3R-1011

Release Report/ General Correspondence

Enterprise SJ

Date: Oct-Dec 2017

85

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name: **Payne #221**	Facility Type: **Natural Gas Gathering Pipeline**

Surface Owner: **Private**	Mineral Owner: **BLM**	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	**22**	**31N**	**10W**	**1759**		**1127**		**San Juan**

Latitude 36.974646 Longitude 107.874562

OIL CONS. DIV DIST. 3
JUL 17 2017

NATURE OF RELEASE

Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release: **11.82 MCF Gas; 10-15 BBLs Condensate**	Volume Recovered: **None**
Source of Release: Internal corrosion	Date and Hour of Occurrence: **3/8/2017 @ 11:15 a.m.**	Date and Hour of Discovery: **3/8/2017 @ 11:15 a.m.**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? Courtesy Notification: Vanessa Fields – NMOCD	
By Whom? Thomas Long	Date and Hour March 15, 2017 @ 11:17 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action: On March 8, 2017, during routine operations a field operation technician identified a natural gas release on Payne #221 pipeline. The pipeline was isolated, depressurized, locked out and tagged out. Enterprise has determined this release is reportable per NMOCD regulation on March 8, 2017, due to the volume of subsurface impacts. Remediation and repairs were completed on March 22, 2017.

Describe Area Affected and Cleanup Action Taken.* Remediation was completed on March 22, 2017. The contaminant mass was removed by mechanical excavation. The final excavation measured approximately 96 feet long by 24 feet wide ranging from 13-18 feet deep. Approximately 1,654 cubic yards of hydrocarbon impacted soil was excavated and transported to a New Mexico Oil Conservation approved land farm facility. A third party corrective action report is included with this "Final." C-141.

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

Signature: Jon E. Fields	OIL CONSERVATION DIVISION
Printed Name: Jon E. Fields	Approved by Environmental Specialist:
Title: Director, Environmental	Approval Date: 10/4/2017 Expiration Date:
E-mail Address:jefields@eprod.com	Conditions of Approval: Attached ☐
Date: 7-12-2017 Phone: (713)381-6684	

NVF1707656452

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Fields, Vanessa, EMNRD

From: Long, Thomas <tjlong@eprod.com>
Sent: Monday, September 25, 2017 8:13 AM
To: Fields, Vanessa, EMNRD
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

Vanessa,

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)
tjlong@eprod.com

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 <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,

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 <Vanessa.Fields@state.nm.us>
Cc: Stone, Brian <bmstone@eprod.com>; Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
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)

tjlong@eprod.com

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 <Vanessa.Fields@state.nm.us>
Cc: Stone, Brian <bmstone@eprod.com>
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

From: Long, Thomas
Sent: Tuesday, March 21, 2017 2:13 PM
To: Fields, Vanessa, EMNRD (Vanessa.Fields@state.nm.us)

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 (Vanessa.Fields@state.nm.us)
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 (Vanessa.Fields@state.nm.us)
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)

505-215-4727 (Cell)
tjlong@eprod.com

From: Long, Thomas
Sent: Wednesday, March 15, 2017 11:17 AM
To: Fields, Vanessa, EMNRD (Vanessa.Fields@state.nm.us); 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)'
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

Enterprise Products

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

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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.

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

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-of-custody 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).

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

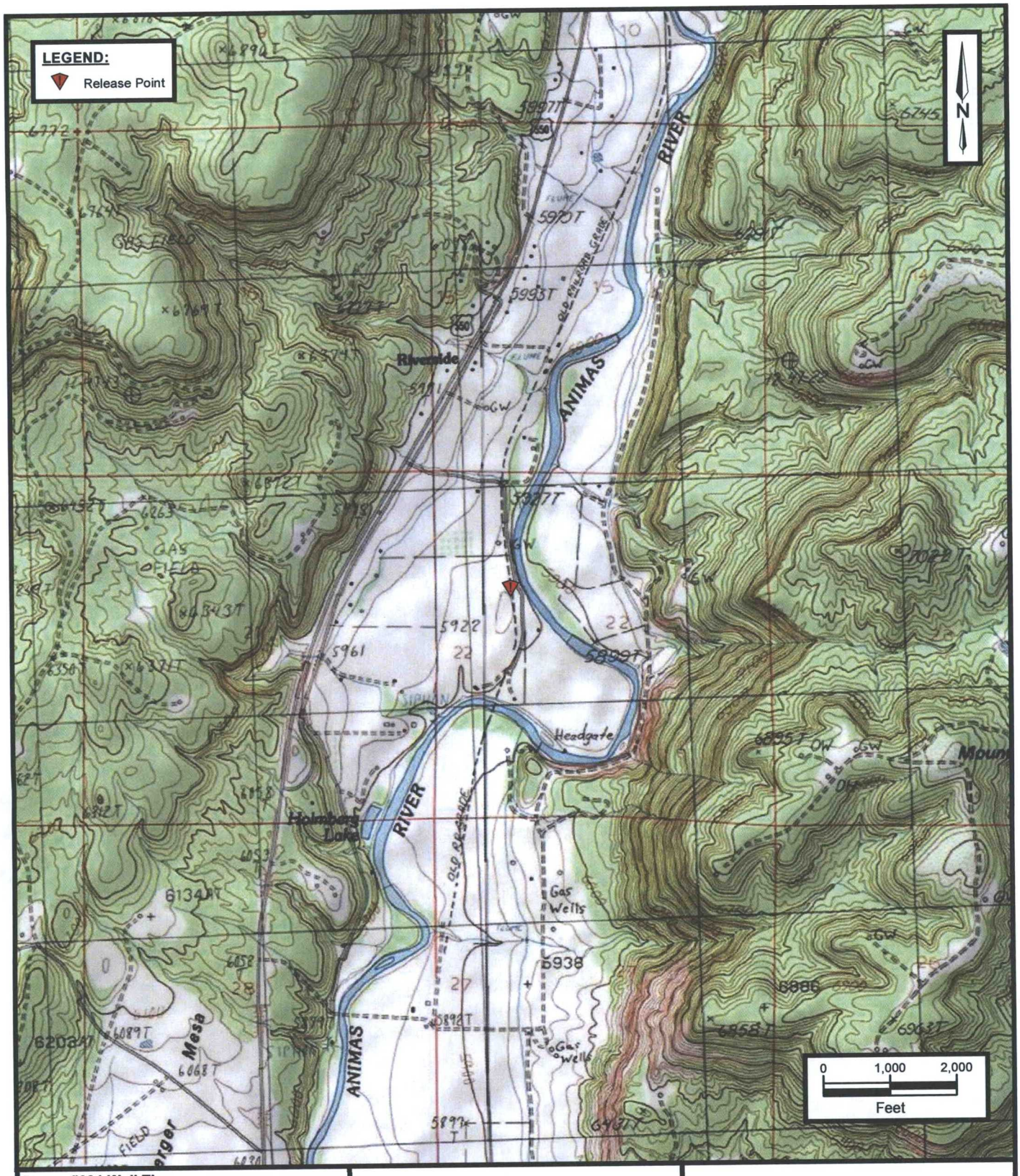
Apex's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Apex makes no warranties, expressed or implied, as to the services performed hereunder. Additionally, Apex does not warrant the work 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.

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



Payne #221 Well Tie
NW 1/4 S22 T32N R10W
San Juan County, New Mexico
36.97302 N, 107.87424 W

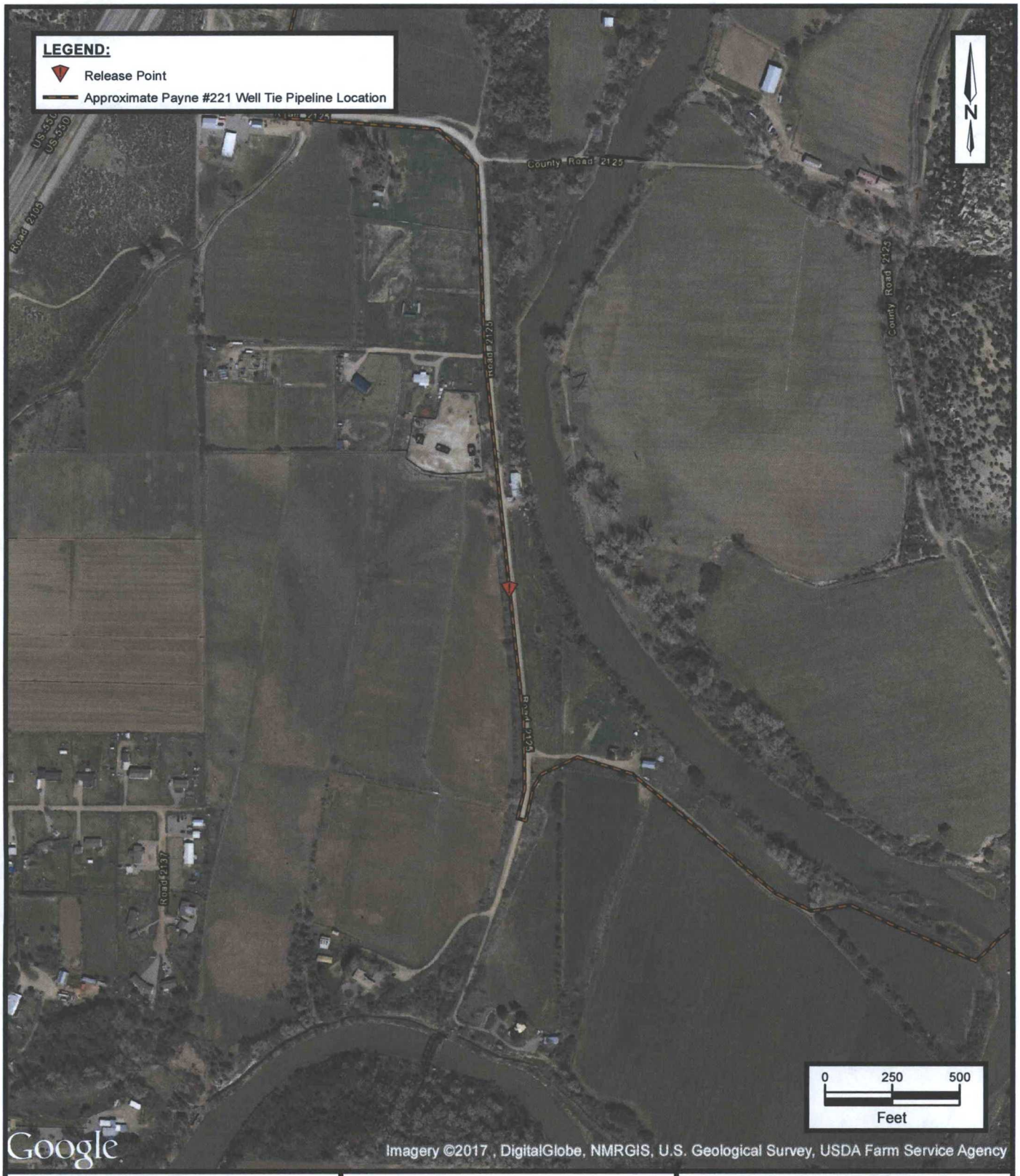
Project No. 725040112266

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

FIGURE 1

Topographic Map

C:\Users\jsimpson\Desktop\725040112266\Figure 1.mxd Modified 4/4/2017 by JSimpson NAD 1983 2011 StatePlane New Mexico West FIPS 3003 Ft US Coordinate System



Payne #221 Well Tie
NW 1/4 S22 T32N R10W
San Juan County, New Mexico
36.97302 N, 107.87424 W

Project No. 725040112266

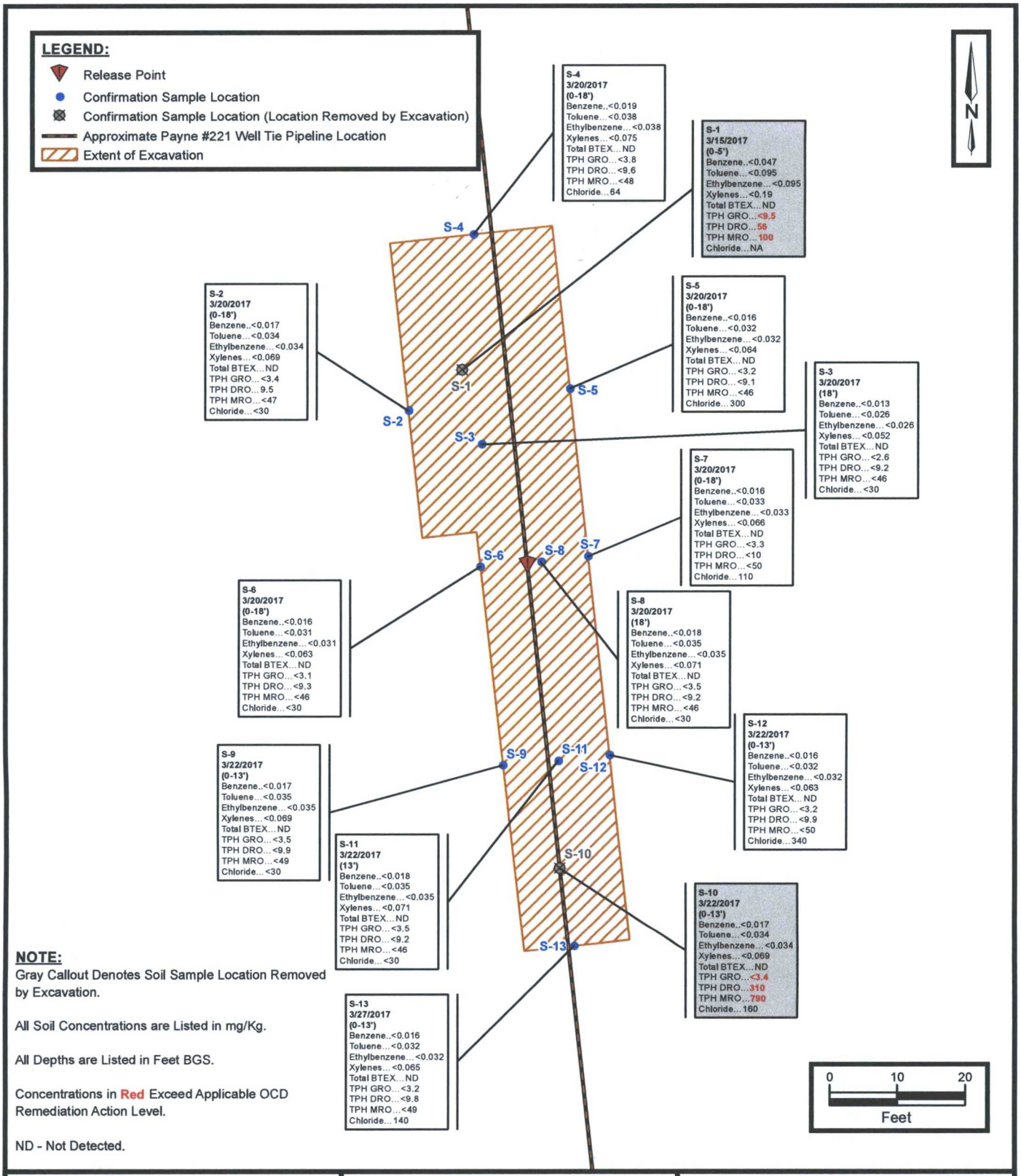
Apex TITAN, Inc.
606 South Rio Grande, Suite A
Aztec, New Mexico 87410
Phone: (505) 334-5200
www.apexcos.com
A Subsidiary of Apex Companies, LLC

FIGURE 2

Site Vicinity Map

Service Layer Credits:
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, Aerial Photograph March 2015

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



NOTE:

Gray Callout Denotes Soil Sample Location Removed by Excavation.

