3R-1011

Release Report/ General Correspondence

Enterprise SJ

Date: Oct-Dec 2017

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

State of New Mexico Energy Minerals and Natural Resources

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

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

Santa Fe, NM 87505												
Release Notification and Corrective Action												
					0	PERATO	२] Initial	Report	\boxtimes	Final Report
Name of C	ompany:	Enterprise I	Field Serv	vices LLC		Contact: T	homas Long					
Address: 6	14 Reilly A	Ave, Farmin	gton, NM	87401		Telephone	No. 505-599-2	2286				
Facility Na	me: Payne	e #221				Facility Typ	be: Natural Ga	s Gatl	nering P	ipeline		
Surface Ov	vner: Priv	ate		Mineral O	wnei	: BLM		_	API No).		
				LOCA	TIO	N OF REI	EASE					
Unit Letter D	Section 22	Township 31N	Range 10W	Feet from the 1759	Line	th/South e	Feet from the 1127	Eas Line	Nest	County San Jua	an	
		1	Lat	itude <u>36.974</u>	4646	_Longitud	e <u>107.874562</u>		OIL C	UL 17	DIS	T. 3
Type of Rele	ease: Natur	al Gas and N	Vatural Ga	s Liquids	UKL	Volume o	f Release: 11.82	2	Volume	Recovered	d: Non	e
						MCF Gas Condens	; 10-15 BBLs ate					
Source of R	elease: Inte	ernal corrosio	n			Date and 3/8/2017	Hour of Occurre @ 11:15 a.m.	nce:	Date and 3/8/2017	d Hour of I	Discov a.m.	ery:
Was Immed	iate Notice	Given?	s 🗆 No	Not Reg	uired	If YES, To Whom? Courtesy Notification: Vanessa Fields – NMOCD						
By Whom?	Thomas Lo	ong				Date and	Hour March 15,	2017 @	© 11:17 a	.m.		
Was a Wate	rcourse Re	ached?	□ Yes	🛛 No		If YES, Volume Impacting the Watercourse						
If a Waterco Describe Ca natural gas this release completed o	urse was Ir use of Prob release on is reportabl on March 22	npacted, Des blem and Rei Payne #221 le per NMOC 2, 2017.	scribe Fully medial Act pipeline. T D regulati	y.* tion: On March `he pipeline wa on on March 8	8, 20 as isol , 201	17, during ro ated, depres 7, due to the	utine operations surized, locked o volume of subsu	a field out and Irface ir	operation tagged o npacts. F	i technicia ut. Enterpi Remediatic	n ident rise ha on and	iified a s determined repairs were
Describe Ar by mechanic Approximate land farm fa	ea Affected cal excavati ely 1,654 cu cility. A thir	and Cleanu ion. The fina ubic yards of d party corre	p Action Ta Il excavation hydrocarb ctive action	aken.* Remedi on measured a on impacted so n report is inclu	iation approx oil wa uded	was complet kimately 96 fe s excavated with this "Fina	ed on March 22, eet long by 24 fe and transported al." C-141.	, 2017. et wide to a Ne	The conta ranging f w Mexico	aminant m rom 13-18 o Oil Conse	ass wa feet d ervatio	as removed eep. in approved
I hereby cer rules and re which may e relieve the o ground wate operator of r	tify that the gulations al andanger pupperator of I ar, surface v responsibili	information g Il operators a ublic health o liability should water, humar ty for complia	given above the required or the envired their ope thealth or ance with a	ve is true and c d to report and ronment. The a rations have fa the environme any other feder	compl /or file accep ailed t ent. Ir ral, sta	ete to the best e certain relea otance of a Co to adequately n addition, NM ate, or local la	st of my knowled ase notifications -141 report by th investigate and AOCD acceptan aws and/or regul	ge and and pe e NMO remed ce of a ations.	understa erform cor OCD marke iate conta C-141 rep	nd that pu rective act ed as "Fin mination t port does r	rsuant tions fo al Rep hat po not reli	to NMOCD or releases ort" does not se a threat to eve the
	0	EI	r i	71			OIL CON	SERV	ATION	I DIVISI	ON	
Signature: Jon F. Fields					Approved by	y Environmental	Specia	list:			>	
Title: Directo	or, Environr	nental				Approval Da		a	Expiration	Date:		
E-mail Addr	ess:jefields	@eprod.com	I			Conditions	of Approval:			Attache	ed 🗌	
Date: 7	12.20	2F1.	Phon	e: (713)381-66	684							
						NVEI	10765	64	52			76

Fields, Vanessa, EMNRD

Long, Thomas <tjlong@eprod.com> Monday, September 25, 2017 8:13 AM Fields, Vanessa, EMNRD Smith, Cory, EMNRD; Stone, Brian Subject: RE: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Vanessa.

From:

Sent: To:

Cc:

Thank you.

Tom Long 505-599-2286 (office) 505-215-4727 (Cell) tjlong@eprod.com

From: Fields, Vanessa, EMNRD [mailto:Vanessa.Fields@state.nm.us] Sent: Friday, September 22, 2017 11:14 AM To: Long, Thomas Cc: Smith, Cory, EMNRD; Stone, Brian Subject: RE: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Tom,

Thank you for the clarification on the sampling. In the future please ensure closure samples are collected from the excavation area initially sampled from.

Thank you,

Vanessa Fields **Environmental Specialist Oil Conservation Division** Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 119 Cell: (505) 419-0463 vanessa.fields@state.nm.us

From: Long, Thomas [mailto:tjlong@eprod.com] Sent: Friday, September 22, 2017 11:10 AM To: Fields, Vanessa, EMNRD < Vanessa. Fields@state.nm.us> Cc: Smith, Cory, EMNRD < Cory.Smith@state.nm.us>; Stone, Brian < bmstone@eprod.com> Subject: RE: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Vanessa,

I have looked over the sampling maps and spoke with Apex. On 3/22/2017, S-10 (0-13') a sidewall (end wall) sample was collected from the southern extent of the excavation at that time. Also, samples S-9, S-10, S-11 and S-12 were also collected that day, under the assumption the removal of contaminants was completed. Upon receipt of laboratory sample results, S-10 exceeded NMOCD standards. Enterprise subsequently excavated approximately 12 feet further to the south where Petrol Flag field screening results exhibited a concentration of 70 ppm TPH. Enterprise then collected an additional sample (S-13) on 3/27/2017, another side wall (end wall) sample for laboratory analysis. Laboratory results for S-13 are all below NMOCD site specific remediation standards. Does this help clarify things?

Tom Long 505-599-2286 (office) 505-215-4727 (Cell) <u>tjlong@eprod.com</u>

From: Fields, Vanessa, EMNRD [mailto:Vanessa.Fields@state.nm.us]
Sent: Friday, September 22, 2017 8:43 AM
To: Long, Thomas
Cc: Smith, Cory, EMNRD; Stone, Brian
Subject: RE: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

The way I read the report is S-13 was taken from the wall not the base of the excavation, and it was collected at least 10' from the original sample S-10.

Vanessa Fields Environmental Specialist Oil Conservation Division Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 119 Cell: (505) 419-0463 vanessa.fields@state.nm.us

From: Long, Thomas [mailto:tjlong@eprod.com]
Sent: Friday, September 22, 2017 8:38 AM
To: Fields, Vanessa, EMNRD <<u>Vanessa.Fields@state.nm.us</u>>
Cc: Smith, Cory, EMNRD <<u>Cory.Smith@state.nm.us</u>>; Stone, Brian <<u>bmstone@eprod.com</u>>
Subject: RE: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Vanessa,

Sample S-10 is and wall sample that was removed by excavating it out as indicated in the Notes on the Figure. S-13 would be the replacement sample.

Tom Long 505-599-2286 (office) 505-215-4727 (Cell) tjlong@eprod.com

From: Fields, Vanessa, EMNRD [mailto:Vanessa.Fields@state.nm.us]
Sent: Friday, September 22, 2017 7:58 AM
To: Long, Thomas
Cc: Smith, Cory, EMNRD
Subject: RE: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Good morning Tom,

I am currently reviewing the Final C-141 for the Payne #221 release and it appears S-10 sample is quite a bit above standards with no further analytical results for the area.

Could you please let me know if there is anything missing in the closure packet.

Thank you,

Vanessa Fields Environmental Specialist Oil Conservation Division Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 119 Cell: (505) 419-0463 vanessa.fields@state.nm.us

From: Long, Thomas [mailto:tjlong@eprod.com]
Sent: Tuesday, March 28, 2017 2:58 PM
To: Fields, Vanessa, EMNRD <<u>Vanessa.Fields@state.nm.us</u>>
Cc: Stone, Brian <<u>bmstone@eprod.com</u>>; Smith, Cory, EMNRD <<u>Cory.Smith@state.nm.us</u>>
Subject: RE: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Vanessa,

Please find the attached site sketch and laboratory reports for the Payne #221 excavation. All sample results are below the site specific remediation standard. Enterprise will continue backfilling the excavation with clean imported fill. If you have any questions, please call or email.

Sincerely,

Tom Long 505-599-2286 (office) 505-215-4727 (Cell) From: Fields, Vanessa, EMNRD [mailto:Vanessa.Fields@state.nm.us]
Sent: Thursday, March 23, 2017 10:42 AM
To: Long, Thomas
Cc: Stone, Brian; Smith, Cory, EMNRD
Subject: RE: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Good morning Tom,

Please find attached the directive for the Payne #221.

Thank you,

Vanessa Fields Environmental Specialist Oil Conservation Division Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 119 Cell: (505) 419-0463 vanessa.fields@state.nm.us

From: Long, Thomas [mailto:tjlong@eprod.com]
Sent: Wednesday, March 22, 2017 7:24 AM
To: Fields, Vanessa, EMNRD <<u>Vanessa.Fields@state.nm.us</u>>
Cc: Stone, Brian <<u>bmstone@eprod.com</u>>
Subject: FW: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Vanessa,

Please find the attached lab analysis for the north side of the excavation of Payne #226 release site. All sample results are below the site specific remediation standard. The groundwater sample result is also attached. No impacts! If you have any questions, please call or email.

Sincerely,

Tom Long 505-599-2286 (office) 505-215-4727 (Cell) tjlong@eprod.com Cc: Stone, Brian Subject: FW: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Vanessa,

We are going to change the sampling time to 9:00 a.m. Sorry for the quick change. Thanks.

Tom Long 505-599-2286 (office) 505-215-4727 (Cell) tjlong@eprod.com

From: Long, Thomas
Sent: Tuesday, March 21, 2017 2:04 PM
To: Fields, Vanessa, EMNRD (<u>Vanessa.Fields@state.nm.us</u>)
Cc: Stone, Brian
Subject: FW: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Vanessa,

This email is to notify you that Enterprise will collecting soil samples for laboratory analysis at the Payne #221 release site tomorrow, March 22, 2017 at 2:00 p.m. If you have any questions, please call or email.

Sincerely,

Tom Long 505-599-2286 (office) 505-215-4727 (Cell) tjlong@eprod.com

From: Long, Thomas
Sent: Sunday, March 19, 2017 7:48 PM
To: Fields, Vanessa, EMNRD (<u>Vanessa.Fields@state.nm.us</u>)
Cc: Stone, Brian
Subject: FW: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Vanessa,

This email is to notify you that Enterprise will be collecting soil samples for laboratory analysis at the Payne #221 excavation tomorrow at 12 p.m. If you have any questions, please call or email.

Sincerely,

Tom Long 505-599-2286 (office) From: Long, Thomas
Sent: Wednesday, March 15, 2017 11:17 AM
To: Fields, Vanessa, EMNRD (<u>Vanessa.Fields@state.nm.us</u>); 'Smith, Cory, EMNRD (<u>Cory.Smith@state.nm.us</u>)'
Cc: Stone, Brian
Subject: Payne #221 - Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562

Vanessa/Cory,

This email is notify you that Enterprise had a release of natural gas on the Payne #221 well tie on March 8, 2017. There were no fluids observed on the ground surface. The release is located at Unit D Sec 22 T 32 N R 10W, San Juan County, NM; 36.974646, -107.874562. We are currently excavating to repair the pipeline. I will let you know when we plan to collect soil samples for laboratory analysis. If you have any questions, please call or email.

Sincerely,

Thomas J. Long Senior Environmental Scientist Enterprise Products Company 614 Reilly Ave. Farmington, New Mexico 87401 505-599-2286 (office) 505-215-4727 (Cell) tjlong@eprod.com



This message (including any attachments) is confidential and intended for a specific individual and purpose. If you are not the intended recipient, please notify the sender immediately and delete this message.



OIL CONS. DIV DIST. 3 JUL 17 2017

CORRECTIVE ACTION REPORT

Property:

Payne #221 Well Tie NW 1/4, S22 T32N R10W San Juan County, New Mexico

June 27, 2017 Apex Project No. 725040112266

Prepared for:

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

Prepared by:

Chad D'Aponti Project Scientist

Kyle Summers, CPG Branch Manager / Senior Geologist

Apex TITAN, Inc., a subsidiary of Apex Companies, LLC 606 S Rio Grande, Unit A, Aztec, NM 87410 T 505.334.5200 F 505.334.5204 www.apexcos.com

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CORRECTIVE ACTION REPORT

Payne #221 Well Tie NW 1/4, S22 T32N R10W San Juan County, New Mexico

Apex Project No. 725040112266

1.0 INTRODUCTION

1.1 Site Description & Background

The Payne #221 Well Tie release site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the northwest (NW) ¼ of Section 22, Township 32 North, Range 10 West, in San Juan County, New Mexico (36.97302N, 107.87424W), referred to hereinafter as the "Site". The Site is located on private land and is adjacent to a county road. The surrounding properties are private acreages, periodically interrupted by oil and gas production and gathering facilities. The closest residence is located approximately 230 feet north of the Site. The Enterprise Payne #221 pipeline transects the area from approximately north to south.

On March 8, 2017, a release of natural gas was discovered at the Site. Enterprise subsequently isolated and locked the line out of service. On March 15, 2017, Enterprise initiated excavation activities to facilitate the repair of the pipeline, and to remediate potential hydrocarbon impact. The pipeline was subsequently repaired.

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 environmental corrective action 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 New Mexico 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 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.

1



Rank	Ranking Criteria						
	<50 feet	20					
Depth to Groundwater	50 to 99 feet	10	20				
	>100 feet	0					
Wellhead Protection Area • <1,000 feet from a water	Yes	20					
source, or; <200 feet from private domestic water source.	No	0	20				
Distance to Surface Water	<200 feet	20					
Body	200 to 1,000 feet	10	20				
Body	>1,000 feet	0					
Total R		60					

Based on Apex's evaluation of the scoring criteria, the Site would earn a maximum Total Ranking Score of "60". This ranking is based on the following:

- Groundwater was encountered during excavation activities at approximately 18 feet below grade surface (bgs), resulting in a ranking score of "20" for depth to groundwater.
- 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 score of "0". The Animas River, 165 feet west, is ultimately a source of drinking water for municipalities downstream. The proximity of the Site to the river results in a conservative wellhead/water source protection area ranking score of "20".
- The Site is located approximately 165 feet east of the Animas River. This information supports a distance to surface water ranking score of "20".

3.0 RESPONSE ACTIONS

3.1 Soil Excavation Activities

On March 8, 2017, a release of natural gas was discovered at the Site. Enterprise subsequently isolated and locked the line out of service. On March 15, 2017, Enterprise initiated excavation activities to facilitate the repair of the pipeline, and to remediate potential hydrocarbon impact. The pipeline was subsequently repaired. During the pipeline repair and corrective action activities, West States Energy Contractors, provided heavy equipment and labor support, and Apex provided environmental support.

Enterprise performed remediation excavation activities intermittently from March 15, 2017 to March 27, 2017. Activities were occasionally delayed during that time frame due to inclement weather. Between March 15, 2017 and March 27, 2017, a total of 13 composite soil samples (S-1 through S-13) were collected from the excavation sidewalls, floors, and benches of the excavation.

Subsurface water was observed at approximately 18 feet bgs near the point of release and the floor of the excavation was subsequently extended downward at that location to allow the collection of a groundwater sample (GW-1) for laboratory analysis.

The final excavation measured approximately 96 feet long by 24 feet wide, at the maximum extents. The depth of the excavation ranged from approximately 13 feet bgs to 18 feet bgs.

2



The lithology encountered during the completion of corrective action activities consisted primarily of unconsolidated silty sand and river rock.

A total of approximately 1,654 cubic yards of hydrocarbon affected soils were transported to the Industrial Ecosystems, Inc. (IEI) landfarm on Crouch Mesa, near Aztec, New Mexico for disposal/remediation. The executed C-138 form is provided in Appendix B. The excavation was backfilled with clean imported fill and contoured to surrounding grade.

Figure 3 is a Site Map that identifies the approximate sample locations in relation to the excavation extents and the location of the pipeline (Appendix A). Photographic documentation of the field activities is included in Appendix C.

3.2 Soil and Water Sampling Program

Apex field screened soil samples from the excavation utilizing a photoionization detector (PID) fitted with a 10.6 eV lamp and a calibrated Dexsil PetroFLAG[®] hydrocarbon analyzer system to guide excavation extents.

Apex's soil sampling program included the collection of 13 confirmation soil samples (S-1 through S-13) from the resulting excavation for laboratory analysis. Figure 3 depicts the approximate location of the excavated area and depicts the final confirmation sample locations in relation to the final excavation dimensions (Appendix A).

A water sample was collected from the open excavation utilizing a bailer, and was submitted for laboratory analysis to evaluate the potential for groundwater impact at the Site.

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 and water sample were analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA SW-846 Method 8021, and total petroleum hydrocarbon (TPH) gasoline range organics (GRO), diesel range organics (DRO), motor oil/lube oil range organics (MRO) using EPA SW-846 Method 8015. The confirmation soil samples were also analyzed for Chloride utilizing EPA Method 300.0.

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

4.0 DATA EVALUATION

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to condensate releases, the New Mexico 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 sites subject to reporting and/or corrective action.



4.1 Confirmation Soil Samples

Apex compared the BTEX, TPH, and chloride concentrations or practical quantitation limits (PQLs) associated with the final confirmation samples (S-2 through S-9 and S-11 through S-13) to the OCD *RALs* for sites having a total ranking score of "60". Soils associated with confirmation soil samples S-1 and S-10 were transported to an approved OCD facility for disposal/treatment and are not included in the following discussion.

- The laboratory analyses of confirmation samples collected from soils remaining in place do not indicate benzene concentrations above the PQLs, 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 place do not indicate total BTEX concentrations above the PQLs, 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/MRO concentrations ranging from below the PQLs to 9.5 mg/kg (S-2), which are below the OCD *RAL* of 100 mg/kg for a Site ranking of "60".
- The laboratory analyses of the confirmation samples collected from soils remaining in place indicate chloride concentrations ranging from below PQLs to 340 mg/kg (S-12).

The stockpiled soils resulting from the excavation were transported to the IEI landfarm on Crouch Mesa, near Aztec, New Mexico, New Mexico for disposal/remediation.

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

4.2 Water Sample

Apex compared the BTEX and TPH concentrations or PQLs associated with water sample GW-1 to the New Mexico Water Quality Control Commission (WQCC) *Groundwater Quality Standards* (*GQSs*).

- The water sample collected from the excavation exhibited a benzene concentration below the PQLs, which is below the WQCC GQS of 10 micrograms per liter (μg/L).
- The water sample collected from the excavation exhibited a toluene concentration below the PQLs, which is below the WQCC GQS of 750 µg/L.
- The water sample collected from the excavation exhibited an ethylbenzene concentration below the PQLs, which is below the WQCC GQS of 750 µg/L.
- The water sample collected from the excavation exhibited a total xylenes concentration below the PQLs, which is below the WQCC GQS of 620 µg/L.
- The water sample collected from the excavation exhibited a combined TPH GRO/DRO/MRO concentration of 1.5 milligrams per liter (mg/L).

Water sample analytical results are provided in Table 2 (Appendix D).

Enterprise Field Services, LLC Corrective Action Report Payne #221 Well Tie June 27, 2017



5.0 FINDINGS AND RECOMMENDATIONS

The Payne #221 Well Tie release site is located within the Enterprise ROW in the NW ¼ of Section 22, Township 32 North, Range 10 West, in San Juan County, New Mexico. The Site is located on private land and is adjacent to a county road. The surrounding properties are private acreages, periodically interrupted by oil and gas production and gathering facilities. The closest residence is located approximately 230 feet north of the Site. The Enterprise Payne #221 pipeline transects the area from approximately north to south.

On March 8, 2017, a release of natural gas was discovered at the Site. Enterprise subsequently isolated and locked the line out of service. On March 15, 2017, Enterprise initiated excavation activities to facilitate the repair of the pipeline, and to remediate potential hydrocarbon impact. The pipeline was subsequently repaired.

- The primary objective of the environmental corrective action 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 poorly sorted silty sand and river rock.
- The final excavation measured approximately 96 feet long by 24 feet wide, at the maximum extents. The depth of the excavation ranged from approximately 13 feet bgs to 18 feet bgs.
- Prior to backfilling, a total of 13 confirmation samples soil samples were collected from the final excavation for laboratory analyses. Based on analytical results, soils remaining in place do not exhibit COC concentrations above the OCD *RALs* for a Site ranking of "60".
- One (1) water sample (GW-1) was collected from the excavation near the release point. The water sample exhibited BTEX constituent concentrations below the PQLs which are below the WQCC GQSs. Sample GW-1 exhibited a combined TPH GRO/DRO/MRO concentration of 1.5 mg/L.
- A total of approximately 1,654 cubic yards of hydrocarbon affected soils were transported to the IEI landfarm on Crouch Mesa, near Aztec, New Mexico for disposal/remediation. The excavation was backfilled with clean imported fill and was contoured to surrounding grade.

Based on field observations and laboratory analytical results, no additional investigative or corrective actions appear 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.

Enterprise Field Services, LLC Corrective Action Report Payne #221 Well Tie June 27, 2017



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 may be 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





C:\Users\jsimpson\Desktop\725040112266\Figure 2.mxd Modified 4/4/2017 by JSimpson NAD 1983 2011 StatePlane New Mexico West FIPS 3003 Ft US Coordinate System





APPENDIX B

Executed C-138 Solid Waste Acceptance form

District 1 1625 N. French Dr., Hobbs, NM 88240 State	of New Mexico	Form C-138
District II Energy Minera 1301 W. Grand Avenue, Artesia, NM 88210	als and Natural Resources	Revised 08/01/11
District III 1000 Rio Brazos Road, Aztec, NM 87410 1220 So	uth St. Francis Dr.	*Surface Waste Management Facility Operator and Generator shall maintain and make this
strict IV 20 S. St. Francis Dr., Santa Fe, NM 87505 Santa	Fe, NM 87505	documentation available for Division inspection.
REQUEST FOR APPRO	VAL TO ACCEPT	SOLID WASTE
1. Generator Name and Address:		
Enterprise Field Services, LLC, 614 Reilly Ave, Farmington	NM 87401	
2. Originating Site: Payne #221 Well Tie		3/23/17 - 228 04
3. Location of Material (Street Address, City, State or ULS Unit D Sec 22 T 32 N R 10 W, San Juan County, NM; 36	TR): .974646, -107.874562	322 m - 300 cy 321 n - 300 cy
 Source and Description of Waste: Source: Hydro excavation Spoils from a Leak from a Natural G Description: Soil impacted with Natural Gas Liquids (Condensation) 	as Gathering Line tte and Water)	3/19/17-14202 () 3/19/17-34800
Estimated Volume 30 yd bbls Known Volume (to be ente	red by the operator at the end	of the haul) (0) (yd') bbls
5. GENERATOR CERTIFICATI	ON STATEMENT OF WA	STE STATUS
I Thomas I and There buy representative or outhorized event for	Entermine Broducts Operatio	a da harahu
Generator Signature	Enterprise Products Operatin	ig do hereby
certify that according to the Resource Conservation and Recover regulatory determination, the above described waste is: (Check t	y Act (RCRA) and the US Er he appropriate classification)	vironmental Protection Age / 1988
RCRA Exempt: Oil field wastes generated from oil and exempt waste. Operator Use Only: Waste Acceptance	gas exploration and producti	on operations and are not m non- Weekly Per Load
RCRA Non-Exempt: Oil field waste which is non-hazar characteristics established in RCRA regulations, 40 CFR 26 subpart D, as amended. The following documentation is atta the appropriate items)	dous that does not exceed the 1.21-261.24, or listed hazardo ached to demonstrate the above	e minimum standards for w g dous by ous waste as defined in 40 261, we-described waste is non-r g (Check
☐ MSDS Information ☐ RCRA Hazardous Waste Analysis	Process Knowledge	Other (Provide descripti
GENERATOR 19.15.36.15 WASTE TESTING C	ERTIFICATION STATEM	ENT FOR LANDFARM
I, Thomas Long 3-15-17, representative for Enterprise Generator Signature the required testing/sign the Generator Waste Testing Certification	Products Operating authorize	s <u>IEI, Inc.</u> to complete
1 th John concentrative for	IEI Inc	do horobu corti
representative samples of the oil field waste have been subjected have been found to conform to the specific requirements applicat of the representative samples are attached to demonstrate the abo	to the paint filter test and test ble to landfarms pursuant to S ve-described waste conform t	ted for chloride content te samples tection 15 of 19.15.36 NMAC. The results to the requirements of Section 15 of
5. Transporter: West States Energy Contractors	DH	<u>-</u>]
OCD Permitted Surface Waste Management Facility Name and Facility Permit #: JFJ Landfarm/Industrial Ecosyste Address of Facility: #49 CR 2150 Aztec, New Mexico	ms, Inc. * Permit #: NM-01-	=/i28
Method of Treatment and/or Disposal:	Plant 🛛 Landfarm 🗌	Landfill 🗌 Other
Waste Acceptance Status:	DENIED	(Mart De Maintained A. Demonstration Description)
APPROVED	DENIED	(Must Be Maintained As Permanent Record)
SIGNATURE: A. Soloh	TELEPHONE NO.: 5	05-632-1782
Surface Waste Management Facility Authorized Agent		
		3/15/17



APPENDIX C

Photographic Documentation



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Payne #221 Well Tie (2017)



SITE PHOTOGRAPHS



Payne #221 Well Tie (2017)





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APPENDIX D

Tables



				Payne	TABL #221 Well Tie SOIL ANALYTIC	E 1 Pipeline Re AL SUMMARY	lease				
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)	TPH MRO (mg/kg)	Chloride (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department, Oil Conservation Division, Remediation Action Level		Natural Resources ivision, Remediation I	10	NE	NE	NE	50		100		NE
a construction of					Soil Samples Remov	ed by Excavation					
S-1	3.15.17	0 to 5	<0.047	< 0.095	< 0.095	<0.19	ND	<9.5	56	100	NA
S-10	3.22.17	0 to 13	<0.017	< 0.034	<0.034	<0.069	ND	<3.4	310	790	160
	and the second second				Excavation So	il Samples					
S-2	3.20.17	0 to 18	<0.017	< 0.034	<0.034	<0.069	ND	<3.4	9.5	<47	<30
S-3	3.20.17	18	<0.013	< 0.026	<0.026	<0.052	ND	<2.6	<9.2	<46	<30
S-4	3.20.17	0 to 18	<0.019	<0.038	<0.038	<0.075	ND	<3.8	<9.6	<48	64
S-5	3.20.17	0 to 18	<0.016	< 0.032	< 0.032	< 0.064	ND	<3.2	<9.1	<46	300
S-6	3.20.17	0 to 18	<0.016	<0.031	<0.031	< 0.063	ND	<3.1	<9.3	<46	<30
S-7	3.20.17	0 to 18	< 0.016	< 0.033	< 0.033	<0.066	ND	<3.3	<10	<50	110
S-8	3.20.17	18	<0.018	< 0.035	< 0.035	<0.071	ND	<3.5	<9.2	<46	<30
S-9	3.22.17	0 to 13	<0.017	< 0.035	< 0.035	< 0.069	ND	<3.5	<9.9	<49	<30
S-11	3.22.17	13	<0.018	< 0.035	< 0.035	<0.071	ND	<3.5	<9.2	<46	<30
S-12	3.22.17	0 to 13	<0.016	< 0.032	< 0.032	< 0.063	ND	<3.2	<9.9	<50	340
S-13	3.27.17	0 to 13	< 0.016	< 0.032	< 0.032	< 0.065	ND	<3.2	<9.8	<49	140

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

ND = Not Detected above the Practical Quantitation Limits

NE = Not Established

NA = Not Analyzed

mg/kg = milligram per kilogram



100 million

	TABLE 2 Payne #221 Well Tie Pipeline Release WATER ANALYTICAL SUMMARY											
Sample I.D.	Sample Date	Benzene (μg/L)	Toluene (μg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)	TPH MRO (mg/L)				
New Mexico Water Quality Control Commission Groundwater Quality Standards		10	750	750	620		NE					
			Water sam	ple from excavation								
GW-1	3.20.17	<1.0	<1.0	<1.0	<1.5	<0.050	1.5	<5.0				

NE = Not Established

µg/L = microgram per liter

mg/L = milligram per liter

<1.0 = the numeral (in this case "1.0") identifies the practical quantitation limit



Appendix E:

Laboratory Data Sheets & Chain of Custody Documentation



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

March 23, 2017

Kyle Summers APEX TITAN 606 S. Rio Grande Unit A Aztec, NM 87410 TEL: (903) 821-5603 FAX

RE: Payne 221 Well Tie

OrderNo.: 1703A28

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 7 sample(s) on 3/21/2017 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 <u>www.hallenvironmental.com</u> 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1703A28 Date Reported: 3/23/2017

3/21/2017 9:51:50 AM

1

B41547

Hall Environmental Analysis Laboratory, Inc.

CLIENT:	APEX TITAN		(lient Sampl	e ID: S-2	2					
Project: Payne 221 Well Tie			Collection Date: 3/20/2017 2:30:00 PM								
Lab ID:	1703A28-001	Matrix: N	AEOH (SOIL)	Received	Date: 3/2	1/2017 7:53:00 AM					
Analyses		Result	PQL Qual	Units	DF	Date Analyzed	Batch				
EPA MET	HOD 300.0: ANIONS					Analyst:	MRA				
Chloride		ND	30	mg/Kg	20	3/22/2017 11:38:47 AM	30843				
EPA MET	HOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst:	MAB				
Diesel R	ange Organics (DRO)	9.5	9.3	mg/Kg	1	3/21/2017 11:18:17 AM	30814				
Motor Oi	I Range Organics (MRO)	ND	47	mg/Kg	1	3/21/2017 11:18:17 AM	30814				
Surr: [DNOP	81.5	70-130	%Rec	1	3/21/2017 11:18:17 AM	30814				
EPA MET	HOD 8015D: GASOLINE R	ANGE				Analyst:	NSB				
Gasoline	Range Organics (GRO)	ND	3.4	mg/Kg	1	3/21/2017 9:51:50 AM	G41547				
Surr: E	BFB	85.9	54-150	%Rec	1	3/21/2017 9:51:50 AM	G41547				
EPA MET	HOD 8021B: VOLATILES					Analyst:	NSB				
Benzene	•	ND	0.017	mg/Kg	1	3/21/2017 9:51:50 AM	B41547				
Toluene		ND	0.034	mg/Kg	1	3/21/2017 9:51:50 AM	B41547				
Ethylben	zene	ND	0.034	mg/Kg	1	3/21/2017 9:51:50 AM	B41547				
Xylenes,	Total	ND	0.069	mg/Kg	1	3/21/2017 9:51:50 AM	B41547				

66.6-132

%Rec

97.9

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

Qualifiers:	*
-------------	---

Surr: 4-Bromofluorobenzene

- * 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 11
- P Sample pH Not In Range
- RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1703A28 Date Reported: 3/23/2017

Hall Environmental Analysis Laboratory, Inc.

18

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CLIENT: APEX TITAN			Client Sample	e ID: S-3	5	
Project: Payne 221 Well Tie			Collection I	Date: 3/2	0/2017 2:35:00 PM	
Lab ID: 1703A28-002	Matrix:	MEOH (SOIL)) Received I	Date: 3/2	1/2017 7:53:00 AM	
Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst:	MRA
Chloride	ND	30	mg/Kg	20	3/22/2017 11:51:11 AM	30843
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	S			Analyst:	MAB
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	3/21/2017 11:46:46 AM	30814
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	3/21/2017 11:46:46 AM	30814
Surr: DNOP	82.3	70-130	%Rec	1	3/21/2017 11:46:46 AM	30814
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	2.6	mg/Kg	1	3/21/2017 10:15:32 AM	G41547
Surr: BFB	87.3	54-150	%Rec	1	3/21/2017 10:15:32 AM	G41547
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Benzene	ND	0.013	mg/Kg	1	3/21/2017 10:15:32 AM	B41547
Toluene	ND	0.026	mg/Kg	1	3/21/2017 10:15:32 AM	B41547
Ethylbenzene	ND	0.026	mg/Kg	1	3/21/2017 10:15:32 AM	B41547
Xylenes, Total	ND	0.052	mg/Kg	1	3/21/2017 10:15:32 AM	B41547
Surr: 4-Bromofluorobenzene	99.0	66.6-132	%Rec	1	3/21/2017 10:15:32 AM	B41547

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 2 of 11
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report	
Lab Order 1703A28	

Date Reported: 3/23/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT:	APEX TITAN		C	lient Sam	ole ID: S-4	4	
Project:	Payne 221 Well Tie			Collection	Date: 3/2	20/2017 2:40:00 PM	
Lab ID:	1703A28-003	Matrix: M	EOH (SOIL)	Received	Date: 3/2	21/2017 7:53:00 AM	
Analyses		Result	PQL Qual	Units	DF	Date Analyzed	Batch
EPA MET	THOD 300.0: ANIONS					Analyst	MRA
Chloride		64	30	mg/Kg	20	3/22/2017 12:03:36 PM	30843
EPA MET	THOD 8015M/D: DIESEL RANG	GE ORGANICS				Analyst	MAB
Diesel R	ange Organics (DRO)	ND	9.6	mg/Kg	1	3/21/2017 12:15:06 PM	30814

30814
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B41547 B41547 B41547

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	uted Due to Matrix E Value above quantitation range	
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 11
	ND	Not Detected at the Reporting Limit	ting Limit P Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report	
Lab Order 1703A28	

Date Reported: 3/23/2017

Hall Environmental Analysis Laboratory, Inc.

1

CLIENT: APEX TITANClient Sample ID: S-5Project: Payne 221 Well TieCollection Date: 3/20/2017 2:45:00 PMLab ID: 1703A28-004Matrix: MEOH (SOIL)Received Date: 3/21/2017 7:53:00 AM

Analyses	Result	PQL Qual	Units	DF Date Analyzed Bate	ch
EPA METHOD 300.0: ANIONS				Analyst: MR	A
Chloride	300	30	mg/Kg	20 3/22/2017 12:40:51 PM 3084	43
EPA METHOD 8015M/D: DIESEL RANGE	ORGANIC	CS		Analyst: MA	В
Diesel Range Organics (DRO)	ND	9.1	mg/Kg	1 3/21/2017 12:43:38 PM 308	14
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1 3/21/2017 12:43:38 PM 308	14
Surr: DNOP	82.1	70-130	%Rec	1 3/21/2017 12:43:38 PM 308	14
EPA METHOD 8015D: GASOLINE RANGE	E			Analyst: NSE	3
Gasoline Range Organics (GRO)	ND	3.2	mg/Kg	1 3/21/2017 11:02:33 AM G41	547
Surr: BFB	88.0	54-150	%Rec	1 3/21/2017 11:02:33 AM G41	547
EPA METHOD 8021B: VOLATILES				Analyst: NSE	3
Benzene	ND	0.016	mg/Kg	1 3/21/2017 11:02:33 AM B41	547
Toluene	ND	0.032	mg/Kg	1 3/21/2017 11:02:33 AM B41	547
Ethylbenzene	ND	0.032	mg/Kg	1 3/21/2017 11:02:33 AM B41	547
Xylenes, Total	ND	0.064	mg/Kg	1 3/21/2017 11:02:33 AM B41	547
Surr: 4-Bromofluorobenzene	99.2	66.6-132	%Rec	1 3/21/2017 11:02:33 AM B41	547

n the associated Method Blank
itation range
elow quantitation limits Page 4 of 11
Range
on Limit
emperature is out of limit as specified

Analytical Report

Lab Order 1703A28

Date Reported: 3/23/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN			Client Sa	nple ID: S-6		
Project: Payne 221 Well Tie			Collection	on Date: 3/20	/2017 2:50:00 PM	
Lab ID: 1703A28-005	Matrix:	MEOH (SC	OIL) Receiv	ed Date: 3/21	/2017 7:53:00 AM	
Analyses	Result	PQL 0	Qual Units	DF I	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst:	MRA
Chloride	ND	30	mg/Kg	20	3/22/2017 12:53:15 PM	30843
EPA METHOD 8015M/D: DIESEL RANG		cs			Analyst:	MAB
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	3/21/2017 1:12:30 PM	30814
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	3/21/2017 1:12:30 PM	30814
Surr: DNOP	81.8	70-130	%Rec	1	3/21/2017 1:12:30 PM	30814
EPA METHOD 8015D: GASOLINE RANG	E				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	3.1	mg/Kg	1	3/21/2017 11:26:00 AM	G41547
Surr: BFB	87.7	5 4 -150	%Rec	1	3/21/2017 11:26:00 AM	G41547
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Benzene	ND	0.016	mg/Kg	1	3/21/2017 11:26:00 AM	B41547
Toluene	ND	0.031	mg/Kg	1	3/21/2017 11:26:00 AM	B41547
Ethylbenzene	ND	0.031	mg/Kg	1	3/21/2017 11:26:00 AM	B41547
Xylenes, Total	ND	0.063	mg/Kg	1	3/21/2017 11:26:00 AM	B41547
Surr: 4-Bromofluorobenzene	98.9	66.6-132	%Rec	1	3/21/2017 11:26:00 AM	B41547

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 11
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report Lab Order 1703A28

3/21/2017 11:49:26 AM G41547

3/21/2017 11:49:26 AM B41547

Analyst: NSB

Date Reported: 3/23/2017

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Hall Environmental Analysis Laboratory, Inc.

11

Surr: BFB

Benzene

Toluene

Ethylbenzene

Xylenes, Total

EPA METHOD 8021B: VOLATILES

Surr: 4-Bromofluorobenzene

CLIENT:	APEX TITAN		0	lient Sam	ole ID: S-7	7	
Project:	Payne 221 Well Tie			Collection	Date: 3/2	20/2017 2:55:00 PM	
Lab ID:	1703A28-006	Matrix:	MEOH (SOIL)	Received	Date: 3/2	21/2017 7:53:00 AM	
Analyses		Result	PQL Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analyst	MRA
Chloride		110	30	mg/Kg	20	3/22/2017 1:05:40 PM	30843
EPA MET	HOD 8015M/D: DIESEL RANG		s			Analyst	MAB
Diesel R	ange Organics (DRO)	ND	10	mg/Kg	1	3/21/2017 1:40:49 PM	30814
Motor Oi	Range Organics (MRO)	ND	50	mg/Kg	1	3/21/2017 1:40:49 PM	30814
Surr: [DNOP	83.4	70-130	%Rec	1	3/21/2017 1:40:49 PM	30814
EPA MET	HOD 8015D: GASOLINE RANG	θE				Analyst	NSB
Gasoline	Range Organics (GRO)	ND	3.3	mg/Kg	1	3/21/2017 11:49:26 AM	G41547

54-150

0.016

0.033

0.033

0.066

66.6-132

%Rec

mg/Kg

mg/Kg

mg/Kg

mg/Kg

%Rec

88.7

ND

ND

ND

ND

101

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 11
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified
Analytical Report Lab Order 1703A28

Date Reported: 3/23/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN Project: Payne 221 Well Tie	Client Sample ID: S-8 Collection Date: 3/20/2017 3:00:00 PM											
Lab ID: 1703A28-007	Matrix:	Matrix: MEOH (SOIL) Received Date: 3/21/2017 7:53:										
Analyses	Result	PQL Qual	Units	DF Date Analyzed Batch								
EPA METHOD 300.0: ANIONS				Analyst: MRA								
Chloride	ND	30	mg/Kg	20 3/22/2017 1:18:04 PM 30843								
EPA METHOD 8015M/D: DIESEL RANGI		s		Analyst: MAB								
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1 3/21/2017 2:09:39 PM 30814								
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1 3/21/2017 2:09:39 PM 30814								
Surr: DNOP	83.3	70-130	%Rec	1 3/21/2017 2:09:39 PM 30814								
EPA METHOD 8015D: GASOLINE RANG	E			Analyst: NSB								
Gasoline Range Organics (GRO)	ND	3.5	mg/Kg	1 3/21/2017 12:12:50 PM G4154								
Surr: BFB	87.8	54-150	%Rec	1 3/21/2017 12:12:50 PM G4154								

EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Benzene	ND	0.018	mg/Kg	1	3/21/2017 12:12:50 PM	B41547
Toluene	ND	0.035	mg/Kg	1	3/21/2017 12:12:50 PM	B41547
Ethylbenzene	ND	0.035	mg/Kg	1	3/21/2017 12:12:50 PM	B41547
Xylenes, Total	ND	0.071	mg/Kg	1	3/21/2017 12:12:50 PM	B41547
Surr: 4-Bromofluorobenzene	100	66.6-132	%Rec	1	3/21/2017 12:12:50 PM	B41547

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 11
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

APEX TITAN **Client:**

Project: Payne 221 Well Tie

Sample ID MB-30843	SampType: mblk	TestCode: EPA Method	300.0: Anions	
Client ID: PBS	Batch ID: 30843	RunNo: 41580		
Prep Date: 3/22/2017	Analysis Date: 3/22/2017	SeqNo: 1304961	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual	
Chloride	ND 15			
onionao	ing ing			
Sample ID LCS-30843	SampType: Ics	TestCode: EPA Method	300.0: Anions	
Sample ID LCS-30843 Client ID: LCSS	SampType: Ics Batch ID: 30843	TestCode: EPA Method RunNo: 41580	300.0: Anions	
Sample ID LCS-30843 Client ID: LCSS Prep Date: 3/22/2017	SampType: Ics Batch ID: 30843 Analysis Date: 3/22/2017	TestCode: EPA Method RunNo: 41580 SeqNo: 1304962	300.0: Anions Units: mg/Kg	
Sample ID LCS-30843 Client ID: LCSS Prep Date: 3/22/2017 Analyte	SampType: Ics Batch ID: 30843 Analysis Date: 3/22/2017 Result PQL SPK value	TestCode: EPA Method RunNo: 41580 SeqNo: 1304962 SPK Ref Val %REC LowLimit	300.0: Anions Units: mg/Kg HighLimit %RPD RPDLimit Qual	

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

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1703A28

WO#: 23-Mar-17

QC SUMMARY REPORT

WO#: 1703A28

23-Mar-17

Hall Environmental Analysis Laboratory	, Inc.
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Client: Project:

1

APEX TITAN Payne 221 Well Tie

Sample ID LCS-30814	SampTy	pe: LC	s	TestCode: EPA Method 8015M/D: Diesel Range Organics									
Client ID: LCSS	Batch	ID: 30	814	F	RunNo: 4	1526							
Prep Date: 3/21/2017	Analysis Da	ate: 3/	/21/2017	5	SeqNo: 1	302332	Units: mg/	Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Diesel Range Organics (DRO)	47	10	50.00	0	94.5	63.8	116						
Surr: DNOP	4.4		5.000		88.0	70	130						
Sample ID MB-30814	SampTy	pe: ME	BLK	Tes	tCode: E	PA Method	8015M/D: D	iesel Rang	e Organics				
Client ID: PBS	Batch	ID: 30	814	F	RunNo: 4	1526							
Prep Date: 3/21/2017	Analysis Da	ate: 3/	/21/2017	5	SeqNo: 1	302333	Units: mg/	Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Diesel Range Organics (DRO)	ND	10											
Motor Oil Range Organics (MRO)	ND	50											
Surr: DNOP	8.4		10.00		83.9	70	130						
Sample ID 1703A28-001AMS	SampTy	pe: MS	S	Tes	tCode: E	PA Method	8015M/D: D	iesel Rang	e Organics				
Client ID: S-2	Batch	ID: 30	814	F	RunNo: 4	1526							
Prep Date: 3/21/2017	Analysis Da	ate: 3/	21/2017	S	SeqNo: 1	303145	Units: mg/l	Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Diesel Range Organics (DRO)	41	9.5	47.44	9.536	66.7	51.6	130						
Surr: DNOP	3.7		4.744		77.6	70	130						
Sample ID 1703A28-001AMS	D SampTy	pe: MS	SD	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics				
Client ID: S-2	Batch	ID: 30	814	F	RunNo: 4	1526							
Prep Date: 3/21/2017	Analysis Da	ate: 3/	21/2017	S	SeqNo: 1	303146	Units: mg/l	٨g					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Diesel Range Organics (DRO)	43	9.1	45.54	9.536	72.4	51.6	130	3.25	20				
Surr: DNOP	3.7		4.554		80.3	70	130	0	0				

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- % Recovery outside of range due to dilution or matrix S
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Page 9 of 11

- Р Sample pH Not In Range
- RL **Reporting Detection Limit**
- Sample container temperature is out of limit as specified W

