xylenes, Total	0.64	0.093		mg/Kg	1	4/16/2015 12:46:23 AM	18657
Surr: 4-Bromofluorobenzene	138	80-120	S	%REC	1	4/16/2015 12:46:23 AM	18657

Matrix: SOIL

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

### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 2 of 8

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504521

Date Reported: 4/22/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Project: Lateral K-7

Lab ID: 1504521-003

Client Sample ID: SP-3

Collection Date: 4/9/2015 3:59:00 PM

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE	ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	4/14/2015 5:10:43 PM	18641
Surr: DNOP	110	63.5-128	%REC	1	4/14/2015 5:10:43 PM	18641
EPA METHOD 8015D: GASOLINE RAN	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/17/2015 12:43:02 AM	18657
Surr: BFB	93.5	80-120	%REC	1	4/17/2015 12:43:02 AM	18657
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.048	mg/Kg	1	4/16/2015 1:15:01 AM	18657
Toluene	ND	0.048	mg/Kg	1	4/16/2015 1:15:01 AM	18657
Ethylbenzene	ND	0.048	mg/Kg	1	4/16/2015 1:15:01 AM	18657
Xylenes, Total	ND	0.096	mg/Kg	1	4/16/2015 1:15:01 AM	18657
Surr: 4-Bromofluorobenzene	90.8	80-120	%REC	1	4/16/2015 1:15:01 AM	18657

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 3 of 8

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1504521

Date Reported: 4/22/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Project: Lateral K-7

Lab ID: 1504521-004

Client Sample ID: SP-4

Collection Date: 4/9/2015 4:12:00 PM

Received Date: 4/10/2015 6:00:00 AM

Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANG	E ORGANICS				Analyst	BCN
Diesel Range Organics (DRO)	12	10	mg/Kg	1	4/14/2015 5:32:06 PM	18641
Surr: DNOP	112	63.5-128	%REC	1	4/14/2015 5:32:06 PM	18641
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	4/17/2015 1:11:45 AM	18657
Surr: BFB	88.7	80-120	%REC	1	4/17/2015 1:11:45 AM	18657
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.050	mg/Kg	1	4/16/2015 1:43:42 AM	18657
Toluene	ND	0.050	mg/Kg	1	4/16/2015 1:43:42 AM	18657
Ethylbenzene	ND	0.050	mg/Kg	1	4/16/2015 1:43:42 AM	18657
Xylenes, Total	ND	0.099	mg/Kg	1	4/16/2015 1:43:42 AM	18657
Surr: 4-Bromofluorobenzene	93.1	80-120	%REC	1	4/16/2015 1:43:42 AM	18657

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 4 of 8

- P Sample pH Not In Range
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1504521

22-Apr-15

Client:

APEX TITAN

Project:

Lateral K-7

Sample ID MB-18641	SampT	ype: ME	BLK	Tes	Code: El	PA Method	8015D: Dies	el Range (	Organics	
Client ID: PBS	Batcl	ID: 18	641	R	unNo: 2	5489				
Prep Date: 4/13/2015	Analysis D	ate: 4/	14/2015	S	eqNo: 7	54938	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								H
Surr: DNOP	9.9		10.00		98.8	63.5	128			

Sample ID LCS-18641	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D: Dies	el Range (	Organics	
Client ID: LCSS	Batch	n ID: 18	641	F	RunNo: 2	5489				
Prep Date: 4/13/2015	Analysis D	Date: 4/	14/2015	8	SeqNo: 7	54939	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.0	67.8	130			
Surr: DNOP	4.9		5.000		97.6	63.5	128			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Page 5 of 8

# Hall Environmental Analysis Laboratory, Inc.

WO#: 1504521

22-Apr-15

Client:

APEX TITAN

Sample ID MB-18665	SampType: MBLK	TestCode: EPA Method	8015D: Gasoline Range	Э
Client ID: PBS	Batch ID: 18665	RunNo: 25496		
Prep Date: 4/13/2015	Analysis Date: 4/14/2015	SeqNo: 755452	Units: %REC	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Surr: BFB	870 1000	87.2 80	120	and the
Sample ID LCS-18665	SampType: LCS	TestCode: EPA Method	8015D: Gasoline Range	е
Client ID: LCSS	Batch ID: 18665	RunNo: 25496		
Prep Date: 4/13/2015	Analysis Date: 4/14/2015	SeqNo: 755453	Units: %REC	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Surr: BFB	960 1000	96.3 80	120	3
Sample ID MB-18657	SampType: MBLK	TestCode: EPA Method	8015D: Gasoline Range	е
Client ID: PBS	Batch ID: 18657	RunNo: 25496		
Prep Date: 4/13/2015	Analysis Date: 4/14/2015	SeqNo: 755490	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 900 1000	89.7 80	120	
Sample ID LCS-18657	SampType: LCS	TestCode: EPA Method	8015D: Gasoline Range	е
Client ID: LCSS	Batch ID: 18657	RunNo: 25496		
Prep Date: 4/13/2015	Analysis Date: 4/14/2015	SeqNo: 755491	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Gasoline Range Organics (GRO)	26 5.0 25.00	0 102 64	130	
Surr: BFB	970 1000	97.0 80	120	
Sample ID MB-18710	SampType: MBLK	TestCode: EPA Method	8015D: Gasoline Range	е
Client ID: PBS	Batch ID: 18710	RunNo: 25555		
Prep Date: 4/15/2015	Analysis Date: 4/16/2015	SeqNo: 757273	Units: %REC	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Surr: BFB	930 1000	93.2 80	120	
Sample ID LCS-18710	SampType: LCS	TestCode: EPA Method	8015D: Gasoline Range	9
Client ID: LCSS	Batch ID: 18710	RunNo: 25555		

#### Qualifiers:

Analyte

Surr: BFB

Value exceeds Maximum Contaminant Level.

Result

960

PQL

- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

LowLimit

80

HighLimit

120

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

95.8

Page 6 of 8

**RPDLimit** 

Qual

%RPD

P Sample pH Not In Range

SPK value SPK Ref Val %REC

1000

RL Reporting Detection Limit

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1504521

22-Apr-15

Client:

APEX TITAN

Project:

Lateral K-7

Sample ID	MB-18665
-----------	----------

SampType: MBLK

TestCode: EPA Method 8021B: Volatiles

Client ID:

PBS

Batch ID: 18665

RunNo: 25496

Prep Date: 4/13/2015

Analysis Date: 4/14/2015

SeqNo: 755514

Units: %REC

Result

%REC

Qual

0.98

SPK value SPK Ref Val 1.000

97.8

HighLimit

Surr: 4-Bromofluorobenzene

Sample ID LCS-18665

SampType: LCS

Analysis Date: 4/14/2015

PQL

TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS Prep Date: 4/13/2015 Batch ID: 18665

RunNo: 25496 SeqNo: 755515

Units: %REC

%RPD

%RPD

Result 1.1

1.000

SPK value SPK Ref Val %REC LowLimit 110

HighLimit

80

**RPDLimit** 

**RPDLimit** 

Qual

Surr: 4-Bromofluorobenzene

4/13/2015

TestCode: EPA Method 8021B: Volatiles

SeqNo: 755526

120

Client ID:

Prep Date:

Sample ID MB-18657

SampType: MBLK

RunNo: 25496

Units: mg/Kg

Result PQL ND

0.050 0.050

Batch ID: 18657

Analysis Date: 4/14/2015

SPK value SPK Ref Val %REC LowLimit

HighLimit

%RPD

**RPDLimit** 

Qual

Analyte Benzene

Toluene

Ethylbenzene Xylenes, Total

PBS

0.050 ND ND 0.10

1.000

SPK value SPK Ref Val

1.000

104

80

120

Surr: 4-Bromofluorobenzene Sample ID LCS-18657

SampType: LCS

Analysis Date: 4/14/2015

PQL

0.050

0.050

0.050

0.10

TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS Prep Date: 4/13/2015

Batch ID: 18657

Result

1.1

1.0

ND

1.0

RunNo: 25496 SeqNo: 755527

%REC

Units: mg/Kg **RPDLimit** %RPD HighLimit Qual

Analyte Benzene Toluene Ethylbenzene Xylenes, Total

1.1 3.3 Surr: 4-Bromofluorobenzene

0 110

0

SPK value SPK Ref Val %REC

113 76.6 128 103 75 124

LowLimit

1.000 1.000 126 0 79.5 3.000 110 78.8 124 1 000

Sample ID MB-18710

Surr: 4-Bromofluorobenzene

Client ID: PBS

SampType: MBLK

POL

TestCode: EPA Method 8021B: Volatiles RunNo: 25555

92.4

80

%RPD

Prep Date: Analyte

4/15/2015

Analysis Date: 4/16/2015

Result

0.92

Batch ID: 18710

1.000

SeqNo: 757283

Lowl imit

Units: %REC HighLimit

120

**RPDLimit** Qual

Qualifiers: Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits

Spike Recovery outside accepted recovery limits

0 RSD is greater than RSDlimit R RPD outside accepted recovery limits B Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

P Sample pH Not In Range

Reporting Detection Limit

Page 7 of 8

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1504521

22-Apr-15

Client:

APEX TITAN

Project:

Lateral K-7

Sample ID LCS-18710

SampType: LCS

TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS

Batch ID: 18710

RunNo: 25555

Analysis Date: 4/16/2015

SeqNo: 757284

Units: %REC

Prep Date: 4/15/2015

SPK value SPK Ref Val %REC

HighLimit

**RPDLimit** %RPD

Surr: 4-Bromofluorobenzene

103

1.0

1.000

120

Qualifiers:

Value exceeds Maximum Contaminant Level.

E Value above quantitation range

Analyte detected below quantitation limits

0 RSD is greater than RSDlimit

RPD outside accepted recovery limits

Spike Recovery outside accepted recovery limits

В Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

P Sample pH Not In Range

Reporting Detection Limit

Page 8 of 8



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: APEX AZTEC	Work Order Number:	1504521		RcptNo: 1	
Received by/date:					5
01111			A		
Logged By: Ashley Gallegos	4/10/2015 6:00:00 AM		St. J		
Completed By: Ashley Gallegos	4/13/2015 7:37:57 AM		A		
Reviewed By:	04/13/15		0 000 0 0 0 0		
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 sam	ples?	Yes 🗹	No 🗌	NA 🗆	
5. Were all samples received at a temper	ature 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) p	roperly 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 🐼		
				# of preserved bottles checked	
12. Does paperwork match bottle labels?		Yes	No 🗆	for pH:	>12 imless nated)
(Note discrepancies on chain of custod	The second of the second	Yes	No 🗆	Adjusted?	>12 unless noted)
13. Are matrices correctly identified on Cha 14. Is it clear what analyses were requeste		Yes 🖝	No 🗆	****	
15. Were all holding times able to be met?		Yes 🖃	No 🗆	Checked by:	
(If no, notify customer for authorization	.)		d.		
Special Handling (if applicable)					
16. Was client notified of all discrepancies	with this order?	Yes	No 🗆	NA 🖃	
Person Notified:	Date		MANAGEMENT OF THE PARTY OF THE		
By Whom:	Via:	eMail	Phone Fax	In Person	
Regarding:			NAME OF THE PERSON NAMED IN COLUMN	OR ET THOUSAND WHEN AND AND AND AND AND AND AND AND AND AN	
Client Instructions:		NONE ADMINISTRAÇÃO	Habitata in the second of the		
17. Additional remarks:	10.000 30000 30000 30000				
18. Cooler Information	¥2				
Cooler No Temp °C Condition	Seal Intact   Seal No	Seal Date	Signed By		
1 2.1 Good	Yes				

CHAIN OF CUSTODY RECORD Lab use only ANALYSIS Due Date: REQUESTED Laboratory: Hall Environmental APEX Address: Albuquerque, AM Temp. of coolers when received (C°): Z Office Location Aztec, NM Contact: Andy Freeman BOIS THY GROUDED Project Manager Heather Woods PO/SO#: Direct Bill to Enterprise Sampler's Signature Sampler's Name Bozi Brex Heath M. Wood Heather Woods K-7 per Heathwhype of Containers Project Name 72504145005 Lateral Start Depth Depth VOA A/G 1 L. 250 ml Glass Jar P/O Identifying Marks of Sample(s) Matrix Date Lab Sample ID (Lab Use Only) 1504521-001 4/9/15 1549 59-1 4/9/15 1554 59-2 4/9/15 1559 59-3 4/9/15 1612 50-4 Turn around time ☐ 25% Rush ☐ 50% Rush ☐ 109% Rush Relinquished by (Signature) Received by: (Signature) Time: Date: Time: Direct Bill to Enterprise 4/9/15 1944 4/10/15 COO Heath W. Woods Attn: Tom Long / Johnny Sandoual Non-AFE: N 20591 Relinquished by (Signature) Time: Received by: (Signature) Date: Received by: (Signature) Date: Time: Relinquished by (Signature) Date: Time: Relinquished by (Signature) Date: Time: Received by: (Signature) Date: Time: O - Oil S - Soil SD - Solid W - Water L - Liquid A - Air Bag C - Charcoal tube SL - sludge WW - Wastewater P/O - Plastic or other VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth Container

District I 1625 N. French Dr., Hobbs, NM 88240 District II

100 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

Form C-141 Revised August 8, 2011

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

Release Notification and Corrective Action

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

					OP	ERATO	R		Initial	Report		ort
Name of C	company: I	Enterprise I	Field Sen	vices LLC	- 8	Contact: T	homas Long		Letter Control			
		ve, Farmin	gton, NN	87401			No. 505-599		of the Paris	View and the second		
Facility Na	me: Latera	al 2C-85			9	Facility Ty	pe: Natural G	as Gat	hering P	ipeline		
Surface O	wner: Jica	rilla Apach	e Tribe	Mineral O	wner:	Jicarilla A	Apache Tribe	)	API No	0.		
				LOCA	TION	OF REI	LEASE					
Unit Letter	Section	Township	Range	Feet from		South	Feet from		Vest	County		
0	4	23N	4W	the	Line		the	Line		Rio Arriba	7 2	
				1593			2450		ON CON	S. DIV DIS	1.0	
			La	titude_36.249					JU	L 27 2015	)	
					JRE	OF REL						
Type of Rel	ease: Natur	al Gas and (	Condensat	e			f Release: 18.6 timated 5-7 bb	575	Volume	Recovered:	None	
		ernal corrosio	n			Date and Hour of Occurrence: Date an			Date an @ 12:00	d Hour of Discovery: 6/3/2015 0 p.m.		
Was Immed	diate Notice		s 🗆 No	⊠ Not Requ	ired	If YES, To	o Whom?					
By Whom? Date and Hour												
Was a Wate	ercourse Re		☐ Yes	⊠ No		If YES, V	olume Impactir	ng the W	/atercours	е		
If a Materia	ource was In	npacted, Des	oribo Eull	v *		1						_
gas release		ral 2C-85 pi									entified a natura nediation were	
measured a impacted so farm facility I hereby cerules and rewhich may	approximate bil were exca . A third partify that the egulations all endanger pu	ly 133 feet lo avated from inty corrective information I operators a ublic health o	ing by 18 the area of action regiven about the require or the environment.	d to report and/ ronment. The a	g fron ease part with the omple or file accept	n 7 to 9 feet point and tra this "Final" ( te to the be- certain rele ance of a C	deep. Approximate an	imately New Me edge and is and p the NM(	180 cubic exico Oil C d understa erform cor OCD mark	yards of hyd onservation and that purs rective actio ed as "Final	Irocarbon approved land uant to NMOCE	ot
ground water	er, surface v	vater, humar	health or	the environmen	nt. In	addition, NI	MOCD accepta	nce of a	C-141 rep			1
	1		0							DIVISIO	N///	7
Signature:	Jas	Fu	leb						/		7/ -	7
Printed Nar	ne: Jon E. F	ields				Approved b	y Environmenta	al Speci	alist:	1	In	_
Title: Direct	or, Environn	nental				Approval Da	ate: 8/12/1	5	Expiration	Date:		
		@eprod.com		-		Conditions	of Approval:			Attached		
	-22			e: (713)381-66	84						5個。這場	
Attach Add	itional She	ets If Neces	ssary _	FNCS	15	1734	19852				(55)	

Enterprise Products
Lateral 2C-85 Pipeline Release
Latitude North 36.249718°, Longitude West -107.258614°
SW/SE (Unit O), Section 4, T23N, R4W
Rio Arriba County, New Mexico
July 6, 2015



Submitted To: Enterprise Products Field Environmental-San Juan Basin 614 Reilly Avenue Farmington, NM 87401 Submitted By: Souder, Miller & Associates 401 West Broadway Farmington, NM 87401 (505)325-7535

OIL CONS. DIV DIST. 3
JUL 27 2015



### **Table of Contents**

1.0	Executive Summary	1
2.0	Introduction	1
3.0	Site Ranking and Land Jurisdiction	2
4.0	Summary of Field Activities	2
5.0	Conclusions and Recommendations	3
6.0	Closure and Limitations	3

### Figures:

Figure 1: Vicinity Map Figure 2: Site Map

Figure 3: Soil Contaminant Concentration Map

### Tables:

Table 1: Release Information

Table 2: Site Ranking

Table 3: Summary of Laboratory Analysis

### Appendices:

Appendix A: Photographic Documentation Appendix B: Soil Disposal Documentation Appendix C: Laboratory Analytical Reports

#### 1.0 Executive Summary

From June 4, through June 23, 2015, Souder, Miller & Associates (SMA) responded to oversee the excavation of a hydrocarbon release associated with the Lateral 2C-85 natural gas pipeline. The release was initially reported to SMA on June 3, 2015 and is a result of internal corrosion of the eight-inch natural gas pipeline. The table below summarizes information about the pipeline remediation activities.

Name	Lateral 2C-85 Pipeline Release					
	Latitude	/Longitude	Section, Township, Range			
Location	36.249718°	-107.258614°	SW/SE (Unit O)	Section 4	T 23N, R 4W	
Date Reported to SMA	June 3, 2015					
Reported by	Tom Long	1 New York				
Land Owner	Jicarilla Apach	Jicarilla Apache Nation				
Reported To	NM Oil Conser Protection Office	vation Division (N ce (JAEPO)	IMOCD) Jio	arilla Apac	he Environmenta	
Diameter of Pipeline	8 inches					
Source of Release	Internal Corrosion					
Release Contents	Natural Gas Li	Natural Gas Liquids/Condensate				
Release Volume	Unknown					
Nearest Waterway	Located about	300' east of an ur	nnamed wa	sh		
Depth to Groundwater	Estimated to be between 50 and 100 feet					
Nearest Domestic Water Source	Greater than 1	,000 feet				
NMOCD Ranking	20					
SMA Response Dates	June 4, 16,17,23, 2015					
Subcontractors	West States E	nergy Contractors				
Disposal Facility	T-n-T Environmental					
Yd <sup>3</sup> Contaminated Soil Excavated and Disposed	180 (Reported	on Completed C-	138)	14.4		

#### 2.0 Introduction

On behalf of Enterprise Products Operating, LLC. (Enterprise), SMA has prepared this report that describes remediation of a hydrocarbon release associated with the Lateral 2C-85 pipeline release site. The site is located in SW/SE (Unit O), Section 4, T23N, R4W, 36.249718°, -107.258614°, Rio Arriba County, New Mexico, on land owned by the Jicarilla Apache Nation. Figure 1 illustrates the vicinity and location of the site.

#### 3.0 Site Ranking and Land Jurisdiction

The release site is located near an unnamed ephemeral tributary on land owned by the Jicarilla Apache Nation and governed by the Jicarilla Apache Environmental Protection Office (JAEPO). The site is at an elevation of approximately 7,176 feet above sea level. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be between 50 and 100 feet below ground surface (bgs).

SMA searched the New Mexico Office of the State Engineer online water well data base for water wells in the vicinity of the release. No water wells were located in Section 4 or any adjacent sections. The physical location of this release is within the jurisdiction of JAEPO. This release location has been assigned an OCD ranking of 20, which requires a soil remediation standard of 10 parts per million (ppm) benzene, 50 ppm total benzene, toluene, ethyl-benzene, and total xylenes (BTEX), and 100 ppm total petroleum hydrocarbons (TPH). Table 2 illustrates site ranking rationale.

#### 4.0 Summary of Field Activities

On June 4, 2015, SMA responded to a hydrocarbon release associated with the Lateral 2C-85 pipeline. West States Energy Contractors (WSEC) was on site with a rubber tired backhoe excavating the pipeline for inspection and repair. The release was determined to be a result of internal corrosion of the 8" diameter pipe, and a clamp was initially installed by WSEC. The faulty section of pipe was later replaced with new pipe. SMA guided the excavation activities by collecting composite soil samples for field screening with a calibrated photo-ionization detector (PID). The extent of the excavation was increased to approximately 18 feet long, 8 feet wide and 6 feet deep. Field screening determined that more excavation was required. It was decided that repairs would be completed prior to continued excavation.

SMA returned to the site on June 16 and 17, 2015 to continue oversight and guidance of the remedial excavation. However, repair activities experienced delays, preventing any continued remedial excavation. SMA left the site, returning the next day to check on the progress. Remedial excavation had not yet resumed on June 17.

SMA returned to site on June 23, 2015 to collect final samples for laboratory analysis. The excavation had been extended over 100 feet along the length of the pipeline to the north as a second release point was suspected. However, no other points of release where discovered. Stockpiled soil was segregated into two piles and the north stockpile was sampled to determine if the soil was suitable for use as backfill material. Five point composite samples were collected from the stockpiles and the walls and base of the excavation. No representatives from JAEPO or NMOCD were present to monitor the sampling activities. The final excavation measured approximately 133 feet long by 18 feet wide with a depth of 7 to 9 feet, covering an area of approximately 2394 ft². A detailed map of the excavation is attached as Figure 3. In total, approximately 180 cubic yards of contaminated soil were removed and replaced with clean backfill material. The contaminated soil was transported to T-n-T Environmental, near Lindrith, NM. Soil disposal documentation is included in Appendix B.