All Soil Concentrations are Listed in mg/Kg.

All Depths are Listed in Feet BGS.

Concentrations in **Red** Exceed Applicable OCD Remediation Action Level.

ND - Not Detected.

Payne #221 Well Tie
NW 1/4 S22 T32N R10W
San Juan County, New Mexico
36.97302 N, 107.87424 W

Project No. 725040112266

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

FIGURE 3

Site Map

Z:\Dallas South\Drafting\2016\725040112266\Figure 3.mxd Modified 6/26/2017 by jsimpson NAD 1983 2011 StatePlane New Mexico West FIPS 3003 Ft US Coordinate System

APEX

APPENDIX B

Executed C-138 Solid Waste Acceptance form

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
20 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-138
Revised 08/01/11

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

REQUEST FOR APPROVAL 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

3/24/17 - 108cy
3/23/17 - 228 cy
3/22/17 - 300 cy
3/21/17 - 300cy
3/19/17 - 142cy
3/18/17 - 348cy

3. Location of Material (Street Address, City, State or ULSTR):
Unit D Sec 22 T 32 N R 10 W, San Juan County, NM; 36.974646, -107.874562

4. Source and Description of Waste:
Source: Hydro excavation Spoils from a Leak from a Natural Gas Gathering Line
Description: Soil impacted with Natural Gas Liquids (Condensate and Water)
Estimated Volume 30 (yd³) / bbls Known Volume (to be entered by the operator at the end of the haul) 168 (yd³) / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Thomas Long, representative or authorized agent for Enterprise Products Operating do hereby
Generator Signature
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Age / 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not m non-exempt waste. ***Operator Use Only: Waste Acceptance Frequency*** ☒ ***Monthly*** ☐ ***Weekly*** ☐ ***Per Load***

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for w dous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 C 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-h (Check the appropriate items)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☒ Process Knowledge ☐ Other (Provide descripti 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARM

I, Thomas Long 3-15-17, representative for Enterprise Products Operating authorizes IEI, Inc. to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

I, K Selph, representative for IEI, Inc. do hereby certif representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content a e samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter: West States Energy Contractors

PH=7
Cl=2128

OCD Permitted Surface Waste Management Facility
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** ☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: K Selph TITLE: Clerk DATE: 3/17/17

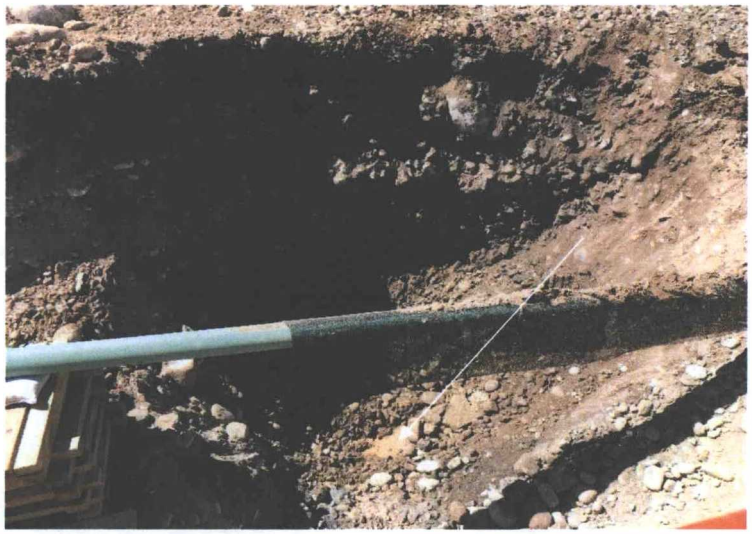
SIGNATURE: K Selph TELEPHONE NO.: 505-632-1782
Surface Waste Management Facility Authorized Agent

3/15/17

APPENDIX C

Photographic Documentation

Photograph 1 Initial excavation activites.	
Photograph 2 View of stockpiled soils and excavation activities, facing northwest.	
Photograph 3 View of excavation, facing north.	

Photograph 4 View of the accumulated water (approximately 18 feet bgs), facing west.	
Photograph 5 View of the excavation, facing southwest.	
Photograph 6 View of the excavation, facing northwest.	

APPENDIX D

Tables

TABLE 1
Payne #221 Well Tie Pipeline Release
SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Chloride (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department, Oil Conservation Division, Remediation Action Level			10	NE	NE	NE	50	100			NE
Soil Samples Removed 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
Excavation Soil 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

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 sample 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

APEX

Appendix E:

Laboratory Data Sheets & Chain of Custody Documentation

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

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-2
Project: Payne 221 Well Tie
Collection Date: 3/20/2017 2:30:00 PM
Lab ID: 1703A28-001
Matrix: MEOH (SOIL)
Received Date: 3/21/2017 7:53:00 AM

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 11:38:47 AM	30843
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**MAB**
Diesel Range Organics (DRO)	9.5	9.3		mg/Kg	1	3/21/2017 11:18:17 AM	30814
Motor Oil 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 METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	3/21/2017 9:51:50 AM	G41547
Surr: BFB	85.9	54-150		%Rec	1	3/21/2017 9:51:50 AM	G41547
EPA METHOD 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
Ethylbenzene	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
Surr: 4-Bromofluorobenzene	97.9	66.6-132		%Rec	1	3/21/2017 9:51:50 AM	B41547

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-3
Project: Payne 221 Well Tie
Collection Date: 3/20/2017 2:35:00 PM
Lab ID: 1703A28-002
Matrix: MEOH (SOIL)
Received Date: 3/21/2017 7:53:00 AM

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 11:51:11 AM	30843
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						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 RANGE						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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-4
Project: Payne 221 Well Tie
Collection Date: 3/20/2017 2:40:00 PM
Lab ID: 1703A28-003
Matrix: MEOH (SOIL)
Received Date: 3/21/2017 7:53:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	64	30		mg/Kg	20	3/22/2017 12:03:36 PM	30843
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **MAB**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/21/2017 12:15:06 PM	30814
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/21/2017 12:15:06 PM	30814
Surr: DNOP	78.7	70-130		%Rec	1	3/21/2017 12:15:06 PM	30814
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	3/21/2017 10:39:11 AM	G41547
Surr: BFB	87.2	54-150		%Rec	1	3/21/2017 10:39:11 AM	G41547
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	3/21/2017 10:39:11 AM	B41547
Toluene	ND	0.038		mg/Kg	1	3/21/2017 10:39:11 AM	B41547
Ethylbenzene	ND	0.038		mg/Kg	1	3/21/2017 10:39:11 AM	B41547
Xylenes, Total	ND	0.075		mg/Kg	1	3/21/2017 10:39:11 AM	B41547
Surr: 4-Bromofluorobenzene	99.8	66.6-132		%Rec	1	3/21/2017 10:39:11 AM	B41547

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-5
Project: Payne 221 Well Tie
Collection Date: 3/20/2017 2:45:00 PM
Lab ID: 1703A28-004
Matrix: MEOH (SOIL)
Received Date: 3/21/2017 7:53:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	300	30		mg/Kg	20	3/22/2017 12:40:51 PM	30843
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **MAB**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	3/21/2017 12:43:38 PM	30814
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	3/21/2017 12:43:38 PM	30814
Surr: DNOP	82.1	70-130		%Rec	1	3/21/2017 12:43:38 PM	30814
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	3/21/2017 11:02:33 AM	G41547
Surr: BFB	88.0	54-150		%Rec	1	3/21/2017 11:02:33 AM	G41547
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.016		mg/Kg	1	3/21/2017 11:02:33 AM	B41547
Toluene	ND	0.032		mg/Kg	1	3/21/2017 11:02:33 AM	B41547
Ethylbenzene	ND	0.032		mg/Kg	1	3/21/2017 11:02:33 AM	B41547
Xylenes, Total	ND	0.064		mg/Kg	1	3/21/2017 11:02:33 AM	B41547
Surr: 4-Bromofluorobenzene	99.2	66.6-132		%Rec	1	3/21/2017 11:02:33 AM	B41547

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Payne 221 Well Tie
Lab ID: 1703A28-005

Client Sample ID: S-6
Collection Date: 3/20/2017 2:50:00 PM
Matrix: MEOH (SOIL) **Received Date:** 3/21/2017 7:53:00 AM

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 12:53:15 PM	30843
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						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 RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	3/21/2017 11:26:00 AM	G41547
Surr: BFB	87.7	54-150		%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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-7
Project: Payne 221 Well Tie
Collection Date: 3/20/2017 2:55:00 PM
Lab ID: 1703A28-006
Matrix: MEOH (SOIL)
Received Date: 3/21/2017 7:53:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	110	30		mg/Kg	20	3/22/2017 1:05:40 PM	30843
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **MAB**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/21/2017 1:40:49 PM	30814
Motor Oil 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 METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	3/21/2017 11:49:26 AM	G41547
Surr: BFB	88.7	54-150		%Rec	1	3/21/2017 11:49:26 AM	G41547
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.016		mg/Kg	1	3/21/2017 11:49:26 AM	B41547
Toluene	ND	0.033		mg/Kg	1	3/21/2017 11:49:26 AM	B41547
Ethylbenzene	ND	0.033		mg/Kg	1	3/21/2017 11:49:26 AM	B41547
Xylenes, Total	ND	0.066		mg/Kg	1	3/21/2017 11:49:26 AM	B41547
Surr: 4-Bromofluorobenzene	101	66.6-132		%Rec	1	3/21/2017 11:49:26 AM	B41547

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-8
Project: Payne 221 Well Tie
Collection Date: 3/20/2017 3:00:00 PM
Lab ID: 1703A28-007
Matrix: MEOH (SOIL)
Received Date: 3/21/2017 7:53:00 AM

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 RANGE ORGANICS						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 RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	3/21/2017 12:12:50 PM	G41547
Surr: BFB	87.8	54-150		%Rec	1	3/21/2017 12:12:50 PM	G41547
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

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703A28**

23-Mar-17

Client: APEX TITAN

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	1.5								

Sample ID	**LCS-30843**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**30843**	RunNo:	**41580**					
Prep Date:	**3/22/2017**	Analysis Date:	**3/22/2017**	SeqNo:	**1304962**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703A28**

23-Mar-17

Client: APEX TITAN

Project: Payne 221 Well Tie

Sample ID **LCS-30814**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **30814**	RunNo: **41526**
Prep Date: **3/21/2017**	Analysis Date: **3/21/2017**	SeqNo: **1302332** 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**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **30814**	RunNo: **41526**
Prep Date: **3/21/2017**	Analysis Date: **3/21/2017**	SeqNo: **1302333** 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**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-2**	Batch ID: **30814**	RunNo: **41526**
Prep Date: **3/21/2017**	Analysis Date: **3/21/2017**	SeqNo: **1303145** Units: **mg/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 **1703A28-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-2**	Batch ID: **30814**	RunNo: **41526**
Prep Date: **3/21/2017**	Analysis Date: **3/21/2017**	SeqNo: **1303146** Units: **mg/Kg**

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703A28**

23-Mar-17

Client: APEX TITAN

Project: Payne 221 Well Tie

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G41547**	RunNo: **41547**
Prep Date:	Analysis Date: **3/21/2017**	SeqNo: **1303119** 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	880		1000		88.5	54	150			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G41547**	RunNo: **41547**
Prep Date:	Analysis Date: **3/21/2017**	SeqNo: **1303120** Units: **mg/Kg**

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			
Surr: BFB	930		1000		92.5	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703A28**

23-Mar-17

Client: APEX TITAN

Project: Payne 221 Well Tie

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B41547**	RunNo: **41547**
Prep Date:	Analysis Date: **3/21/2017**	SeqNo: **1303126** 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	0.99		1.000		99.1	66.6	132			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B41547**	RunNo: **41547**
Prep Date:	Analysis Date: **3/21/2017**	SeqNo: **1303127** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	84.5	80	120			
Toluene	0.86	0.050	1.000	0	85.5	80	120			
Ethylbenzene	0.91	0.050	1.000	0	90.6	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.1	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	66.6	132			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC | Work Order Number: 1703A28 | RcptNo: 1

Received by/date: 03/21/17

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

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.0	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec NM

Project Manager: K Summers

Laboratory: Hall Env

Address: ABQ NM

Contact: A Freeman

Phone:

PO/SO #:

Sampler's Name: Chad DAgostini

Sampler's Signature:

Proj. No.