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

APEX TITAN **Client: Project:**

18

Payne 221 Well Tie

Sample ID RB	SampT	ype: ME	BLK	Tes	TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch	1 ID: G4	1547	F	RunNo: 4							
Prep Date:	Analysis D	ate: 3/	21/2017	5	SeqNo: 1							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Range Organics (GRO)	ND	5.0										
Surr: BFB	880		1000		88.5	54	150					
Sample ID 2.5UG GRO LCS	SampT	ype: LC	S	Tes	e							
Client ID: LCSS	Batch	n ID: G4	1547	F	RunNo: 4							
Prep Date:	Analysis D	ate: 3/	21/2017	S	SeqNo: 1	303120	Units: mg/M	٢g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Range Organics (GRO)	19	5.0	25.00	0	76.6	76.4	125					
Curry DED	020		1000		02 5	EA	150					

Qualifiers:

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

1703A28

23-Mar-17

WO#:

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and the owner where the party of the party o			-

APEX TITAN

12

1

Client: Project: Payne 221 Well Tie

Sample ID RB	Samp	Гуре: МЕ	BLK	Tes	tCode: E					
Client ID: PBS	Batc	h ID: B4	1547	F	RunNo: 4					
Prep Date:	Analysis [Date: 3/	21/2017	S	SeqNo: 1	303126	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xvlenes Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1 000		99 1	66.6	132			
oun: 1 bromonadrobonizario	0.00		1.000		00.1	00.0				
Sample ID 100NG BTEX LCS	Samp	Type: LC	S	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Sample ID 100NG BTEX LCS Client ID: LCSS	Samp Batc	Type: LC h ID: B4	S 1547	Tes	tCode: El RunNo: 4	PA Method 1547	8021B: Vola	tiles		
Sample ID 100NG BTEX LCS Client ID: LCSS Prep Date:	Samp Batc Analysis [Гуре: LC h ID: B4 Date: 3/	S 1547 21/2017	Tes F S	tCode: El RunNo: 4 SeqNo: 1	PA Method 1547 303127	8021B: Vola Units: mg/F	tiles (g		
Sample ID 100NG BTEX LCS Client ID: LCSS Prep Date: Analyte	S Samp Batc Analysis [Result	Type: LC h ID: B4 Date: 3/ PQL	S 1547 21/2017 SPK value	Tes F S SPK Ref Val	Code: El RunNo: 4 SeqNo: 1 %REC	PA Method 1547 303127 LowLimit	8021B: Vola Units: mg/k HighLimit	tiles (g %RPD	RPDLimit	Qual
Sample ID 100NG BTEX LCS Client ID: LCSS Prep Date: Analyte Benzene	Samp Batc Analysis [Result 0.85	Type: LC h ID: B4 Date: 3/ PQL 0.025	S 1547 21/2017 SPK value 1.000	Tes F S SPK Ref Val 0	tCode: El tunNo: 4 SeqNo: 1 %REC 84.5	PA Method 1547 303127 LowLimit 80	8021B: Vola Units: mg/k HighLimit 120	tiles (g %RPD	RPDLimit	Qual
Sample ID 100NG BTEX LCS Client ID: LCSS Prep Date: Analyte Benzene Toluene	Samp Batc Analysis I Result 0.85 0.86	Type: LC h ID: B4 Date: 3/ PQL 0.025 0.050	S 1547 21/2017 SPK value 1.000 1.000	Tes F S SPK Ref Val 0 0	tCode: El RunNo: 4 GeqNo: 1 %REC 84.5 85.5	PA Method 1547 303127 LowLimit 80 80	8021B: Vola Units: mg/k HighLimit 120 120	tiles (g %RPD	RPDLimit	Qual
Sample ID 100NG BTEX LCS Client ID: LCSS Prep Date: Analyte Benzene Toluene Ethylbenzene	Samp Batc Analysis I Result 0.85 0.86 0.91	Type: LC h ID: B4 Date: 3/ PQL 0.025 0.050 0.050	S 1547 21/2017 SPK value 1.000 1.000 1.000	Tes F SPK Ref Val 0 0 0	tCode: El RunNo: 4 SeqNo: 1 %REC 84.5 85.5 90.6	PA Method 1547 303127 LowLimit 80 80 80 80	8021B: Vola Units: mg/k HighLimit 120 120 120	tiles (g %RPD	RPDLimit	Qual
Sample ID 100NG BTEX LCS Client ID: LCSS Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total	Samp Batc Analysis I Result 0.85 0.86 0.91 2.7	Type: LC h ID: B4 Date: 3/ PQL 0.025 0.050 0.050 0.10	S 1547 21/2017 SPK value 1.000 1.000 1.000 3.000	Tes F SPK Ref Val 0 0 0 0 0	tCode: El tunNo: 4 SeqNo: 1 %REC 84.5 85.5 90.6 90.1	PA Method 1547 303127 LowLimit 80 80 80 80 80 80	8021B: Vola Units: mg/k HighLimit 120 120 120 120	tiles (g %RPD	RPDLimit	Qual

Qualifiers:

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

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Client Name: APEX AZTEC Work Order Number: 1 Received by/date: 63 Z1 17 Logged By: Lindsay Mangin 3/21/2017 7:53:00 AM Completed By: Lindsay Mangin 3/21/2017 8:11:01 AM Reviewed By: 03 21 17 Chain of Custody 03 21 17 1. Custody seals intact on sample bottles? 2. Is Chain of Custody complete? 3. How was the sample delivered? Log In 4. 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)? 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10. VOA vials have zero headspace?	1703A	28		RcptNo	: 1
Received by/date: 03/21/2017 7:53:00 AM Logged By: Lindsay Mangin 3/21/2017 7:53:00 AM Completed By: Lindsay Mangin 3/21/2017 8:11:01 AM Reviewed By: 03/21/11 Chain of Custody 1. Custody seals intact on sample bottles? 03/21/11 2. Is Chain of Custody complete? 3 3. How was the sample delivered? 9 4. Was an attempt made to cool the samples? 5 5. Were all samples received at a temperature of >0° C to 6.0°C 9 6. Sample(s) in proper container(s)? 7 7. Sufficient sample volume for indicated test(s)? 8 8. Are samples (except VOA and ONG) properly preserved? 9 9. Was preservative added to bottles? 10.		0			
Logged By: Lindsay Mangin 3/21/2017 7:53:00 AM Completed By: Lindsay Mangin 3/21/2017 8:11:01 AM Reviewed By: OS 21 11 Chain of Custody 03 21 11 1. Custody seals intact on sample bottles? 03 21 11 2. Is Chain of Custody complete? 3. 3. How was the sample delivered? 9. Log In 4. 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)? 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10. VOA vials have zero headspace?		0			
Completed By: Lindsay Mangin 3/21/2017 8:11:01 AM Reviewed By: OS 21 17 Chain of Custody 03 21 17 Chain of Custody complete? 1 Second In 1 4. Was an attempt made to cool the samples? 1 5. Were all samples received at a temperature of >0° C to 6.0°C 1 6. Sample(s) in proper container(s)? 1 7. Sufficient sample volume for indicated test(s)? 1 8. Are samples (except VOA and ONG) properly preserved? 1 9. Was preservative added to bottles? 1 10. VOA vials have zero headspace? 1			tindy they		
Reviewed By: Age (1) 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)? 8. Are samples (except VOA and ONG) property preserved? 9. Was preservative added to bottles? 10. VOA vials have zero headspace?		0	they they		
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)? 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10.VOA vials have zero headspace?		V			
 Custody seals intact on sample bottles? Is Chain of Custody complete? How was the sample delivered? How was the sample delivered? Was an attempt made to cool the samples? Were all samples received at a temperature of >0° C to 6.0°C Sample(s) in proper container(s)? Sufficient sample volume for indicated test(s)? Are samples (except VOA and ONG) properly preserved? Was preservative added to bottles? NOA vials have zero headspace? 					
 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)? 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10.VOA vials have zero headspace? 	Yes		No 🗀	Not Present	
 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)? 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10.VOA vials have zero headspace? 	Yes		No 🗌	Not Present	
 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)? 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10.VOA vials have zero headspace? 	Couri	er			
 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)? 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10. VOA vials have zero headspace? 					
 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)? 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10. VOA vials have zero headspace? 	Yes		No 🗔	NA 🗌	
 6. Sample(s) in proper container(s)? 7. Sufficient sample volume for indicated test(s)? 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10. VOA viais have zero headspace? 	Yes		No 🗆	NA 🗆	
 7. Sufficient sample volume for indicated test(s)? 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10. VOA vials have zero headspace? 	Yes		No 🗌		
 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10. VOA vials have zero headspace? 	Yes		No 🗆		
9. Was preservative added to bottles?10. VOA vials have zero headspace?	Yes		No 🗌		
10.VOA vials have zero headspace?	Yes		No 🗹	NA 🗌	
	Yes		No 🗆	No VOA Vials 🗹	
11. Were any sample containers received broken?	Yes		No 🗹 🗌	# of preserved	
12. Does paperwork match bottle labels?	Yes		No 🗆	bottles checked for pH:	or >12 unloss noted
(Note discrepancies on chain of custody)	Voe			Adjusted?	or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes				
15. Were all holding times able to be met?	Yes			Checked by:	
(If no, notify customer for authorization.)			<u>-</u>		
Special Handling (if applicable)					
16. Was client notified of all discrepancies with this order?	Yes		No 🗌	NA 🗹	
Person Notified: Date		and a state of the st			
By Whom: Via:	eMa	il 🔲 Phone	e 🗌 Fax 🛛	In Person	
Regarding:		25/2- ^{11/12/2}		ar i an an an ann ann ann an ann an ann an	
Client Instructions:					_
1 / . Additional remarks:					
18. <u>Cooler Information</u> <u>Cooler No</u> <u>Temp °C</u> <u>Condition</u> <u>Seal Intact</u> <u>Seal No</u> <u>Seal</u> <u>1</u> 3.0 Good Yes	al Da	te Sigi	ned By		
·			1		

																					CHAII	N OF	CUS	STODY I	RECORD
A	PEX e Locatio	n Az	tec		NM	Laborate Address Contact	ory: s:	Ho AB AB	11	EN. N.	m			A	NALYS	STED	Nie Say						La Du Te wh	ue Date: mp. of cooler nen received 2 3	s (C ⁿ): Z ₂ (4 5
						Phone:									3	M	1	[]		1,	/ /	1	Pa	geî	ot
Proje	ect Manag	ger <u> </u>	5	um	mers	PO/SO	#:								91	20	11	/	/	/ /	/	/			
Samp	ler's Name	. с.				Sampler's	Signatu	re	1/	1					~	N	1		/ /		11	(
	Chod	DA	for	n);		1		a	t						2/	Nº/	1	11	/ /		11				
Proj. 1	No.		Proje	ect Na	ame Quyrk	# 20	21	Uni Tic	1	No/Ty	pe of (Containe	ers		N/2	5/	[]			/ /					
Matrix	Date	Time	CoEn	Grab	Identifying Ma	arks of Sample	e(s)	Depth	Depth	VOV	AVG 1 LL	250 ml	Jar Jar		YE			1	/ /			Lab	Sampl	e ID (Lab Us	e Only)
S	3/20/17	1430			5-2	2							1	1	1						17	031	AZ	8-00	21
1	1	1435			5-3	1							1											-00	Z
		1440			5-6	1							1											-00	R
		1445			5-5								1											-00	4
1		1450			5-6								1		11									-60	5
		1455			5-7	,							1		11									-00	76
1		1500			5-2	5							1		111									-00	77
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Turn a	round time	Nor	mal	22	5% Rush	3 50% Rush	001	00% Ri	ish	Se	ree	day							1						
Reling	uished by	(Signature)		3	Date:	Time: Re	eceived	by: (S	Signa	ture)	03	al	Date: 17	0	Time: 753	NO	TES:			t.	The	NI	200	16	
Relind	uished by ((Signature)		1	Date:	Time: Re	eceived	by: (S	Signa	ture)	-		Date:		Time:		B	;11	1	10	101			7	L /
Relind	uished by ((Signature)			Date:	Time: Ro	eceived	l by: (S	Signa	ture)		1	Date:		Time:		AFZ	= 0	EN	129	756	6		50	03/
Reling	uished by ((Signature)			Date:	Time: Re	eceived	l by: (\$	Signa	ture)		[Date:	1	Time:									¥	
Matrix	ww ww	V - Wastewa	ter		W - Water A/G - Amber / C	S - Soil SD r Glass 1 Lite	- Solid	L -		d A Glass	- Air B	ag	C - CI	arcoa Plasti	al tube	SL -	sludge		0 - Oil						

Apex TITAN, Inc. • 606 S. Rio Grande, Suite A, Downstairs • Aztec, New Mexico 87410 • Office: 505-334-5200 • Fax: 505-334-5204



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

March 22, 2017

Kyle Summers APEX TITAN 606 S. Rio Grande Unit A Aztec, NM 87410 TEL: (903) 821-5603 FAX

RE: Payne 221 Well Tie

OrderNo.: 1703A29

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 3/21/2017 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 <u>www.hallenvironmental.com</u> 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,

Ander

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1703A29

Date Reported: 3/22/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT:	APEX TITAN			Client Samp	le ID: G\	W-1	
Project:	Payne 221 Well Tie			Collection	Date: 3/2	20/2017 3:05:00 PM	
Lab ID:	1703A29-001	Matrix:	AQUEOUS	Received			
Analyses		Result	PQL Qua	l Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015D: GASOLINE RAN	GE				Analyst:	DJF
Gasoline	Range Organics (GRO)	ND	0.050	mg/L	1	3/21/2017 10:38:44 AM	G41534
Surr: E	3FB	94.6	70-130	%Rec	1	3/21/2017 10:38:44 AM	G41534
EPA MET	HOD 8015M/D: DIESEL RANG	E				Analyst:	MAB
Diesel Ra	ange Organics (DRO)	1.5	1.0	mg/L	1	3/21/2017 3:34:26 PM	30817
Motor Oil	Range Organics (MRO)	ND	5.0	mg/L	1	3/21/2017 3:34:26 PM	30817
Surr: D	DNOP	97.0	72.4-157	%Rec	1	3/21/2017 3:34:26 PM	30817
EPA MET	HOD 8260: VOLATILES SHOP	RT LIST				Analyst:	DJF
Benzene		ND	1.0	µg/L	1	3/21/2017 10:38:44 AM	SL41534
Toluene		ND	1.0	µg/L	1	3/21/2017 10:38:44 AM	SL41534
Ethylben	zene	ND	1.0	µg/L	1	3/21/2017 10:38:44 AM	SL41534
Xylenes,	Total	ND	1.5	µg/L	1	3/21/2017 10:38:44 AM	SL41534
Surr: 1	1,2-Dichloroethane-d4	113	70-130	%Rec	1	3/21/2017 10:38:44 AM	SL41534
Surr: 4	4-Bromofluorobenzene	94.6	70-130	%Rec	1	3/21/2017 10:38:44 AM	SL41534
Surr: D	Dibromofluoromethane	108	70-130	%Rec	1	3/21/2017 10:38:44 AM	SL41534
Surr: 1	Foluene-d8	101	70-130	%Rec	1	3/21/2017 10:38:44 AM	SL41534

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank	
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range	
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 o	f4
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specifie	d

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client:APEX TITANProject:Payne 221 Well Tie

1

Sample ID LCS-30817	SampT	ype: LC	S	Tes						
Client ID: LCSW	Batch	Batch ID: 30817			RunNo: 41526					
Prep Date: 3/21/2017	Analysis D	ate: 3/	21/2017	S	SeqNo: 1	302947	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	111	82.8	146			
Surr: DNOP	0.52		0.5000		103	72.4	157			
Sample ID MB-30817	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8015M/D: Die	sel Range	Ð	
Sample ID MB-30817 Client ID: PBW	SampT Batch	ype: ME	3LK 817	Tes R	tCode: E RunNo: 4	PA Method 1526	8015M/D: Die	sel Range	9	
Sample ID MB-30817 Client ID: PBW Prep Date: 3/21/2017	SampT Batch Analysis D	ype: ME ID: 30 ate: 3/	3LK 817 21/2017	Tesi R S	tCode: E RunNo: 4 SeqNo: 1	PA Method 1526 302948	8015M/D: Die Units: mg/L	esel Range	9	
Sample ID MB-30817 Client ID: PBW Prep Date: 3/21/2017 Analyte	SampT Batch Analysis D Result	ype: ME ID: 30 ate: 3 / PQL	BLK 817 21/2017 SPK value	Tesi R SPK Ref Val	tCode: E RunNo: 4 SeqNo: 1 %REC	PA Method 1526 302948 LowLimit	8015M/D: Die Units: mg/L HighLimit	sel Rango %RPD	e RPDLimit	Qual
Sample ID MB-30817 Client ID: PBW Prep Date: 3/21/2017 Analyte Diesel Range Organics (DRO)	SampT Batch Analysis D Result ND	ype: ME ID: 30 ate: 3/ PQL 1.0	BLK 817 21/2017 SPK value	Tesi R S SPK Ref Val	tCode: E RunNo: 4 SeqNo: 1 %REC	PA Method 1526 302948 LowLimit	8015M/D: Die Units: mg/L HighLimit	sel Range %RPD	e RPDLimit	Qual
Sample ID MB-30817 Client ID: PBW Prep Date: 3/21/2017 Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO)	SampT Batch Analysis D Result ND ND	ype: ME ID: 30 ate: 3/ PQL 1.0 5.0	BLK 817 21/2017 SPK value	Tesi R SPK Ref Val	tCode: E RunNo: 4 SeqNo: 1 %REC	PA Method 1526 302948 LowLimit	8015M/D: Die Units: mg/L HighLimit	sel Rango %RPD	e RPDLimit	Qual

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
- W Sample container temperature is out of limit as specified

Page 2 of 4

WO#: 1703A29 22-Mar-17

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

Client: Project: Payne 221 Well Tie

APEX TITAN

Sample ID rb	SampT	ype: ME	BLK	TestCode: EPA Method 8260: Volatiles Short List							
Client ID: PBW	Batch	h ID: SL	.41534	F	RunNo: 41534						
Prep Date:	Analysis D	Date: 3/	21/2017	5	SeqNo: 1	303187	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Xylenes, Total	ND	1.5									
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130				
Surr: 4-Bromofluorobenzene	9.0		10.00		90.3	70	130				
Surr: Dibromofluoromethane	11		10.00		111	70	130				
Surr: Toluene-d8	10		10.00		100	70	130				
Sample ID 100ng Ics	SampT	ype: LC	s	TestCode: EPA Method 8260: Volatiles Short List							
Client ID: LCSW	Batch	n ID: SL	.41534	F	unNo: 4	1534					
Prep Date:	Analysis D)ate: 3/	21/2017	5	SeqNo: 1	303188	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	25	1.0	20.00	0	123	70	130				
Toluene	21	1.0	20.00	0	106	70	130				
Surr: 1,2-Dichloroethane-d4	11		10.00		115	70	130				
Surr: 4-Bromofluorobenzene	9.4		10.00		93.8	70	130				
Surr: Dibromofluoromethane	11		10.00		108	70	130				

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

- Holding times for preparation or analysis exceeded Η
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified

Page 3 of 4

WO#: 1703A29 22-Mar-17

WO#: 1703A29 22-Mar-17

Hall	Environmental	Analysis	Laboratory,	Inc
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Client: AP

APEX TITAN

Project:	Payne 22	l Well Tie									
Sample ID	rb	SampTy	pe: ME	BLK	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID:	PBW	Batch	D: G4	1534	F	RunNo: 4	1534				
Prep Date:		Analysis Da	te: 3/	21/2017	5	SeqNo: 1	303200	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	ND	0.050								
Surr: BFB		9.1		10.00		90.9	70	130			
Sample ID	2.5ug gro lcs	SampTy	pe: LC	s	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID:	LCSW	Batch I	D: G4	1534	F	RunNo: 4	1534				
Prep Date:		Analysis Da	te: 3/	21/2017	5	SeqNo: 1	303201	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	0.52	0.050	0.5000	0	104	75.9	120			
Surr: BFB		8.9		10.00		89.5	70	130			
Sample ID	1703a29-001a ms	SampTy	pe: MS	6	Tes	tCode: E	PA Method	8015D: Gaso	line Rang	e	
Client ID:	GW-1	Batch I	D: G4	1534	F	RunNo: 4	1534				
Prep Date:		Analysis Da	te: 3/	21/2017	5	eqNo: 1	303202	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range	e Organics (GRO)	0.49	0.050	0.5000	0	98.9	70	130			
Surr: BFB		9.1		10.00		91.2	70	130			
Sample ID	1703a29-001a msc	SampTy	pe: MS	SD	Tes	Code: E	PA Method	8015D: Gaso	line Rang	e	
Client ID:	GW-1	Batch I	D: G4	1534	F	aunNo: 4	1534				
Prep Date:		Analysis Da	te: 3/	21/2017	S	eqNo: 1	303203	Units: mg/L			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	0.61	0.050	0.5000	0	121	70	130	20.3	20	R
Surr: BFB		9.6		10.00		95.9	70	130	0	0	

Qualifiers:

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

Page 4 of 4

HALL Hail Envir ENVIRONMENTAL ANALYSIS LABORATORY TEL: 505 Websin	ronmental Analysis Labora 4901 Hawkias Albuquerque, NM 87 -345-3975 FAX: 505-345-4 e: www.ballenvironmental.	NE 109 Sam 107	ole Log-In Checl	k List
Client Name: APEX AZTEC Work Order	Number: 1703A29		RcptNo: 1	
Received by/date: CB/1117				
Logged By: Lindsay Mangin 3/21/2017 7:5	3:00 AM	Julip		
Completed By: Lindsay Mangin 3/21/2017 8:1	9:40 AM	Andyther		
Reviewed By: AJ 03/21/	17	0.00		
hain of Custody				
1 Custody seals intact on sample bottles?	Yes	No 🗌	Not Present	
2. Is Chain of Custody complete?	Yes 🖌	No	Not Present	
3. How was the sample delivered?	Courier			
Log In				
4. Was an attempt made to cool the samples?	Yes 🗹	No 🗌	NA 🗌	
 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 viats have zero headspace?	Yes	No 🗌	No VOA Vials 🗹	
11. Were any sample containers received broken?	Yes 🗌	No 🖌	# _ f	
			bottles checked	
12. Does paperwork match bottle labels?	Yes M	No	for pH (<2 or >12 u	nless no
(Note discrepancies on chain or custody)	Yes V	No	Adjusted?	
13, real matrices contectly identified on chain of outdoy?	Yes V	No 🗌		
15. Were all holding times able to be met?	Yes 🗹	No	Checked by:	
(If no, notify customer for authorization.)				
pecial Handling (if applicable)				
16. Was client notified of all discrepancies with this order?	Yes	No 🗌	NA 🗹	
Person Notified:	Date			
By Whom:	Via: eMail [] I	Phone 🗌 Fax	In Person	
Regarding:				
Client Instructions.		ng kaline ta an		
17. Additional remarks:				
18. <u>Cooler Information</u> Cooler No Temp ^o C Condition Seal Intact Se	al No Seal Date	Signed By		
1 3.0 Good Yes				

1

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Al Offic Proje	PEX e Locatio	nA	zto		N.M mers	Labora Addres Contac Phone PO/SC Sampler's	ttory: ss: ct:) #: s Signa	A A A	1211 30 21=	l. N en	m	7			ANALYSIS	ED MIL	1650						Lab u Due D Temp. when i 2 Page	se only pate: of cooler eceived (3 (s C ⁻): <u>3</u> , () 4 s of /
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Matrix	Date	Time	CoEo	Grab	Identifying M	larks of Sam	ple(s)	Cepth	Cepth	NOA	AIG	250 m	Glass	D'O	20	//		/	1	$\left \right $	/ .	Lab Sa	ample ID	(Lab Us	e Only)
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Relino	uished by ((Signature)			Date:	Time: I	Receiv	ed by:	(Signa	iture)			Date		Time:								,	14	ſ
Matrix	W	V - Wastewa	ter		W - Water	S - Soil S	SD - Sol	id L	- Liquid	d A	- Air Bi	ag	C	- Cha	rcoal tube	SL · slud	90	0.	Di						

Apex TITAN, Inc. • 606 S. Rio Grande, Suite A, Downstairs • Aztec, New Mexico 87410 • Office: 505-334-5200 • Fax: 505-334-5204



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

March 24, 2017

Kyle Summers APEX TITAN 606 S. Rio Grande Unit A Aztec, NM 87410 TEL: (903) 821-5603 FAX

RE: Payne 221 Well Tie

OrderNo.: 1703B57

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 4 sample(s) on 3/23/2017 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 <u>www.hallenvironmental.com</u> 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report	
Lab Order 1703B57	

Hall Environmental Analysis Laboratory, Inc.

-

Analyses		Posult	POL Qual	Unite	DF Date Analyzed
Lab ID:	1703B57-001	Matrix:	MEOH (SOIL)	Received	Date: 3/23/2017 7:20:00 AM
Project:	Payne 221 Well Tie			Collection	Date: 3/22/2017 9:00:00 AM
CLIENT:	APEX TITAN		C	lient Samp	ole ID: S-9

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst:	LGT
Chloride	ND	30	mg/Kg	20	3/23/2017 11:01:34 AM	30864
EPA METHOD 8015M/D: DIESEL RANGE	ORGANIC	S			Analyst:	MAB
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	3/23/2017 9:48:52 AM	30857
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	3/23/2017 9:48:52 AM	30857
Surr: DNOP	81.2	70-130	%Rec	1	3/23/2017 9:48:52 AM	30857
EPA METHOD 8015D: GASOLINE RANGI	Ξ				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	3.5	mg/Kg	1	3/23/2017 9:25:24 AM	G41606
Surr: BFB	90.5	54-150	%Rec	1	3/23/2017 9:25:24 AM	G41606
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Benzene	ND	0.017	mg/Kg	1	3/23/2017 9:25:24 AM	R41606
Toluene	ND	0.035	mg/Kg	1	3/23/2017 9:25:24 AM	R41606
Ethylbenzene	ND	0.035	mg/Kg	1	3/23/2017 9:25:24 AM	R41606
Xylenes, Total	ND	0.069	mg/Kg	1	3/23/2017 9:25:24 AM	R41606
Surr: 4-Bromofluorobenzene	112	66.6-132	%Rec	1	3/23/2017 9:25:24 AM	R41606

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 9
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report	
Lab Order 1703B57	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN Client Sample ID: S-10 Project: Payne 221 Well Tie Collection Date: 3/22/2017 9:05:00 AM Lab ID: 1703B57-002 Matrix: MEOH (SOIL) Received Date: 3/23/2017 7:20:00 AM Analyses Result PQL Qual Units DF Date Analyzed Batch

			-	the second s		the second se	and the second s
EPA METHOD 300.0: ANIONS						Analyst:	LGT
Chloride	160	30		mg/Kg	20	3/23/2017 11:13:58 AM	30864
EPA METHOD 8015M/D: DIESEL RANGE	ORGANIC	s				Analyst:	MAB
Diesel Range Organics (DRO)	310	92		mg/Kg	10	3/23/2017 10:16:31 AM	30857
Motor Oil Range Organics (MRO)	790	460		mg/Kg	10	3/23/2017 10:16:31 AM	30857
Surr: DNOP	0	70-130	S	%Rec	10	3/23/2017 10:16:31 AM	30857
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	NSB
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	3/23/2017 9:48:58 AM	G41606
Surr: BFB	90.8	54-150		%Rec	1	3/23/2017 9:48:58 AM	G41606
EPA METHOD 8021B: VOLATILES						Analyst:	NSB
Benzene	ND	0.017		mg/Kg	1	3/23/2017 9:48:58 AM	R41606
Toluene	ND	0.034		mg/Kg	1	3/23/2017 9:48:58 AM	R41606
Ethylbenzene	ND	0.034		mg/Kg	1	3/23/2017 9:48:58 AM	R41606
Xylenes, Total	ND	0.069		mg/Kg	1	3/23/2017 9:48:58 AM	R41606
Surr: 4-Bromofluorobenzene	111	66.6-132		%Rec	1	3/23/2017 9:48:58 AM	R41606

Qualifiers:	*	Value exceeds Maximum Contaminant Level.		Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 9
	ND Not Detected at the Reporting Limit		Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report	
Lab Order 1703B57	

Batch

Hall Environmental Analysis Laboratory, Inc.

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Analyses		Result	PQL Qual	Units	DF Date Analyzed
Lab ID:	1703B57-003	Matrix:	MEOH (SOIL)	Received	d Date: 3/23/2017 7:20:00 AM
Project:	Payne 221 Well Tie			Collection	n Date: 3/22/2017 9:10:00 AM
CLIENT:	APEX TITAN		C	lient Sam	ple ID: S-11

EPA METHOD 300.0: ANIONS					Analyst:	LGT
Chloride	ND	30	mg/Kg	20	3/23/2017 11:26:23 AM	30864
EPA METHOD 8015M/D: DIESEL RANGE	ORGANIC	s			Analyst:	MAB
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	3/23/2017 10:44:20 AM	30857
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	3/23/2017 10:44:20 AM	30857
Surr: DNOP	84.5	70-130	%Rec	1	3/23/2017 10:44:20 AM	30857
EPA METHOD 8015D: GASOLINE RANGE					Analyst:	NSB
Gasoline Range Organics (GRO)	ND	3.5	mg/Kg	1	3/23/2017 10:12:29 AM	G41606
Surr: BFB	89.6	54-150	%Rec	1	3/23/2017 10:12:29 AM	G41606
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Benzene	ND	0.018	mg/Kg	1	3/23/2017 10:12:29 AM	R41606
Toluene	ND	0.035	mg/Kg	1	3/23/2017 10:12:29 AM	R41606
Ethylbenzene	ND	0.035	mg/Kg	1	3/23/2017 10:12:29 AM	R41606
Xylenes, Total	ND	0.071	mg/Kg	1	3/23/2017 10:12:29 AM	R41606
Surr: 4-Bromofluorobenzene	109	66.6-132	%Rec	1	3/23/2017 10:12:29 AM	R41606

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank	
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3	of 9
H Holding times for prepar ND Not Detected at the Rep.	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	01)	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
S % Recovery outside of range due to dilution		% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specif	fied

Analytical Report	
Lab Order 1703B57	

Hall Environmental Analysis Laboratory, Inc.

Surr: 4-Bromofluorobenzene

CLIENT:	APEX TITAN		(lient Samp	e ID: S-	12	
Project:	Payne 221 Well Tie			Collection	Date: 3/2	2/2017 9:15:00 AM	
Lab ID:	1703B57-004	Matrix: MEOH (SOIL)		Received	23/2017 7:20:00 AM		
Analyses		Result	PQL Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 300.0: ANIONS					Analyst	LGT
Chloride		340	30	mg/Kg	20	3/23/2017 11:38:48 AM	30864
EPA MET	HOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst	MAB
Diesel R	ange Organics (DRO)	ND	9.9	mg/Kg	1	3/23/2017 11:12:24 AM	30857
Motor Oi	Range Organics (MRO)	ND	50	mg/Kg	1	3/23/2017 11:12:24 AM	30857
Surr: I	ONOP	83.0	70-130	%Rec	1	3/23/2017 11:12:24 AM	30857
EPA MET	HOD 8015D: GASOLINE R	ANGE				Analyst:	NSB
Gasoline	Range Organics (GRO)	ND	3.2	mg/Kg	1	3/23/2017 10:35:56 AM	G41606
Surr: I	3FB	89.2	54-150	%Rec	1	3/23/2017 10:35:56 AM	G41606
EPA MET	HOD 8021B: VOLATILES					Analyst:	NSB
Benzene	(ND	0.016	mg/Kg	1	3/23/2017 10:35:56 AM	R41606
Toluene		ND	0.032	mg/Kg	1	3/23/2017 10:35:56 AM	R41606
Ethylben	zene	ND	0.032	mg/Kg	1	3/23/2017 10:35:56 AM	R41606
Xylenes,	Total	ND	0.063	mg/Kg	1	3/23/2017 10:35:56 AM	R41606

66.6-132

%Rec

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3/23/2017 10:35:56 AM R41606

108

Qualifiers:	*	Value exceeds Maximum Contaminant Level.		Analyte detected in the associated Method Blank		
	D	Sample Diluted Due to Matrix	E	Value above quantitation range		
	Η	H Holding times for preparation or analysis exceeded		Analyte detected below quantitation limits	Page 4 of 9	
	ND Not Detected at the Reporting Limit		Р	Sample pH Not In Range	r age + or y	
	R RPD outside accepted recovery limits		RL	Reporting Detection Limit		
	S	% Recovery outside of range due to dilution or matrix		Sample container temperature is out of limit as specified		

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

APEX TITAN **Client:**

Project: Payne 221 Well Tie

100

Sample ID MB-30864	SampType: MBLK	TestCode: EPA Method	300.0: Anions	
Client ID: PBS	Batch ID: 30864	RunNo: 41611		
Prep Date: 3/23/2017	Analysis Date: 3/23/2017	SeqNo: 1305782	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Chloride	ND 1.5			
Sample ID LCS-30864	SampType: LCS	TestCode: EPA Method	300.0: Anions	
Client ID: LCSS	Batch ID: 30864	RunNo: 41611		
Prep Date: 3/23/2017	Analysis Date: 3/23/2017	SeqNo: 1305783	Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual

Qualifiers:

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

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WO#: 1703B57

QC SUMMARY REPORT

WO#: 1703B57

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24-Mar-17

Client:APEX TITANProject:Payne 221 Well Tie

1

										and the second
Sample ID MB-	30857	SampType:	MBLK	Tes	tCode: El	PA Method	8015M/D: Die	sel Rang	e Organics	
Client ID: PBS		Batch ID:	30857	F	RunNo: 41593					
Prep Date: 3/2	3/2017 Ana	alysis Date:	3/23/2017	5	SeqNo: 1	304737	Units: mg/K	g		
Analyte	R	esult PG	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organic	cs (DRO)	ND	10							
Motor Oil Range Orga	anics (MRO)	ND	50							
Surr: DNOP		11	10.00		107	70	130			
Sample ID LCS	-30857	SampType:	LCS	Tes	tCode: El	PA Method	8015M/D: Die	sel Rang	e Organics	
Client ID: LCS	S	Batch ID:	30857	F	RunNo: 4	1593				
Prep Date: 3/2	3/2017 Ana	alysis Date:	3/23/2017	5	SeqNo: 1	304744	Units: mg/K	g		
Analyte	R	esult PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organic	cs (DRO)	50	10 50.00	0	100	63.8	116			
Surr: DNOP		5.2	5.000		104	70	130			
Sample ID 1703	B57-001AMS	SampType:	MS	Tes	tCode: El	PA Method	8015M/D: Die	sel Range	e Organics	
Client ID: S-9		Batch ID:	30857	F	RunNo: 4	1595				
Prep Date: 3/2	3/2017 Ana	alysis Date:	3/23/2017	5	SeqNo: 1	305342	Units: mg/K	9		
Analyte	R	esult PG	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organic	cs (DRO)	53 9	9.6 47.89	8.184	93.3	51.6	130			
Surr: DNOP		4.3	4.789		90.2	70	130			
Sample ID 1703	B57-001AMSD	SampType:	MSD	Tes	tCode: El	PA Method	8015M/D: Die	sel Range	e Organics	
Client ID: S-9		Batch ID:	30857	F	RunNo: 4	1595				
Prep Date: 3/2	3/2017 Ana	alysis Date:	3/23/2017	S	SeqNo: 1	305343	Units: mg/Kg	g		
Analyte	R	esult PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organic	cs (DRO)	50 9	9.4 47.04	8.184	88.0	51.6	130	6.44	20	
Surr: DNOP		4.3	4.704		92.4	70	130	0	0	
Sample ID LCS	-30846	SampType:	LCS	Tes	tCode: E	PA Method	8015M/D: Die	sel Range	e Organics	
Client ID: LCS	S	Batch ID:	30846	F	RunNo: 4	1593				
Prep Date: 3/2	2/2017 Ana	alysis Date:	3/23/2017	S	SeqNo: 1	305627	Units: %Rec			
Analyte	R	esult PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		5.2	5.000		103	70	130			
Sample ID MB-	30846	SampType:	MBLK	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	e Organics	
Client ID: PBS		Batch ID:	30846	F	RunNo: 4	1593				
Prep Date: 3/2	2/2017 Ana	alysis Date:	3/23/2017	S	SeqNo: 1	305628	Units: %Rec			
Analyte	R	esult PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

APEX TITAN **Client:**

1

Project: Payne 221 Well Tie

Sample ID MB-30846	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 30846	RunNo: 41593
Prep Date: 3/22/2017	Analysis Date: 3/23/201	SeqNo: 1305628 Units: %Rec
Analyte	Result PQL SPK v	ue SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Surr: DNOP	11 1	00 105 70 130

Qualifiers:

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

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Client:	APEX TI	TAN									
Project:	Payne 22	1 Well Tie								-	
Sample ID	RB	SampT	ype: MI	BLK	Tes	tCode: El	PA Method	8015D: Gase	oline Rang	e	
Client ID:	PBS	Batch	ID: G4	41606	F	RunNo: 4	1606				
Prep Date:		Analysis D	ate: 3	/23/2017	5	SeqNo: 1	305565	Units: mg/l	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	ND	5.0								
Surr: BFB		910		1000		91.2	54	150			
Sample ID	2.5UG GRO LCS	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015D: Gase	oline Rang	e	
Client ID:	LCSS	Batch	ID: G4	\$1606	F	RunNo: 4	1606				
Prep Date:		Analysis D	ate: 3	/23/2017	5	SeqNo: 1	305566	Units: mg/l	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	27	5.0	25.00	0	109	76.4	125			
Surr: BFB		1000		1000		99.6	54	150			
Sample ID	1703B57-001AMS	SampT	ype: MS	S	Tes	tCode: El	PA Method	8015D: Gase	oline Rang	e	
Client ID:	S-9	Batch	ID: G4	1606	F	RunNo: 4	1606				
Prep Date:		Analysis D	ate: 3/	/23/2017	5	SeqNo: 1	305567	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	22	5.0	25.00	0	88.6	61.3	150			
Surr: BFB		980		1000		97.6	54	150			
Sample ID	1703B57-001AMS	D SampT	ype: MS	SD	Tes	tCode: El	PA Method	8015D: Gase	oline Rang	e	
Client ID:	S-9	Batch	ID: G4	1606	F	RunNo: 4	1606				
Prep Date:		Analysis D	ate: 3/	23/2017	S	SeqNo: 1	305568	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	30	5.0	25.00	0	119	61.3	150	29.1	20	R
Surr BEB		1000		1000		100	54	150	0	0	

Qualifiers:

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QC SUMMARY REPORT	
Hall Environmental Analysis Laboratory, Inc	

APEX TITAN

1

Client: 1

WO#: 1703B57

24-Mar-17

Qual

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Qual

Qual

Project:	Payne 22	Well Tie	•							
Sample ID	RB SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID:	PBS	Batch	n ID: R4	1606	F	RunNo: 4	1606			
Prep Date:		Analysis D	ate: 3/	23/2017	S	SeqNo: 1	305574	Units: mg/ł	۲g	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit
Benzene		ND	0.025							
Toluene		ND	0.050							
Ethylbenzene		ND	0.050							
Xylenes, Total		ND	0.10							
Surr: 4-Brom	nofluorobenzene	1.1		1.000		112	66.6	132		
Sample ID	100NG BTEX LCS	SampT	ype: LC	s	Tes	tCode: E	PA Method	8021B: Vola	tiles	
Client ID:	LCSS	Batch	n ID: R4	1606	R	RunNo: 4	1606			
Prep Date:		Analysis D	ate: 3/	23/2017	S	eqNo: 1	305575	Units: mg/h	٢g	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit
Benzene		1.0	0.025	1.000	0	102	80	120		
Toluene		1.0	0.050	1.000	0	102	80	120		
Ethylbenzene		1.0	0.050	1.000	0	103	80	120		
Xylenes, Total		3.1	0.10	3.000	0	103	80	120		
Surr: 4-Brom	nofluorobenzene	1.2		1.000		116	66.6	132		
Sample ID	1703B57-002AMS	SampT	ype: MS	3	Test	Code: E	PA Method	8021B: Vola	tiles	
Sample ID Client ID:	1703B57-002AMS S-10	SampT Batch	ype: MS	3 1606	Tesi	tCode: E	PA Method	8021B: Vola	tiles	
Sample ID Client ID: Prep Date:	1703B57-002AMS S-10	SampT Batch Analysis D	ype: MS ID: R4 ate: 3/	3 1606 23/2017	Tesi R S	tCode: E tunNo: 4 SeqNo: 1	PA Method 1606 305576	8021B: Vola Units: mg/ł	tiles (g	
Sample ID Client ID: Prep Date: Analyte	1703B57-002AMS S-10	SampT Batch Analysis D Result	ype: MS ID: R4 ate: 3/ PQL	5 1606 23/2017 SPK value	Tesi R S SPK Ref Val	Code: E unNo: 4 GeqNo: 1 %REC	PA Method 1606 305576 LowLimit	8021B: Vola Units: mg// HighLimit	tiles (g %RPD	RPDLimit
Sample ID Client ID: Prep Date: Analyte Benzene	1703B57-002AMS S-10	SampT Batch Analysis D Result 1.1	ype: M\$ n ID: R4 ate: 3/ PQL 0.025	5 1606 23/2017 SPK value 1.000	Tesi R S SPK Ref Val 0	tCode: E tunNo: 4 seqNo: 1 %REC 110	PA Method 1606 305576 LowLimit 61.5	8021B: Vola Units: mg/k HighLimit 138	tiles (g %RPD	RPDLimit
Sample ID Client ID: Prep Date: Analyte Benzene Toluene	1703B57-002AMS S-10	SampT Batch Analysis D Result 1.1 1.1	ype: MS ID: R4 Pate: 3/ PQL 0.025 0.050	5 1606 23/2017 SPK value 1.000 1.000	Tesi R SPK Ref Val 0 0	Code: E RunNo: 4 SeqNo: 1 %REC 110 110	PA Method 1606 305576 LowLimit 61.5 71.4	8021B: Vola Units: mg/F HighLimit 138 127	tiles (g %RPD	RPDLimit
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene	1703B57-002AMS S-10	SampT Batch Analysis D Result 1.1 1.1 1.1	ype: MS ID: R4 Pate: 3/ PQL 0.025 0.050 0.050	5 1606 23/2017 SPK value 1.000 1.000 1.000	Test R SPK Ref Val 0 0 0 0	Code: E anNo: 4 seqNo: 1 %REC 110 110 113	PA Method 1606 305576 LowLimit 61.5 71.4 70.9	8021B: Vola Units: mg/F HighLimit 138 127 132	tiles (g %RPD	RPDLimit
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total	1703B57-002AMS S-10	SampT Batch Analysis D Result 1.1 1.1 1.1 3.4	ype: MS n ID: R4 ate: 3/ PQL 0.025 0.050 0.050 0.10	5 1606 23/2017 SPK value 1.000 1.000 1.000 3.000	Test R SPK Ref Val 0 0 0 0.01273	Code: E cunNo: 4 SeqNo: 1 %REC 110 110 113 113	PA Method 1606 305576 LowLimit 61.5 71.4 70.9 76.2	8021B: Vola Units: mg// HighLimit 138 127 132 123	tiles (g %RPD	RPDLimit
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron	1703B57-002AMS S-10	SampT Batch Analysis D Result 1.1 1.1 1.1 3.4 1.1	ype: MS a ID: R4 pate: 3/ PQL 0.025 0.050 0.050 0.050 0.10	5 1606 23/2017 SPK value 1.000 1.000 3.000 1.000	Tesi R SPK Ref Val 0 0 0 0 0.01273	tCode: E tunNo: 4 SeqNo: 1 %REC 110 110 113 113 114	PA Method 1606 305576 LowLimit 61.5 71.4 70.9 76.2 66.6	8021B: Vola Units: mg/F HighLimit 138 127 132 123 132	tiles (g %RPD	RPDLimit
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID	1703B57-002AMS S-10 nofluorobenzene 1703B57-002AMSI	SampT Batch Analysis D Result 1.1 1.1 1.1 3.4 1.1 3.4 1.1	ype: MS h ID: R4 hate: 3/ PQL 0.025 0.050 0.050 0.050 0.10	5 1606 23/2017 SPK value 1.000 1.000 3.000 1.000 5D	Test R S SPK Ref Val 0 0 0.01273 Test	Code: E RunNo: 4 SeqNo: 1 %REC 110 110 113 113 114 Code: E	PA Method 1606 305576 LowLimit 61.5 71.4 70.9 76.2 66.6 PA Method	8021B: Vola Units: mg/F HighLimit 138 127 132 123 132 8021B: Vola	tiles (g %RPD	RPDLimit
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID:	1703B57-002AMS S-10 nofluorobenzene 1703B57-002AMSE S-10	SampT Batch Analysis D Result 1.1 1.1 1.1 3.4 1.1 SampT Batch	ype: MS 1D: R4 eate: 3/ PQL 0.025 0.050 0.050 0.050 0.10 ype: MS 1D: R4	5 1606 23/2017 SPK value 1.000 1.000 3.000 1.000 5D 1606	Tesi R SPK Ref Val 0 0 0 0 0.01273 Tesi R	tCode: E tunNo: 4 SeqNo: 1 %REC 110 110 113 113 114 tCode: E tunNo: 4	PA Method 1606 305576 LowLimit 61.5 71.4 70.9 76.2 66.6 PA Method 1606	8021B: Vola Units: mg/F HighLimit 138 127 132 123 132 8021B: Vola	tiles (g %RPD tiles	RPDLimit
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Sur: 4-Bron Sample ID Client ID: Prep Date:	1703B57-002AMS S-10 nofluorobenzene 1703B57-002AMSE S-10	SampT Batch Analysis D Result 1.1 1.1 1.1 3.4 1.1 O SampT Batch Analysis D	ype: MS h ID: R4 hate: 3/ PQL 0.025 0.050 0.050 0.10 0.10 ype: MS h ID: R4 hate: 3/	S 1606 23/2017 SPK value 1.000 1.000 3.000 1.000 SD 1606 23/2017	Test R S SPK Ref Val 0 0 0.01273 Test R S	Code: E tunNo: 4 %REC 110 113 113 114 Code: E tunNo: 4 ieqNo: 1	PA Method 1606 305576 LowLimit 61.5 71.4 70.9 76.2 66.6 PA Method 1606 305577	8021B: Vola Units: mg/k HighLimit 138 127 132 123 132 8021B: Vola Units: mg/k	tiles (g %RPD tiles	RPDLimit
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID: Prep Date: Analyte	1703B57-002AMS S-10 nofluorobenzene 1703B57-002AMSE S-10	SampT Batch Analysis D Result 1.1 1.1 1.1 3.4 1.1 3.4 1.1 0 SampT Batch Analysis D Result	ype: MS PQL 0.025 0.050 0.050 0.050 0.10 ype: MS 1D: R4 ate: 3/ PQL	3 1606 23/2017 SPK value 1.000 1.000 3.000 1.000 3.000 1.000 3.000 1.000 3.000 1.000 3.000 1.000 3.000 1.000 3.000 1.000 3.000 3.000 1.000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.0000 3.00000 3.0000 3.00000 3.00000 3.00000 3.00000 3.000000000 3.000000000 3.0000000000	Test SPK Ref Val 0 0 0 0.01273 Test R SPK Ref Val	tCode: E tunNo: 4 SeqNo: 1 %REC 110 110 113 113 114 tCode: E tunNo: 4 SeqNo: 1 %REC	PA Method 1606 305576 LowLimit 61.5 71.4 70.9 76.2 66.6 PA Method 1606 305577 LowLimit	8021B: Vola Units: mg/k HighLimit 138 127 132 123 132 8021B: Vola Units: mg/k HighLimit	tiles (g %RPD tiles (g %RPD	RPDLimit
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID: Prep Date: Analyte Benzene	1703B57-002AMS S-10 nofluorobenzene 1703B57-002AMSE S-10	SampT Batch Analysis D Result 1.1 1.1 1.1 3.4 1.1 O SampT Batch Analysis D Result 0.97	ype: MS a ID: R4 pate: 3/ PQL 0.025 0.050 0.050 0.10 0.10 ype: MS a ID: R4 ate: 3/ PQL 0.025	SPK value 23/2017 SPK value 1.000 1.000 3.000 1.000 3.000 1.000 SD 1606 23/2017 SPK value 1.000	Test SPK Ref Val 0 0 0 0 0.01273 Test R S SPK Ref Val 0	Code: E LunNo: 4 SeqNo: 1 %REC 110 113 113 113 114 Code: E LunNo: 4 SeqNo: 1 %REC 97.1	PA Method 1606 305576 LowLimit 61.5 71.4 70.9 76.2 66.6 PA Method 1606 305577 LowLimit 61.5	8021B: Vola Units: mg// HighLimit 138 127 132 123 132 8021B: Vola Units: mg// HighLimit 138	tiles (g %RPD tiles (g %RPD 12.1	RPDLimit RPDLimit 20
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID: Prep Date: Analyte Benzene Toluene	1703B57-002AMS S-10 nofluorobenzene 1703B57-002AMSE S-10	SampT Batch Analysis D Result 1.1 1.1 1.1 3.4 1.1 O SampT Batch Analysis D Result 0.97 1.0	ype: MS a ID: R4 pate: 3/ PQL 0.025 0.050 0.050 0.10 ype: MS a ID: R4 ate: 3/ PQL 0.025 0.050	5 1606 23/2017 SPK value 1.000 1.000 3.000 1.000 5D 1606 23/2017 SPK value 1.000 1.000 1.000	Tesi SPK Ref Val 0 0 0 0.01273 Tesi R SPK Ref Val 0 0	Code: E LunNo: 4 SeqNo: 1 %REC 110 113 113 113 114 Code: E SeqNo: 1 %REC 97.1 99.9	PA Method 305576 LowLimit 61.5 71.4 70.9 76.2 66.6 PA Method 1606 305577 LowLimit 61.5 71.4	8021B: Vola Units: mg// HighLimit 138 127 132 123 132 8021B: Vola Units: mg// HighLimit 138 127	tiles (g %RPD tiles (g %RPD 12.1 9.68	RPDLimit RPDLimit 20 20
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene	1703B57-002AMS S-10 nofluorobenzene 1703B57-002AMSE S-10	SampT Batch Analysis D Result 1.1 1.1 1.1 3.4 1.1 O SampT Batch Analysis D Result 0.97 1.0 1.0	ype: MS a ID: R4 pate: 3/ PQL 0.025 0.050 0.050 0.10 ype: MS a ID: R4 ate: 3/ PQL 0.025 0.050 0.050	5 1606 23/2017 SPK value 1.000 1.000 3.000 1.000 5D 1606 23/2017 SPK value 1.000 1.000 1.000 1.000 1.000	Test SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 SPK Ref Val 0 0 0 0 0	Code: E LunNo: 4 SeqNo: 1 %REC 110 113 113 113 114 Code: E LunNo: 4 SeqNo: 1 %REC 97.1 99.9 104	PA Method 305576 LowLimit 61.5 71.4 70.9 76.2 66.6 PA Method 1606 305577 LowLimit 61.5 71.4 70.9	8021B: Vola Units: mg// HighLimit 138 127 132 123 132 8021B: Vola Units: mg// HighLimit 138 127 132	tiles (g %RPD tiles (g %RPD 12.1 9.68 8.01	RPDLimit RPDLimit 20 20 20
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total	1703B57-002AMS S-10 nofluorobenzene 1703B57-002AMSE S-10	SampT Batch Analysis D Result 1.1 1.1 1.1 3.4 1.1 O SampT Batch Analysis D Result 0.97 1.0 1.0 3.1	ype: MS a ID: R4 pate: 3/ PQL 0.025 0.050 0.050 0.10 ype: MS a ID: R4 ate: 3/ PQL 0.025 0.050 0.050 0.050 0.050 0.050	S 1606 23/2017 SPK value 1.000 1.000 3.000 1.000 3.000 1606 23/2017 SPK value 1.000 1.000 1.000 3.000 1.000 3.000	Test SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Code: E RunNo: 4 SeqNo: 1 100 110 113 113 114 Code: E SeqNo: 1 %REC 97.1 99.9 104 104	PA Method 305576 LowLimit 61.5 71.4 70.9 76.2 66.6 PA Method 1606 305577 LowLimit 61.5 71.4 70.9 76.2 6.6	8021B: Vola Units: mg/k HighLimit 138 127 132 123 132 8021B: Vola Units: mg/k HighLimit 138 127 132 123	tiles (g %RPD tiles (g %RPD 12.1 9.68 8.01 8.03	RPDLimit RPDLimit 20 20 20 20 20