A total of 23 soil samples were submitted for laboratory analysis per United States Environmental Protection Agency Methods: 8021B for benzene, toluene, ethylbenzene, and xylenes (BTEX) and 8015D for diesel and gasoline range organics (DRO/GRO). All samples were analyzed by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. Figure 3 illustrates the release point, the extent of the excavation, laboratory soil sample locations, and laboratory results.

#### 5.0 Conclusions and Recommendations

As noted in Section 3.0 of this report, this release location has been assigned a NMOCD ranking of 20.

Laboratory analytical results for all final extent samples collected were below laboratory detection limits as well as NMOCD remediation soil standards of 10 parts per million (ppm) benzene, 50 ppm combined benzene, toluene, ethyl-benzene, and total xylenes (BTEX), and 100 ppm total petroleum hydrocarbons, based on the site ranking. Soil contaminant concentrations are illustrated in Figure 3. A summary of laboratory analyses is included in Table 3. Laboratory reports are included in Appendix C

SMA recommends no further action at the Lateral 2C-85 pipeline release location.

#### 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, oversight and control of remediation operations, disposal arrangements and documentation, project management, and preparation of this summary report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas pipeline releases in the San Juan Basin in New Mexico.

If there are any questions regarding this report, please contact either Jesse Sprague or Reid Allan at 505-325-7535.

Submitted by:

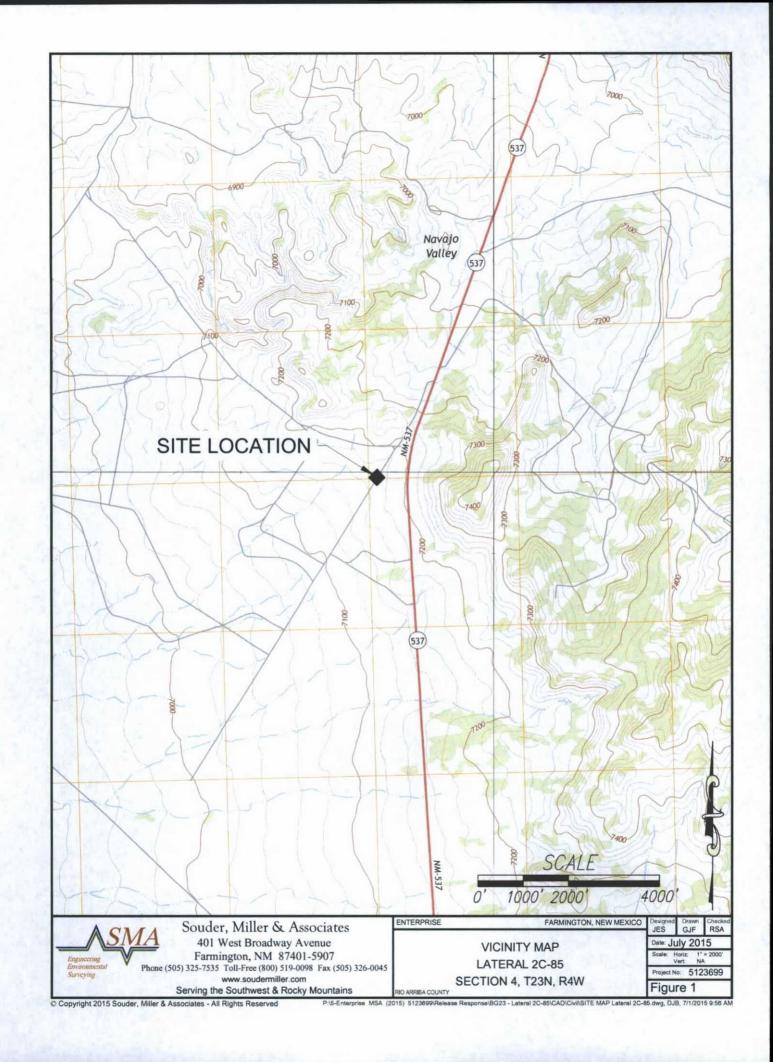
Reviewed by:

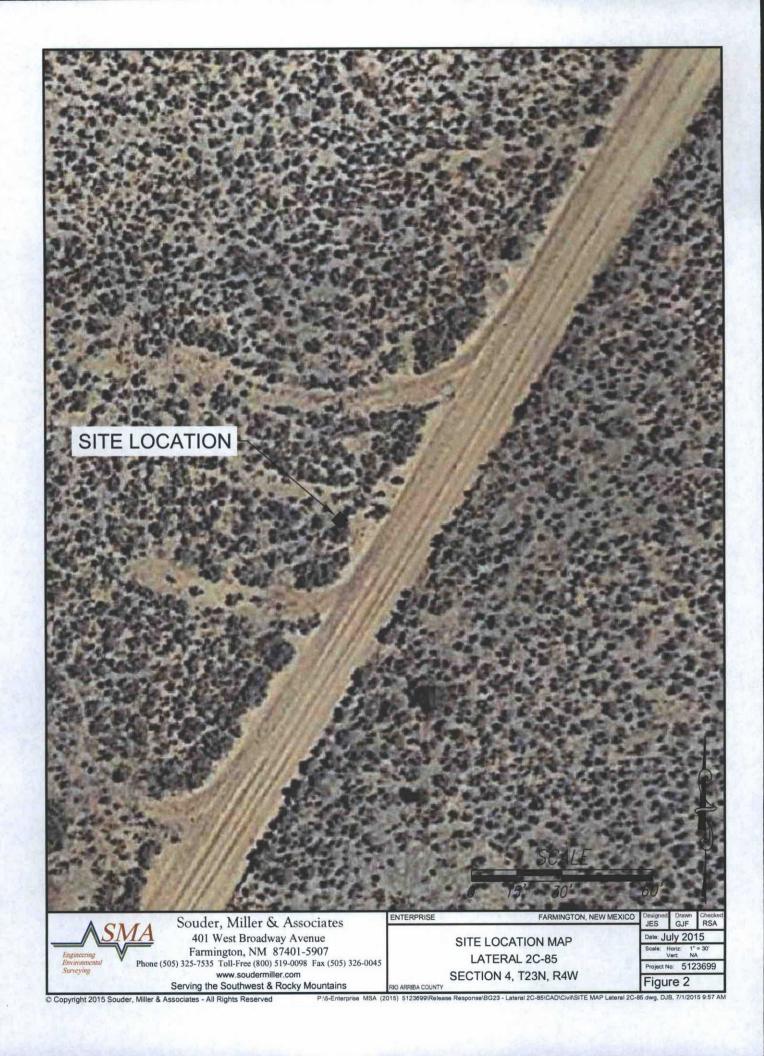
SOUDER, MILLER & ASSOCIATES

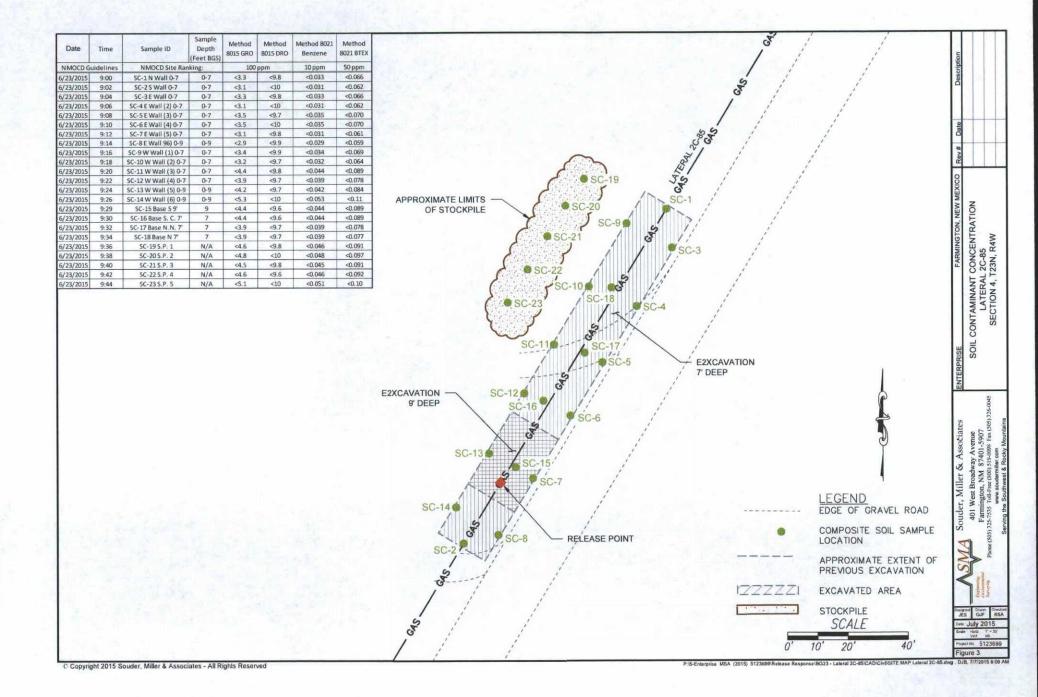
Jesse Sprague Staff Scientist Reid Allan, P.G.

Vice President/Principal Scientist

**Figures** 







**Tables** 

## Enterprise Products Table 2: Site Ranking

Depth to Groundwater	NMOCD Numeric Rank for this Site	Source for Ranking	Notes	
< 50 BGS = 20		USGS Topo Maps;	Site is located near	
50' to 99' = 10	10	Google Earth Elevation Difference from the site and the unnamed	unnamed ephemeral wash on Jicarilla Reservation, no water	
>100' = 0		wash to the west	wells in vicinity	
Ranking Criteria for Horizontal Distance to Nearest Surface Water	NMOCD Numeric Rank for this Site	Source for Ranking	Notes	
< 200' = 20		USGS Topo Maps;	Unnamed ephemera	
200' - 1000' = 10	10	Google Earth (An unnamed wash ~300' to the west); PRRC	wash is located approximately 300 feet	
>1000' = 0	Land Control	Mapping Tool	to the west of releas	
Ranking Criteria for Horizintal Distance to a Water Well or Water Source	NMOCD Numeric Rank for this Site	Source for Ranking	Notes	
<1000' from a water source? <200'				
source? YES OR NO to BOTH. YES = 20, NO = 0			No Water Wells in 2000 meter radius	
Total Site Ranking		30		
Soil Remedation Standards	0 to 9	10 to 19	>19	
Marine Control	40.555	40.5514		
Benzene BTEX	10 PPM 50 PPM	10 PPM 50 PPM	10 PPM 50 PPM	
TPH	5000 PPM	1000 PPM	100 PPM	



# Enterprise Products Table 3: Summary of Laboratory Analysis Results in mg/Kg

Date	Time	Sample ID	Sample Depth (Feet BGS)	Method 8015 GRO	Method 8015 DRO	Method 8021 Benzene	Method 8021 BTEX
NMOCD G	uidelines	NMOCD Site Ran	king:	1000	) ppm	10 ppm	50 ppm
6/23/2015	9:00	SC-1 N Wall 0-7	0-7	<3.3	<9.8	<0.033	<0.066
6/23/2015	9:02	SC-2 S Wall 0-7	0-7	<3.1	<10	<0.031	<0.062
6/23/2015	9:04	SC-3 E Wall 0-7	0-7	<3.3	<9.8	<0.033	<0.066
6/23/2015	9:06	SC-4 E Wall (2) 0-7	0-7	<3.1	<10	<0.031	<0.062
6/23/2015	9:08	SC-5 E Wall (3) 0-7	0-7	<3.5	<9.7	<0.035	<0.070
6/23/2015	9:10	SC-6 E Wall (4) 0-7	0-7	<3.5	<10	<0.035	<0.070
6/23/2015	9:12	SC-7 E Wall (5) 0-7	0-7	<3.1	<9.8	<0.031	<0.061
6/23/2015	9:14	SC-8 E Wall 96) 0-9	0-9	<2.9	<9.9	<0.029	< 0.059
6/23/2015	9:16	SC-9 W Wall (1) 0-7	0-7	<3.4	<9.9	<0.034	< 0.069
6/23/2015	9:18	SC-10 W Wall (2) 0-7	0-7	<3.2	<9.7	<0.032	< 0.064
6/23/2015	9:20	SC-11 W Wall (3) 0-7	0-7	<4.4	<9.8	<0.044	<0.089
6/23/2015	9:22	SC-12 W Wall (4) 0-7	0-7	<3.9	<9.7	<0.039	<0.078
6/23/2015	9:24	SC-13 W Wall (5) 0-9	0-9	<4.2	<9.7	<0.042	<0.084
6/23/2015	9:26	SC-14 W Wall (6) 0-9	0-9	<5.3	<10	< 0.053	<0.11
6/23/2015	9:29	SC-15 Base S 9'	9	<4.4	<9.6	<0.044	<0.089
6/23/2015	9:30	SC-16 Base S. C. 7'	7	<4.4	<9.6	<0.044	<0.089
6/23/2015	9:32	SC-17 Base N.N. 7'	7	<3.9	<9.7	<0.039	<0.078
6/23/2015	9:34	SC-18 Base N 7'	7	<3.9	<9.7	<0.039	<0.077
6/23/2015	9:36	SC-19 S.P. 1	N/A	<4.6	<9.8	<0.046	<0.091
6/23/2015	9:38	SC-20 S.P. 2	N/A	<4.8	<10	<0.048	<0.097
6/23/2015	9:40	SC-21 S.P. 3	N/A	<4.5	<9.8	<0.045	<0.091
6/23/2015	9:42	SC-22 S.P. 4	N/A	<4.6	<9.6	<0.046	<0.092
6/23/2015	9:44	SC-23 S.P. 5	N/A	<5.1	<10	<0.051	<0.10



Appendix A
Photographic Documentation

## Site Photographs Enterprise Products Lateral 2C-85 Pipeline

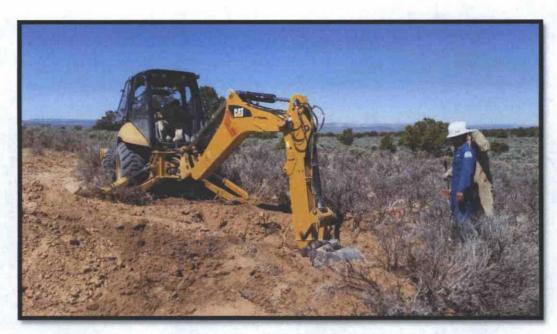


Photo 1: Lateral 2C-85 site during initial excavation for pipeline inspection and repair, photo aspect to south west.



**Photo 2:** Track mounted excavator on site during sampling, final excavation extent pictured. Repair visible in foreground.

## Site Photographs Enterprise Products Lateral 2C-85 Pipeline



**Photo 3:** Deeper base section visible beneath repair, this area was excavated to 9 ft BGS.



**Photo 4:** Track mounted excavator segregating stockpiles. The pile in the background (north) was sampled for use as backfill material.

Appendix B
Soil Disposal Documentation

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 \*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

Form C-138

Revised August 1, 2011

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:
Enterprise Field Services, LLC, 614 Reilly Avenue, Farmington, NM 87401
2. Originating Site: Lateral 2C-85 Pipeline
3. Location of Material (Street Address, City, State or ULSTR): Unit Letter O Section 4 Township 23 North Range 4 West; 36.249718, -107.25614
4. Source and Description of Waste: Hydro-excavated soil impacted with hydrocarbons associated with a pipeline release.  5. Estimated Volume 50 yd / bbls Known Volume (to be entered by the operator at the end of the haul) 180 yd / bbls
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS
I, Thomas Long representative or authorized agent for Enterprise Field Services, LLC do hereby
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)
RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.  **Operator Use Only: Waste Acceptance Frequency   Monthly   Weekly   Per Load
RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous be characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Chec the appropriate items)
☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)
GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS
I, 6-16-15 representative for Enterprise Field Services, LLC authorize TNT Land Farm. to  Generator Signature
Generator Signature complete the required testing/sign the Generator Waste Testing Certification.
I, Crare Scharte representative for TNT Land Farm do hereby certify that representative samples of the oil field wasternave been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.
6. Transporter: West States Energy Contractor
Name and Facility Permit #: TNT Evap Pond/Landfarm, NM01-0008 Address of Facility: 70 CR 405, Lindrith NM Method of Treatment and/or Disposal:
☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other
Waste Acceptance Status:  APPROVED  DENIED (Must Be Maintained As Permanent Record)
PRINT NAME: Crady School TITLE: Plas. DATE: 6-23-13
SIGNATURE: TELEPHONE NO.: 505-632-0615- 774-6504
Surface Waste Management Facility Authorized Agent

Appendix C
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

June 26, 2015

Steve Moskal Souder, Miller and Associates 401 W. Broadway Farmington, NM 87401 TEL: (505) 325-5667

RE: 2C-85

OrderNo.: 1506A92

#### Dear Steve Moskal:

FAX (505) 327-1496

Hall Environmental Analysis Laboratory received 23 sample(s) on 6/24/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SC-1 N Wall 0-7'

Project: 2C-85

CLIENT: Souder, Miller and Associates

Collection Date: 6/23/2015 9:00:00 AM

Lab ID: 1506A92-001

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst	КЈН
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/24/2015 9:55:56 AM	19901
Surr: DNOP	77.6	57.9-140		%REC	1	6/24/2015 9:55:56 AM	19901
EPA METHOD 8015D: GASOLINE RA	NGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	6/24/2015 11:53:40 AM	19882
Surr: BFB	87.3	75.4-113		%REC	1	6/24/2015 11:53:40 AM	19882
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst	NSB
Benzene	ND	0.033		mg/Kg	1	6/24/2015 11:53:40 AM	19882
Toluene	ND	0.033		mg/Kg	1	6/24/2015 11:53:40 AM	19882
Ethylbenzene	ND	0.033		mg/Kg	1	6/24/2015 11:53:40 AM	19882
Xylenes, Total	ND	0.066		mg/Kg	1	6/24/2015 11:53:40 AM	19882
Surr: 4-Bromofluorobenzene	90.2	80-120		%REC	1	6/24/2015 11:53:40 AM	19882

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- RSD is greater than RSDlimit 0
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 1 of 31

- Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project:

2C-85 Lab ID: 1506A92-002 Client Sample ID: SC-2 S Wall 0-7'

Collection Date: 6/23/2015 9:02:00 AM

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	КЈН
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/24/2015 9:56:05 AM	19901
Surr: DNOP	89.9	57.9-140		%REC	1	6/24/2015 9:56:05 AM	19901
EPA METHOD 8015D: GASOLINE RANGE						Analyst	NSB
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	6/24/2015 12:22:26 PM	19882
Surr: BFB	85.7	75.4-113		%REC	1	6/24/2015 12:22:26 PM	19882
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst	NSB
Benzene	ND	0.031		mg/Kg	1	6/24/2015 12:22:26 PM	19882
Toluene	ND	0.031		mg/Kg	1	6/24/2015 12:22:26 PM	19882
Ethylbenzene	ND	0.031		mg/Kg	1	6/24/2015 12:22:26 PM	19882
Xylenes, Total	ND	0.062		mg/Kg	1	6/24/2015 12:22:26 PM	19882
Surr: 4-Bromofluorobenzene	88.1	80-120		%REC	1	6/24/2015 12:22:26 PM	19882

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits R
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 2 of 31

- Sample pH Not In Range
- Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Lab ID: 1506A92-003

Chefft Sample

Client Sample ID: SC-3 E Wall 1 0-7'

Collection Date: 6/23/2015 9:04:00 AM

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL C	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANIC	s			Analyst	КЈН
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	6/24/2015 10:22:30 AM	19901
Surr: DNOP	92.0	57.9-140	%REC	1	6/24/2015 10:22:30 AM	19901
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	3.3	mg/Kg	1	6/24/2015 12:51:15 PM	19882
Surr: BFB	85.5	75.4-113	%REC	1	6/24/2015 12:51:15 PM	19882
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.033	mg/Kg	1	6/24/2015 12:51:15 PM	19882
Toluene	ND	0.033	mg/Kg	1	6/24/2015 12:51:15 PM	19882
Ethylbenzene	ND	0.033	mg/Kg	1	6/24/2015 12:51:15 PM	19882
Xylenes, Total	ND	0.066	mg/Kg	1	6/24/2015 12:51:15 PM	19882
Surr: 4-Bromofluorobenzene	87.5	80-120	%REC	1	6/24/2015 12:51:15 PM	19882

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 3 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

## Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Lab ID:

1506A92-004

Matrix: SOIL

Client Sample ID: SC-4 E Wall 2 0-7'

Collection Date: 6/23/2015 9:06:00 AM

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Qu	ial Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analyst: K		
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/24/2015 10:49:30 AM	19901	
Surr: DNOP	97.0	57.9-140	%REC	1	6/24/2015 10:49:30 AM	19901	
EPA METHOD 8015D: GASOLINE RA	ANGE				Analyst	NSB	
Gasoline Range Organics (GRO)	ND	3.1	mg/Kg	1	6/24/2015 1:20:02 PM	19882	
Surr: BFB	85.2	75.4-113	%REC	1	6/24/2015 1:20:02 PM	19882	
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB	
Benzene	ND	0.031	mg/Kg	1	6/24/2015 1:20:02 PM	19882	
Toluene	ND	0.031	mg/Kg	1	6/24/2015 1:20:02 PM	19882	
Ethylbenzene	ND	0.031	mg/Kg	1	6/24/2015 1:20:02 PM	19882	
Xylenes, Total	ND	0.062	mg/Kg	1	6/24/2015 1:20:02 PM	19882	
Surr: 4-Bromofluorobenzene	86.0	80-120	%REC	1	6/24/2015 1:20:02 PM	19882	