Project Name: Payne #221 Drill Pit

No/Type of Containers

ANALYSIS REQUESTED: BTEX 8021 / TPH GRO/DRO/MRO 8015

Lab use only
Due Date:

Temp. of coolers when received (C°): 3.0

1 2 3 4 5

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	3/20/17	1430			S-2						1		1703A28-001
		1435			S-3						1		-002
		1440			S-4						1		-003
		1445			S-5						1		-004
		1450			S-6						1		-005
		1455			S-7						1		-006
		1500			S-8						1		-007

H2S

Turn around time: ☐ Normal ☐ 25% Rush ☐ 50% Rush ☒ 100% Rush Same day

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3-20-17	1640		03/21/17	0753
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

Bill to Tom Long

AFE # N29756

Same Day

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

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

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1703A29**
Date Reported: **3/22/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Payne 221 Well Tie
Lab ID: 1703A29-001 **Matrix:** AQUEOUS

Client Sample ID: GW-1
Collection Date: 3/20/2017 3:05:00 PM
Received Date: 3/21/2017 7:53:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/21/2017 10:38:44 AM	G41534
Surr: BFB	94.6	70-130		%Rec	1	3/21/2017 10:38:44 AM	G41534
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **MAB**	
Diesel Range 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: DNOP	97.0	72.4-157		%Rec	1	3/21/2017 3:34:26 PM	30817
EPA METHOD 8260: VOLATILES SHORT 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
Ethylbenzene	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: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	3/21/2017 10:38:44 AM	SL41534
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	3/21/2017 10:38:44 AM	SL41534
Surr: Dibromofluoromethane	108	70-130		%Rec	1	3/21/2017 10:38:44 AM	SL41534
Surr: Toluene-d8	101	70-130		%Rec	1	3/21/2017 10:38:44 AM	SL41534

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703A29**

22-Mar-17

Client: APEX TITAN

Project: Payne 221 Well Tie

Sample ID **LCS-30817**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **30817**	RunNo: **41526**
Prep Date: **3/21/2017**	Analysis Date: **3/21/2017**	SeqNo: **1302947** 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**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **30817**	RunNo: **41526**
Prep Date: **3/21/2017**	Analysis Date: **3/21/2017**	SeqNo: **1302948** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.99		1.000		99.0	72.4	157			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703A29**

22-Mar-17

Client: APEX TITAN

Project: Payne 221 Well Tie

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **SL41534**	RunNo: **41534**
Prep Date:	Analysis Date: **3/21/2017**	SeqNo: **1303187** 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 lcs**	SampType: **LCS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **SL41534**	RunNo: **41534**
Prep Date:	Analysis Date: **3/21/2017**	SeqNo: **1303188** 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			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703A29**

22-Mar-17

Client: APEX TITAN
Project: Payne 221 Well Tie

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **G41534**	RunNo: **41534**
Prep Date:	Analysis Date: **3/21/2017**	SeqNo: **1303200** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.1		10.00		90.9	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **G41534**	RunNo: **41534**
Prep Date:	Analysis Date: **3/21/2017**	SeqNo: **1303201** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range 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**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **GW-1**	Batch ID: **G41534**	RunNo: **41534**
Prep Date:	Analysis Date: **3/21/2017**	SeqNo: **1303202** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range 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 msd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **GW-1**	Batch ID: **G41534**	RunNo: **41534**
Prep Date:	Analysis Date: **3/21/2017**	SeqNo: **1303203** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range 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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC | Work Order Number: 1703A29 | RcptNo: 1

Received by/date: [signature] 03/21/17

Logged By: Lindsay Mangin 3/21/2017 7:53:00 AM [signature]

Completed By: Lindsay Mangin 3/21/2017 8:19:40 AM [signature]

Reviewed By: AJ 03/21/17

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 ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.0	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec N.M

Project Manager: R Summers

Laboratory: Hall Env

Address: ABQ NM

Contact: A Freeman

Phone:

PO/SO #:

Lab use only
Due Date:

Temp. of coolers when received (C°): 3.0

1 | 2 | 3 | 4 | 5

Page 1 of 1

Sampler's Name: Chad DApont

Sampler's Signature: [signature]

Proj. No.:

Project Name: Payne #201 Well Tie

ANALYSIS REQUESTED: BTEX 8021 / TPH DRO/GRO / MRO 8015

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt	250 ml	Glass Jar	P/O	BTEX 8021	TPH DRO/GRO/MRO 8015								Lab Sample ID (Lab Use Only)
W	3/20/17	1505			GW-1			3					1	1								1703A29-001

NFS CD

Turn around time: ☐ Normal ☐ 25% Rush ☐ 50% Rush ☒ 100% Rush — Same day

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Chad DApont	3-20-17	1640	[signature]	03/21/17	0753

NOTES:
Bill to Tom Long
AFE # N29756
Same day

Matrix: WW - Wastewater, W - Water, S - Soil, SD - Solid, L - Liquid, A - Air Bag, C - Charcoal tube, SL - sludge, O - Oil

Container: VOA - 40 ml vial, A/G - Amber / Or Glass 1 Liter, 250 ml - Glass wide mouth, P/O - Plastic or other

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

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-9
Project: Payne 221 Well Tie
Collection Date: 3/22/2017 9:00:00 AM
Lab ID: 1703B57-001
Matrix: MEOH (SOIL)
Received Date: 3/23/2017 7:20:00 AM

Analyses	Result	PQL	Qual	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 ORGANICS						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 RANGE						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

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

Qualifiers:

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

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
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 ORGANICS						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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-11
Project: Payne 221 Well Tie
Collection Date: 3/22/2017 9:10:00 AM
Lab ID: 1703B57-003
Matrix: MEOH (SOIL)
Received Date: 3/23/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
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 ORGANICS						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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-12
Project: Payne 221 Well Tie
Collection Date: 3/22/2017 9:15:00 AM
Lab ID: 1703B57-004
Matrix: MEOH (SOIL)
Received Date: 3/23/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	340	30		mg/Kg	20	3/23/2017 11:38:48 AM	30864
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **MAB**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/23/2017 11:12:24 AM	30857
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/23/2017 11:12:24 AM	30857
Surr: DNOP	83.0	70-130		%Rec	1	3/23/2017 11:12:24 AM	30857
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	3/23/2017 10:35:56 AM	G41606
Surr: BFB	89.2	54-150		%Rec	1	3/23/2017 10:35:56 AM	G41606
EPA METHOD 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
Ethylbenzene	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
Surr: 4-Bromofluorobenzene	108	66.6-132		%Rec	1	3/23/2017 10:35:56 AM	R41606

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703B57**

24-Mar-17

Client: APEX TITAN

Project: Payne 221 Well Tie

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
Chloride	14	1.5	15.00	0	94.3	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703B57**

24-Mar-17

Client: APEX TITAN

Project: Payne 221 Well Tie

Sample ID **MB-30857**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **30857**	RunNo: **41593**
Prep Date: **3/23/2017**	Analysis Date: **3/23/2017**	SeqNo: **1304737** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		107	70	130			

Sample ID **LCS-30857**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **30857**	RunNo: **41593**
Prep Date: **3/23/2017**	Analysis Date: **3/23/2017**	SeqNo: **1304744** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	100	63.8	116			
Surr: DNOP	5.2		5.000		104	70	130			

Sample ID **1703B57-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-9**	Batch ID: **30857**	RunNo: **41595**
Prep Date: **3/23/2017**	Analysis Date: **3/23/2017**	SeqNo: **1305342** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	9.6	47.89	8.184	93.3	51.6	130			
Surr: DNOP	4.3		4.789		90.2	70	130			

Sample ID **1703B57-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-9**	Batch ID: **30857**	RunNo: **41595**
Prep Date: **3/23/2017**	Analysis Date: **3/23/2017**	SeqNo: **1305343** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	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**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **30846**	RunNo: **41593**
Prep Date: **3/22/2017**	Analysis Date: **3/23/2017**	SeqNo: **1305627** Units: **%Rec**

Analyte	Result	PQL	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**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **30846**	RunNo: **41593**
Prep Date: **3/22/2017**	Analysis Date: **3/23/2017**	SeqNo: **1305628** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703B57**

24-Mar-17

Client: APEX TITAN

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: **3/23/2017**	SeqNo: **1305628** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		105	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703B57**

24-Mar-17

Client: APEX TITAN

Project: Payne 221 Well Tie

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G41606**	RunNo: **41606**
Prep Date:	Analysis Date: **3/23/2017**	SeqNo: **1305565** 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	910		1000		91.2	54	150			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G41606**	RunNo: **41606**
Prep Date:	Analysis Date: **3/23/2017**	SeqNo: **1305566** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	109	76.4	125			
Surr: BFB	1000		1000		99.6	54	150			

Sample ID **1703B57-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-9**	Batch ID: **G41606**	RunNo: **41606**
Prep Date:	Analysis Date: **3/23/2017**	SeqNo: **1305567** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	88.6	61.3	150			
Surr: BFB	980		1000		97.6	54	150			

Sample ID **1703B57-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-9**	Batch ID: **G41606**	RunNo: **41606**
Prep Date:	Analysis Date: **3/23/2017**	SeqNo: **1305568** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	5.0	25.00	0	119	61.3	150	29.1	20	R
Surr: BFB	1000		1000		100	54	150	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703B57**

24-Mar-17

Client: APEX TITAN

Project: Payne 221 Well Tie

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **R41606**	RunNo: **41606**
Prep Date:	Analysis Date: **3/23/2017**	SeqNo: **1305574** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		112	66.6	132			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **R41606**	RunNo: **41606**
Prep Date:	Analysis Date: **3/23/2017**	SeqNo: **1305575** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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-Bromofluorobenzene	1.2		1.000		116	66.6	132			

Sample ID **1703B57-002AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-10**	Batch ID: **R41606**	RunNo: **41606**
Prep Date:	Analysis Date: **3/23/2017**	SeqNo: **1305576** 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	110	61.5	138			
Toluene	1.1	0.050	1.000	0	110	71.4	127			
Ethylbenzene	1.1	0.050	1.000	0	113	70.9	132			
Xylenes, Total	3.4	0.10	3.000	0.01273	113	76.2	123			
Surr: 4-Bromofluorobenzene	1.1		1.000		114	66.6	132			

Sample ID **1703B57-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-10**	Batch ID: **R41606**	RunNo: **41606**
Prep Date:	Analysis Date: **3/23/2017**	SeqNo: **1305577** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.1	61.5	138	12.1	20	
Toluene	1.0	0.050	1.000	0	99.9	71.4	127	9.68	20	
Ethylbenzene	1.0	0.050	1.000	0	104	70.9	132	8.01	20	
Xylenes, Total	3.1	0.10	3.000	0.01273	104	76.2	123	8.03	20	
Surr: 4-Bromofluorobenzene	1.1		1.000		113	66.6	132	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC | Work Order Number: 1703B57 | RcptNo: 1

Received by/date: ek 03/23/17

Logged By: Lindsay Mangin 3/23/2017 7:20:00 AM

Completed By: Lindsay Mangin 3/23/2017 8:19:24 AM

Reviewed By: aj 03/23/17

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec NM

Project Manager: K Summers

Laboratory: Hall Env

Address: ABQ NM

Contact: A Freeman

Phone:

PO/SO #:

Sampler's Name: Chad D'Appolonia

Sampler's Signature:

Proj. No.

Project Name: Payne #221 Mill Tie

No/Type of Containers

ANALYSIS REQUESTED: BTEX 8021 / TPH GRO / DRO / ORO / PAH 8270 SIMS / Chlorides

Lab use only
Due Date:

Temp. of coolers when received (C°): 1.7

1 2 3 4 5

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt	250 ml Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	3/22/17	900			S-9					1	1 1 1	1703B57-001
"	"	905			S-10					1	1 1 1	-002
"	"	~~910~~ 910			S-11					1	1 1 1	-003
"	"	915			S-12					1	1 1 1	-004

Turn around time: ☐ Normal ☐ 25% Rush ☐ 50% Rush ☑ 100% Rush Same day

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3-22-17	1300	Matt Walters	3/22/17	1300
Matt Walters	3/22/17	1824		03/23/17	0920
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

Bill to Tom Long

AFE # 029756

Same Day

Matrix: WW - Wastewater; W Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic 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

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

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Payne #221 Well Tie
Lab ID: 1703D46-001 **Matrix:** SOIL

Client Sample ID: S-13
Collection Date: 3/27/2017 12:00:00 PM
Received Date: 3/28/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	140	30		mg/Kg	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 RANGE ORGANICS						Analyst: **TOM**	
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 SHORT 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

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703D46**

30-Mar-17

Client: APEX TITAN

Project: Payne #221 Well Tie

Sample ID	**MB-30936**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	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:	**lcs**	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			

Sample ID	**MB-30936**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**30936**	RunNo:	**41707**					
Prep Date:	**3/28/2017**	Analysis Date:	**3/28/2017**	SeqNo:	**1309826**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-30936**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**30936**	RunNo:	**41707**					
Prep Date:	**3/28/2017**	Analysis Date:	**3/28/2017**	SeqNo:	**1309827**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.9	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703D46**

30-Mar-17

Client: APEX TITAN

Project: Payne #221 Well Tie

Sample ID **LCS-30908**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **30908**	RunNo: **41689**
Prep Date: **3/27/2017**	Analysis Date: **3/28/2017**	SeqNo: **1307961** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		5.000		83.0	70	130			

Sample ID **MB-30908**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **30908**	RunNo: **41689**
Prep Date: **3/27/2017**	Analysis Date: **3/28/2017**	SeqNo: **1307962** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%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**
Client ID: **LCSS**	Batch ID: **30930**	RunNo: **41688**
Prep Date: **3/28/2017**	Analysis Date: **3/28/2017**	SeqNo: **1307965** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	101	63.8	116			
Surr: DNOP	4.9		5.000		97.3	70	130			

Sample ID **MB-30930**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **30930**	RunNo: **41688**
Prep Date: **3/28/2017**	Analysis Date: **3/28/2017**	SeqNo: **1307966** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		109	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703D46**

30-Mar-17

Client: APEX TITAN

Project: Payne #221 Well Tie

Sample ID **mb-30945**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **30945**	RunNo: **41730**
Prep Date: **3/28/2017**	Analysis Date: **3/29/2017**	SeqNo: **1310415** Units: **%Rec**

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 **lcs-30945**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **30945**	RunNo: **41730**
Prep Date: **3/28/2017**	Analysis Date: **3/29/2017**	SeqNo: **1310416** Units: **%Rec**

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			

Sample ID **mb-30918**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **30918**	RunNo: **41730**
Prep Date: **3/27/2017**	Analysis Date: **3/29/2017**	SeqNo: **1310430** 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: 1,2-Dichloroethane-d4	0.55		0.5000		110	70	130			
Surr: 4-Bromofluorobenzene	0.43		0.5000		86.2	70	130			
Surr: Dibromofluoromethane	0.57		0.5000		114	70	130			
Surr: Toluene-d8	0.47		0.5000		94.7	70	130			

Sample ID **lcs-30918**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **30918**	RunNo: **41730**
Prep Date: **3/27/2017**	Analysis Date: **3/29/2017**	SeqNo: **1310431** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.3	0.025	1.000	0	128	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	0.57		0.5000		115	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		88.8	70	130			
Surr: Dibromofluoromethane	0.56		0.5000		112	70	130			
Surr: Toluene-d8	0.47		0.5000		93.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703D46**

30-Mar-17

Client: APEX TITAN

Project: Payne #221 Well Tie

Sample ID **mb-30918**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **30918**	RunNo: **41730**
Prep Date: **3/27/2017**	Analysis Date: **3/29/2017**	SeqNo: **1310441** 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	460		500.0		91.8	70	130			

Sample ID **lcs-30918**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **30918**	RunNo: **41730**
Prep Date: **3/27/2017**	Analysis Date: **3/29/2017**	SeqNo: **1310442** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	70	130			
Surr: BFB	470		500.0		93.7	70	130			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC Work Order Number: 1703D46 RcptNo: 1

Received by/date: CM 03/28/17

Logged By: Anne Thorne 3/28/2017 7:15:00 AM

Completed By: Anne Thorne 3/28/2017 7:38:27 AM

Reviewed By: 03/28/17 ENM

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec NM

Project Manager: K Summers

Laboratory: Hall Env

Address: ABQ N.M

Contact: A. Freeman

Phone:

PO/SO #:

Sampler's Name: Chad D'Aponte

Sampler's Signature:

Proj. No.: 30504011726

Project Name: Payne #221 Will T.C

No/Type of Containers

ANALYSIS REQUESTED: BTEX 8021 / TPH GRO / DRO / MRO 8015 / Chloride

Lab use only
Due Date:

Temp. of coolers when received (C°): 1.7

1	2	3	4	5

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	3-27-17	1100			S-13						1		1703046-001

1 1 1

AFES

Turn around time: ☐ Normal ☐ 25% Rush ☐ 50% Rush ☑ 100% Rush Same Day

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3-27-17	1315		3/27/17	1315
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3/27/17	1924		03/28/17	0715
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:
Bill to Ben Long
AFE # NM 29756
Same Day