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank В
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Page 9 of 9

- Р Sample pH Not In Range RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental Ana 4 Albuque TEL: 505-345-3975 FA Website: www.hallen	alysis Laborato 1901 Hawkins N erque, NM 8710 X: 505-345-410 wironmental.co	79 NE 09 Sam p 07 m	ole Log-In Ch	eck List
Client Name: APEX AZTEC	Work Order Number: 17	703B57		RcptNo: 1	
Received by/date:	15/28/17				
Logged By: Lindsay Mangin 3/	23/2017 7:20:00 AM	4	Julythigo		
Completed By: Lindsay Mangin 3/	23/2017 8:19:24 AM		Julipo		
Reviewed By: Q.J. O	3/23/17				
Chain of Custody					
1. Custody seals intact on sample bottles?	Y	fes 🗌	No 🗌	Not Present	
2. Is Chain of Custody complete?	Y	res 🗹	No	Not Present	
3. How was the sample delivered?	<u>C</u>	Courier			
Log In					
4. Was an attempt made to cool the samples?	١	Yes 🗹	No 🗌		
5. Were all samples received at a temperature of	>0° C to 6.0°C	es 🗹	No 🗌		
6. Sample(s) in proper container(s)?	۱. ۱	Yes 🗹	No 🗌		
7. Sufficient sample volume for indicated test(s)?	Y	es 🖌	No 🗆		
8. Are samples (except VOA and ONG) properly	preserved? Y	es 🗹	No 🗌		
9. Was preservative added to bottles?	Y	es	No 🗹	NA 🗆	
10, VOA vials have zero headspace?	Y	es	No 🗌	No VOA Vials 🗹	
11. Were any sample containers received broken?	· · ·	res	No 🗹		
12. Does paperwork match bottle labels?	Y	es 🖌	No 🗆	# of preserved bottles checked for pH:	
(Note discrepancies on chain of custody)		_		(<2 or >	12 unless noted)
13. Are matrices correctly identified on Chain of Cu	istody? Y	′es ⊻		Adjusted ?	
14. Is it clear what analyses were requested?	Y	es 🔽		Checked by:	
(If no, notify customer for authorization.)					
Special Handling (if applicable)					
16. Was client notified of all discrepancies with this	order? Y	'es	No 🗆	NA 🗹	
Person Notified:	Date				
By Whom:	Via:	eMail 🗌 Ph	one 🗌 Fax	In Person	
Regarding:		***			
Client Instructions:					
17. Additional remarks:					
18. <u>Cooler Information</u> <u>Cooler No</u> Temp ^o C Condition Seal 1 1.7 Good Yes	Intact Seal No Sea	I Date S	Signed By		
Page 1 of 1					

				CHAIN OF CUSTODY RECORD
APEX	Laboratory: Har Address: A 34	11 Env Q NM		Lab use only Due Date:
Office Location Aztec NM				/ / Temp. or coolers when received (C ^o): 1, 7
	Contact: 4	denen		
	Phone:			Page of /
Project Managor K Sun and S	PO/20 #-			
Sampler's Name	Sampler's Signature	1 1		
Chad DAponti	Nati	103	J. N. N.	(
Project Name Project Name	#221 Wull Tie	No/Type of Containers		
/atrix Date Time O 7 Identifying Ma	riks of Sample(s) the dample of Sample (s) the dample of t	VOA VOA VLC VLC VLC VLC VLC VLC VLC VLC VLC VLC	223	Lab Sample ID (Lab Use Only)
5 3/2/10 900 S-9		1	1 1 1	1703867-001
1 505 510		1	1 1 1	- (107
910 S-11		1	1 1 1	-(703
915 S-1:	2	1	2 5 1	-004
			EFS .	
			Ch	
furn around time 🗋 Normal 🛄 25% Rush 🔅	50% Rush 100% Rush	Sare dig		
Relinquished by (Signature) Date:	Time: Received by, (Sign	ature) Date:	Time: NOTES:	
Relinquished by (Signature) Date: 3/22/17 8 Relinquished by (Signature) Date: Belinquished by (Signature) Date:	Time: Received by: (Sian	ature) [122.1/7 ature) Date: (3/13/17 ature) Date:	Time: Bill to 7	Im long we will
			AFE + N29	750 . 4
Relinquished by (Signature) Date:	Time: Received by: (Sign	ature) Date:	Time:	
Matrix WW - Wastewater W Water / Container VOA - 40 ml vist A/G - Amber / C	S - Soll SD - Solid L - Liqu Glass 1 Liter 250 ml	id A - Air Bag C - Cha - Glass wide mouth P/O - P	arcoal tube SL - sludge O - Oil lastic or other	

Apex TITAN, Inc. • 606 S. Rio Grande, Suite A, Downstairs • Aztec, New Mexico 87410 • Office: 505-334-5200 • Fax: 505-334-5204



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

March 30, 2017

Kyle Summers APEX TITAN 606 S. Rio Grande Unit A Aztec, NM 87410 TEL: (903) 821-5603 FAX

RE: Payne #221 Well Tie

OrderNo.: 1703D46

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 3/28/2017 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 <u>www.hallenvironmental.com</u> 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,

ander

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1703D46 Date Reported: 3/30/2017

Hall Environmental Analysis Laboratory, Inc.

11

10

CLIENT: APEX TITAN Client Sample ID: S-13 Collection Date: 3/27/2017 12:00:00 PM **Project:** Payne #221 Well Tie Lab ID: 1703D46-001 Matrix: SOIL Received Date: 3/28/2017 7:15:00 AM **PQL** Qual Units Analyses Result **DF** Date Analyzed Batch **EPA METHOD 300.0: ANIONS** Analyst: MRA mg/Ka Chloride 140 30 20 3/28/2017 2:09:10 PM 30936

EPA METHOD 8015D MOD: GASOLINE	RANGE				Analyst:	DJF
Gasoline Range Organics (GRO)	ND	3.2	mg/Kg	1	3/28/2017 10:58:20 AM	30918
Surr: BFB	93.0	70-130	%Rec	1	3/28/2017 10:58:20 AM	30918
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	1			Analyst:	том
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	3/28/2017 9:16:33 AM	30930
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	3/28/2017 9:16:33 AM	30930
Surr: DNOP	106	70-130	%Rec	1	3/28/2017 9:16:33 AM	30930
EPA METHOD 8260B: VOLATILES SHO	RT LIST				Analyst:	DJF
Benzene	ND	0.016	mg/Kg	1	3/28/2017 10:58:20 AM	30918
Toluene	ND	0.032	mg/Kg	1	3/28/2017 10:58:20 AM	30918
Ethylbenzene	ND	0.032	mg/Kg	1	3/28/2017 10:58:20 AM	30918
Xylenes, Total	ND	0.065	mg/Kg	1	3/28/2017 10:58:20 AM	30918
Surr: 1,2-Dichloroethane-d4	110	70-130	%Rec	1	3/28/2017 10:58:20 AM	30918
Surr: 4-Bromofluorobenzene	88.2	70-130	%Rec	1	3/28/2017 10:58:20 AM	30918
Surr: Dibromofluoromethane	113	70-130	%Rec	1	3/28/2017 10:58:20 AM	30918
Surr: Toluene-d8	99.5	70-130	%Rec	1	3/28/2017 10:58:20 AM	30918

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank	
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of	85
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	l.

QC SUMMARY F	REPORT
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WO#:	1703D46
	30-Mar-17

Hall Environmental Analysis Laboratory, In
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APEX TITAN **Client:**

Chent.	ALLA IIIAN				
Project:	Payne #221 Well Tie				

Sample ID MB-30936	SampType: mblk TestCode: EPA Method 300.0: Anions							
Client ID: PBS	Batch ID: 30936	Batch ID: 30936 RunNo: 41713						
Prep Date: 3/28/2017	Analysis Date: 3/28/2017	SeqNo: 1309248	Units: mg/Kg					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual				
Chloride	ND 0.50							
Sample ID LCS-30936	SampType: Ics TestCode: EPA Method 300.0: Anions							
Client ID: LCSS	Batch ID: 30936	RunNo: 41713						
Prep Date: 3/28/2017	Analysis Date: 3/28/2017	SeqNo: 1309249	Units: mg/Kg					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual				
Chloride	14 1.5 15.00	0 96.1 90	110					
Unionae	11 1.6 16.66	0 00.1 00						
Sample ID MB-30936	SampType: MBLK	TestCode: EPA Method	300.0: Anions					
Sample ID MB-30936 Client ID: PBS	SampType: MBLK Batch ID: 30936	TestCode: EPA Method RunNo: 41707	300.0: Anions					
Sample ID MB-30936 Client ID: PBS Prep Date: 3/28/2017	SampType: MBLK Batch ID: 30936 Analysis Date: 3/28/2017	TestCode: EPA Method RunNo: 41707 SeqNo: 1309826	300.0: Anions Units: mg/Kg					
Sample ID MB-30936 Client ID: PBS Prep Date: 3/28/2017 Analyte	SampType: MBLK Batch ID: 30936 Analysis Date: 3/28/2017 Result PQL SPK value	TestCode: EPA Method RunNo: 41707 SeqNo: 1309826 SPK Ref Val %REC LowLimit	300.0: Anions Units: mg/Kg HighLimit %RPD	RPDLimit Qual				
Sample ID MB-30936 Client ID: PBS Prep Date: 3/28/2017 Analyte Chloride	SampType: MBLK Batch ID: 30936 Analysis Date: 3/28/2017 Result PQL SPK value ND 1.5	TestCode: EPA Method RunNo: 41707 SeqNo: 1309826 SPK Ref Val %REC LowLimit	300.0: Anions Units: mg/Kg HighLimit %RPD	RPDLimit Qual				
Sample ID MB-30936 Client ID: PBS Prep Date: 3/28/2017 Analyte Chloride	SampType: MBLK Batch ID: 30936 Analysis Date: 3/28/2017 Result PQL SPK value ND 1.5 SampType: LCS	TestCode: EPA Method RunNo: 41707 SeqNo: 1309826 SPK Ref Val %REC LowLimit TestCode: EPA Method	300.0: Anions Units: mg/Kg HighLimit %RPD 300.0: Anions	RPDLimit Qual				
Sample ID MB-30936 Client ID: PBS Prep Date: 3/28/2017 Analyte Chloride Sample ID LCS-30936 Client ID: LCSS	SampType: MBLK Batch ID: 30936 Analysis Date: 3/28/2017 Result PQL SPK value ND 1.5 SampType: LCS Batch ID: 30936	TestCode: EPA Method RunNo: 41707 SeqNo: 1309826 SPK Ref Val %REC LowLimit TestCode: EPA Method RunNo: 41707	300.0: Anions Units: mg/Kg HighLimit %RPD 300.0: Anions	RPDLimit Qual				
Sample ID MB-30936 Client ID: PBS Prep Date: 3/28/2017 Analyte Chloride Sample ID LCS-30936 Client ID: LCSS Prep Date: 3/28/2017	SampType: MBLK Batch ID: 30936 Analysis Date: 3/28/2017 Result PQL SPK value ND 1.5 SampType: LCS Batch ID: 30936 Analysis Date: 3/28/2017	TestCode: EPA Method RunNo: 41707 SeqNo: 1309826 SPK Ref Val %REC LowLimit TestCode: EPA Method RunNo: 41707 SeqNo: 1309827	300.0: Anions Units: mg/Kg HighLimit %RPD 300.0: Anions Units: mg/Kg	RPDLimit Qual				
Sample ID MB-30936 Client ID: PBS Prep Date: 3/28/2017 Analyte Chloride Sample ID LCS-30936 Client ID: LCSS Prep Date: 3/28/2017 Analyte	SampType: MBLK Batch ID: 30936 Analysis Date: 3/28/2017 Result PQL SPK value ND 1.5 SampType: LCS Batch ID: 30936 Analysis Date: 3/28/2017 Result PQL SPK value	TestCode: EPA Method RunNo: 41707 SeqNo: 1309826 SPK Ref Val %REC LowLimit TestCode: EPA Method RunNo: 41707 SeqNo: 1309827 SPK Ref Val %REC LowLimit	300.0: Anions Units: mg/Kg HighLimit %RPD 300.0: Anions Units: mg/Kg HighLimit %RPD	RPDLimit Qual				

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

- Holding times for preparation or analysis exceeded Н
- Not Detected at the Reporting Limit ND
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank В
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL **Reporting Detection Limit**
- Sample container temperature is out of limit as specified W

Page 2 of 5

QC SUMMARY REPORT

WO#: 1703D46

30-Mar-17

Hall Environmental Analysis Laboratory, Inc.

Client:APEX TITANProject:Payne #221 Well Tie

Sample ID LCS-30908	SampType: LCS		TestC	ode: EPA Method	8015M/D: Die	sel Range	Organics	
Client ID: LCSS	Batch ID: 30908		RunNo: 41689					
Prep Date: 3/27/2017	Analysis Date: 3/28/2	017	Sec	qNo: 1307961	Units: %Rec			
Analyte	Result PQL SP	K value SF	PK Ref Val	%REC LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2	5.000		83.0 70	130			
Sample ID MB-30908	SampType: MBLK		TestC	ode: EPA Method	8015M/D: Die	sel Range	Organics	
Client ID: PBS	Batch ID: 30908		Rur	nNo: 41689				
Prep Date: 3/27/2017	Analysis Date: 3/28/2	017	Sec	qNo: 1307962	Units: %Rec			
Analyte	Result PQL SP	K value SF	PK Ref Val 3	%REC LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.1	10.00		90.9 70	130			
Sample ID LCS-30930	SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics							
		Batch ID: 30930 RunNo: 41688						
Client ID: LCSS	Batch ID: 30930		Rur	nNo: 41688				
Prep Date: 3/28/2017	Analysis Date: 3/28/2	017	Rur	nNo: 41688 qNo: 1307965	Units: mg/Kg	g		
Prep Date: 3/28/2017 Analyte	Analysis Date: 3/28/2 Result PQL SPI	017 K value SF	Rur Sec PK Ref Val 3	NO: 41688 NO: 1307965 KREC LowLimit	Units: mg/K g HighLimit	g %RPD	RPDLimit	Qual
Client ID: LCSS Prep Date: 3/28/2017 Analyte Diesel Range Organics (DRO)	Analysis Date: 3/28/2 Result PQL SPI 51 10	017 K value SF 50.00	Rur Sec PK Ref Val 3 0	No: 41688 No: 1307965 <u>KREC LowLimit</u> 101 63.8	Units: mg/K g HighLimit 116	9 %RPD	RPDLimit	Qual
Client ID: LCSS Prep Date: 3/28/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP	Batch ID: 30930 Analysis Date: 3/28/2 Result PQL SPI 51 10 4.9	017 K value SF 50.00 5.000	Rur Sec PK Ref Val 3 0	No: 41688 No: 1307965 <u>%REC LowLimit</u> 101 63.8 97.3 70	Units: mg/K g HighLimit 116 130	g %RPD	RPDLimit	Qual
Client ID: LCSS Prep Date: 3/28/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP	Analysis Date: 3/28/2 Result PQL SP 51 10 4.9 SampType: MBLK	017 K value SF 50.00 5.000	Rur Sec PK Ref Val 3 0 TestC	NO: 41688 qNo: 1307965 <u>%REC LowLimit</u> 101 63.8 97.3 70 ode: EPA Method	Units: mg/Kg HighLimit 116 130 8015M/D: Die	g %RPD sel Range	RPDLimit	Qual
Client ID: LCSS Prep Date: 3/28/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID MB-30930 Client ID: PBS	Analysis Date: 3/28/2 Result PQL SPI 51 10 4.9 SampType: MBLK Batch ID: 30930	017 K value SF 50.00 5.000	Rur Sec <u>PK Ref Val 3</u> 0 TestCo Rur	NNO: 41688 ANO: 1307965 <u>6REC LowLimit</u> 101 63.8 97.3 70 Ode: EPA Method NNO: 41688	Units: mg/Kg HighLimit 116 130 8015M/D: Die	g %RPD sel Range	RPDLimit Organics	Qual
Client ID: LCSS Prep Date: 3/28/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID MB-30930 Client ID: PBS Prep Date: 3/28/2017	Analysis Date: 3/28/2 Result PQL SP 51 10 4.9 SampType: MBLK Batch ID: 30930 Analysis Date: 3/28/2	017 <u>K value</u> SF 50.00 5.000 017	Rur Sec PK Ref Val 0 TestCr Rur Sec	NNO: 41688 QNO: 1307965 <u>6REC LowLimit</u> 101 63.8 97.3 70 Ode: EPA Method NO: 41688 QNO: 1307966	Units: mg/Kg HighLimit 116 130 8015M/D: Die Units: mg/Kg	g %RPD sel Range	RPDLimit Organics	Qual
Client ID: LCSS Prep Date: 3/28/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID MB-30930 Client ID: PBS Prep Date: 3/28/2017 Analyte	Analysis Date: 3/28/2 Result PQL SPI 51 10 4.9 SampType: MBLK Batch ID: 30930 Analysis Date: 3/28/2 Result PQL SPI	017 K value SF 50.00 5.000 017 K value SF	Rur Sec 2K Ref Val 3 0 TestCo Rur Sec 2K Ref Val 3	ANO: 41688 ANO: 1307965 6REC LowLimit 101 63.8 97.3 70 Ode: EPA Method ANO: 41688 ANO: 1307966 6REC LowLimit	Units: mg/Kg HighLimit 116 130 8015M/D: Die Units: mg/Kg HighLimit	g %RPD sel Range g %RPD	RPDLimit	Qual
Client ID: LCSS Prep Date: 3/28/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID MB-30930 Client ID: PBS Prep Date: 3/28/2017 Analyte Diesel Range Organics (DRO)	Analysis Date: 3/28/2 Result PQL SPI 51 10 4.9 SampType: MBLK Batch ID: 30930 Analysis Date: 3/28/20 Result PQL SPI ND 10	017 <u>K value</u> SF 50.00 5.000 017 K value SF	Rur Sec PK Ref Val → 0 TestCr Rur Sec PK Ref Val →	NO: 41688 qNo: 1307965 &REC LowLimit 101 63.8 97.3 70 ode: EPA Method nNo: 41688 qNo: 1307966 &REC LowLimit	Units: mg/Kg HighLimit 116 130 8015M/D: Die Units: mg/Kg HighLimit	g %RPD sel Range g %RPD	RPDLimit • Organics RPDLimit	Qual
Client ID: LCSS Prep Date: 3/28/2017 Analyte Diesel Range Organics (DRO) Surr: DNOP Sample ID MB-30930 Client ID: PBS Prep Date: 3/28/2017 Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO)	Analysis Date: 3/28/2 Result PQL SPI 51 10 4.9 SampType: MBLK Batch ID: 30930 Analysis Date: 3/28/20 Result PQL SPI ND 10 ND 50	017 <u>K value</u> SF 50.00 5.000 017 K value SF	PK Ref Val 3 0 TestC Rur Sec PK Ref Val 3	NNO: 41688 qNO: 1307965 <u>6REC LowLimit</u> 101 63.8 97.3 70 ode: EPA Method NO: 41688 qNO: 1307966 <u>6REC LowLimit</u>	Units: mg/Kg HighLimit 116 130 8015M/D: Die Units: mg/Kg HighLimit	g %RPD sel Range g %RPD	RPDLimit • Organics RPDLimit	Qual

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
- W Sample container temperature is out of limit as specified

Page 3 of 5

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

WO#: 1703D46

30-Mar-17

Client: APEX 7	TITAN									
Project: Payne #	221 Well T	ie								
Sample ID mb-30945	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: PBS	Batcl	h ID: 30	945	F	RunNo: 4	1730				
Prep Date: 3/28/2017	Analysis E	Date: 3/	29/2017	S	SeqNo: 1	310415	Units: %Re	с		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		108	70	130			
Surr: 4-Bromofluorobenzene	0.43		0.5000		85.2	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		110	70	130			
Surr: Toluene-d8	0.49		0.5000		97.2	70	130			
Sample ID Ics-30945	SampT	ype: LC	S	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: LCSS	Batcl	h ID: 30	945	F	RunNo: 4	1730				
Prep Date: 3/28/2017	Analysis D)ate: 3/	29/2017	S	SeqNo: 1	310416	Units: %Re	C		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.57		0.5000		113	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.4	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		109	70	130			
Surr: Toluene-d8	0.48		0.5000		95.1	70	130			
Comple ID mb 20040	SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List									
Sample ID mb-30918	Sampi	ype. wit		100		Ameniou	0200D. V01a	ules Short	LISL	
Client ID: PBS	Batch	n ID: 30	918	F	RunNo: 4	1730	0200B. VOIA	ules short	LISt	
Client ID: PBS Prep Date: 3/27/2017	Batch Analysis D	n ID: 30 ate: 3/	918 29/2017	F	RunNo: 4 SeqNo: 1	1730 310430	Units: mg/k	(g	List	
Client ID: PBS Prep Date: 3/27/2017 Analyte	Batch Analysis D Result	Date: 3/	918 29/2017 SPK value	F SPK Ref Val	RunNo: 4 SeqNo: 1 %REC	1730 310430 LowLimit	Units: mg/K HighLimit	silles short (g %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene	Batch Analysis D Result ND	Date: 3/ PQL 0.025	918 29/2017 SPK value	SPK Ref Val	RunNo: 4 SeqNo: 1 %REC	1730 310430 LowLimit	Units: mg/K	kg %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene	Batcl Analysis D Result ND ND	ppe: mile n ID: 30 Date: 3/ PQL 0.025 0.050	918 29/2017 SPK value	F SPK Ref Val	RunNo: 4 SeqNo: 1 %REC	1730 310430 LowLimit	Units: mg/K HighLimit	kg %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene	Analysis D Result ND ND ND	ppe: mile n ID: 30 Date: 3/ PQL 0.025 0.050 0.050	918 29/2017 SPK value	SPK Ref Val	RunNo: 4 SeqNo: 1 %REC	1730 310430 LowLimit	Units: mg/K HighLimit	silon %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total	Analysis D Result ND ND ND ND ND	PQL 0.025 0.050 0.10	918 29/2017 SPK value	SPK Ref Val	RunNo: 4 SeqNo: 1 %REC	1730 310430 LowLimit	Units: mg/K HighLimit	kg %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4	Analysis E Result ND ND ND ND ND ND 0.55	PQL 0.025 0.050 0.10	918 29/2017 SPK value 0.5000	SPK Ref Val	RunNo: 4 SeqNo: 1 %REC 110	1730 310430 LowLimit	Units: mg/k HighLimit 130	Kg %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene	Analysis E Result ND ND ND ND 0.55 0.43	n ID: 30 Date: 3/ PQL 0.025 0.050 0.050 0.10	918 29/2017 SPK value 0.5000 0.5000	F SPK Ref Val	RunNo: 4 SeqNo: 1 %REC 110 86.2	1730 310430 LowLimit 70 70	Units: mg/k HighLimit 130 130	Kg %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane	Analysis D Result ND ND ND ND 0.55 0.43 0.57	ppe: m Di ID: 30 Date: 3/ PQL 0.025 0.050 0.050 0.10	918 29/2017 SPK value 0.5000 0.5000 0.5000	F SPK Ref Val	RunNo: 4 SeqNo: 1 %REC 110 86.2 114	1730 310430 LowLimit 70 70 70 70	Units: mg/k <u>HighLimit</u> 130 130 130	Sg %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane Surr: Toluene-d8	Analysis D Result ND ND ND ND 0.55 0.43 0.57 0.47	PQL 0.025 0.050 0.10	918 29/2017 SPK value 0.5000 0.5000 0.5000 0.5000	SPK Ref Val	RunNo: 4 SeqNo: 1 %REC 110 86.2 114 94.7	1730 310430 LowLimit 70 70 70 70 70	Units: mg/k HighLimit 130 130 130 130	Sg %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane Surr: Toluene-d8	Analysis D Result ND ND ND 0.55 0.43 0.57 0.47 SampT	PQL 0.025 0.050 0.050 0.10	918 29/2017 SPK value 0.5000 0.5000 0.5000 0.5000 S	SPK Ref Val	RunNo: 4 SeqNo: 1 %REC 110 86.2 114 94.7	1730 310430 LowLimit 70 70 70 70 70 70	Units: mg/k HighLimit 130 130 130 130 130	(g %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane Surr: Toluene-d8 Sample ID Ics-30918 Client ID: LCSS	Analysis D Result ND ND ND 0.55 0.43 0.57 0.47 SampT Batch	PQL 0.025 0.050 0.050 0.10	0.5000 0.5000 0.5000 0.5000 0.5000 0.5000	SPK Ref Val	110 80.2 110 86.2 114 94.7 tCode: El RunNo: 4	1730 310430 LowLimit 70 70 70 70 70 70 70 70 70 70	Units: mg/k HighLimit 130 130 130 130 8260B: Volat	Sg %RPD	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane Surr: Toluene-d8 Sample ID Ics-30918 Client ID: LCSS Prep Date: 3/27/2017	Analysis D Result ND ND ND 0.55 0.43 0.57 0.47 SampT Batch Analysis D	PQL 0.025 0.050 0.050 0.10 vype: LC	918 29/2017 SPK value 0.5000 0.5000 0.5000 0.5000 S 918 29/2017	SPK Ref Val	RunNo: 4 SeqNo: 1 %REC 110 86.2 114 94.7 tCode: El RunNo: 4 SeqNo: 1	1730 310430 LowLimit 70 70 70 70 70 70 70 70 70 70 70 310431	Units: mg/K HighLimit 130 130 130 130 8260B: Volat	(g %RPD tiles Short	RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane Surr: Toluene-d8 Sample ID Ics-30918 Client ID: LCSS Prep Date: 3/27/2017 Analyte	Analysis D Result ND ND ND 0.55 0.43 0.57 0.47 SampT Batch Analysis D Result	PQL 0.025 0.050 0.050 0.050 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.025 0.050	918 29/2017 SPK value 0.5000 0.5000 0.5000 0.5000 S 918 29/2017 SPK value	F SPK Ref Val Tes SPK Ref Val	110 80.2 36.2 114 94.7 10 86.2 114 94.7 10 80.2 114 94.7 10 80.2 114 94.7	70 70 70 70 70 70 70 70 70 70 70 70 70 7	Units: mg/K HighLimit 130 130 130 130 8260B: Volat Units: mg/K HighLimit	Sg %RPD tiles Short	RPDLimit List	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 2-Dichloroethane-d4 Surr: Dibromofluorobenzene Surr: Dibromofluoromethane Surr: Toluene-d8 Sample ID Ics-30918 Client ID: LCSS Prep Date: 3/27/2017 Analyte Benzene	Analysis D Result ND ND ND 0.55 0.43 0.57 0.47 SampT Batch Analysis D Result 1.3	PQL 0.025 0.050 0.050 0.050 0.10 7ype: LC 0.1D: 309 0ate: 3/ PQL 0.025	0.5000 0.50000 0.50000 0.500000000	SPK Ref Val Tes SPK Ref Val SPK Ref Val 0	110 80000: 4 80000: 1 80000: 1	70 70 70 70 70 70 70 70 70 70 70 70 70 7	Units: mg/k HighLimit 130 130 130 130 8260B: Volat Units: mg/k HighLimit 130	Sg %RPD tilles Short	RPDLimit List RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane Surr: Toluene-d8 Sample ID Ics-30918 Client ID: LCSS Prep Date: 3/27/2017 Analyte Benzene Toluene	Analysis D Result ND ND ND 0.55 0.43 0.57 0.47 SampT Batch Analysis D Result 1.3 1.1	PQL 0.025 0.050 0.050 0.050 0.10 7ype: LC 0.10: 30 0ate: 3/ PQL 0.025 0.050	0.5000 0.50000 0.50000 0.500000000	SPK Ref Val SPK Ref Val Tes SPK Ref Val 0 0	110 80000: 4 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 800000: 1 80000: 1 800000: 1 80000: 1	70 70 70 70 70 70 70 70 70 70 70 70 70 7	Units: mg/K HighLimit 130 130 130 130 130 Units: mg/K HighLimit 130 130	illes Short	RPDLimit List RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane Surr: Toluene-d8 Sample ID Ics-30918 Client ID: LCSS Prep Date: 3/27/2017 Analyte Benzene Toluene Surr: 1,2-Dichloroethane-d4	Analysis D Result ND ND ND 0.55 0.43 0.57 0.47 SampT Batch Analysis D Result 1.3 1.1 0.57	PQL 0.025 0.050 0.050 0.050 0.10 7ype: LC n ID: 30 0ate: 3/ PQL 0.025 0.050	0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 S 918 29/2017 SPK value 1.000 1.000 0.5000	Field SPK Ref Val Tess Field SPK Ref Val 0 0	110 8eqNo: 1 %REC 110 86.2 114 94.7 tCode: El RunNo: 4 SeqNo: 1 %REC 128 105 115	70 70 70 70 70 70 70 70 70 70 70 70 70 7	Units: mg/k HighLimit 130 130 130 130 130 8260B: Volat Units: mg/k HighLimit 130 130 130	illes Short	RPDLimit List RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane Surr: Toluene-d8 Sample ID Ics-30918 Client ID: LCSS Prep Date: 3/27/2017 Analyte Benzene Toluene Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene	Analysis D Result ND ND ND 0.55 0.43 0.57 0.47 SampT Batch Analysis D Result 1.3 1.1 0.57 0.44	ype: m n ID: 30 pate: 3/ PQL 0.025 0.050 0.050 0.050 0.10 vype: LC n ID: 30 oute: 3/ PQL 0.025 0.025 0.050 oute: 3/ PQL 0.025 0.025 0.050	918 29/2017 SPK value 0.5000 0.5000 0.5000 0.5000 5918 29/2017 SPK value 1.000 1.000 0.5000 0.5000	SPK Ref Val	110 80000: 4 80000: 1 %REC 110 86.2 114 94.7 tCode: El 80000: 4 80000: 1 %REC 128 105 115 88.8	70 70 70 70 70 70 70 70 70 70 70 70 70 1730 310431 LowLimit 70 70 70 70 70	Units: mg/k HighLimit 130 130 130 130 130 8260B: Volat Units: mg/k HighLimit 130 130 130 130	illes Short	RPDLimit List RPDLimit	Qual
Client ID: PBS Prep Date: 3/27/2017 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane Surr: Toluene-d8 Sample ID Ics-30918 Client ID: LCSS Prep Date: 3/27/2017 Analyte Benzene Toluene Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane	Analysis D Result ND ND ND 0.55 0.43 0.57 0.47 SampT Batch Analysis D Result 1.3 1.1 0.57 0.44 0.56	PQL 0.025 0.050 0.050 0.050 0.10 ype: LC 1D: 30 0.025 0.025 0.025 0.025 0.025	0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 S 918 29/2017 SPK value 1.000 1.000 0.5000 0.5000 0.5000	SPK Ref Val	110 80000: 4 80000: 1 %REC 110 86.2 114 94.7 tCode: El 80000: 4 80000: 1 80000: 4 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 94.7 10 80000: 1 80000: 1 94.7 10 80000: 1 10 80000: 1 80000: 1 10 80000: 1 10 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 94.7 10 80000: 1 80000: 1 90000: 1 80000: 1 8000000: 1 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 80000: 1 8000	70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70 70	Units: mg/k HighLimit 130 130 130 130 130 8260B: Volat Units: mg/k HighLimit 130 130 130 130 130	illes Short	RPDLimit List RPDLimit	Qual

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
- Analyte detected in the associated Method Blank

E Value above quantitation range

- J Analyte detected below quantitation limits
- Page 4 of 5

P Sample pH Not In RangeRL Reporting Detection Limit

В

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

nt: APEX TITAN

Hall Environmental Analysis Laboratory, Inc.

Client:APEX TITANProject:Payne #221 Well Tie

111

Sample ID mb-30918	SampT	ype: ME	BLK	Tes	8015D Mod:	Gasoline	Range			
Client ID: PBS	Batch	Batch ID: 30918 RunNo: 41730								
Prep Date: 3/27/2017	Analysis D	ate: 3/	29/2017	S	SeqNo: 1	310441	Units: mg/M	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	460		500.0		91.8	70	130			
Sample ID Ics-30918	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID: LCSS	Batch	ID: 30	918	F	RunNo: 4	1730				
Prep Date: 3/27/2017	Analysis D	ate: 3/	29/2017	S	SeqNo: 1	310442	Units: mg/k	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- 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
- W Sample container temperature is out of limit as specified

WO#: 1703D46 30-Mar-17

Page 5 of 5

HALL Hall ENVIRONMENTAL ANALYSIS LABORATORY TEL: We	Snvironmental Analysis Labora 4901 Hawkin Albuquerque, NM 8 505-345-3975 FAX: 505-345-4 ibsite: www.hallenvironmental	atory s NE 7109 Sam 4107 .com	ple Log-In Ch	eck List
Client Name: APEX AZTEC Work O	rder Number: 1703D46		RcptNo:	1
Received by/date: (m. 63/28/17				
Logged By: Anne Thome 3/28/2017	7:15:00 AM	ame I'm	-	
Completed By: Anne Thomas 3/28/2017 Reviewed By: 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7:38:27 AM	anne Hom	-	
Chain of Custody				·
1. Custody seals intact on sample bottles?	Yes	No 🗆	Not Present	
2. Is Chain of Custody complete?	Yes 🖌	No 🗌	Not Present	
3. How was the sample delivered?	Courier			
Log In				
4. Was an attempt made to cool the samples?	Yes 🗹	No 🗌	NA 🗆	
5. Were all samples received at a temperature of >0° C t	o 6.0°C Yes 🗹	No 🗀		
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 preserve	d? 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 🗆	for pH:	>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 🗹	
Parpas Notified:	Data			
By Whom:	Via: CeMail CI	Phone 🗌 Fax	In Person	
Regarding:				
Client Instructions:				
17. Additional remarks:				
18. <u>Cooler Information</u>				
Cooler No Temp C Condition Seal Intact	Seal No Seal Date	Signed By		
1 1.7 Good Yes				

	_	_	_	_	_
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Page 1 of 1

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			0.0																	U	HAIN OF CUSTODY RECORD
AI Office Proje Sampl C	E Locatio	n _ AP ger _ K D' A_		A Sect Na	(M 	Laboratory: Address: Contact: Phone: PO/SO #: Sampler's Sign	A.	ABC Fr	all 2 m CCC 1	En I. N main	Contain	iers		Analy Reque	SIS ESTE	ecidence and a	Tae				Lab use only Due Date: Temp. of coolers when received (C°):), 7 1 2 3 4 5 Page 1 of
725	040112	360		1	Rane P	* 221 We	117	10						5	N	N.		/	/	/	/
Matrix	Date	Time	CoEp	Grab	Identifying Mar	rks of Sample(s)	Start Depth	End	VOA	AG 1L	250	Glass	D/O	SR	12	/ /		/			Lab Sample ID (Lab Use Only)
5	3-2217	200			Si	3						1		11	1						17/314/2001
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Turn a	round time	C Non	mal	02	25% Rush) 50% Rüsh 🛛	100%	Rush	Sa	me	P	un						1			
Reling	uished by (Signature)			Date:	Time: Receiv	ed by:	Signa	iture)		-	Pate	1	Time:	N	OTES		/	ï	カ	> 1
Reling	uished by (uished by (uished by (Signature) Signature)	15	1	Date:	Time: Receiv	red by:	(Signa	ture)		03	27 Date 28 Date	17	13/3 Time: 0716 Time:	5	1	5:11 A.E	*		10	m cong carbord
Relinq	uished by (Signature)			Date: 1	Time: Receiv	ed by:	(Signa	ture)			Date	:	Time:	-		15	-	10	ð	975 0 18/
Matrix	W	V - Wastewa	ter		W - Water S	S - Soil SD - So	lid I	Liqui	d A	- Air Ba	ag auth	C-	Cha	rcoal tube	SL	- sludg	e	0-0	Dil		

Apex TITAN, Inc. • 606 S. Rio Grande, Suite A, Downstairs • Aztec, New Mexico 87410 • Office: 505-334-5200 • Fax: 505-334-5204



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

March 20, 2017

Kyle Summers APEX TITAN 606 S. Rio Grande Unit A Aztec, NM 87410 TEL: (903) 821-5603 FAX

RE: Payne 221 Well Tie

OrderNo.: 1703851

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 3/16/2017 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 <u>www.hallenvironmental.com</u> 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report

Lab Order 1703851

2

2

Date Reported: 3/20/2017

3/17/2017 9:18:11 AM

3/17/2017 9:18:11 AM 30725

30725

Hall Environmental Analysis Laboratory, Inc.