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 4 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-5 E Wall 3 0-7'

Project: 2C-85

Collection Date: 6/23/2015 9:08:00 AM

Lab ID: 1506A92-005

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analyst:	КЈН
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	6/24/2015 11:16:17 AM	19901
Surr: DNOP	99.5	57.9-140	%REC	1	6/24/2015 11:16:17 AM	19901
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	3.5	mg/Kg	1	6/24/2015 1:48:45 PM	19882
Surr: BFB	84.7	75.4-113	%REC	1	6/24/2015 1:48:45 PM	19882
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	NSB
Benzene	ND	0.035	mg/Kg	1	6/24/2015 1:48:45 PM	19882
Toluene	ND	0.035	mg/Kg	1	6/24/2015 1:48:45 PM	19882
Ethylbenzene	ND	0.035	mg/Kg	1	6/24/2015 1:48:45 PM	19882
Xylenes, Total	ND	0.070	mg/Kg	1	6/24/2015 1:48:45 PM	19882
Surr: 4-Bromofluorobenzene	85.7	80-120	%REC	1	6/24/2015 1:48:45 PM	19882

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 5 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-6 E Wall 4 0-7'

Project: 2C-85

Collection Date: 6/23/2015 9:10:00 AM

Lab ID: 1506A92-006

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analyst	КЈН
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/24/2015 11:42:54 AM	19901
Surr: DNOP	102	57.9-140	%REC	1	6/24/2015 11:42:54 AM	19901
EPA METHOD 8015D: GASOLINE RANGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	3.5	mg/Kg	1	6/24/2015 2:17:26 PM	19882
Surr: BFB	84.4	75.4-113	%REC	1	6/24/2015 2:17:26 PM	19882
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst	: NSB
Benzene	ND	0.035	mg/Kg	1	6/24/2015 2:17:26 PM	19882
Toluene	ND	0.035	mg/Kg	1	6/24/2015 2:17:26 PM	19882
Ethylbenzene	ND	0.035	mg/Kg	1	6/24/2015 2:17:26 PM	19882
Xylenes, Total	ND	0.070	mg/Kg	1	6/24/2015 2:17:26 PM	19882
Surr: 4-Bromofluorobenzene	86.2	80-120	%REC	1	6/24/2015 2:17:26 PM	19882

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 6 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Lab ID: 1506A92-007

Client Sample ID: SC-7 E Wall 5 0-9'

Collection Date: 6/23/2015 9:12:00 AM

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analyst	КЈН
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	6/24/2015 12:09:51 PM	19901
Surr: DNOP	96.4	57.9-140	%REC	1	6/24/2015 12:09:51 PM	19901
EPA METHOD 8015D: GASOLINE RANGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	3.1	mg/Kg	1	6/24/2015 2:46:08 PM	19882
Surr: BFB	84.9	75.4-113	%REC	1	6/24/2015 2:46:08 PM	19882
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.031	mg/Kg	1	6/24/2015 2:46:08 PM	19882
Toluene	ND	0.031	mg/Kg	1	6/24/2015 2:46:08 PM	19882
Ethylbenzene	ND	0.031	mg/Kg	. 1	6/24/2015 2:46:08 PM	19882
Xylenes, Total	ND	0.061	mg/Kg	1	6/24/2015 2:46:08 PM	19882
Surr: 4-Bromofluorobenzene	86.7	80-120	%REC	1	6/24/2015 2:46:08 PM	19882

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 7 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-8 E Wall 6 0-9'

Project: 2C-85

Collection Date: 6/23/2015 9:14:00 AM

Lab ID: 1506A92-008

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	DJF
Gasoline Range Organics (GRO)	ND	2.9	mg/Kg	1	6/24/2015 3:30:55 PM	R27055
Surr: BFB	108	67.4-150	%REC	1	6/24/2015 3:30:55 PM	R27055
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	6/24/2015 12:36:42 PM	19901
Surr: DNOP	92.2	57.9-140	%REC	1	6/24/2015 12:36:42 PM	19901
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: DJF
Benzene	ND	0.029	mg/Kg	1	6/24/2015 3:30:55 PM	R27055
Toluene	ND	0.029	mg/Kg	1	6/24/2015 3:30:55 PM	R27055
Ethylbenzene	ND	0.029	mg/Kg	1	6/24/2015 3:30:55 PM	R27055
Xylenes, Total	ND	0.059	mg/Kg	1	6/24/2015 3:30:55 PM	R27055
Surr: 1,2-Dichloroethane-d4	107	70-130	%REC	1	6/24/2015 3:30:55 PM	R27055
Surr: 4-Bromofluorobenzene	103	70-130	%REC	1	6/24/2015 3:30:55 PM	R27055
Surr: Dibromofluoromethane	114	70-130	%REC	1	6/24/2015 3:30:55 PM	R27055
Surr: Toluene-d8	100	70-130	%REC	1	6/24/2015 3:30:55 PM	R2705

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 8 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-9 W Wall 1 0-7'

Project: 2C-85

Collection Date: 6/23/2015 9:16:00 AM

Lab ID: 1506A92-009

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	DJF
Gasoline Range Organics (GRO)	ND	3.4	mg/Kg	1	6/24/2015 3:58:36 PM	R27055
Surr: BFB	104	67.4-150	%REC	1	6/24/2015 3:58:36 PM	R27055
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	6/24/2015 1:05:30 PM	19901
Surr: DNOP	95.1	57.9-140	%REC	1	6/24/2015 1:05:30 PM	19901
<b>EPA METHOD 8260B: VOLATILES S</b>	SHORT LIST				Analyst	DJF
Benzene	ND	0.034	mg/Kg	1	6/24/2015 3:58:36 PM	R27055
Toluene	ND	0.034	mg/Kg	1	6/24/2015 3:58:36 PM	R27055
Ethylbenzene	ND	0.034	mg/Kg	1	6/24/2015 3:58:36 PM	R27055
Xylenes, Total	ND	0.069	mg/Kg	1	6/24/2015 3:58:36 PM	R27055
Surr: 1,2-Dichloroethane-d4	105	70-130	%REC	1	6/24/2015 3:58:36 PM	R27055
Surr: 4-Bromofluorobenzene	97.1	70-130	%REC	1	6/24/2015 3:58:36 PM	R27055
Surr: Dibromofluoromethane	110	70-130	%REC	1	6/24/2015 3:58:36 PM	R27055
Surr: Toluene-d8	98.3	70-130	%REC	1	6/24/2015 3:58:36 PM	R27055

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 9 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Client Sample ID: SC-10 W Wall 2 0-7'

Project: 2C-85

Collection Date: 6/23/2015 9:18:00 AM

Lab ID: 1506A92-010

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	cadg
Gasoline Range Organics (GRO)	ND	3.2	mg/Kg	1	6/24/2015 1:10:27 PM	R27056
Surr: BFB	109	67.4-150	%REC	1	6/24/2015 1:10:27 PM	R27056
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	6/24/2015 1:32:36 PM	19901
Surr: DNOP	90.3	57.9-140	%REC	1	6/24/2015 1:32:36 PM	19901
<b>EPA METHOD 8260B: VOLATILES 9</b>	SHORT LIST				Analyst	cadg
Benzene	ND	0.032	mg/Kg	1	6/24/2015 1:10:27 PM	19882
Toluene	ND	0.032	mg/Kg	1	6/24/2015 1:10:27 PM	19882
Ethylbenzene	ND	0.032	mg/Kg	1	6/24/2015 1:10:27 PM	19882
Xylenes, Total	ND	0.064	mg/Kg	1	6/24/2015 1:10:27 PM	19882
Surr: 1,2-Dichloroethane-d4	102	70-130	%REC	1	6/24/2015 1:10:27 PM	19882
Surr: 4-Bromofluorobenzene	105	70-130	%REC	1	6/24/2015 1:10:27 PM	19882
Surr: Dibromofluoromethane	106	70-130	%REC	1	6/24/2015 1:10:27 PM	19882
Surr: Toluene-d8	100	70-130	%REC	1	6/24/2015 1:10:27 PM	19882

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 10 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Lab ID:

1506A92-011

Matrix: SOIL

Client Sample ID: SC-11 W Wall 3 0-7'

**Collection Date:** 6/23/2015 9:20:00 AM **Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: cadg
Gasoline Range Organics (GRO)	ND	4.4	mg/Kg	1	6/24/2015 1:39:14 PM	R27056
Surr: BFB	107	67.4-150	%REC	1	6/24/2015 1:39:14 PM	R27056
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	s			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	6/24/2015 1:59:51 PM	19901
Surr: DNOP	94.1	57.9-140	%REC	1	6/24/2015 1:59:51 PM	19901
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	cadg
Benzene	ND	0.044	mg/Kg	1	6/24/2015 1:39:14 PM	19882
Toluene	ND	0.044	mg/Kg	1	6/24/2015 1:39:14 PM	19882
Ethylbenzene	ND	0.044	mg/Kg	1	6/24/2015 1:39:14 PM	19882
Xylenes, Total	ND	0.089	mg/Kg	1	6/24/2015 1:39:14 PM	19882
Surr: 1,2-Dichloroethane-d4	102	70-130	%REC	1	6/24/2015 1:39:14 PM	19882
Surr: 4-Bromofluorobenzene	107	70-130	%REC	1	6/24/2015 1:39:14 PM	19882
Surr: Dibromofluoromethane	106	70-130	%REC	1	6/24/2015 1:39:14 PM	19882
Surr: Toluene-d8	93.5	70-130	%REC	1	6/24/2015 1:39:14 PM	19882

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 11 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Client Sample ID: SC-12 W Wall 4 0-7'

Collection Date: 6/23/2015 9:22:00 AM

Lab ID: 1506A92-012

Matrix: SOIL

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	cadg
Gasoline Range Organics (GRO)	ND	3.9	mg/Kg	1	6/24/2015 2:08:01 PM	R27056
Surr: BFB	104	67.4-150	%REC	1	6/24/2015 2:08:01 PM	R27056
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	6/24/2015 10:17:22 AM	19901
Surr: DNOP	90.5	57.9-140	%REC	1	6/24/2015 10:17:22 AM	19901
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: cadg
Benzene	ND	0.039	mg/Kg	1	6/24/2015 2:08:01 PM	19882
Toluene	ND	0.039	mg/Kg	1	6/24/2015 2:08:01 PM	19882
Ethylbenzene	ND	0.039	mg/Kg	1	6/24/2015 2:08:01 PM	19882
Xylenes, Total	ND	0.078	mg/Kg	1	6/24/2015 2:08:01 PM	19882
Surr: 1,2-Dichloroethane-d4	102	70-130	%REC	1	6/24/2015 2:08:01 PM	19882
Surr: 4-Bromofluorobenzene	106	70-130	%REC	1	6/24/2015 2:08:01 PM	19882
Surr: Dibromofluoromethane	108	70-130	%REC	1	6/24/2015 2:08:01 PM	19882
Surr: Toluene-d8	91.8	70-130	%REC	1	6/24/2015 2:08:01 PM	19882

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits J
- RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 12 of 31

- Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Lab ID: 1506A92-013

Client Sample ID: SC-13 W Wall 5 0-9'

Collection Date: 6/23/2015 9:24:00 AM

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL (	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	cadg
Gasoline Range Organics (GRO)	ND	4.2	mg/Kg	1	6/24/2015 2:36:50 PM	R27056
Surr: BFB	108	67.4-150	%REC	1	6/24/2015 2:36:50 PM	R27056
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	6/24/2015 10:45:36 AM	19901
Surr: DNOP	85.2	57.9-140	%REC	1	6/24/2015 10:45:36 AM	19901
<b>EPA METHOD 8260B: VOLATILES 5</b>	SHORT LIST				Analyst	cadg
Benzene	ND	0.042	mg/Kg	1	6/24/2015 2:36:50 PM	19882
Toluene	ND	0.042	mg/Kg	1	6/24/2015 2:36:50 PM	19882
Ethylbenzene	ND	0.042	mg/Kg	1	6/24/2015 2:36:50 PM	19882
Xylenes, Total	ND	0.084	mg/Kg	1	6/24/2015 2:36:50 PM	19882
Surr: 1,2-Dichloroethane-d4	99.6	70-130	%REC	1	6/24/2015 2:36:50 PM	19882
Surr: 4-Bromofluorobenzene	102	70-130	%REC	1	6/24/2015 2:36:50 PM	19882
Surr: Dibromofluoromethane	111	70-130	%REC	1	6/24/2015 2:36:50 PM	19882
Surr: Toluene-d8	97.3	70-130	%REC	1	6/24/2015 2:36:50 PM	19882

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range E
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 13 of 31

- Sample pH Not In Range
- Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

2C-85 Lab ID: 1506A92-014

Project:

Client Sample ID: SC-14 W Wall 6 0-9'

Collection Date: 6/23/2015 9:26:00 AM Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE		23 7		Analyst	cadg
Gasoline Range Organics (GRO)	ND	5.3	mg/Kg	1	6/24/2015 3:05:41 PM	R27056
Surr: BFB	108	67.4-150	%REC	1	6/24/2015 3:05:41 PM	R27056
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	KJH
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/24/2015 11:06:49 AM	19901
Surr: DNOP	82.1	57.9-140	%REC	1	6/24/2015 11:06:49 AM	19901
<b>EPA METHOD 8260B: VOLATILES</b>	SHORT LIST				Analyst	cadg
Benzene	ND	0.053	mg/Kg	1	6/24/2015 3:05:41 PM	19882
Toluene	ND	0.053	mg/Kg	1	6/24/2015 3:05:41 PM	19882
Ethylbenzene	ND	0.053	mg/Kg	1	6/24/2015 3:05:41 PM	19882
Xylenes, Total	ND	0.11	mg/Kg	1	6/24/2015 3:05:41 PM	19882
Surr: 1,2-Dichloroethane-d4	98.1	70-130	%REC	1	6/24/2015 3:05:41 PM	19882
Surr: 4-Bromofluorobenzene	105	70-130	%REC	1	6/24/2015 3:05:41 PM	19882
Surr: Dibromofluoromethane	103	70-130	%REC	1	6/24/2015 3:05:41 PM	19882
Surr: Toluene-d8	94.4	70-130	%REC	1	6/24/2015 3:05:41 PM	19882

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 14 of 31

- Sample pH Not In Range
- Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Lab ID: 1506A92-015

Project: 2C-85

Client Sample ID: SC-15 Base S 9'

Collection Date: 6/23/2015 9:28:00 AM Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE	1 4 5			Analyst	cadg
Gasoline Range Organics (GRO)	ND	4.4	mg/Kg	1	6/24/2015 3:34:33 PM	R27056
Surr: BFB	113	67.4-150	%REC	1	6/24/2015 3:34:33 PM	R27056
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	6/24/2015 11:28:02 AM	19901
Surr: DNOP	89.1	57.9-140	%REC	1	6/24/2015 11:28:02 AM	19901
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	cadg
Benzene	ND	0.044	mg/Kg	1	6/24/2015 3:34:33 PM	19882
Toluene	ND	0.044	mg/Kg	1	6/24/2015 3:34:33 PM	19882
Ethylbenzene	ND	0.044	mg/Kg	1	6/24/2015 3:34:33 PM	19882
Xylenes, Total	ND	0.089	mg/Kg	1	6/24/2015 3:34:33 PM	19882
Surr: 1,2-Dichloroethane-d4	94.5	70-130	%REC	1	6/24/2015 3:34:33 PM	19882
Surr: 4-Bromofluorobenzene	106	70-130	%REC	1	6/24/2015 3:34:33 PM	19882
Surr: Dibromofluoromethane	105	70-130	%REC	1	6/24/2015 3:34:33 PM	19882
Surr: Toluene-d8	99.4	70-130	%REC	1	6/24/2015 3:34:33 PM	19882

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range E
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 15 of 31

- Sample pH Not In Range
- Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Lab ID: 1506A92-016

Matrix: SOIL

Client Sample ID: SC-16 Base S.C. 7'

Collection Date: 6/23/2015 9:30:00 AM

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst:	DJF
Gasoline Range Organics (GRO)	ND	4.4	mg/Kg	1	6/24/2015 11:49:56 AM	R27055
Surr: BFB	99.8	67.4-150	%REC	1	6/24/2015 11:49:56 AM	R27055
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANIC	s			Analyst	KJH
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	6/24/2015 2:44:22 PM	19901
Surr: DNOP	87.8	57.9-140	%REC	1	6/24/2015 2:44:22 PM	19901
EPA METHOD 8260B: VOLATILES S	SHORT LIST				Analyst	DJF
Benzene	ND	0.044	mg/Kg	1	6/24/2015 11:49:56 AM	R27055
Toluene	ND	0.044	mg/Kg	1	6/24/2015 11:49:56 AM	R27055
Ethylbenzene	ND	0.044	mg/Kg	1	6/24/2015 11:49:56 AM	R27055
Xylenes, Total	ND	0.089	mg/Kg	1	6/24/2015 11:49:56 AM	R27055
Surr: 1,2-Dichloroethane-d4	94.6	70-130	%REC	1	6/24/2015 11:49:56 AM	R27055
Surr: 4-Bromofluorobenzene	103	70-130	%REC	1	6/24/2015 11:49:56 AM	R27055
Surr: Dibromofluoromethane	103	70-130	%REC	1	6/24/2015 11:49:56 AM	R27055
Surr: Toluene-d8	98.0	70-130	%REC	1	6/24/2015 11:49:56 AM	R27055

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 16 of 31

- Sample pH Not In Range
- Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: Lab ID:

1506A92-017

2C-85

Client Sample ID: SC-17 Base N.C. 7'

Collection Date: 6/23/2015 9:32:00 AM

Matrix: SOIL Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: DJF
Gasoline Range Organics (GRO)	ND	3.9	mg/Kg	1	6/24/2015 12:17:31 PM	R27055
Surr: BFB	99.7	67.4-150	%REC	1	6/24/2015 12:17:31 PM	R27055
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	KJH
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	6/24/2015 12:10:36 PM	19901
Surr: DNOP	89.1	57.9-140	%REC	1	6/24/2015 12:10:36 PM	19901
<b>EPA METHOD 8260B: VOLATILES S</b>	SHORT LIST				Analyst	: DJF
Benzene	ND	0.039	mg/Kg	1	6/24/2015 12:17:31 PM	R27055
Toluene	ND	0.039	mg/Kg	1	6/24/2015 12:17:31 PM	R27055
Ethylbenzene	ND	0.039	mg/Kg	1	6/24/2015 12:17:31 PM	R27055
Xylenes, Total	ND	0.078	mg/Kg	1	6/24/2015 12:17:31 PM	R27055
Surr: 1,2-Dichloroethane-d4	95.5	70-130	%REC	1	6/24/2015 12:17:31 PM	R27055
Surr: 4-Bromofluorobenzene	96.1	70-130	%REC	1	6/24/2015 12:17:31 PM	R27055
Surr: Dibromofluoromethane	108	70-130	%REC	1	6/24/2015 12:17:31 PM	R27055
Surr: Toluene-d8	94.2	70-130	%REC	1	6/24/2015 12:17:31 PM	R27055

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 17 of 31

- Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

6/24/2015 12:45:11 PM R27055

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Xylenes, Total

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

Lab ID: 1506A92-018

Client Sample ID: SC-18 Base N 7'

Collection Date: 6/23/2015 9:34:00 AM Received Date: 6/24/2015 7:20:00 AM

Analyses Result **RL Qual Units DF** Date Analyzed Batch **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: DJF Gasoline Range Organics (GRO) ND 39 mg/Kg 1 6/24/2015 12:45:11 PM R27055 Surr: BFB 98.9 67.4-150 %REC 6/24/2015 12:45:11 PM R27055 **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: KJH 6/24/2015 12:31:59 PM 19901 Diesel Range Organics (DRO) ND 9.7 mg/Kg 90.5 %REC 6/24/2015 12:31:59 PM 19901 Surr: DNOP 57.9-140 Analyst: DJF **EPA METHOD 8260B: VOLATILES SHORT LIST** 6/24/2015 12:45:11 PM R27055 Benzene ND 0.039 mg/Kg Toluene ND 0.039 6/24/2015 12:45:11 PM R27055 mg/Kg Ethylbenzene ND 0.039 mg/Kg 6/24/2015 12:45:11 PM R27055

0.077

70-130

70-130

70-130

70-130

mg/Kg

%REC

%REC

%REC

%REC

Matrix: SOIL

ND

103

93.5

110

93.0

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 18 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Lab ID: 1506A92-019

Client Sample ID: SC-19 S.P. 1

Collection Date: 6/23/2015 9:36:00 AM

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: DJF
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	6/24/2015 1:12:45 PM	R27055
Surr: BFB	104	67.4-150	%REC	1	6/24/2015 1:12:45 PM	R27055
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	6/24/2015 12:53:13 PM	19901
Surr: DNOP	92.5	57.9-140	%REC	1	6/24/2015 12:53:13 PM	19901
<b>EPA METHOD 8260B: VOLATILES S</b>	SHORT LIST				Analyst: DJF	
Benzene	ND	0.046	mg/Kg	1	6/24/2015 1:12:45 PM	R27055
Toluene	ND	0.046	mg/Kg	1	6/24/2015 1:12:45 PM	R27055
Ethylbenzene	ND	0.046	mg/Kg	1	6/24/2015 1:12:45 PM	R27055
Xylenes, Total	ND	0.091	mg/Kg	1	6/24/2015 1:12:45 PM	R27055
Surr: 1,2-Dichloroethane-d4	100	70-130	%REC	1	6/24/2015 1:12:45 PM	R27055
Surr: 4-Bromofluorobenzene	93.6	70-130	%REC	1	6/24/2015 1:12:45 PM	R27055
Surr: Dibromofluoromethane	107	70-130	%REC	1	6/24/2015 1:12:45 PM	R27055
Surr: Toluene-d8	93.8	70-130	%REC	1	6/24/2015 1:12:45 PM	R27055