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

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

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1703851**
Date Reported: **3/20/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Payne 221 Well Tie
Lab ID: 1703851-001 **Matrix:** SOIL

Client Sample ID: S-1
Collection Date: 3/15/2017 3:00:00 PM
Received Date: 3/16/2017 7:09:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						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 RANGE						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
Xylenes, Total	ND	0.19		mg/Kg	2	3/17/2017 9:18:11 AM	30725
Surr: 4-Bromofluorobenzene	102	66.6-132		%Rec	2	3/17/2017 9:18:11 AM	30725

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

Qualifiers:

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

WO#: **1703851**

20-Mar-17

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**
Prep Date: **3/16/2017**	Analysis Date: **3/16/2017**	SeqNo: **1297887** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		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	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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703851**

20-Mar-17

Client: APEX TITAN

Project: Payne 221 Well Tie

Sample ID **MB-30725**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **30725**	RunNo: **41456**
Prep Date: **3/16/2017**	Analysis Date: **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								
Surr: BFB	690		1000		68.6	54	150			

Sample ID **LCS-30725**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **30725**	RunNo: **41456**
Prep Date: **3/16/2017**	Analysis Date: **3/17/2017**	SeqNo: **1300834** Units: **mg/Kg**

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			
Surr: BFB	880		1000		88.2	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703851**

20-Mar-17

Client: APEX TITAN

Project: Payne 221 Well Tie

Sample ID **MB-30725**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **30725**	RunNo: **41456**
Prep Date: **3/16/2017**	Analysis Date: **3/17/2017**	SeqNo: **1300908** 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	0.75		1.000		75.3	66.6	132			

Sample ID **LCS-30725**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **30725**	RunNo: **41456**
Prep Date: **3/16/2017**	Analysis Date: **3/17/2017**	SeqNo: **1300909** Units: **mg/Kg**

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			
Surr: 4-Bromofluorobenzene	0.74		1.000		74.3	66.6	132			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC | Work Order Number: 1703851 | RcptNo: 1

Received by/date: 03/16/17

Logged By: Lindsay Mangin 3/16/2017 7:09:00 AM

Completed By: Lindsay Mangin 3/16/2017 7:25:28 AM

Reviewed By: aj 03/16/17

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 ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: ____ (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? ____
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: ____

Special Handling (if applicable)

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

Person Notified: ____ Date: ____

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

Regarding: ____

Client Instructions: ____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec NM

Project Manager: R Summers

Laboratory: Hall Env

Address: ABQ N.M

Contact: A Fireman

Phone:

PO/SO#:

Sampler's Name: Chad D'Apont

Sampler's Signature:

Proj. No.: 70504011266

Project Name: Payne #221 Well Tie

ANALYSIS REQUESTED: BTEX 8021 / TPH (DRO/GRO/MRO) 8015

Lab use only
Due Date:

Temp. of coolers when received (C°): 2.6

1 2 3 4 5

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No/Type of Containers: VOA	A/G 1 L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	3-15-17	1500			S-1						1		1703851-001
								1	1				

FS

Turn around time: ☐ Normal ☐ 25% Rush ☐ 50% Rush ☑ 100% Rush Same Day

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3-15-17	1545		3/15/17	1545
	3/15/17	1620		3/15/17	1620
	3/15/17	1857		03/16/17	0709

NOTES:

Bill & Tom Long

NM AFE # N29756

Same Day

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Cr Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long/Runell Seale
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name: **Trunk 10A Pipeline**	Facility Type: **Natural Gas Gathering Pipeline**

Surface Owner: **Navajo Tribal**	Mineral Owner: **BIA**	API No. **NA**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	**15**	**25N**	**11W**	**628**		**387**		**San Juan**

Latitude 36.3954413 Longitude -107.9990745

OIL CONS. DIV DIST. 3
JUL 31 2017

NATURE OF RELEASE

Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release: **Unknown**	Volume Recovered: **None**
Source of Release: Suspected internal corrosion	Date and Hour of Occurrence: **7/12/2017 @ 6:20 p.m.**	Date and Hour of Discovery: **7/12/2017 @ 6:20 p.m.**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? Courtesy Notification: Vanessa Fields – NMOCD; Steve Austin - NNEPA	
By Whom? Thomas Long	Date and Hour July 13, 2017 @ 12:52 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action: On July 12, 2017, Enterprise responded to a natural gas release on the Trunk 10A pipeline. The pipeline was isolated, depressurized, locked out and tagged out. An area around the release of ground surface of approximately 20 feet long by 15 feet wide was affected by fluids released. Fluids also flowed to the north along an erosional feature approximately 300 feet. Repairs and remediation were initiated on July 19, 2017.

Describe Area Affected and Cleanup Action Taken.* Repairs and remediation are currently in progress. Enterprise will remove the contaminant mass by mechanical excavation. A third party corrective action report will be included with the "Final." C-141.

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

Signature: Jon E. Fields	OIL CONSERVATION DIVISION
Printed Name: Jon E. Fields	Approved by Environmental Specialist:
Title: Director, Environmental	Approval Date: 9/22/17 Expiration Date:
E-mail Address:jefields@eprod.com	Conditions of Approval: Attached ☐
Date: 7/26/2017 Phone: (713)381-6684	

* Attach Additional Sheets If Necessary

NVF1726538484

3

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 7/31/17 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.**

NVF1721653849

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 division-approved corrective action 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 8/31/17. 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; C_6 thru C_{36}), 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; C_6 thru C_{36}), 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

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.

8/7/2017 Received

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long/Runell Seale
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name: **Lateral 2B-24**	Facility Type: **Natural Gas Gathering Pipeline**

Surface Owner: **BLM**	Mineral Owner: **BLM**	API No. **NA**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	**22**	**28N**	**10W**	**2023**		**1500**		**San Juan**

Latitude 36.649366 Longitude -107.886875

NATURE OF RELEASE

Type of Release: Natural Gas and Natural Gas Liquids	Volume of Release: **Unknown**	Volume Recovered: **None**
Source of Release: Suspected internal corrosion	Date and Hour of Occurrence: **7/21/2017 @ 2:30 p.m.**	Date and Hour of Discovery: **7/21/2017 @ 2:30 p.m.**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? Courtesy Notification: Vanessa Fields – NMOCD; Whitney Thomas-BLM	
By Whom? Runell Seale	Date and Hour July 27, 2017 @ 1:42 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action: On July 21, 2017, Enterprise responded to a possible natural gas leak on the Lateral 2B-24 pipeline. Enterprise technician verified the leak and initiated notification procedures to Gas Control, local management, safety and environmental. The pipeline was isolated, depressurized, LOTO was implemented. This is a class 1 non-jurisdictional pipeline. An area around the release of ground surface of approximately 60 feet long by 18 inches wide was affected by fluids released. Repairs and remediation were initiated on July 27, 2017.

Describe Area Affected and Cleanup Action Taken.* Repairs and remediation are currently in progress. Enterprise will remove the contaminant mass by mechanical excavation. A third party corrective action report will be included with the "Final." C-141.

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: *Jon E. Fields*	Approved by ~~District Supervisor~~ Environmental Specialist:
Title: *Director, Field Environmental*	Approval Date: 9/14/2017 Expiration Date:
E-mail Address: *jefields@eprod.com*	Conditions of Approval: Attached ☐
Date: Phone: *713-381-6684*	

* Attach Additional Sheets If Necessary

nvf1725729285

3

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 8/7/2017 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.**

NVF1725729285

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 division-approved corrective action 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 9/7/17. 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; C_6 thru C_{36}), 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; C_6 thru C_{36}), 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

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **Enterprise Field Services, LLC**	Contact **Thomas Long**
Address **614 Reilly Ave, Farmington, NM 87401**	Telephone No. **505-599-2286**
Facility Name **Potter Compressor Station**	Facility Type **Natural Gas Compressor Station**

Surface Owner **BLM**	Mineral Owner **BLM**	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	**19**	**30N**	**10W**	**470**		**1522**		**San Juan**

Latitude 36.803020 Longitude 107.921590 NAD83

NATURE OF RELEASE

Type of Release Natural Gas Liquids	Volume of Release **Unknown**	Volume Recovered **None**
Source of Release External Corrosion	Date and Hour of Occurrence **8/21/2017 @ 1:30 p.m.**	Date and Hour of Discovery **8/21/2017 @ 1:30 p.m.**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? : Courtesy Notification Cory Smith – NMOCD; Whitney Smith - BLM	
By Whom? Thomas Long	Date and Hour August 21, 2017 @ 2:25 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*On August 21, 2017, during below grade tank (BGT) decommissioning activities, Enterprise technicians discovered a release natural gas fluids from the BGT located at Potter Compressor Station. The BGT was removed from service.

Describe Area Affected and Cleanup Action Taken.* Remediation of the release will be initiated after facility equipment has been removed from the vicinity of the release. The contaminant mass will be removed by mechanical excavation. A third party corrective action report will be included with the "Final." C-141.

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

Signature: J. E. Fields	OIL CONSERVATION DIVISION
Printed Name: Jon E. Fields	Approved by Environmental Specialist:
Title: Director, Environmental	Approval Date: 9/21/2017 Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval: Attached ☒
Date: 8/31/2017 Phone: (713) 381-6684	

* Attach Additional Sheets If Necessary

nVF1726326264

3

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 9/5/2017 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 division-approved corrective action 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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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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- Composite sampling is not generally allowed.

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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.

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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

District I
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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 April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☒ Final Report

Name of Company **Enterprise Field Services, LLC**	Contact **Thomas Long**
Address **614 Reilly Ave, Farmington, NM 87401**	Telephone No. **505-599-2286**
Facility Name **Middle Mesa Compressor Station**	Facility Type **Natural Gas Compressor Station**

Surface Owner **BLM**	Mineral Owner **BLM**	Serial Number:

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from	North/South Line	Feet from	East/West Line	County
P	**10**	**31N**	**7W**	the **2,489**		the **836**		**San Juan**

Latitude 36.907129 Longitude 107.564528 NAD83

NATURE OF RELEASE

Type of Release: Natural Gas	Volume of Release **10,289 MCF Gas**	Volume Recovered **None**
Source of Release ESD Vent Valve	Date and Hour of Occurrence **11/21/2017 @ 2:30 p.m.**	Date and Hour of Discovery **11/21/2017 @ 2:30 p.m.**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? : Notification to Cory Smith – NMOCD	
By Whom? Thomas Long	Date and Hour 11/22/2017 @ 9:00 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* On November 21, 2017, it was reported that gas was emitting from ESD vent valve. A technician was dispatched and confirmed that the ESD valve was jammed in the open position. A calculated volume of 10, 289 MCF of gas was released.

Describe Area Affected and Cleanup Action Taken.* No fluids released. No further action required.

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

Signature: Jon E. Fields

Printed Name: Jon E. Fields

Title: Director, Environmental

E-mail Address: jefields@eprod.com

Date: 11/28/2017 Phone: (713) 381-6684

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: 12/18/17 Expiration Date:

Conditions of Approval: — Attached ☐

NVF1735233152

* Attach Additional Sheets If Necessary

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
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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 April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **Enterprise Field Services, LLC**	Contact **Thomas Long**
Address **614 Reilly Ave, Farmington, NM 87401**	Telephone No. **505-599-2286**
Facility Name **Richardson #100**	Facility Type **Natural Gas Metering Tube/Well Site**

Surface Owner **Navajo Tribal**	Mineral Owner **Navajo Tribal**	**Serial No.**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	**2**	**27N**	**13W**	**697**		**763**		**San Juan**

Latitude 36.5988 Longitude -108.1822 NAD83

NATURE OF RELEASE

Type of Release Condensate/Water	Volume of Release **Estimated 3-5 BBLs of Condensate/Water**	Volume Recovered **None**
Source of Release Meter Tube Freeze	Date and Hour of Occurrence **11/20/2017 @ 2:30 p.m.**	Date and Hour of Discovery **11/20/2017 @ 2:30 p.m.**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? : Courtesy Notification Cory Smith – NMOCD; Steve Austin - NNEPA	
By Whom? Thomas Long	Date and Hour November 21, 2017 @ 3:23 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* On November 20, 2017, a third party reported and leaking meter tube at the Richardson #100 well site. Enterprise confirmed the release and isolated, depressurized, locked out and tagged out the meter tube.

Describe Area Affected and Cleanup Action Taken.* An area on the well pad of approximately 40 feet long by 15 feet wide was impacted with fluids. Investigation/remediation activities are in the scheduling process. A third party corrective action report will be included with the "Final." C-141.

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

Signature: Jon E. Fields

Printed Name: Jon E. Fields

Title: Director, Environmental

E-mail Address: jefields@eprod.com

Date: 12/1/2017 Phone: (713) 381-6684

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: 12/18/17 Expiration Date:

Conditions of Approval: Sample Area 8015/8021/Chlorides NVF1735233522 Attached ☐

* Attach Additional Sheets If Necessary

1

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Enterprise Field Services, LLC	Contact: Thomas Long
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name: **Mudge B#59**	Facility Type: **Natural Gas Gathering Pipeline**

Surface Owner: **BLM**	Mineral Owner: **BLM**	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from	North/South Line	Feet from	East/West Line	County
H	**9**	**31N**	**11W**	the **2189**	North	the **1302**	West	**San Juan**

Latitude 36.91366 Longitude -107.99122

NATURE OF RELEASE

Type of Release: Natural Gas and Condensate	Volume of Release**18.58 MCF Gas; 15-20 BBLs Condensate**	Volume Recovered: **None**
Source of Release: Suspected Internal Corrosion	Date and Hour of Occurrence: **1/15/2016 @ 12:22 a.m.**	Date and Hour of Discovery: **1/15/2016 @ 1:30 a.m.**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Time	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume	

OIL CONS. DIV DIST. 3

JUN 14 2017

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action: On January 15, 2016, Enterprise technicians discovered a gas leak on the Mudge B#59 pipeline. The pipeline was isolated, blown down, locked out and tagged out. Subsequently, temporary repairs were completed. On December 5, 2016, Enterprise resumed remediation activities and completed the permanent repairs. Remediation efforts were ceased on December 19, 2016.

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 compliance with any other federal, state, or local laws and/or regulations.