Xylenes, Total

Surr: 4-Bromofluorobenzene

CLIENT: APEX TITAN			Client Samp	le ID: S-	1	
Project: Payne 221 Well Tie			Collection	Date: 3/1	5/2017 3:00:00 PM	
Lab ID: 1703851-001	Matrix:	SOIL	Received	Date: 3/1	6/2017 7:09:00 AM	
Analyses	Result	PQL Qua	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGI		s			Analyst	MAB
Diesel Range Organics (DRO)	56	9.4	mg/Kg	1	3/16/2017 11:25:07 AM	30722
Motor Oil Range Organics (MRO)	100	47	mg/Kg	1	3/16/2017 11:25:07 AM	30722
Surr: DNOP	96.0	70-130	%Rec	1	3/16/2017 11:25:07 AM	30722
EPA METHOD 8015D: GASOLINE RANG	E				Analyst	NSB
Gasoline Range Organics (GRO)	ND	9.5	mg/Kg	2	3/17/2017 9:18:11 AM	30725
Surr: BFB	92.0	54-150	%Rec	2	3/17/2017 9:18:11 AM	30725
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.047	mg/Kg	2	3/17/2017 9:18:11 AM	30725
Toluene	ND	0.095	mg/Kg	2	3/17/2017 9:18:11 AM	30725
Ethylbenzene	ND	0.095	mg/Kg	2	3/17/2017 9:18:11 AM	30725

0.19

66.6-132

mg/Kg

%Rec

ND

102

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method E	Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 1 of 4
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	1 age 1 01 4
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit	as specified
QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

Client: APEX TITAN

Project: Payne 221 Well Tie

Sample ID MB-30722	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 30722	RunNo: 41403	5 5
Prep Date: 3/16/2017	Analysis Date: 3/16/2017	SegNo: 1297887	Units: ma/Ka
Analyte	Result PQL SPK value	e SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	ND 10		
Motor Oil Range Organics (MRO)	ND 50		
Surr: DNOP	10 10.00) 104 70	130
Sample ID LCS-30722	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 30722	RunNo: 41403	
Prep Date: 3/16/2017	Analysis Date: 3/16/2017	SeqNo: 1298115	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	48 10 50.00	0 0 96.9 63.8	116
Surr: DNOP	4.9 5.000	98.8 70	130
Sample ID LCS-30698	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 30698	RunNo: 41403	
Prep Date: 3/15/2017	Analysis Date: 3/16/2017	SeqNo: 1299328	Units: %Rec
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Surr: DNOP	5.1 5.000	102 70	130
Sample ID MB-30698	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 30698	RunNo: 41403	
Prep Date: 3/15/2017	Analysis Date: 3/16/2017	SeqNo: 1299329	Units: %Rec
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Surr: DNOP	10 10.00	101 70	130

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- 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
- W Sample container temperature is out of limit as specified

Page 2 of 4

WO#: 1703851 20-Mar-17

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

APEX TITAN **Client:**

Project: Payne 221 Well Tie

Sample ID MB-30725	SampT	ype: ME	BLK	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch	ID: 30	725	F	RunNo: 4					
Prep Date: 3/16/2017	Analysis D	ate: 3/	17/2017	SeqNo: 1300833 Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
SUIT: BEB	690		1000		68.6	54	150			
	000		1000		00.0		100			
Sample ID LCS-30725	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015D: Gasc	line Rang	e	
Client ID: LCSS	Batch	ID: 30	725	R	RunNo: 4	1456				
Prep Date: 3/16/2017	Analysis D	ate: 3/	17/2017	S	SeqNo: 1	300834	Units: mg/k	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	115	76.4	125			
Sur: BEB	880		1000		88.2	54	150			

Qualifiers:

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

WO#: 1703851

20-Mar-17

Page 3 of 4

WO#: 1703851

20-Mar-17

APEX TITAN **Client: Project:**

Payne 221 Well Tie

Sample ID MB-30725	Samp	Type: ME	BLK	Tes	tCode: El					
Client ID: PBS	Batc	h ID: 30	725	F	RunNo: 4	1456				
Prep Date: 3/16/2017	Analysis E	Date: 3/	17/2017	5	SeqNo: 1	300908	Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025					Ŭ			
Takiana	ND	0.020								
louene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.75		1.000		75.3	66.6	132			
Sample ID I CS 20725	Somo		6	Too		DA Mathad	9024 B. Vala	tiloo		
Sample ID LCS-30725	Samp	ype. LC	5	Tes	Code: El	PA Method	8021B: VOIa	tiles		
Client ID: LCSS	Batc	h ID: 30	725	F	RunNo: 4	1456				
Prep Date: 3/16/2017	Analysis E	Date: 3/	17/2017	5	SeqNo: 1	300909	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.9	80	120			
Toluene	0.97	0.050	1.000	0	96.7	80	120			
Ethylbenzene	0.95	0.050	1.000	0	94.6	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.8	80	120			

Qualifiers:

1

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- W Sample container temperature is out of limit as specified

Page 4 of 4

RL **Reporting Detection Limit**

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental A Albu TEL: 505-345-3975 Website: www.hal	Analysi 4901 querqu FAX: 5 lenviro	is Labord Hawkin e, NM 8 05-345- nmental	alory s NE 7109 Sam 4107 4.com	ple Log-In	Check List
Client Name: APEX AZTEC W	ork Order Number:	1703	851		RcptN	lo: 1
Received by/date:	316/7	. .				
Logged By: Lindsay Mangin 3/16	2017 7:09:00 AM			Julythigo		:
Completed By: Lindsay Mangin 3/16	2017 7:25:28 AM			Andyther		
Reviewed By: OL OT	5/16/17			000		
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?		Cour	<u>ier</u>			
Log In						
4. Was an attempt made to cool the samples?		Yes		No 🗌	NA [
5. Were all samples received at a temperature of >	0° C to 6.0°C	Yes		No 🗌)
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 pre	eserved?	Yes	\checkmark	No 🗌		
9. Was preservative added to bottles?		Yes		No 🗹	NA]
10.VOA vials have zero headspace?		Yes		No 🗌	No VOA Vials	2
11. Were any sample containers received broken?		Yes		No 🗹	# of preserved	
					bottles checked	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes		No	tor pH: (<	2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Cust	ody?	Yes	\checkmark	No 🗌	Adjusted?	
14. Is it clear what analyses were requested?		Yes	\checkmark	No 🗌		
15. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes	\checkmark	No 🗌	Checked by	<u> </u>
Special Handling (If applicable)						
16 Was client notified of all discremencies with this of	rder?	Vee		No 🗖	NA	2
		105				
Person Notified:	Date j				Demen	
Bergarding:						
Client Instructions:				**************************************		
17. Additional remarks:						
18. <u>Cooler Information</u> <u>Cooler No</u> Temp °C Condition Seal Inf 1 2.6 Good Yes	tact Seal No S	ieal Da	ate	Signed By		
Page 1 of 1			<mark>2</mark> 2.			

																			C	HAIN	OF (CUSTO	DY RECO	ORD
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Reinc	uished by (Signature)		1	Date:	Time: Receiv	ed by:	(Signa	ature)		a	Date	H	Time: 0709	Nei	n A	FE	II.	No	97	56	C	Parl	
Relinc	uished by (Signature)			Date:	Time: Receiv	ed by:	(Signa	ature)			Date:		Time:									/ V	
Matrix	WV	V - Wastewa	ter		W - Water A/G - Amber / C	S - Soil SD - So	ie L	- Liqui	d A Glass v	- Air Ba	ig with	C.	Char	coal tube S	SL - slu	dge	0	- Oil						

Apex TITAN, Inc. • 606 S. Rio Grande, Suite A, Downstairs • Aztec, New Mexico 87410 • Office: 505-334-5200 • Fax: 505-334-5204

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

Form C-141 Revised August 8, 2011

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

1220 5. 51. 118	1105 D1., Odi		505	1220 Sar	south	St. Fran e. NM 87	cis Dr. 505					
		F	Releas	e Notifica	ation	and C	orrective	Actio	on			
					OP	ERATO	2		Initial	Report	🗌 Fi	na <mark>l Report</mark>
Name of C	ompany:	Enterprise I	Field Serv	vices LLC		Contact: Th	nomas Long/R	unell S	eale			
Address: 6	14 Reilly A	ve, Farmin	gton, NM	87401		Telephone No. 505-599-2286						
Facility Na	me: Trunk	10A Pipel	ine		1	Facility Typ	e: Natural Ga	s Gath	nering P	ipeline		
Surface Ov	wner: Nava	ajo Tribal		Mineral O	wner:	BIA			API No	D. NA		
				LOCA	TION	OE REL	EASE					
Unit Letter	Section	Township	Range	Feet from	Nort	1/South	Feet from	East	Vest	County	n	
IVI	15	231	1100	628	LINE		387	Line		San Jua		
			Latit	ude <u>36.3954</u>	413	Longitude	e <u>-107.999074</u>	15	01	L CONS.	DIV DIS	57. 3
Type of Rel	ase Natur	al Gas and N	Jatural Ga	NAT!	URE	OF RELE	EASE	own	Volume	Recovered	L ZUIT	
Source of R	elease: Sus	spected inter	nal corros	ion		Date and	Hour of Occurre	ence:	Date and	d Hour of [Discovery	:
Was Immed	iate Notice	Given?				//12/2017 If YES, To	Whom? Courte	esy Noti	fication: \	/anessa Fi	p.m. ields – NI	MOCD;
		L Ye	s 🗌 No	Not Req	uired	Steve Aus	sun - NNEPA					
By Whom? Was a Wate	Thomas Lo ercourse Re	ached?				Date and If YES, Vo	Hour July 13, 2 Jume Impacting	017 @ the Wa	12:52 p.m atercourse	n. Ə		
			Yes	🛛 No								
If a Waterco	urse was Ir	npacted, De	scribe Full	y.*	0.0045						Truck 40	
pipeline. The approximate approximate	e pipeline w ely 20 feet lo ely 300 feet	vas isolated, ong by 15 fee Repairs and	depressur depressur et wide wa d remediat	ized, locked ou s affected by fl ion were initiat	z, 2017 ut and t luids re ed on .	agged out. A leased. Flu July 19, 201	An area around ids also flowed 7.	the rele	ase of groot	ase on the ound surfa g an erosic	ce of nal featu	re
Describe Ar	ea Affected t mass by n	and Cleanu nechanical e	p Action T cavation.	aken.* Repairs A third party co	and re orrectiv	emediation a /e action rep	re currently in p ort will be inclue	orogress ded with	. Enterpri	ise will rem al." C-141.	nove the	
I hereby cer rules and re which may e relieve the c ground wate operator of t	tify that the gulations al endanger pu operator of I er, surface v responsibili	information I operators a ublic health o iability shoul vater, humar y for complia	given above or require or the envire d their ope h health or ance with a	ve is true and c d to report and ronment. The a erations have fa the environme any other feder	omplet /or file accepta ailed to ent. In ral, stat	te to the bes certain relea ance of a C- adequately addition, NM re, or local la	t of my knowled ase notifications 141 report by th investigate and IOCD acceptan ws and/or regul	lge and and pe ie NMO remedi ce of a lations.	understa rform con CD marke ate conta C-141 rep	nd that pur rective act ed as "Fina mination th port does r	rsuant to ions for re al Report nat pose a not relieve	NMOCD eleases ' does not a threat to e the
	(5"	1.				OIL CON	SERV	ATION	DIVISI	ON	
Signature:	m	1. Tu	4		,	Approved by	Environmental	Specia	list:	C	3	
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Title: Directo	or, Environn	nental				Approval Da	ile: Hotel		-xpiration	Date:		
E-mail Addr	ess:jefields	@eprod.com				Conditions of	of Approval:			Attache	ad Z	,
Date: 7	126/2017	1	Phon	e: (713)381-66	84							
Attach Addi	tional She	ets If Neces	ssary			NA	17265	38	480			

Operator/Responsible Party,

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

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

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Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District III office in 30 days_ on or before _______. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

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

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

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District I	D. Ushba			Stat	te of	New Mex	lico				Form (2 1 1 1	
District II	n Dr., Hodds,	NM 88240		Energy	Min	erals and I	Natural			Revis	ed August 8	3, 2011	
District III 1000 Rio Braz	os Road Azt	PC NM 87410			Re	sources		Subr	mit 1 Cop	y to appropria	te District	Office	
District IV	ancis Dr. Sar	ata Fe NM 87	505	Oil Co	nse	rvation Di	vision						
1220 3. 31. 118			000	1220 San	outh ta F	NM 87	CIS Dr. 505	R		Lark	ee-	2	
		F	Peleas	e Notifica	atio	ion and Corrective Action							
			Cicas	c notinot			2		Initial I	Report [Final	Report	
Name of C	ompany:	Enterprise F	Field Ser	vices LLC		Contact: Th	nomas Long/R	unell S	Seale			report	
Address: 6	14 Reilly A	ve, Farmin	gton, NN	87401		Telephone	No. 505-599-2	2286				1	
Facility Na	me: Latera	al 2B-24				Facility Type: Natural Gas Gathering Pipeline							
Surface O	wner BIM			Mineral O	wner	BLM				NA		-141-	
	MICI. DEM						EASE		7.1110		al Arict	Office	
Unit Letter	Section	Township	Range	Feet from	Nort	b South	Feet from	EastA	Nest	County		WWING -	
F	22	28N	10Ŵ	the 2023	Line		the 1500	Line		San Juan		ANT ANT	
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			Lat	itude <u>36.649</u>	366	Longitude	<u>-107.88687</u>	5			2	Lana di	
N												report	
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Source of R	elease: Natur	spected inter	nal corros	ion		Date and	Hour of Occurre	ence:	Date and	d Hour of Disc	covery:	- अल्लाम	
Was Immed	iate Notice	Given?				7/21/2017	@ 2:30 p.m.	esv Noti	7/21/201	7 @ 2:30 p.n	n. Is – NMOC	141	
		Yes	s 🗌 No	Not Req	uired	Whitney T	homas-BLM	009 1100	noation. v			Uffice	
By Whom?	Runell Sea	le		,		Date and	Hour July 27, 2	.017 @	1:42 p.m.		1 243-4	Att int.	
Was a Wate	ercourse Re	ached?	□ Yes	No.		If YES, Volume Impacting the Watercourse							
in a là m												. Louis bill ideanas	
Describe Ca	ause of Prob	plem and Rei	medial Ac	y." tion: On July 21	1, 201	7, Enterprise	responded to a	possib	le natural	gas leak on t	he Lateral	2B-	
24 pipeline.	Enterprise t	technician ve	erified the	leak and initiate	ed not	ification proc	edures to Gas	Control,	local mar	nagement, sa	fety and	epon	
around the r	elease of g	round surfac	e of appro	eximately 60 fee	et long	by 18 inche	s wide was affe	cted by	fluids rele	eased. Repai	rs and	1. 1. VANE (0.1. MEM 20 	
remediation	were initiat	ed on July 2	7, 2017.			81 					1.157	- <u>19</u>	
Describe Ar contaminan	ea Affected t mass by m	and Cleanup echanical ex	Action T cavation.	aken.* Repairs A third party co	and r	emediation a ve action rep	re currently in port will be include	orogress ded with	. Enterpri	ise will remov al." C-141.	e the	142	
I hereby cert	ifv that the ir	formation giv	en above i	s true and compl	ete to 1	he best of my	knowledge and u	inderstar	nd that purs	suant to NMO	CD rules and	d	
regulations a	ll operators a	are required to	report and	/or file certain re	lease r	notifications a	nd perform correct	ctive acti	ions for rel	eases which m	ay endanger	r	
should their	operations ha	ive failed to a	lequately in	nvestigate and re	media	te contaminati	on that pose a thi	reat to gr	ound wate	r, surface wate	r, human he	ealth	
or the enviro federal, state	nment. In ac , or local law	and/or regul	D accepta ations.	ince of a C-141 r	eport o	loes not reliev	e the operator of	responsi	bility for c	compliance wit	h any other		
	71	6	1	8	4	1	OIL CON	SERV	ATION	DIVISION	1		
Signature:	-AN	. the	4			-nuiron	bied Ishow	atr	X	V	5		
Printed Name	e: Jon E.	Fields			Approved by District Supervisor:								
Title:	Directo	or. Field Envi	ronmental			Approval Da	10: 114/20	100	Expiration	Date:			
	- a tr												
E-mail Addro	ess: jefield	s(a)eprod.com				Conditions of	Approval:			Attached			
Date:	tional Shee	Phone: 713	-381-6684			NIA	15000	200	100	-			
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District I 1625 N. French Dr., Hobbs, NM 88240 State c	of New Mexico		Form C-141			
District II Energy Mi 811 S. First St., Artesia, NM 88210	nerals and Natural		Revised April 3, 2017			
District III 1000 Rio Brazos Road, Aztec, NM 87410		Submit 1 Copy in acco	y to appropriate District Office ordance with 19.15.29 NMAC.			
District IV UII CONS 1220 S. St. Francis Dr., Santa Fe, NM 87505 1220 Sou	ervation Division					
Santa	Fe, NM 87505					
Release Notification	on and Corrective	Action				
C	PERATOR	Initial I	Report			
Name of Company Enterprise Field Services, LLC	Contact Thomas Long					
Address 614 Reilly Ave, Farmington, NM 87401 Facility Name Potter Compressor Station	Facility Type Natural Ga	2286 Is Compressor	Station			
Surface Owner PLM						
		APING).			
LOCATIO	the South Eest from	Fast/West	County			
A 19 30N 10W the Line	the 1522	Line	San Juan			
Latitude 36.803020 Longi	tude 107.921590 NAD83					
NATUR	E OF RELEASE					
Type of Release Natural Gas Liquids	Volume of Release Unkr	Nown Volume	Recovered None			
Source of Release External Corrosion	Date and Hour of Occurr 8/21/2017 @ 1:30 p.m.	ence Date and 8/21/201	Hour of Discovery			
Was Immediate Notice Given?	If YES, To Whom? : Courtesy Notification Cory Smith – NMOCD;					
Required	Whitney Smith - BLM					
By Whom? Thomas Long	Date and Hour August 21	1, 2017 @ 2:25 p.i	m.			
Was a Watercourse Reached?	If YES, Volume Impacting	g the Watercourse).			
If a Watercourse was Impacted, Describe Fully.*						
Enterprise technicians discovered a release natural gas fluids fro	m the BGT located at Potter (Compressor Static	on. The BGT was removed			
from service.						
Describe Area Affected and Cleanup Action Taken.* Remediation	n of the release will be initiate	d after facility equ	ipment has been removed			
from the vicinity of the release. The contaminant mass will be renue to be included with the "Final." C-141.	moved by mechanical excava	tion. A third party	corrective action report will			
	1					
I hereby certify that the information given above is true and comp	lete to the best of my knowled	dge and understar	nd that pursuant to NMOCD			
which may endanger public health or the environment. The acce	ptance of a C-141 report by the	he NMOCD marke	ed as "Final Report" does not			
ground water, surface water, human health or the environment. I	n addition, NMOCD acceptar	ce of a C-141 rep	mination that pose a threat to ort does not relieve the			
operator of responsibility for compliance with any other federal, st	tate, or local laws and/or regu	lations.	DIVISION			
h.4 - /1		SERVATION	DIVISION			
Signature: / NC, Kuly	Approved by Environmenta	I Specialist	$\langle Q \rangle$			
Printed Name: Jon E. Fields			In en			
Title: Director, Environmental	Approval Date	Expiration	Date:			
E-mail Address: jefields@eprod.com	Conditions of Approval:		and the second			
Date: \$\begin{bmatrix} 31 \begin{bmatrix} Z_3 / \end{bmatrix} 7 \end{bmatrix} Phone: (713) 381-			Attached			
* Attach Additional Sheets If Necessary	NVFN26	32626	4			

Į

Operator/Responsible Party,

The OCD has received the form C-141 you provided on <u>15000</u> regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number has been assigned. **Please refer to this case number in all future correspondence.**

NVF1726326264

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District III office in 30 days_ on or before if a submitted of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

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

• Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

• Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

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

• Composite sampling is not generally allowed.

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

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

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

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

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

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

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

Form C-141 Revised April 3, 2017

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

Oil Conservation Divisio	n
220 South St. Francis E)r.
Santa Fe, NM 87505	

Release Notificati	on and Corrective Action
Name of Company Enterprise Field Services LLC	
Address 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name Middle Mesa Compressor Station	Facility Type Natural Gas Compressor Station
	PLM Sorial Number:
	er BLW Senai Number. April 2 2017
P 10 31N 7W the 2,489 Line	the 836 Line San Juan
Latitude_36.907129_Longi	itude_107.564528_NAD83
NATURE	E OF RELEASE
Lype of Release: Natural Gas	Volume of Release 10,289 Volume Recovered None
Source of Release ESD Vent Valve	Date and Hour of Occurrence Date and Hour of Discovery
Was Immediate Notice Given?	If YES. To Whom? : Notification to Corv Smith – NMOCD
🛛 Yes 🗌 No 🗌 Not	
Required	
By Whom? Thomas Long	Date and Hour 11/22/2017 @ 9:00 a.m.
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.
If a Watercourse was Impacted, Describe Fully.*	Constant Co
MCF of gas was released.	eased. No further action required.
Thereby certify that the information given above is true and comp rules and regulations all operators are required to report and/or fil which may endanger public health or the environment. The acce relieve the operator of liability should their operations have failed ground water, surface water, human health or the environment. I operator of responsibility for compliance with any other federal, st Signature:	blete to the best of my knowledge and understand that pursuant to NMOCD le certain release notifications and perform corrective actions for releases ptance of a C-141 report by the NMOCD marked as "Final Report" does not to adequately investigate and remediate contamination that pose a threat to In addition, NMOCD acceptance of a C-141 report does not relieve the tate, or local laws and/or regulations.
Printed Name: Jon E. Fields	Approved by Environmental Specialist:
Title: Director, Environmental	Approval Date: 211817 Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval:
Date: U/28/2017 Phone: (713) 381-6684	
Attach Additional Sheets If Necessary	NVFI735233152

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

 1625 N. French Dr., Hobbs, NN 66276

 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

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

Oil Conservation Division

Form C-141 Revised April 3, 2017

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

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		F	Releas	e Notific	atior	and C	orrective	Actio	on				
					OP	ERATO	र	\boxtimes	Initial	Report 🗌 F	-inal Report		
Name of C	Company E	nterprise F	ield Serv	vices, LLC	(Contact Th	omas Long	2286					
Facility Na	me Richa	rdson #100	igton, M	VI 07401		Facility Type Natural Gas Metering Tube/Well Site							
Surface O	wner Nava	io Tribal		Mineral	Owner	Navaio Tri	bal		Serial	No			
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Type of Rel	ease Conde	ensate/Water		NAT	URE	Volume o	EASE	nated	Volume	Recovered None			
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Source of R	elease Mete	er Tube Free	ze			Date and	Hour of Occurr	ence	Date an	d Hour of Discover	у		
Was Immed	liate Notice	Given?				If YES, To	Whom? : Cou	rtesy No	otification	Cory Smith – NMC	DCD; Steve		
Required			∐ Yes		Not	Austin - N	NEPA						
By Whom?	Thomas Lo	ng				Date and	Hour Novembe	r 21, 20	17 @ 3:2	3 p.m.			
Was a Wate	ercourse Re	ached?	☐ Yes	🖾 No		If YES, Vo	olume Impacting	g the Wa	atercourse	э.			
If a Waterco	ourse was Ir	npacted. Des	scribe Full	v.*									
Describe Ca	ause of Prot	olem and Rei	medial Act	tion Taken.* C	On Nove	mber 20, 20	17, a third part	y report	ed and lea	aking meter tube a	t the		
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"Final." C-14	41.				0		. ,						
I hereby cer	rtify that the	information of	niven abov	e is true and	complet	te to the bes	t of my knowle	doe and	understa	nd that pursuant to	NMOCD		
rules and re	gulations al	ll operators a	re require	d to report an	d/or file	certain relea	ase notifications	s and pe	rform cor	rective actions for	releases		
relieve the c	operator of l	iability should	their ope	rations have	failed to	adequately	investigate and	d remed	iate conta	mination that pose	e a threat to		
ground wate operator of	er, surface v responsibjlit	vater, human ly for complia	health or	the environm any other fede	ent. In a eral, stat	addition, NN e, or local la	IOCD acceptar	lations.	C-141 rej	port does not reliev	ve the		
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Signature:		V. fu	4						ix				
Printed Nan	ne: Jon E. F	ields			1	Approved by	/ Environmenta	I Specia	list:		>		
Title: Direct	or, Environn	nental				Approval Da	ite: 1218/5	2	Expiration	Date:			
E-mail Addr	ess: jefields	@eprod.com	ı		(Conditions of	of Approval:	sub	le re				
Date: 1	2/1/201	7	Phon	e: (713) 381-	6684	SOF	80211	Chlo	rida)				
* Attach Add	itional She	ets If Neces	sary			NVF	1735	233	352	2			

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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

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

	Santa Fe, NM 87505										
	Release Notification and Corrective Action										
	OPERATOR Initial Report I Final Report										
Name of C	Name of Company: Enterprise Field Services, LLC Contact: Thomas Long										
Address: 6	14 Reilly A	Ave, Farmin	gton, NM	87401		Telephone	No. 505-599-	2286			
Facility Na	me: Mudg	e B#59				Facility Typ	be: Natural Ga	as Gat	hering P	ipeline	
Surface Ov	vner: BLM			Mineral O	wne	r: BLM			API No).	
				LOCA	TIO	N OF REI	EASE				
Unit Letter	Section	Township	Range	Feet from	No	rth South	Feet from	East	West	County	
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Type of Rele	ease: Natur	al Gas and C	condensat	e		Gas: 15-20	BBLs Conden	sate	volume	Recovered: r	None
Source of R	elease: Sus	spected Inter	nal Corros	ion		Date and He	our of Occurren	ce:	Date and	d Hour of Dis	covery:
Was Immed	iate Notice	Given?				1/15/2016 @	0 12:22 a.m.		1/15/201	6 @ 1:30 a.r	m.
		Yes	🗆 No 🛛	Not Require	d						
By Whom?						Date and Ti	me		0	CONS DI	V DIST 2
Was a Wate	rcourse Re	ached?				If YES, Volu	me				0101.0
			L res	X NO						JUN 14	2017
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Describe Ard 1,900 cubic farm facility. excavating a Enterprise c included with	Describe Area Affected and Cleanup Action: A majority of the contaminant mass was removed by mechanical excavation. Approximately 1,900 cubic yards of hydrocarbon impacted soil were excavated and transported to a New Mexico Oil Conservation Division approved land farm facility. Contaminants concentrations exceed NMOCD remediation standards along the east wall of the excavation where the excavating activities were terminated due to the presence of the Great Western Petroleum, LLC storage tank and associated equipment. Enterprise coordinated with NMOCD and elected to evaluate a risk-based closure for this site. 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 compatiance with any other federal, state, or local laws and/or regulations.											
Signature:	Signature: OIL CONSERVATION DIVISION										
Printed Nam	Printed Name: Jon E. Fields Approved by Environmental Specialist:										
Title: Director, Environmental Approval Date: 20917 Expiration Date:											
E-mail Addr	ess:jefields(@eprod.com				Conditions of	of Approval:			Attached	
Date: 6/	Date: 6 //2 /2017 Phone: (713)381-6684										
Attach Addi	tional She	ets If Neces	sary			NV	71636	140	1671		



OIL CONS. DIV DIST. 3 JUN 1 4 2017

CORRECTIVE ACTION REPORT

Property:

Mudge B #59 Well Tie Release NE 1/4, S9 T31N R11W San Juan County, New Mexico

May 24, 2017 Apex Project No. 725040112098

Prepared for:

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

Prepared by:

Ranee Deechilly

Project Scientist

12 rannon

Kyle Summers, CPG Branch Manager / Senior Project Manager

Apex TITAN, Inc., a subsidiary of Apex Companies, LLC 606 S Rio Grande, Unit A, Aztec, NM 87410 T 505.334.5200 F 505.334.5204 www.apexcos.com

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Appendix B:	Executed C-138 Solid Waste Acceptance Form
Appendix C:	Photographic Documentation
Appendix D:	Table
Appendix E:	Laboratory Data Sheets & Chain of Custody Documentation



CORRECTIVE ACTION REPORT

Mudge B #59 Well Tie Release NE 1/4, S9 T31N R11W San Juan County, New Mexico

Apex Project No. 725040112098

1.0 INTRODUCTION

1.1 Site Description & Background

The Mudge B#59 well tie release site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the northeast (NE) ¼ of Section 9, Township 31 North, Range 11 West, in San Juan County, New Mexico (36.91366N, 107.99122W), referred to hereinafter as the "Site". The Site is located on land managed by the United States Bureau of Land Management (BLM), adjacent to a natural gas production well pad. The Site is surrounded by native vegetation rangeland periodically interrupted by oil and gas gathering facilities, including the Enterprise natural gas well tie which traverses the area from approximately southeast to northwest.

During January 2016, Enterprise identified a release on the Mudge B#59 well tie. The pipeline was subsequently repaired and placed back into service. Due to pending ROW discussions and access limitations related to road conditions, the repair excavation was subsequently backfilled, with remediation activities delayed until a later date. During December 2016, Enterprise resumed corrective action activities at the Site to remediate hydrocarbon impact. Enterprise also utilized this opportunity to replace approximately 75 feet of pipeline.

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 environmental corrective action 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 New Mexico 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 to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:

1



Ra	nking Criteria		Ranking Score
	<50 feet	20	
Depth to Groundwater	50 to 99 feet	10	10
	>100 feet	0	
Wellhead Protection Area • <1,000 feet	Yes	20	
from a water source, or; <200 feet from private domestic water source.	No	0	0
Distance to Curface	<200 feet	20	
Mater Redu	200 to 1,000 feet	10	20
Water Body	>1,000 feet	0	
Total	Ranking Score	30	

Based on Apex's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 30. This ranking is based on the following:

- No water wells were identified within one (1) mile of the Site on the Office of the State Engineer (OSE) website. The depth to groundwater at the Site is anticipated to be greater than 50 feet below grade surface (bgs) and potentially greater than 100 feet bgs, resulting in an estimated ranking score of "10" for depth to groundwater.
- 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 Site is located approximately 132 feet west of a small ephemeral wash that is identified as a "blue line" on the United States Geological Society topographic map. This information supports a distance to surface water ranking score of "20".

3.0 RESPONSE ACTIONS

3.1 Soil Excavation Activities

On December 5, 2016, Enterprise resumed remediation activities at the Site and utilized this opportunity to replace approximately 75 feet of the pipeline. During the pipeline repair and corrective action activities, HALO Services, Inc., provided heavy equipment and labor support, and Apex provided environmental support.

On December 5 and 7, 2016, a total of 13 soil samples (S-1 through S-13) were collected from the initial repair excavation. Subsequent analytical results indicated that soils associated with samples S-1 through S-4, S-6, S-7, S-9, and S-11 through S-13 exhibited COC concentrations that exceeded OCD guidelines.

On December 9, 2016, the southern portion of the excavation was over-excavated and soil samples S-14 and S-15 were subsequently collected for laboratory analysis. The east wall on the of the excavation was over-excavated to the maximum practical horizontal extent, but was limited by the presence of a Great Western storage tank and associated containment berm and appurtenances. To allow access to the central portion of the excavation, the southern end of the excavation was subsequently backfilled with permission from the OCD.

2

Enterprise Field Services, LLC Corrective Action Report Mudge B#59 Well Tie Release May 24, 2017



On December 14, 2016 Enterprise, in coordination with the OCD, advanced two (2) hand auger soil borings to evaluate suspected shallow soil impact on the well pad east of the release area. One (1) soil boring was advanced approximately 25 feet east of the Mudge B#59 pipeline (within the water tank containment berm) and impacted soil was identified, beginning at approximately six (6) inches bgs. A second soil boring was advanced approximately 25 feet east of the first boring to a depth of approximately 14 inches bgs. Impact was not identified in the second soil boring. One (1) soil sample (GW-1) was collected from the affected soil boring for laboratory analysis, and COC concentrations were subsequently identified above OCD guidelines. OCD and BLM representatives were on-Site during the shallow soil boring activities.

Over-excavation resumed on the central and northern portions of the excavation and seven (7) additional soil samples (S-16 through S-22) were collected from the excavation on December 19, and December 20, 2016.

Based on field screening results, hydrocarbon-affected soil remains beneath the pipe chase from approximately eight (8) feet bgs to 16 feet bgs on a portion of the northern (topographically upgradient) end of the excavation. This impact under the pipe chase at the north end of the excavation appears limited in width to about 12 to 16 feet. An analytical soil sample was not obtained from this portion of the northern wall prior to backfilling.

Impacted soils on the east wall were not removed due to the presence of the Great Western Petroleum, LLC (Great Western) storage tank and associated containment berm and fence. Enterprise coordinated with the OCD and elected to evaluate a risk-based closure for the Site. The excavation was backfilled with clean imported fill with the permission of the OCD and BLM.

The final excavation measured approximately 100 feet long by 32 feet wide at the maximum extents. The depth of the excavation ranged from 13 feet bgs (south end) to 17 feet bgs (north end).

The lithology encountered during the completion of corrective action activities consisted primarily of unconsolidated silty sand, weathered mudstone, and weathered sandstone, underlain by a silty/clayey sandstone that appears to have halted downward COC migration.

A total of approximately 1,900 cubic yards of hydrocarbon affected soils were transported to the Industrial Ecosystems, Inc. (IEI) landfarm on Crouch Mesa, near Aztec, New Mexico for disposal/remediation. The executed C-138 form is provided in Appendix B. The excavation was backfilled with clean imported fill and then contoured to surrounding grade.

Figure 3 is a Site Map with Soil Analytical Results that indicates the approximate location of the excavated area in relation to the pipeline and Great Western storage tank (Appendix A). Photographic documentation of the field activities is included in Appendix C.

3.2 Soil Sampling Program

Apex field screened soil samples from the excavation utilizing a photoionization detector (PID) fitted with a 10.6 eV lamp and a calibrated Dexsil PetroFLAG[®] hydrocarbon analyzer system. The results of the PetroFLAG[®] screenings identified adverse total petroleum hydrocarbon (TPH) concentrations in remaining Site soils.

Apex's soil sampling program included the collection of 22 soil samples (S-1 through S-22) from the repair excavation for laboratory analysis. Soil sample numbers S-14 and S-15 (collected on



12/19/16) were inadvertent sample ID duplicates of prior sample numbers and were redesignated as soil samples S-22 and S-21, respectively.

In addition to the excavation samples, a shallow soil sample (GW-1) was collected south of the Great Western storage tank, within the containment berm, at the request of the OCD.

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

3.3 Laboratory Analytical Methods

The confirmation soil samples and stockpiled soil samples were analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA SW-846 Method #8021, and TPH gasoline range organics (GRO), diesel range organics (DRO), and motor oil/lube oil range organics (MRO) using EPA SW-846 Method #8015.

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

4.0 DATA EVALUATION

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

4.1 Confirmation Soil Samples

Apex compared the BTEX and TPH concentrations or practical quantitation limits (PQLs) associated with the confirmation soil samples (S-2, S-5, S-8, S-10, and S-13 through S-23) and the sample from the secondary containment (GW-1) for the adjacent storage tank to the OCD *RALs* for sites having a total ranking score of "30". Soils associated with confirmation samples S-1, S-3, S-4, S-6, S-7, S-9, S-11, S-12 were removed by excavation and transported to the IEI landfarm near Aztec, NM for disposal/treatment, and are not included in the following discussion.

- The laboratory analysis of confirmation soil sample S-2 indicates a benzene concentration of 12 milligrams per kilogram (mg/Kg), which is above the OCD RAL of 10 mg/Kg. The laboratory analyses of the confirmation soil samples GW-1, S-5, S-8, S-10, and S-13 through S-22 do not indicate benzene concentrations above the PQLs, which are below the OCD RAL of 10 mg/Kg.
- The laboratory analysis of confirmation soil sample S-2 indicates a total BTEX concentration of 424 mg/Kg, which is above the OCD RAL of 50 mg/Kg. The laboratory analyses of the confirmation soil samples GW-1, S-5, S-8, S-10, and S-13 through S-22 indicate total BTEX concentrations ranging from below the PQLs to 7.9 mg/Kg, which are below the OCD RAL of 50 mg/Kg.



The laboratory analyses of the confirmation soil samples GW-1, S-2, and S-13 indicate combined TPH GRO/DRO/MRO concentrations of 2,750 mg/Kg, 7,710 mg/Kg and 1,890 mg/Kg, respectively, which are above the OCD RAL of 100 mg/Kg. The laboratory analyses of the confirmation soil samples S-5, S-8, S-10, and S-14 through S-22 indicate combined TPH GRO/DRO/MRO concentrations ranging from below the PQLs to 95 mg/Kg (S-17), which are below the OCD RAL of 100 mg/Kg.

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

5.0 RISK BASED ENVIRONMENTAL EVALUATION

Current land use at the Site consists of oil and gas production and gathering activities. The area surrounding the Site is high desert rangeland with intermittent oil and gas production and gathering facilities and potential for grazing farther to the south. No additional uses were identified within a mile of the Site. The following bullets provide an overview of the Site characteristics as they pertain to exposure risks for the Site:

- As defined by the New Mexico Environment Department (NMED)¹, no Sensitive Areas were identified at the Site.
- No surface impact remains at the Site.
- No liquid contaminants were identified remaining at the Site.
- Based on analytical results, the silty/clayey sandstone at the base of the remediation excavation halted downward COC migration.
- Residential uses were not identified within one (1) mile of the Site.
- Recreational uses were not identified in the vicinity of the Site.
- Potential construction worker exposure would be limited to oil & gas workers that are trained to work in areas containing potential hydrocarbon-affected materials.
- The release occurred beneath the lease road, adjacent to an oil & gas production well pad, and the vicinity of the release is relatively free of vegetation.
- The shallow soil horizon and weathered mudstone and sandstone at the Site are not conducive to burrowing animals.
- Limited juniper, sage, and desert grasses are present in the surrounding terrain which is designated as "badland" by the United States Department of Agriculture (USDA) Web Soil Survey. The badland designation refers primarily to the slope of the land and the potential for heavy erosion which is evident when viewing the hills surrounding the Site. No indication of distressed vegetation was observed near the Site.

¹ New Mexico Environment Department. (2015). *Risk Assessment Guidance for Site Investigations and Remediation*.



- Primary drainage at the Site was apparently engineered to flow to the opposite side of the production pad, approximately 140 feet to the east of the Site.
- No groundwater uses were identified within one (1) mile of the Site, and the depth to groundwater is potentially greater than 100 feet bgs based on reviewed data.
- No permanent walled structures that could potentially accumulate soil vapors are present near the Site.

Based on field screening results, hydrocarbon-affected soil remains beneath the pipe chase from approximately eight (8) feet bgs to 16 feet bgs on a portion of the northern (topographically upgradient) end of the excavation.

Impacted soils on the east wall were not removed due to the presence of the Great Western storage tank and associated fence and spill containment. Additionally, based on interaction with the OCD and related sampling, apparently unrelated shallow impact is present near the storage tank and potentially elsewhere on the production pad. The analytical sample from the production pad (GW-1) exhibited higher TPH DRO and MRO results than any of the other Site samples, including the point of release samples (S-1 and S-2), and may indicate the presence of a historic surface release or pit.

Site Risk and Hazard:

Although no likely receptors have been identified, Site-specific risk and hazard indices were developed for the Site utilizing New Mexico Environmental Department guidance. For this site, the concentrations for the remaining soil sample (S-2) that exhibited a total BTEX and TPH concentrations above the OCD RAL were used for the evaluation. The most conservative soil screening levels (Residential Soil) were used to evaluate the site risk and hazard indices. The equations and variables that were used to evaluate the site risk and hazard index are presented in the following tables:

Site Risk (Carcinogens)							
Site Risk = $\left(\frac{\operatorname{conc}_x}{SSL_x} + \frac{\operatorname{conc}_r}{SSL_y} + \frac{\operatorname{conc}_z}{SSL_z} + \dots + \frac{\operatorname{conc}_r}{SSL_t}\right) \times 10^{-5}$ Site-Specific Risk = 9.9 x 10 ⁻⁶							
Variable	Variable Definition Highest Observed Concentration (mg/Kg) Variable Definition Residential SSL Concentration (mg/kg)						
concx	Benzene	12	SSLx	SSL for Benzene	1.78E+01		
concy	Ethylbenzene	24	SSLy	SSL for Ethylbenzene	7.51E+01		



Site Hazard Index (Non-carcinogens)							
Site Hazard Index (HI) = $\left(\frac{\operatorname{conc}_x}{SSL_x} + \frac{\operatorname{conc}_y}{SSL_y} + \frac{\operatorname{conc}_z}{SSL_z} + \dots + \frac{\operatorname{conc}_i}{SSL_i}\right) \times 1$							
	Site-Specific HI = 0.37						
Variable	Definition	Highest Observed Concentration (mg/kg)	Variable	Definition	Residential SSL Concentration (mg/kg)		
concx	Toluene	78	SSLx	SSL for Toluene	5.23E+03		
concy	Xylene	310	SSLy	SSL for Xylenes	8.71E+02		

TPH Site Hazard Index (Non-carcinogens)							
$(HI) = \left(\frac{\operatorname{conc}_{x}}{SSL_{x}} + \frac{\operatorname{conc}_{y}}{SSL_{y}} + \frac{\operatorname{conc}_{z}}{SSL_{z}} + \dots + \frac{\operatorname{conc}_{i}}{SSL_{i}}\right) \times 1$ $HI = 0.85$							
Variable	Definition	Observed Concentration (mg/kg)	Variable	Definition	SSL Concentration (mg/kg)		
concx	DRO	770	SSLx	SSL concentration for Diesel #2/crankcase oil	1000		
concy	MRO	140	SSLy	SSL concentration for mineral oil	1800		

Note: For TPH DRO and MRO, the NMED developed TPH soil screening levels based on non-carcinogenic toxicity¹, therefore the equation for non-carcinogenic contaminants was utilized to evaluate site hazard. Due to the potential presence of carcinogens such as benzene, a generic TPH GRO SSL is not provided by the NMED (default to the chemical-specific SSL).

Summary:

- For carcinogenic contaminants, the calculated site risk is 9.9E-06, which is below the NMED target risk of 1E-05.
- For non-carcinogenic contaminants, the calculated hazard index is 0.37, which is below the NMED hazard index of 1.0.
- The calculated hazard index for TPH is 0.85, which is below the NMED target level of 1.0.

Based on findings from the scoping assessment, there is no apparent risk to potential receptors at the Site or adjacent to the Site. In addition, based on a quantitative evaluation of site risk/hazard levels, it appears that the impacted soils that do remain on-Site do not present a risk to human health under the existing Site conditions.

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6.0 FINDINGS AND RECOMMENDATIONS

The Mudge B #59 well tie release Site is located within the Enterprise pipeline ROW in the NE ¼ of Section 9, Township 31 North, Range 11 West, in San Juan County, New Mexico. The Site is located under a lease road, adjacent to a natural gas production well pad, on land managed by the BLM. The Site is surrounded by native vegetation rangeland periodically interrupted by oil and gas gathering facilities, including the Enterprise natural gas well tie which traverses the area from approximately southeast to northwest.

During January 2016, Enterprise personnel identified a release on the Mudge B#59 well tie. The pipeline was temporarily repaired and placed back into service. Due to pending ROW discussions and access limitations related to road conditions, the repair excavation was subsequently backfilled with stockpiled soils to finish remediation at a later date. During December 2016, Enterprise resumed corrective action activities at the Site to remediate hydrocarbon impact. Enterprise also utilized this opportunity to replace approximately 75 feet of the pipeline.

- The primary objective of the environmental 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 silty sand, weathered mudstone, and weathered sandstone, underlain by a silty/clayey sandstone that appears to have halted downward COC migration.
- The final excavation measured approximately 100 feet long by 32 feet wide, at the maximum extent. The depth of the excavation ranged from 13 feet bgs (south end) to 17 feet bgs (north end).
- The laboratory analysis of confirmation soil sample S-2 indicates a benzene concentration of 12 mg/kg and a total BTEX concentration of 424 mg/kg, which are above the OCD *RALs* of 10 mg/kg and 50 mg/kg, respectively.
- The laboratory analyses of confirmation soil samples GW-1, S-2, and S-13 indicate combined TPH GRO/DRO/MRO concentrations of 2,750 mg/kg, 7,710 mg/kg and 1,890 mg/kg, respectively, which are above the OCD *RAL* of 100 mg/kg.
- A total of approximately 1,900 cubic yards of hydrocarbon affected soils were transported to the IEI landfarm on Crouch Mesa, near Aztec, New Mexico for disposal/remediation. The excavation was backfilled with clean imported fill and then contoured to the approximate surrounding grade.
- Based on the TPH DRO and MRO concentrations observed in shallow soils within the adjacent storage tank spill containment berm, it appears a separate release may have occurred near the tank.
- Based on Site-specific Risk and Health Hazard Indices, and the lack of likely receptors, the affected soil remaining in place at the Site does not appear to pose a health risk at the observed concentrations.

Enterprise Field Services, LLC Corrective Action Report Mudge B#59 Well Tie Release May 24, 2017



7.0 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 or described herein. 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.

Fields, Vanessa, EMNRD

From:Fields, Vanessa, EMNRDSent:Tuesday, December 20, 2016 10:42 AMTo:'Long, Thomas'; 11thomas@blm.govCc:Stone, BrianSubject:RE: Mudge B#59 - Unit Letter G Section 9 T31N R11W; 36.913734, -107.991173, San
Juan County, NM

Tom,

Thank you for the follow up email. Per our phone conversation the OCD grants approval for backfill and a risk based closure based on the siting conditions.

Please let me know if you have any questions and/or concerns.

Thank you, Vanessa Fields Environmental Specialist Oil Conservation Division Energy, Minerals, & Natural Resources 1000 Rio Brazos, Aztec, NM 87410 (505)334-6178 ext 119 Cell: (505) 419-0463 vanessa.fields@state.nm.us

From: Long, Thomas [mailto:tjlong@eprod.com]
Sent: Tuesday, December 20, 2016 10:30 AM
To: Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>; l1thomas@blm.gov
Cc: Stone, Brian <bmstone@eprod.com>
Subject: FW: Mudge B#59 - Unit Letter G Section 9 T31N R11W; 36.913734, -107.991173, San Juan County, NM

Vanessa,

This email is a follow up to our phone conversation earlier this morning. Due to the safety concerns of the unstable west wall of the excavation at the Mudge B#59 release site, Enterprise will backfill the excavation with clean imported fill material. Enterprise has collected additional soil samples for laboratory analysis to better characterize the soil to the west. After backfilling the excavation, Enterprise will submit a risk base closure report for the potential residual impacted subsurface soils. If you have any questions, please call or email.

Sincerely,

Thomas J. Long Senior Environmental Scientist Enterprise Products Company 614 Reilly Ave. Farmington, New Mexico 87401 From: Long, Thomas Sent: Tuesday, December 13, 2016 8:04 AM To: Fields, Vanessa, EMNRD (<u>Vanessa.Fields@state.nm.us</u>); <u>l1thomas@blm.gov</u> Cc: Stone, Brian Subject: FW: Mudge B#59 - Unit Letter G Section 9 T31N R11W; 36.913734, -107.991173, San Juan County, NM

Vanessa,

Please find the attached site sketch, summary table and laboratory report for the Mudge B#59. This set of samples should get us clear on the south side except on the east wall, where we plan of installing soil borings with a hand auger tomorrow. Enterprise will need to backfill to this area to continue addressing the source area the north. If you have any questions, please call or email.