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 19 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Lab ID: 1506A92-020

Matrix: SOIL

Client Sample ID: SC-20 S.P. 2

**Collection Date:** 6/23/2015 9:38:00 AM **Received Date:** 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE		A Law Service		Analyst	: DJF
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	6/24/2015 1:40:22 PM	R27055
Surr: BFB	98.8	67.4-150	%REC	1	6/24/2015 1:40:22 PM	R27055
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/24/2015 1:14:33 PM	19901
Surr: DNOP	89.7	57.9-140	%REC	1	6/24/2015 1:14:33 PM	19901
<b>EPA METHOD 8260B: VOLATILES 5</b>	SHORT LIST				Analyst	: DJF
Benzene	ND	0.048	mg/Kg	1	6/24/2015 1:40:22 PM	R27055
Toluene	ND	0.048	mg/Kg	1	6/24/2015 1:40:22 PM	R27055
Ethylbenzene	ND	0.048	mg/Kg	1	6/24/2015 1:40:22 PM	R27055
Xylenes, Total	ND	0.097	mg/Kg	1	6/24/2015 1:40:22 PM	R27055
Surr: 1,2-Dichloroethane-d4	105	70-130	%REC	1	6/24/2015 1:40:22 PM	R27055
Surr: 4-Bromofluorobenzene	95.0	70-130	%REC	1	6/24/2015 1:40:22 PM	R27055
Surr: Dibromofluoromethane	108	70-130	%REC	1	6/24/2015 1:40:22 PM	R27055
Surr: Toluene-d8	95.6	70-130	%REC	1	6/24/2015 1:40:22 PM	R27055

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 20 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Lab ID:

1506A92-021

Matrix: SOIL

Client Sample ID: SC-21 S.P. 3

Collection Date: 6/23/2015 9:40:00 AM Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: DJF
Gasoline Range Organics (GRO)	ND	4.5	mg/Kg	1	6/24/2015 2:07:56 PM	R27055
Surr: BFB	104	67.4-150	%REC	1	6/24/2015 2:07:56 PM	R27055
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	6/24/2015 3:05:42 PM	19902
Surr: DNOP	83.8	57.9-140	%REC	1	6/24/2015 3:05:42 PM	19902
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: DJF
Benzene	ND	0.045	mg/Kg	1	6/24/2015 2:07:56 PM	R27055
Toluene	ND	0.045	mg/Kg	1	6/24/2015 2:07:56 PM	R27055
Ethylbenzene	ND	0.045	mg/Kg	1	6/24/2015 2:07:56 PM	R27055
Xylenes, Total	ND	0.091	mg/Kg	1	6/24/2015 2:07:56 PM	R27055
Surr: 1,2-Dichloroethane-d4	100	70-130	%REC	1	6/24/2015 2:07:56 PM	R27055
Surr: 4-Bromofluorobenzene	98.1	70-130	%REC	1	6/24/2015 2:07:56 PM	R27055
Surr: Dibromofluoromethane	103	70-130	%REC	1	6/24/2015 2:07:56 PM	R27055
Surr: Toluene-d8	97.7	70-130	%REC	1	6/24/2015 2:07:56 PM	R27055

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 21 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Lab ID: 1506A92-022

Client Sample ID: SC-22 S.P. 4

Collection Date: 6/23/2015 9:42:00 AM

Received Date: 6/24/2015 7:20:00 AM

Analyses	Result	RL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: DJF
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	6/24/2015 2:35:34 PM	R27055
Surr: BFB	107	67.4-150	%REC	1	6/24/2015 2:35:34 PM	R27055
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: KJH
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	6/24/2015 2:01:30 PM	19902
Surr: DNOP	90.6	57.9-140	%REC	1	6/24/2015 2:01:30 PM	19902
<b>EPA METHOD 8260B: VOLATILES 5</b>	SHORT LIST				Analyst: DJF	
Benzene	ND	0.046	mg/Kg	1	6/24/2015 2:35:34 PM	R27055
Toluene	ND	0.046	mg/Kg	1	6/24/2015 2:35:34 PM	R27055
Ethylbenzene	ND	0.046	mg/Kg	1	6/24/2015 2:35:34 PM	R27055
Xylenes, Total	ND	0.092	mg/Kg	1	6/24/2015 2:35:34 PM	R27055
Surr: 1,2-Dichloroethane-d4	102	70-130	%REC	1	6/24/2015 2:35:34 PM	R27055
Surr: 4-Bromofluorobenzene	99.4	70-130	%REC	1	6/24/2015 2:35:34 PM	R27055
Surr: Dibromofluoromethane	104	70-130	%REC	1	6/24/2015 2:35:34 PM	R27055
Surr: Toluene-d8	96.5	70-130	%REC	1	6/24/2015 2:35:34 PM	R27055

Matrix: SOIL

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 22 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1506A92

Date Reported: 6/26/2015

6/24/2015 3:03:14 PM

R27055

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Project: 2C-85

Lab ID: 1506A92-023

Surr: Toluene-d8

Client Sample ID: SC-23 S.P. 5

Collection Date: 6/23/2015 9:44:00 AM Received Date: 6/24/2015 7:20:00 AM

Analyses Result **RL Qual Units DF** Date Analyzed Batch **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: DJF Gasoline Range Organics (GRO) ND 6/24/2015 3:03:14 PM R27055 5.1 mg/Kg 1 Surr: BFB 108 %REC 6/24/2015 3:03:14 PM R27055 67.4-150 **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: KJH ND 6/24/2015 2:22:55 PM 19902 Diesel Range Organics (DRO) 10 mg/Kg Surr: DNOP 94.4 %REC 6/24/2015 2:22:55 PM 19902 57.9-140 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: DJF Benzene ND 0.051 mg/Kg 6/24/2015 3:03:14 PM R27055 1 Toluene ND 0.051 mg/Kg 6/24/2015 3:03:14 PM R27055 Ethylbenzene ND 0.051 6/24/2015 3:03:14 PM mg/Kg Xylenes, Total ND 0.10 mg/Kg 6/24/2015 3:03:14 PM R27055 1 Surr: 1,2-Dichloroethane-d4 103 %REC 6/24/2015 3:03:14 PM 70-130 R27055 Surr: 4-Bromofluorobenzene 93.8 70-130 %REC 6/24/2015 3:03:14 PM R27055 Surr: Dibromofluoromethane 108 70-130 %REC 6/24/2015 3:03:14 PM R27055

70-130

%REC

Matrix: SOIL

102

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

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 23 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

## **QC SUMMARY REPORT**

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1506A92

26-Jun-15

Client:

Souder, Miller and Associates

Project:

2C-85

roject:	2C-85										
Sample ID	MB-19902	SampTy	pe: M	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	PBS	Batch	ID: 19	902	F	RunNo: 2	7043				
Prep Date:	6/24/2015	Analysis Da	te: 6	/24/2015		SeqNo: 8	07981	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (	Organics (DRO)	ND	10						7 //	2011	
Surr: DNOP		9.1		10.00		90.9	57.9	140	To be		
Sample ID	LCS-19902	SampTy	pe: L0	cs	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	41
Client ID:	LCSS	Batch	ID: 19	902	F	RunNo: 2	7043				
Prep Date:	6/24/2015	Analysis Da	ite: 6	/24/2015	S	SeqNo: 8	07984	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (	Organics (DRO)	45	10	50.00	0	89.2	57.4	139			
Surr: DNOP		4.5	le .	5.000		90.3	57.9	140			147
Sample ID	MB-19901	SampTy	pe: M	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	PBS	Batch	ID: 19	901	F	RunNo: 2	7044				
Prep Date:	6/24/2015	Analysis Da	ite: 6	/24/2015	8	SeqNo: 8	80080	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
A CONTRACTOR OF THE PARTY OF TH	Organics (DRO)	ND	10								
Surr: DNOP	A CHARLES	9.3		10.00		92.8	57.9	140	ik beet	10	
Sample ID	LCS-19901	SampTy	pe: L0	cs	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	LCSS	Batch	ID: 19	901	F	RunNo: 2	7044				
Prep Date:	6/24/2015	Analysis Da	ate: 6	/24/2015	5	SeqNo: 8	08009	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (	Organics (DRO)	49	10		0	97.3	57.4	139	1,54.0		
Surr: DNOP		5.0		5.000		101	57.9	140	8 m	I STEEL	
Sample ID	1506A92-001AMS	SampTy	pe: M	s	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	SC-1 N Wall 0-7'	Batch	ID: 19	9901	F	RunNo: 2	7044				
Prep Date:	6/24/2015	Analysis Da	ate: 6	/24/2015	5	SeqNo: 8	08326	Units: mg/F	(g		
		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Analyte	Omanice (DRO)	49	9.9	49.55	8.242	81.3	42.3	146	7.78	4 4)	1
	organics (DITO)			4.955		93.2	57.9	140			
Analyte Diesel Range ( Surr: DNOP	organics (DNO)	4.6									
Diesel Range ( Surr: DNOP	1506A92-001AMSI		pe: M		Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	1
Diesel Range ( Surr: DNOP		D SampTy	/pe: M	SD		tCode: E		8015M/D: Di	esel Rang	e Organics	
Diesel Range ( Surr: DNOP Sample ID Client ID:	1506A92-001AMSI	D SampTy	ID: 19	SD 9901	F		7044	8015M/D: Di		e Organics	

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

Page 24 of 31

- P Sample pH Not In Range
- RL Reporting Detection Limit

## **QC SUMMARY REPORT**

## Hall Environmental Analysis Laboratory, Inc.

WO#:

1506A92

26-Jun-15

Client:

Souder, Miller and Associates

Project:

2C-85

Sample ID 1	1506A92-001AMSD	SampT	ype: MS	SD	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: 5	SC-1 N Wall 0-7'	Batch	ID: 19	901	F	RunNo: 2	7044				
Prep Date:	6/24/2015	Analysis D	ate: 6/	24/2015	5	SeqNo: 8	08394	Units: mg/K	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Or	rganics (DRO)	51	9.6	47.85	8.242	90.0	42.3	146	5.55	28.9	
Surr: DNOP		4.9		4.785		103	57.9	140	0	0	
Sample ID 1	1506A92-021AMS	SampT	ype: MS	s	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: 5	SC-21 S.P. 3	Batch	1D: 19	902	F	RunNo: 2	7043				
Prep Date:	6/24/2015	Analysis D	ate: 6/	24/2015	5	SeqNo: 8	08716	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Or	rganics (DRO)	40	9.9	49.31	0	81.5	42.3	146			
Surr: DNOP		4.4		4.931		90.2	57.9	140			
Sample ID 1	1506A92-021AMSD	SampT	ype: MS	SD	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
S2.074.04.02.250.070.01.00	1506A92-021AMSD SC-21 S.P. 3		ype: MS			tCode: El		8015M/D: Di	esel Rang	e Organics	
Client ID:	SC-21 S.P. 3		1D: 19	902	F		7043	8015M/D: Di		e Organics	
22 pm (M#2250 pm ) 1 d	SC-21 S.P. 3	Batch	1D: 19	902 /24/2015	F	RunNo: 2 SeqNo: 8	7043			e Organics	Qual
Client ID: \$ Prep Date: Analyte	SC-21 S.P. 3 6/24/2015	Batch Analysis D	n ID: 19 ate: 6	902 /24/2015	F	RunNo: 2 SeqNo: 8	7043 08717	Units: mg/k	(g		Qual
Client ID: \$ Prep Date: Analyte	SC-21 S.P. 3 6/24/2015	Batch Analysis D Result	n ID: 19 Pate: 6/	902 /24/2015 SPK value	SPK Ref Val	RunNo: 2 SeqNo: 8 %REC	7043 08717 LowLimit	Units: mg/F	(g %RPD	RPDLimit	Qual
Client ID: SPrep Date: Analyte Diesel Range Or	SC-21 S.P. 3 6/24/2015 rganics (DRO)	Batch Analysis D Result 37 4.1	n ID: 19 Pate: 6/	902 /24/2015 SPK value 48.12 4.812	SPK Ref Val	RunNo: 2 SeqNo: 8 %REC 77.3 85.8	7043 08717 LowLimit 42.3 57.9	Units: mg/k HighLimit 146	%RPD 7.67 0	RPDLimit 28.9 0	Qual
Client ID: \$ Prep Date: Analyte Diesel Range Or Surr: DNOP	SC-21 S.P. 3 6/24/2015 rganics (DRO)	Batch Analysis D Result 37 4.1 SampT	PQL 9.6	902 /24/2015 SPK value 48.12 4.812	SPK Ref Val 0	RunNo: 2 SeqNo: 8 %REC 77.3 85.8	7043 08717 LowLimit 42.3 57.9	Units: mg/k HighLimit 146 140	%RPD 7.67 0	RPDLimit 28.9 0	Qual
Client ID: \$ Prep Date: Analyte Diesel Range Or Surr: DNOP	SC-21 S.P. 3 6/24/2015 rganics (DRO) MB-19850 PBS	Batch Analysis D Result 37 4.1 SampT	PQL 9.6  Type: MI	902 /24/2015 SPK value 48.12 4.812 BLK 850	SPK Ref Val 0	RunNo: 2 SeqNo: 8 %REC 77.3 85.8	7043 08717 LowLimit 42.3 57.9 PA Method	Units: mg/k HighLimit 146 140	%RPD 7.67 0	RPDLimit 28.9 0	Qual
Client ID: \$ Prep Date:  Analyte Diesel Range Or Surr: DNOP  Sample ID   Client ID:   Prep Date:	SC-21 S.P. 3 6/24/2015 rganics (DRO) MB-19850 PBS	Batch Analysis D Result 37 4.1 SampT Batch	PQL 9.6  Type: MI	902 /24/2015 SPK value 48.12 4.812 BLK 850	SPK Ref Val 0	RunNo: 2 SeqNo: 8 %REC 77.3 85.8 ctCode: El	7043 08717 LowLimit 42.3 57.9 PA Method	Units: mg/k HighLimit 146 140 8015M/D: Di	%RPD 7.67 0	RPDLimit 28.9 0	Qual
Client ID: \$ Prep Date: Analyte Diesel Range Or Surr: DNOP  Sample ID   Client ID:	SC-21 S.P. 3 6/24/2015 rganics (DRO) MB-19850 PBS	Result 37 4.1  SampT Batch Analysis D	PQL 9.6  PQL 9.6  Type: MI  TID: 19	902 /24/2015 SPK value 48.12 4.812 BLK 850	SPK Ref Val 0	RunNo: 2 SeqNo: 8 %REC 77.3 85.8 stCode: El RunNo: 2 SeqNo: 8	7043 08717 LowLimit 42.3 57.9 PA Method 7044 09147	Units: mg/k HighLimit 146 140 8015M/D: Di	%RPD 7.67 0 esel Rang	RPDLimit 28.9 0	
Client ID: \$ Prep Date:  Analyte Diesel Range Or Surr: DNOP  Sample ID   Client ID:   Prep Date:  Analyte	SC-21 S.P. 3 6/24/2015  rganics (DRO)  MB-19850  PBS 6/22/2015	Batch Analysis D Result 37 4.1 SampT Batch Analysis D Result 11	PQL 9.6  PQL 9.6  Type: MI  TID: 19	902 /24/2015 SPK value 48.12 4.812 BLK 850 /24/2015 SPK value 10.00	SPK Ref Val  0  Tes  SPK Ref Val	RunNo: 2 SeqNo: 8 %REC 77.3 85.8 stCode: El RunNo: 2 SeqNo: 8 %REC 113	7043 08717 LowLimit 42.3 57.9 PA Method 7044 09147 LowLimit 57.9	Units: mg/k HighLimit 146 140  8015M/D: Did Units: %RE	%RPD 7.67 0 esel Rang C	RPDLimit 28.9 0 e Organics  RPDLimit	
Client ID: \$ Prep Date:  Analyte Diesel Range Or Surr: DNOP  Sample ID   Client ID:   Prep Date:  Analyte Surr: DNOP	SC-21 S.P. 3 6/24/2015 rganics (DRO) MB-19850 PBS 6/22/2015	Batch Analysis D Result 37 4.1 SampT Batch Analysis D Result 11 SampT	PQL 9.6 9.6 9.6 9.6 9.6 9.6 9.6 PQL PQL	902 /24/2015 SPK value 48.12 4.812 BLK 850 /24/2015 SPK value 10.00	SPK Ref Val  Tes  SPK Ref Val  Tes	RunNo: 2 SeqNo: 8 %REC 77.3 85.8 stCode: El RunNo: 2 SeqNo: 8 %REC 113	7043 08717 LowLimit 42.3 57.9 PA Method 7044 09147 LowLimit 57.9	Units: mg/k HighLimit 146 140  8015M/D: Did Units: %RE HighLimit 140	%RPD 7.67 0 esel Rang C	RPDLimit 28.9 0 e Organics  RPDLimit	

#### Qualifiers:

Analyte

Surr: DNOP

Value exceeds Maximum Contaminant Level.

Result

5.4

PQL

SPK value SPK Ref Val

5.000

- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

%REC

109

LowLimit

57.9

HighLimit

Page 25 of 31

**RPDLimit** 

- P Sample pH Not In Range
- RL Reporting Detection Limit

#### Hall Environmental Analysis Laboratory, Inc.

WO#:

1506A92

26-Jun-15

Client:

Souder, Miller and Associates

Project:

2C-85

Sample ID MB-19882 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range Client ID: PBS Batch ID: 19882 RunNo: 27049 SeqNo: 808572 Prep Date: 6/23/2015 Analysis Date: 6/24/2015 Units: mg/Kg **RPDLimit** %REC HighLimit %RPD Qual Analyte Result PQL SPK value SPK Ref Val LowLimit Gasoline Range Organics (GRO) ND 5.0 Surr: BFB 840 1000 84.2 75.4 113 TestCode: EPA Method 8015D: Gasoline Range Sample ID LCS-19882 SampType: LCS

Client ID: LCSS Batch ID: 19882 RunNo: 27049 SegNo: 808573 Prep Date: 6/23/2015 Analysis Date: 6/24/2015 Units: mg/Kg PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Result Gasoline Range Organics (GRO) 25 5.0 25.00 98.6 64 130 920 1000 92.3 75.4 113 Surr: BFB

TestCode: EPA Method 8015D: Gasoline Range Sample ID 1506A92-001AMS SampType: MS Client ID: SC-1 N Wall 0-7' Batch ID: 19882 RunNo: 27049 Prep Date: Analysis Date: 6/24/2015 SegNo: 808574 Units: mg/Kg LowLimit %REC HighLimit %RPD **RPDLimit** Analyte Result PQL SPK value SPK Ref Val Qual 47.9 Gasoline Range Organics (GRO) 18 3.3 16.60 0 107 144 620 93.3 75.4 Surr: BFB 664.0 113

SampType: MSD TestCode: EPA Method 8015D: Gasoline Range Sample ID 1506A92-001AMSD Client ID: SC-1 N Wall 0-7' Batch ID: 19882 RunNo: 27049 Prep Date: Analysis Date: 6/24/2015 SegNo: 808575 Units: mg/Kg Result SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual PQL Analyte 29.9 Gasoline Range Organics (GRO) 17 3.3 16.60 0 103 47.9 144 3.53 620 664.0 92.8 75.4 113 0 0 Surr: BFB

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Page 26 of 31

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1506A92

26-Jun-15

Client:

Souder, Miller and Associates

Project:

2C-85

Sample ID MB-19882	Samp	Type: ME	BLK	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: PBS	Batc	h ID: 19	882	F	RunNo: 2	7049				
Prep Date: 6/23/2015	Analysis I	Date: 6/	24/2015	5	SeqNo: 8	08592	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050				Television				
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.86		1.000		86.4	80	120	10-1		
Sample ID LCS-19882	Samp	Type: LC	S	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Sample ID LCS-19882 Client ID: LCSS		Гуре: LC h ID: 19			tCode: E RunNo: 2		8021B: Vola	tiles		
		h ID: 19	882	F		7049	Units: mg/k			
Client ID: LCSS	Batc	h ID: 19	882 24/2015	F	RunNo: 2	7049			RPDLimit	Qual
Client ID: LCSS Prep Date: 6/23/2015	Batc Analysis [	h ID: 19	882 24/2015	F	RunNo: 2 SeqNo: 8	7049 08593	Units: mg/k	(g	RPDLimit	Qual
Client ID: LCSS Prep Date: 6/23/2015 Analyte	Batc Analysis I Result	h ID: 19 Date: 6/	882 24/2015 SPK value	SPK Ref Val	RunNo: 2 SeqNo: 8	7049 08593 LowLimit	Units: mg/F	(g	RPDLimit	Qual
Client ID: LCSS Prep Date: 6/23/2015 Analyte Benzene	Analysis I Result	PQL 0.050	882 24/2015 SPK value 1.000	SPK Ref Val	RunNo: 2 SeqNo: 8 %REC 105	7049 08593 LowLimit 76.6	Units: mg/k HighLimit 128	(g	RPDLimit	Qual
Client ID: LCSS Prep Date: 6/23/2015 Analyte Benzene Toluene Ethylbenzene	Analysis I Result	PQL 0.050 0.050	882 24/2015 SPK value 1.000 1.000	SPK Ref Val	RunNo: 2 SeqNo: 8 %REC 105 102	7049 08593 LowLimit 76.6 75	Units: mg/K HighLimit 128 124	(g	RPDLimit	Qual
Client ID: LCSS Prep Date: 6/23/2015 Analyte Benzene Toluene	Analysis I Result 1.1 1.0 1.0	PQL 0.050 0.050 0.050	24/2015 SPK value 1.000 1.000 1.000	SPK Ref Val  0 0 0	RunNo: 2 SeqNo: 8 %REC 105 102 104	7049 08593 LowLimit 76.6 75 79.5	Units: mg/k HighLimit 128 124 126	(g	RPDLimit	Qual
Client ID: LCSS Prep Date: 6/23/2015 Analyte Benzene Toluene Ethylbenzene Xylenes, Total	Result 1.1 1.0 1.0 3.1 0.94	PQL 0.050 0.050 0.050	24/2015 SPK value 1.000 1.000 1.000 3.000 1.000	SPK Ref Val 0 0 0 0	RunNo: 2 SeqNo: 8 %REC 105 102 104 103 94.5	7049 08593 LowLimit 76.6 75 79.5 78.8 80	Units: mg/k HighLimit 128 124 126 124	%RPD	RPDLimit	Qual
Client ID: LCSS Prep Date: 6/23/2015 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene	Result 1.1 1.0 1.0 3.1 0.94	PQL 0.050 0.050 0.050 0.10	882 24/2015 SPK value 1.000 1.000 3.000 1.000	SPK Ref Val  0 0 0 0 Tes	RunNo: 2 SeqNo: 8 %REC 105 102 104 103 94.5	7049 08593 LowLimit 76.6 75 79.5 78.8 80	Units: mg/k HighLimit 128 124 126 124 120	%RPD	RPDLimit	Qual