Signature: Jon E. Fields	OIL CONSERVATION DIVISION
Printed Name: Jon E. Fields	Approved by Environmental Specialist:
Title: Director, Environmental	Approval Date: 12/19/17 Expiration Date:
E-mail Address:jefields@eprod.com	Conditions of Approval: — Attached ☐
Date: 6/12/2017 Phone: (713)381-6684	

* Attach Additional Sheets If Necessary

NVF1636449671

93

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

Kyle Summers, CPG
Branch Manager / Senior Project Manager

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LIST OF APPENDICES

APEX

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:

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

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 re-designated 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-of-custody 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 = $\left(\frac{conc_x}{SSL_x}+\frac{conc_y}{SSL_y}+\frac{conc_z}{SSL_z}+\ldots+\frac{conc_i}{SSL_i}\right) \times 10^{-5}$ **Site-Specific Risk = 9.9 x 10^{-6}**					
Variable	Definition	Highest Observed Concentration (mg/Kg)	Variable	Definition	Residential SSL Concentration (mg/kg)
$conc_x$	Benzene	12	SSL_x	SSL for Benzene	1.78E+01
$conc_y$	Ethylbenzene	24	SSL_y	SSL for Ethylbenzene	7.51E+01

Site Hazard Index (Non-carcinogens)					
Site Hazard Index (HI) = $\left(\frac{conc_x}{SSL_x}+\frac{conc_y}{SSL_y}+\frac{conc_z}{SSL_z}+...+\frac{conc_i}{SSL_i}\right)$ x 1 **Site-Specific HI = 0.37**					
Variable	Definition	Highest Observed Concentration (mg/kg)	Variable	Definition	Residential SSL Concentration (mg/kg)
$conc_x$	Toluene	78	SSL_x	SSL for Toluene	5.23E+03
$conc_y$	Xylene	310	SSL_y	SSL for Xylenes	8.71E+02

TPH Site Hazard Index (Non-carcinogens)					
(HI) = $\left(\frac{conc_x}{SSL_x}+\frac{conc_y}{SSL_y}+\frac{conc_z}{SSL_z}+...+\frac{conc_i}{SSL_i}\right)$ x 1 **HI = 0.85**					
Variable	Definition	Observed Concentration (mg/kg)	Variable	Definition	SSL Concentration (mg/kg)
$conc_x$	DRO	770	SSL_x	SSL concentration for Diesel #2/crankcase oil	1000
$conc_y$	MRO	140	SSL_y	SSL concentration for mineral oil	1800

Note: For TPH DRO and MRO, the NMED developed TPH soil screening levels based on non-carcinogenic toxicity[1], 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.

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.

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, EMNRD
Sent: Tuesday, December 20, 2016 10:42 AM
To: 'Long, Thomas'; l1thomas@blm.gov
Cc: Stone, Brian
Subject: 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 (Vanessa.Fields@state.nm.us); l1thomas@blm.gov
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 (Vanessa.Fields@state.nm.us); l1thomas@blm.gov; 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)'
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)
tjlong@eprod.com

From: Long, Thomas
Sent: Thursday, December 08, 2016 3:57 PM
To: Fields, Vanessa, EMNRD (Vanessa.Fields@state.nm.us); 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)'; l1thomas@blm.gov

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.

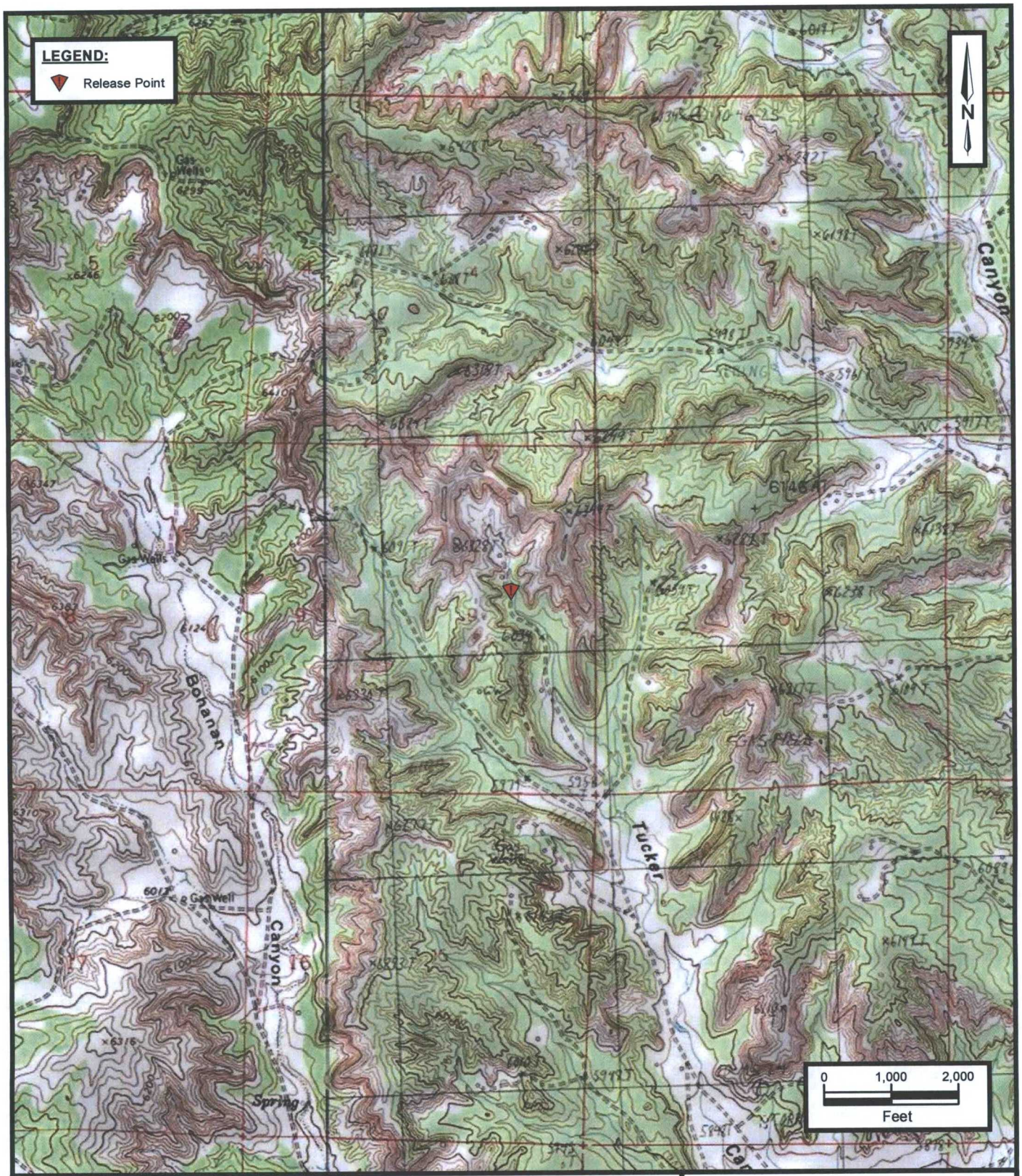
Sincerely,

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

Enterprise Products

APPENDIX A

Figures



Mudge B #59 Pipeline Release
NE 1/4, Sec9 T31N R11W
San Juan County, New Mexico
36.91366 N, 107.99122 W

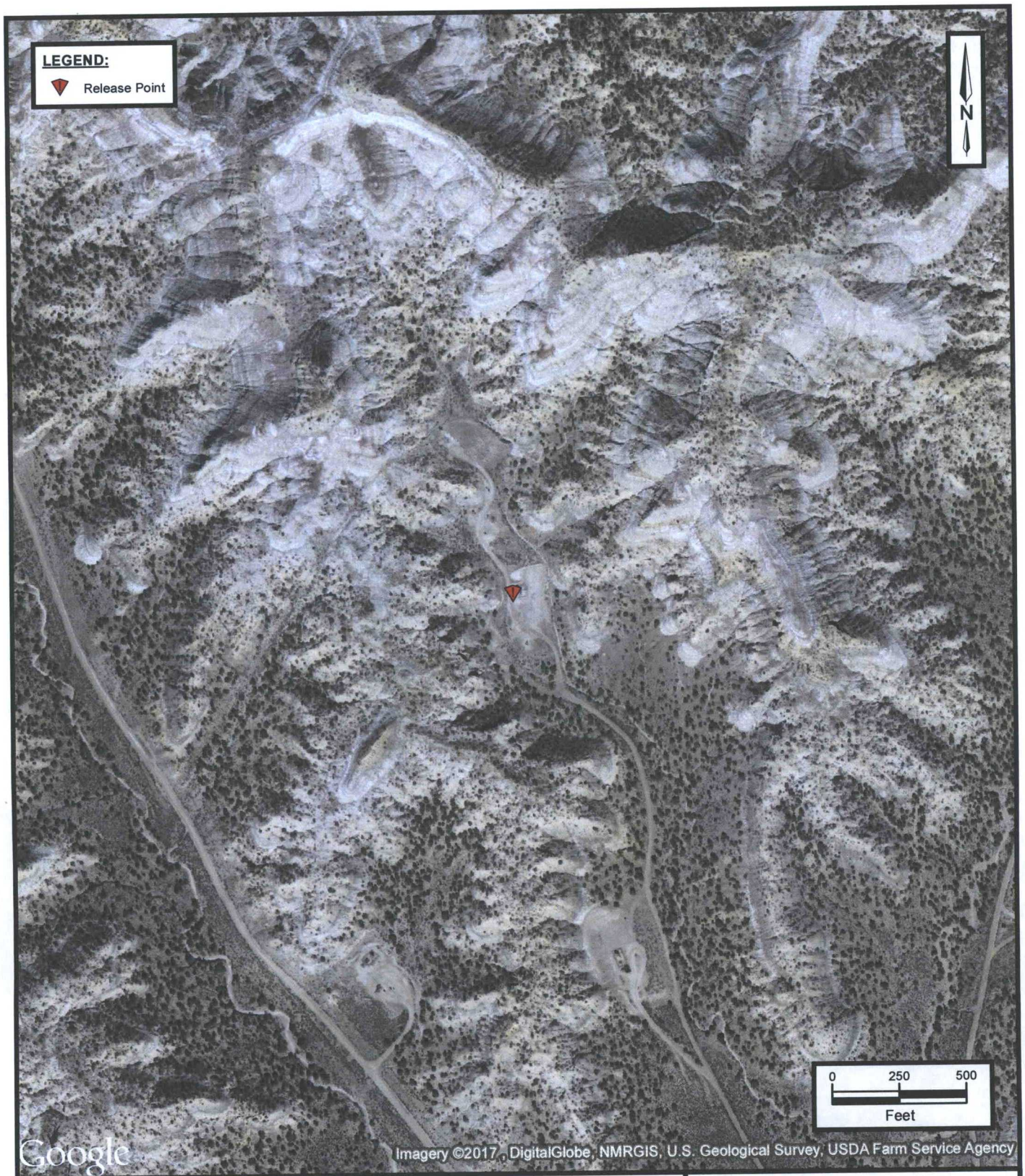
Project No. 725040112098

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

FIGURE 1

Topographic Map

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



Mudge B #59 Pipeline Release
NE 1/4, Sec9 T31N R11W
San Juan County, New Mexico
36.91366 N, 107.99122 W

Project No. 725040112098

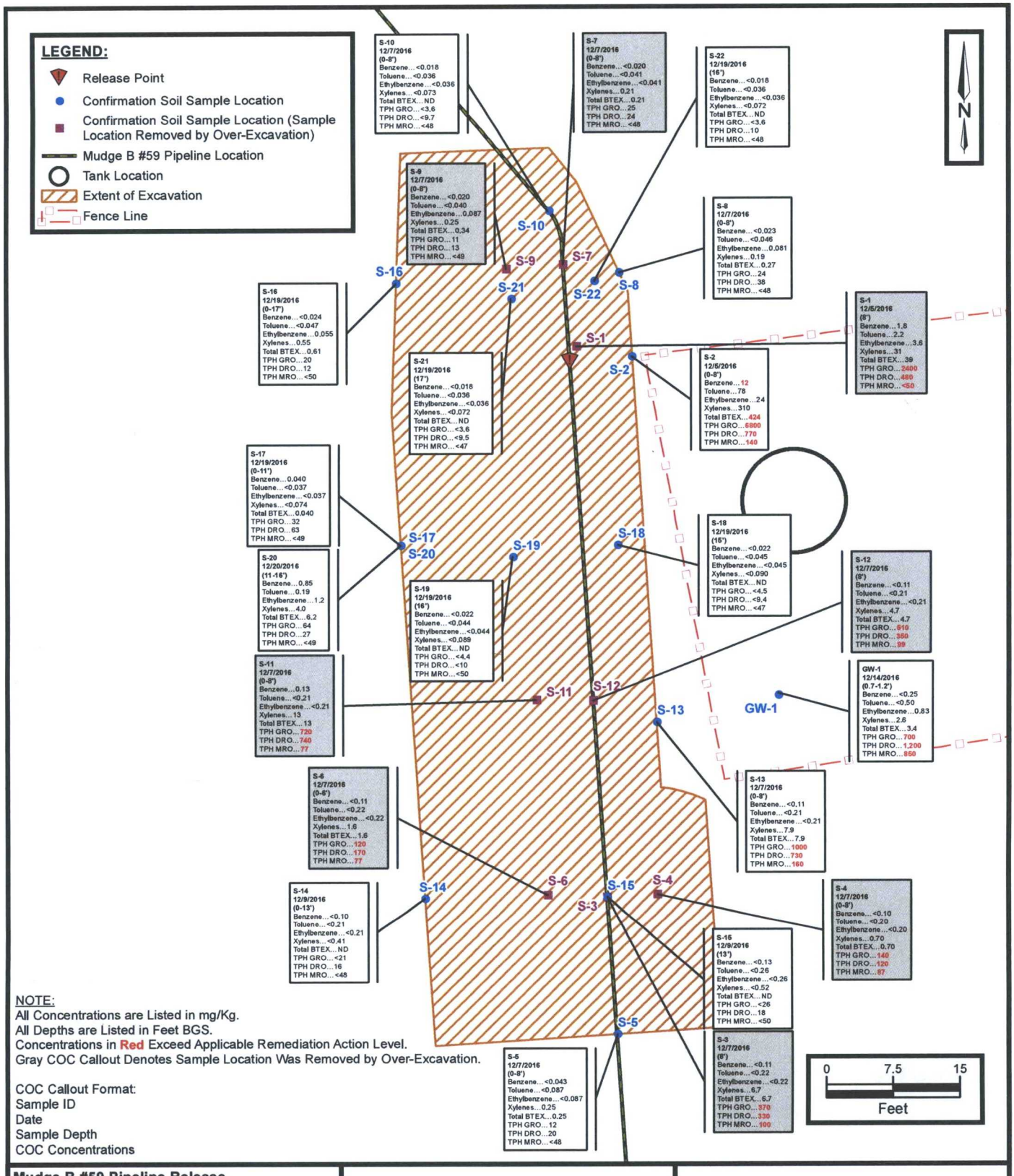
Apex TITAN, Inc.
606 South Rio Grande, Suite A
Aztec, New Mexico 87410
Phone: (505) 334-5200
www.apexcos.com
A Subsidiary of Apex Companies, LLC

FIGURE 2

Site Vicinity Map

Service Layer Credits:
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, Aerial Photograph March 2015

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



NOTE:
All Concentrations are Listed in mg/Kg.
All Depths are Listed in Feet BGS.
Concentrations in **Red** Exceed Applicable Remediation Action Level.
Gray COC Callout Denotes Sample Location Was Removed by Over-Excavation.