Sincerely,

Tom Long 505-599-2286 (office) 505-215-4727 (Cell) tjlong@eprod.com

From: Long, Thomas
Sent: Monday, December 12, 2016 7:43 AM
To: Fields, Vanessa, EMNRD (<u>Vanessa.Fields@state.nm.us</u>); <u>l1thomas@blm.gov</u>; 'Smith, Cory, EMNRD (<u>Cory.Smith@state.nm.us</u>)'
Cc: Stone, Brian
Subject: FW: Mudge B#59 - Unit Letter G Section 9 T31N R11W; 36.913734, -107.991173, San Juan County, NM

Vanessa/Whitney,

Please look at the attached pictures. I believe we have encountered an old drilling pit. Enterprise will not be excavating any further east as this would be the responsibility of the producer. All of our samples are above standards on this east wall are likely to be from this pit that extends under the tank.

Sincerely,

Tom Long 505-599-2286 (office) 505-215-4727 (Cell) <u>tjlong@eprod.com</u>

From: Long, Thomas Sent: Thursday, December 08, 2016 3:57 PM To: Fields, Vanessa, EMNRD (<u>Vanessa.Fields@state.nm.us</u>); 'Smith, Cory, EMNRD (<u>Cory.Smith@state.nm.us</u>)'; <u>l1thomas@blm.gov</u> This email is to notify you that Enterprise had a release natural gas and condensate on the Mudge B#59 well tie. The release occurred on January 15, 2016. No washes were impacted. Weather conditions (a lot of snow/mud) at the time of the release were bad. The repairs and remediation began yesterday. Enterprise determine this release is reportable due to the volume of subsurface impacts. The release site is located at UL G Section 9 T31N R11W; 36.913734, -107.991173. If you have any questions, please call or email.

Sincerely,

Thomas J. Long Senior Environmental Scientist Enterprise Products Company 614 Reilly Ave. Farmington, New Mexico 87401 505-599-2286 (office) 505-215-4727 (Cell) tilong@eprod.com



This message (including any attachments) is confidential and intended for a specific individual and purpose. If you are not the intended recipient, please notify the sender immediately and delete this message.



APPENDIX A

Figures



Z:\Dallas South\Drafting\2016\725040112098\Figure 1.mxd Modified 2/10/2017 by JSimpson NAD 1983 2011 StatePlane New Mexico West FIPS 3003 Ft US Coordinate System







APPENDIX B

Executed C-138 Solid Waste Acceptance Form
District 1 1625 N. French Dr., Hobbs, NM 88240 District 11 811 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

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Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-138 Revised August 1, 2011

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

	REQUEST FOR APPROVAL TO ACCEPT SOLID WAS	ГЕ
	1. Generator Name and Address: Enterprise Field Services, LLC, 614 Reilly Avenue, Farmington, NM 87401	12/14/110-316cy
3. Location of Material (Street Address, City, State or ULSTR): (Later G Section 973N R119: 36.91378, -107.991173, San Juan County, Nither Council and the section 973N R119: 36.91378, -107.991173, San Juan County, Nither Council and the section 973N R119: 36.91378, -107.991173, San Juan County, Nither Council and the section 973N R119: 36.91378, -107.991173, San Juan County, Nither Council and the section 973N R119: 36.91378, -107.991173, San Juan County, Nither Council and the section 973N R119: 36.91378, -107.991173, San Juan County, Nither Council and Section 973N R119: 36.91378, -107.991173, San Juan County, Nither Council and Section 973N R119: 36.91378, -107.991173, San Juan County, Nither Council and Section 973N R119: 36.91378, -107.991173, San Juan County, Nither Council and Section 973N R119: 36.91378, -107.991173, San Juan County, Nither Council and Section 973N R119: 46.91378, -107.991173, San Juan County, Nither Council and Section 973N R119: 36.91378, -107.991173, San Juan County, Nither Council and Section 973N R119: 46.91378, -107.991173, San Juan County, Nither Council and Section 973N R119: 474 -	2. Originating Site: Mudge B#59 Well Tie	12/12/10-1920cg
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS 1. Thomas Long Image: Control of the state of the	 Location of Material (Street Address, City, State or ULSTR): Unit Letter G Section 9 T31N R11W; 36.913734, -107.991173, San Juan County, NM Source and Description of Weste: Excavated soil impacted with hydrocarbons associated with a pipeline Estimated Volume _50 _ Vd³ bbls Known Volume (to be entered by the operator at the end of the had 	12 146 - 94 cy 12 15/16 - 24 cy 13 16-40 00 cg félease. 11) 240 (yd ³) bbls
\[5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, <u>Thomas Long</u> representative or authorized agent for Enterprise Field Services, LLC do he PRINT & SIGN NAME COMPANY NAME certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Prote regulatory determination, the above described waste is: (Check the appropriate classification)	ereby ection Agency's July 1988
□ 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 1,	 	are not mixed with non- Load rds for waste hazardous by rd in 40 CFR, part 261, e is non-hazardous. (Check
Image: Superior and Section 19 of the constraint where reading continuous: Image: Superior and Section 19 of 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: Halo Image: Section 19 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: Halo Image: Section 19 of 19.15.36 NMAC. OCD Permitted Surface Waste Management Facility PH = 8 Name and Facility Permit #: JFJ Landfarm/Industrial Ecosystems, Inc. * Permit #: NM 01-0010B PH = 8 Address of Facility: #49 CR 2150 Aztec, New Mexico PH = 8 Method of Treatment and/or Disposal: Image: Dentited Prove Prove Prove Provide Prove	□ MSDS Information □ RCRA Hazardous Waste Analysis □ Process Knowledge □ Other (Provide of GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LAND I, <u>Jume Lag 12-6-16</u> , representative for Enterprise Field Services, LLC authorize IEI, Inc. to Generator Signature complete the required testing/sign the Generator Waste Testing Certification	lescription in Box 4) DFARMS
6. Iransporter: Halo Iransporter: Halo Iransporter: Halo OCD Permitted Surface Waste Management Facility Name and Facility Permit #: JFJ Landfarm/Industrial Ecosystems, Inc. * Permit #: NM 01-0010B $PH = 8$ Address of Facility: #49 CR 2150 Aztec, New Mexico $L = < 124$ Method of Treatment and/or Disposal: Irating Plant Landfarm Evaporation Injection Treating Plant Landfarm Waste Acceptance Status: Image: APPROVED Image: Denied (Must Be Maintained As Permanent Record) PRINT NAME: Image: Management Facility Authorized Agent ITTLE: Land Farm Administrator DATE: Surface Waste Management Facility Authorized Agent Image: Surface Waste Management Facility Authorized Agent Image: Surface Waste Management Facility Authorized Agent Image: Sufface Waste Management Facility Authorized Agent Sufface Waste Management Facility Authorized Agent Image: Sufface Waste Management Facility Authorized Agent Sufface Waste Management Facility Authorized Agent Image: Sufface Waste Management Facility Authorized Agent Sufface Waste Management Facility Authorized Agent	I, <u>Manada fac</u> , representative for <u>IEI. Inc.</u> do hereby certify that representative waste have been subjected to the paint filter test and tested for chloride content and that the samples have been for specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representation demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.	ive samples of the oil field ound to conform to the resentative samples are C.
Name and Facility Permit #: JFJ Landfarm/Industrial Ecosystems, Inc. * Permit #: NM 01-0010B Address of Facility: #49 CR 2150 Aztec, New Mexico Method of Treatment and/or Disposal: Evaporation Injection Treating Plant Landfarm Landfill Other Waste Acceptance Status: APPROVED PRINT NAME: SIGNATURE: Surface Waste Management Facility Authorized Agent Time: Land Farm Administrator Surface Waste Management Facility Authorized Agent	0. 1 ransporter: Haio - -	PH=8
Method of Treatment and/or Disposal: Evaporation Injection Treating Plant Landfarm Landfill Other Waste Acceptance Status: Waste Acceptance Status: DENIED (Must Be Maintained As Permanent Record) PRINT NAME: SIGNATURE: Surface Waste Management Facility Authorized Agent Surface Waste Management Facility Authorized Agent DATE: DATE: <u>505-632-1782</u>	Name and Facility Permit #: JFJ Landfarm/Industrial Ecosystems, Inc. * Permit #: NM 01-0010B Address of Facility: #49 CR 2150 Aztec, New Mexico	CL=<124
Waste Acceptance Status: APPROVED DENIED (Must Be Maintained As Permanent Record) PRINT NAME: M. Manguel TITLE: Land Farm Administrator DATE:	Method of Treatment and/or Disposal:	
PRINT NAME: M. Management Pacifity Authorized Agent TITLE: Land Farm Administrator DATE: 12/11/14 SIGNATURE: Surface Waste Management Facility Authorized Agent TELEPHONE NO.: 505-632-1782	Waste Acceptance Status: APPROVED DENIED (Must Be Maintaine	d As Permanent Record)
	PRINT NAME: M. Manguell TITLE: Land Farm Administrator D SIGNATURE: Surface Waste Management Facility Authorized Agent TITLE: Land Farm Administrator D Surface Waste Management Facility Authorized Agent Surface Waste Management Facility Authorized Agent TITLE: Land Farm Administrator D	DATE: 12/10/14



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APPENDIX C

Photographic Documentation

SITE PHOTOGRAPHS



Mudge B#59 Well Tie Release

Photograph 1

View of the initial repair excavation, facing north.



Photograph 2

View of the initial repair excavation, facing northeast.



Photograph 3

View of the in-process over-excavation activities on the southern end, facing southeast.



SITE PHOTOGRAPHS



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Mudge B#59 Well Tie Release

Photograph 4

View of the in-process over-excavation activities on the mid-section and northern end, facing north.



Photograph 5

View of the in-process over-excavation activities, facing northeast.





APPENDIX D

Table



	TABLE 1									
	Mudge B #59 Pipeline Release									
	SOIL ANALYTICAL SUMMARY									
Sample I.D.	Date	Sample (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)	TPH MRO (mg/kg)
New Mexico E Resources Dep Division, Re	Energy, Mineral partment, Oil Co mediation Actio	& Natural nservation in Level	10	NE	NE	NE	50		100	
			S	oil Samples R	emoved by Over-Ex	cavation		New Arder		
S-1	12.05.16	8	1.8	2.2	3.6	31	39	2,400	480	<50
S-3	12.07.16	8	<0.11	<0.22	<0.22	6.7	6.7	370	330	100
S-4	12.07.16	0 to 8	<0.10	<0.20	<0.20	0.70	0.70	140	120	87
S-6	12.07.16	0 to 6	<0.11	<0.22	<0.22	1.6	1.6	120	170	77
S-7	12.07.16	0 to 8	<0.020	< 0.041	<0.041	0.21	0.21	25	24	<48
S-9	12.07.16	0 to 8	<0.020	<0.040	0.087	0.25	0.34	11	13	<49
S-11	12.07.16	0 to 8	0.13	<0.21	<0.21	13	13	720	740	77
S-12	12.07.16	8	<0.11	<0.21	<0.21	4.7	4.7	510	350	99
			Great V	Vestern Storag	ge Tank Spill Contai	nment Sampl	e	and the second	A	e vir der G
GW-1	12.14.16	0.7 to 1.2	<0.25	<0.50	0.83	2.6	3.4	700	1,200	850
				Excavation C	Confirmation Soil Sa	mples				
S-2	12.05.16	0 to 8	12	78	24	310	424	6,800	770	140
S-5	12.07.16	0 to 8	<0.043	<0.087	<0.087	0.25	0.25	12	20	<48
S-8	12.07.16	0 to 8	<0.023	<0.046	0.081	0.19	0.27	24	38	<48
S-10	12.07.16	0 to 8	<0.018	< 0.036	< 0.036	< 0.073	ND	<3.6	<9.7	<48
S-13	12.07.16	0 to 8	<0.11	<0.21	<0.21	7.9	7.9	1,000	730	160
S-14	12.09.16	0 to 13	<0.10	<0.21	<0.21	< 0.41	ND	<21	16	<48
S-15	12.09.16	13	< 0.13	< 0.26	< 0.26	< 0.52	ND	<26	18	<50
S-16	12.19.16	0 to 17	<0.024	<0.047	0.055	0.55	0.61	20	12	<50
S-17	12.19.16	0 to 11	0.040	< 0.037	< 0.037	< 0.074	0.040	32	63	<49
S-18	12.19.16	15	<0.022	<0.045	< 0.045	< 0.090	ND	<4.5	<9.4	<47
S-19	12.19.16	16	<0.022	< 0.044	<0.044	<0.089	ND	<4.4	<10	<50
S-20	12.20.16	11 to 16	0.85	0.19	1.2	4.0	6.2	64	2/	<49
5-21	12.19.16	1/	<0.018	<0.036	<0.036	<0.072	ND	<3.6	<9.5	<4/
S-22	12.19.16	16	<0.018	< 0.036	< 0.036	< 0.072	ND	<3.6	10	<48

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

mg/kg = milligram per kilogram

ND = Not Detected above the Laboratory Reporting Limits

NE = Not established



Appendix E

Laboratory Data Sheets & Chain of Custody Documentation

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

December 07, 2016

Kyle Summers APEX TITAN 606 S. Rio Grande Unit A Aztec, NM 87410 TEL: (903) 821-5603 FAX

OrderNo.: 1612194

Dear Kyle Summers:

RE: Mudge B59

Hall Environmental Analysis Laboratory received 2 sample(s) on 12/6/2016 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 <u>www.hallenvironmental.com</u> 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report	
Lab Order 1612194	

Date Reported: 12/7/2016

Hall Environmental Analysis Laboratory, Inc.

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CLIENT: APEX TITAN		Client Sample ID: S-1											
Project: Mudge B59	Collection Date: 12/5/2016 3:20:00 PM												
Lab ID: 1612194-001	Matrix: N	MEOH (SOIL)	Received	Date: 12	/6/2016 8:00:00 AM								
Analyses	Result	PQL Qua	al Units	DF	Date Analyzed	Batch							
EPA METHOD 8015D MOD: GASOI	INE RANGE				Analyst:	AG							
Gasoline Range Organics (GRO)	2400	240	mg/Kg	50	12/6/2016 10:19:54 AM	G39172							
Surr: BFB	96.3	70-130	%Rec	50	12/6/2016 10:19:54 AM	G39172							
EPA METHOD 8015M/D: DIESEL R	ANGE ORGANICS				Analyst:	TOM							
Diesel Range Organics (DRO)	480	10	mg/Kg	1	12/6/2016 10:37:21 AM	29013							
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	12/6/2016 10:37:21 AM	29013							
Surr: DNOP	99.2	70-130	%Rec	1	12/6/2016 10:37:21 AM	29013							
EPA METHOD 8260B: VOLATILES	SHORT LIST				Analyst:	AG							
Benzene	1.8	1.2	mg/Kg	50	12/6/2016 10:19:54 AM	S39172							
Toluene	2.2	1.2	mg/Kg	50	12/6/2016 10:19:54 AM	S39172							
Ethylbenzene	3.6	2.4	mg/Kg	50	12/6/2016 10:19:54 AM	S39172							
Xylenes, Total	31	4.7	mg/Kg	50	12/6/2016 10:19:54 AM	S39172							
Surr: 1,2-Dichloroethane-d4	114	70-130	%Rec	50	12/6/2016 10:19:54 AM	S39172							
Surr: 4-Bromofluorobenzene	79.6	70-130	%Rec	50	12/6/2016 10:19:54 AM	S39172							
Surr: Dibromofluoromethane	117	70-130	%Rec	50	12/6/2016 10:19:54 AM	S39172							
Surr: Toluene-d8	96.5	70-130	%Rec	50	12/6/2016 10:19:54 AM	S39172							

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 6
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN			Client Sa	mple ID: S-2		
Project: Mudge B59			Collecti	on Date: 12/	5/2016 3:30:00 PM	
Lab ID: 1612194-002	Matrix:	MEOH (SC	OIL) Receiv	ed Date: 12/0	5/2016 8:00:00 AM	
Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINI	RANGE				Analyst:	AG
Gasoline Range Organics (GRO)	6800	190	mg/Kg	50	12/6/2016 10:48:43 AM	G39172
Surr: BFB	103	70-130	%Rec	50	12/6/2016 10:48:43 AM	G39172
EPA METHOD 8015M/D: DIESEL RANG		s			Analyst:	том
Diesel Range Organics (DRO)	770	18	mg/Kg	2	12/6/2016 11:50:48 AM	29013
Motor Oil Range Organics (MRO)	140	92	mg/Kg	2	12/6/2016 11:50:48 AM	29013
Surr: DNOP	97.7	70-130	%Rec	2	12/6/2016 11:50:48 AM	29013
EPA METHOD 8260B: VOLATILES SH	ORT LIST				Analyst:	AG
Benzene	12	0.93	mg/Kg	50	12/6/2016 10:48:43 AM	S39172
Toluene	78	1.9	mg/Kg	50	12/6/2016 10:48:43 AM	S39172
Ethylbenzene	24	1.9	mg/Kg	50	12/6/2016 10:48:43 AM	S39172
Xylenes, Total	310	3.7	mg/Kg	50	12/6/2016 10:48:43 AM	S39172
Surr: 1,2-Dichloroethane-d4	104	70-130	%Rec	50	12/6/2016 10:48:43 AM	S39172
Surr: 4-Bromofluorobenzene	80.5	70-130	%Rec	50	12/6/2016 10:48:43 AM	S39172
Surr: Dibromofluoromethane	101	70-130	%Rec	50	12/6/2016 10:48:43 AM	S39172
Surr: Toluene-d8	101	70-130	%Rec	50	12/6/2016 10:48:43 AM	S39172

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 6
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Client: Mudge B59 **Project:**

APEX TITAN

Sample ID LCS-29013	SampType: LCS			Tes	TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID: LCSS	Batch	ID: 29	013	F	RunNo: 39168					
Prep Date: 12/6/2016	Analysis D	ate: 12	2/6/2016	S	SeqNo: 1	225423	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	62.6	124			
Surr: DNOP	4.3		5.000		86.8	70	130			
Sample ID MB-29013	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: PBS	Batch	ID: 29	013	F	RunNo: 3	9168				
Prep Date: 12/6/2016	Analysis D	ate: 12	2/6/2016	S	SeqNo: 1	225426	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
	NID	50								
Motor Oil Range Organics (MRO)	ND	50								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н 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
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified

WO#: 1612194 07-Dec-16

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WO#: 1612194

07-Dec-16

Client: APEX TITAN

Project: Mudge B59

Sample ID 100ng Ics	SampT	Type: LC	s	Tes	tCode: E	PA Method	8260B: Volat	tiles Short	List	
Client ID: LCSS	Batch	h ID: \$3	9172	F	RunNo: 3	9172				
Prep Date:	Analysis D	Date: 12	2/6/2016	5	SeqNo: 1	225752	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	109	70	130			
Toluene	1.0	0.050	1.000	0	101	70	130			
Surr: 1 2-Dichloroethane-d4	0.53		0 5000		105	70	130			
Surr: 1,2 Disnorocontaile un	0.48		0.5000		96.9	70	130			
	0.40		0.5000		102	70	130			
Sur: Dibromoliuorometriane	0.51		0.5000		102	70	130			
Surr: Toluene-d8	0.50		0.5000		99.9	70	130			
Sample ID rb	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: PBS	Batch	h ID: S 3	9172	F	RunNo: 3	9172				
Prep Date:	Analysis D	Date: 12	2/6/2016	S	SeqNo: 1	225758	Units: mg/M	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xvlenes Total	ND	0.10								
Surr: 1 2-Dichloroethane-d4	0.52	0.10	0 5000		104	70	130			
	0.02		0.5000		01.6	70	130			
Surr. 4-Bromoliuorobenzene	0.40		0.5000		91.0	70	130			
Surr: Dibromofluoromethane	0.57		0.5000		115	70	130			
Surr: Toluene-d8	0.49		0.5000		97.2	70	130			
Sample ID 1612194-001ams	SampT	ype: MS	6	Tes	tCode: E	PA Method	8260B: Volat	tiles Short	List	
Client ID: S-1	Batch	h ID: S 3	9172	F	RunNo: 3	9172				
Prep Date:	Analysis D	Date: 12	2/6/2016	S	eqNo: 1	226536	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	54	1.2	47.08	1.783	110	49.2	155			
Toluene	52	2.4	47.08	2.243	106	52	154			
Surr: 1,2-Dichloroethane-d4	26		23.54		112	70	130			
Surr: 4-Bromofluorobenzene	18		23.54		75.1	70	130			
Surr: Dibromofluoromethane	24		23.54		102	70	130			
Surr: Toluene-d8	23		23 54		96.9	70	130			
	20		20.04		00.0	10	100			
Sample ID 1612194-001amsd	SampT	ype: MS	SD	Tes	tCode: E	PA Method	8260B: Volat	tiles Short	List	
Client ID: S-1	Batch	n ID: S3	9172	F	unNo: 3	9172				
Prep Date:	Analysis D	Date: 12	2/6/2016	S	eqNo: 1	226537	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	51	1.2	47.08	1.783	105	49.2	155	4.81	20	
Toluene	49	2.4	47.08	2.243	98.6	52	154	7.00	20	

Qualifiers:

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- * 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 6

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Client: Project:

APEX TITAN Mudge B59

Sample ID 1612194-001ams	SampT	ype: MS	SD	Tes	tCode: El	PA Method	8260B: Volat	tiles Short	List	
Client ID: S-1	Batch	ID: S 3	9172	F	RunNo: 3	9172				
Prep Date:	Analysis D	ate: 12	2/6/2016	5	SeqNo: 1	226537	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	27		23.54		113	70	130	0	0	
Surr: 4-Bromofluorobenzene	18		23.54		78.2	70	130	0	0	
Surr: Dibromofluoromethane	24		23.54		102	70	130	0	0	
Surr: Toluene-d8	22		23.54		93.7	70	130	0	0	

Qualifiers:

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

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WO#:

QC SUMMARY REPORT

WO#: 1612194

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Client: Project:

APEX TITAN
Mudge B59

Sample ID rb	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID: PBS	Batc	h ID: G3	9172	R	RunNo: 3	9172				
Prep Date:	Analysis D	Date: 12	2/6/2016	S	SeqNo: 1	225809	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	410		500.0		82.3	70	130			
Sample ID 2.5ug gro Ics	Samp1	Type: LC	S	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID: LCSS	Batc	h ID: G3	9172	R	RunNo: 3	9172				
Prep Date:	Analysis E	Date: 12	2/6/2016	S	SeqNo: 1	226499	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	97.6	62.9	123			
Surr: BFB	430		500.0		85.3	70	130			
Sample ID 1612194-001AMS	SampT	Гуре: МS	5	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Sample ID 1612194-001AMS Client ID: S-1	Samp1 Batcl	Гуре: М З h ID: G3	9172	Tesi	tCode: El	PA Method 9172	8015D Mod:	Gasoline	Range	
Sample ID 1612194-001AMS Client ID: S-1 Prep Date:	Samp1 Batcl Analysis D	Type: MS h ID: G3 Date: 12	9172 2/6/2016	Test R S	tCode: El RunNo: 3 SeqNo: 1	PA Method 9172 226500	8015D Mod: Units: mg/l	Gasoline Kg	Range	
Sample ID 1612194-001AMS Client ID: S-1 Prep Date: Analyte	Samp1 Batcl Analysis D Result	Type: MS h ID: G3 Date: 12 PQL	9172 2/6/2016 SPK value	Tesi R SPK Ref Val	tCode: El RunNo: 3 SeqNo: 1 %REC	PA Method 9172 226500 LowLimit	8015D Mod: Units: mg/l HighLimit	Gasoline Kg %RPD	Range RPDLimit	Qual
Sample ID 1612194-001AMS Client ID: S-1 Prep Date: Analyte Gasoline Range Organics (GRO)	SampT Batcl Analysis D Result 3700	Type: MS h ID: G3 Date: 12 PQL 240	9172 2/6/2016 SPK value 1177	Tesi R S SPK Ref Val 2410	tCode: El RunNo: 3 SeqNo: 1: %REC 107	PA Method 9172 226500 LowLimit 52.3	8015D Mod: Units: mg/l HighLimit 132	Gasoline Kg %RPD	Range RPDLimit	Qual
Sample ID 1612194-001AMS Client ID: S-1 Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB	SampT Batcl Analysis D Result 3700 22000	Type: MS h ID: G3 Date: 12 PQL 240	9172 2/6/2016 SPK value 1177 23540	Tesi R S SPK Ref Val 2410	tCode: El RunNo: 3 SeqNo: 1 %REC 107 95.3	PA Method 9172 226500 LowLimit 52.3 70	8015D Mod: Units: mg/l HighLimit 132 130	Gasoline Kg %RPD	Range RPDLimit	Qual
Sample ID 1612194-001AMS Client ID: S-1 Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB Sample ID 1612194-001AMS	Samp1 Batcl Analysis D Result 3700 22000 D Samp1	Fype: MS h ID: G3 Date: 12 PQL 240	9172 2/6/2016 SPK value 1177 23540	Tesi R S SPK Ref Val 2410 Tesi	tCode: El RunNo: 3 SeqNo: 1 %REC 107 95.3 tCode: El	PA Method 9172 226500 LowLimit 52.3 70 PA Method	8015D Mod: Units: mg/l HighLimit 132 130 8015D Mod:	Gasoline Kg %RPD Gasoline	Range RPDLimit Range	Qual
Sample ID 1612194-001AMS Client ID: S-1 Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB Sample ID 1612194-001AMS Client ID: S-1	Samp1 Batcl Analysis D Result 3700 22000 D Samp1 Batcl	Fype: MS h ID: G3 Date: 12 240 Fype: MS h ID: G3	9172 2/6/2016 SPK value 1177 23540 5D 9172	Tesi SPK Ref Val 2410 Tesi R	tCode: El RunNo: 3 SeqNo: 1 %REC 107 95.3 tCode: El RunNo: 3	PA Method 9172 226500 LowLimit 52.3 70 PA Method 9172	8015D Mod: Units: mg/l HighLimit 132 130 8015D Mod:	Gasoline Kg %RPD Gasoline	Range RPDLimit Range	Qual
Sample ID 1612194-001AMS Client ID: S-1 Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB Sample ID 1612194-001AMS Client ID: S-1 Prep Date:	Samp1 Batcl Analysis D Result 3700 22000 D Samp1 Batcl Analysis D	Fype: MS h ID: G3 Date: 12 240 Fype: MS h ID: G3 Date: 12	9172 2/6/2016 SPK value 1177 23540 5D 9172 2/6/2016	Tesi R SPK Ref Val 2410 Tesi R S	tCode: El RunNo: 3 SeqNo: 1 %REC 107 95.3 tCode: El RunNo: 3 SeqNo: 1	PA Method 9172 226500 LowLimit 52.3 70 PA Method 9172 226501	8015D Mod: Units: mg/l HighLimit 132 130 8015D Mod: Units: mg/l	Gasoline Kg %RPD Gasoline	Range RPDLimit Range	Qual
Sample ID 1612194-001AMS Client ID: S-1 Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB Sample ID 1612194-001AMS Client ID: S-1 Prep Date: Analyte	SampT Batcl Analysis E Result 3700 22000 D SampT Batcl Analysis E Result	Type: MS h ID: G3 Date: 12 PQL 240 Type: MS h ID: G3 Date: 12 PQL	9172 2/6/2016 SPK value 1177 23540 5D 9172 2/6/2016 SPK value	Tesi R SPK Ref Val 2410 Tesi R SPK Ref Val	tCode: El RunNo: 3: SeqNo: 1: %REC 107 95.3 tCode: El RunNo: 3: SeqNo: 1: %REC	PA Method 9172 226500 LowLimit 52.3 70 PA Method 9172 226501 LowLimit	8015D Mod: Units: mg/l HighLimit 132 130 8015D Mod: Units: mg/l HighLimit	Gasoline Kg %RPD Gasoline Kg %RPD	RPDLimit RPDLimit	Qual
Sample ID 1612194-001AMS Client ID: S-1 Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB Sample ID 1612194-001AMS Client ID: S-1 Prep Date: Analyte Gasoline Range Organics (GRO)	SampT Batcl Analysis E Result 3700 22000 D SampT Batcl Analysis E Result 3600	Type: MS h ID: G3 Date: 12 PQL 240 Type: MS h ID: G3 Date: 12 PQL 240	9172 2/6/2016 SPK value 1177 23540 9172 2/6/2016 SPK value 1177	Tesi SPK Ref Val 2410 Tesi R SPK Ref Val 2410	tCode: El RunNo: 3: SeqNo: 1: %REC 107 95.3 tCode: El RunNo: 3: SeqNo: 1: %REC 97.1	PA Method 9172 226500 LowLimit 52.3 70 PA Method 9172 226501 LowLimit 52.3	8015D Mod: Units: mg/l HighLimit 132 130 8015D Mod: Units: mg/l HighLimit 132	Gasoline Kg %RPD Gasoline Kg %RPD 3.28	Renge RPDLimit Range RPDLimit 20	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н 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
- Analyte detected in the associated Method Blank В
- Value above quantitation range E
- Analyte detected below quantitation limits J
- Р Sample pH Not In Range
- RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified

Client Name: APEX AZTEC Work Order Number: 10 Received by/date: 12/0/0/11	612194		RcptNo:	1
Received by/date: A 12/0/2/11	0			
Logged By: Ashley Gallegos 12/6/2016 8:00:00 AM		AZ		
Completed By: Ashley Gallegos 12/6/2016 8:34:08 AM		A		
Reviewed By: 30 12/06/10		v		
Chain of Custody				
1. Custody seals intact on sample bottles?	Yes	No [_]	Not Present	
2. Is Chain of Custody complete?	Yes M	No []]	Not Present	
3. How was the sample delivered?	Courier			
Log In				
A Was an attempt made to cool the samples?	Voc 词	No [1]	NA [
- was an attempt made to cool the samples r	Tes IV			
5. Were all samples received at a temperature of >0° C to 6.0°C Y	(es 🖌	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?	es 🗍	No []	No VOA Vials 🖌	
11. Were any sample containers received broken?	Yes	No 🗹		
12.Does paperwork match bottle labels?	res M	No []]	# of preserved bottles checked for pH:	>12 unloss noted)
(Note discrepancies on chain of custody) 12 Are matrices correctly identified on Chain of Custody2	100	No [Adjusted?	>12 unless noted)
14. Is it clear what analyses were requested? Y	res 🗹	No []		
15. Were all holding times able to be met? Y	res 🗹	No 🗌	Checked by:	
(If no, notify customer for authorization.)				
16. Was client notified of all discrepancies with this order? Y		No	NA 🗹	
Person Notified: Date Date		n in anderstandigter and an and an and an		
By Whom: Via: []	eMail	Phone Fax	[] In Person	
Regarding:			NANY OR AND	
17. Additional remarks:				
18 Cooler Information				
Cooler No Temp C Condition Seal Intact Seal No Sea	I Date	Signed By	L	
1 1.0 Good Not Present]	
Page 1 of 1				nan

																				С	HAIN	OF (CUSTO	DY RECO	RD
A Offic Proje	PEX e Locatio	nA gerK	zte	ec,	NIM	Laboratory: Address: Contact: Phone: PO/SO #:	A	tall 48Q	Env INM amad	ii <i>ron</i>]	men	ta		ANALY	ISIS ESTE	eeploed me.							Lab use Due Da Temp. o when re 1 2 Page	e only ate: f coolers ceived (C°): / - 3 4 of	5
X	10 5.000	AA A 1.00				14/-	Z	·····						č	AA	/ /	/	/ /	/ /	/ /	/ /				
Proj. I	No.	MUNS	Proje	M.	ame Udge Bi	159			No/Typ	pe of C	Contair	ers		P.	SUL		//	//	/						
Matrix	Date	Time	CoEp	Grab	Identifying Ma	rks of Sample(s)	Start	End	VOA	A/G 1LL	250 ml	Glass	P/O				/			/ /	/	Lab S	ample ID ((Lab Use Only)	
3	12/5/16	1520		Y	51							1		XX							10	la	194	1-001	
5	12/5/16	1530		X	5-	2						1		XX										-002	
_																									
		/	/										-												
																_	-								
						AND IN											_			_					
						KS										_	-			+					_
												/				-	_								-
																				-					-
Turn a	round time	Nor	mai		25% Rush	50% Rush	100%	Rµsh	SAM	1E	DAY	f													-
Reline	uished by (Signature) Signature) Signature)	0	1	Date: 2 5 16 Date: 2 15 16 Date:	Time: Repeiv 757 / / Time: Receiv 849 / Time: Receiv	ed by:	(Signation)	ature)		12	Date Date Date		Time: 1'70 Time: 0'80 Time:	70	OTES: B	III-ta	To	n La ≠N	ng	3452	200) 3			
Relino	quished by (Signature)	ar		Date:	Time: Receiv	ed by:	(Signa	ature)	Air Be		Date	: Che	Time:		- eludos		0.0	1			SA	MED	AY PUS	1
Contai	ner VO.	A - 40 ml via	1		A/G - Amber / O	r Glass 1 Liter		250 mi -	Glass w	ide ma	outh	P/	0 - PI	astic or oth	ner	unuge									

Apex TITAN, Inc. • 606 S. Rio Grande, Suite A, Downstairs • Aztec, New Mexico 87410 • Office: 505-334-5200 • Fax: 505-334-5204

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

December 09, 2016

Kyle Summers APEX TITAN 606 S. Rio Grande Unit A Aztec, NM 87410 TEL: (903) 821-5603 FAX

OrderNo.: 1612401

Dear Kyle Summers:

RE: Mudge B 59

Hall Environmental Analysis Laboratory received 11 sample(s) on 12/8/2016 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 <u>www.hallenvironmental.com</u> 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

12/8/2016 1:05:30 PM

12/8/2016 1:05:30 PM

29059

29059

Hall Environmental Analysis Laboratory, Inc.

Xylenes, Total

10

 Surr: 4-Bromofluorobenzene

CLIENT:	APEX TITAN			C	lient Sam	ole ID: S-	3	
Project:	Mudge B 59				Collection	Date: 12	/7/2016 12:30:00 PM	
Lab ID:	1612401-001	Matrix:	MEOH (Se	OIL)	Received	Date: 12	/8/2016 8:10:00 AM	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015M/D: DIESEL RA	NGE ORGANIC	s				Analyst	TOM
Diesel Ra	ange Organics (DRO)	330	9.9		mg/Kg	1	12/8/2016 10:30:41 AM	29071
Motor Oil	Range Organics (MRO)	100	49		mg/Kg	1	12/8/2016 10:30:41 AM	29071
Surr: D	DNOP	86.8	70-130		%Rec	1	12/8/2016 10:30:41 AM	29071
EPA MET	HOD 8015D: GASOLINE R	ANGE					Analyst	NSB
Gasoline	Range Organics (GRO)	370	22		mg/Kg	5	12/8/2016 1:05:30 PM	29059
Surr: E	BFB	616	68.3-144	S	%Rec	5	12/8/2016 1:05:30 PM	29059
EPA MET	HOD 8021B: VOLATILES						Analyst	NSB
Benzene		ND	0.11		mg/Kg	5	12/8/2016 1:05:30 PM	29059
Toluene		ND	0.22		mg/Kg	5	12/8/2016 1:05:30 PM	29059
Ethylben	zene	ND	0.22		mg/Kg	5	12/8/2016 1:05:30 PM	29059

0.44

S

80-120

mg/Kg

%Rec

5

5

6.7

134

			_	
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 15
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report Lab Order 1612401

Date Reported: 12/9/2016

Hall Environmental Analysis Laboratory, Inc.

EPA MET	THOD 8015M/D: DIESEL R	ANGE ORGANIC	S		Analyst	TOM
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch
Lab ID:	1612401-002	Matrix:	MEOH (SOIL)	Received	Date: 12/8/2016 8:10:00 AM	
Project:	Mudge B 59			Collection	Date: 12/7/2016 12:40:00 PM	
CLIENT:	APEX TITAN		(Client Sam	ple ID: S-4	

						,	
Diesel Range Organics (DRO)	120	9.6		mg/Kg	1	12/8/2016 10:53:46 AM	29071
Motor Oil Range Organics (MRO)	87	48		mg/Kg	1	12/8/2016 10:53:46 AM	29071
Surr: DNOP	88.7	70-130		%Rec	1	12/8/2016 10:53:46 AM	29071
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	NSB
Gasoline Range Organics (GRO)	140	20		mg/Kg	5	12/8/2016 1:28:59 PM	29059
Surr: BFB	369	68.3-144	S	%Rec	5	12/8/2016 1:28:59 PM	29059
EPA METHOD 8021B: VOLATILES						Analyst:	NSB
Benzene	ND	0.10		mg/Kg	5	12/8/2016 1:28:59 PM	29059
Toluene	ND	0.20		mg/Kg	5	12/8/2016 1:28:59 PM	29059
Ethylbenzene	ND	0.20		mg/Kg	5	12/8/2016 1:28:59 PM	29059
Xylenes, Total	0.70	0.41		mg/Kg	5	12/8/2016 1:28:59 PM	29059
Surr: 4-Bromofluorobenzene	116	80-120		%Rec	5	12/8/2016 1:28:59 PM	29059

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 15
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1612401

Date Reported: 12/9/2016

Hall Environmental Analysis Laboratory, Inc.

			c		Applyot	TOM
Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch
Lab ID:	1612401-003	Matrix:	MEOH (SOIL)	Receive	d Date: 12/8/2016 8:10:00 AM	
Project:	Mudge B 59			Collection	n Date: 12/7/2016 12:50:00 PM	
CLIENT:	APEX TITAN		C	lient Sam	ple ID: S-5	

ETA METHOD WINMD. DIEDEE NAMOE O	NOANN'				/ thatyou	
Diesel Range Organics (DRO)	20	9.5	mg/Kg	1	12/8/2016 11:16:41 AM	29071
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	12/8/2016 11:16:41 AM	29071
Surr: DNOP	89.2	70-130	%Rec	1	12/8/2016 11:16:41 AM	29071
EPA METHOD 8015D: GASOLINE RANGE					Analyst	NSB
Gasoline Range Organics (GRO)	12	8.7	mg/Kg	2	12/8/2016 1:22:30 PM	G39252
Surr: BFB	138	68.3-144	%Rec	2	12/8/2016 1:22:30 PM	G39252
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.043	mg/Kg	2	12/8/2016 1:22:30 PM	B39252
Toluene	ND	0.087	mg/Kg	2	12/8/2016 1:22:30 PM	B39252
Ethylbenzene	ND	0.087	mg/Kg	2	12/8/2016 1:22:30 PM	B39252
Xylenes, Total	0.25	0.17	mg/Kg	2	12/8/2016 1:22:30 PM	B39252
Surr: 4-Bromofluorobenzene	99.2	80-120	%Rec	2	12/8/2016 1:22:30 PM	B39252

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 15
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1612401

Date Reported: 12/9/2016

Hall Environmental Analysis Laboratory, Inc.

			-			
Analyses		Result	PQL Q	ual Units	DF Date Analyzed	Batch
Lab ID:	1612401-004	Matrix:	MEOH (SOI	L) Receiv	ved Date: 12/8/2016 8:10:00 AM	
Project:	Mudge B 59			Collect	ion Date: 12/7/2016 1:00:00 PM	
CLIENT:	APEX TITAN			Client Sa	mple ID: S-6	

EPA METHOD 8015M/D: DIESEL RANGE OF	RGANIC	CS				Analyst:	TOM
Diesel Range Organics (DRO)	170	9.4	mg	/Kg	1	12/8/2016 10:34:56 AM	29071
Motor Oil Range Organics (MRO)	77	47	mg	/Kg	1	12/8/2016 10:34:56 AM	29071
Surr: DNOP	95.2	70-130	%F	Rec	1	12/8/2016 10:34:56 AM	29071
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	NSB
Gasoline Range Organics (GRO)	120	22	mg	/Kg	5	12/8/2016 11:07:28 AM	29059
Surr: BFB	362	68.3-144	S %F	lec	5	12/8/2016 11:07:28 AM	29059
EPA METHOD 8021B: VOLATILES						Analyst:	NSB
Benzene	ND	0.11	mg	/Kg	5	12/8/2016 11:07:28 AM	29059
Toluene	ND	0.22	mg	/Kg	5	12/8/2016 11:07:28 AM	29059
Ethylbenzene	ND	0.22	mg	/Kg	5	12/8/2016 11:07:28 AM	29059
Xylenes, Total	1.6	0.44	mg	/Kg	5	12/8/2016 11:07:28 AM	29059
Surr: 4-Bromofluorobenzene	111	80-120	%F	lec	5	12/8/2016 11:07:28 AM	29059

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	A
	D	Sample Diluted Due to Matrix	E	V
	Н	Holding times for preparation or analysis exceeded	J	A
	ND	Not Detected at the Reporting Limit	Р	Sa
	R	RPD outside accepted recovery limits	RL	R

S % Recovery outside of range due to dilution or matrix

1

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits Page 4 of 15
- P Sample pH Not In Range
- RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN	Client Sample ID: S-7							
Project: Mudge B 59				Collection	Date: 12	/7/2016 1:10:00 PM		
Lab ID: 1612401-005	Matrix:	MEOH (SO	IL)	Received	Date: 12	/8/2016 8:10:00 AM		
Analyses	Result	PQL Q	Qual	Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RANG		s				Analyst:	том	
Diesel Range Organics (DRO)	24	9.7		mg/Kg	1	12/8/2016 10:56:18 AM	29071	
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/8/2016 10:56:18 AM	29071	
Surr: DNOP	93.5	70-130		%Rec	1	12/8/2016 10:56:18 AM	29071	
EPA METHOD 8015D: GASOLINE RANG	GE					Analyst:	NSB	
Gasoline Range Organics (GRO)	25	4.1		mg/Kg	1	12/8/2016 11:31:06 AM	29059	
Surr: BFB	295	68.3-144	S	%Rec	1	12/8/2016 11:31:06 AM	29059	
EPA METHOD 8021B: VOLATILES						Analyst:	NSB	
Benzene	ND	0.020		mg/Kg	1	12/8/2016 11:31:06 AM	29059	
Toluene	ND	0.041		mg/Kg	1	12/8/2016 11:31:06 AM	29059	
Ethylbenzene	ND	0.041		mg/Kg	1	12/8/2016 11:31:06 AM	29059	
Xylenes, Total	0.21	0.082		mg/Kg	1	12/8/2016 11:31:06 AM	29059	
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	12/8/2016 11:31:06 AM	29059	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 15
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

nalyses		Result	PQL Qual	Units	DF Date Analyzed	Batch
ab ID:	1612401-006	Matrix	: MEOH (SOIL)	Receive	d Date: 12/8/2016 8:10:00 AM	
roject:	Mudge B 59			Collection	n Date: 12/7/2016 1:20:00 PM	
CLIENT:	APEX TITAN		(Client Sam	ple ID: S-8	
LIENT:	APEX TITAN		(lient Sam	nle ID: S-8	-

EPA METHOD 8015M/D: DIESEL RANGE	ORGANIC	S				Analyst:	том
Diesel Range Organics (DRO)	38	9.6		mg/Kg	1	12/8/2016 11:17:50 AM	29071
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/8/2016 11:17:50 AM	29071
Surr: DNOP	94.7	70-130		%Rec	1	12/8/2016 11:17:50 AM	29071
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	NSB
Gasoline Range Organics (GRO)	24	4.6		mg/Kg	1	12/8/2016 10:31:06 AM	G39252
Surr: BFB	261	68.3-144	S	%Rec	1	12/8/2016 10:31:06 AM	G39252
EPA METHOD 8021B: VOLATILES						Analyst:	NSB
Benzene	ND	0.023		mg/Kg	1	12/8/2016 10:31:06 AM	B39252
Toluene	ND	0.046		mg/Kg	1	12/8/2016 10:31:06 AM	B39252
Ethylbenzene	0.081	0.046		mg/Kg	1	12/8/2016 10:31:06 AM	B39252
Xylenes, Total	0.19	0.093		mg/Kg	1	12/8/2016 10:31:06 AM	B39252
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	12/8/2016 10:31:06 AM	B39252

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 15
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

12/8/2016 10:55:26 AM B39252

12/8/2016 10:55:26 AM B39252

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN	Client Sample ID: S-9							
Project: Mudge B 59		Collection Date: 12/7/2016 1:30:00 PM						
Lab ID: 1612401-007	Matrix:	MEOH (SC	DIL)	Received	Date: 12	/8/2016 8:10:00 AM		
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	s				Analyst:	том	
Diesel Range Organics (DRO)	13	9.7		mg/Kg	1	12/8/2016 11:39:15 AM	29071	
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/8/2016 11:39:15 AM	29071	
Surr: DNOP	93.2	70-130		%Rec	1	12/8/2016 11:39:15 AM	29071	
EPA METHOD 8015D: GASOLINE RA	NGE					Analyst:	NSB	
Gasoline Range Organics (GRO)	11	4.0		mg/Kg	1	12/8/2016 10:55:26 AM	G39252	
Surr: BFB	199	68.3-144	S	%Rec	1	12/8/2016 10:55:26 AM	G39252	
EPA METHOD 8021B: VOLATILES						Analyst:	NSB	
Benzene	ND	0.020		mg/Kg	1	12/8/2016 10:55:26 AM	B39252	
Toluene	ND	0.040		mg/Kg	1	12/8/2016 10:55:26 AM	B39252	
Ethylbenzene	0.087	0.040		mg/Kg	1	12/8/2016 10:55:26 AM	B39252	

0.080

80-120

mg/Kg

%Rec

1

1

0.25

107

Xylenes, Total

Surr: 4-Bromofluorobenzene

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 15
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analyses		Result	PQL Qual	Units	DF Date Analyzed	Batch
Lab ID: 16	512401-008	Matrix:	MEOH (SOIL)	Received	d Date: 12/8/2016 8:10:00 AM	
Project: M	udge B 59			Collection	n Date: 12/7/2016 1:40:00 PM	
CLIENT: AF	PEX TITAN		C	lient Sam	ple ID: S-10	

EPA METHOD 8015M/D: DIESEL RANG		S			Analyst:	том
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	12/8/2016 12:00:48 PM	29071
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	12/8/2016 12:00:48 PM	29071
Surr: DNOP	95.0	70-130	%Rec	1	12/8/2016 12:00:48 PM	29071
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst:	NSB
Gasoline Range Organics (GRO)	ND	3.6	mg/Kg	1	12/8/2016 11:19:53 AM	G39252
Surr: BFB	115	68.3-144	%Rec	1	12/8/2016 11:19:53 AM	G39252
EPA METHOD 8021B: VOLATILES					Analyst:	NSB
Benzene	ND	0.018	mg/Kg	1	12/8/2016 11:19:53 AM	B39252
Toluene	ND	0.036	mg/Kg	1	12/8/2016 11:19:53 AM	B39252
Ethylbenzene	ND	0.036	mg/Kg	1	12/8/2016 11:19:53 AM	B39252
Xylenes, Total	ND	0.073	mg/Kg	1	12/8/2016 11:19:53 AM	B39252
Surr: 4-Bromofluorobenzene	99.2	80-120	%Rec	1	12/8/2016 11:19:53 AM	B39252

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 8 of 15
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

12/8/2016 11:54:42 AM 29059

12/8/2016 11:54:42 AM 29059

Hall Environmental Analysis Laboratory, Inc.