Sample ID 1506A92-002AMS	SampT	ype: MS	3	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: SC-2 S Wall 0-7'	Batcl	n ID: 19	882	F	RunNo: 2	7049				
Prep Date:	Analysis D	Date: 6/	24/2015		SeqNo: 8	08594	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.68	0.031	0.6173	0	110	69.2	126	HIDA	THE	
Toluene	0.65	0.031	0.6173	0	105	65.6	128			
Ethylbenzene	0.67	0.031	0.6173	0	109	65.5	138			
Xylenes, Total	2.0	0.062	1.852	0	108	63	139			
Surr: 4-Bromofluorobenzene	0.59		0.6173		96.4	80	120			

Sample ID 1506A92-002AM	ISD Samp	ype: MS	SD	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: SC-2 S Wall 0-7	" Batcl	h ID: 19	882	F	RunNo: 2	7049				
Prep Date:	Analysis E	Date: 6/	24/2015	8	SeqNo: 8	08595	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.67	0.031	0.6173	0	108	69.2	126	1.31	18.5	1916
Toluene	0.65	0.031	0.6173	0	106	65.6	128	0.562	20.6	
Ethylbenzene	0.67	0.031	0.6173	0	109	65.5	138	0.267	20.1	
Xylenes, Total	2.0	0.062	1.852	0	108	63	139	0.722	21.1	
Surr: 4-Bromofluorobenzene	0.60		0.6173		96.9	80	120	0	0	

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Page 27 of 31

### Hall Environmental Analysis Laboratory, Inc.

WO#:

1506A92

26-Jun-15

Client:

Souder, Miller and Associates

Project:

2C-85

Sample ID mb-19882	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Client ID: PBS	Batch	1D: 19	882	F	RunNo: 2	7056				
Prep Date: 6/23/2015	Analysis D	ate: 6/	25/2015	8	SeqNo: 8	08766	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050			Militar					
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Kylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		110	70	130			
Surr: Toluene-d8	0.50		0.5000		99.5	70	130	100		
Sample ID Ics-19882	SampT	ype: LC	s	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Client ID: LCSS	Batcl	n ID: 19	882	F	RunNo: 2	7056				
Prep Date: 6/23/2015	Analysis D	Date: 6/	25/2015	5	SeqNo: 8	08775	Units: mg/h	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	103	70	130			
Toluene	0.97	0.050	1.000	0	97.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			
Surr: Dibromofluoromethane	0.56		0.5000		112	70	130			
Surr: Toluene-d8	0.48		0.5000	1568	95.4	70	130			
Sample ID rb1	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Client ID: PBS	Batcl	h ID: R2	7055	F	RunNo: 2	7055				
Prep Date:	Analysis D	Date: 6/	24/2015		SeqNo: 8	08810	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qua
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.7	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		100	70	130			
Surr: Toluene-d8	0.49		0.5000		97.7	70	130			

# Analyte Qualifiers:

Prep Date:

Client ID: LCSS

Value exceeds Maximum Contaminant Level.

Batch ID: R27055

PQL

Analysis Date: 6/24/2015

Result

- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

Units: mg/Kg

%RPD

HighLimit

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

RunNo: 27055

SeqNo: 808818

Sample nH Not In Range

Page 28 of 31

Qual

**RPDLimit** 

P Sample pH Not In Range

SPK value SPK Ref Val %REC LowLimit

RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1506A92

26-Jun-15

Client:

Souder, Miller and Associates

Project:

2C-85

Sample ID 100ng Ics	SampT	ype: LC	S	Tes	tCode: El	PA Method	8260B: Volat	iles Short	List	
Client ID: LCSS	Batch	ID: R2	7055	F	RunNo: 2	7055				
Prep Date:	Analysis D	ate: 6/	24/2015	8	SeqNo: 8	08818	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	108	70	130		THE PLAN	
Toluene	1.1	0.050	1.000	0	109	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		111	70	130			
Surr: Toluene-d8	0.50		0.5000		99.7	70	130			

Sample ID 1506092-017ams	SampT	ype: MS	3	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Client ID: BatchQC	Batcl	h ID: R2	7055	F	RunNo: 2	7055				
Prep Date:	Analysis D	Date: 6/	24/2015		SeqNo: 8	08840	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.039	0.7770	0	104	57.8	132			
Toluene	0.83	0.039	0.7770	0	107	54.8	139			
Surr: 1,2-Dichloroethane-d4	0.40		0.3885		103	70	130			
Surr: 4-Bromofluorobenzene	0.36		0.3885		93.6	70	130			
Surr: Dibromofluoromethane	0.42		0.3885		107	70	130			
Surr: Toluene-d8	0.38		0.3885		97.3	70	130			

Sample ID 1506092-017ams	d SampT	ype: MS	SD	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Client ID: BatchQC	Batch	ID: R2	7055	F	RunNo: 2	7055				
Prep Date:	Analysis D	ate: 6/	24/2015	8	SeqNo: 8	08854	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.78	0.039	0.7770	0	101	57.8	132	3.24	20	15.1
Toluene	0.79	0.039	0.7770	0	102	54.8	139	4.54	20	
Surr: 1,2-Dichloroethane-d4	0.41		0.3885		106	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.37		0.3885		95.4	70	130	0	0	
Surr: Dibromofluoromethane	0.42		0.3885		109	70	130	0	0	
Surr: Toluene-d8	0.39		0.3885		99.9	70	130	0	0	

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

Page 29 of 31

#### Hall Environmental Analysis Laboratory, Inc.

WO#: 1506A92

26-Jun-15

Client:

Souder, Miller and Associates

Project:

2C-85

Sample ID rb1

SampType: MBLK

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID:

Batch ID: R27055

RunNo: 27055

Prep Date:

Analysis Date: 6/24/2015 PQL

5.0

SeqNo: 808860

Units: mg/Kg

Analyte

ND

SPK value SPK Ref Val

%REC LowLimit HighLimit

Gasoline Range Organics (GRO)

Result

500.0

97.5

67.4

%RPD **RPDLimit**  Qual

Surr: BFB

490

150

Sample ID 2.5ug gro Ics

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: LCSS Prep Date:

Batch ID: R27055 Analysis Date: 6/24/2015

SampType: LCS

RunNo: 27055

SeqNo: 808868

Units: mg/Kg

HighLimit

Analyte

PQL

SPK value SPK Ref Val

%REC LowLimit

79.9

Surr: BFB

Gasoline Range Organics (GRO)

26 490

Result

25.00

103

%RPD **RPDLimit** 

Qual

5.0 500.0

98.4

67.4

135 150

Sample ID 1506092-016ams

SampType: MS

TestCode: EPA Method 8015D Mod: Gasoline Range RunNo: 27055

150

Prep Date:

Analysis Date: 6/24/2015

SeqNo: 808869

Units: mg/Kg

Analyte Gasoline Range Organics (GRO)

Client ID: BatchQC

Result 23 SPK value SPK Ref Val %REC 22.12

0

LowLimit

HighLimit 156 %RPD

480

65.2 67.4

**RPDLimit** 

Qual

Surr: BFB

442.5

108

106

TestCode: EPA Method 8015D Mod: Gasoline Range

Sample ID 1506092-016amsd Client ID: BatchQC

SampType: MSD Batch ID: R27055

Batch ID: R27055

PQL

RunNo: 27055

108

RunNo: 27056

SeqNo: 808871

Qual

Prep Date: Analyte

Gasoline Range Organics (GRO)

Result PQL 24 44

480

Result

Result

ND

Analysis Date: 6/24/2015 SPK value SPK Ref Val

22.12

SegNo: 808870 %REC

0

LowLimit

Units: mg/Kg HighLimit 156

150

%RPD 1.61

**RPDLimit** 

20

0

Surr: BFB

Sample ID rb1

PBS

SampType: MBLK

Batch ID: R27056

Analysis Date: 6/24/2015

PQL

5.0

442.5

108

65.2 67 4

TestCode: EPA Method 8015D Mod: Gasoline Range

Units: mg/Kg

150

Prep Date: Analyte

Client ID:

Prep Date:

Client ID:

Gasoline Range Organics (GRO)

500

SPK value SPK Ref Val 500.0

%REC 99.4

SeqNo: 808872

%REC

LowLimit 67.4 HighLimit

%RPD

**RPDLimit** Qual

Surr: BFB

LCSS

Sample ID 2.5ug gro lcs1

SampType: LCS Batch ID: R27056

Analysis Date: 6/24/2015

PQL

TestCode: EPA Method 8015D Mod: Gasoline Range

RunNo: 27056

LowLimit

HighLimit

Units: mg/Kg %RPD

**RPDLimit** 

Qual

Page 30 of 31

# Analyte

E

Qualifiers:

Value exceeds Maximum Contaminant Level.

Spike Recovery outside accepted recovery limits

- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit R RPD outside accepted recovery limits

Value above quantitation range

В

RL

SPK value SPK Ref Val

- Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded
- ND
- P Sample pH Not In Range

Reporting Detection Limit

Not Detected at the Reporting Limit

#### Hall Environmental Analysis Laboratory, Inc.

WO#: 1506A92

26-Jun-15

Client:

Souder, Miller and Associates

Project:

2C-85

Sample ID 2.5ug gro lcs1

SampType: LCS

TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: LCSS Batch ID: R27056

RunNo: 27056

Prep Date:

Analysis Date: 6/24/2015

SeqNo: 808872

Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.1	79.9	135		Treat a	100
Surr: BFB	500		500.0		101	67.4	150			

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- 0 RSD is greater than RSDlimit
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank В
- H Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- P Sample pH Not In Range
- Reporting Detection Limit

Page 31 of 31



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-FARM	Work Order Number: 1506A92		RcptNo: 1
Received by/date: AT 06/24	115	-	***
ogged By: Anne Thorne	6/24/2015 7:20:00 AM	anne Am	
Completed By: Anne Thorne	6/24/2015	an Ilm	
Reviewed By:	04/24/15		
hain of Custody	10 11		
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			
Was an attempt made to cool the samples?	Yes V	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) proper	ly 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 broke	en? Yes	No 🗸	
			# of preserved bottles checked
12. Does paperwork match bottle labels?  (Note discrepancies on chain of custody)	Yes 🗸	No L	for pH: (<2 or >12 unless no
13. Are matrices correctly identified on Chain of	Custody? Yes ✓	No 🗌	Adjusted?
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 🗆	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:	The second of Maria National Property of the San	have explored a second section of	and the second s
Client Instructions:	THE RESIDENCE OF STREET		4 7 4 45
17. Additional remarks:			
18. Cooler Information			
approximately the second secon	eal Intact   Seal No   Seal Date	Signed By	

C	hain	of-Cu	stody Record	Turn-Around		7.30				٠.			-					45	AIT		
Client:		SMK	EWA CO BLUTTER	☐ Standard	Rush	Some Day				177	-	200	100						TO	RY	
							-				www	w.hal	lenv	iron	ment	tal.co	om				
	Address	101	W Broadway	2	C-85	74 74 14 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13	49	01 H	awk	ins N	NE -	Alb	uqu	erqu	e, N	M 87	109			
fan	rington,	NM	87401	Project #:	2154	6		Te	d. 50	5-34	5-3	1000	-		-	-	4107				
hone		505 3	325 7535		-	0					ŖĖ,	A	naly	/sis	Req	uest					
email o	r Fax#:	Steve	on moskale soudmiller				7	yluc	2				10.24	(700	S						
QA/QC □ Star	Package: idard		☐ Level 4 (Full Validation)	Sta	re Mos	kal	MB's (8021)	(Gas only)	DRO MRO			SIMS)		,PO4,S	2 PCB's						
Accred				Sampler:	J. Spr Ø Yes	aque_	E SE	TPH	-	8.1)	=	8270		S N	808						î
□ NEL		□ Othe	er				1	+	GRO	4	504	or 82	8	503,	es/		OA)				o,
] EDL	(Type)	Г		Sample Tem	perature:	40	THE	ITBI	B (	hod	hod	310	Aeta	0	ticid	OA)	V-in				() se
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX+ MTB	BTEX + MTBE	TPH 8015B	TPH (Method	EDB (Method 504.1)	PAH's (8310 or	RCRA 8 Metals	Anions (F,CI,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
13	6900	50:1	SC-1 N well 0-7'	1402 Eit	MOU	701	X		X			41									
1	0902	4	5c-2 5 well 0-71	11	И	702	X		X												
	090+	1,	X-3 E mal 1 0-7	h	4	-003	X		X				18								
	0906	11	56-4 E wal 2 0-7	4	И	-014	X		X	1			119		Z,						
	0908	1/	5C-5 E wall 3 0-7	/1	- 11	-245	X		X												
	0910	4	SC-6 E wall 4 0-7		11	-006	X		X												
	0912	4	5C-7 E west 50-9	- (1	li	7007	X		X												
	0914	4	5C-8 E wall 6 0-9'	4	4	-208	X		X												
	0916	4	5c-9 w wall 1 0-7'	11	11	-009	X		X					1							
	0918	1	5C-10 W wall 2 0-7	4	4	-010	X		X						1						
	0920	1	Sc-11 w wall 3 0-7	1	1	7011	X	F	X					T				:			
V	0922	1	56-12 w wall 4 0-7	11	(1	012	N		1												
Date:	Time:	Relinquish	ed by: 25/1/	Received by:	hat	Date Time Date Time Time Time	_	nark!			II COI	woi	دو	91	Ef	co					
28/15	1850	Mu	tululles mitted to Hall Environmental may be subc	1/ pan	- m	04/24/15 0720	possi	Des	SC Any su	. S	Practer	dona	ed lliw	e clear	Sou y nota	ted on	mill the an	・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	Co I report.		

C	hain-	of-Cu	stody Record	Turn-Aroun	d Time:								= 8.13	/TI	20	BIB	IEN	TA	
Client:		SMI		□ Standa	rd Rust	Same Day									-	The second	RAT		
		T THE		Project Nar	ne:					W	ww t	alle	nviron	men	tal c	om			
Mailing	Address	401	W Broadway		20-8	5		490	)1 H							M 871	109		
Fara	nelpa		M , 87401	Project #:	/					5-345						-4107			
Phone	#: 5	505	325 7535		21546						8		alysis	_	-	-			
	r Fax#:	Stevas	. Moskal@Soudu	rille Project Mai	nager:		=	nly)	1				04)						
QA/QC	Package:			con Show	c Most	. 1	₹ (8021)	(Gas only)	RO JURO		6	2	04,8	CB's					
□ Star	dard		☐ Level 4 (Full Validat	ion)			ke	9	\S\		CINAC	5	ي ا	2 P					
Accred		□ Othe	er	Sampler:	J. Spro	iave	HALE	TPH	0/0	8.1)		0770	Anions (F,Cl,NO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )	8081 Pesticides / 8082 PCB		~			2
	(Type)			Sample Te	THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAME	1.0		3E +	GRO	TPH (Method 41	ELDS (Method 504.1)	5 5	NO N	des	-	8270 (Semi-VOA)			Air Bubbles (Y or N)
					2 22 22 23		BTEX MARK	BTEX + MTBE	158	etho	EUB (Method of	SlotoMo Ago	F,C	stici	8260B (VOA)	emi-			səlc
Date	Time	Matrix	Sample Request	ID Container Type and		HEAL No.	A	+ ×	TPH 8015B	N S	NI)	0 40	Suc Suc	1 Pe	0B (	0 (S			3npt
				Type and	" Type	1501,A92		BTE	쇼	HAT !			Anic	808	826	827			Air
6/23	6924	Soil	5c-13 w wall 5	0-9' 1 40Z	ch Neou	7013	X		K										
	0926		5c-14 w w/ 6			7014	X	1	K										
	0928		5c-15 Buse 5	009		715	1		X										
	0930		56-6 Base 5	100	1	016	X		X				and N						
	0932		56-17 Base N	- Appl		-217	X		X										
	0934		SC-18 Base N			218	X		X										
4	0936		SC-19 5.P. 1		The American	-019	X		1										
	0938		SC-20 5.8 2			020	X	45-	V										
1	0940		SC-21 S.P. 3			-022	X		X			115							
./	0942		SC-22 J.P. "	$\vdash$	1	723	X		X				3					ш	
V	0944	V	6c-23 5.P 5	5	1	D24	X		X				1						
1				<b>V</b>	V								3						
Date:	Time:	Relinguist	ned by:	Received by:	11.	Date Time	Rer	narks	: -	INUO	ice	E	EPC	0					
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ol	1900	/ L	ed by:	Received by:	12	06/2415	,,,,	1		1.	د				4				
123/15	1000	1 m	united to Hall Environmental may	be subcontracted to other	in the	- OPEC		Je	550	5	Pla	gu	e C	50	ud	5mil	alytical rec	DM	

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State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 OIL CONS. DIV DIST. 3

AUG 1 3 2015 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**

			-:		OPERA			$\boxtimes$	IIIIIIai	Report		al Repo
	company: E					t: Thomas		2000		11313		
	314 Reilly A			187401		one No. 50						
Facility Na	me: Jicaril	lla 1265 #1	3		Facility	Type: Nati	ural Ga	as Gathe	ring P	ipeline		
Surface O	wner: Jicar	rilla Apach	e Tribe	Mineral (	Owner: <b>Jicari</b>	lla Apache	Tribe		API N	0.		
				LOCA	ATION OF	RELEASE		1				
Unit Letter	Section	Township	Range	Feet from	North South	Feet fr	om	East	est	County		
L	12	24 N	4W	the 031	Line	the 12	00	Line	121171	Rio Arri	iba	
			1.	atituda 26.2	323088 Long	itudo 107	20282	4				
			_	54.7	URE OF R		LULUL	-				
Type of Rel	ease: Natura	al Gas and N	Natural Ga	(TRANSPORT (CON		of Release	Unknow	vn V	olume	Recovere	d: None	
	Release: Lea		Tatarar o			nd Hour of Oc					Discovery:	1
						@ 10:25 a.r				@ 11:15 a		
Was Immed Required	diate Notice		s 🗌 No	Not		To Whom? ( al - JAEPO	Courtesy	y Notificati	ion – C	ory Smith	- NMOCD	, Hobso
By Whom?	Thomas Lo	na			Date ar	nd Time 7/29	/15 9:48	a.m.	No. of the			
	ercourse Re				5-3500000000000000000000000000000000000	Volume Impa			ourse			
			Yes	☐ No								
						no around eu	rface an	nd flowed	down t	ho hill into	a amall an	CHARLES AND A
wash. Describe Ca associated	ause of Prob with the Jica	olem and Re arilla 126S #	medial Ac	tion: On July 2 e. Fluids were	e released to the 28, 2015, Enter released to the Repairs and re	prise technic ground surf	ians cor ace. The	nfirmed a	minor g	gas leak or olated, blo	n a valve	
wash. Describe Ca associated out and tage  Describe Ar is overseeir	ause of Prob with the Jica ged out for s	olem and Re arilla 126S # safety and en and Cleanu n activities a	medial Ac 13 pipeline nvironmen p Action: F	tion: On July 2 e. Fluids were tal concerns.	28, 2015, Enter	prise technic ground surf mediation are	ians cor ace. The e in the	nfirmed a e pipeline scheduling	minor g was is g proce	gas leak or olated, blo ess.	n a valve wn down, l	ocked
Describe Are submitted we which may be relieve the coground water	ause of Prob with the Jica ged out for s rea Affected ng excavatio with the "Final rtify that the egulations all endanger pu operator of li er, surface w	and Cleanu n activities a al" C-141.	medial Acta 13 pipeline nvironmen p Action: Fand will color given about the environmen proper the environmen proper the environmen proper the environment open health or	tion: On July 2  E. Fluids were tal concerns.  Repairs and relect samples to the tall to report and the retions have the environm	28, 2015, Enter released to the Repairs and remediation are for determinated complete to the d/or file certain acceptance of failed to adequient. In addition	prise technice ground surfimediation are in the schedule on of impacted the best of my release notificated investign, NMOCD ac	ians cor ace. The e in the uling prod d soils. knowled fications ort by the	nfirmed a e pipeline scheduling pocess A A third parties and performe NMOCI remediations of a C-	minor g was is g proce third p arty con	gas leak or older, blooss.  arty environmentive active act	onmental contion report	ontractor will be
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OIL CONS. DIV DIST. 3