COC Callout Format:
Sample ID
Date
Sample Depth
COC Concentrations

Mudge B #59 Pipeline Release
NE 1/4, Sec9 T31N R11W
San Juan County, New Mexico
36.91366 N, 107.99122 W

Project No. 725040112098

Apex TITAN, Inc.
606 South Rio Grande, Suite A
Aztec, New Mexico 87410
Phone: (505) 334-5200
www.apexcos.com
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FIGURE 3

Site Map with Soil Analytical Results

C:\Users\jsimpson\Desktop\725040112098\Figure 3.mxd Modified 3/17/2017 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 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-138
Revised August 1, 2011

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

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. **Generator Name and Address:**
Enterprise Field Services, LLC, 614 Reilly Avenue, Farmington, NM 87401

12/14/16-316cy
12/13/16-316cy
12/12/16-192cy
12/9/16=192cy
12/8/16-24cy
12/7/16-40.66cy
12/6/16-316cy
12/2/16-98cy

2. **Originating Site:**
Mudge B#59 Well Tie

3. **Location of Material (Street Address, City, State or ULSTR):**
Unit Letter G Section 9 T31N R11W; 36.913734, -107.991173, San Juan County, NM

4. **Source and Description of Waste:** Excavated soil impacted with hydrocarbons associated with a pipeline release.

5. Estimated Volume 50 (yd³) bbls Known Volume (to be entered by the operator at the end of the haul) 240 (yd³) bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Thomas Long (Thomas Long) representative or authorized agent for Enterprise Field Services, LLC do hereby
PRINT & SIGN NAME COMPANY NAME
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. *Operator Use Only: Waste Acceptance Frequency* ☒ *Monthly* ☐ *Weekly* ☐ *Per Load*

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, (Thomas Long) 12-6-16, representative for Enterprise Field Services, LLC authorize IEI, Inc. to
Generator Signature
complete the required testing/sign the Generator Waste Testing Certification.

I, Manuela Lee, representative for IEI, Inc. do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

6. **Transporter: Halo**

OCD Permitted Surface Waste Management Facility

PH=8
CL=<124

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:

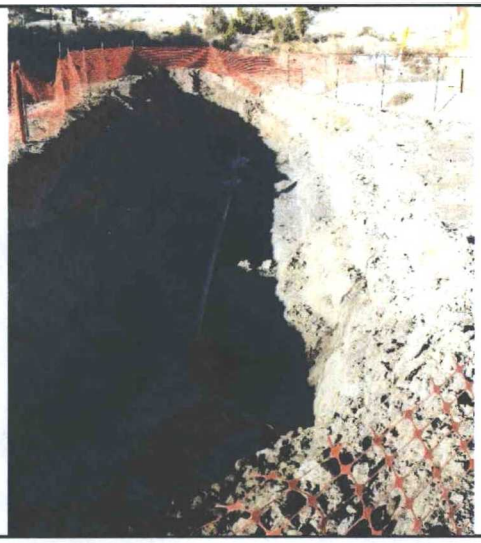
☒ **APPROVED** ☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: M. Marquez TITLE: Land Farm Administrator DATE: 12/6/16
SIGNATURE: M. Marquez TELEPHONE NO.: 505-632-1782
Surface Waste Management Facility Authorized Agent

12-6-16

APPENDIX C

Photographic Documentation

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.	

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 Energy, Mineral & Natural Resources Department, Oil Conservation Division, Remediation Action Level			10	NE	NE	NE	50	100		
Soil Samples Removed by Over-Excavation										
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 Western Storage Tank Spill Containment Sample										
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 Confirmation Soil Samples										
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	27	<49
S-21	12.19.16	17	<0.018	<0.036	<0.036	<0.072	ND	<3.6	<9.5	<47
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

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 07, 2016

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

RE: Mudge B59 OrderNo.: 1612194

Dear Kyle Summers:

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1612194**
Date Reported: **12/7/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B59
Lab ID: 1612194-001
Client Sample ID: S-1
Collection Date: 12/5/2016 3:20:00 PM
Matrix: MEOH (SOIL)
Received Date: 12/6/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE 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 RANGE 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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-2
Project: Mudge B59
Collection Date: 12/5/2016 3:30:00 PM
Lab ID: 1612194-002
Matrix: MEOH (SOIL)
Received Date: 12/6/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE 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 RANGE ORGANICS						Analyst: **TOM**	
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 SHORT 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

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612194**

07-Dec-16

Client: APEX TITAN
Project: Mudge B59

Sample ID **LCS-29013**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **29013**	RunNo: **39168**
Prep Date: **12/6/2016**	Analysis Date: **12/6/2016**	SeqNo: **1225423** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	62.6	124			
Surr: DNOP	4.3		5.000		86.8	70	130			

Sample ID **MB-29013**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **29013**	RunNo: **39168**
Prep Date: **12/6/2016**	Analysis Date: **12/6/2016**	SeqNo: **1225426** 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		84.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612194**

07-Dec-16

Client: APEX TITAN
Project: Mudge B59

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **S39172**	RunNo: **39172**
Prep Date:	Analysis Date: **12/6/2016**	SeqNo: **1225752** 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	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: 4-Bromofluorobenzene	0.48		0.5000		96.9	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: Toluene-d8	0.50		0.5000		99.9	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **S39172**	RunNo: **39172**
Prep Date:	Analysis Date: **12/6/2016**	SeqNo: **1225758** 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: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.6	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**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **S-1**	Batch ID: **S39172**	RunNo: **39172**
Prep Date:	Analysis Date: **12/6/2016**	SeqNo: **1226536** Units: **mg/Kg**

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			

Sample ID **1612194-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **S-1**	Batch ID: **S39172**	RunNo: **39172**
Prep Date:	Analysis Date: **12/6/2016**	SeqNo: **1226537** Units: **mg/Kg**

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:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612194**

07-Dec-16

Client: APEX TITAN
Project: Mudge B59

Sample ID **1612194-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **S-1**	Batch ID: **S39172**	RunNo: **39172**
Prep Date:	Analysis Date: **12/6/2016**	SeqNo: **1226537** Units: **mg/Kg**

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612194**

07-Dec-16

Client: APEX TITAN

Project: Mudge B59

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **G39172**	RunNo: **39172**
Prep Date:	Analysis Date: **12/6/2016**	SeqNo: **1225809** 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 lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G39172**	RunNo: **39172**
Prep Date:	Analysis Date: **12/6/2016**	SeqNo: **1226499** 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**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **S-1**	Batch ID: **G39172**	RunNo: **39172**
Prep Date:	Analysis Date: **12/6/2016**	SeqNo: **1226500** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	3700	240	1177	2410	107	52.3	132			
Surr: BFB	22000		23540		95.3	70	130			

Sample ID **1612194-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **S-1**	Batch ID: **G39172**	RunNo: **39172**
Prep Date:	Analysis Date: **12/6/2016**	SeqNo: **1226501** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	3600	240	1177	2410	97.1	52.3	132	3.28	20	
Surr: BFB	22000		23540		93.3	70	130	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC | Work Order Number: 1612194 | RcptNo: 1

Received by/date: 12/06/16

Logged By: Ashley Gallegos 12/6/2016 8:00:00 AM

Completed By: Ashley Gallegos 12/6/2016 8:34:08 AM

Reviewed By: JO 12/06/16

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

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

Adjusted?

Checked by:

Special Handling (if applicable)

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

Person Notified: Date

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

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec, NM

Project Manager: K. Summers

Laboratory: Hall Environmental

Address: ABQ, NM

Contact: A. Freeman

Phone:

PO/SO #:

Sampler's Name: Kyle Summers

Sampler's Signature:

Proj. No.

Project Name: Mudge B #59

Lab use only
Due Date:

Temp. of coolers when received (C°): 1.0

1 | 2 | 3 | 4 | 5

Page 1 of 1

ANALYSIS REQUESTED

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No/Type of Containers: VOA	A/G 1 L	250 ml	Glass Jar	P/O	8021 BTEX	8015 TPH GRO/DRO/MRO	Lab Sample ID (Lab Use Only)
S	12/5/16	1520		X	S-1						1		X	X	1612194-001
S	12/5/16	1530		X	S-2						1		X	X	-002

NS
NS

Turn around time: ☐ Normal ☐ 25% Rush ☐ 50% Rush ☒ 100% Rush SAME DAY

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	12/5/16	1707		12/5/16	1707
	12/5/16	1849		12/06/16	0800

NOTES:

Bill-to Tom Long (EPCOD)
Non AFE # N 23923

SAME DAY RUSH

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

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

RE: Mudge B 59 OrderNo.: 1612401

Dear Kyle Summers:

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1612401**
Date Reported: **12/9/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B 59
Lab ID: 1612401-001
Client Sample ID: S-3
Collection Date: 12/7/2016 12:30:00 PM
Matrix: MEOH (SOIL)
Received Date: 12/8/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range 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: DNOP	86.8	70-130		%Rec	1	12/8/2016 10:30:41 AM	29071
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	370	22		mg/Kg	5	12/8/2016 1:05:30 PM	29059
Surr: BFB	616	68.3-144	S	%Rec	5	12/8/2016 1:05:30 PM	29059
EPA METHOD 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
Ethylbenzene	ND	0.22		mg/Kg	5	12/8/2016 1:05:30 PM	29059
Xylenes, Total	6.7	0.44		mg/Kg	5	12/8/2016 1:05:30 PM	29059
Surr: 4-Bromofluorobenzene	134	80-120	S	%Rec	5	12/8/2016 1:05:30 PM	29059

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-4
Project: Mudge B 59
Collection Date: 12/7/2016 12:40:00 PM
Lab ID: 1612401-002
Matrix: MEOH (SOIL)
Received Date: 12/8/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B 59
Lab ID: 1612401-003
Client Sample ID: S-5
Collection Date: 12/7/2016 12:50:00 PM
Matrix: MEOH (SOIL)
Received Date: 12/8/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-6
Project: Mudge B 59
Collection Date: 12/7/2016 1:00:00 PM
Lab ID: 1612401-004
Matrix: MEOH (SOIL)
Received Date: 12/8/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						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		%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	%Rec	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		%Rec	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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B 59
Lab ID: 1612401-005
Client Sample ID: S-7
Collection Date: 12/7/2016 1:10:00 PM
Matrix: MEOH (SOIL)
Received Date: 12/8/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
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 RANGE						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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B 59
Lab ID: 1612401-006
Matrix: MEOH (SOIL)
Client Sample ID: S-8
Collection Date: 12/7/2016 1:20:00 PM
Received Date: 12/8/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B 59
Lab ID: 1612401-007
Client Sample ID: S-9
Collection Date: 12/7/2016 1:30:00 PM
Matrix: MEOH (SOIL)
Received Date: 12/8/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
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 RANGE						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
Xylenes, Total	0.25	0.080		mg/Kg	1	12/8/2016 10:55:26 AM	B39252
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	12/8/2016 10:55:26 AM	B39252

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B 59
Lab ID: 1612401-008
Client Sample ID: S-10
Collection Date: 12/7/2016 1:40:00 PM
Matrix: MEOH (SOIL)
Received Date: 12/8/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
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 RANGE						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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: S-11
Project: Mudge B 59
Collection Date: 12/7/2016 1:50:00 PM
Lab ID: 1612401-009
Matrix: MEOH (SOIL)
Received Date: 12/8/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range 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: DNOP	92.2	70-130		%Rec	1	12/8/2016 11:39:45 AM	29071
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	720	21		mg/Kg	5	12/8/2016 11:54:42 AM	29059
Surr: BFB	1240	68.3-144	S	%Rec	5	12/8/2016 11:54:42 AM	29059
EPA METHOD 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
Ethylbenzene	ND	0.21		mg/Kg	5	12/8/2016 11:54:42 AM	29059
Xylenes, Total	13	0.42		mg/Kg	5	12/8/2016 11:54:42 AM	29059
Surr: 4-Bromofluorobenzene	156	80-120	S	%Rec	5	12/8/2016 11:54:42 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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B 59
Lab ID: 1612401-010
Client Sample ID: S-12
Collection Date: 12/7/2016 2:00:00 PM
Matrix: MEOH (SOIL)
Received Date: 12/8/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range 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: DNOP	94.8	70-130		%Rec	1	12/8/2016 12:22:30 PM	29071
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	510	21		mg/Kg	5	12/8/2016 12:18:14 PM	29059
Surr: BFB	968	68.3-144	S	%Rec	5	12/8/2016 12:18:14 PM	29059
EPA METHOD 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
Ethylbenzene	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
Surr: 4-Bromofluorobenzene	153	80-120	S	%Rec	5	12/8/2016 12:18:14 PM	29059

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B 59
Lab ID: 1612401-011

Client Sample ID: S-13
Collection Date: 12/7/2016 2:10:00 PM
Matrix: MEOH (SOIL) **Received Date:** 12/8/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						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 RANGE						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

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612401**

09-Dec-16

Client: APEX TITAN
Project: Mudge B 59

Sample ID	LCS-29071	SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS	Batch ID:	29071		RunNo:	39237				
Prep Date:	12/8/2016	Analysis Date:	12/8/2016		SeqNo:	1227846	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	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:	PBS	Batch ID:	29071		RunNo:	39237				
Prep Date:	12/8/2016	Analysis Date:	12/8/2016		SeqNo:	1227849	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.1	70	130			

Sample ID	1612401-001AMS	SampType:	MS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	S-3	Batch ID:	29071		RunNo:	39237				
Prep Date:	12/8/2016	Analysis Date:	12/8/2016		SeqNo:	1228224	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	330	9.4	46.86	334.0	-3.95	51.6	130			S
Surr: DNOP	4.1		4.686		86.8	70	130			

Sample ID	1612401-001AMSD	SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	S-3	Batch ID:	29071		RunNo:	39237				
Prep Date:	12/8/2016	Analysis Date:	12/8/2016		SeqNo:	1228225	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612401**

09-Dec-16

Client: APEX TITAN
Project: Mudge B 59

Sample ID **MB-29059**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **29059**	RunNo: **39251**
Prep Date: **12/7/2016**	Analysis Date: **12/8/2016**	SeqNo: **1228697** 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	840		1000		83.7	68.3	144			

Sample ID **LCS-29059**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **29059**	RunNo: **39251**
Prep Date: **12/7/2016**	Analysis Date: **12/8/2016**	SeqNo: **1228698** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	74.6	123			
Surr: BFB	920		1000		92.4	68.3	144			

Sample ID **MB-29049**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **29049**	RunNo: **39251**
Prep Date: **12/7/2016**	Analysis Date: **12/8/2016**	SeqNo: **1228752** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	860		1000		85.8	68.3	144			

Sample ID **LCS-29049**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **29049**	RunNo: **39251**
Prep Date: **12/7/2016**	Analysis Date: **12/8/2016**	SeqNo: **1228753** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	920		1000		92.0	68.3	144			

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G39252**	RunNo: **39252**
Prep Date:	Analysis Date: **12/8/2016**	SeqNo: **1228807** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	850		1000		85.1	68.3	144			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G39252**	RunNo: **39252**
Prep Date:	Analysis Date: **12/8/2016**	SeqNo: **1228808** 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	95.2	74.6	123			
Surr: BFB	940		1000		93.6	68.3	144			

Qualifiers:

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

QC SUMMARY REPORT

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612401**

09-Dec-16

Client: APEX TITAN

Project: Mudge B 59

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
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**	Batch ID: **B39252**	RunNo: **39252**
Prep Date:	Analysis Date: **12/8/2016**	SeqNo: **1228832** 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	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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC | Work Order Number: 1612401 | RcptNo: 1

Received by/date: 12/08/16

Logged By: Lindsay Mangin 12/8/2016 8:10:00 AM

Completed By: Lindsay Mangin 12/8/2016 8:28:28 AM

Reviewed By: 12/08/16

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	NA
6. Sample(s) in proper container(s)?	Yes ✔	No	
7. Sufficient sample volume for indicated test(s)?	Yes ✔	No	
8. Are samples (except VOA and ONG) properly preserved?	Yes ✔	No	
9. Was preservative added to bottles?	Yes	No ✔	NA
10. VOA vials have zero headspace?	Yes	No	No VOA Vials ✔
11. Were any sample containers received broken?	Yes	No ✔	# of preserved bottles checked for pH:
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ✔	No	(<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ✔	No	Adjusted?
14. Is it clear what analyses were requested?	Yes ✔	No	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ✔	No	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes No NA ✔

Person Notified: Date:

By Whom: Via: eMail Phone Fax In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

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

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec, NM

Project Manager: K Summers

Laboratory: Hall Environmental

Address: ABQ, NM

Contact: A. Freeman

Phone:

PO/SO #:

Lab use only
Due Date:

Temp. of coolers when received (C°): 1 · 1

1	2	3	4	5

Page 1 of 2

Sampler's Name: Kyle Summers

Sampler's Signature:

Proj. No.