Xylenes, Total

Surr: 4-Bromofluorobenzene

CLIENT:	APEX TITAN			C	lient Sam	ole ID: S-	11	
Project:	Mudge B 59				Collection	Date: 12	/7/2016 1:50:00 PM	
Lab ID:	1612401-009	Matrix:	MEOH (SO	OIL)	Received	Date: 12	/8/2016 8:10:00 AM	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015M/D: DIESEL RANG		s				Analyst	том
Diesel Ra	ange Organics (DRO)	740	9.6		mg/Kg	1	12/8/2016 11:39:45 AM	29071
Motor Oil	Range Organics (MRO)	77	48		mg/Kg	1	12/8/2016 11:39:45 AM	29071
Surr: D	NOP	92.2	70-130		%Rec	1	12/8/2016 11:39:45 AM	29071
EPA MET	HOD 8015D: GASOLINE RAN	GE					Analyst	NSB
Gasoline	Range Organics (GRO)	720	21		mg/Kg	5	12/8/2016 11:54:42 AM	29059
Surr: E	BFB	1240	68.3-144	S	%Rec	5	12/8/2016 11:54:42 AM	29059
EPA MET	HOD 8021B: VOLATILES						Analyst	NSB
Benzene		0.13	0.10		mg/Kg	5	12/8/2016 11:54:42 AM	29059
Toluene		ND	0.21		mg/Kg	5	12/8/2016 11:54:42 AM	29059
Ethylben	zene	ND	0.21		mg/Kg	5	12/8/2016 11:54:42 AM	29059

0.42

S

80-120

mg/Kg

%Rec

5

5

13

156

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 9 of 15
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

12/8/2016 12:18:14 PM 29059

Hall Environmental Analysis Laboratory, Inc.

Surr: 4-Bromofluorobenzene

CLIENT:	APEX TITAN			C	lient Sam	ple ID: S-	12			
Project:	Mudge B 59	Collection Date: 12/7/2016 2:00:00 PM								
Lab ID:	1612401-010	Matrix:	MEOH (SC	DIL)	Received	Date: 12	/8/2016 8:10:00 AM			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch		
EPA MET	HOD 8015M/D: DIESEL RANG		S				Analyst	TOM		
Diesel Ra	ange Organics (DRO)	350	9.3		mg/Kg	1	12/8/2016 12:22:30 PM	29071		
Motor Oil	Range Organics (MRO)	99	47		mg/Kg	1	12/8/2016 12:22:30 PM	29071		
Surr: D	DNOP	94.8	70-130		%Rec	1	12/8/2016 12:22:30 PM	29071		
EPA MET	HOD 8015D: GASOLINE RAN	GE					Analyst	NSB		
Gasoline	Range Organics (GRO)	510	21		mg/Kg	5	12/8/2016 12:18:14 PM	29059		
Surr: E	BFB	968	68.3-144	S	%Rec	5	12/8/2016 12:18:14 PM	29059		
EPA MET	HOD 8021B: VOLATILES						Analyst	NSB		
Benzene		ND	0.11		mg/Kg	5	12/8/2016 12:18:14 PM	29059		
Toluene		ND	0.21		mg/Kg	5	12/8/2016 12:18:14 PM	29059		
Ethylben	zene	ND	0.21		mg/Kg	5	12/8/2016 12:18:14 PM	29059		
Xylenes,	Total	4.7	0.42		mg/Kg	5	12/8/2016 12:18:14 PM	29059		

80-120

%Rec

5

S

153

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limitspace 10 of 15
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN	Client Sample ID: S-13									
Project: Mudge B 59	Collection Date: 12/7/2016 2:10:00 PM									
Lab ID: 1612401-011	Matrix:	MEOH (SC	DIL)	Received	Date: 12/	/8/2016 8:10:00 AM				
Analyses	Result	PQL 0	Qual	Units	DF	Date Analyzed	Batch			
EPA METHOD 8015M/D: DIESEL RANG		s				Analyst	TOM			
Diesel Range Organics (DRO)	730	9.2		mg/Kg	1	12/8/2016 11:47:53 AM	29071			
Motor Oil Range Organics (MRO)	160	46		mg/Kg	1	12/8/2016 11:47:53 AM	29071			
Surr: DNOP	87.7	70-130		%Rec	1	12/8/2016 11:47:53 AM	29071			
EPA METHOD 8015D: GASOLINE RAN	GE					Analyst	NSB			
Gasoline Range Organics (GRO)	1000	21		mg/Kg	5	12/8/2016 12:41:54 PM	29059			
Surr: BFB	1730	68.3-144	S	%Rec	5	12/8/2016 12:41:54 PM	29059			
EPA METHOD 8021B: VOLATILES						Analyst	NSB			
Benzene	ND	0.11		mg/Kg	5	12/8/2016 12:41:54 PM	29059			
Toluene	ND	0.21		mg/Kg	5	12/8/2016 12:41:54 PM	29059			
Ethylbenzene	ND	0.21		mg/Kg	5	12/8/2016 12:41:54 PM	29059			
Xylenes, Total	7.9	0.42		mg/Kg	5	12/8/2016 12:41:54 PM	29059			
Surr: 4-Bromofluorobenzene	236	80-120	S	%Rec	5	12/8/2016 12:41:54 PM	29059			

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 11 of 15
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

WO#: 1612401

09-Dec-16

Client:	APEX TI	TAN									
Project:	Mudge B	59									
Sample ID L	-CS-29071	SampTy	pe: LC	S	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: L	CSS	Batch	ID: 29	071	F	RunNo: 3	9237				
Prep Date:	12/8/2016	Analysis Da	te: 1:	2/8/2016	9	SeqNo: 1	227846	Units: mg/l	٨g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Or	ganics (DRO)	50	10	50.00	0	100	62.6	124			
Surr: DNOP		4.4		5.000		88.0	70	130			
Sample ID MB-29071 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics											
Client ID: F	PBS	Batch I	ID: 29	071	F	RunNo: 3	9237				
Prep Date:	12/8/2016	Analysis Da	te: 12	2/8/2016	5	SeqNo: 1	227849	Units: mg/l	٨g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Or	ganics (DRO)	ND	10								
Motor Oil Range	Organics (MRO)	ND	50								
Surr: DNOP		9.5		10.00		95.1	70	130			
Sample ID 1	612401-001AMS	SampTy	pe: MS	S	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: S	5-3	Batch I	D: 29	071	F	RunNo: 3	9237				
Prep Date:	12/8/2016	Analysis Da	te: 12	2/8/2016	S	SeqNo: 1	228224	Units: mg/k	۲g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Or	ganics (DRO)	330	9.4	46.86	334.0	-3.95	51. <mark>6</mark>	130			S
Surr: DNOP		4.1		4.686		86.8	70	130			
Sample ID 1	612401-001AMSE	SampTy	pe: MS	SD	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: S	6-3	Batch I	D: 29	071	F	RunNo: 3	9237				
Prep Date:	12/8/2016	Analysis Dat	te: 12	2/8/2016	S	SeqNo: 1	228225	Units: mg/h	٨g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Or	ganics (DRO)	350	9.5	47.71	334.0	43.0	51.6	130	6.51	20	S
Surr: DNOP		4.3		4.771		90.4	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL

Page 12 of 15

- Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Client: Mudge B 59 **Project:**

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APEX TITAN

Sample ID MB-29059	SampType:	MBLK	Tes	tCode: EP	A Method	8015D: Gaso	oline Rang	e	
Client ID: PBS	Batch ID:	29059	F	RunNo: 39	251				
Prep Date: 12/7/2016	Analysis Date:	12/8/2016	S	SeqNo: 12	28697	Units: mg/k	٢g		
Analyte	Result PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND 5	5.0							
Surr: BFB	840	1000		83.7	68.3	144			
Sample ID LCS-29059	SampType:	LCS	Tes	tCode: EP	A Method	8015D: Gaso	oline Rang	e	
Client ID: LCSS	Batch ID:	29059	F	RunNo: 39	251				
Prep Date: 12/7/2016	Analysis Date:	12/8/2016	S	SeqNo: 12	28698	Units: mg/k	٢g		
Analyte	Result PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25 5	5.0 25.00	0	101	74.6	123			
Surr: BFB	920	1000		92.4	68.3	144			
Sample ID MB-29049	SampType:	MBLK	Tes	tCode: EP	A Method	8015D: Gaso	oline Rang	e	
Client ID: PBS	Batch ID:	29049	F	RunNo: 39	251				
Prep Date: 12/7/2016	Analysis Date:	12/8/2016	S	SeqNo: 12	28752	Units: %Re	с		
Analyte	Result PQ	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	860	1000		05.0	00.0				
	000	1000		85.8	68.3	144			
Sample ID LCS-29049	SampType:	LCS	Tes	tCode: EP	A Method	144 8015D: Gaso	oline Rang	e	
Sample ID LCS-29049 Client ID: LCSS	SampType: Batch ID:	LCS 29049	Tes	tCode: EP	68.3 A Method	144 8015D: Gaso	oline Rang	e	
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016	SampType: Batch ID: Analysis Date:	LCS 29049 12/8/2016	Tes R S	tCode: EP RunNo: 39 SeqNo: 12	68.3 A Method 251 28753	144 8015D: Gaso Units: %Re	oline Rang	e	
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte	SampType: Batch ID: Analysis Date: Result PQ	LCS 29049 12/8/2016	Tesi F S SPK Ref Val	tCode: EP tunNo: 39 SeqNo: 12 %REC	68.3 PA Method 251 228753 LowLimit	144 8015D: Gaso Units: %Re HighLimit	bline Rang c %RPD	e RPDLimit	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB	SampType: Batch ID: Analysis Date: Result PQ 920	LCS 29049 12/8/2016 L SPK value 1000	Tes R S SPK Ref Val	85.8 tCode: EP RunNo: 39 GeqNo: 12 %REC 92.0	68.3 A Method 251 228753 LowLimit 68.3	8015D: Gaso Units: %Re HighLimit 144	oline Rang c %RPD	e RPDLimit	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB Sample ID RB	SampType: Batch ID: Analysis Date: Result PQ 920 SampType:	LCS 29049 12/8/2016 12 SPK value 1000 MBLK	Tes R SPK Ref Val Tes	85.8 tCode: EP RunNo: 39 SeqNo: 12 %REC 92.0 tCode: EP	68.3 A Method 251 28753 LowLimit 68.3	144 8015D: Gaso Units: %Re HighLimit 144 8015D: Gaso	oline Rang c %RPD oline Rang	e RPDLimit e	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB Sample ID RB Client ID: PBS	SampType: Batch ID: Analysis Date: Result PQ 920 SampType: Batch ID:	LCS 29049 12/8/2016 L SPK value 1000 MBLK G39252	Tes R SPK Ref Val Tesi R	85.8 tCode: EP RunNo: 39 SeqNo: 12 %REC 92.0 tCode: EP RunNo: 39	68.3 24 Method 2251 228753 LowLimit 68.3 24 Method 252	144 8015D: Gaso Units: %Re HighLimit 144 8015D: Gaso	bline Rang c %RPD bline Rang	e RPDLimit e	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB Sample ID RB Client ID: PBS Prep Date:	SampType: Batch ID: Analysis Date: Result PQ 920 SampType: Batch ID: Analysis Date:	LCS 29049 12/8/2016 IL SPK value 1000 MBLK G39252 12/8/2016	Tesi SPK Ref Val Tesi R S	85.8 tCode: EP RunNo: 39 SeqNo: 12 %REC 92.0 tCode: EP RunNo: 39 SeqNo: 12	68.3 A Method 251 228753 LowLimit 68.3 A Method 252 228807	144 8015D: Gaso Units: %Re HighLimit 144 8015D: Gaso Units: mg/k	oline Rang c %RPD oline Rang	e RPDLimit e	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB Sample ID RB Client ID: PBS Prep Date: Analyte	SampType: Batch ID: Analysis Date: Result PQ 920 SampType: Batch ID: Analysis Date: Result PQ	LCS 29049 12/8/2016 L SPK value 1000 MBLK G39252 12/8/2016 L SPK value	Tes F SPK Ref Val Tes R SPK Ref Val	85.8 tCode: EP RunNo: 39 SeqNo: 12 %REC 92.0 tCode: EP RunNo: 39 SeqNo: 12 %REC	68.3 A Method 2251 228753 LowLimit 68.3 A Method 2252 228807 LowLimit	144 8015D: Gaso Units: %Re HighLimit 144 8015D: Gaso Units: mg/k HighLimit	oline Rang c %RPD oline Rang (g %RPD	e RPDLimit e RPDLimit	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB Sample ID RB Client ID: PBS Prep Date: Analyte Gasoline Range Organics (GRO)	SampType: Batch ID: Analysis Date: Result PQ 920 SampType: Batch ID: Analysis Date: Result PQ ND 5	LCS 29049 12/8/2016 1000 MBLK G39252 12/8/2016 12/8/2016 5.0	Tes F SPK Ref Val Tes R SPK Ref Val	85.8 tCode: EP RunNo: 39 SeqNo: 12 %REC 92.0 tCode: EP RunNo: 39 SeqNo: 12 %REC	68.3 A Method 2251 228753 LowLimit 68.3 A Method 252 228807 LowLimit	144 8015D: Gaso Units: %Re HighLimit 144 8015D: Gaso Units: mg/k HighLimit	oline Rang c %RPD oline Rang (g %RPD	e RPDLimit e RPDLimit	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB Sample ID RB Client ID: PBS Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB	SampType: Batch ID: Analysis Date: Result PQ 920 SampType: Batch ID: Analysis Date: Result PQ ND 5 850	LCS 29049 12/8/2016 PL SPK value 1000 MBLK G39252 12/8/2016 PK value 5.0 1000	Tesi SPK Ref Val Tesi R SPK Ref Val	85.8 tCode: EP RunNo: 39 GeqNo: 12 %REC 92.0 tCode: EP RunNo: 39 GeqNo: 12 %REC 85.1	68.3 A Method 2251 228753 LowLimit 68.3 A Method 252 228807 LowLimit 68.3	144 8015D: Gaso Units: %Re HighLimit 144 8015D: Gaso Units: mg/# HighLimit 144	oline Rang %RPD oline Rang %g %RPD	e RPDLimit e RPDLimit	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB Sample ID RB Client ID: PBS Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB	SampType: Batch ID: Analysis Date: Result PQ 920 SampType: Batch ID: Analysis Date: Result PQ ND 5 850 SampType:	LCS 29049 12/8/2016 2L SPK value 1000 MBLK G39252 12/8/2016 2L SPK value 5.0 1000 LCS	Tes F SPK Ref Val Tes SPK Ref Val SPK Ref Val	85.8 tCode: EP RunNo: 39 SeqNo: 12 %REC 92.0 tCode: EP RunNo: 39 SeqNo: 12 %REC 85.1 tCode: EP	68.3 A Method 2251 228753 LowLimit 68.3 A Method 252 228807 LowLimit 68.3 A Method	144 8015D: Gaso Units: %Re HighLimit 144 8015D: Gaso Units: mg/k HighLimit 144 8015D: Gaso	oline Rang c %RPD oline Rang %RPD oline Rang	e RPDLimit e RPDLimit	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB Sample ID RB Client ID: PBS Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB Sample ID 2.5UG GRO LCS Client ID: LCSS	SampType: Batch ID: Analysis Date: Result PQ 920 SampType: Batch ID: Analysis Date: Result PQ ND 5 850 SampType: Batch ID:	LCS 29049 12/8/2016 PL SPK value 1000 MBLK G39252 12/8/2016 PL SPK value 5.0 1000 LCS G39252	Tesi SPK Ref Val Tesi SPK Ref Val SPK Ref Val	85.8 tCode: EP RunNo: 39 SeqNo: 12 %REC 92.0 tCode: EP RunNo: 39 SeqNo: 12 %REC 85.1 tCode: EP RunNo: 39	68.3 A Method 251 228753 LowLimit 68.3 A Method 252 228807 LowLimit 68.3 A Method 252	144 8015D: Gaso Units: %Re HighLimit 144 8015D: Gaso Units: mg/k HighLimit 144 8015D: Gaso	oline Rang %RPD oline Rang %RPD	e RPDLimit e RPDLimit	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB Sample ID RB Client ID: PBS Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB Sample ID 2.5UG GRO LCS Client ID: LCSS Prep Date:	SampType: Batch ID: Analysis Date: Result PQ 920 SampType: Batch ID: Analysis Date: Result PQ ND 5 850 SampType: Batch ID: Analysis Date:	LCS 29049 12/8/2016 2L SPK value 1000 MBLK G39252 12/8/2016 2L SPK value 5.0 1000 LCS G39252 12/8/2016	Tes F SPK Ref Val Tes SPK Ref Val SPK Ref Val Tes S	85.8 tCode: EP RunNo: 39 SeqNo: 12 %REC 92.0 tCode: EP RunNo: 39 SeqNo: 12 85.1 tCode: EP RunNo: 39 SeqNo: 12	68.3 A Method 2251 228753 LowLimit 68.3 A Method 252 228807 LowLimit 68.3 A Method 252 228808	144 8015D: Gaso Units: %Re HighLimit 144 8015D: Gaso Units: mg/k 144 8015D: Gaso Units: mg/k	oline Rang c %RPD oline Rang %RPD oline Rang	e RPDLimit e RPDLimit	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB Sample ID RB Client ID: PBS Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB Sample ID 2.5UG GRO LCS Client ID: LCSS Prep Date: Analyte	SampType: Batch ID: Analysis Date: Result PQ 920 SampType: Batch ID: Analysis Date: Result PQ ND 5 850 SampType: Batch ID: Analysis Date: Result PQ	LCS 29049 12/8/2016 PL SPK value 1000 MBLK G39252 12/8/2016 LCS G39252 12/8/2016 LCS G39252 12/8/2016	Tesi SPK Ref Val Tesi SPK Ref Val SPK Ref Val Tesi SPK Ref Val	85.8 tCode: EP RunNo: 39 SeqNo: 12 %REC 92.0 tCode: EP RunNo: 39 SeqNo: 12 %REC 85.1 tCode: EP RunNo: 39 SeqNo: 12 %REC	68.3 A Method 251 228753 LowLimit 68.3 A Method 252 228807 LowLimit 68.3 A Method 252 228808 LowLimit	144 8015D: Gaso Units: %Re HighLimit 144 8015D: Gaso Units: mg/k HighLimit Units: mg/k HighLimit	oline Rang c %RPD oline Rang %RPD oline Rang	e RPDLimit e RPDLimit e RPDLimit	Qual
Sample ID LCS-29049 Client ID: LCSS Prep Date: 12/7/2016 Analyte Surr: BFB Sample ID RB Client ID: PBS Prep Date: Analyte Gasoline Range Organics (GRO) Surr: BFB Sample ID 2.5UG GRO LCS Client ID: LCSS Prep Date: Analyte Gasoline Range Organics (GRO)	SampType: Batch ID: Analysis Date: Result PQ 920 SampType: Batch ID: Analysis Date: Result PQ ND 5 850 SampType: Batch ID: Analysis Date: Result PQ Analysis Date: Result PQ 24 5	LCS 29049 12/8/2016 L	Tesi SPK Ref Val Tesi SPK Ref Val SPK Ref Val SPK Ref Val SPK Ref Val 0	85.8 tCode: EP RunNo: 39 SeqNo: 12 %REC 92.0 tCode: EP RunNo: 39 SeqNo: 12 %REC 85.1 tCode: EP RunNo: 39 SeqNo: 12 %REC 95.2	68.3 A Method 251 228753 LowLimit 68.3 A Method 252 28807 LowLimit 68.3 A Method 252 28808 LowLimit 74.6	144 8015D: Gaso Units: %Re HighLimit 144 8015D: Gaso Units: mg/k HighLimit 144 8015D: Gaso Units: mg/k HighLimit	oline Rang c %RPD oline Rang %RPD oline Rang (g %RPD	e RPDLimit e RPDLimit e RPDLimit	Qual

Qualifiers:

Value exceeds Maximum Contaminant Level. *

D Sample Diluted Due to Matrix

- Н 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
- Analyte detected in the associated Method Blank В
- Value above quantitation range E
- Analyte detected below quantitation limits J
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

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WO#: 1612401

09-Dec-16

QC	SUMMARY	REPOR '	Г	
Hall	Environmenta	l Analysis	Laboratory,	Inc.

WO#: 1612401

09-Dec-16

Client: APEX TITAN

Project: Mudge B 59

Sample ID MB-29059	SampType: MBLK TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 29059	RunNo: 39251						
Prep Date: 12/7/2016	Analysis Date: 12/8/2016	SeqNo: 1228772	Units: mg/Kg					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual				
Benzene	ND 0.025							
Toluene	ND 0.050							
Ethylbenzene	ND 0.050							
Xylenes, Total	ND 0.10							
Surr: 4-Bromofluorobenzene	0.92 1.000	92.4 80	120					
Sample ID LCS-29059	SampType: LCS	TestCode: EPA Method	8021B: Volatiles					
Client ID: LCSS	Batch ID: 29059	RunNo: 39251						
Prep Date: 12/7/2016	Analysis Date: 12/8/2016	SeqNo: 1228773	Units: mg/Kg					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual				
Benzene	1.1 0.025 1.000	0 108 75.2	115					
Toluene	1.0 0.050 1.000	0 102 80.7	112					
Ethylbenzene	0.99 0.050 1.000	0 98.7 78.9	117					
Xylenes, Total	3.0 0.10 3.000	0 99.6 79.2	115					
Surr: 4-Bromofluorobenzene	1.0 1.000	102 80	120					
Sample ID MB-29049	SampType: MBLK	TestCode: EPA Method	8021B: Volatiles					
Client ID: PBS	Batch ID: 29049	RunNo: 39251						
Prep Date: 12/7/2016	Analysis Date: 12/8/2016	SeqNo: 1228780	Units: %Rec					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual				
Surr: 4-Bromofluorobenzene	0.95 1.000	94.6 80	120					
Sample ID LCS-29049	SampType: LCS	TestCode: EPA Method	8021B: Volatiles					
Client ID: LCSS	Batch ID: 29049	RunNo: 39251						
Prep Date: 12/7/2016	Analysis Date: 12/8/2016	SeqNo: 1228782	Units: %Rec					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual				
Surr: 4-Bromofluorobenzene	0.99 1.000	99.0 80	120					
Sample ID RB	SampType: MBLK	TestCode: EPA Method	8021B: Volatiles					
Client ID: PBS	Batch ID: B39252	RunNo: 39252						
Prep Date:	Analysis Date: 12/8/2016	SeqNo: 1228831	Units: mg/Kg					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual				
Benzene	ND 0.025							
Toluene	ND 0.050							
Ethylbenzene	ND 0.050							
Xylenes, Total	ND 0.10							

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 14 of 15

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

WO#: 1612401

09-Dec-16

Hall Environmental Analysis Laboratory, Inc.

Client:APEX TITANProject:Mudge B 59

Sample ID RB	Samp	Гуре: МЕ	BLK	Tes	Code: El	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batc	h ID: B3	9252	F	unNo: 3	9252				
Prep Date:	Analysis D	Date: 12	2/8/2016	S	eqNo: 1	228831	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.96		1.000		96.4	80	120			
Sample ID 100NG BTEX LCS SampType: LCS TestCode: EPA Method 8021B: Volatiles										
Client ID: LCSS	Batc	h ID: B3	9252	R	unNo: 3	9252				
Prep Date:	Analysis E	Date: 12	2/8/2016	S	eqNo: 1	228832	Units: mg/h	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	111	75.2	115			
Toluene	1.1	0.050	1.000	0	107	80.7	112			
Ethylbenzene	1.0	0.050	1.000	0	103	78.9	117			
Xylenes, Total	2.9	0.10	3.000	0	97.9	79.2	115			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.3	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
- W Sample container temperature is out of limit as specified

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HALL Environmental Analysis Laboratory	Hall Environmental Albu Albu TEL: 505-345-3975 Website: www.hal	I Analysis Laboratory 4901 Hawkins NE buquerque NM 87109 5 FAX: 505-345-4107 allenvironmental.com					
Client Name: APEX AZTEC	Work Order Number:	16124	01		Rcptl	No: 1	
Received by/date:	12/00/16			the second second			
Logged By: Lindsay Mangin	12/8/2016 8:10:00 AM			() mayo			
Completed By: Lindsay Mangin Reviewed By:	12/8/2016 8:28:28 AM 12/08/14			Jundy Margo			
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?		Cour	ier				
Log In							
4. Was an attempt made to cool the samples	?	Yes	~	No	NA		
5. Were all samples received at a temperature	e of >0° C to 6.0°C	Yes	V	No	NA		
6. Sample(s) in proper container(s)?		Yes	V	No			
7. Sufficient sample volume for indicated test(s)?	Yes	V	No			
8. Are samples (except VOA and ONG) prope	rly preserved?	Yes	~	No			
9. Was preservative added to bottles?		Yes	· ·	No 🗸	NA		
10.VOA vials have zero headspace?		Yes	•	No	No VOA Vials	v	
11. Were any sample containers received brok	en?	Yes		No 🖍	# of preserved		
10				N.,	bottles checked		
12.Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes		NO	וסן וסו. (<2 or >12 unless noted)	
13. Are matrices correctly identified on Chain o	f 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 t	by:	
Special Handling (if applicable)							
16. Was client notified of all discrepancies with	this order?	Yes		No	NA	 Image: A start of the start of	
Person Notified:	Date:	<u>iii ii iyy</u> taladaala		4			
By Whom:	Via:	eMa	ail	Phone Fax	In Person		
Regarding:	an an air a lide air an an an an air air an an an air an air an				ande ander die bieden andere ander	-	
Client Instructions:						-	
17. Additional remarks:							
18. <u>Cooler Information</u> Cooler No Temp °C Condition S 1 1.1 Good Ye	Seal Intact Seal No S	Seal D	ate	Signed By			
Page 1 of 1							

																		C	HAIN C	JF CUSIC	DDY RECORD
														ANALYSI	s /	11		17		/ Lab us	se only
											REQUES	TED /		/ /			Due D	ate:			
ADEY						uvonmenta'				-		/	/ /	11	/	/ /					
Address: ABQIN						<u>N</u>				-		1.9		/ /	/	/ /	Temp.	of coolers			
Office Location													Z	//	/	/ /		when n	eceived (C°): · · I		
Contact:								man						2	/ /	/ /	/ /		1 2	3 4 5	
Phone:														/ /	/ /	/	/ /	Page_			
Project Manager KSummers PO/SO #:												it	181			/					
Samp	ler's Name					Sampler's Sign	ature							E	X		/	/ /	/ /		
Kyle Summers Kyl								and stands of the					1	al /	/ /	/ /	/ /	/			
Proj. No. Project Name							No/Type of Containers					AL			/ /	/	/				
mudge B					3 #59						5 5	4 /			/	/					
Matrix	Date	Time	CoEc	Gra	Identifying Ma	irks of Sample(s)	Start	End	VOA	A/G	250 al	Glass Jar	D/0					/ /	/	ab Sample ID	(Lab Use Only)
5	12/7/16	1230	X	D	S	-3						1		XV	+		+		1612	401-	001
1	1	1240	Ì		5-	.4						}		1 1						-1	202
		1250			5-	-5						1								-1	203
		130D			5.	-6						1								-(204
		1310			5-	7						1	_			_				-6	205
		1320			5-	8						1	150							-0	06
		1330			5-	9						1								-0	07
		1340			5-	-10						1								-0	08
		1350			S-	-11						1								-0	09
L	X	1400	\mathbf{V}		S	-12						1		VY						-0	10
Turn a	round time	D Nor	mal	02	5% Rush	50% Rush	100%	Rush		SAN	1E	DA	4	-							
Henric	Reinfquished by (Signature)																				
Relinquished by (Signature) Date: Time: Received by: (Signat							ture) Date:				. 1	Time: Bill to Tom Long (EP200)									
Belingüísbed by (Signature) Date: Time: Beceived by (Signature) Date: Time: N 229.22																					
12/7/N 1910 - FA								1	20	BIV	6	0810		100	210	12		CAALE	DAV BUSH		
Relind	Relinquished by (Signature) Date: Time: Received by: (Signature) Date: Time:																				
Matrix	ww	V - Wastewa	ter		W - Water	S - Soil SD - So	lid (- Liquid	A	- Air Ba	aq	C-	Cha	rcoal tube	SL - slude	e O	- Oil				
Contai	ner VO	A - 40 mi via	al		A/G - Amber / C	or Glass 1 Liter	2	250 ml -	Glass	wide mo	outh	P/C) - PI	astic or other							

Apex TITAN, Inc. • 606 S. Rio Grande, Suite A, Downstairs • Aztec, New Mexico 87410 • Office: 505-334-5200 • Fax: 505-334-5204

						CHAIN OF CUSTODY RECOR
APEX Office Location Aztec, NM	Laboratory: <u>Hail En</u> Address: <u>AB</u> 6	disonmenta 21NM]	ANALYSIS REQUESTED	Intest	Lab use only Due Date: Temp. of coolers when received (C°): [, ,]
	Contact: <u>A</u> Freer Phone:	nan			total .	Page 2 of 2
Project Manager <u>KSUUMMER'S</u> Sampler's Name Kyle Summers	PO/SO #: Sampler's 9ignature			BIEL	/////	
Proj. No. Project Name Mudge B#	159	No/Type of Containe	rs	Sun		
Matrix Date Time O T Identifying Ma	rks of Sample(s) Light and	AG AG AG AG	Jar P/O			Lab Sample ID (Lab Use Only)
5 1217/110 1410 X S-	13		1	XX		1612401-001 -011
	ACK					
	Kis					
Turn around tinge Normal 25% Rush	150% Rush 5(00% Rush Time: Received by: (Signa COD Rush Time: Received by: (Signa	SAMEDA iture)	V JAte: JAIb	Time: NC	Bill to The	n Long (FPRCD)
Tumper of the second	Time: Received by: (Signa C	tture)	1111c Date OB IL Date:	Time:	N 23923	SAMEDAY PUSH
Matrix WW - Wastewater W - Water	S - Soil SD - Solid L - Liqui	d A - Air Bag	C - Cha	arcoal tube SL -	sludge O - Oil	

- ----

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HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

December 13, 2016

Kyle Summers APEX TITAN 606 S. Rio Grande Unit A Aztec, NM 87410 TEL: (903) 821-5603 FAX

OrderNo.: 1612558

Dear Kyle Summers:

RE: Mudge B 59

Hall Environmental Analysis Laboratory received 2 sample(s) on 12/10/2016 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 <u>www.hallenvironmental.com</u> 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109
Analytical Report Lab Order 1612558 Date Reported: 12/13/2016

Hall Environmental Analysis Laboratory, Inc.

Analyses		Result	PQL Qu	al Units	DF Date Analyzed	Batch
Lab ID:	1612558-001	Matrix:	MEOH (SOIL) Receive	ed Date: 12/10/2016 10:00:00 AM	
Project:	Mudge B 59			Collectio	on Date: 12/9/2016 1:00:00 PM	
CLIENT:	APEX TITAN			Client Sa	nple ID: S-14	
				~		

1100410		ur enno	21	Dave Manay Dea	Dutten
	S			Analyst	TOM
16	9.5	mg/Kg	1	12/12/2016 10:19:25 A	M 29117
ND	48	mg/Kg	1	12/12/2016 10:19:25 A	M 29117
97.1	70-130	%Rec	1	12/12/2016 10:19:25 A	M 29117
θE				Analyst	NSB
ND	21	mg/Kg	5	12/12/2016 11:24:29 A	M 29099
110	68.3-144	%Rec	5	12/12/2016 11:24:29 A	M 29099
				Analyst	NSB
ND	0.10	mg/Kg	5	12/12/2016 11:24:29 AI	M 29099
ND	0.21	mg/Kg	5	12/12/2016 11:24:29 AI	M 29099
ND	0.21	mg/Kg	5	12/12/2016 11:24:29 AI	M 29099
ND	0.41	mg/Kg	5	12/12/2016 11:24:29 AI	M 29099
98.5	80-120	%Rec	5	12/12/2016 11:24:29 AI	M 29099
	E ORGANIC: 16 ND 97.1 SE ND 110 ND ND ND ND ND ND 98.5	E ORGANICS 16 9.5 ND 48 97.1 70-130 SE ND 21 110 68.3-144 ND 0.10 ND 0.21 ND 0.21 ND 0.21 ND 0.21 ND 0.41 98.5 80-120	E ORGANICS 16 9.5 mg/Kg ND 48 mg/Kg 97.1 70-130 %Rec SE ND 21 mg/Kg 110 68.3-144 %Rec ND 0.10 mg/Kg ND 0.21 mg/Kg	ICAN ICAN <thican< th=""> ICAN ICAN <thi< td=""><td>E ORGANICS Analyst 16 9.5 mg/Kg 1 12/12/2016 10:19:25 AI ND 48 mg/Kg 1 12/12/2016 10:19:25 AI 97.1 70-130 %Rec 1 12/12/2016 10:19:25 AI MD 21 mg/Kg 5 12/12/2016 11:24:29 AI MD 0.10 mg/Kg 5 12/12/2016 11:24:29 AI ND 0.21 mg/Kg 5</td></thi<></thican<>	E ORGANICS Analyst 16 9.5 mg/Kg 1 12/12/2016 10:19:25 AI ND 48 mg/Kg 1 12/12/2016 10:19:25 AI 97.1 70-130 %Rec 1 12/12/2016 10:19:25 AI MD 21 mg/Kg 5 12/12/2016 11:24:29 AI MD 0.10 mg/Kg 5 12/12/2016 11:24:29 AI ND 0.21 mg/Kg 5

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method	Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 1 of 5
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	rage rors
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit	t as specified

Analytical Report Lab Order 1612558 Date Reported: 12/13/2016

Hall Environmental Analysis Laboratory, Inc.

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CLIENT:	APEX TITAN		C	lient Sam	ple ID: S-	15	
Project:	Mudge B 59			Collection	Date: 12	/9/2016 1:10:00 PM	
Lab ID:	1612558-002	Matrix:	MEOH (SOIL)	Received	Date: 12	/10/2016 10:00:00 A	M
Analyses		Result	PQL Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015M/D: DIESEL RA	NGE ORGANIC	S			Analy	yst: TOM
Diesel R	ange Organics (DRO)	18	10	ma/Ka	1	12/12/2016 10:40:49	AM 29117

Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	12/12/2016 10:40:49 AM 29117
Surr: DNOP	97.4	70-130	%Rec	1	12/12/2016 10:40:49 AM 29117
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	26	mg/Kg	5	12/12/2016 11:48:10 AM 29099
Surr: BFB	106	68.3-144	%Rec	5	12/12/2016 11:48:10 AM 29099
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.13	mg/Kg	5	12/12/2016 11:48:10 AM 29099
Toluene	ND	0.26	mg/Kg	5	12/12/2016 11:48:10 AM 29099
Ethylbenzene	ND	0.26	mg/Kg	5	12/12/2016 11:48:10 AM 29099
Xylenes, Total	ND	0.52	mg/Kg	5	12/12/2016 11:48:10 AM 29099
Surr: 4-Bromofluorobenzene	101	80-120	%Rec	5	12/12/2016 11:48:10 AM 29099

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

WO#: 1612558

Page 3 of 5

13-Dec-16

Client: APEX TITAN Project: Mudge B 59

Sample ID LCS-29117	mple ID LCS-29117 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 29117	RunNo: 39305						
Prep Date: 12/12/2016	Analysis Date: 12/12/2016	SeqNo: 1230437	Units: mg/Kg					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual					
Diesel Range Organics (DRO)	46 10 50.00	0 92.1 62.6	124					
Surr: DNOP	3.9 5.000	77.4 70	130					
Sample ID MB-29117	Sample ID MB-29117 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 29117	RunNo: 39305						
Prep Date: 12/12/2016	Analysis Date: 12/12/2016	SeqNo: 1230438	Units: mg/Kg					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual					
Diesel Range Organics (DRO)	ND 10							
Motor Oil Range Organics (MRO)	ND 50							
Surr: DNOP	8.0 10.00	80.4 70	130					
Sample ID MB-29055	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics					
Client ID: PBS	Batch ID: 29055	RunNo: 39306						
Prep Date: 12/7/2016	Analysis Date: 12/12/2016	SeqNo: 1230594	Units: %Rec					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual					
Surr: DNOP	10 10.00	104 70	130					
Sample ID LCS-29055	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics					
Client ID: LCSS	Batch ID: 29055	RunNo: 39306						
Prep Date: 12/7/2016	Analysis Date: 12/12/2016	SeqNo: 1230702	Units: %Rec					
Analyta	Posult POI SPK value	SPK Ref Val %REC Low imit	Highl imit %RPD RPDI imit Qual					
Analyte	Result FQL SFR value		Tigheimit /orti D Tti Deimit Qua					

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
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Client: APEX TITAN **Project:** Mudge B 59

-										
Sample ID MB-29099	ble ID MB-29099 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range									
Client ID: PBS	Batch	ID: 29	099	F	unNo: 3	9314				
Prep Date: 12/9/2016	Analysis Da	ate: 12	2/12/2016	S	eqNo: 1	230865	Units: mg/#	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		86.2	68.3	144			
Sample ID LCS-29099	SampTy	/pe: LC	S	Tes	Code: El	PA Method	8015D: Gasc	line Rang	e	
Client ID: LCSS	Batch	ID: 29	099	F	unNo: 3	9314				
Prep Date: 12/9/2016	Analysis Da	ate: 12	2/12/2016	S	eqNo: 1	230866	Units: mg/k	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.0	74.6	123			
Surr: BFB	940		1000		94.2	68.3	144			

Qualifiers:

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

1612558 13-Dec-16

WO#:

Page 4 of 5

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:

-

APEX TITAN Mudge B 59

Sample ID MB-29099	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batch	n ID: 29	099	F	RunNo: 3	9314				
Prep Date: 12/9/2016	Analysis D	ate: 12	2/12/2016	5	SeqNo: 1	230878	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.4	80	120			
Sample ID LCS-29099	SampT	ype: LC	S	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batch	n ID: 29	099	F	RunNo: 3	9314				
Prep Date: 12/9/2016	Analysis D	ate: 12	2/12/2016	S	SeqNo: 1	230879	Units: mg/h	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	109	75.2	115			
Toluene	1.0	0.050	1.000	0	103	80.7	112			
Ethylbenzene	1.0	0.050	1.000	0	99.9	78.9	117			
Xylenes, Total	3.0	0.10	3.000	0	99.4	79.2	115			
Surr: 4-Bromofluorobenzene	1.0		1,000		101	80	120			

Qualifiers:

Value exceeds Maximum Contaminant Level. *

D Sample Diluted Due to Matrix

- Η 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
- Analyte detected in the associated Method Blank В
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL **Reporting Detection Limit** W Sample container temperature is out of limit as specified

Page 5 of 5

1612558 13-Dec-16

WO#:

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental Analys 490 Albuquerg TEL: 505-345-3975 FAX: Website: www.hallenvir	is Laboratory Hawkins NE ue, NM 87109 505-345-4107 onmental.com	Samp	ble Log-In Ch	eck List
Client Name: APEX AZTEC We	ork Order, Number: 1612	558		RcptNo: 1	
Received by/date:	-10/16				
Logged By: Lindsay Mangin 12/10	0/2016 10:00:00 AM	0	Freedry Martin D		
Completed By: Lindsay Mangin 12/12	2/2016 7:19:49 AM	0	fily flags		
Reviewed By: and iz	112116				
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?	Cou	rier			
Log In					
4. Was an attempt made to cool the samples?	Yes		No 📋	NA [.]]	
5. Were all samples received at a temperature of >	0° C to 6.0°C Yes		No 🗔	NA	
6. Sample(s) in proper container(s)?	Ye	3	No 🗌		
7. Sufficient sample volume for indicated test(s)?	Yes		No 🗔		
8. Are samples (except VOA and ONG) properly pre	served? 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:	
(Note discrepancies on chain of custody)	adu? Vas		No 🗇	Adjusted?	Z unless noted)
13. Are mainles correctly identified on chain of custo 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 or	rder? Yes	. []	No 🗋	NA 🗹	
Person Notified:	Date:	annan a na an an Innan al annaidh			
By Whom:	Via: [_] eN	lail [] Phor	ne [] Fax	In Person	
Regarding:					
Client Instructions:	an an a thu sha				
17. Additional remarks:					
18. <u>Cooler Information</u>					
Cooler No Temp °C Condition Seal Int	act Seal No Seal I	Date Si	gned By		
	I				
Page 1 of 1	a and a second second descent for an and a second second				

				C	HAIN OF CUSTODY RECORD
APEX Office Location Project Manager Project Manager Range Project Name Project Project Project Project Project Pro	oratory: <u>Ha</u> // Iress: <u>A</u> R R Itact: <u>A</u> , <i>F</i> <u>r</u> Ine: SO#: Ier's Signature Machine Mac	9 IM C M	ANALYSIS REQUESTED		Temp. of coolers when received (C*): 3,4 1 2 3 4 5 Page of
11090 12 4 3	/		- 5 - 1		/
Matrix Date Time O T I Identifying Marks of S	Sample(s)	VOA MG Jar Jar		/////	Lab Sample ID (Lab Use Only)
5 12/9/16/300 5-14		1	XX		1612568-001
5 12/9/16 1310 5-15		1	XX		-007_
					0.0
	NEC				
Turn around time 🖸 Normal 🖸 25% Rush 🛛 50% I	Rush 2100% Rush				
Belinquished by (Signature) Date: Time:	Received by: (Stigna	ture) Date:	Time: NOTES:	ill Tom	Long
Felinguished by (Signature) Date: Time:	Received by: (Signa	ture) Date:	Time: No	A AFE# N	23923
Relinquished by (Signature) Date: Time:	Received by: Signa	tture) IZIOL Date:	Time:		
					C. M. ANK
Relinquished by (Signature) Date: Time:	Received by Signa	ture) Date:	Time:		SAMEDAT
Matrix WW - Wastewater W - Water S - Soil Container VOA - 40 ml vial A/G - Amber / Or Glass	SD - Solid L - Liquid 1 Liter 250 ml -	d A - Air Bag C - Ch Glass wide mouth P/O -	arcoal tube SL - sludge Plastic or other	0 - 01	

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HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

December 21, 2016

Kyle Summers APEX TITAN 606 S. Rio Grande Unit A Aztec, NM 87410 TEL: (903) 821-5603 FAX

OrderNo.: 1612A47

Dear Kyle Summers:

RE: Mudge B #59

Hall Environmental Analysis Laboratory received 6 sample(s) on 12/20/2016 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 <u>www.hallenvironmental.com</u> 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1612A47 Date Reported: 12/21/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT:	APEX TITAN	Client Sample ID: S-22							
Project:	Mudge B #59			Collectio	n Date: 12	/19/2016 2:30:00 PN	Л		
Lab ID:	1612A47-001	Matrix:	MEOH (SO	IL) Receive	d Date: 12	/20/2016 8:10:00 AN	Ν		
Analyses		Result	PQL (Qual Units	DF	Date Analyzed	Batch		
EPA MET	HOD 8015M/D: DIESEL RANG		s			Analy	/st: TOM		
Diesel R	ange Organics (DRO)	10	9.5	mg/Kg	1	12/20/2016 10:00:24	AM 29292		
Motor Oi	I Range Organics (MRO)	ND	48	mg/Kg	1	12/20/2016 10:00:24	AM 29292		
Surr: [ONOP	126	70-130	%Rec	1	12/20/2016 10:00:24	AM 29292		
EPA MET	HOD 8015D: GASOLINE RAN	GE				Analy	/st: NSB		
Gasoline	Range Organics (GRO)	ND	3.6	mg/Kg	1	12/20/2016 11:54:38	AM 29267		
Surr: E	3FB	102	68.3-144	%Rec	1	12/20/2016 11:54:38	AM 29267		
EPA MET	HOD 8021B: VOLATILES					Analy	/st: NSB		
Benzene		ND	0.018	mg/Kg	1	12/20/2016 11:54:38	AM 29267		
Toluene		ND	0.036	mg/Kg	1	12/20/2016 11:54:38	AM 29267		
Ethylben	zene	ND	0.036	mg/Kg	1	12/20/2016 11:54:38	AM 29267		
Xylenes,	Total	ND	0.072	mg/Kg	1	12/20/2016 11:54:38	AM 29267		
Surr: 4	4-Bromofluorobenzene	102	80-120	%Rec	1	12/20/2016 11:54:38	AM 29267		

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 11
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report				
Lab Order 1612A47				
Date Reported: 12/21/2016				

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN Project: Mudge B #59		(Client Samp Collection	ole ID: S-2 Date: 12	21 /19/2016 2:35:00 PM	[
Lab ID: 1612A47-002	Matrix:	MEOH (SOIL)	Received	Date: 12	/20/2016 8:10:00 AM	ſ
Analyses	Result	PQL Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: TO						
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	12/20/2016 10:22:04	AM 29292
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	12/20/2016 10:22:04	AM 29292
Surr: DNOP	89.8	70-130	%Rec	1	12/20/2016 10:22:04	AM 29292
EPA METHOD 8015D: GASOLINE RANG	E				Analy	st: NSB
Gasoline Range Organics (GRO)	ND	3.6	mg/Kg	1	12/20/2016 12:18:16	PM 29267
Surr: BFB	127	68.3-144	%Rec	1	12/20/2016 12:18:16	PM 29267
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.018	mg/Kg	1	12/20/2016 12:18:16	PM 29267
Toluene	ND	0.036	mg/Kg	1	12/20/2016 12:18:16	PM 29267
Ethylbenzene	ND	0.036	mg/Kg	1	12/20/2016 12:18:16	PM 29267
Xylenes, Total	ND	0.072	mg/Kg	1	12/20/2016 12:18:16	PM 29267
Surr: 4-Bromofluorobenzene	104	80-120	%Rec	1	12/20/2016 12:18:16	PM 29267

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Η	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 11
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1612A47

Date Reported: 12/21/2016

12/20/2016 12:41:46 PM 29267

12/20/2016 12:41:46 PM 29267

Hall Environmental Analysis Laboratory, Inc.