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Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 AUG 1 4 2015 Form C-141 Revised August 8, 2011

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# Release Notification and Corrective Action

												Repor
Name of C	ompany:	Enterprise F	Field Serv	vices LLC		Contact:	Thomas Long					
Address: 6	14 Reilly A	Ave, Farmin	gton, NM	87401			e No. 505-599			أودا بخلطين		
Facility Na	me: Latera	al K-51				Facility T	ype: Natural (	Gas Gat	thering I	Pipeline		
Surface O	unor State	e Of New M	levice	Mineral (	Owner	ner: State Of New Mexico API No.						
Surface Of	Wilei. State	e Of INCAN IN	ICAICO	The National Control	- 100				ALLI	0.		118
		The Late		LOCA	-		LEASE					
Unit Letter	Section	Township	Range	Feet from	-	South	Feet from		West	County		0.
0	36	26N	6W	the 860'	Line		the 1450'	Line		Rio Arrib	oa	
		1				1000				1		
			La	atitude 36.4	438860	_Longitu	de -107.417	726				
				ΝΔΤ	TURE	OF REI	FASE					
Type of Rele	ease: Natur	al Gas and N	Vatural Ga		OIL		of Release Uni	cnown	Volume	Recovered	: None	-2
		spected Inter					d Hour of Occu			nd Hour of D		
			: We the last				@ 2:45 p.m.		7/31/15	@ 3:35 p.n	n.	
Was Immed	iate Notice					If YES,	To Whom? Cou	rtesy No	tification -	<ul> <li>Cory Smith</li> </ul>	n - NMOCD	
		☐ Yes	s 🗌 No	Not Re	quired							
By Whom?	Runell Sea	ile					d Time 8/8/15 a					41
Was a Wate	ercourse Re			<b>53</b>		If YES,	Volume Impacti	ng the W	/atercours	se		
			☐ Yes	⊠ No								1
											CHO -	10
If a Waterco	urse was Ir	npacted. Des	scribe Full	v.*								
Describe Ca	ause of Prob e pipeline w	vas isolated,	medial Act	tion: On July	31, 2019 t and tag	5, Enterpris	se technicians or safety and en	confirmed vironme	d a minor ntal conce	gas leak on erns. Repairs	the Lateral s and remed	K-51 iation
Describe Ca pipeline. Th are currently Describe Ar	ause of Prote e pipeline w y in progres ea Affected	blem and Rei vas isolated, ss.	medial Act blown dow	tion: On July 3 vn, locked out	t and tag	gged out fo	or safety and en	vironme	ntal conce	ion was enc	s and remed	he
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		F	Releas	e Notific		n and C	Corrective	Acti		Report  Final Report
Name of C	ompany. I	Enterprise F	Field Sen	vices LLC			homas Long	<u>V</u>	<u> Illidai</u>	report rinarreport
		ve, Farmin					No. 505-599	-2286	La Salles	
Facility Na							pe: Natural G		hering F	Pipeline
Surface Ov	vner: <b>Jica</b> ı	rilla Apach	e Tribe	Mineral (	Owne	r: Jicarilla	Apache Tribe		API N	0.
		YV	7	LOCA	ATIO	N OF RE	LEASE			
Unit Letter C	Section 28	Township 26 N	Range 5 W	Feet from the <b>705</b>	Lin	rth South e	Feet from the 1691	East	(Vest)	County Rio Arriba
			L	3 9 100		5 Longitu	de107.3680	<u>65</u>		XMXX
Type of Rele	ease: Natura	al Gas and N	latural Ga	107711111111111111111111111111111111111	UKL		Release Unkno	wn	Volume	Recovered: None
		spected Interi				Date and F	lour of Occurrer		Date ar	nd Hour of Discovery:
Man Immad	into Matica	Chron					10:36 a.m.	NI-EE		@ 11:15 a.m.
Was Immed	late Notice		s 🗌 No	⊠ Not		If YES, 10	vvnom? Courtes	sy Notifi	cation – F	Hobson Sandoval - JAEPO
By Whom?						Date and T	ime 7/31/15 2:1	8 p.m.	and the late	The second secon
Was a Wate	ercourse Re		☐ Yes	⊠ No		If YES, Vol	ume Impacting	the Wat	ercourse	
If a Waterco	urse was In	npacted, Des	scribe Full	y.*	-				- Strike	East man year of the
pipeline. No concerns. R	surface implepairs and	pacts were of remediation a	bserved. Tare in the	The pipeline wascheduling pr	vas iso rocess	olated, blown	down, locked o	ut and t	agged ou	ak on the Jicarilla F#3 t for safety and environmental
Describe Ar is overseein submitted w	g excavatio	n activities a	o Action: F nd will col	Repairs and re	emedia for det	ation are in the ermination of	ne scheduling pi f impacted soils	rocess. . A third	A third pa d party co	arty environmental contractor rective action report will be
rules and re which may e relieve the o ground water	gulations all endanger pu operator of li er, surface w	I operators a ublic health o lability should vater, human	re require r the envi d their ope health or	d to report and ronment. The erations have the environm	d/or file acceptailed the nent. In	e certain rele otance of a C to adequatel n addition, N	ease notification C-141 report by the street of the street	s and potential the NMC d remediate of a	erform co DCD mark liate conta C-141 re	and that pursuant to NMOCD rrective actions for releases ked as "Final Report" does not amination that pose a threat to sport does not relieve the
Signature:	Va	n F	uld				OIL CON	ISER'	OITAN	N DIVISION
Printed Nam	e: Jon E. F	ields				Approved b	y Environmenta	al Specia	alist:	and ling
Title: Directo	or, Environm	nental				Approval D	0/	_	Expiration	n Date:
E-mail Addr	ess:jefields(	@eprod.com				Conditions	of Approval:			Attached
Date: 87				e: (713)381-6	684	Site Re	nk 20			
Attach Addi	tional Shee	ets If Neces	ssary	HIDE	51	5230	03/14/			2

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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

\* Attach Additional Sheets If Necessary

#### State of New Mexico Energy Minerals and Natural Resources

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

Form C-141 Revised August 8, 2011

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

6.2	E. L.	F	Releas			and C	orrective	Acti	on	1	
						ERATO		Г		Report	l Report
Name of C	ompany:	Enterprise	Field Ser	vices LLC		The second secon	homas Long	1			
		Ave, Farmir					No. 505-599	-2286	1-, 20		4 120
		he Hills #2				Facility Ty	pe: Natural C	as Gat	hering l	Pipeline	
Surface O	wner: Jica	rilla Apach	e Tribe	Mineral (	Owner:	Jicarilla	Apache Tribe	)	APIN	lo.	10
				LOCA	ATION	OF RE	LEASE				
Unit Letter N	Section 8	Township 23N	Range 3W	Feet from the	Norti Line	h/South	Feet from the	East/ Line	West	County Rio Arriba	Ö.
			L			_Longitud	de 107.18543	3		CONS. DIV DIST. 3 SEP 2 5 2015	- a, y) <sub>2</sub> ,
Type of Rel	ease: Natur	al Gas					of Release: 63.	25		Recovered: None	
Source of R	telease: Inte	ernal corrosio	on				Hour of Occur @ 3:20 p.m.	rence:	Date ar @ 4:00	nd Hour of Discovery: 6 p.m.	/9/2015
Was Immed	liate Notice	Given?	s 🗆 No	Not Re	quired	If YES, T	o Whom? Con	Smith -	- NMOC	D; Hobson Sandoval -	
By Whom?	Thomas Lo	ona				Date and	Hour 6/10/201	4@7:4	8 a.m.		- 21
Was a Wate	ercourse Re	eached?	☐ Yes				olume Impactii			se	C.
Describe Ca	ause of Prol on the Apa		medial Ac	tion: On July 9						technician identified a r ut. Repairs were compl	
activities. T	he investiga	ation indicate	ed that the		elease o	caused no s	subsurface impa			stigation during the repa ted during repair activiti	
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Printed Nar Title: Direct		rields vironmental					10/-	1 _	C		
Here III Ville	ress:jefields	@eprod.com		ne: (713)381-6		Approval D Conditions	of Approval:	15	Expiratio	Attached	1.5

#NCS 1518952955

# Apache Hills #2 Pipeline Release Report

N36.23344, W107.18544 Sec. 8, T23N, R3W Rio Arriba County, New Mexico August 12, 2015

OIL CONS. DIV DIST. 3

SEP 2 5 2015

Prepared for:

Enterprise Field Services, LLC 614 Reilly Avenue Farmington, New Mexico 87401

Prepared by:

Rule Engineering, LLC 501 Airport Drive, Suite 205 Farmington, New Mexico 87401



# Enterprise Field Services, LLC Apache Hills #2 Pipeline Release Report

Prepared for:

Enterprise Field Services, LLC 614 Reilly Avenue Farmington, New Mexico 87401

Prepared by:

Rule Engineering, LLC 501 Airport Drive, Suite 205 Farmington, New Mexico 87401

Sean Norris, Area Manager

Reviewed by:

Heather M. Woods, P.G., Area Manager

August 19, 2015

#### **Table of Contents**

1	Introduction	. 1
2	Release Summary	. 1
3	NMOCD Site Ranking	. 1
4	Field Activities	. 2
5	Soil Sampling	. 2
6	Conclusions	. 3
7	Closure and Limitations	3

### **Tables**

Table 1 NMOCD Site Ranking Determination

Table 2 Soil Sampling Results-VOCs, Benzene, Total BTEX, and TPH

# **Figures**

Figure 1 Topographic Map Figure 2 Aerial Site Map Figure 3 Soil Analytical Map

# **Appendices**

Appendix A Photograph Log

Appendix B Analytical Laboratory Reports

#### 1 Introduction

The Enterprise Field Services, LLC (Enterprise) Apache Hills #2 pipeline release site is located in Rio Arriba County, New Mexico, north of Jicarilla Road 20. The release of natural gas and condensate was discovered on June 9, 2015, and resulted from a corrosion hole on the 4-inch well tie pipeline for the Apache Hills #2 well site. Site work commenced on July 20, 2015, which included the replacement of approximately 210 feet of the well tie pipeline.

A topographic map of the location is included as Figure 1 and an aerial site map is included as Figure 2.

# 2 Release Summary

Site Name - Apache Hills #2 Pipeline Release

Location - Unit Letter M (SW/SW), Section 8, Township 23N, Range 3W

Release Latitude/Longitude - N36.23344 and W107.18544, respectively

Land Jurisdiction - Jicarilla Apache Nation

Date Release Discovered - June 9, 2015

Agency Notification - New Mexico Oil Conservation Division (NMOCD),

Jicarilla Apache Nation Environmental Protection Agency (JANEPO)

Diameter of pipeline - 4-inch

Source of Release - corrosion hole on the 4-inch pipeline

Release Contents - natural gas

Release Volume - unknown

NMOCD Site Ranking - 10

Date of Rule Engineering, LLC (Rule) Field Work – July 21, 2015

Subcontractor(s) – West States Energy Contractors, Inc. (West States)

Disposal Facility - Backfilled in place

# 3 NMOCD Site Ranking

In accordance with NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 10 (Table 1). Based on the ranking score of 10, action levels for remediated soils at the site are as follows: 10 mg/kg benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1,000 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

Depth to groundwater at the site was estimated to be greater than 100 feet below grade surface (bgs) based on the elevation differential (271 feet) between the release location and the nearest wash (approximately 2 miles to the south).

A review of the New Mexico Office of the State Engineer online New Mexico Water Rights Reporting System identified no water wells within a 1,000 foot radius of the location.

#### 4 Field Activities

On July 20, 2015, Enterprise, West States, and Rule personnel were onsite for the initiation of pipeline repair activities. West States provided heavy equipment operation and Rule personnel provided excavation guidance. On July 21, 2015, based on visual observations and field screening results, Rule personnel collected eight confirmation samples (SC-1 through SC-8) from the sidewalls and base of the excavation. Additionally, one composite sample (Stockpile) was collected from the stockpiled soils to determine reuse as backfill material. Repair of the line consisted of the replacement of approximately 210 feet of the well tie pipeline from the meter at the well pad to the connection with the lateral line. The final repair excavation measured approximately 55 feet by 4 feet by 4 to 5 feet in depth. Figure 3 provides the locations and results of the soil samples collected.

A photograph log is included in Appendix A.

# 5 Soil Sampling

Rule collected confirmation soil samples from the sidewalls and base of the excavation. Soil samples SC-1 through SC-8 were collected on July 21, 2015. Each confirmation soil sample is a representative composite of material collected from separate locations within the sample area. Additionally, Rule collected a composite sample from the stockpiled soils (Stockpile) on July 21, 2015.

Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per U.S. Environmental Protection Agency (USEPA) Method 8021B and TPH for gasoline range organics (GRO) and diesel range organics (DRO) per USEPA Method 8015D. Laboratory analytical results are summarized in Table 2, and the analytical laboratory report is included in Appendix B.

A portion of each composite soil sample was also field screened for volatile organic compounds (VOCs). Field screening for VOC vapors was conducted with a photo-ionization detector (PID). Before beginning field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas. Field screening results are summarized in Table 2.

#### 6 Conclusions

The release of natural gas and condensate was discovered on June 9, 2015, and resulted from a corrosion hole on the 4-inch well tie pipeline for the Apache Hills #2 well site. Eight confirmation soil samples were collected from the sidewalls and base of the repair excavation and one composite sample was collected from the stockpiled soils on July 21, 2015, for laboratory analysis of BTEX and TPH. The final excavation measured approximately 55 feet by 4 feet by 4 to 5 feet in depth.

Laboratory analytical results for soil confirmation samples (SC-1 through SC-8 and Stockpile) reported benzene and total BTEX concentrations below the NMOCD action levels of 10 mg/kg and 50 mg/kg, respectively. The soil confirmation samples also reported TPH (GRO/DRO) concentrations below the NMOCD action level of 1,000 mg/kg. Action levels are based on a NMOCD site ranking of 10.

Based on laboratory analytical results, no further work is recommended.

#### 7 Closure and Limitations

This report has been prepared for the exclusive use of Enterprise and is subject to the terms, conditions and limitations stated in Rule's proposal, the report, and Rule's Service Agreement with Enterprise. All work has been performed in accordance with generally accepted professional environmental consulting practices. No other warranty is expressed or implied.

# **Tables**

Table 1. NMOCD Site Ranking Determination Apache Hills #2 Pipeline Release San Juan County, New Mexico Enterprise Products Operating, LLC

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20		Elevation differential between location and wash in	NMOCD Online database,
50-99 feet	10	0	Chacon Canyon, south of the location, is 271 feet.	Five Lakes Canyon NW Quadrangle, Google Earth, and Visual
>100 feet	0			Inspection
Wellhead Protection Area				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes)	0	No water source or recorded water wells within 1,000 feet radius of location.	NMOSE NMWRRS, Five Lakes Canyon NW
	0 (No)			Quadrangle, Google Earth and Visual Inspection
Distance to Surface Water Body				X
<200 horizontal feet	20			Five Lakes Canyon NW
200 to 1,000 horizontal feet	10	10	Unnamed wash located approximately 714 feet east of location, drains to the wash in Chacon Canyon.	Quadrangle, Google
>1,000 horizontal feet	0		2	Earth, and Visual Inspection

Table 2. Soil Sampling Results-VOCs, Benzene, Total BTEX, and TPH Apache Hills #2 Pipeline Release Rio Arriba County, New Mexico Enterprise Products Operating, LLC

			Sample Depth	VOCs (PID)	Benzene	Total BTEX	TPH-GRO	TPH-DRO
Sample ID	Date	Location	(ft bgs)	(ppm)	(mg/kg)	(mg/kg)	(mg	/kg)
		NMC	CD Action Levels*	100	10	50	1,0	000
SC-1	7/21/15	South Wall	0 to 5	8.4	<0.049	<0.245	<4.9	<10
SC-2	7/21/15	S. East Wall	0 to 5	59.4	<0.048	<0.240	18	19
SC-3	7/21/15	South Base	5	2,087	0.25	15	290	46
SC-4	7/21/15	S. West Wall	0 to 5	474	0.11	2.2	56	79
SC-5	7/21/15	N. West Wall	0 to 5	123.2	<0.048	0.14	11	18
SC-6	7/21/15	N. East Wall	0 to 5	17.9	<0.048	<0.240	<4.8	11
SC-7	7/21/15	North Base	5	3.4	<0.049	<0.245	<4.9	<9.7
SC-8	7/21/15	North Wall	0 to 5	53.8	<0.048	<0.239	<4.8	79
Stockpile	7/21/15	Stockpile	-		0.13	3.4	25	43

Notes:

VOCs - volatile organic compounds

PID - photo-ionization detector

ft bgs - feet below grade surface

ppm - parts per million

mg/kg - milligrams/kilograms

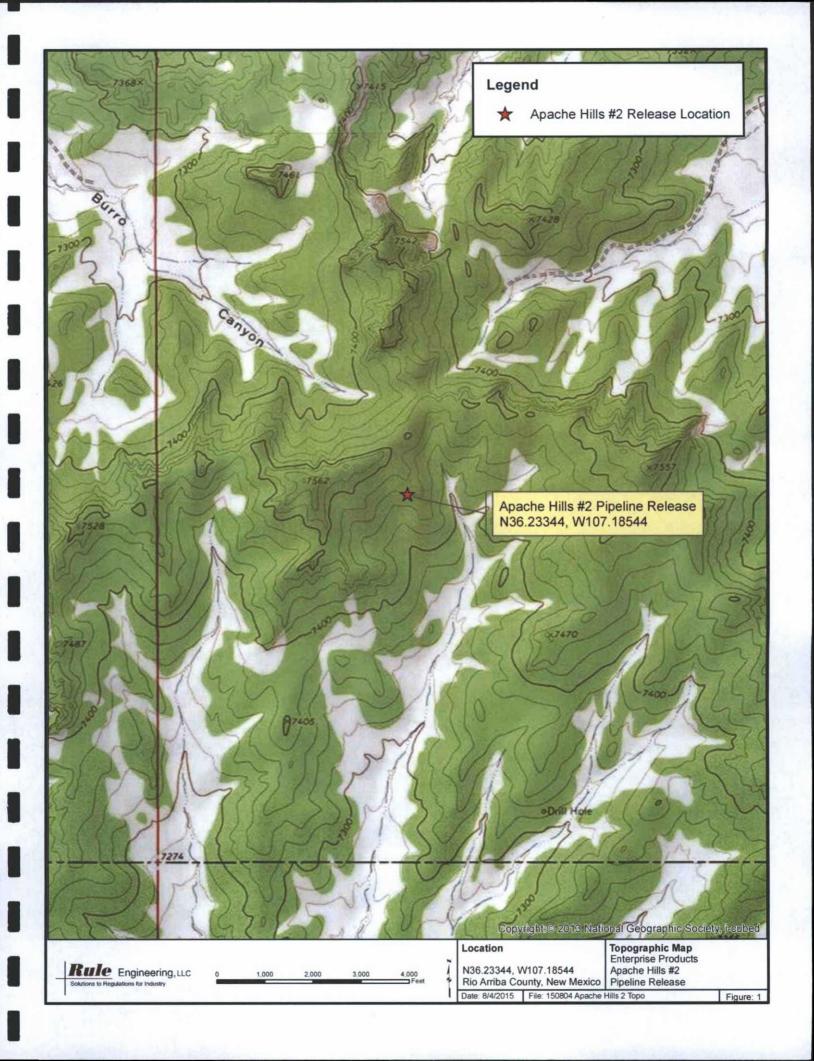
BTEX - benzene, toluene, ethylbenzene, and xylenes

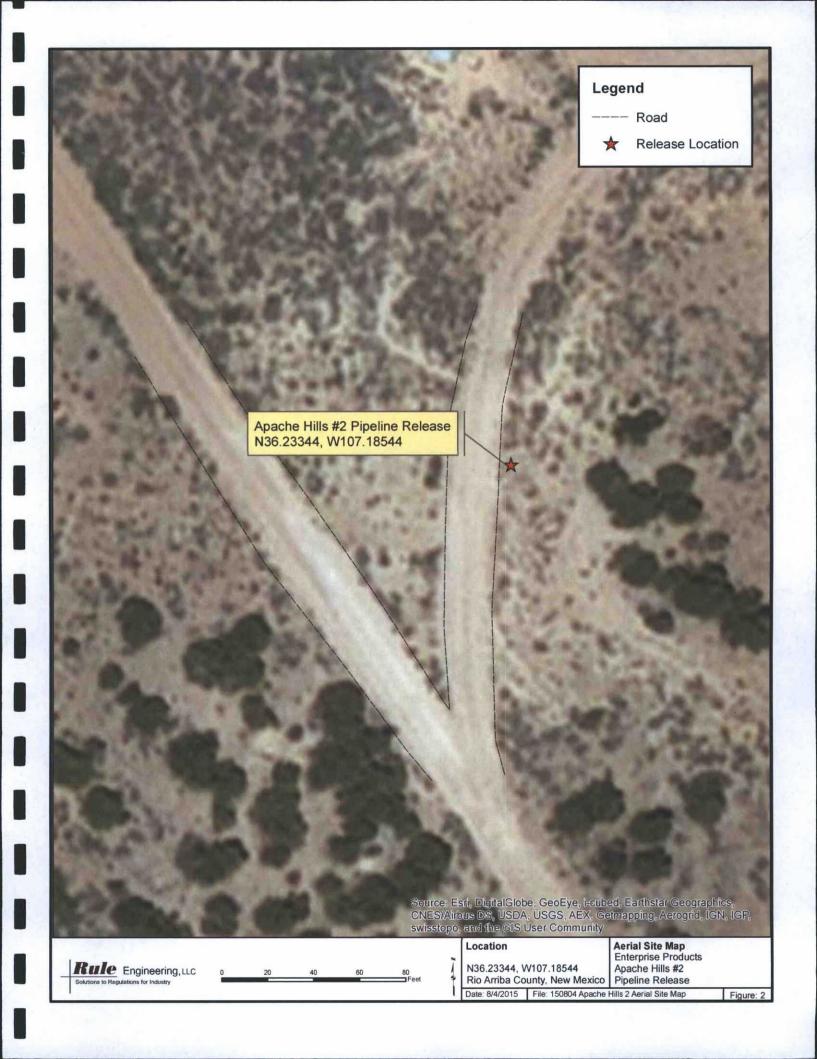
TPH-GRO - total petroleum hydrocarbons-gasoline range organics