Project Name: Mudge B #59

No/Type of Containers

ANALYSIS REQUESTED: 8021 BTEX; 8015 TPH GRO/DRO/MRO

Matrix	Date	Time	Comp.	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	12/7/16	1230	X		S-3						1		1612401-001
		1240			S-4						1		-002
		1250			S-5						1		-003
		1300			S-6						1		-004
		1310			S-7						1		-005
		1320			S-8						1		-006
		1330			S-9						1		-007
		1340			S-10						1		-008
		1350			S-11						1		-009
		1400			S-12						1		-010

Turn around time: ☐ Normal ☐ 25% Rush ☐ 50% Rush ☒ 100% Rush SAME DAY

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	12/7/16	1600		12/7/16	1600
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	12/7/16	1700		12/7/16	1700
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	12/7/16	1910		12/8/16	0810
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

Bill to Tom Long (EPROD)
N23923

SAMEDAY Rush

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other _____

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec, NM

Project Manager: K Summers

Laboratory: Hall Environmental

Address: ABQ, NM

Contact: A Freeman

Phone:

PO/SO #:

Lab use only
Due Date:

Temp. of coolers when received (C°): 1.1

1 | 2 | 3 | 4 | 5

Page 2 of 2

Sampler's Name: Kyle Summers

Sampler's Signature:

Proj. No.

Project Name: Mudge B #59

No/Type of Containers

ANALYSIS REQUESTED: 8021 BTEX; 8015 TPH GRO / DRO / MRO

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	12/7/16	1410	X		S-13						1		1612401-001 -011

Turn around time: ☐ Normal ☐ 25% Rush ☐ 50% Rush ☒ 100% Rush SAMEDAY

Relinquished by (Signature)	Date	Time	Received by: (Signature)	Date	Time
	12/7/16	1600		12/7/16	1600
	12/7/16	1700		12/7/16	1701
	12/7/16	1710		12/08/16	0810

NOTES:

Bill to Tom Long (EPROD)

N23923

SAMEDAY Rush

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

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 13, 2016

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

RE: Mudge B 59 OrderNo.: 1612558

Dear Kyle Summers:

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B 59
Lab ID: 1612558-001

Client Sample ID: S-14
Collection Date: 12/9/2016 1:00:00 PM
Matrix: MEOH (SOIL) **Received Date:** 12/10/2016 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	16	9.5		mg/Kg	1	12/12/2016 10:19:25 AM	29117
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/12/2016 10:19:25 AM	29117
Surr: DNOP	97.1	70-130		%Rec	1	12/12/2016 10:19:25 AM	29117
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	12/12/2016 11:24:29 AM	29099
Surr: BFB	110	68.3-144		%Rec	5	12/12/2016 11:24:29 AM	29099
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.10		mg/Kg	5	12/12/2016 11:24:29 AM	29099
Toluene	ND	0.21		mg/Kg	5	12/12/2016 11:24:29 AM	29099
Ethylbenzene	ND	0.21		mg/Kg	5	12/12/2016 11:24:29 AM	29099
Xylenes, Total	ND	0.41		mg/Kg	5	12/12/2016 11:24:29 AM	29099
Surr: 4-Bromofluorobenzene	98.5	80-120		%Rec	5	12/12/2016 11:24:29 AM	29099

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample 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 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	18	10		mg/Kg	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

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612558**

13-Dec-16

Client: APEX TITAN
Project: Mudge B 59

Sample 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**	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**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.3	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612558**

13-Dec-16

Client: APEX TITAN
Project: Mudge B 59

Sample ID **MB-29099**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **29099**	RunNo: **39314**
Prep Date: **12/9/2016**	Analysis Date: **12/12/2016**	SeqNo: **1230865** 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	860		1000		86.2	68.3	144			

Sample ID **LCS-29099**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **29099**	RunNo: **39314**
Prep Date: **12/9/2016**	Analysis Date: **12/12/2016**	SeqNo: **1230866** Units: **mg/Kg**

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612558**

13-Dec-16

Client: APEX TITAN
Project: Mudge B 59

Sample ID **MB-29099**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **29099**	RunNo: **39314**
Prep Date: **12/9/2016**	Analysis Date: **12/12/2016**	SeqNo: **1230878** 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	0.95		1.000		95.4	80	120			

Sample ID **LCS-29099**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **29099**	RunNo: **39314**
Prep Date: **12/9/2016**	Analysis Date: **12/12/2016**	SeqNo: **1230879** 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	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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC | Work Order Number: 1612558 | RcptNo: 1

Received by/date: 12/10/16

Logged By: Lindsay Mangin 12/10/2016 10:00:00 AM

Completed By: Lindsay Mangin 12/12/2016 7:19:49 AM

Reviewed By: aJ 12/12/16

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec

Project Manager: M. Summers

Laboratory: Hall

Address: ABQ

Contact: A. Freeman

Phone:

PO/SO #:

Sampler's Name: Ranee Deechilly

Sampler's Signature:

Proj. No.

Project Name: Mudge B#59

ANALYSIS REQUESTED: BTEX 8021 / TPH GRO/DRO/MRO 8015

Lab use only
Due Date:

Temp. of coolers when received (C°): 3.4

1	2	3	4	5

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No/Type of Containers: VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	12/9/16	1300			S-14						1		1612668-001
S	12/9/16	1310			S-15						1		-002

NFS

Turn around time: ☐ Normal ☐ 25% Rush ☐ 50% Rush ☒ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	12/9/16	1430		12/9/16	1430
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	12/10/16	1010		12/10/16	1000
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES: Bill Tom Long
Non AFE# N23923

SAME DAY

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

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 21, 2016

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

RE: Mudge B #59 OrderNo.: 1612A47

Dear Kyle Summers:

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B #59
Lab ID: 1612A47-001

Client Sample ID: S-22
Collection Date: 12/19/2016 2:30:00 PM
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 RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	10	9.5		mg/Kg	1	12/20/2016 10:00:24 AM	29292
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/20/2016 10:00:24 AM	29292
Surr: DNOP	126	70-130		%Rec	1	12/20/2016 10:00:24 AM	29292
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	12/20/2016 11:54:38 AM	29267
Surr: BFB	102	68.3-144		%Rec	1	12/20/2016 11:54:38 AM	29267
EPA METHOD 8021B: VOLATILES						Analyst: **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
Ethylbenzene	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-Bromofluorobenzene	102	80-120		%Rec	1	12/20/2016 11:54:38 AM	29267

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B #59
Lab ID: 1612A47-002

Client Sample ID: S-21
Collection Date: 12/19/2016 2:35:00 PM
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 RANGE ORGANICS						Analyst: **TOM**	
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 RANGE						Analyst: **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						Analyst: **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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B #59
Lab ID: 1612A47-003

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 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	12	10		mg/Kg	1	12/20/2016 10:43:32 AM	29292
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2016 10:43:32 AM	29292
Surr: DNOP	92.7	70-130		%Rec	1	12/20/2016 10:43:32 AM	29292
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	20	4.7		mg/Kg	1	12/20/2016 12:41:46 PM	29267
Surr: BFB	201	68.3-144	S	%Rec	1	12/20/2016 12:41:46 PM	29267
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/20/2016 12:41:46 PM	29267
Toluene	ND	0.047		mg/Kg	1	12/20/2016 12:41:46 PM	29267
Ethylbenzene	0.055	0.047		mg/Kg	1	12/20/2016 12:41:46 PM	29267
Xylenes, Total	0.55	0.095		mg/Kg	1	12/20/2016 12:41:46 PM	29267
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/20/2016 12:41:46 PM	29267

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B #59
Lab ID: 1612A47-004

Client Sample ID: S-17
Collection Date: 12/19/2016 3:20:00 PM
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 RANGE ORGANICS						Analyst: **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 RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	32	3.7		mg/Kg	1	12/20/2016 1:05:09 PM	29267
Surr: BFB	542	68.3-144	S	%Rec	1	12/20/2016 1:05:09 PM	29267
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.040	0.018		mg/Kg	1	12/20/2016 1:05:09 PM	29267
Toluene	ND	0.037		mg/Kg	1	12/20/2016 1:05:09 PM	29267
Ethylbenzene	ND	0.037		mg/Kg	1	12/20/2016 1:05:09 PM	29267
Xylenes, Total	ND	0.074		mg/Kg	1	12/20/2016 1:05:09 PM	29267
Surr: 4-Bromofluorobenzene	114	80-120		%Rec	1	12/20/2016 1:05:09 PM	29267

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B #59
Lab ID: 1612A47-005

Client Sample ID: S-18
Collection Date: 12/19/2016 3:30:00 PM
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 RANGE ORGANICS						Analyst: **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 RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	12/20/2016 12:29:13 PM	G39532
Surr: BFB	88.6	68.3-144		%Rec	1	12/20/2016 12:29:13 PM	G39532
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.022		mg/Kg	1	12/20/2016 12:29:13 PM	B39532
Toluene	ND	0.045		mg/Kg	1	12/20/2016 12:29:13 PM	B39532
Ethylbenzene	ND	0.045		mg/Kg	1	12/20/2016 12:29:13 PM	B39532
Xylenes, Total	ND	0.090		mg/Kg	1	12/20/2016 12:29:13 PM	B39532
Surr: 4-Bromofluorobenzene	96.2	80-120		%Rec	1	12/20/2016 12:29:13 PM	B39532

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B #59
Lab ID: 1612A47-006
Matrix: MEOH (SOIL)
Client Sample ID: S-19
Collection Date: 12/19/2016 3:50:00 PM
Received Date: 12/20/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2016 11:47:56 AM	29292
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2016 11:47:56 AM	29292
Surr: DNOP	91.8	70-130		%Rec	1	12/20/2016 11:47:56 AM	29292
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	12/20/2016 12:53:40 PM	G39532
Surr: BFB	89.4	68.3-144		%Rec	1	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

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612A47**

21-Dec-16

Client: APEX TITAN
Project: Mudge B #59

Sample ID **LCS-29291**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **29291**	RunNo: **39526**
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
Surr: 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	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			

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								
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			
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**
Prep Date: **12/20/2016**	Analysis Date: **12/20/2016**	SeqNo: **1238549** Units: **mg/Kg**

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612A47**

21-Dec-16

Client: APEX TITAN

Project: Mudge B #59

Sample ID	**1612A47-001AMSD**	SampType:	**MSD**		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:	**1238549**	Units:	**mg/Kg**		
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**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**29273**		RunNo:	**39526**				
Prep Date:	**12/19/2016**	Analysis Date:	**12/20/2016**		SeqNo:	**1238583**	Units:	**%Rec**		
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**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**29273**		RunNo:	**39526**				
Prep Date:	**12/19/2016**	Analysis Date:	**12/20/2016**		SeqNo:	**1238584**	Units:	**%Rec**		
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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612A47**

21-Dec-16

Client: APEX TITAN
Project: Mudge B #59

Sample ID **MB-29267**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **29267**	RunNo: **39531**
Prep Date: **12/19/2016**	Analysis Date: **12/20/2016**	SeqNo: **1238284** 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	860		1000		86.3	68.3	144			

Sample ID **LCS-29267**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **29267**	RunNo: **39531**
Prep Date: **12/19/2016**	Analysis Date: **12/20/2016**	SeqNo: **1238285** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	74.6	123			
Surr: BFB	970		1000		97.0	68.3	144			

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G39532**	RunNo: **39532**
Prep Date:	Analysis Date: **12/20/2016**	SeqNo: **1238355** 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	830		1000		83.3	68.3	144			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G39532**	RunNo: **39532**
Prep Date:	Analysis Date: **12/20/2016**	SeqNo: **1238356** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range 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**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **29268**	RunNo: **39532**
Prep Date: **12/19/2016**	Analysis Date: **12/20/2016**	SeqNo: **1238359** 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**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **29268**	RunNo: **39532**
Prep Date: **12/19/2016**	Analysis Date: **12/20/2016**	SeqNo: **1238360** 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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612A47**

21-Dec-16

Client: APEX TITAN

Project: Mudge B #59

Sample ID **MB-29267**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **29267**	RunNo: **39531**
Prep Date: **12/19/2016**	Analysis Date: **12/20/2016**	SeqNo: **1238317** 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	0.96		1.000		96.5	80	120			

Sample ID **LCS-29267**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **29267**	RunNo: **39531**
Prep Date: **12/19/2016**	Analysis Date: **12/20/2016**	SeqNo: **1238318** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	117	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-Bromofluorobenzene	1.0		1.000		99.8	80	120			

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B39532**	RunNo: **39532**
Prep Date:	Analysis Date: **12/20/2016**	SeqNo: **1238384** 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	0.89		1.000		88.6	80	120			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B39532**	RunNo: **39532**
Prep Date:	Analysis Date: **12/20/2016**	SeqNo: **1238385** 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	106	75.2	115			
Toluene	0.98	0.050	1.000	0	98.2	80.7	112			
Ethylbenzene	0.94	0.050	1.000	0	93.8	78.9	117			
Xylenes, Total	2.8	0.10	3.000	0	92.5	79.2	115			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.8	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612A47**

21-Dec-16

Client: APEX TITAN

Project: Mudge B #59

Sample ID	**MB-29268**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
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**					
Client ID:	**LCSS**	Batch ID:	**29268**	RunNo:	**39532**					
Prep Date:	**12/19/2016**	Analysis Date:	**12/20/2016**	SeqNo:	**1238389**	Units:	**%Rec**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.92		1.000		92.0	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC | Work Order Number: 1612A47 | RcptNo: 1

Received by/date: AG 12/20/16
Logged By: Ashley Gallegos 12/20/2016 8:10:00 AM
Completed By: Ashley Gallegos 12/20/2016 8:24:31 AM
Reviewed By: AJ 12/20/16

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

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

Special Handling (if applicable)

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

Person Notified: _____ Date _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location Aztec

Project Manager Rob Sumner

Laboratory: Hall

Address: Aztec

Contact: Arlene

Phone:

PO/SO #:

Sampler's Name Rob Sumner

Sampler's Signature

Proj. No.