Xylenes, Total

Surr: 4-Bromofluorobenzene

		C	lient Samp	ole ID: S-	16	
			Collection	Date: 12	/19/2016 2:45:00 PM	Л
Matrix:	MEOH (SO	IL)	Received	Date: 12	/20/2016 8:10:00 AM	M
Result	PQL (Qual	Units	DF	Date Analyzed	Batch
	cs				Analy	yst: TOM
12	10		mg/Kg	1	12/20/2016 10:43:32	AM 29292
ND	50		mg/Kg	1	12/20/2016 10:43:32	AM 29292
92.7	70-130		%Rec	1	12/20/2016 10:43:32	AM 29292
IGE					Analy	/st: NSB
20	4.7		mg/Kg	1	12/20/2016 12:41:46	PM 29267
201	68.3-144	S	%Rec	1	12/20/2016 12:41:46	PM 29267
					Analy	/st: NSB
ND	0.024		mg/Kg	1	12/20/2016 12:41:46	PM 29267
ND	0.047		mg/Kg	1	12/20/2016 12:41:46	PM 29267
0.055	0.047		mg/Kg	1	12/20/2016 12:41:46	PM 29267
	Matrix: Result GE ORGANIC 12 ND 92.7 IGE 20 201 ND ND 0.055	Matrix: MEOH (SO Result PQL 0 SE ORGANICS 12 10 ND 50 92.7 70-130 IGE 20 4.7 201 68.3-144 ND 0.024 ND 0.024 ND 0.047 0.055 0.047	Cl Matrix: MEOH (SOIL) Result PQL Qual GE ORGANICS 12 10 ND 50 92.7 70-130 IGE 20 4.7 201 68.3-144 S ND 0.024 ND 0.024 ND 0.047 0.055 0.047	Client Samp Collection Matrix: MEOH (SOIL) Received Result PQL Qual Units GE ORGANICS 12 10 mg/Kg 92.7 70-130 %Rec 13 4.7 mg/Kg 201 68.3-144 S %Rec ND 0.024 mg/Kg ND 0.047 mg/Kg 0.055 0.047 mg/Kg	Client Sample ID: S- Collection Date: 12 Matrix: MEOH (SOIL) Received Date: 12 Result PQL Qual Units DF GE ORGANICS 12 10 mg/Kg 1 ND 50 mg/Kg 1 92.7 70-130 %Rec 1 IGE 20 4.7 mg/Kg 1 ND 0.024 mg/Kg 1 ND 0.024 mg/Kg 1 ND 0.047 mg/Kg 1 ND 0.047 mg/Kg 1 ND 0.047 mg/Kg 1	Client Sample ID: S-16 Collection Date: 12/19/2016 2:45:00 PM Matrix: MEOH (SOIL) Received Date: 12/20/2016 8:10:00 AI Result PQL Qual Units DF Date Analyzed GE ORGANICS Analy 12 10 mg/Kg 1 12/20/2016 10:43:32 ND 50 mg/Kg 1 12/20/2016 10:43:32 92.7 70-130 %Rec 1 12/20/2016 10:43:32 QGE Analy 20 4.7 mg/Kg 1 12/20/2016 12:41:46 201 68.3-144 S %Rec 1 12/20/2016 12:41:46 ND 0.024 mg/Kg 1 12/20/2016 12:41:46 Analy ND 0.047 mg/Kg 1 12/20/2016 12:41:46 Analy ND 0.047 mg/Kg 1 12/20/2016 12:41:46 Analy ND 0.047 mg/Kg 1 12/20/2016 12:41:46 Analy

0.095

80-120

mg/Kg

%Rec

1

1

0.55

109

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 11
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report					
Lab Order 1612A47					
Date Reported: 12/21/2016					

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN	Client Sample ID: S-17							
Project: Mudge B #59				Collection	Date: 12	/19/2016 3:20:00 PM	1	
Lab ID: 1612A47-004	Matrix:	MEOH (SO	OIL)	Received	Date: 12	/20/2016 8:10:00 AN	1	
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch	
EPA METHOD 8015M/D: DIESEL RANG		s				Analy	st: TOM	
Diesel Range Organics (DRO)	63	9.7		mg/Kg	1	12/20/2016 11:04:55	AM 29292	
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/20/2016 11:04:55	AM 29292	
Surr: DNOP	94.2	70-130		%Rec	1	12/20/2016 11:04:55	AM 29292	
EPA METHOD 8015D: GASOLINE RAN	GE					Analy	st: NSB	
Gasoline Range Organics (GRO)	32	3.7		mg/Kg	1	12/20/2016 1:05:09 F	M 29267	
Surr: BFB	542	68.3-144	S	%Rec	1	12/20/2016 1:05:09 P	M 29267	
EPA METHOD 8021B: VOLATILES						Analy	st: NSB	
Benzene	0.040	0.018		mg/Kg	1	12/20/2016 1:05:09 P	M 29267	
Toluene	ND	0.037		mg/Kg	1	12/20/2016 1:05:09 P	M 29267	
Ethylbenzene	ND	0.037		mg/Kg	1	12/20/2016 1:05:09 P	M 29267	
Xylenes, Total	ND	0.074		mg/Kg	1	12/20/2016 1:05:09 P	M 29267	
Surr: 4-Bromofluorobenzene	114	80-120		%Rec	1	12/20/2016 1:05:09 P	M 29267	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 11
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report Lab Order 1612A47 Date Reported: 12/21/2016

12/20/2016 12:29:13 PM B39532

12/20/2016 12:29:13 PM B39532

12/20/2016 12:29:13 PM B39532

Hall Environmental Analysis Laboratory, Inc.

Ethylbenzene

Xylenes, Total

Surr: 4-Bromofluorobenzene

CLIENT: APEX TITAN		(lient Sam	ole ID: S-	18	
Project: Mudge B #59			Collection	Date: 12	/19/2016 3:30:00 PM	
Lab ID: 1612A47-005	Matrix:	MEOH (SOIL)	Received	Date: 12	/20/2016 8:10:00 AM	[
Analyses	Result	PQL Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analys	st: TOM
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	12/20/2016 11:26:30	AM 29292
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	12/20/2016 11:26:30	AM 29292
Surr: DNOP	92.4	70-130	%Rec	1	12/20/2016 11:26:30	AM 29292
EPA METHOD 8015D: GASOLINE RAM	NGE				Analys	st: NSB
Gasoline Range Organics (GRO)	ND	4.5	mg/Kg	1	12/20/2016 12:29:13 F	PM G39532
Surr: BFB	88.6	68.3-144	%Rec	1	12/20/2016 12:29:13 F	PM G39532
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.022	mg/Kg	1	12/20/2016 12:29:13 F	PM B39532
Toluene	ND	0.045	mg/Kg	1	12/20/2016 12:29:13 F	PM B39532

0.045

0.090

80-120

ND

ND

96.2

mg/Kg

mg/Kg

%Rec

1

1

1

l Blank
^S Page 5 of 11
1 age 5 01 11
nit as specified

Analytical Report
Lab Order 1612A47
Date Reported: 12/21/2016

Hall Environmental Analysis Laboratory, Inc.

EPA METHOD 8015D: GASOLINE RANGE

Gasoline Range Organics (GRO)

Surr: BFB

CLIENT:	APEX TITAN		(Client Sam	ole ID: S-	19	
Project:	Mudge B #59			Collection	Date: 12	/19/2016 3:50:00 P	М
Lab ID:	1612A47-006	Matrix:	MEOH (SOIL)	Received	Date: 12	/20/2016 8:10:00 A	Μ
Analyses		Result	PQL Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015M/D: DIESEL I	RANGE ORGANIC	S			Anal	lyst: TOM
Diesel R	ange Organics (DRO)	ND	10	mg/Kg	1	12/20/2016 11:47:56	5 AM 29292
Motor Oi	I Range Organics (MRO)	ND	50	mg/Kg	1	12/20/2016 11:47:56	6 AM 29292
Surr: I	DNOP	91.8	70-130	%Rec	1	12/20/2016 11:47:56	5 AM 29292

ND

89.4

Analyst: NSB

Analyst: NSB

12/20/2016 12:53:40 PM G39532

12/20/2016 12:53:40 PM G39532

EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.022	mg/Kg	1	12/20/2016 12:53:40 PM B39532
Toluene	ND	0.044	mg/Kg	1	12/20/2016 12:53:40 PM B39532
Ethylbenzene	ND	0.044	mg/Kg	1	12/20/2016 12:53:40 PM B39532
Xylenes, Total	ND	0.089	mg/Kg	1	12/20/2016 12:53:40 PM B39532
Surr: 4-Bromofluorobenzene	97.9	80-120	%Rec	1	12/20/2016 12:53:40 PM B39532

4.4

68.3-144

mg/Kg

%Rec

1

1

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 11
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

WO#: 1612A47

21-Dec-16

Hall Environmental Analysis Laboratory, Inc.

Client:APEX TITANProject:Mudge B #59

11

Sample ID LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 2221 RunNo: 39526 Prep Date: 12/20/2016 Analytis Date: 12/20/2016 SeqNo: 1237875 Units: %Rec Analyte Result POL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Sample ID LCS-28292 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analytis SeqNo: 1237876 Units: mg/Kg Analyte Result POL SPK value SeqNo: 1237876 Units: mg/Kg Analyte Result POL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Sarr: DNOP 4.7 5.000 9.1 63.	Sample ID LCS-29291 Client ID: LCSS	SampType: L Batch ID: 2	.cs	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: LCSS Batch ID: 2291 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237875 Units: %Rec Analyte Result POL SPK Value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Sample ID LCS-29292 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 29292 RunNo: 38626 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237876 Units: mg/Kg Analyte Result POL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 45 10 50.00 9.31 70 130 Sample ID MB-29291 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS <t< td=""><th>Client ID: LCSS</th><td>Batch ID: 2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Client ID: LCSS	Batch ID: 2								
Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237875 Units: %Rec Analyte Result PQL SPK Value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Sur:::DNOP 4.5 5.000 90.9 70 130 Sample ID LCS-29292 SampType:: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237876 Units:: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 45 10 50.00 93.1 70 130 Sample ID MB-29291 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29291 RunNo: 39526 Prep Date: 12/			9291	F	RunNo: 3	9526				
Analyte Result PQL SPK value SPK ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Sur: DNOP 4.5 5.000 90.9 70 130 Sample ID LCS-29292 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237876 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Disel Range Organics (DR0) 45 10 50.00 9.1 63.8 116 Sum: DNOP 4.7 5.000 93.1 70 130 Sample ID MB-29291 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29292 RunNo: 39526	Prep Date: 12/20/2016	Analysis Date:	12/20/2016	5	SeqNo: 1	237875	Units: %Re	с		
Surr: DNOP 4.5 5.000 90.9 70 130 Sample ID LCS-29292 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Cilent ID: LCSS Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237876 Units: mg/Kg Analyte Result POL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 45 10 5.000 90.1 63.8 116 Sur: DNOP 4.7 5.000 93.1 70 130 Sample ID MB-29291 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29291 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237877 Units: mg/Kg Analyte Result POL SPK value SPK Kef Val %REC LowLimit HighLimit %RPD RPDLimit Q	Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sample ID LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237876 Units: mg/Kg Analyte Result PQL SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 45 10 50.00 0 93.1 70 130 Sample ID MB-29291 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29291 RunNo: 39526 Prep Date: 12/20/2016 Analyte Result POL SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Surr. DNOP 9.2 10.00 91.9 70 130 Sample ID MB-29292 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Clie	Surr: DNOP	4.5	5.000		90.9	70	130			
Client ID: LCSS Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237876 Units: mg/Kg Analyte Result PQL SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 45 10 50.00 0 93.1 70 130 Sample ID MB-29291 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29291 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237877 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Sur:: DNOP 9.2 10.00 91.9 70 130 Sample ID MB-29292 SampType:	Sample ID LCS-29292	SampType: L	.CS	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237876 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 45 10 50.00 90.1 63.8 116 Surr. DNOP 4.7 5.000 93.1 70 130 Sample ID MB-29291 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PPS Batch ID: 29291 RunNo: 39526 Prep Date: 12/20/2016 SeqNo: 1237877 Units: %Rec Analyte Result PQL SPK value SPK value SPK value SPK value SPK Sur: DNOP 9.2 10.00 91.9 70 130 Sample ID MB-29292 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: Result PQL S	Client ID: LCSS	Batch ID: 2	9292	F	RunNo: 3	9526				
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 45 10 50.00 0 90.1 63.8 116 Surr: DNOP 4.7 5.000 93.1 70 130 Sample ID MB-29291 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29291 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237877 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Sur::DNOP 9.2 10.00 91.9 70 130 Sample ID MB-29292 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29292 Ru	Prep Date: 12/20/2016	Analysis Date:	12/20/2016	5	SeqNo: 1	237876	Units: mg/k	(g		
Diesel Range Organics (DRO) 45 10 50.00 0 90.1 63.8 116 Surr: DNOP 4.7 5.000 93.1 70 130 Sample ID MB-29291 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29291 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237877 Units: %Rec Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Surr: DNOP 9.2 10.00 91.9 70 130 30 Sample ID MB-29292 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237879 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual<	Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP4.75.00093.170130Sample IDMB-29291SampType:MBLKTestCode:EPA Method 8015M/D: Diesel Range OrganicsCilent ID:PBSBatch ID:29291RunNo:39526Prep Date:12/20/2016Analysis Date:12/20/2016SeqNo:1237877Units:%RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualSurr: DNOP9.210.0091.97013030303030Sample IDMB-29292SampType:MBLKTestCode:EPA Method 8015M/D: Diesel Range OrganicsCilent ID:PBSBatch ID:29292RunNo:39526Prep Date:12/20/2016Analysis Date:12/20/2016SeqNo:1237879Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualDiesel Range Organics (MRO)ND1050Sur:: DNOP9.310.0093.270130Sample ID1612A47-001AMSSampType:MSTestCode:EPA Method 8015M/D: Diesel Range OrganicsClient ID:S-2Batch ID:29292RunNo:3952670130Sample ID1612A47-001AMSSampType:MSTestCode:EPA Method 8015M/D: Diesel Range OrganicsClient ID:S-22Batch ID:29292RunNo:39526 <t< td=""><th>Diesel Range Organics (DRO)</th><td>45 1</td><td>50.00</td><td>0</td><td>90.1</td><td>63.8</td><td>116</td><td></td><td></td><td></td></t<>	Diesel Range Organics (DRO)	45 1	50.00	0	90.1	63.8	116			
Sample ID MB-29291 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29291 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237877 Units: %Rec Analyte Result PQL SPK value SPK Kef Val %REC LowLimit HighLimit %RPD RPDLimit Qual Surr: DNOP 9.2 10.00 91.9 70 130 30 Sample ID MB-29292 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237879 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (MRO) ND 50 Surr: DNOP 9.3 10.00 93.2 <td< td=""><th>Surr: DNOP</th><td>4.7</td><td>5.000</td><td></td><td>93.1</td><td>70</td><td>130</td><td></td><td></td><td></td></td<>	Surr: DNOP	4.7	5.000		93.1	70	130			
Client ID: PBS Batch ID: 29291 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237877 Units: %Rec Analyte Result PQL SPK value SPK Kef Val %REC LowLimit HighLimit %RPD RPDLimit Qual Surr: DNOP 9.2 10.00 91.9 70 130 130 Sample ID MB-29292 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237879 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) ND 10 ND Sample ID 1612A47-001AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292	Sample ID MB-29291	SampType:	IBLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Prep Date:12/20/2016Analysis Date:12/20/2016SeqNo:1237877Units:%RecAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualSurr: DNOP9.210.0091.970130 </td <th>Client ID: PBS</th> <td>Batch ID: 2</td> <td>9291</td> <td>F</td> <td>RunNo: 3</td> <td>9526</td> <td></td> <td></td> <td></td> <td></td>	Client ID: PBS	Batch ID: 2	9291	F	RunNo: 3	9526				
AnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualSurr. DNOP9.210.0091.970130Sample IDMB-29292SampType:MBLKTestCode:EPA Method 8015M/D:Diesel Range OrganicsClient ID:PBSBatch ID:29292RunNo:39526Prep Date:12/20/2016Analysis Date:12/20/2016SeqNo:1237879Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualDiesel Range Organics (DRO)ND10ND50Surr: DNOP9.310.0093.270130Sample ID1612A47-001AMSSampType:MSTestCode:EPA Method 8015M/D:Diesel Range OrganicsClient ID:S-22Batch ID:29292RunNo:39526Prep Date:12/20/2016Analysis Date:12/20/2016SeqNo:1238548Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualDiesel Range Organics (DRO)469.848.8810.3073.451.6130Surr: DNOP4.84.88898.370130Sample ID1612A47-001AMSDSampType:MSDTestCode:EPA Method 8015M/D:Diesel Range OrganicsClient ID:SampType:MSD <td< td=""><th>Prep Date: 12/20/2016</th><td>Analysis Date:</td><td>12/20/2016</td><td>5</td><td>SeqNo: 1</td><td>237877</td><td>Units: %Re</td><td>с</td><td></td><td></td></td<>	Prep Date: 12/20/2016	Analysis Date:	12/20/2016	5	SeqNo: 1	237877	Units: %Re	с		
Surr: DNOP9.210.0091.970130Sample IDMB-29292SampType:MBLKTestCode:EPA Method 8015M/D: Diesel Range OrganicsClient ID:PBSBatch ID:29292RunNo:39526Prep Date:12/20/2016Analysis Date:12/20/2016SeqNo:1237879Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualDiesel Range Organics (DRO)ND10ND50Surr: DNOP9.310.0093.270130Sample ID1612A47-001AMSSampType:MSTestCode:EPA Method 8015M/D: Diesel Range OrganicsClient ID:S9526Prep Date:12/20/2016Analysis Date:12/20/2016SeqNo:1238548Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualDiesel Range Organics (DRO)469.848.8810.3073.451.6130Surr: DNOP4.84.88898.370130Sample ID1612A47-001AMSDSampType:MSDTestCode:EPA Method 8015M/D: Diesel Range OrganicsClient ID:S-22Batch ID:29292RunNo:39526130Sample ID1612A47-001AMSDSampType:MSDTestCode:EPA Method 8015M/D: Diesel Range OrganicsClient ID:S-22Batch ID:29292 <th>Analyte</th> <td>Result PQL</td> <td>SPK value</td> <td>SPK Ref Val</td> <td>%REC</td> <td>LowLimit</td> <td>HighLimit</td> <td>%RPD</td> <td>RPDLimit</td> <td>Qual</td>	Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sample ID MB-29292 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237879 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) ND 10 Qual Qual	Surr: DNOP	9.2	10.00		91.9	70	130			
Client ID: PBS Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1237879 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) ND 10 10 ND 50 Sur: DNOP 9.3 10.00 93.2 70 130 130 Sample ID 1612A47-001AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1238548 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 46 9.8 48.88 10.30 73.4 51.6 130 Surr: DNOP 4.8 4.888	Sample ID MB-29292	SampType:	IBLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Prep Date:12/20/2016Analysis Date:12/20/2016SeqNo:1237879Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualDiesel Range Organics (DRO)ND10Motor Oil Range Organics (MRO)ND50Surr: DNOP9.310.0093.270130Sample ID1612A47-001AMSSampType:MSTestCode:EPA Method 8015M/D:Diesel Range OrganicsClient ID:S-22Batch ID:29292RunNo:39526Prep Date:12/20/2016Analysis Date:12/20/2016SeqNo:1238548Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualDiesel Range Organics (DRO)469.848.8810.3073.451.6130Surr: DNOP4.84.88898.370130Sample ID1612A47-001AMSDSampType:MSDTestCode:EPA Method 8015M/D:Diesel Range OrganicsClient ID:SampType:SampType:Result98.370130Sample ID1612A47-001AMSDSampType:MSDTestCode:EPA Method 8015M/D:Diesel Range OrganicsSample ID1612A47-001AMSDSampType:MSDTestCode:EPA Method 8015M/D:Diesel Range OrganicsClient ID:S-22Batch ID:29292RunNo:39526SampType:<	Client ID: PBS	Batch ID: 2	9292	F	RunNo: 3	9526				
AnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualDiesel Range Organics (DRO)ND10Motor Oil Range Organics (MRO)ND50Surr: DNOP9.310.0093.270130Sample ID1612A47-001AMSSampType:MSTestCode:EPA Method 8015M/D:Diesel Range OrganicsClient ID:S-22Batch ID:29292RunNo:39526Prep Date:12/20/2016Analysis Date:12/20/2016SeqNo:1238548Units:mg/KgAnalyteResultPQLSPK valueSPK Ref Val%RECLowLimitHighLimit%RPDRPDLimitQualDiesel Range Organics (DRO)469.848.8810.3073.451.6130<	Prep Date: 12/20/2016	Analysis Date:	12/20/2016	5	SeqNo: 1	237879	Units: mg/k	٢g		
Diesel Range Organics (DRO) ND 10 Motor Oil Range Organics (MRO) ND 50 Surr: DNOP 9.3 10.00 93.2 70 130 Sample ID 1612A47-001AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1238548 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 46 9.8 48.88 10.30 73.4 51.6 130 Sur: DNOP 4.8 4.888 98.3 70 130 130 Sample ID 1612A47-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292 RunNo: 39526	Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Motor Oil Range Organics (MRO) ND 50 Surr: DNOP 9.3 10.00 93.2 70 130 Sample ID 1612A47-001AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1238548 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 46 9.8 48.88 10.30 73.4 51.6 130 Sur: DNOP 4.8 4.888 98.3 70 130 130 Sample ID 1612A47-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: \$-22 Batch ID: 29292 RunNo: 39526	Diesel Range Organics (DRO)	ND 1	0							
Surr: DNOP 9.3 10.00 93.2 70 130 Sample ID 1612A47-001AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1238548 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 46 9.8 48.88 10.30 73.4 51.6 130 Surr: DNOP 4.8 4.888 98.3 70 130 130 Sample ID 1612A47-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292 RunNo: 39526	Motor Oil Range Organics (MRO)	ND 5	0							
Sample ID 1612A47-001AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1238548 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val % REC LowLimit HighLimit % RPD RPDLimit Qual Diesel Range Organics (DRO) 46 9.8 48.88 10.30 73.4 51.6 130 Surr: DNOP 4.8 4.888 98.3 70 130 130 Sample ID 1612A47-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: \$-22 Batch ID: 29292 RunNo: 39526	Surr: DNOP	9.3	10.00		93.2	70	130			
Client ID: S-22 Batch ID: 29292 RunNo: 39526 Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1238548 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 46 9.8 48.88 10.30 73.4 51.6 130 Surr: DNOP 4.8 4.888 98.3 70 130 130 Sample ID 1612A47-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: \$-22 Batch ID: 29292 RunNo: 39526	Sample ID 1612A47-001AN	IS SampType: N	IS	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1238548 Units: mg/Kg Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 46 9.8 48.88 10.30 73.4 51.6 130 Surr: DNOP 4.8 4.888 98.3 70 130 130 Sample ID 1612A47-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292 RunNo: 39526	Client ID: S-22	Batch ID: 2	9292	F	RunNo: 3	9526				
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Diesel Range Organics (DRO) 46 9.8 48.88 10.30 73.4 51.6 130 Surr: DNOP 4.8 4.888 98.3 70 130 130 Sample ID 1612A47-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: \$-22 Batch ID: 29292 RunNo: 39526	Prep Date: 12/20/2016	Analysis Date:	12/20/2016	5	SeqNo: 1	238548	Units: mg/k	(g		
Diesel Range Organics (DRO) 46 9.8 48.88 10.30 73.4 51.6 130 Surr: DNOP 4.8 4.888 98.3 70 130 Sample ID 1612A47-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292 RunNo: 39526	Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP 4.8 4.888 98.3 70 130 Sample ID 1612A47-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292 RunNo: 39526	Diesel Range Organics (DRO)	46 9.8	48.88	10.30	73.4	51.6	130			
Sample ID 1612A47-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: S-22 Batch ID: 29292 RunNo: 39526	Surr: DNOP	4.8	4.888		98.3	70	130			
Client ID: S-22 Batch ID: 29292 RunNo: 39526	Sample ID 1612A47-001AN	ISD SampType: N	ISD	Tes	tCode: El	PA Method	8015M/D: Di	esel Range	e Organics	
	Client ID: S-22	Batch ID: 2	9292	F	anNo: 3	9526				
Prep Date: 12/20/2016 Analysis Date: 12/20/2016 SeqNo: 1238549 Units: mg/Kg	Prep Date: 12/20/2016	Analysis Date:	12/20/2016	S	eqNo: 1	238549	Units: mg/M	(g		
	Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual	Diesel Range Organics (DRO)	62 9.3	46.60	10.30	110	51.6	130	28.4	20	R

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
- W Sample container temperature is out of limit as specified

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		WO#:

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Hall Environmental	Analysis	Laboratory,	Inc
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Client: Project:

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APEX TITAN Mudge B #59

Sample ID	1612A47-001AMSE	SampTy	pe: M	SD	Tes	Code: E	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	S-22	Batch I	D: 29	292	F	unNo: 3	9526				
Prep Date:	12/20/2016	Analysis Da	te: 1	2/20/2016	S	eqNo: 1	238549	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		10		4.660		224	70	130	0	0	S
Sample ID	LCS-29273	SampTy	pe: LC	s	Tes	Code: E	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	LCSS	Batch I	D: 29	273	F	unNo: 3	9526				
Prep Date:	12/19/2016	Analysis Da	te: 1	2/20/2016	S	eqNo: 1	238583	Units: %Ree	C		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		4.7		5.000		94.4	70	130			
Sample ID	MB-29273	SampTy	pe: MI	BLK	Tes	Code: E	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	PBS	Batch I	D: 29	273	F	unNo: 3	9526				
Prep Date:	12/19/2016	Analysis Da	te: 1	2/20/2016	S	eqNo: 1	238584	Units: %Ree	C		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		10		10.00		99.6	70	130			

Qualifiers:

Value exceeds Maximum Contaminant Level. *

D Sample Diluted Due to Matrix

- Н 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
- Analyte detected in the associated Method Blank В
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Reporting Detection Limit RL
- W Sample container temperature is out of limit as specified

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WO#: 1612A47

Hall	Environmen	tal A	nalysi	is La	bora	tory,	Inc
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Client: Project: Mudge B #59

APEX TITAN

Sample ID	MB-29267	SampTy	pe: MI	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID:	PBS	Batch	D: 29	267	F	RunNo: 39	9531				
Prep Date:	12/19/2016	Analysis Da	te: 1	2/20/2016	5	SeqNo: 12	238284	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	ND	5.0								
Surr: BFB		860		1000		86.3	. 68.3	144			
Sample ID	LCS-29267	SampTy	pe: LC	s	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID:	LCSS	Batch	D: 29	267	F	RunNo: 39	9531				
Prep Date:	12/19/2016	Analysis Da	te: 1	2/20/2016	5	SeqNo: 12	238285	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	26	5.0	25.00	0	103	74.6	123			
Surr: BFB		970		1000		97.0	68.3	144			
Sample ID	RB	SampTy	pe: MI	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID:	PBS	Batch	D: G:	39532	F	RunNo: 39	9532				
Prep Date:		Analysis Da	te: 1	2/20/2016	S	SeqNo: 12	238355	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	ND	5.0								
Surr: BFB		830		1000		83.3	68.3	144			
Sample ID	2.5UG GRO LCS	SampTy	pe: LC	s	Tes	tCode: EF	PA Method	8015D: Gaso	line Rang	e	
Client ID:	LCSS	Batch I	D: G:	39532	R	unNo: 39	9532				
Prep Date:		Analysis Da	te: 1	2/20/2016	S	eqNo: 12	238356	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	28	5.0	25.00	0	113	74.6	123			
Surr: BFB		940		1000		94.4	68.3	144			
Sample ID	MB-29268	SampTy	oe: MI	BLK	Tes	Code: EP	PA Method	8015D: Gaso	line Rang	e	
Client ID:	PBS	Batch I	D: 29	268	R	unNo: 39	9532				
Prep Date:	12/19/2016	Analysis Da	te: 12	2/20/2016	S	eqNo: 12	238359	Units: %Rec	;		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		890		1000		89.2	68.3	144			
Sample ID	LCS-29268	SampTy	be: LC	s	Test	Code: EP	PA Method	8015D: Gaso	line Rang	e	
Client ID:	LCSS	Batch I	D: 29	268	R	unNo: 39	9532				
Prep Date:	12/19/2016	Analysis Da	te: 1	2/20/2016	S	eqNo: 12	238360	Units: %Rec	:		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		880		1000		88.0	68.3	144			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

- Holding times for preparation or analysis exceeded Η
- Not Detected at the Reporting Limit ND
- RPD outside accepted recovery limits R
- S % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified

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QC	SL	IMMA	RY	REP	ORT	

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Hall	Environmental	Analysis	Laboratory,	Inc.
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Client:APEX TITANProject:Mudge B #59

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Sample ID	MB-29267	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID:	PBS	Batch	ID: 29	267	F	RunNo: 3	9531				
Prep Date:	12/19/2016	Analysis D	ate: 12	2/20/2016	S	SeqNo: 1	238317	Units: mg/M	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		ND	0.025								
Toluene		ND	0.050								
Ethylbenzene		ND	0.050								
Xylenes, Total		ND	0.10								
Surr: 4-Brom	nofluorobenzene	0.96		1.000		96.5	80	120			
Sample ID	LCS-29267	SampT	ype: LC	s	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID:	LCSS	Batch	ID: 29	267	F	RunNo: 3	9531				
Prep Date:	12/19/2016	Analysis D	ate: 12	2/20/2016	5	SeqNo: 1	238318	Units: mg/k	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		1.2	0.025	1.000	0	117	75.2	115			S
Toluene		1.0	0.050	1.000	0	103	80.7	112			
Ethylbenzene		1.0	0.050	1.000	0	100	78.9	117			
Xylenes, Total		3.0	0.10	3.000	0	100	79.2	115			
Surr: 4-Brom	ofluorobenzene	1.0		1.000		99.8	80	120			
Sample ID	RB	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Sample ID Client ID:	RB PBS	SampT Batch	ype: ME	3LK 9532	Tes	tCode: El	PA Method 9532	8021B: Volat	tiles		
Sample ID Client ID: Prep Date:	RB PBS	SampT Batch Analysis D	ype: ME ID: B3 ate: 12	3LK 9532 2/20/2016	Tes F	tCode: El RunNo: 3 SeqNo: 1	PA Method 9532 238384	8021B: Volat	tiles		
Sample ID Client ID: Prep Date: Analyte	RB PBS	SampT Batch Analysis D Result	ype: ME 1D: B3 ate: 12 PQL	3LK 9532 2/20/2016 SPK value	Tes F इ SPK Ref Val	tCode: El RunNo: 3 SeqNo: 1 %REC	PA Method 9532 238384 LowLimit	8021B: Volat Units: mg/K HighLimit	tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene	RB PBS	SampT Batch Analysis D Result ND	ype: ME ID: B3 ate: 12 PQL 0.025	3LK 9532 2/20/2016 SPK value	Tes F SPK Ref Val	tCode: El RunNo: 3 SeqNo: 1 %REC	PA Method 9532 238384 LowLimit	8021B: Volat Units: mg/K HighLimit	tiles Kg %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene	RB PBS	SampT Batch Analysis D Result ND ND	ype: ME 1D: B3 ate: 12 PQL 0.025 0.050	3LK 9532 2/20/2016 SPK value	Tes F SPK Ref Val	tCode: El RunNo: 3: SeqNo: 1: %REC	PA Method 9532 238384 LowLimit	8021B: Volat Units: mg/K HighLimit	tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene	RB PBS	SampT Batch Analysis D Result ND ND ND	ype: ME a ID: B3 ate: 12 PQL 0.025 0.050 0.050	3LK 9532 2/20/2016 SPK value	Tes F SPK Ref Val	tCode: El RunNo: 3 SeqNo: 1 %REC	PA Method 9532 238384 LowLimit	8021B: Volat Units: mg/K HighLimit	tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total	RB PBS	SampT Batch Analysis D Result ND ND ND ND ND	ype: ME 1D: B3 ate: 12 PQL 0.025 0.050 0.050 0.10	3LK 9532 2/20/2016 SPK value	Tes F SPK Ref Val	tCode: El RunNo: 3 SeqNo: 1: %REC	PA Method 9532 238384 LowLimit	8021B: Volat Units: mg/K HighLimit	tiles Sg %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom	RB PBS	SampT Batch Analysis D Result ND ND ND 0.89	ype: ME ID: B3 ate: 12 PQL 0.025 0.050 0.050 0.10	3LK 9532 2/20/2016 SPK value 1.000	Tes F SPK Ref Val	tCode: El RunNo: 3 SeqNo: 1 %REC 88.6	PA Method 9532 238384 LowLimit 80	8021B: Volat Units: mg/K HighLimit 120	tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID	RB PBS nofluorobenzene 100NG BTEX LCS	SampT Batch Analysis D Result ND ND ND ND 0.89 SampT	ype: ME D: B3 ate: 12 PQL 0.025 0.050 0.050 0.10 ype: LC	BLK 99532 2/20/2016 SPK value 1.000	Tes F SPK Ref Val Tes	tCode: El RunNo: 3: SeqNo: 1: %REC 88.6 tCode: El	PA Method 9532 238384 LowLimit 80 PA Method	8021B: Volat Units: mg/K HighLimit 120 8021B: Volat	tiles %RPD tiles	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID:	RB PBS nofluorobenzene 100NG BTEX LCS LCSS	SampT Batch Analysis D Result ND ND ND 0.89 SampT Batch	ype: ME alD: B3 ate: 12 0.025 0.050 0.050 0.050 0.10 ype: LC alD: B3	3LK 99532 2/20/2016 SPK value 1.000 S 9532	Tes F SPK Ref Val Tes F	tCode: El RunNo: 3 SeqNo: 1 %REC 88.6 tCode: El RunNo: 3	PA Method 9532 238384 LowLimit 80 PA Method 9532	8021B: Volat Units: mg/K HighLimit 120 8021B: Volat	tiles %RPD tiles	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date:	RB PBS nofluorobenzene 100NG BTEX LCS LCSS	SampT Batch Analysis D Result ND ND ND ND 0.89 SampT Batch Analysis D	ype: ME ale: 12 PQL 0.025 0.050 0.050 0.050 0.10 ype: LC alb: B3 ate: 12	3LK 9532 2/20/2016 SPK value 1.000 :S 9532 2/20/2016	Tes F SPK Ref Val Tes F	tCode: El RunNo: 3 SeqNo: 1 %REC 88.6 tCode: El RunNo: 3 SeqNo: 1	PA Method 9532 238384 LowLimit 80 PA Method 9532 238385	8021B: Volat Units: mg/K HighLimit 120 8021B: Volat Units: mg/K	tiles (g %RPD tiles	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Sur: 4-Brom Sample ID Client ID: Prep Date: Analyte	RB PBS nofluorobenzene 100NG BTEX LCS LCSS	SampT Batch Analysis D Result ND ND ND 0.89 SampT Batch Analysis D Result	ype: ME alD: B3 ate: 12 0.025 0.050 0.050 0.050 0.10 ype: LC alD: B3 ate: 12 PQL	3LK 99532 2/20/2016 SPK value 1.000 35 9532 2/20/2016 SPK value	Tes SPK Ref Val Tes SPK Ref Val	tCode: El RunNo: 3 SeqNo: 1 %REC 88.6 tCode: El RunNo: 3 SeqNo: 1 %REC	PA Method 9532 238384 LowLimit 80 PA Method 9532 238385 LowLimit	8021B: Volat Units: mg/K HighLimit 120 8021B: Volat Units: mg/K HighLimit	tiles (g %RPD tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Sample ID Client ID: Prep Date: Analyte Benzene	RB PBS nofluorobenzene 100NG BTEX LCS LCSS	SampT Batch Analysis D Result ND ND ND 0.89 SampT Batch Analysis D Result 1.1	ype: ME alD: B3 ate: 12 0.025 0.050 0.050 0.050 0.10 ype: LC alD: B3 ate: 12 PQL 0.025	3LK 9532 2/20/2016 SPK value 1.000 S 9532 2/20/2016 SPK value 1.000	Tes SPK Ref Val Tes SPK Ref Val SPK Ref Val 0	tCode: El RunNo: 3 SeqNo: 1 %REC 88.6 tCode: El RunNo: 3 SeqNo: 1 %REC 106	PA Method 9532 238384 LowLimit 80 PA Method 9532 238385 LowLimit 75.2	8021B: Volat Units: mg/K HighLimit 120 8021B: Volat Units: mg/K HighLimit 115	tiles (g %RPD tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bron Client ID: Prep Date: Analyte Benzene Toluene	RB PBS nofluorobenzene 100NG BTEX LCS LCSS	SampT Batch Analysis D Result ND ND ND 0.89 SampT Batch Analysis D Result 1.1 0.98	ype: ME ale: 12 PQL 0.025 0.050 0.050 0.10 ype: LC alD: B3 ate: 12 PQL 0.025 0.050	3LK 99532 2/20/2016 SPK value 1.000 3S 99532 2/20/2016 SPK value 1.000 1.000	Tes SPK Ref Val Tes SPK Ref Val SPK Ref Val 0 0	tCode: El RunNo: 3 SeqNo: 1 %REC 88.6 tCode: El RunNo: 3 SeqNo: 1 %REC 106 98.2	PA Method 9532 238384 LowLimit 80 PA Method 9532 238385 LowLimit 75.2 80.7	8021B: Volat Units: mg/K HighLimit 120 8021B: Volat Units: mg/K HighLimit 115 112	tiles (g %RPD tiles (g %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene	RB PBS nofluorobenzene 100NG BTEX LCS LCSS	SampT Batch Analysis D Result ND ND ND 0.89 SampT Batch Analysis D Result 1.1 0.98 0.94	ype: ME ale: 12 PQL 0.025 0.050 0.050 0.10 ype: LC 1D: B3 ate: 12 PQL 0.025 0.050 0.050	3LK 9532 2/20/2016 SPK value 1.000 3S 9532 2/20/2016 SPK value 1.000 1.000 1.000	Tes SPK Ref Val	tCode: El RunNo: 3: SeqNo: 1: %REC 88.6 tCode: El RunNo: 3: SeqNo: 1: %REC 106 98.2 93.8	PA Method 9532 238384 LowLimit 80 PA Method 9532 238385 LowLimit 75.2 80.7 78.9	8021B: Volat Units: mg/K HighLimit 120 8021B: Volat Units: mg/K HighLimit 115 112 117	tiles %RPD tiles %RPD	RPDLimit	Qual
Sample ID Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Brom Client ID: Prep Date: Analyte Benzene Toluene Ethylbenzene Xylenes, Total	RB PBS nofluorobenzene 100NG BTEX LCS LCSS	SampT Batch Analysis D Result ND ND ND 0.89 SampT Batch Analysis D Result 1.1 0.98 0.94 2.8	ype: ME ale: 12 PQL 0.025 0.050 0.050 0.050 0.10 ype: LC 1D: B3 ate: 12 PQL 0.025 0.050 0.050 0.050 0.050 0.10	BLK 9532 2/20/2016 SPK value 1.000 SS 9532 2/20/2016 SPK value 1.000 1.000 1.000 3.000	Tes SPK Ref Val	tCode: El RunNo: 3: SeqNo: 1: %REC 88.6 tCode: El RunNo: 3: SeqNo: 1: %REC 106 98.2 93.8 92.5	PA Method 9532 238384 LowLimit 80 PA Method 9532 238385 LowLimit 75.2 80.7 78.9 79.2	8021B: Volat Units: mg/K HighLimit 120 8021B: Volat Units: mg/K HighLimit 115 112 117 115	tiles %RPD tiles %RPD	RPDLimit	Qual

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 10 of 11

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

APEX TITAN **Client: Project:**

Mudge B #59

Sample ID MB-29268	SampType: MBLK	TestCode: EPA Method		
Client ID: PBS	Batch ID: 29268	RunNo: 39532		
Prep Date: 12/19/2016	Analysis Date: 12/20/2016	SeqNo: 1238388	Units: %Rec	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual
Surr: 4-Bromofluorobenzene	0.96 1.000	96.2 80	120	
Sample ID LCS-29268	SampType: LCS	TestCode: EPA Method	8021B: Volatiles	
Sample ID LCS-29268 Client ID: LCSS	SampType: LCS Batch ID: 29268	TestCode: EPA Method RunNo: 39532	8021B: Volatiles	
Sample ID LCS-29268 Client ID: LCSS Prep Date: 12/19/2016	SampType: LCS Batch ID: 29268 Analysis Date: 12/20/2016	TestCode: EPA Method RunNo: 39532 SeqNo: 1238389	I 8021B: Volatiles	
Sample ID LCS-29268 Client ID: LCSS Prep Date: 12/19/2016 Analyte	SampType: LCS Batch ID: 29268 Analysis Date: 12/20/2016 Result PQL SPK value	TestCode: EPA Method RunNo: 39532 SeqNo: 1238389 SPK Ref Val %REC LowLimit	I 8021B: Volatiles Units: %Rec HighLimit %RPD	RPDLimit Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η 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
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits J
- Р Sample pH Not In Range
- **Reporting Detection Limit** RL
- W Sample container temperature is out of limit as specified

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1612A47 21-Dec-16

WO#:

Client Name: APEX AZTEC Work Order Number: 1612A47 RcptNo: 1 Received by/date:	HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental A Albuq TEL: 505-345-3975 F Website: www.halk	nalysis Laborato. 4901 Hawkins N werque, NM 8710 AX: 505-345-410 environmental.co	ry VE 09 Sam 07	ple Log-in Cl	neck List
Received by/dete:	Client Name: APEX AZTEC	Work Order Number:	1612A47		RcptNo:	1
Logged By: Ashley Gylagos 12202016 8:10:00 AM Completed By: Ashley Gallegos 12202016 8:24:31 AM Reviewed By: Mol Not Present Ø 1. Custody seals intact on sample bottles? Yes No Not Present Ø 2. Is Chain of Custody complete? Yes No Not Present Ø 3. How was the sample deliverod? Courier Log In 4. Was an attempt made to cool the samples? Yes No NA 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA I 5. Ware all samples received at a temperature of >0° C to 6.0°C Yes No NA I 6. Sample (a) in proper container(s)? Yes No NA I 7. Sufficient sample volume for indicated test(s)? Yes No NA I 9. Was preservative added to bottles? Yes No No No VOA Valis M 10. VOA viats have zero headspace? Yes No I Adjusted? 11. Were any sample containers received broken? Yes No I Adjusted? 12. Does papework match bottle labels? Yes	Received by/date:	12/20/	16			
Completed By: Ashtey Gellegos 12202016 8:24:31 AM Reviewed By: V 2 2.0 / 16 Chain of Custody No No Not Present Ø 1. custody seals intact on sample bottles? Yes No Not Present Ø 2. Is Chain of Custody complete? Yes Ø No Not Present Ø 3. How was the sample delivered? Courier Log In . No No No 4. Was an attempt made to cool the samples? Yes Ø No NA 5. Were all samples received at a temperature of >0° C to 6.0°C Yes Ø No NA 6. Sample(s) in proper container(s)? Yes Ø No NA 7. Sufficient sample volume for indicated test(s)? Yes Ø No NA 9. Was preservative added to bottles? Yes Ø No Na I 10. VOA viels have zero headspace? Yes Ø No Mo Adjusted? 11. Were ary sample containers received broken? Yes Ø No Adjusted? 12. Does papervork match bottle labels? Yes Ø No Adjusted? 13. Are matrices correctly identified on Chain of Custody?<	Logged By: Ashley Gallegos 12	2/20/2016 8:10:00 AM		AF		
Reviewed By:	Completed By: Ashley Gallegos 12	2/20/2016 8:24:31 AM		AF		
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	Reviewed By: 05	12/20/16				
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	Chain of Custody					
2. is Chain of Custody complete? Yes No Not Present I 3. How was the sample delivered? Courter Log In 4. Was an attempt made to cool the samples? Yes No NA I 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA I 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA I 6. Sample(s) in proper container(s)? Yes No NA I 7. Sufficient sample volume for indicated test(s)? Yes No NA I 8. Are samples (except VOA and ONG) properly preserved? Yes No No NA I 10. VOA viats have zero headspace? Yes No No No If of preserved # of preserved 11. Were any sample containers received broken? Yes No If of preserved #	1. Custody seals intact on sample bottles?		Yes	No	Not Present	
3. How was the sample delivered? Courier Log In 4. Was an attempt made to cool the samples? Yes No NA 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA 6. Sample(s) in proper container(s)? Yes No NA 7. Sufficient sample volume for indicated test(s)? Yes No NA 8. Are samples (except VOA and OKG) properly preserved? Yes No NA 9. Was preservative added to bottles? Yes No NA I 10.VOA viats have zero headspace? Yes No No NA I 11. Were any sample containers received broken? Yes No No VOA Viats M 12. Does paperwork match bottle labels? Yes No I dites checked 13. Are matrices correctly identified on Chain of Custody? Yes No Adjusted? Adjusted? 14. Is a clear what analyses were requested? Yes No No Adjusted? Checked by: 15. Were all hoding times able to be met? Yes No Na Person Notified: Date Date By Whon:: Regardin	2. Is Chain of Custody complete?		Yes 🖌	No	Not Present	
Log In 4. Was an attempt made to cool the samples? Yes No NA 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA 6. Sample(a) in proper container(s)? Yes No NA 7. Sufficient sample volume for indicated test(s)? Yes No NA 8. Are samples (except VOA and ONG) properly preserved? Yes No NA 9. Was preservative added to bottles? Yes No NA Intervention 10. VOA vials have zero headspace? Yes No No VOA Vials MI 11. Were any sample containers received broken? Yes No No VOA Vials MI 12. Does paperwork match bottle labels? Yes No Interved for preserved 12. Does paperwork match bottle labels? Yes No Interved for preserved 13. Are matrices correctly identified on Chain of Custody? Yes No Interved Adjusted? 14. is it clear what analyses were requested? Yes No Interved Adjusted? 15. Were all hoding times able to be met? Yes No Interved Interved	3. How was the sample delivered?		Courier			
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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 10. VOA viats have zero headspace? Yes No No 11. Were any sample containers received broken? Yes No No VOA Viats 12. Does paperwork match bottle labels? Yes No If of preserved bottles for preserved bottles included? 12. Does paperwork match bottle labels? Yes No If of preserved bottle included? 13. Are matrices correctly identified on Chain of Custody? Yes No If of preserved bottle included? 15. Were all holding times able to be met? Yes No If then, notify customer for authorization.) Scecial Handling (If applicable) 16. Was client notified of all discrepancies with this order? Yes No NA 18. Vas client instructions: Via: eMail Phone Fax In Person Regarding: Client Instructions: In Person In Person In Person 17. Additional remarks: 18. Cooler Informatio	5. Were all samples received at a temperature of	f >0° C to 6.0°C	Yes 🗹	No 🗌	NA	
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 10. VOA vials have zero headspace? Yes No 11. Were any sample containers received broken? Yes No 12. Does papenwork match bottle labels? Yes No (Note discrepancies on chain of custody) Yes No 13. Are matrices correctly identified on Chain of Custody? Yes No 14. Is it clear what analyses were requested? Yes No 15. Were all holding times able to be met? Yes No (If no, notify customer for authorization.) Yes No 16. Was client notified of all discrepancies with this order? Yes No No Na 17. Additional remarks: 18. <u>Cooler Information</u> <u>Condition Seal Intact Seal No Seel Date Signed By 10. Condition 11. Seal Intact 12. Description 13. Are matrices correction of the seal No 14. Is a client notified of all discrepancies with this order? Yes No No Na Na<</u>	6. Sample(s) in proper container(s)?		Yes 🗹	No 🗌		
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10. VOA vials have zero headspace? Yes No No VOA Vials Id 11. Were any sample containers received broken? Yes No If of preserved bottles checked 12. Does paperwork match bottle labels? Yes No If of preserved bottles checked for pH: (Note discrepancies on chain of custody) Yes No If of preserved bottles checked for pH: (Note discrepancies on chain of custody) Yes No If of preserved bottles checked for pH: (Note discrepancies on chain of custody) Yes No If of preserved bottles checked for pH: (Note discrepancies on chain of custody) Yes No If of preserved bottles checked for pH: (If no, notify customer for authorization.) Yes No If of preserved bottles checked by: Special Handling (if applicable) 16. Wes dient notified of all discrepancies with this order? Yes No NA 16. Wes dient notified: Date Date In Person In Person Regarding: Client Instructions: In Person In Person 17. Additional remarks: 18. Cooler Information Seal Intact Seal No Seal Date Signed By	9. Was preservative added to bottles?		Yes	No 🖌	NA []]	
11. Were any sample containers received broken? Yes No # of preserved bottles checked for pH: (12. Does paperwork match bottle labels? Yes No # of preserved bottles checked for pH: (<2 or >12 unless not Adjusted? 13. Are matrices correctly identified on Chain of Custody? Yes No Adjusted? 14. Is it clear what analyses were requested? Yes No Adjusted? 15. Were all holding times able to be met? Yes No Checked by: (If no, notify customer for authorization.) Special Handling (if applicable) No No 16. Was client notified of all discrepancies with this order? Yes No NA M Person Notified:	10. VOA vials have zero headspace?		Yes	No	No VOA Vials 🖌	
12. Does paperwork match bottle labels? Yes Yes No # of preserved bottles checked for pH: (Note discrepancies on chain of custody) Yes Yes No Adjusted? 13. Are matrices correctly identified on Chain of Custody? Yes No Adjusted? 14. Is it clear what analyses were requested? Yes No Adjusted? 15. Were all holding times able to be met? Yes No Checked by: (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 16. Was client notified: Date Date By Whom: Via: eMail Phone Fax In Person 17. Additional remarks: 11. Cooler Information Seal Intact Seal No Seal Date Signed By Integer big doed	11. Were any sample containers received broken?	?	Yes	No 🔽		
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Special Handling (if applicable) 16. Was client notified of all discrepancies with this order? Yes No NA M Person Notified:	15. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes 🗹	No []]	Checked by:	
16. Was client notified of all discrepancies with this order? Yes No NA Person Notified: Date Date By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: Client Instructions: In Person In Person 17. Additional remarks: 18. Cooler Information Cooler No Temp °C Condition Seal Intact Seal No Seal Date Signed By	Special Handling (if applicable)					
Person Notified: Date By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: Client Instructions: 17. Additional remarks: 17. Additional remarks: 18. Cooler Information Cooler No Temp °C Condition Seal Intact Seal No Seal Date Signed By 1 1.0 Good Yes Yes Yes Yes	16. Was client notified of all discrepancies with this	s order?	Yes	No 🗋	NA 🗹	
By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: In Person In Person 17. Additional remarks: In Person In Person In Person 18. Cooler Information Cooler No Temp °C Condition Seal Intact Seal No Seal Date Signed By 1 1.0 Good Yes Yes In Person	Person Notified:	Date	and a state of the			
Regarding: Client Instructions: 17. Additional remarks: 18. Cooler Information Cooler No Temp °C Condition Seal Intact Seal Date Signed By 1 1.0 Good Yes	By Whom:	Via:	eMail 🗌 Ph	one [] Fax	[] In Person	
Client Instructions: 17. Additional remarks: 18. Cooler Information Cooler No Temp °C Condition Seal Intact Seal Date Signed By 1 10	Regarding:	A STAR OLD MORE DEPENDENT OF THE STAR OF THE ST	R, Maganan, Amani kulo makaranda (Jasan ana na mada	an a		
17. Additional remarks: 18. <u>Cooler Information</u> <u>Cooler No</u> Temp °C Condition Seal Intact Seal No Seal Date Signed By 1 1.0 Good Yes						
18. <u>Cooler Information</u> <u>Cooler No Temp °C Condition Seal Intact Seal No Seal Date Signed By</u> <u>1 1.0 Good Yes</u>	1 / . Additional remarks:					
1 1.0 Good Yes	18. <u>Cooler Information</u>	Intent Past No. 0		Signed Dury		
	1 1.0 Good Yes					
				<u></u>		

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11

		CHAIN OF CUSTODY RECORD
×	Laboratory Hall	ANALYSIS REQUESTED Lab use only Due Date:
APEX	Address: ABU	R/////
Office Location	Address	Temp. of coolers when received (C°):
	Contact:	
	Phone:	Page of
Project Manager Mi SUMMS (S	PO/SO #·	
Sampler's Name	Sampler's Signature	03/04//////
Rule Symmets	Nel	
Proj. No. Project Name	No/Type of Containers	REIIIIII
Matrix Date Time C G r m a Identifying Mar	ks ol Samle(s) Start Depth Jar 250 2550 2550 2550 2550 2550 2550 2550	Lab Sample ID (Lab Use Only)
5 12/19/10/43- 5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5	22	$\lambda \times$
1 1 1635 1 5-20	21 12	
1 130 5-10		
1 1520 5-17		
1530 5-13		
4 4 1550 4 5-19		SNV I I I I I I I I I I I I I I I I I I I
	YES I I I I	
Turn around time Normal 25% Rush	50% Rush 🔲 100% Rush	
Relinquished by (Signature)	ime: Received by: (Signature) Date:	Time: NOTES: Rellom Long
Relinquished by (Signature) Date: T	ime: Received by: (Signature) Date:	Time: N 23923
Relinquished by (Signature) Date: T	ime: Received by: (Signature) Date:	Time: JAN & M
Relinquished by (Signature) Date: T	ime: Received by: (Signature) Date:	Time:
Matrix WW - Wastewater W - Water S Container VOA - 40 ml vial A/G - Amber / Or	- Soil SD - Solid L - Liquid A - Air Bag C - Char Glass 1 Liter 250 ml - Glass wide mouth P/O - Pl	coal tube SL - sludge O - Oil astic or other

Apex TITAN, Inc. • 606 S. Rio Grande, Suite A, Downstairs • Aztec, New Mexico 87410 • Office: 505-334-5200 • Fax: 505-334-5204



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

December 29, 2016

Kyle Summers APEX TITAN 606 S. Rio Grande Unit A Aztec, NM 87410 TEL: (903) 821-5603 FAX

OrderNo.: 1612B64

Dear Kyle Summers:

RE: Mudge B #59

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/21/2016 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 <u>www.hallenvironmental.com</u> 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1612B64

Date Reported: 12/29/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN			C	lient Sam	ple ID: S-2	20	
Project: Mudge B #59				Collection	n Date: 12	/20/2016 10:00:00 A	M
Lab ID: 1612B64-001	Matrix:	SOIL		Received	d Date: 12	/21/2016 8:00:00 AM	Ν
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	s				Analy	vst: TOM
Diesel Range Organics (DRO)	27	9.7		mg/Kg	1	12/24/2016 12:01:43	AM 29359
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/24/2016 12:01:43	AM 29359
Surr: DNOP	93.5	70-130		%Rec	1	12/24/2016 12:01:43	AM 29359
EPA METHOD 8015D: GASOLINE RAN	GE					Analy	st: NSB
Gasoline Range Organics (GRO)	64	10		mg/Kg	2	12/28/2016 4:28:21 /	AM 29352
Surr: BFB	225	68.3-144	S	%Rec	2	12/28/2016 4:28:21 A	AM 29352
EPA METHOD 8021B: VOLATILES						Analy	vst: NSB
Benzene	0.85	0.050		mg/Kg	2	12/28/2016 4:28:21 /	AM 29352
Toluene	0.19	0.10		mg/Kg	2	12/28/2016 4:28:21 A	AM 29352
Ethylbenzene	1.2	0.10		mg/Kg	2	12/28/2016 4:28:21 A	AM 29352
Xylenes, Total	4.0	0.20		mg/Kg	2	12/28/2016 4:28:21 A	M 29352
Surr: 4-Bromofluorobenzene	126	80-120	S	%Rec	2	12/28/2016 4:28:21 A	AM 29352

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank	
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page	1 of 4
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range	1 01 1
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as spe	cified

WO#: 1612B64 29-Dec-16

Hall Environmenta	l Analysis	Laboratory,	Inc.
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Client: Project:

APEX TITAN Mudge B #59

Sample ID LCS-29359	SampT	ype: LC	S	TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch	Batch ID: 29359			RunNo: 3	9589				
Prep Date: 12/22/2016	Analysis D	Analysis Date: 12/23/2016			SeqNo: 1	241856	Units: mg/M	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.3	63.8	116			
Surr: DNOP	4.3		5.000		86.0	70	130			
Sample ID MB-29359	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Range	e Organics	
Sample ID MB-29359 Client ID: PBS	SampTy Batch	ype: ME	3LK 359	Tes	tCode: El RunNo: 3	PA Method 9589	8015M/D: Di	esel Range	e Organics	
Sample ID MB-29359 Client ID: PBS Prep Date: 12/22/2016	SampT Batch Analysis D	ype: ME 1D: 293 ate: 12	3LK 359 2/23/2016	Tes F S	tCode: El RunNo: 3 SeqNo: 1	PA Method 9589 241857	8015M/D: Die Units: mg/M	esel Range	e Organics	
Sample ID MB-29359 Client ID: PBS Prep Date: 12/22/2016 Analyte	SampTy Batch Analysis D Result	ype: ME 1D: 29: ate: 12 PQL	3LK 359 2/23/2016 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 3 SeqNo: 1 %REC	PA Method 9589 241857 LowLimit	8015M/D: Die Units: mg/M HighLimit	esel Rango (g %RPD	• Organics	Qual
Sample ID MB-29359 Client ID: PBS Prep Date: 12/22/2016 Analyte Diesel Range Organics (DRO)	SampT Batch Analysis D Result ND	ype: ME 1 ID: 29: ate: 12 PQL 10	3LK 359 2/23/2016 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 3 SeqNo: 1 %REC	PA Method 9589 241857 LowLimit	8015M/D: Die Units: mg/M HighLimit	esel Rango (g %RPD	e Organics	Qual
Sample ID MB-29359 Client ID: PBS Prep Date: 12/22/2016 Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO)	SampT Batch Analysis D Result ND ND	ype: ME 1D: 29: ate: 12 PQL 10 50	3LK 359 2/23/2016 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 3 GeqNo: 1 %REC	PA Method 9589 241857 LowLimit	8015M/D: Die Units: mg/M HighLimit	esel Rango (g %RPD	e Organics	Qual

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
- В Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified
- Page 2 of 4

WO#: 1612B64 29-Dec-16

Hall Environmenta	l Analysis	Labora	tory,]	Inc.
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Client: Project:

21

APEX TITAN Mudge B #59

	0			Tee					_	
Sample ID MB-29352	Sampi	ype: ME	SLK	les	restorde. EPA method 6015D: Gasoline Range					
Client ID: PBS	Batch ID: 29352			F	RunNo: 3	9645				
Prep Date: 12/22/2016	Analysis Date: 12/23/2016			S	SeqNo: 1	241888	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		92.5	68.3	144			
Sample ID LCS-29352	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Sample ID LCS-29352 Client ID: LCSS	SampT Batch	ype: LC	S 352	Tes	tCode: El RunNo: 3	PA Method 9645	8015D: Gaso	oline Rang	0	
Sample ID LCS-29352 Client ID: LCSS Prep Date: 12/22/2016	SampT Batch Analysis D	ype: LC 1D: 29: ate: 12	S 352 2/23/2016	Tes F S	tCode: El RunNo: 3 SeqNo: 1	PA Method 9645 241889	8015D: Gaso Units: mg/k	bline Rang	e	
Sample ID LCS-29352 Client ID: LCSS Prep Date: 12/22/2016 Analyte	SampT Batch Analysis D Result	ype: LC 1 ID: 29: ate: 12 PQL	S 352 2/23/2016 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 3 SeqNo: 1 %REC	PA Method 9645 241889 LowLimit	8015D: Gaso Units: mg/K HighLimit	oline Rang (g %RPD	e RPDLimit	Qual
Sample ID LCS-29352 Client ID: LCSS Prep Date: 12/22/2016 Analyte Gasoline Range Organics (GRO)	SampT Batch Analysis D Result 26	ype: LC 1D: 29: ate: 12 PQL 5.0	S 352 2/23/2016 SPK value 25.00	Tes F S SPK Ref Val 0	tCode: El RunNo: 3 SeqNo: 1: %REC 106	PA Method 9645 241889 LowLimit 74.6	8015D: Gaso Units: mg/k HighLimit 123	oline Rang Kg %RPD	e RPDLimit	Qual

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
- W Sample container temperature is out of limit as specified

Page 3 of 4

WO#: 1612B64

29-Dec-16

Hall Environmental Analysis Laboratory, Inc.

Client: Project: APEX TITAN Mudge B #59

Sample ID MB-29352	SampType: MBLK			Tes	TestCode: EPA Method 8021B: Volatiles					
Client ID: PBS	Batc	h ID: 29	352	F	RunNo: 39645					
Prep Date: 12/22/2016	Analysis Date: 12/23/2016			S	SeqNo: 1241930 Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Yvlenes Total	ND	0.000								
	10	0.10	1 000		102	80	120			
Surr: 4-Bromonuorobenzene	1.0		1.000		103	80	120			
Sample ID LCS-29352	Samp	Type: LC	S	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batc	h ID: 29	352	F	RunNo: 3	9645				
Prep Date: 12/22/2016	Analysis [Date: 12	2/23/2016	S	SeqNo: 1	241931	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	108	75.2	115			
Toluene	1.0	0.050	1.000	0	102	80.7	112			
Ethylbenzene	0.98	0.050	1.000	0	98.3	78.9	117			
Xvlenes, Total	3.0	0.10	3.000	0	98.6	79.2	115			

Qualifiers:

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

Page 4 of 4

HALL Hall Environment ENVIRONMENTAL ANALYSIS LABORATORY TEL: 505-345-39 Website: www.	al Analysis Labor 4901 Hawkin Ibuguerque, NM 8 75 FAX: 505-345- hallenvironmental	atory s NE 7109 Sam 4107 4.com	ple Log-In Cl	neck List
Client Name: APEX AZTEC Work Order Number	er: 1612B64		RcptNo:	1
Received by/date: AS 12/2/11/6				
Logged By: Anne Thome 12/21/2016 8:00:00 /	AM	anne Am	-	
Completed By: Anne Thome 12/21/2016 1:42:26	PM	anne Hum		
Reviewed By: TO IZZILIG				
Chain of Custody				
1. Custody seals intact on sample bottles?	Yes	No 🗌	Not Present	
2. Is Chain of Custody complete?	Yes 🗹	No 🗌	Not Present	
3. How was the sample delivered?	Courier			
Log In				
4. Was an attempt made to cool the samples?	Yes 🗹	No 🗌	NA	
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes 🗹	No 🗌		
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 bottles checked	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes 🗹	No 🗔	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 🗹	l
Person Notified: Date				
By Whom: Via:	eMail	Phone 📋 Fax		
Regarding:		Carlos A Constanting		
17 Additional remarks:				
18. Cooler Information	Seal Date	Signed By		
1 1.0 Good Not Present	Jean Date	Signed by		
	······································			

				CHAIN OF CUSTODY RECORD
APEX Office Location <u>Aztec</u> Project Manager <u>N. Summers</u> Sampler's Name Kyle Summers	Laboratory:A Address:ABA Contact:A, Fr Phone: PO/SO #: Sampler's Signature	11 ree man	ANALYSIS REQUESTED	CHAIN OF CUSTODY RECORD
Proj. No. Project Name	#59	No/Type of Containers	No.	
Matrix Date Time O r Identifying Ma	rks of Sample(s)	VOA AG AG atass Jar P/O	02	Lab Sample ID (Lab Use Only)
S 12/20/ 1000 N 5-2	0			1612 But-col
				MT
	NAC			12/2/104
	Nes			
Turn around time (2)Normal 25% Rush (Relinduished by (Signature) 25% Rush (2)24/16	Time: Repeived by: (Sign	ature) Date:	Time: NOTES:///	TomLong
Relinquished by (Signature) Date: Date: Date: Date: Date: Date: Date:	Time: Received by (Signa	ature) Date: iz/21/16	Time: N2.	3923
Relinquished by (Signature) Date:	Time: Received by: (Signa	ature) Date:	Time:	
Relinquished by (Signature) Date:	Time: Received by: (Signa	ature) Date:	Time:	
Matrix WW - Wastewater W - Water Container VOA - 40 ml vial A/G - Amber / C	S - Soil SD - Solid L - Liqui r Glass 1 Liter 250 ml	id A - Air Bag C - Cha - Glass wide mouth P/O - F	arcoal tube SL - sludge O - tastic or other	Oil

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

December 21, 2016

Kyle Summers APEX TITAN 606 S. Rio Grande Unit A Aztec, NM 87410 TEL: (903) 821-5603 FAX

OrderNo.: 1612834

Dear Kyle Summers:

RE: Mudge B #59

Hall Environmental Analysis Laboratory received 1 sample(s) on 12/15/2016 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 <u>www.hallenvironmental.com</u> 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1612834 Date Reported: 12/21/2016

Hall Environmental Analysis Laboratory, Inc.

Toluene

CLIENT :	APEX TITAN			0	lient San	nple ID: GV	W-1	
Project:	Mudge B #59				Collectio	on Date: 12/	/14/2016 2:30:00 PM	
Lab ID:	1612834-001	Matrix:	SOIL		Receive	ed Date: 12/	/15/2016 8:10:00 AM	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	HOD 8015M/D: DIESEL RANG		S				Analyst	TOM
Diesel Ra	ange Organics (DRO)	1200	100		mg/Kg	10	12/20/2016 8:44:14 PM	29233
Motor Oi	Range Organics (MRO)	850	500		mg/Kg	10	12/20/2016 8:44:14 PM	29233
Surr: [DNOP	0	70-130	S	%Rec	10	12/20/2016 8:44:14 PM	29233
EPA MET	HOD 8015D: GASOLINE RAN	GE					Analyst	NSB
Gasoline	Range Organics (GRO)	700	50		mg/Kg	10	12/16/2016 1:04:29 PM	29188
Surr: E	3FB	460	68.3-144	S	%Rec	10	12/16/2016 1:04:29 PM	29188
EPA MET	HOD 8021B: VOLATILES						Analyst	NSB
Benzene		ND	0.25		mg/Kg	10	12/16/2016 1:04:29 PM	29188

ND 0.50 mg/Kg 10 12/16/2016 1:04:29 PM 29188 10 12/16/2016 1:04:29 PM 29188 Ethylbenzene 0.83 0.50 mg/Kg Xylenes, Total 10 12/16/2016 1:04:29 PM 29188 2.6 1.0 mg/Kg Surr: 4-Bromofluorobenzene 139 80-120 %Rec 10 12/16/2016 1:04:29 PM 29188 S

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 4
	ND	Not Detected at the Reporting Limit	Р	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: APEX TITAN

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Project: Mudge B #59

Sample ID LCS-29233	SampT	ype: LC	s	TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch	ID: 29	233	R	RunNo: 39485					
Prep Date: 12/16/2016	Analysis D	ate: 12	2/19/2016	S	SeqNo: 1237666 Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.3	63.8	116			
Surr: DNOP	4.3		5.000		86.8	70	130			
	SampType: MBLK TestCode: EPA Method 8015M/									
Sample ID MB-29233	SampT	ype: ME	BLK	Test	Code: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Sample ID MB-29233 Client ID: PBS	SampT Batch	ype: ME	3LK 233	Tesi R	tCode: El	PA Method 9485	8015M/D: Di	esel Rang	e Organics	
Sample ID MB-29233 Client ID: PBS Prep Date: 12/16/2016	SampT Batch Analysis D	ype: ME ID: 29: ate: 12	3LK 233 2/19/2016	Tesi R S	tCode: El tunNo: 3 GeqNo: 1	PA Method 9485 237667	8015M/D: Di	esel Rango (g	e Organics	
Sample ID MB-29233 Client ID: PBS Prep Date: 12/16/2016 Analyte	SampT Batch Analysis D Result	ype: ME ID: 29 ate: 12 PQL	3LK 233 2/19/2016 SPK value	Tesi R SPK Ref Val	Code: El RunNo: 3 GeqNo: 1 %REC	PA Method 9485 237667 LowLimit	8015M/D: Di Units: mg/F HighLimit	esel Rango (g %RPD	e Organics RPDLimit	Qual
Sample ID MB-29233 Client ID: PBS Prep Date: 12/16/2016 Analyte Diesel Range Organics (DRO)	SampT Batch Analysis D Result ND	ype: ME ID: 29 ate: 12 PQL 10	3LK 233 2/19/2016 SPK value	Tesi R SPK Ref Val	tCode: El RunNo: 3 GeqNo: 1 %REC	PA Method 9485 237667 LowLimit	8015M/D: Di Units: mg/H HighLimit	esel Rango (g %RPD	e Organics RPDLimit	Qual
Sample ID MB-29233 Client ID: PBS Prep Date: 12/16/2016 Analyte Diesel Range Organics (DRO) Motor Oil Range Organics (MRO)	SampT Batch Analysis D Result ND ND	ype: ME ID: 29 ate: 12 PQL 10 50	3LK 233 2/19/2016 SPK value	Test R SPK Ref Val	Code: El RunNo: 3 GeqNo: 1 %REC	PA Method 9485 237667 LowLimit	8015M/D: Di Units: mg/F HighLimit	esel Rango (g %RPD	e Organics RPDLimit	Qual

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
- W Sample container temperature is out of limit as specified

Page 2 of 4

1612834 21-Dec-16

WO#:

Hall Environmental Analysis Laboratory, Inc.

Client: Project: Mudge B #59

APEX TITAN

							and the second designed of the second designed building of the second designed by the			service of the local division of the local d
Sample ID MB-29188	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBS	Batch	ID: 29	188	F	RunNo: 3	9451				
Prep Date: 12/14/2016	Analysis D	ate: 12	2/16/2016	S	SeqNo: 1	235878	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	880		1000		88.1	68.3	144			
Sample ID LCS-29188	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Sample ID LCS-29188 Client ID: LCSS	SampT Batch	ype: LC	S 188	Tes	tCode: El RunNo: 3	PA Method 9451	8015D: Gaso	line Rang	e	
Sample ID LCS-29188 Client ID: LCSS Prep Date: 12/14/2016	SampT Batch Analysis D	ype: LC 1D: 29 ate: 12	S 188 2/16/2016	Tes F	tCode: El RunNo: 3 SeqNo: 1	PA Method 9451 235879	8015D: Gaso Units: mg/K	oline Rang	e	
Sample ID LCS-29188 Client ID: LCSS Prep Date: 12/14/2016 Analyte	SampT Batch Analysis D Result	ype: LC 1D: 29 ate: 12 PQL	S 188 2/16/2016 SPK value	Tes F S SPK Ref Val	tCode: El RunNo: 3 SeqNo: 1 %REC	PA Method 9451 235879 LowLimit	8015D: Gaso Units: mg/K HighLimit	line Rang (g %RPD	RPDLimit	Qual
Sample ID LCS-29188 Client ID: LCSS Prep Date: 12/14/2016 Analyte Gasoline Range Organics (GRO)	SampT Batch Analysis D Result 25	ype: LC 1 ID: 29 ate: 12 PQL 5.0	S 188 2/16/2016 SPK value 25.00	Tes F S SPK Ref Val 0	tCode: El RunNo: 3 SeqNo: 1 %REC 100	PA Method 9451 235879 LowLimit 74.6	8015D: Gaso Units: mg/K HighLimit 123	oline Rang Kg %RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н 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
- В Analyte detected in the associated Method Blank
- Value above quantitation range E
- Analyte detected below quantitation limits J
- Р Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Page 3 of 4

WO#: 1612834

21-Dec-16

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project: Mudge B #59

APEX TITAN

Sample ID MB-29188	SampT	ype: ME	BLK	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batcl	h ID: 29	188	F	RunNo: 39451					
Prep Date: 12/14/2016	Analysis D	Date: 12	2/16/2016	5	SeqNo: 1	235892	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.96		1.000		96.4	80	120			
Sample ID LCS-29188	SampT	ype: LC	s	Tes	tCode: E	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batch	h ID: 29	188	F	RunNo: 3	9451				
Prep Date: 12/14/2016	Analysis D	Date: 12	2/16/2016	S	SeqNo: 1	235893	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	110	75.2	115			
Toluene	1.0	0.050	1.000	0	103	80.7	112			
Ethylbenzene	0.98	0.050	1.000	0	98.3	78.9	117			
Xylenes, Total	3.0	0.10	3.000	0	98.9	79.2	115			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н 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
- Analyte detected in the associated Method Blank В
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified

Page 4 of 4

WO#: 1612834

21-Dec-16

HALL Hall ENVIRONMENTAL ANALYSIS LABORATORY	l Environmental Analysis 4901 F Albuquergue, L: 505-345-3975 FAX: 50 Website: www.hallenviron	Laboratory lawkins NE NM 87109 5-345-4107 mental.com	Sam	ple Log-In Cł	neck List
Client Name: APEX AZTEC Work	Order Number: 161283	34		ReptNo:	1
Received by/date: AG- 12/15/14					
Logged By: Anne Thome 12/15/20	016 8:10:00 AM	Ann	Am	~	
Completed By: Anne Thome 12/15/20	016 9:24:11 AM	Ann	Am	-	
Reviewed By: TU 17	15/16				
Chain of Custody					
1. Custody seals intact on sample bottles?	Yes	<u> </u>	•	Not Present	
2. Is Chain of Custody complete?	Yes	✓ N	•	Not Present	
3. How was the sample delivered?	Courie	i.			
Log In					
4. Was an attempt made to cool the samples?	Yes	V 1	lo 🗌	NA 🗔	
5. Were all samples received at a temperature of >0° 0	C to 6.0°C Yes	N	•		
6. Sample(s) in proper container(s)?	Yes		lo 🗌		
7. Sufficient sample volume for indicated test(s)?	Yes	✓ N	•		
8. Are samples (except VOA and ONG) properly preser	ved? Yes	✓ N	•		
9. Was preservative added to bottles?	Yes	N	•	NA 🗆	
10. VOA viais have zero headspace?	Yes		•	No VOA Vials 🗹	
11. Were any sample containers received broken?	Yes		lo 🗹	the farmen and	
12. Does paperwork match bottle labels?	Yes	2 N	•	bottles checked for pH:	12 unless noted
(Note discrepancies on chain of custody) 13. Are matrices correctly identified on Chain of Custody	Yes		• 🗆	Adjusted?	- 12 Unicas notou
14. Is it clear what analyses were requested?	Yes		•	_	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes		•	Checked by:	
Special Handling (if applicable)					
16. Was client notified of all discrepancies with this order	r? Yes		•	NA 🗹	
Person Notified:	Date				
By Whom:	Via: 🗌 eMai	Phone	Fax		
Regarding:					
Client Instructions:]
1 / . Additional remarks:					
18. <u>Cooler Information</u>			d Bu	1	
1 1.4 Good Yes	L Seal NO Seal Da	e Signe	ы Бу	1	
		· · · · · · · · · · · · · · · · · · ·			

					CHAIN OF CUSTODY RECORD
APEX Office Location Aztec, NM	Laboratory: <u>Hall B</u> Address: <u>ABQ</u>	nuivonmenta)	ANALYSIS REQUESTED	Jure	Lab use only Due Date: Temp. of coolers when received (C°): /· 4
	Contact: <u>AiFre</u>	eman	- /.		1 2 3 4 5 Page 1 of 1
Project Manager & SumMAX	PO/SO #			\mathcal{F}	
Sampler's Name	Sampler's Signature			' / / / / /	
Ranee Deechilly	KuDahls		H L		
Proj. No. Project Name Mudge B	#59	No/Type of Containers	- Sing		
Matrix Date Time C G J Matrix Date Time O r Identifying Mar	ks of Sample(s)	VOA 1LL: Jar Jar	8 / / /		Lab Sample ID (Lab Use Only)
S 12/14/16 1430 GW-	1		XX		1612834-001
				_	
	NES				
Turn around time O Normal O 25% Rush	50% Rush 🛛 100% Rush	A 3-DAVE	URUE		
Relinquished by (Signature) Date:	Time: Received by: (Signa 55 / Wat	Date	Time: NC	Bill to Tam	Ima
Relinquished by (Signature)	ZI AWC	late iule) Date	110 0810 Time:	NOM-APE #	N23923
Relinquished by (Signature) Date:	Time: Received by: (Signa	uture) Date	Time:		3-DAN RUSH
Matrix WW - Wastewater W - Water S Container VOA - 40 ml vial A/G - Amber / O	S - Soil SD - Solid L - Liquid Glass 1 Liter 250 ml -	d A - Air Bag C - Glass wide mouth P/C	- Plastic or other	sludge O - Oil	

Apex TITAN, Inc. • 606 S. Rio Grande, Suite A, Downstairs • Aztec, New Mexico 87410 • Office: 505-334-5200 • Fax: 505-334-5204

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

Form C-141 Revised April 3, 2017

3

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

1220 S. St. Fra	ancis Dr., Sa	nta Fe, NM 87	505	1220 Sa	South nta Fe	St. Fran . NM 87	cis Dr. 505					
		F	Releas	e Notific	ation	and C	orrective	Acti	on			
					OP	ERATO	R	\square	Initial F	Report	🗆 Fi	nal Repor
Name of C	ompany E	interprise F	ield Serv	vices, LLC	(Contact Th	nomas Long		1	topoit		nei Heper
Address 6	4 Reilly	Ave, Farmin	ngton, NM	A 87401	1	Telephone	No. 505-599	-2286				
Facility Na	me Johns	ion #2 FRT				-acility I y	be Natural G	as Mete	ering Tub	e/Well S	ite	
Surface Ov	vner BLM	×		Mineral (Owner I	BLM		-	Serial	No. NM 0	86649	
				LOC	ATION	OF REI	EASE					
Unit Letter I	Section 21	Township 27N	Range 10W	Feet from the 1604	Norti Line	South	Feet from the 1091	East/ Line	West	County San Jua	n	
		La	atitude <u>36</u>	6.5579 Lor	ngitude	107.8957	NAD83					
				NAT	URE	OF REL	EASE					
Type of Rel	ease Conde	ensate/Water				Volume o 3-5 BBLs Condens	f Release Esti of ate/Water	mated	Volume F	Recovered	None	
Source of R	elease Met	er Tube Free	ze			Date and 11/20/20	Hour of Occur	rence	Date and 11/20/20	Hour of D)iscovery	
Was Immed	iate Notice	Given?				If YES, To	Whom? : Co	urtesy No	otification (Cory Smith	n – NMO	CD
Required			∐ Yes		Not							
By Whom?	Thomas Lo	na				Date and	Hour Novemb	er 21 20	17 @ 3.11	n m		
Was a Wate	ercourse Re	eached?	_	_		If YES, V	olume Impactir	ng the Wa	atercourse).		
			Yes	🛛 No								
If a Waterco	urse was li	mpacted, Des	scribe Fully	/.* ion Tokon * (De Novo	mbor 20, 20	17 a third par	turanart	ad and loa	king moto	r tubo ot	the
Johnson #2	FRT well s	ite. Enterpris	se confirme	ed the release	e and isc	plated, depr	essurized, lock	ty report ked out a	ind tagged	out the m	eter tube	the
Describe Ar	ea Affected	and Cleanu	p Action Ta	aken.* An are	a on the	well pad o	f approximately	/ 30 feet	long by 15	5 feet wide	was imp	acted
with fluids.	In addition,	fluids ran do	wn hill app	proximately 80	0 feet to	the north a	long drainage	feature.	Remediati	on is in the	e schedu	ling
process. A	tiniti party		lion report			ille Fillai.	0-141.					
I hereby cer	tify that the	information	given abov	e is true and	complet	e to the be	st of my knowle	edge and	lunderstar	nd that pur	suant to	NMOCD
rules and re	gulations a	Il operators a	re required	d to report an	d/or file	certain rele	ase notification	is and pe	erform corr	ective acti	ons for real Report	eleases
relieve the c	perator of	iability shoul	d their ope	rations have	failed to	adequately	investigate an	d remed	liate contai	mination th	nat pose	a threat to
ground wate	er, surface v responsibili	water, humar tv for complia	health or ance with a	the environm any other fede	ent. In a eral, state	addition, NI e. or local la	NOCD accepta	nce of a ulations.	C-141 rep	ort does n	ot relieve	e the
operator er		7/1-	$\overline{}$	ing outer load		o, or local l	OIL CO	SER	ATION	DIVISI	ON /	/
Signature:		1. 7	4.11							1	A	Θ
	1	~ /	may			Approved b	y Environment	al Specia	alist: /	lan	K	. 7
Printed Nan	ne: Jon E. F	lelds					/	,	2	-6	/	
Title: Directe	or, Environi	mental			ŀ	Approval Da	ate: 1/1/6/1	8	Expiration	Date:		
E-mail Addr	ess: jefield	s@eprod.con	n		(Conditions	of Approval:	Amp	Le for	Attache	d 🔽	
Date: 1	1/28/2017	Phone	e: (713) 38	1-6684	+	PH RTO	x Bearea	Co	maked		下	
Attach Addi	tional She	ets If Neces	ssary		2	emedial	No /	t also	100	3/16	114	
			Ha	1514A	1650	5901		THERE T			10	
			TY	00100							,	\sim
Operator/Responsible Party,

The OCD has received the form C-141 you provided on ______ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number we have been assigned. Please refer to this case number in all future correspondence.

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

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

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

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

• Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

• Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.

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

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

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

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

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

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

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

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State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division

Form C-141 Revised April 3, 2017

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

1220 S. St. Fra	ancis Dr., Sa	nta Fe, NM 87	505	1220 Sa	Sout	h St. Fran e. NM 87	icis Dr. 505						
		F	Peleas	e Notific	atio	n and C	orrective	Actio	n				
Name of Company Enterprise Field Services, LLC Contact Thomas Long											r mar roport		
Address 614 Reilly Ave, Farmington, NM 87401							Telephone No. 505-599-2286						
Facility Name Hughes LS #3							Facility Type Natural Gas Gathering Pipeline						
Surface Ov	wner BLM		Owner	BLM		Serial No. NM 031701							
LOCATION OF RELEASE													
Unit Letter	Section	Township	Range	Feet from	Nort	South	Feet from	East	Vest	County			
P	20	29N	8W	the 761	Line	ne the Line San		San Juar	San Juan				
				705000	l	uda 10760		1	8				
		La	atitude <u>36</u>	<u>5.705922</u>	Longiti		0048. NAD83						
NATURE OF RELEASE													
Source of R	elease Inte	rnal Corrosic	n of the Pi	peline		Date and Hour of Occurrence Date and Hour of Discovery					ery		
	into Nation	Oisen 2				12/11/2017 @ 8:48 a.m. 12/11/2017 @ 8:48 a.m.						000	
vvas immed	late Notice	Given?	Yes		Not	Whitney Thomas - BLM							
Required			_			OIL CONS. DIV DIST. 3							
						JAN 0 9 2018							
By Whom?	Thomas Lo	ng				Date and Hour December 12, 2017 @ 10:54 a.m.							
Was a Wate	ercourse Re	eached?				If YES, Volume Impacting the Watercourse.							
			L res	K NO									
If a Waterco	ourse was li	mpacted, Dep	scribe Fully	y.* ion Takon * (ombor 11 2	017 a third part	roporte	d a roloa	ee on the H	luabo	e S #3	
pipeline. Er	nterprise te	chnicians cor	firmed the	release and	isolate	d, depressu	ized, locked out	and tag	ged out t	the pipeline		5 LO #3	
Describe Ar	ea Affected	and Cleanu	p Action Ta	aken.* No flui	ds obs	erved were o	on the ground su	irface. F	Remediat	tion is in pro	gress	and	
Enterprise h	as determi	ned this relea	ase reporta	able per NMO	CD reg	gulation due	to the volume of	subsurf	ace impa	acts on Dec	embe	r 19, 2017.	
A tillu party	conective	action repon			e rina	II. 0-141.							
I hereby cer	tify that the	information	given abov	e is true and	comple	ete to the be	st of my knowled	dge and	understa	nd that pur	suant	to NMOCD	
rules and re	gulations a	Il operators a	re require	d to report an	d/or file	e certain rele	ase notifications	and pe	rform cor	rective action	ons fo	r releases	
relieve the c	perator of	liability shoul	d their ope	rations have	failed t	o adequately	investigate and	remedi	ate conta	amination th	at pos	se a threat to	
ground wate	er, surface	water, humar	health or	the environm	ent. Ir	addition, N	MOCD acceptan	ce of a	C-141 rep	port does no	ot relie	eve the	
operator of	responsibili	ty for complia	ance with a	any other fede	erai, sta	ate, or local l	aws and/or regu	CEDV			M	\cap	
Signature: Jon Fulde						- American I and I american							
Printed Nan	ne: Jon E. F	Fields		Approved by Environmental Specialist:									
Title: Direct	or, Environi	mental		Approval Date: //6/16 Expiration Date:									
E-mail Address: jefields@eprod.com						Conditions of Approval: SAMPLE FOR Attached							
Date:	12-31	- 2017	Phon	e: (713) 381-	6684	TPH :	Btex Be	Negr	و				
Attach Add	itional She	ets If Nece	ssary	-12-	(andia	e Remedical	ton B.	23	16/14			
	+	1 NOSIS	66165	6251		Co. K			,	1. 10			

Operator/Responsible Party,

The OCD has received the form C-141 you provided on $\frac{1}{9}$ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number $\frac{1}{9}$ has been assigned. Please refer to this case number in all future correspondence.

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

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

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State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division

Form C-141 Revised April 3, 2017

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

1220 S. St. Fra	ancis Dr., Sa	nta Fe, NM 87	505	1220 Sa	South	St. Fran e, NM 87	cis Dr. 505						
		F	Releas	e Notific	atior	and C	orrective	Acti	on				
					OP	ERATO	R		Initial	Report		Final Report	
Name of C	ompany E	Contact Thomas Long											
Address 6	14 Reilly A	Telephone No. 505-599-2286											
Facility Na	me Quinn	Facility Type Natural Gas Metering Gathering Pipeline											
Surface Ov	Surface Owner Private Mineral Owne								Serial No.				
LOCATION OF RELEASE													
Unit Letter K	Section 20	Township 31N	Range 8W	Feet from the	North Line	South	Feet from the	East/ Line	West	County San Juan			
				1505			1643						
Latitude <u>36.880316</u> Longitude <u>-107.701861</u> NAD83													
NATURE OF RELEASE													
Source of R	ease Natura	al Gas	al Corros	ion		Volume of Release Unknown Volume Recovered None Date and Hour of Occurrence Date and Hour of Discriminal						n n n	
	000000000					12/20/2017 @ 1:30 p.m.						, 1	
Was Immed	liate Notice	Given?			Not	If YES, To	Whom? : Cou	rtesy No	otification	Cory Smith	n - NMC	DCD	
Required					NOL								
									K	AN U	0 FA	10	
By Whom?	Thomas Lo	ng				Date and Hour December 20, 2017 @ 3:07 p.m.							
Was a Wate	ercourse Re	eached?	🗌 Yes	🛛 No		IT YES, Volume Impacting the Watercourse.							
If a Waterco	ourse was Ir	npacted, Des	scribe Full	y.* The releas	se is loca	ated in a sm	nall ephemeral v	vash. N	o fluids we	ere observe	ed on tl	he ground	
surface.	(5)					1 00 0							
Quinn 340S	well site.	Enterprise co	medial Ac	tion Taken." (le release and	d isolate	d, depressu	rized, locked ou	echnicia it and ta	ans discov agged out	the pipelin	elease e.	on the	
Describe Ar	ea Affected	and Cleanu	p Action T	aken.* No flui	ids were	observed o	on the ground su	Irface. F	Repairs ar	nd remedia	tion act	tivities are	
in the sched	luling proce	ess. A third p	arty corre	ctive action re	eport will	be include	d with the "Final	." C-141	1.				
I hereby cer	tify that the	information	given abo	ve is true and	complet	te to the be	st of my knowled	dge and	lundersta	nd that pur	suant t	o NMOCD	
which may e	endanger p	ublic health c	or the envi	ronment. The	accept	ance of a C	-141 report by the	he NMC	CD mark	ed as "Fina	al Repo	releases ort" 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													
	/	OIL CONSERVATION DIVISION											
Signature	Ch	110											
oignature.			Jund			Approved b	v Environmenta	l Specia	alist [.]	land	K	\mathcal{T}	
Printed Nan	ne: Jon E. F	ields				ippiored b				AF	_		
Title: Directe	or, Environr	Approval Date: ///6/14 Expiration Date:											
E-mail Addr	E-mail Address: jefields@eprod.com						Conditions of Approval: SAMPLE TOR Attached X						
Date: 1/	3/2018	8	Phon	ie: (713) 381-	6684	PH, B	Tex, Benze	Ne					
* Attach Addi	tional She	ets If Neces	ssary	14.		C	omplete !	Befor	e 3/	16/18			
		#NC	5180	16570	517		ſ		-1	/ 0			

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 1/6/16 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number NCS 180 165 7017. has been assigned. Please refer to this case number in all future correspondence.

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

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

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