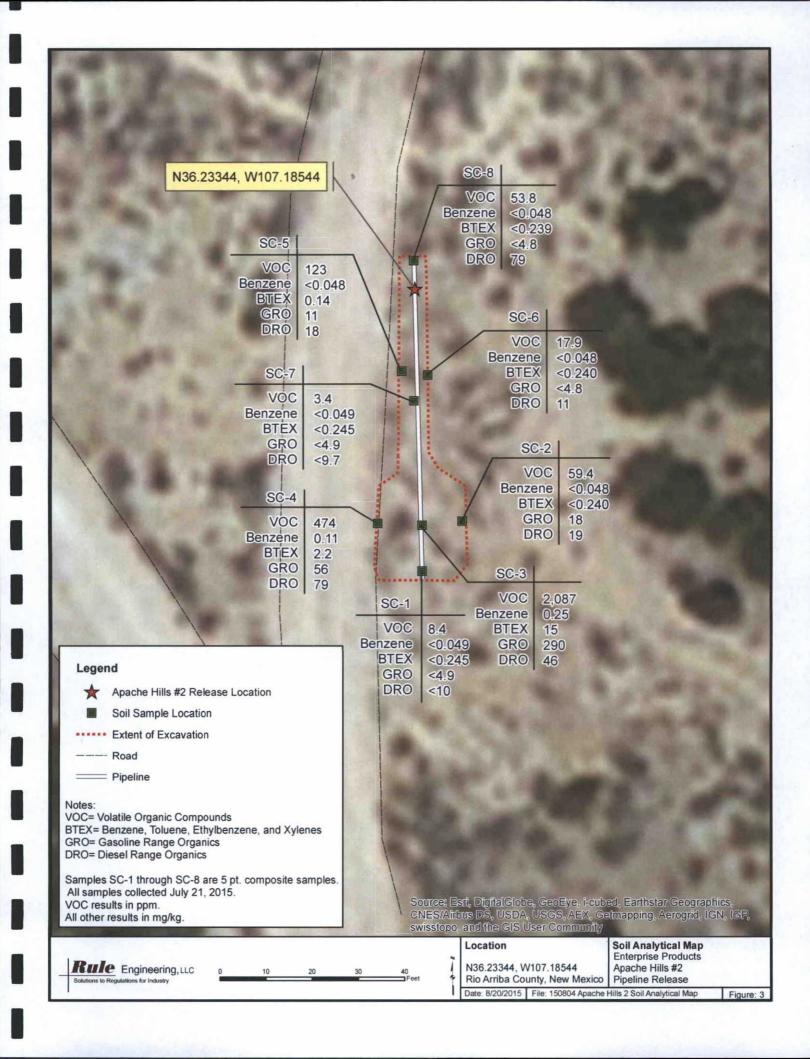
TPH-DRO - total petroleum hydrocarbons-diesel range organics

\*NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (1993)

# **Figures**







Apache Hills #2 Pipeline Release Report

# Appendix A Photograph Log

Photograph #1

Client:

Enterprise

Site Name: Apache Hills #2 Pipeline Release

Date Photo Taken: July 21, 2015

> Location: N36.23344, W107.18544

Sec. 8, T23N, R3W Rio Arriba County, New Mexico

Photo Taken by: Deborah Watson



Description: View of final pipeline repair excavation, looking south.

Photograph #2

Client: Enterprise Products

Site Name:

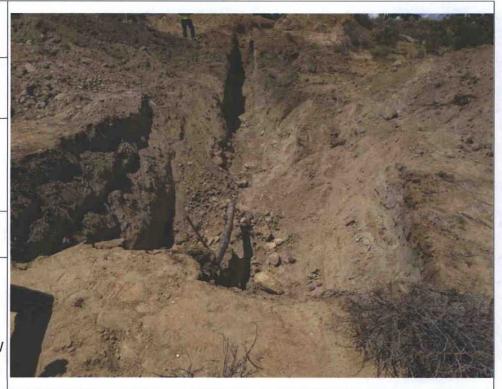
Apache Hills #2 Pipeline Release

Date Photo Taken: July 21, 2015

> Location: N36.23344, W107.18544

Sec. 8, T23N, R3W Rio Arriba County, New Mexico

Photo Taken by: Deborah Watson



Description: View of final pipeline repair excavation, looking north.

# Appendix B Analytical Laboratory Reports



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

OrderNo.: 1507970

July 27, 2015

Deborah Watson Rule Engineering LLC 501 Airport Dr., Ste 205 Farmington, NM 87401 TEL: (505) 860-2712

FAX

RE: Apache Hills #2 Pipeline Release

#### Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 8 sample(s) on 7/22/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

may

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1507970

Date Reported: 7/27/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Project: Apache Hills #2 Pipeline Release

Lab ID: 1507970-001

Matrix: SOIL

Client Sample ID: SC-1

**Collection Date:** 7/21/2015 1:25:00 PM

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	DJF
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	7/23/2015 2:35:16 PM	20387
Surr: BFB	103	70-130	%REC	1	7/23/2015 2:35:16 PM	20387
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	JME
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	7/24/2015 9:31:40 PM	20379
Surr: DNOP	132	57.9-140	%REC	1	7/24/2015 9:31:40 PM	20379
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	DJF
Benzene	ND	0.049	mg/Kg	1	7/23/2015 2:35:16 PM	20387
Toluene	ND	0.049	mg/Kg	1	7/23/2015 2:35:16 PM	20387
Ethylbenzene	ND	0.049	mg/Kg	1	7/23/2015 2:35:16 PM	20387
Xylenes, Total	ND	0.098	mg/Kg	1	7/23/2015 2:35:16 PM	20387
Surr: 1,2-Dichloroethane-d4	103	70-130	%REC	1	7/23/2015 2:35:16 PM	20387
Surr: 4-Bromofluorobenzene	93.2	70-130	%REC	1	7/23/2015 2:35:16 PM	20387
Surr: Dibromofluoromethane	110	70-130	%REC	1	7/23/2015 2:35:16 PM	20387
Surr: Toluene-d8	95.7	70-130	%REC	1	7/23/2015 2:35:16 PM	20387

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

- \* 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 Page 1 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507970

Date Reported: 7/27/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-2

 Project:
 Apache Hills #2 Pipeline Release
 Collection Date: 7/21/2015 1:36:00 PM

 Lab ID:
 1507970-002
 Matrix: SOIL
 Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst:	DJF
Gasoline Range Organics (GRO)	18	4.8	mg/Kg	1	7/23/2015 3:58:14 PM	20387
Surr: BFB	115	70-130	%REC	1	7/23/2015 3:58:14 PM	20387
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst:	JME
Diesel Range Organics (DRO)	19	9.8	mg/Kg	1	7/24/2015 9:58:59 PM	20379
Surr: DNOP	111	57.9-140	%REC	1	7/24/2015 9:58:59 PM	20379
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst:	DJF
Benzene	ND	0.048	mg/Kg	1	7/23/2015 3:58:14 PM	20387
Toluene	ND	0.048	mg/Kg	1	7/23/2015 3:58:14 PM	20387
Ethylbenzene	ND	0.048	mg/Kg	1	7/23/2015 3:58:14 PM	20387
Xylenes, Total	ND	0.096	mg/Kg	1	7/23/2015 3:58:14 PM	20387
Surr: 1,2-Dichloroethane-d4	105	70-130	%REC	1	7/23/2015 3:58:14 PM	20387
Surr: 4-Bromofluorobenzene	88.8	70-130	%REC	1	7/23/2015 3:58:14 PM	20387
Surr: Dibromofluoromethane	117	70-130	%REC	1	7/23/2015 3:58:14 PM	20387
Surr: Toluene-d8	98.0	70-130	%REC	1	7/23/2015 3:58:14 PM	20387

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

- 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 Page 2 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507970

Date Reported: 7/27/2015

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-3

Project: Apac

Apache Hills #2 Pipeline Release

**Collection Date:** 7/21/2015 1:42:00 PM

Lab ID: 1507970-003

Matrix: SOIL

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	DJF
Gasoline Range Organics (GRO)	290	25	mg/Kg	5	7/23/2015 4:25:56 PM	20387
Surr: BFB	111	70-130	%REC	5	7/23/2015 4:25:56 PM	20387
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	JME
Diesel Range Organics (DRO)	46	9.7	mg/Kg	1	7/24/2015 10:26:14 PM	20379
Surr: DNOP	116	57.9-140	%REC	1	7/24/2015 10:26:14 PM	20379
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	DJF
Benzene	0.25	0.25	mg/Kg	5	7/23/2015 4:25:56 PM	20387
Toluene	2.7	0.25	mg/Kg	5	7/23/2015 4:25:56 PM	20387
Ethylbenzene	1.4	0.25	mg/Kg	5	7/23/2015 4:25:56 PM	20387
Xylenes, Total	11	0.49	mg/Kg	5	7/23/2015 4:25:56 PM	20387
Surr: 1,2-Dichloroethane-d4	109	70-130	%REC	. 5	7/23/2015 4:25:56 PM	20387
Surr: 4-Bromofluorobenzene	87.8	70-130	%REC	5	7/23/2015 4:25:56 PM	20387
Surr: Dibromofluoromethane	107	70-130	%REC	5	7/23/2015 4:25:56 PM	20387
Surr: Toluene-d8	97.9	70-130	%REC	5	7/23/2015 4:25:56 PM	20387

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

- \* 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 Page 3 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507970

Date Reported: 7/27/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-4

Project: Apache Hills #2 Pipeline Release

Collection Date: 7/21/2015 1:30:00 PM

Lab ID: 1507970-004

Matrix: SOIL

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	DJF
Gasoline Range Organics (GRO)	56	4.9	mg/Kg	1	7/23/2015 4:53:38 PM	20387
Surr: BFB	116	70-130	%REC	1	7/23/2015 4:53:38 PM	20387
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANIC	S			Analyst	JME
Diesel Range Organics (DRO)	79	10	mg/Kg	1	7/24/2015 10:53:34 PM	20379
Surr: DNOP	122	57.9-140	%REC	1	7/24/2015 10:53:34 PM	20379
EPA METHOD 8260B: VOLATILES S	SHORT LIST				Analyst	DJF
Benzene	0.11	0.049	mg/Kg	1	7/23/2015 4:53:38 PM	20387
Toluene	0.51	0.049	mg/Kg	1	7/23/2015 4:53:38 PM	20387
Ethylbenzene	0.18	0.049	mg/Kg	1	7/23/2015 4:53:38 PM	20387
Xylenes, Total	1.4	0.098	mg/Kg	1	7/23/2015 4:53:38 PM	20387
Surr: 1,2-Dichloroethane-d4	106	70-130	%REC	1	7/23/2015 4:53:38 PM	20387
Surr: 4-Bromofluorobenzene	82.2	70-130	%REC	1	7/23/2015 4:53:38 PM	20387
Surr: Dibromofluoromethane	110	70-130	%REC	1	7/23/2015 4:53:38 PM	20387
Surr: Toluene-d8	97.8	70-130	%REC	1	7/23/2015 4:53:38 PM	20387

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

- 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 Page 4 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507970

Date Reported: 7/27/2015

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-5

Project: Apache Hills #2 Pipeline Release Collection Date: 7/21/2015 1:44:00 PM

Lab ID: 1507970-005 Matrix: SOIL Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: DJF
Gasoline Range Organics (GRO)	11	4.8	mg/Kg	1	7/23/2015 5:21:16 PM	20387
Surr: BFB	109	70-130	%REC	1	7/23/2015 5:21:16 PM	20387
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: JME
Diesel Range Organics (DRO)	18	9.8	mg/Kg	1	7/24/2015 11:20:53 PM	20379
Surr: DNOP	121	57.9-140	%REC	1	7/24/2015 11:20:53 PM	20379
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: DJF
Benzene	ND	0.048	mg/Kg	1	7/23/2015 5:21:16 PM	20387
Toluene	ND	0.048	mg/Kg	1	7/23/2015 5:21:16 PM	20387
Ethylbenzene	ND	0.048	mg/Kg	1	7/23/2015 5:21:16 PM	20387
Xylenes, Total	0.14	0.097	mg/Kg	1	7/23/2015 5:21:16 PM	20387
Surr: 1,2-Dichloroethane-d4	106	70-130	%REC	1	7/23/2015 5:21:16 PM	20387
Surr: 4-Bromofluorobenzene	89.7	70-130	%REC	1	7/23/2015 5:21:16 PM	20387
Surr: Dibromofluoromethane	117	70-130	%REC	1	7/23/2015 5:21:16 PM	20387
Surr: Toluene-d8	98.0	70-130	%REC	1	7/23/2015 5:21:16 PM	20387

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

- 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 Page 5 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order 1507970

Date Reported: 7/27/2015

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Project: Apache Hills #2 Pipeline Release

Lab ID: 1507970-006

Client Sample ID: SC-6

Collection Date: 7/21/2015 1:46:00 PM

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: DJF
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/23/2015 5:48:53 PM	20387
Surr: BFB	108	70-130	%REC	1	7/23/2015 5:48:53 PM	20387
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: JME
Diesel Range Organics (DRO)	11	10	mg/Kg	1	7/24/2015 11:48:11 PM	20379
Surr: DNOP	121	57.9-140	%REC	1	7/24/2015 11:48:11 PM	20379
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: DJF
Benzene	ND	0.048	mg/Kg	1	7/23/2015 5:48:53 PM	20387
Toluene	ND	0.048	mg/Kg	1	7/23/2015 5:48:53 PM	20387
Ethylbenzene	ND	0.048	mg/Kg	1	7/23/2015 5:48:53 PM	20387
Xylenes, Total	ND	0.096	mg/Kg	1	7/23/2015 5:48:53 PM	20387
Surr: 1,2-Dichloroethane-d4	103	70-130	%REC	1	7/23/2015 5:48:53 PM	20387
Surr: 4-Bromofluorobenzene	91.7	70-130	%REC	1	7/23/2015 5:48:53 PM	20387
Surr: Dibromofluoromethane	113	70-130	%REC	1	7/23/2015 5:48:53 PM	20387
Surr: Toluene-d8	95.6	70-130	%REC	1	7/23/2015 5:48:53 PM	20387

Matrix: SOIL

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

- 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 Page 6 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit

#### **Analytical Report**

Lab Order 1507970

Date Reported: 7/27/2015

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-7

 Project:
 Apache Hills #2 Pipeline Release
 Collection Date: 7/21/2015 1:50:00 PM

 Lab ID:
 1507970-007
 Matrix: SOIL
 Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst:	DJF
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	7/23/2015 6:16:28 PM	20387
Surr: BFB	104	70-130	%REC	1	7/23/2015 6:16:28 PM	20387
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANIC	S			Analyst:	JME
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	7/25/2015 12:15:30 AM	20379
Surr: DNOP	120	57.9-140	%REC	1	7/25/2015 12:15:30 AM	20379
EPA METHOD 8260B: VOLATILES S	SHORT LIST				Analyst:	DJF
Benzene	ND	0.049	mg/Kg	1	7/23/2015 6:16:28 PM	20387
Toluene	ND	0.049	mg/Kg	1	7/23/2015 6:16:28 PM	20387
Ethylbenzene	ND	0.049	mg/Kg	1	7/23/2015 6:16:28 PM	20387
Xylenes, Total	ND	0.098	mg/Kg	1	7/23/2015 6:16:28 PM	20387
Surr: 1,2-Dichloroethane-d4	101	70-130	%REC	1	7/23/2015 6:16:28 PM	20387
Surr: 4-Bromofluorobenzene	90.7	70-130	%REC	1	7/23/2015 6:16:28 PM	20387
Surr: Dibromofluoromethane	113	70-130	%REC	1	7/23/2015 6:16:28 PM	20387
Surr: Toluene-d8	96.4	70-130	%REC	1	7/23/2015 6:16:28 PM	20387

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
- 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 Page 7 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit

#### **Analytical Report**

Lab Order 1507970

Date Reported: 7/27/2015

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Client Sample ID: SC-8

Project:

Apache Hills #2 Pipeline Release

Collection Date: 7/21/2015 1:55:00 PM

Lab ID:

1507970-008

Matrix: SOIL

Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst	: DJF
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/23/2015 6:44:04 PM	20387
Surr: BFB	102	70-130	%REC	1	7/23/2015 6:44:04 PM	20387
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANIC	S			Analyst	: JME
Diesel Range Organics (DRO)	79	9.9	mg/Kg	1	7/25/2015 12:42:45 AM	20379
Surr: DNOP	114	57.9-140	%REC	1	7/25/2015 12:42:45 AM	20379
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst	: DJF
Benzene	ND	0.048	mg/Kg	1	7/23/2015 6:44:04 PM	20387
Toluene	ND	0.048	mg/Kg	1	7/23/2015 6:44:04 PM	20387
Ethylbenzene	ND	0.048	mg/Kg	1	7/23/2015 6:44:04 PM	20387
Xylenes, Total	ND	0.095	mg/Kg	1	7/23/2015 6:44:04 PM	20387
Surr: 1,2-Dichloroethane-d4	101	70-130	%REC	1	7/23/2015 6:44:04 PM	20387
Surr: 4-Bromofluorobenzene	97.7	70-130	%REC	1	7/23/2015 6:44:04 PM	20387
Surr: Dibromofluoromethane	111	70-130	%REC	1	7/23/2015 6:44:04 PM	20387
Surr: Toluene-d8	94.8	70-130	%REC	1	7/23/2015 6:44:04 PM	20387

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
- 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 Page 8 of 12
- P Sample pH Not In Range
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1507970

27-Jul-15

Client:

Rule Engineering LLC

Project:

Apache Hills #2 Pipeline Release

Sample ID MB-20379

SampType: MBLK

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID:

PBS

Batch ID: 20379

RunNo: 27723

Prep Date: 7/22/2015

Analysis Date: 7/24/2015

SeqNo: 834383

HighLimit

TestCode: EPA Method 8015M/D: Diesel Range Organics

Units: mg/Kg

Analyte

Result PQL 10

SPK value SPK Ref Val %REC

%RPD

**RPDLimit** Qual

Diesel Range Organics (DRO) ND Surr: DNOP 10

SPK value SPK Ref Val %REC

10.00

50.00

5.000

57.9 140

LowLimit

LowLimit

Sample ID LCS-20379

SampType: LCS

RunNo: 27723

105

Client ID:

LCSS

Batch ID: 20379

Prep Date:

7/22/2015

Analysis Date: 7/24/2015

SeqNo: 834384

Units: mg/Kg

HighLimit %RPD **RPDLimit** Qual

Diesel Range Organics (DRO) Surr: DNOP

49 10 5.5

PQL

Result

97.1 111 57.4 139 57.9

140

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH Not In Range
- Reporting Detection Limit

Page 9 of 12

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1507970

27-Jul-15

Client:

Rule Engineering LLC

Project:

Apache Hills #2 Pipeline Release

Project: Apache F	Hills #2 Pip	eline R	elease							
Sample ID mb-20387	SampT	ype: ME	BLK	Test	Code: El	PA Method	8260B: Volat	iles Short	List	
Client ID: PBS	Batch	ID: 20	387	R	tunNo: 2	7718				
Prep Date: 7/22/2015	Analysis D	ate: 7/	23/2015	S	eqNo: 8	33184	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		102	70	130			
Surr. 4-Bromofluorobenzene	0.48		0.5000		96.5	70	130			
Surr: Dibromofluoromethane	0.58		0.5000		115	70	130			
Surr: Toluene-d8	0.47		0.5000		94.5	70	130			
Sample ID Ics-20387	SampT	ype: LC	s	Test	Code: El	PA Method	8260B: Volat	iles Short	List	
Client ID: LCSS	Batch	ID: 20	387	R	RunNo: 2	7718				
Prep Date: 7/22/2015	Analysis D	ate: 7/	23/2015	S	eqNo: 8	33185	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	104	70	130			
Toluene	1.0	0.050	1.000	0	103	70	130			
Ethylbenzene	1.1	0.050	1.000	0	106	70	130			
Xylenes, Total	3.2	0.10	3.000	0	108	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.7	70	130			
Surr: Dibromofluoromethane	0.58		0.5000		116	70	130			
Surr: Toluene-d8	0.49		0.5000		97.8	70	130			
Sample ID 1507970-002ams	SampT	ype: MS	3	Tes	tCode: El	PA Method	8260B: Volat	iles Short	List	
Client ID: SC-2	Batch	ID: 20	387	F	RunNo: 2	7718				
Prep Date: 7/22/2015	Analysis D	ate: 7/	23/2015	S	SeqNo: 8	33188	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	0.9921	0	115	70	130			
Toluene	1.2	0.050	0.9921	0.01751	119	70	130			
Ethylbenzene	1.3	0.050	0.9921	0	129	70	130			
Xylenes, Total	3.8	0.099	2.976	0.04769	127	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.4960		102	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.4960		95.4	70	130			
Surr: Dibromofluoromethane	0.55		0.4960		112	70	130			