Project Name Pudge #59

No/Type of Containers

ANALYSIS REQUESTED: BTEX 8021 GRO/DRO/PAH

Lab use only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	12/9/10	1430			S-22 NS								
		1530			S-21 NS								
		1440			S-16								
		1420			S-17								
		1530			S-18								
		1550			S-19								
					NS								
					NS								

Turn around time ❑ Normal ❑ 25% Rush ❑ 50% Rush ❑ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	12/9/10	1715	Walt	12/9/10	1715
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES: Bill Tom Long
N23923
Same Day

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic 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

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

RE: Mudge B #59 OrderNo.: 1612B64

Dear Kyle Summers:

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1612B64**
Date Reported: **12/29/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B #59
Lab ID: 1612B64-001 **Matrix:** SOIL

Client Sample ID: S-20
Collection Date: 12/20/2016 10:00:00 AM
Received Date: 12/21/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **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 RANGE						Analyst: **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 AM	29352
EPA METHOD 8021B: VOLATILES						Analyst: **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 AM	29352
Ethylbenzene	1.2	0.10		mg/Kg	2	12/28/2016 4:28:21 AM	29352
Xylenes, Total	4.0	0.20		mg/Kg	2	12/28/2016 4:28:21 AM	29352
Surr: 4-Bromofluorobenzene	126	80-120	S	%Rec	2	12/28/2016 4:28:21 AM	29352

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612B64**

29-Dec-16

Client: APEX TITAN

Project: Mudge B #59

Sample ID **LCS-29359**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **29359**	RunNo: **39589**
Prep Date: **12/22/2016**	Analysis Date: **12/23/2016**	SeqNo: **1241856** Units: **mg/Kg**

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**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **29359**	RunNo: **39589**
Prep Date: **12/22/2016**	Analysis Date: **12/23/2016**	SeqNo: **1241857** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.4		10.00		94.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612B64**

29-Dec-16

Client: APEX TITAN
Project: Mudge B #59

Sample ID **MB-29352**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **29352**	RunNo: **39645**
Prep Date: **12/22/2016**	Analysis Date: **12/23/2016**	SeqNo: **1241888** 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	930		1000		92.5	68.3	144			

Sample ID **LCS-29352**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **29352**	RunNo: **39645**
Prep Date: **12/22/2016**	Analysis Date: **12/23/2016**	SeqNo: **1241889** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	106	74.6	123			
Surr: BFB	1000		1000		101	68.3	144			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612B64**

29-Dec-16

Client: APEX TITAN

Project: Mudge B #59

Sample ID **MB-29352**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **29352**	RunNo: **39645**
Prep Date: **12/22/2016**	Analysis Date: **12/23/2016**	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								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID **LCS-29352**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **29352**	RunNo: **39645**
Prep Date: **12/22/2016**	Analysis Date: **12/23/2016**	SeqNo: **1241931** 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	0.98	0.050	1.000	0	98.3	78.9	117			
Xylenes, Total	3.0	0.10	3.000	0	98.6	79.2	115			
Surr: 4-Bromofluorobenzene	1.1		1.000		110	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC | Work Order Number: 1612B64 | RcptNo: 1

Received by/date: AS 12/21/16

Logged By: Anne Thorne 12/21/2016 8:00:00 AM Anne Thorne

Completed By: Anne Thorne 12/21/2016 1:42:26 PM Anne Thorne

Reviewed By: JO 12/21/16

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec

Project Manager: K. Summers

Laboratory: Hall

Address: ABQ

Contact: A. Freeman

Phone:

PO/SO #:

Lab use only

Due Date:

Temp. of coolers when received (C°): 1.0

1 | 2 | 3 | 4 | 5

Page 1 of 1

Sampler's Name: Kyle Summers

Sampler's Signature: [signature]

Proj. No.:

Project Name: Mudge B #59

Analysis Requested: BTEX 8021; TPH GRO/DRO/MRO 8015

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	BTEX 8021	TPH GRO/DRO/MRO 8015	Lab Sample ID (Lab Use Only)
S	12/20/16	1000	X		S-20								X	X	1612 BH-001

~~-002~~ ~~-00~~ KT 12/21/16

NFS

NS

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	12/20/16	1540	[signature]	12/20/16	1540
[signature]	12/20/16	1824	[signature]	12/21/16	0800

NOTES: Bill Tom Long N23923

Matrix: WW - Wastewater, W - Water, S - Soil, SD - Solid, L - Liquid, A - Air Bag, C - Charcoal tube, SL - sludge, O - Oil

Container: VOA - 40 ml vial, A/G - Amber / Or Glass 1 Liter, 250 ml - Glass wide mouth, P/O - Plastic or other

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 21, 2016

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

RE: Mudge B #59 OrderNo.: 1612834

Dear Kyle Summers:

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Mudge B #59
Lab ID: 1612834-001 **Matrix:** SOIL

Client Sample ID: GW-1
Collection Date: 12/14/2016 2:30:00 PM
Received Date: 12/15/2016 8:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1200	100		mg/Kg	10	12/20/2016 8:44:14 PM	29233
Motor Oil 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 METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	700	50		mg/Kg	10	12/16/2016 1:04:29 PM	29188
Surr: BFB	460	68.3-144	S	%Rec	10	12/16/2016 1:04:29 PM	29188
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.25		mg/Kg	10	12/16/2016 1:04:29 PM	29188
Toluene	ND	0.50		mg/Kg	10	12/16/2016 1:04:29 PM	29188
Ethylbenzene	0.83	0.50		mg/Kg	10	12/16/2016 1:04:29 PM	29188
Xylenes, Total	2.6	1.0		mg/Kg	10	12/16/2016 1:04:29 PM	29188
Surr: 4-Bromofluorobenzene	139	80-120	S	%Rec	10	12/16/2016 1:04:29 PM	29188

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612834**

21-Dec-16

Client: APEX TITAN
Project: Mudge B #59

Sample ID **LCS-29233**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **29233**	RunNo: **39485**
Prep Date: **12/16/2016**	Analysis Date: **12/19/2016**	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			

Sample ID **MB-29233**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **29233**	RunNo: **39485**
Prep Date: **12/16/2016**	Analysis Date: **12/19/2016**	SeqNo: **1237667** 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	8.9		10.00		89.0	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612834**

21-Dec-16

Client: APEX TITAN
Project: Mudge B #59

Sample ID **MB-29188**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **29188**	RunNo: **39451**
Prep Date: **12/14/2016**	Analysis Date: **12/16/2016**	SeqNo: **1235878** 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	880		1000		88.1	68.3	144			

Sample ID **LCS-29188**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **29188**	RunNo: **39451**
Prep Date: **12/14/2016**	Analysis Date: **12/16/2016**	SeqNo: **1235879** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	100	74.6	123			
Surr: BFB	960		1000		95.8	68.3	144			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612834**

21-Dec-16

Client: APEX TITAN
Project: Mudge B #59

Sample ID **MB-29188**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **29188**	RunNo: **39451**
Prep Date: **12/14/2016**	Analysis Date: **12/16/2016**	SeqNo: **1235892** 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	0.96		1.000		96.4	80	120			

Sample ID **LCS-29188**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **29188**	RunNo: **39451**
Prep Date: **12/14/2016**	Analysis Date: **12/16/2016**	SeqNo: **1235893** 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	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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC | Work Order Number: 1612834 | RcptNo: 1

Received by/date: AG 12/15/16

Logged By: Anne Thorne 12/15/2016 8:10:00 AM Anne Thorne

Completed By: Anne Thorne 12/15/2016 9:24:11 AM Anne Thorne

Reviewed By: IU 12/16/16

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec, NM

Project Manager: R. Summers

Laboratory: Hall Environmental

Address: ABQ NM

Contact: A. Freeman

Phone:

PO/SO #:

Lab use only
Due Date:

Temp. of coolers when received (C°): 1.4

1 | 2 | 3 | 4 | 5

Page 1 of 1

Sampler's Name: Ranee Deechilly

Sampler's Signature:

Proj. No.

Project Name: Mudge B #59

No/Type of Containers

ANALYSIS REQUESTED: 8021 BTEX; 8015 TPH GRO/DRO/MRO

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	12/14/16	1430			GW-1						1		1612834-001

AFE

Turn around time: ☐ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush ☒ 3-DAY RUSH

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	12/14/16	1559		12/14/16	1559
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	12/14/16	1821		12/15/16	0810
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

Bill to Tom Long

Non-AFE # N23923

3-DAY Rush

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

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 April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **Enterprise Field Services, LLC**	Contact **Thomas Long**
Address **614 Reilly Ave, Farmington, NM 87401**	Telephone No. **505-599-2286**
Facility Name **Johnson #2 FRT**	Facility Type **Natural Gas Metering Tube/Well Site**

Surface Owner **BLM**	Mineral Owner **BLM**	**Serial No. NM 086649**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	**21**	**27N**	**10W**	**1604**		**1091**		**San Juan**

Latitude 36.5579 Longitude 107.8957 NAD83

NATURE OF RELEASE

Type of Release Condensate/Water	Volume of Release **Estimated 3-5 BBLs of Condensate/Water**	Volume Recovered **None**
Source of Release Meter Tube Freeze	Date and Hour of Occurrence **11/20/2017 @ 2:00 p.m.**	Date and Hour of Discovery **11/20/2017 @ 2:00 p.m.**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? : Courtesy Notification Cory Smith – NMOCD	
By Whom? Thomas Long	Date and Hour November 21, 2017 @ 3:11 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* On November 20, 2017, a third party reported and leaking meter tube at the Johnson #2 FRT well site. Enterprise confirmed the release and isolated, depressurized, locked out and tagged out the meter tube.

Describe Area Affected and Cleanup Action Taken.* An area on the well pad of approximately 30 feet long by 15 feet wide was impacted with fluids. In addition, fluids ran down hill approximately 80 feet to the north along drainage feature. Remediation is in the scheduling process. A third party corrective action report will be included with the "Final." C-141.

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

Signature: J. E. Fields	OIL CONSERVATION DIVISION
Printed Name: Jon E. Fields	Approved by Environmental Specialist:
Title: Director, Environmental	Approval Date: 1/16/18 Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval: Sample for TPH, BTex, Benzene Complete Remediation No Later than 3/16/18 Attached ☒
Date: 11/28/2017 Phone: (713) 381-6684	

* Attach Additional Sheets If Necessary

#NCS1801655901

(3)

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 nCS1801655901 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 division-approved corrective action 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** N/A **. 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; C_6 thru C_{36}), 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.

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- 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

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **Enterprise Field Services, LLC**	Contact **Thomas Long**
Address **614 Reilly Ave, Farmington, NM 87401**	Telephone No. **505-599-2286**
Facility Name **Hughes LS #3**	Facility Type **Natural Gas Gathering Pipeline**

Surface Owner **BLM**	Mineral Owner **BLM**	**Serial No. NM 031701**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	**20**	**29N**	**8W**	**761**		**1645**		**San Juan**

Latitude 36.705922 Longitude -107696048. NAD83

NATURE OF RELEASE

Type of Release Natural gas and Natural Gas Liquids	Volume of Release **Unknown**	Volume Recovered **None**
Source of Release Internal Corrosion of the Pipeline	Date and Hour of Occurrence **12/11/2017 @ 8:48 a.m.**	Date and Hour of Discovery **12/11/2017 @ 8:48 a.m.**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? : Courtesy Notification Cory Smith – NMOCD; Whitney Thomas - BLM	
By Whom? Thomas Long	Date and Hour December 12, 2017 @ 10:54 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

OIL CONS. DIV DIST. 3
JAN 09 2018

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* On December 11, 2017, a third party reported a release on the Hughes LS #3 pipeline. Enterprise technicians confirmed the release and isolated, depressurized, locked out and tagged out the pipeline.

Describe Area Affected and Cleanup Action Taken.* No fluids observed were on the ground surface. Remediation is in progress and Enterprise has determined this release reportable per NMOCD regulation due to the volume of subsurface impacts on December 19, 2017. A third party corrective action report will be included with the "Final." C-141.

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

Signature: Jon Fields	OIL CONSERVATION DIVISION	
Printed Name: Jon E. Fields	Approved by Environmental Specialist:	
Title: Director, Environmental	Approval Date: 1/16/18	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval: Sample for TPH Btex Benzene	Attached ☐
Date: 12-31-2017 Phone: (713) 381-6684	Complete Remediation By 3/16/18	

* Attach Additional Sheets If Necessary

#NDS1661656251

(3)

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 1/9/18 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number NCS1801657251 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 division-approved corrective action 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 _____. 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; C_6 thru C_{36}), 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; C_6 thru C_{36}), 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.

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State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **Enterprise Field Services, LLC**	Contact **Thomas Long**
Address **614 Reilly Ave, Farmington, NM 87401**	Telephone No. **505-599-2286**
Facility Name **Quinn 340S**	Facility Type **Natural Gas Metering Gathering Pipeline**

Surface Owner **Private**	Mineral Owner **BLM**	**Serial No.**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	**20**	**31N**	**8W**	**1505**		**1643**		**San Juan**

Latitude 36.880316 Longitude -107.701861 NAD83

NATURE OF RELEASE

Type of Release Natural Gas	Volume of Release **Unknown**	Volume Recovered **None**
Source of Release Suspected Internal Corrosion	Date and Hour of Occurrence **12/20/2017 @ 1:30 p.m.**	Date and Hour of Discovery **12/20/2017 @ 1:30 p.m.**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? : Courtesy Notification Cory Smith - NMOCD	
By Whom? Thomas Long	Date and Hour December 20, 2017 @ 3:07 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

OIL CONS. DIV DIST. 3
JAN 08 2018

If a Watercourse was Impacted, Describe Fully.* The release is located in a small ephemeral wash. No fluids were observed on the ground surface.

Describe Cause of Problem and Remedial Action Taken.* On December 20, 2017 Enterprise technicians discovered and release on the Quinn 340S well site. Enterprise confirmed the release and isolated, depressurized, locked out and tagged out the pipeline.

Describe Area Affected and Cleanup Action Taken.* No fluids were observed on the ground surface. Repairs and remediation activities are in the scheduling process. A third party corrective action report will be included with the "Final." C-141.

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

Signature: Jon E. Fields	OIL CONSERVATION DIVISION
Printed Name: Jon E. Fields	Approved by Environmental Specialist: Cory Smith
Title: Director, Environmental	Approval Date: 1/16/18 Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval: Sample for TPH, BTEX, Benzene Complete Before 3/16/18 Attached ☒
Date: 1/3/2018 Phone: (713) 381-6684	

* Attach Additional Sheets If Necessary

#NCS1801657017

(3)

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 1/8/16 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number NCS1801657017. 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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