#### Qualifiers:

Surr: Toluene-d8

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

0.49

0.4960

- 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

130

E Value above quantitation range

98.2

J Analyte detected below quantitation limits

Page 10 of 12

- P Sample pH Not In Range
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

0

1507970

27-Jul-15

Client:

Rule Engineering LLC

Project:

Surr: Toluene-d8

Apache Hills #2 Pipeline Release

0.48

Sample ID 1507970-002amsd SampType: MSD TestCode: EPA Method 8260B: Volatiles Short List Client ID: SC-2 Batch ID: 20387 RunNo: 27753 Prep Date: 7/22/2015 SeqNo: 834542 Analysis Date: 7/24/2015 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Benzene 1.2 0.048 0.9681 0 123 70 130 4.76 20 Toluene 0.048 1.2 0.9681 0.01751 125 70 130 2.62 20 1.3 Ethylbenzene 0.048 0.9681 70 130 0 0 135 1.80 S Xylenes, Total 3.9 0.097 2.904 0.04769 132 70 130 1.50 0 S Surr: 1,2-Dichloroethane-d4 0.50 0.4840 70 0 0 103 130 Surr: 4-Bromofluorobenzene 0.47 0.4840 96.5 70 130 0 0 0 0 Surr: Dibromofluoromethane 0.54 0.4840 112 70 130

98.2

70

130

0

0.4840

#### 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

Page 11 of 12

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1507970

27-Jul-15

Client:

Rule Engineering LLC

Project:

Apache Hills #2 Pipeline Release

500

488.8

Sample ID mb-20387 SampType: MBLK TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: **PBS** Batch ID: 20387 RunNo: 27718 Prep Date: 7/22/2015 Analysis Date: 7/23/2015 SeqNo: 833250 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 540 500.0 108 70 130 Sample ID Ics-20387 SampType: LCS TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: LCSS Batch ID: 20387 RunNo: 27718 Prep Date: 7/22/2015 Analysis Date: 7/23/2015 SeqNo: 833278 Units: mg/Kg Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 26 5.0 25.00 106 70 123 Surr: BFB 520 500.0 104 70 130 Sample ID 1507970-001ams SampType: MS TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: SC-1 Batch ID: 20387 RunNo: 27718 Prep Date: 7/22/2015 Analysis Date: 7/23/2015 SeqNo: 833291 Units: mg/Kg Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 30 5.0 Gasoline Range Organics (GRO) 25.00 0 121 54.9 131 Surr: BFB 540 500.0 108 70 130 Sample ID 1507970-001amsd SampType: MSD TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: SC-1 Batch ID: 20387 RunNo: 27718 Prep Date: 7/22/2015 Analysis Date: 7/23/2015 SeqNo: 833293 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC %RPD LowLimit HighLimit **RPDLimit** Qual Gasoline Range Organics (GRO) 30 4.9 24.44 124 54.9 131 0.382

#### Qualifiers:

Surr: BFB

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits
- P

102

70

130

0

0

Page 12 of 12

- Sample pH Not In Range
- Reporting Detection Limit



### Hall Environmental Analysis Laboratory 4901 Hawkins NE Aibuquerque. NM 87109

TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

# Sample Log-In Check List

<ol> <li>Is Chain of Custody complete?</li> <li>How was the sample delivered?</li> <li>Log In</li> <li>Was an attempt made to cool the samples?</li> <li>Were all samples received at a temperature of &gt;0° C to 6.0°C</li> <li>Sample(s) in proper container(s)?</li> <li>Sufficient sample volume for indicated test(s)?</li> </ol>	Yes ✓ Courier Yes ✓	No -	Not Present ✓ Not Present □
Completed By: Lindsay Mangin 7/22/2015 9:07:53 AM Reviewed By: OS ON 20 IS  Chain of Custody  1. Custody seals intact on sample bottles? 2. Is Chain of Custody complete? 3. How was the sample delivered?  Log In  4. Was an attempt made to cool the samples?  5. Were all samples received at a temperature of >0° C to 6.0°C  6. Sample(s) in proper container(s)?  7. Sufficient sample volume for indicated test(s)?	Yes ✓ Courier Yes ✓	No 🗆	Not Present
Completed By: Lindsay Mangin 7/22/2015 9:07:53 AM Reviewed By: OS ON 20 IS  Chain of Custody  1. Custody seals intact on sample bottles? 2. Is Chain of Custody complete? 3. How was the sample delivered?  Log In  4. Was an attempt made to cool the samples?  5. Were all samples received at a temperature of >0° C to 6.0°C  6. Sample(s) in proper container(s)?  7. Sufficient sample volume for indicated test(s)?	Yes ✓ Courier Yes ✓	No 🗆	Not Present
Chain of Custody  1. Custody seals intact on sample bottles?  2. Is Chain of Custody complete?  3. How was the sample delivered?  Log In  4. Was an attempt made to cool the samples?  5. Were all samples received at a temperature of >0° C to 6.0°C  6. Sample(s) in proper container(s)?  7. Sufficient sample volume for indicated test(s)?	Yes ✓ Courier Yes ✓	No 🗆	Not Present
Chain of Custody  1. Custody seals intact on sample bottles?  2. Is Chain of Custody complete?  3. How was the sample delivered?  Log In  4. Was an attempt made to cool the samples?  5. Were all samples received at a temperature of >0° C to 6.0°C  6. Sample(s) in proper container(s)?  7. Sufficient sample volume for indicated test(s)?	Yes ✓ Courier Yes ✓	No 🗆	Not Present
<ol> <li>Custody seals intact on sample bottles?</li> <li>Is Chain of Custody complete?</li> <li>How was the sample delivered?</li> <li>Log In</li> <li>Was an attempt made to cool the samples?</li> <li>Were all samples received at a temperature of &gt;0° C to 6.0°C</li> <li>Sample(s) in proper container(s)?</li> <li>Sufficient sample volume for indicated test(s)?</li> </ol>	Yes ✓ Courier Yes ✓	No 🗆	Not Present
<ol> <li>Is Chain of Custody complete?</li> <li>How was the sample delivered?</li> <li>Log In</li> <li>Was an attempt made to cool the samples?</li> <li>Were all samples received at a temperature of &gt;0° C to 6.0°C</li> <li>Sample(s) in proper container(s)?</li> <li>Sufficient sample volume for indicated test(s)?</li> </ol>	Courier Yes ✓	No 🗆	
Log In  4. Was an attempt made to cool the samples?  5. Were all samples received at a temperature of >0° C to 6.0°C  6. Sample(s) in proper container(s)?  7. Sufficient sample volume for indicated test(s)?	Yes <b>⊻</b>		NA 🗆
<ul> <li>4. Was an attempt made to cool the samples?</li> <li>5. Were all samples received at a temperature of &gt;0° C to 6.0°C</li> <li>6. Sample(s) in proper container(s)?</li> <li>7. Sufficient sample volume for indicated test(s)?</li> </ul>			NA 🗆
<ul> <li>5. Were all samples received at a temperature of &gt;0° C to 6.0°C</li> <li>6. Sample(s) in proper container(s)?</li> <li>7. Sufficient sample volume for indicated test(s)?</li> </ul>			NA 🗆
Sample(s) in proper container(s)?      Sufficient sample volume for indicated test(s)?	Yes 🗸	🖂	
7. Sufficient sample volume for indicated test(s)?		No	NA 🗆
	Yes 🗸	No 🗌	
	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 🗸	# of preserved bottles checked
12. Does paperwork match bottle labels?	Yes 🗸	No 🗆	for pH:
(Note discrepancies on chain of custody)			(<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes 🗸	No _	Adjusted?
	Yes ✓ Yes ✓	No 🗆	Checked by:
15. Were all holding times able to be met? (If no, notify customer for authorization.)	res 🖭	NO L	
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		Olerad D. I	1
Cooler No Temp °C Condition Seal Intact Seal No Seal N	Seal Date	Signed By	**

C	hain-	of-Cu	stody Record	Turn-Around	Time:		1			L	A		E	NV	/T E	20	NE	ME	NT	AI	
			ieving U.C.	Standard	□ Rush			-												RY	,
	1 mic	Chaire	TYING CIC	Project Name	9:					-										,121	
Aailing	Address	- 1		Amache t	tills #2 Pi	petine Release									ment						
	71001000	501 A	uport Drive	Project #:		ofice	-											7109			
			ton NM 87401	Floject #.			1	Te	el. 50	5-34	5-3	- Contract	_			_	410	7	1100		
hone a		5 860						0	*		100	A	nai		Req	ues					T
		dwatso	norule enginery com	Project Mana	iger:		1	only	3		4			304)	S						
1	Package:		C Lavel 4 (Evil ) (alidation)	D Wat	SOM		(8021)	sas (	3			SIMS)		0,4	PCB'						
Stan Accredi			☐ Level 4 (Full Validation)		,			) H	BR		_	IS C		D <sub>2</sub> ,F							
□ NEL		□ Othe	r	Sampler: D	Ø Yes	□ No	1	F.	8	8.1	1.1	827		3,5	/ 80		4				Or N
□ EDD	(Type)_			Sample Tem	/		Pa	3E +	(GR	d 41	d 50	or	als	S,	des	-	0				7
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	7	BTEX +-12	BTEX + MTBE + TPH (Gas	TPH 8015B (GROODRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270	RCRA 8 Metals	Anions (F,CI,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles
-21-15	1325	Soil	Sc-1	2-402	irld	-001	X		χ												
_	1336	1	SC-2		1	-002	X		X												
	1342		Sc-3			-003	X		X												
	1330		Sc-4			-004	X		X												
	i344		Sc-5			-005	X		X												
	1346		SC-6			-006	X		X												
1	1350		SC-7		3	-007	X		X												
工	1355	1	SC-8	1 1		-008	X		X												
																113					
			TO A STATE OF THE																		
																					T
Date:   22/15   Date:	Time:	Relinquishe	ih Water	Received by:	Waste	7/21/18 Time 7/21/18 1821 Date Time	Ren	nark	s: F	Bull	to E	inte	rp	ise							
2/15	1830	m	atu Walls mitted to Hall Environmental may be sub:	4 3	27	12/150700	is possii	bility.	Any su	ib-cont	racted	d data	will be	e clear	ly nota	ated or	the a	malytic	al report	<u>.</u>	



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

Deborah Watson Rule Engineering LLC 501 Airport Dr., Ste 205 Farmington, NM 87401 TEL: (505) 860-2712

FAX

RE: Apache Hills #2 Pipeline

OrderNo.: 1507969

#### Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/22/2015 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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 qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman

Laboratory Manager

andel

4901 Hawkins NE

Albuquerque, NM 87109

#### **Analytical Report**

Lab Order 1507969

Date Reported: 7/27/2015

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC

Project:

Apache Hills #2 Pipeline

Client Sample ID: Stockpile

Collection Date: 7/21/2015 2:15:00 PM

Lab ID: 1507969-001 Matrix: SOIL Received Date: 7/22/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s				Analyst	JME
Diesel Range Organics (DRO)	43	9.8		mg/Kg	1	7/24/2015 8:09:28 PM	20379
Surr: DNOP	123	57.9-140		%REC	1	7/24/2015 8:09:28 PM	20379
EPA METHOD 8015D: GASOLINE RAI	NGE					Analyst	NSB
Gasoline Range Organics (GRO)	25	5.0		mg/Kg	1	7/23/2015 11:27:59 PM	20385
Surr: BFB	166	75.4-113	S	%REC	1	7/23/2015 11:27:59 PM	20385
EPA METHOD 8021B: VOLATILES						Analyst	NSB
Benzene	0.13	0.050		mg/Kg	1	7/23/2015 11:27:59 PM	20385
Toluene	0.82	0.050		mg/Kg	1	7/23/2015 11:27:59 PM	20385
Ethylbenzene	0.29	0.050		mg/Kg	1	7/23/2015 11:27:59 PM	20385
Xylenes, Total	2.2	0.10		mg/Kg	1	7/23/2015 11:27:59 PM	20385
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	7/23/2015 11:27:59 PM	20385

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
- 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 Page 1 of 4
- P Sample pH Not In Range
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1507969

27-Jul-15

Client:

Rule Engineering LLC

Project:

Apache Hills #2 Pipeline

Sample ID 1507969-001AMS

SampType: MS

TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID:

Stockpile

Batch ID: 20379

RunNo: 27723

PQL

10

Prep Date: 7/22/2015

Analysis Date: 7/24/2015

Result

98

SeqNo: 834355

109

127

Units: mg/Kg

50.61

5.061

51.39

5.139

SPK value SPK Ref Val %REC

43.10

146

HighLimit

Qual

Analyte Surr: DNOP

Diesel Range Organics (DRO)

6.4 SampType: MSD

TestCode: EPA Method 8015M/D: Diesel Range Organics

57.9 140

%RPD

Client ID:

Sample ID 1507969-001AMSD Stockpile

Batch ID: 20379

RunNo: 27723

Prep Date:

7/22/2015

Analysis Date: 7/24/2015

Units: mg/Kg

Result

SeqNo: 834356

108

127

%RPD **RPDLimit** Qual

Surr: DNOP

Diesel Range Organics (DRO)

PQL

SPK value SPK Ref Val %REC

LowLimit

57.9

LowLimit

42.3

HighLimit

**RPDLimit** 

99 10 6.5

43.10

42.3

146 140 0.342

28.9 0

Sample ID MB-20379

Client ID:

PBS

SampType: MBLK

Batch ID: 20379

TestCode: EPA Method 8015M/D: Diesel Range Organics RunNo: 27723

Prep Date: 7/22/2015

Analysis Date: 7/24/2015

10.00

SeqNo: 834383

105

LowLimit

Units: mg/Kg HighLimit %RPD

**RPDLimit** 

Qual

Diesel Range Organics (DRO) Surr: DNOP

10

Result

ND

5.5

140 TestCode: EPA Method 8015M/D: Diesel Range Organics

Sample ID LCS-20379 Client ID:

SampType: LCS

PQL

10

RunNo: 27723

57.9

Prep Date: 7/22/2015

LCSS

Batch ID: 20379 Analysis Date: 7/24/2015

SPK value SPK Ref Val %REC

SeqNo: 834384

Units: mg/Kg

%RPD **RPDLimit** HighLimit Qual

Analyte Diesel Range Organics (DRO) Surr: DNOP

Result PQL SPK value SPK Ref Val 49 10

50.00 5.000

%REC 97.1

LowLimit

57.4

139 140

111 57.9

#### **Oualifiers:**

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded

% Recovery outside of range due to dilution or matrix

- Not Detected at the Reporting Limit RPD outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- E Value above quantitation range J
- P Sample pH Not In Range
- Reporting Detection Limit
- Analyte detected below quantitation limits
  - Page 2 of 4

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1507969

27-Jul-15

Client:

Rule Engineering LLC

Project:

Apache Hills #2 Pipeline

Sample ID MB-20385

SampType: MBLK

TestCode: EPA Method 8015D: Gasoline Range

Client ID:

**PBS** 

Batch ID: 20385

RunNo: 27716

Prep Date: 7/22/2015

Analysis Date: 7/23/2015

PQL

5.0

SeqNo: 833100

Units: mg/Kg

Analyte

Result ND

SPK value SPK Ref Val %REC

SPK value SPK Ref Val %REC

LowLimit HighLimit %RPD

**RPDLimit** 

Gasoline Range Organics (GRO) Surr: BFB

870

1000

86.8

75.4

113

Qual

Sample ID LCS-20385

SampType: LCS

TestCode: EPA Method 8015D: Gasoline Range

Client ID: Prep Date:

LCSS

Batch ID: 20385

PQL

5.0

RunNo: 27716

7/22/2015

Analysis Date: 7/23/2015

SeqNo: 833101

Units: mg/Kg

HighLimit

%RPD **RPDLimit** Qual

Gasoline Range Organics (GRO) Surr: BFB

Result 24 910

25.00 1000 95.3 91.4

79.6 75.4

LowLimit

122

113

# **Qualifiers:**

- Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH Not In Range
- Reporting Detection Limit

Page 3 of 4

# Hall Environmental Analysis Laboratory, Inc.

WO#:

1507969

27-Jul-15

Client:

Rule Engineering LLC

Project:

Apache Hills #2 Pipeline

Sample ID MB-20385	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batch	ID: 20	385	F	RunNo: 2	7716				
Prep Date: 7/22/2015	Analysis D	ate: 7/	23/2015	8	SeqNo: 8	33126	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	<b>RPDLimit</b>	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.92		1.000		91.9	80	120			
Sample ID LCS-20385	SampT	ype: LC	s	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batch	ID: 20	385	F	RunNo: 2	7716				
	The second second			793						

Client ID: LCSS	Batch	1D: 20	385	R	RunNo: 2	7716				
Prep Date: 7/22/2015	Analysis D	ate: 7/	23/2015	S	SeqNo: 8	33127	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	76.6	128			
Toluene	1.0	0.050	1.000	0	99.9	75	124			
Ethylbenzene	1.1	0.050	1.000	0	107	79.5	126			
Xylenes, Total	3.3	0.10	3.000	0	110	78.8	124			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	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

Page 4 of 4



rian Environmental Analysis Lawuratury 4901 Hawkins NE Albuquerque. NM 87109

TEL: 505-345-3975 FAX: 505-345-4107

# Sample Log-In Check List

Website: www.hailenvironmental.com

Client Name: RULE ENGIN	EERING LL Work Order N	umber: 1507969		RcptNo: 1	
Received by/date:	07/22/15				
Logged By: Lindsay Mar	ngin 7/22/2015 7:00:	00 AM	July Hlyso		
Completed By: Lindsay Mar	ngin 7/22/2015 9:04:	D3 AM	July		
Reviewed By: (	15 07/00/15				
Chain of Custody					
1. Custody seals intact on sar	mple bottles?	Yes	No 🗌	Not Present 🗹	
2. Is Chain of Custody comple	ete?	Yes 🗹	No	Not Present	
3. How was the sample delive	red?	Courier			
Log In					
4. Was an attempt made to c	ool the samples?	Yes 🗸	No	NA C	
5. Were all samples received	at a temperature of >0° C to 6.0°	C Yes ✓	No 🗆	NA 🗆	
6. Sample(s) in proper contain	ner(s)?	Yes 🗸	No 🗌		
7. Sufficient sample volume for	or 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 heads	pace?	Yes	No 🗆	No VOA Vials	
11. Were any sample contains	ers received broken?	Yes	No 🗸	# of preserved bottles checked	He I I
12. Does paperwork match bot	tle labels?	Yes 🗸	No 🗆	for pH:	
(Note discrepancies on cha	ain of custody)			{<2 or : Adjusted?	>12 unless noted)
13. Are matrices correctly ident		Yes 🗸	No .	Adjusted	
14. Is it clear what analyses we		Yes 🗸	No 🗆	Checked by	
<ol> <li>Were all holding times able (If no, notify customer for a</li> </ol>		Yes 🗸	No 🗔	Checked by	
Special Handling (if app	licable)				
16. Was client notified of all dis		Yes	No 🗆	NA 🗹	
Person Notified:		Date			
By Whom:		Via: eMail F	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 1.9	Good Yes		1		

							-				-	T 07/22/15 0700	THE PA	A	1830 LA		830	Julis!
		•	Entrovise	th.	7		t	Ba		of lains.		M	Wheel	Received by:	in Water	Albuha kelinquished by:	12	Julis Dake:
		H	,				-				0	Date Time		Received by:	ad by:	Relinquished by:	Time:	
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							-	$\times$	×	$\times$		100-	cold	1-402	Stockpile	800/	145	1-21-15
	22.0 (0011	8260B (VC 8270 (Sem	8081 Pesti	Anions (F,0	RCRA 8 M	PAH's (831	EDB (Meth	TPH (Meth	BTEX + MT TPH 8015E		BTEX +	HEAL NO.	Preservative Type	Container Type and #	Sample Request ID	Matrix	Time	Date
		-	cide	_	-					_		9	-	Sample Temperature:			(Type)	□ EDD (Type)
		)A)	s / 808	_							au	□ No	Watson	Sampler: On Ice:	ر   	□ Other	ation	Accreditation  NELAP
			2 PCB	,PO <sub>4</sub> ,S		SIMS		RO/I=W			(802		500	D Watson	☐ Level 4 (Full Validation)		ackage: fard	QA/QC Package: ★ Standard
-			s	SO <sub>4</sub> )			_				11		ager:	Project Manager:	7		Fax#:	email or Fax#:
		uest	Analysis Request	ysis	Ana										860 2712		20	Phone #:
li,	07	Fax 505-345-4107	505-	Fax		Tel. 505-345-3975	345	505-	Tel.					Project #:	87401	NM	HAVIMING A	MARI
	37109	Albuquerque, NM 87109	erque	puqu	- All	Z	vkins	4901 Hawkins NE	4901			#2 Pypeline		Apache Hills	Auron Dave		Address	Mailing Address: 501
		www.hallenvironmental.com	ment	viron	allen	w.h.	×	-						Project Nam	٠	J		
OR	ABORATOR	ABC	SL	SISA	- 4	>	2	וטו	8		<u> </u>		Rush	Standard	mainecring UC	Frank	Rule	Client:
	ENVIRONMENTAL	ÕZ	A	Z		HAL	I	_	1		_				delivery income	01-00	11121	1

Air Bubbles (Y or N)

Chain-of-Custody Record

Turn-Around Time: