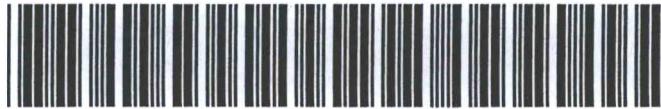




# AE Order Number Banner

## Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.



**App Number: pJK1424832159**

**3RP - 1011**

**ENTERPRISE PRODUCTS OPERATING, LLC**

1/19/2017

150

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

State of New Mexico  
Energy Minerals and Natural  
Resources

Form C-141  
Revised April 3, 2017

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

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

**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 Lateral 2C-80	Facility Type Natural Gas Gathering Pipeline
Surface Owner Jicarilla Apache Tribe	Mineral Owner Jicarilla Apache Tribe
API No.	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North	South	Feet from the	East	West	County
P	20	23N	3W	1700	Line		300	Line		Sandoval

Latitude 36.2065 Longitude 107.1833 NAD83

**NATURE OF RELEASE**

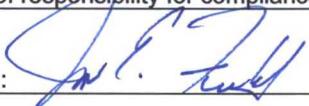
Type of Release Natural Gas and Natural Gas Liquids	Volume of Release 6.99 MCF Gas; 15-20 BBLs Condensate	Volume Recovered None
Source of Release Pipeline strike with a road grader	Date and Hour of Occurrence 3/27/2017 @ 3:52 p.m.	Date and Hour of Discovery 3/27/2017 @ 3:52 p.m.
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? : Cory Smith – NMOCD; Hobson Sandoval - JAEPO	
By Whom? Thomas Long	Date and Hour March 28, 2017 @ 9:58 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*On March 27, 2017, a third party grading lease roads collided with and severed the Lateral 2C-80 pipeline. There were no injuries or fire. The pipeline was isolated, depressurized, locked out and tagged out. Remediation and repairs were completed on May 18, 2017.

Describe Area Affected and Cleanup Action Taken.\*Remediation was completed on May 18, 2017. The contaminant mass was removed by mechanical excavation. The final excavation was irregular in shape and varied in depth. Approximately 1, 331 cubic yards of hydrocarbon impacted soil was excavated and transported to New Mexico Oil Conservation Division 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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Jon E. Fields	Approved by Environmental Specialist: 	
Title: Director, Environmental	Approval Date: 11/8/17	Expiration Date:
E-mail Address: jefields@eprod.com	Conditions of Approval: —	Attached <input type="checkbox"/>
Date: 10/16/2017 6684	Phone: (713) 381-	

\* Attach Additional Sheets If Necessary

# NCS1713151655

149



ENTERPRISE PRODUCTS PARTNERS L.P.  
ENTERPRISE PRODUCTS HOLDINGS LLC  
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

October 16, 2017

7015 1520 0002 7267 4692  
Return Receipt Requested

EMNRD Oil Conservation Division  
Aztec District III Office  
Attn: Cory Smith  
1000 Rio Brazos Road  
Aztec, NM 87410

OIL CONS. DIV DIST. 3  
OCT 23 2017

**RE: Lateral 2C-80  
Sandoval County**

Mr. Smith:

Attached is the Release Notification and the Corrective Action Report for the Lateral 2C-80 on March 27, 2017. Should you have questions or need additional information, please contact Mr. Thomas Long at 505-599-2286 or me directly at 713-381-6684.

Thank you,

Jon E. Fields  
Director, Field Environmental

/bjm  
Enclosures

Xc: Cordell Te Cube & Hobson Sandoval – Jicarilla Apache Tribe Environmental Protection Office,  
P. O. Box 507, Dulce, NM 87528-0807 – Cert #7015 1520 0002 7267 4708

Orson Harrison & Jason Sandoval – Jicarilla Oil and Gas Administration, Jicarilla Apache Nation,  
P. O. Box 146, Dulce, NM 87528 – Cert #7015 1520 0002 7267 4715



**CORRECTIVE ACTION REPORT**

Property:

**Lateral 2C-80 Pipeline Release  
SW ¼, Sec 20 T23N R3W  
Jicarilla Apache Nation, Sandoval County, New Mexico**

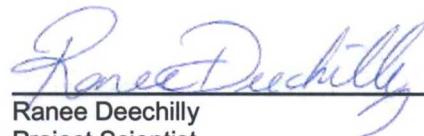
July 11, 2017

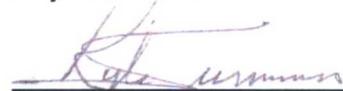
Apex Project No. 725040112272

Prepared for:

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

Prepared by:

  
\_\_\_\_\_  
Raneet Deechilly  
Project Scientist

  
\_\_\_\_\_  
Kyle Summers, CPG  
Branch Manager / Senior Project  
Manager

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## CORRECTIVE ACTION REPORT

### Lateral 2C-80 Pipeline Release

SW ¼, Sec 20 T23N R3W

Jicarilla Apache Nation, Sandoval County, New Mexico

Apex Project No. 725040112272

## 1.0 INTRODUCTION

### 1.1 Site Description & Background

The Lateral 2C-80 pipeline release site is located in the southwest (SW) 1/4 of Section 20, Township 23 North, Range 3 West, in Sandoval County, New Mexico (36.2065N, 107.1833W), referred to hereinafter as the "Site". The Site is located on Jicarilla Apache Nation lands. The Site is located on, and adjacent to, a lease road. The surrounding area is predominately rangeland, periodically interrupted by oil and gas gathering facilities, including one (1) Enterprise Field Services, LLC (Enterprise) natural gas pipeline which transects the area from approximately east to west.

On March 27, 2017, a third-party line strike occurred on the Lateral 2C-80 pipeline, resulting in the loss of natural gas and pipeline liquids to the surface of the lease road and adjacent rangeland. Pipeline liquids traveled north approximately 232 feet on and adjacent to the lease road, terminating near an ephemeral wash. Overspray from the line strike affected approximately 0.09 acres of the pipeline right-of-way (ROW) east of the release point, adjacent to the lease road. Initial response actions were implemented which included the construction of berms to prevent the pipeline liquids from traveling further down the road, and the enhancement of an existing berm to prevent liquids from entering the ephemeral wash. Liquids were subsequently removed and taken to a New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (OCD)-approved disposal facility. On March 30, 2017, Enterprise initiated excavation activities to remediate petroleum hydrocarbon soil impact. The pipeline was subsequently repaired by replacing approximately 40 feet of pipe and placed back into service.

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

### 1.2 Project Objective

The primary objective of the corrective action was to reduce the concentration of constituents of concern (COCs) in the on-Site soils to below the New Mexico EMNRD 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

The Site is under the jurisdiction of the Jicarilla Apache Nation Environmental Protection Office (JANEPO). In the absence of published JANEPO regulatory guidance, Apex TITAN Inc. (Apex) references the New Mexico ENMRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*. Apex utilized the general site characteristics obtained during the completion of corrective action activities and information available from the 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	0
	No	0	
Distance to Surface Water Body	<200 feet	20	20
	200 to 1,000 feet	10	
	>1,000 feet	0	
<b>Total Ranking Score</b>			<b>40</b>

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

- No nearby water wells were identified on the OSE water rights website, however due to the proximity to the Chacon Canyon wash, groundwater may be present at less than 50 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 flow path of the pipeline liquids terminated near the Chacon Canyon wash which is identified as a “blue line” on the United States Geological Survey topographic map. This information supports a distance to surface water ranking score of “20”.

### 3.0 CORRECTIVE ACTIONS

#### 3.1 Soil Excavation Activities

On March 27, 2017, a third-party line strike occurred on the Lateral 2C-80 pipeline resulting in the loss of natural gas and pipeline liquids to the surface of a lease road and adjacent rangeland. Pipeline liquids traveled north approximately 232 feet on and adjacent to the lease road, terminating near an ephemeral wash. Overspray from the line strike affected approximately 0.09 acres of the pipeline right-of-way (ROW) east of the release point, adjacent to the lease road. Initial response actions were implemented which included the construction of berms to prevent the pipeline liquids from traveling further down the road, and the enhancement of an existing berm to prevent liquids from entering the ephemeral wash. Liquids were subsequently vacuumed and taken to a New Mexico ENMRD OCD-approved disposal facility. On March 30, 2017, Enterprise initiated excavation activities to remediate petroleum hydrocarbon soil impact. The pipeline was subsequently repaired by replacing approximately 40 feet of pipe and placed back into service. During the corrective action activities, OFT Construction, Inc., provided heavy equipment and labor support, and Apex provided environmental support.

The pipeline liquid overspray area measured approximately 130 feet long and 40 feet wide, east of the release point. Approximately six (6) inches of soil was scraped from this area to remove potential petroleum hydrocarbon affected soils. Three (3) composite soil samples (S-1 through S-3) from this area were submitted for laboratory analysis.

The pipeline and upper flow path excavation activities were completed on April 17, 2017. A total of nine (9) composite soil samples (ES-1 through ES-9) from the excavated upper flow path and excavated pipeline ROW were submitted for laboratory analysis.

Enterprise performed additional excavation activities intermittently between April 17, 2017 and May 18, 2017 to remediate the lower flow path. These activities were delayed several times due to inclement weather and the repair of the pipeline. A total of 36 composite soil samples (ES-10 through ES-45) from the excavated lower flow path and the terminal berm were submitted for laboratory analysis.

Two (2) soil samples (EW-1 and EW-2) from the ephemeral wash at upstream and downstream sides of the culvert located at the intersection of the lease road and the ephemeral wash were submitted for laboratory analysis to evaluate potential impact to the ephemeral wash.

The final pipeline ROW excavation measured approximately 33 feet long and 12 feet wide at the maximum extents, with a total maximum depth of approximately 8 feet bgs.

The lower flow path excavation measured approximately 232 feet long and 16 feet wide at the maximum extents, with depths ranging from four (4) to nine (9) feet bgs. The upper flow path excavation (north of the pipeline ROW) measured approximately 25 feet long and 25 feet wide, with a maximum depth of approximately four (4) feet bgs.

The lithology encountered during the completion of corrective action activities consisted of unconsolidated silt, silty sand, and silty clay.

A total of approximately 1,331 cubic yards of petroleum hydrocarbon-affected soils and 45 barrels (bbls) of petroleum hydrocarbon-affected saturated soils were transported to the Envirotech, Inc. (Envirotech) landfarm near Hilltop, NM for disposal/remediation. The executed C-138 solid waste acceptance forms are provided in **Appendix B**. The resulting excavations were backfilled with clean imported fill from a JANEPO-approved source, and compacted.

**Figure 3** is a **Site Map** that indicates the approximate location of the remediation excavations and confirmation sample locations in relation to the Enterprise pipeline and adjacent roads (**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 to guide excavation extents.

Apex's soil sampling program included the collection and laboratory submittal of 45 composite excavation samples (ES-1 through ES-45) from the pipeline ROW and upper/lower flow path excavations, three (3) composite surface soil samples (S-1 through S-3) from the overspray area, and two (2) composite samples (EW-1 and EW-2) from the ephemeral wash.

The 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 soil samples 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), 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 forms and laboratory data sheets are provided in **Appendix E**.

## 4.0 DATA EVALUATION

The Site is subject to regulatory oversight by JANEPO and the New Mexico EMNRD OCD. In the absence of published JANEPO regulatory guidance, Apex referenced the New Mexico EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the New Mexico EMNRD 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 and TPH concentrations or practical quantitation limits (PQLs) associated with the final soil samples collected from the excavation, overspray area, and ephemeral wash to the New Mexico EMNRD OCD *RALs* for sites having a total ranking score of "40". Soils associated with excavation sample ES-28 were over-excavated and removed from the Site for appropriate disposal/treatment and are not included in the following discussion.

- The laboratory analyses of the excavation, overspray area, and ephemeral wash samples representing soils remaining at the Site did not indicate benzene concentrations above the PQLs, which are below the New Mexico EMNRD OCD *RAL* of 10 milligrams per kilogram (mg/kg).
- The laboratory analyses of the excavation, overspray area, and ephemeral wash samples representing soils remaining at the Site exhibited total BTEX concentrations ranging from below the PQLs to 0.16 mg/kg (ES-21), which are below the New Mexico EMNRD OCD *RAL* of 50 mg/kg.
- The laboratory analyses of the excavation, overspray area, and ephemeral wash samples representing soils remaining at the Site exhibited combined TPH GRO/DRO/MRO concentrations ranging from below the PQLs to 71.8 mg/kg (ES-21), which are below the New Mexico EMNRD OCD *RAL* of 100 mg/kg for a Site ranking of "40".

Excavation, overspray, and ephemeral wash soil sample laboratory analytical results are provided in **Table 1** in **Appendix D**.

## 5.0 FINDINGS AND RECOMMENDATIONS

The Lateral 2C-80 pipeline release Site is located in the SW 1/4 of Section 20, Township 23 North, Range 3 West, in Sandoval County, New Mexico. The Site is located on Jicarilla Apache Nation lands. The Site is located on, and adjacent to, a lease road. The surrounding area is predominately rangeland, periodically interrupted by oil and gas gathering facilities, including one (1) Enterprise natural gas pipeline which transects the area from approximately east to west.

On March 27, 2017, a third-party line strike occurred on the Lateral 2C-80 pipeline, resulting in the loss of natural gas and pipeline liquids from the pipeline to the surface of a lease road and adjacent rangeland. Pipeline liquids traveled north approximately 232 feet on and adjacent to the lease road, terminating near an ephemeral wash. Overspray from the line strike affected approximately 0.09 acres of the pipeline ROW east of the release point, adjacent to the lease road. Initial response actions were implemented which included the construction of berms to prevent the pipeline liquids from traveling further down the road, and the enhancement of an existing berm to prevent liquids from entering the ephemeral wash. Liquids were subsequently vacuumed and taken to a New Mexico ENMRD OCD-approved disposal facility. On March 30, 2017, Enterprise initiated excavation activities to remediate petroleum hydrocarbon soil impact. The pipeline was subsequently repaired by replacing approximately 40 feet of pipe and placed back into service.

- The primary objective of the corrective actions was to reduce the concentration of COCs in the on-Site soils to below the New Mexico EMNRD OCD RALs using the New Mexico EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.
- The lithology encountered during the completion of corrective action activities consisted primarily of unconsolidated silt, silty sand and silty clay.
- The final pipeline ROW excavation measured approximately 33 feet long and 12 feet wide at the maximum extents, with a total maximum depth of approximately 8 feet bgs.
- The lower flow path excavation measured approximately 232 feet long and 16 feet wide at the maximum extents, with depths ranging from four (4) to nine (9) feet bgs. The upper flow path excavation (north of the pipeline ROW) measured approximately 25 feet long and 25 feet wide, with a maximum depth of approximately four (4) feet bgs.
- Prior to backfilling, a total of 47 composite soil samples from the excavations, terminal berm, and the ephemeral wash were submitted for laboratory analysis. Additionally, three (3) composite surface soil samples were submitted for laboratory analysis. Excavation sample ES-28 was removed from the Site for appropriate disposal/treatment. Based on analytical results, soils remaining in place do not exhibit BTEX or TPH GRO/DRO/MRO concentrations above the New Mexico EMNRD OCD RALs for a site ranking of "40".
- A total of approximately 1,331 cubic yards of petroleum hydrocarbon-affected soils and 45 bbls of petroleum hydrocarbon-affected saturated soils were transported to the Envirotech landfarm near Hilltop, NM for disposal/remediation. The excavation was backfilled with clean imported fill from a JANEPO-approved source, and compacted.

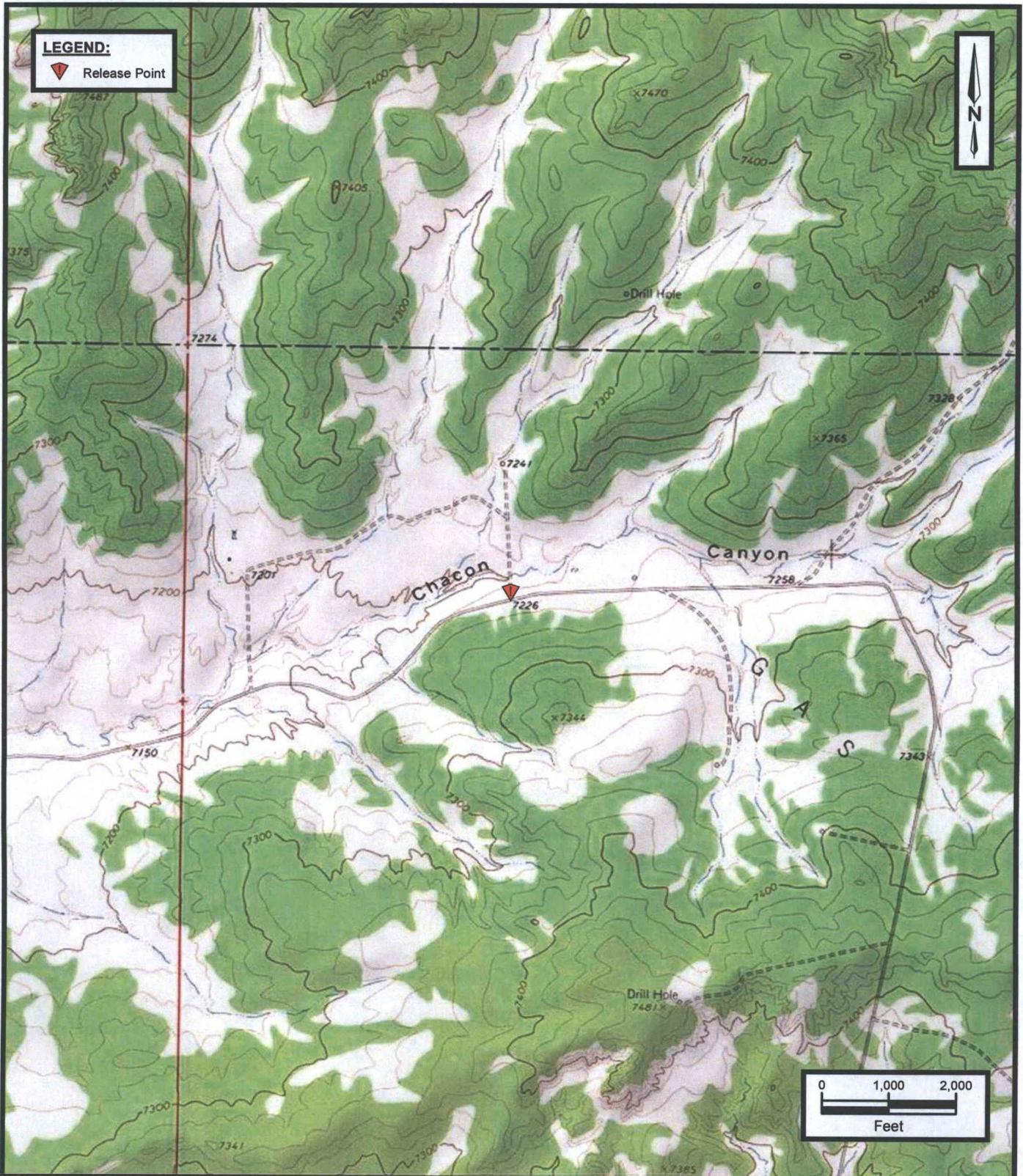
**Based on field observations, laboratory analytical results, and JANEPO regulatory input, no additional investigation or corrective action with respect to soil impact appears warranted at this time.**

## **6.0 STANDARD OF CARE, LIMITATIONS, AND RELIANCE**

Apex's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Apex makes no warranties, expressed or implied, as to the services performed 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.



**Lateral 2C-80**  
 SW 1/4, Sec 20 T23N R3W  
 Sandoval County, New Mexico  
 36.2065 N, 107.1833 W

**Project No. 725040112272**



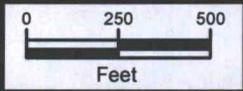
**Apex TITAN, Inc.**  
 606 South Rio Grande, Suite A  
 Aztec, New Mexico 87410  
 Phone: (505) 334-5200  
[www.apexcos.com](http://www.apexcos.com)  
 A Subsidiary of Apex Companies, LLC

**FIGURE 1**  
**Topographic Map**

Service Layer Credits:  
 Copyright © 2013 National Geographic Society, i-cubed, Five  
 Lakes Canyon NW New Mexico 7.5-Minute Quadrangle 1978



**LEGEND:**  
 ▼ Release Point  
 — Lateral 2C-80 Pipeline Location



**Lateral 2C-80**  
 SW 1/4, Sec 20 T23N R3W  
 Sandoval County, New Mexico  
 36.2065 N, 107.1833 W

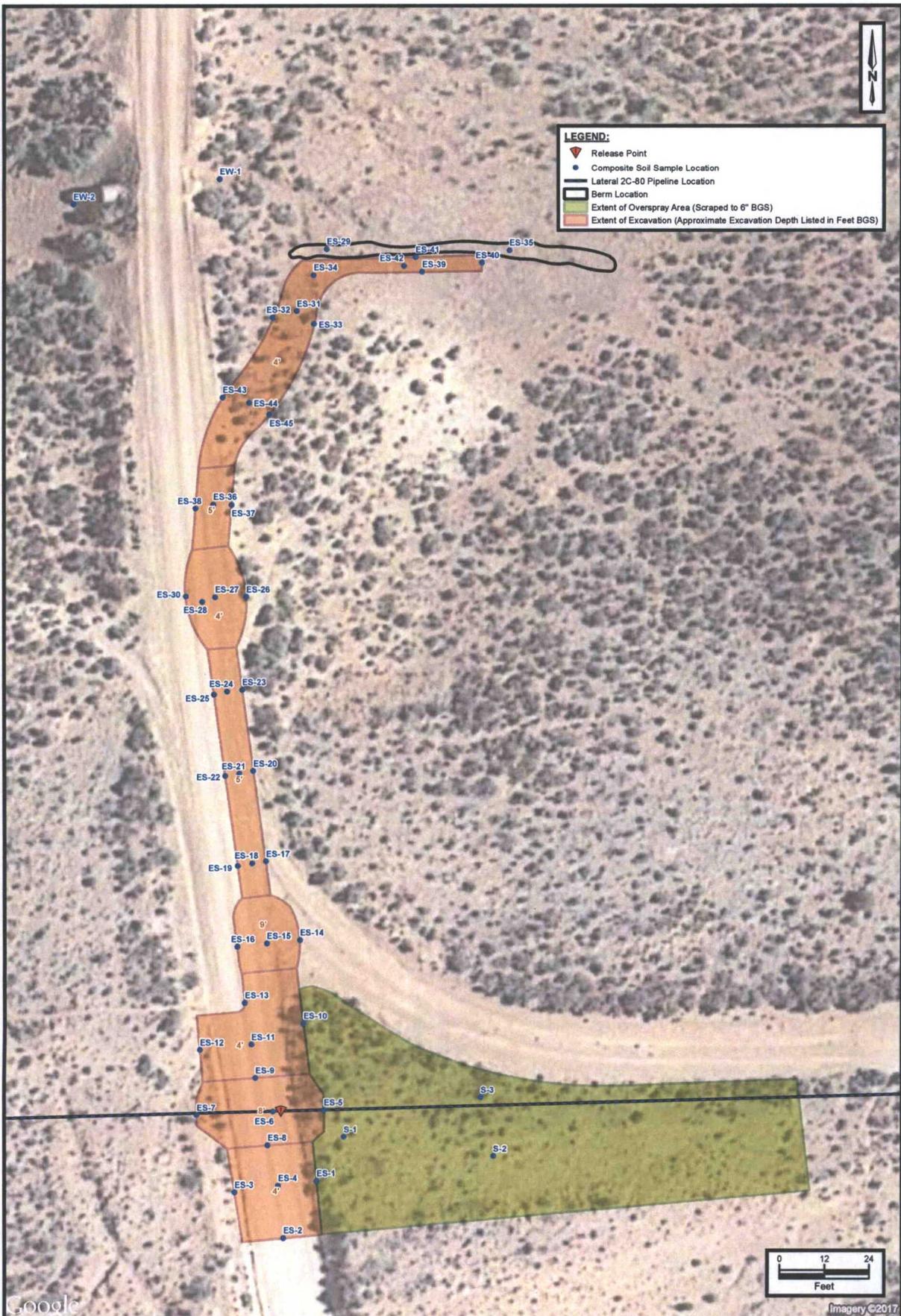
Project No. 725040112272



**Apex TITAN, Inc.**  
 606 South Rio Grande, Suite A  
 Aztec, New Mexico 87410  
 Phone: (505) 334-5200  
[www.apexcos.com](http://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 June 2014



Lateral 2C-80  
 SW 1/4, Sec 20 T23N R3W  
 Sandoval County, New Mexico  
 36.2065 N, 107.1833 W



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

**FIGURE 3**

**Site Map**

Service Layer Credits:  
 Aerial Photograph June 2014

**APPENDIX B**

**Executed C-138 Solid Waste Acceptance Forms**

---

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  
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

97057-0836

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: Lateral 2C-80 Pipeline
3. Location of Material (Street Address, City, State or ULSTR): Section 20 T23N 3W; 36.206620, -107.183271
4. Source and Description of Waste: Hydrocarbon Impacted Soil/Sludge associated with a natural gas pipeline release. Estimated Volume <u>50</u> yd <sup>3</sup> /bbls Known Volume (to be entered by the operator at the end of the haul) <u>1075/45</u> yd <sup>3</sup> /bbls
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

March/April 2017

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

RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with 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 *Thomas Long* 3-28-17, representative for Enterprise Products Operating authorize Envirotech, Inc. to complete  
**Generator Signature**  
the required testing/sign the Generator Waste Testing Certification.

I, *Greg Crabtree*, representative for Envirotech, 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.

5. Transporter: TBD OFT, Ternco, Stan Horn, West States

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Envirotech, Inc. Soil Remediation Facility \* Permit#: NM01-0011  
Address of Facility: Hill Top, NM  
Method of Treatment and/or Disposal:  
 Evaporation  Injection  Treating Plant  Landfarm  Landfill  Other

Waste Acceptance Status:  
 APPROVED  DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Greg Crabtree TITLE: Environmental Manager DATE: 3/28/17  
SIGNATURE: *Greg Crabtree* TELEPHONE NO.: 505-632-0615  
Surface Waste Management Facility Authorized Agent

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  
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

97057-0836

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: Lateral 2C-80 Pipeline
3. Location of Material (Street Address, City, State or ULSTR): Section 20 T23N 3W; 36.206620, -107.183271 May 2017
4. Source and Description of Waste: Hydrocarbon Impacted Soil/Sludge associated with a natural gas pipeline release. Estimated Volume <u>50</u> yd <sup>3</sup> bbls Known Volume (to be entered by the operator at the end of the haul) <u>256</u> yd <sup>3</sup> bbls
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, Thomas Long <i>Thomas Long</i> , representative or authorized agent for Enterprise Products Operating do hereby Generator Signature certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) <input checked="" type="checkbox"/> RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. <u>Operator Use Only: Waste Acceptance Frequency</u> <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Per Load <input type="checkbox"/> 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) <input type="checkbox"/> MSDS Information <input type="checkbox"/> RCRA Hazardous Waste Analysis <input type="checkbox"/> Process Knowledge <input type="checkbox"/> Other (Provide description in Box 4)
GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS I, Thomas Long <i>Thomas Long</i> 5-10-17, representative for Enterprise Products Operating authorize <u>Envirotech, Inc.</u> to complete Generator Signature the required testing/sign the Generator Waste Testing Certification. I, <i>Mr. C.A.</i> , representative for <u>Envirotech, Inc.</u> 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.
5. Transporter: <u>TBD Stan Horn, Ternco, OFT</u>

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Envirotech, Inc. Soil Remediation Facility \* Permit #: NM01-0011

Address of Facility: Hill Top, NM

Method of Treatment and/or Disposal:

Evaporation  Injection  Treating Plant  Landfarm  Landfill  Other

Waste Acceptance Status:

APPROVED

DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Greg Crabtree

TITLE: Environmental Manager DATE: 5/9/17

SIGNATURE: *Greg Crabtree*  
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 505-632-0615

## APPENDIX C

### Photographic Documentation

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**Photograph 1**

View of the Site, facing north.

**Photograph 2**

View of the scraped overspray area, facing west.

**Photograph 3**

View of the upper flow path (south of pipeline ROW) excavation, facing northwest.



**Photograph 4**

View of the pipeline ROW excavation and source area, facing northwest.



**Photograph 5**

View of the excavated flow path, facing southwest.



**Photograph 6**

View of the excavated flow path, facing north.



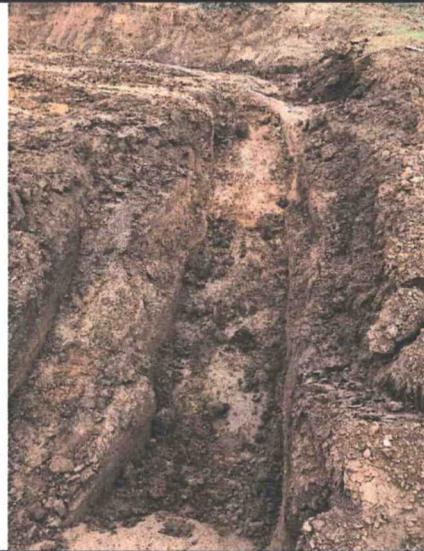
**Photograph 7**

View of the excavated flow path, facing north.



**Photograph 8**

View of the excavated flow path, facing west.



APPENDIX D

Table

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**TABLE 1**  
**Lateral 2C-80 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)
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										
ES-28	4.21.17	0 to 4	<0.10	0.90	0.26	1.9	3.1	79	230	75
Spray Area Soil Samples										
S-1	4.25.17	0 to 0.5	<0.022	<0.044	<0.044	<0.088	ND	<4.4	<9.4	<47
S-2	4.07.17	0 to 0.5	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.3	<46
S-3	4.07.17	0 to 0.5	<0.023	<0.046	<0.046	<0.092	ND	<4.6	<9.3	<47
Culvert/Ephemeral Wash Area Soil Samples										
EW-1	5.16.17	0 to 0.5	<0.025	<0.049	<0.049	<0.099	ND	<4.9	<9.4	<47
EW-2	5.16.7	0 to 0.5	<0.018	<0.037	<0.037	<0.073	ND	<3.7	<9.5	<47
Excavation Soil Samples										
ES-1	4.12.17	0 to 4	<0.024	<0.048	<0.048	<0.095	ND	<4.8	<9.2	<46
ES-2	4.12.17	0 to 4	<0.023	<0.047	<0.047	<0.094	ND	<4.7	<9.1	<46
ES-3	4.12.17	0 to 4	<0.025	<0.050	<0.050	<0.10	ND	<5.0	<9.4	<47
ES-4	4.12.17	4	<0.024	<0.048	<0.048	<0.097	ND	<4.8	<9.6	<48
ES-5	4.12.17	0 to 8	<0.023	<0.047	<0.047	<0.094	ND	<4.7	<9.6	<48
ES-6	4.17.17	8	<0.019	<0.038	<0.038	<0.076	ND	<3.8	<9.4	<47
ES-7	4.17.17	0 to 8	<0.019	<0.037	<0.037	<0.074	ND	<3.7	<9.7	<48
ES-8	4.17.17	4 to 8	<0.018	<0.035	<0.035	<0.071	ND	<3.5	<10	<50
ES-9	4.17.17	4 to 8	<0.018	<0.037	<0.037	<0.073	ND	<3.7	<10	<50
ES-10	4.20.17	0 to 4	<0.022	<0.044	<0.044	<0.088	ND	<4.4	<10	<50
ES-11	4.20.17	4	<0.019	<0.037	<0.037	<0.075	ND	<3.7	<9.4	<47
ES-12	4.20.17	0 to 4	<0.024	<0.048	<0.048	<0.097	ND	<4.8	<10	<51
ES-13	4.20.17	0 to 4	<0.021	<0.041	<0.041	<0.082	ND	<4.1	<9.4	<47
ES-14	4.20.17	0 to 9	<0.021	<0.042	<0.042	<0.084	ND	<4.2	<10	<51
ES-15	4.20.17	9	<0.018	<0.035	<0.035	<0.071	ND	<3.5	<9.4	<47
ES-16	4.20.17	0 to 9	<0.019	<0.038	<0.038	<0.077	ND	<3.8	<9.8	<49
ES-17	4.20.17	0 to 5	<0.023	<0.045	<0.045	<0.091	ND	<4.5	<9.8	<49
ES-18	4.20.17	5	<0.018	<0.035	<0.035	<0.071	ND	<3.5	<9.2	<46
ES-19	4.20.17	0 to 5	<0.020	<0.040	<0.040	<0.080	ND	<4.0	<10	<50

**TABLE 1**  
Lateral 2C-80 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)
New Mexico Energy, Mineral & Natural Resources Department, Oil Conservation Division, Remediation Action Level			10	NE	NE	NE	50	100		
ES-20	4.20.17	0 to 5	<0.021	<0.042	<0.042	<0.083	ND	<4.2	<9.2	<46
ES-21	4.20.17	5	<0.018	<0.035	<0.035	0.16	0.16	8.8	63	<48
ES-22	4.20.17	0 to 5	<0.020	<0.039	<0.039	<0.078	ND	<3.9	<9.8	<49
ES-23	4.21.17	0 to 5	<0.020	<0.040	<0.040	<0.081	ND	<4.0	<9.6	<48
ES-24	4.21.17	5	<0.018	<0.037	<0.037	<0.074	ND	<3.7	<10	<50
ES-25	4.21.17	0 to 5	<0.020	<0.039	<0.039	<0.078	ND	<3.9	<9.6	<48
ES-26	4.21.17	0 to 4	<0.019	<0.038	<0.038	<0.077	ND	<3.8	<10	<50
ES-27	4.21.17	4	<0.018	<0.036	<0.036	<0.072	ND	<3.6	<9.8	<49
ES-29	4.25.17	0 to 3	<0.022	<0.044	<0.044	<0.088	ND	<4.4	<9.7	<49
ES-30	4.27.17	0 to 4	<0.020	<0.041	<0.041	<0.081	ND	<4.1	13	<48
ES-31	5.15.17	4	<0.026	<0.051	<0.051	<0.10	ND	<5.1	<9.8	<49
ES-32	5.15.17	0 to 6	<0.026	0.094	<0.053	<0.11	0.094	<5.3	<9.6	<48
ES-33	5.15.17	0 to 4	<0.027	<0.054	<0.054	<0.11	ND	<5.4	<9.5	<47
ES-34	5.15.17	0 to 4	<0.021	<0.042	<0.042	<0.084	ND	<4.2	<9.4	<47
ES-35	5.15.17	0 to 1	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.8	<49
ES-36	5.16.17	0 to 5	<0.020	<0.041	<0.041	<0.081	ND	<4.1	<9.7	<48
ES-37	5.16.17	0 to 5	<0.020	<0.041	<0.041	<0.081	ND	<4.1	<10	<50
ES-38	5.16.17	0 to 5	<0.022	<0.044	<0.044	<0.088	ND	<4.4	<9.8	<49
ES-39	5.17.17	0 to 5	<0.023	<0.047	<0.047	<0.094	ND	<4.7	<10	<50
ES-40	5.17.17	0 to 5	<0.024	<0.049	<0.049	<0.097	ND	<4.9	<9.9	<49
ES-41	5.17.17	0 to 5	<0.025	<0.051	<0.051	<0.10	ND	<5.1	<9.4	<47
ES-42	5.17.17	5	<0.024	<0.048	<0.048	<0.097	ND	<4.8	<9.9	<50
ES-43	5.17.17	0 to 7	<0.025	<0.051	<0.051	<0.10	ND	<5.1	<9.4	<47
ES-44	5.18.17	4	<0.023	<0.047	<0.047	<0.093	ND	<4.7	<10	<50
ES-45	5.18.17	0 to 4	<0.023	<0.046	<0.046	<0.093	ND	<4.6	<10	<50

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

ND = Not Detected above the Practical Quantitation Limits

NE = Not Established

mg/kg = milligram per kilogram

Appendix E

Laboratory Data Sheets  
& Chain of Custody Documentation

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

May 01, 2017

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

RE: Lateral 2C-80

OrderNo.: 1704C60

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/28/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Hall Environmental Analysis Laboratory, Inc.**

**Analytical Report**  
 Lab Order 1704C60  
 Date Reported: 5/1/2017

**CLIENT:** APEX TITAN  
**Project:** Lateral 2C-80  
**Lab ID:** 1704C60-001

**Client Sample ID:** ES-30  
**Collection Date:** 4/27/2017 11:30:00 AM  
**Received Date:** 4/28/2017 7:15:00 AM

**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	13	9.5		mg/Kg	1	4/28/2017 9:25:15 AM	31481
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/28/2017 9:25:15 AM	31481
Surr: DNOP	91.8	70-130		%Rec	1	4/28/2017 9:25:15 AM	31481
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	4/28/2017 9:38:05 AM	31474
Surr: BFB	108	54-150		%Rec	1	4/28/2017 9:38:05 AM	31474
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.020		mg/Kg	1	4/28/2017 9:38:05 AM	31474
Toluene	ND	0.041		mg/Kg	1	4/28/2017 9:38:05 AM	31474
Ethylbenzene	ND	0.041		mg/Kg	1	4/28/2017 9:38:05 AM	31474
Xylenes, Total	ND	0.081		mg/Kg	1	4/28/2017 9:38:05 AM	31474
Surr: 4-Bromofluorobenzene	117	66.6-132		%Rec	1	4/28/2017 9:38:05 AM	31474

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

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	Page 1 of 4
	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#: 1704C60  
01-May-17

**Client:** APEX TITAN  
**Project:** Lateral 2C-80

Sample ID: <b>MB-31481</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>31481</b>	RunNo: <b>42424</b>								
Prep Date: <b>4/28/2017</b>	Analysis Date: <b>4/28/2017</b>	SeqNo: <b>1333940</b>	Units: <b>mg/Kg</b>							

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	8.8		10.00		88.3	70	130			

Sample ID: <b>LCS-31481</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>31481</b>	RunNo: <b>42424</b>								
Prep Date: <b>4/28/2017</b>	Analysis Date: <b>4/28/2017</b>	SeqNo: <b>1333970</b>	Units: <b>mg/Kg</b>							

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.8	63.8	116			
Surr: DNOP	4.5		5.000		89.8	70	130			

Sample ID: <b>1704C60-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>ES-30</b>	Batch ID: <b>31481</b>	RunNo: <b>42424</b>								
Prep Date: <b>4/28/2017</b>	Analysis Date: <b>4/28/2017</b>	SeqNo: <b>1334180</b>	Units: <b>mg/Kg</b>							

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58	9.3	46.47	12.83	97.2	51.6	130			
Surr: DNOP	4.4		4.647		94.8	70	130			

Sample ID: <b>1704C60-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>ES-30</b>	Batch ID: <b>31481</b>	RunNo: <b>42424</b>								
Prep Date: <b>4/28/2017</b>	Analysis Date: <b>4/28/2017</b>	SeqNo: <b>1334181</b>	Units: <b>mg/Kg</b>							

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58	9.8	48.97	12.83	92.7	51.6	130	0.365	20	
Surr: DNOP	4.7		4.897		95.1	70	130	0	0	

**Qualifiers:**

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1704C60  
01-May-17

Client: APEX TITAN  
Project: Lateral 2C-80

Sample ID	MB-31474	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	31474	RunNo:	42434					
Prep Date:	4/27/2017	Analysis Date:	4/28/2017	SeqNo:	1334707	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	1100		1000		107	54	150			

Sample ID	LCS-31474	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	31474	RunNo:	42434					
Prep Date:	4/27/2017	Analysis Date:	4/28/2017	SeqNo:	1334708	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	105	76.4	125			
Surr: BFB	1200		1000		120	54	150			

**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#: 1704C60

01-May-17

Client: APEX TITAN

Project: Lateral 2C-80

Sample ID	<b>MB-31474</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31474</b>	RunNo:	<b>42434</b>					
Prep Date:	<b>4/27/2017</b>	Analysis Date:	<b>4/28/2017</b>	SeqNo:	<b>1334730</b>	Units:	<b>mg/Kg</b>			
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	1.2		1.000		118	66.6	132			

Sample ID	<b>LCS-31474</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31474</b>	RunNo:	<b>42434</b>					
Prep Date:	<b>4/27/2017</b>	Analysis Date:	<b>4/28/2017</b>	SeqNo:	<b>1334731</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	98.5	80	120			
Toluene	0.99	0.050	1.000	0	99.0	80	120			
Ethylbenzene	0.99	0.050	1.000	0	99.3	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		115	66.6	132			

**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

**Sample Log-In Check List**

Client Name: APEX AZTEC

Work Order Number: 1704C60

RcptNo: 1

Received By: Anne Thorne

4/28/2017 7:15:00 AM

*Anne Thorne*

Completed By: Anne Thorne

4/28/2017 7:40:23 AM

*Anne Thorne*

Reviewed By:

*DF 4/28/2017*

**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

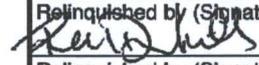
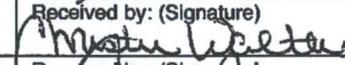
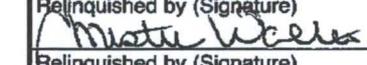
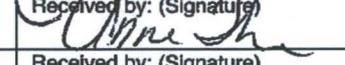
Person Notified: _____	Date: _____
By Whom: _____	Via: <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding: _____	
Client Instructions: _____	

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

 <b>APEX</b> Office Location <u>Aztec, NM</u>		Laboratory: <u>Hall Environmental</u> Address: <u>Abuquerque, NM</u>		ANALYSIS REQUESTED <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                     8021 BTEX                      8015 TPH GRO/PRO/MEQ                 </div>		Lab use only Due Date: <u>1-0</u>							
		Contact: <u>A. Freeman</u> Phone: _____ PO/SO #: _____				Temp. of coolers when received (C°): <table border="1" style="width:100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td> </tr> </table> Page <u>1</u> of <u>1</u>		1	2	3	4	5	
1	2	3	4	5									
Project Manager <u>K. Summers</u>		Sampler's Name <u>Rune Deechilly</u>		Sampler's Signature 									
Proj. No. _____		Project Name <u>Lateral 2C-80</u>		No/Type of Containers _____									
Matrix	Date	Time	COB	DRG	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 L.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	4/27/17	1130	X		ES-30						1		1704C60-001
<del> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); opacity: 0.5;">                         NPS                     </div> </del>													
Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush <u>SAME DAY</u>													
Relinquished by (Signature) 			Date: <u>4/27/17</u> Time: <u>1610</u>		Received by (Signature) 			Date: <u>4/27/17</u> Time: <u>1610</u>		NOTES: Bill to Tom Long (EPROD) AFE # A30036  <u>SAME DAY</u>			
Relinquished by (Signature) 			Date: <u>4/27/17</u> Time: <u>1811</u>		Received by (Signature) 			Date: <u>07/28/17</u> Time: <u>0715</u>					
Relinquished by (Signature)			Date: _____    Time: _____		Received by (Signature)			Date: _____    Time: _____					
Relinquished by (Signature)			Date: _____    Time: _____		Received by (Signature)			Date: _____    Time: _____					

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



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

April 25, 2017

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

RE: Lateral 2C-80

OrderNo.: 1704A18

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/22/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

**Analytical Report**  
 Lab Order 1704A18  
 Date Reported: 4/25/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-23

**Project:** Lateral 2C-80

**Collection Date:** 4/21/2017 1:00:00 PM

**Lab ID:** 1704A18-001

**Matrix:** MEOH (SOIL) **Received Date:** 4/22/2017 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/24/2017 10:26:24 AM	31382
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/24/2017 10:26:24 AM	31382
Surr: DNOP	103	70-130		%Rec	1	4/24/2017 10:26:24 AM	31382
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	4/24/2017 9:50:07 AM	SG42322
Surr: BFB	104	54-150		%Rec	1	4/24/2017 9:50:07 AM	SG42322
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.020		mg/Kg	1	4/24/2017 9:50:07 AM	B42322
Toluene	ND	0.040		mg/Kg	1	4/24/2017 9:50:07 AM	B42322
Ethylbenzene	ND	0.040		mg/Kg	1	4/24/2017 9:50:07 AM	B42322
Xylenes, Total	ND	0.081		mg/Kg	1	4/24/2017 9:50:07 AM	B42322
Surr: 4-Bromofluorobenzene	115	66.6-132		%Rec	1	4/24/2017 9:50:07 AM	B42322

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.

Analytical Report

Lab Order 1704A18

Date Reported: 4/25/2017

CLIENT: APEX TITAN

Client Sample ID: ES-24

Project: Lateral 2C-80

Collection Date: 4/21/2017 1:10:00 PM

Lab ID: 1704A18-002

Matrix: MEOH (SOIL) Received Date: 4/22/2017 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/24/2017 10:48:33 AM	31382
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/24/2017 10:48:33 AM	31382
Surr: DNOP	105	70-130		%Rec	1	4/24/2017 10:48:33 AM	31382
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	4/24/2017 10:14:25 AM	SG42322
Surr: BFB	103	54-150		%Rec	1	4/24/2017 10:14:25 AM	SG42322
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.018		mg/Kg	1	4/24/2017 10:14:25 AM	B42322
Toluene	ND	0.037		mg/Kg	1	4/24/2017 10:14:25 AM	B42322
Ethylbenzene	ND	0.037		mg/Kg	1	4/24/2017 10:14:25 AM	B42322
Xylenes, Total	ND	0.074		mg/Kg	1	4/24/2017 10:14:25 AM	B42322
Surr: 4-Bromofluorobenzene	113	66.6-132		%Rec	1	4/24/2017 10:14:25 AM	B42322

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.

Analytical Report

Lab Order 1704A18

Date Reported: 4/25/2017

CLIENT: APEX TITAN

Client Sample ID: ES-25

Project: Lateral 2C-80

Collection Date: 4/21/2017 1:20:00 PM

Lab ID: 1704A18-003

Matrix: MEOH (SOIL) Received Date: 4/22/2017 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/24/2017 11:10:48 AM	31382
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/24/2017 11:10:48 AM	31382
Surr: DNOP	104	70-130		%Rec	1	4/24/2017 11:10:48 AM	31382
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	4/24/2017 10:38:38 AM	SG42322
Surr: BFB	99.5	54-150		%Rec	1	4/24/2017 10:38:38 AM	SG42322
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	4/24/2017 10:38:38 AM	B42322
Toluene	ND	0.039		mg/Kg	1	4/24/2017 10:38:38 AM	B42322
Ethylbenzene	ND	0.039		mg/Kg	1	4/24/2017 10:38:38 AM	B42322
Xylenes, Total	ND	0.078		mg/Kg	1	4/24/2017 10:38:38 AM	B42322
Surr: 4-Bromofluorobenzene	109	66.6-132		%Rec	1	4/24/2017 10:38:38 AM	B42322

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1704A18

Date Reported: 4/25/2017

CLIENT: APEX TITAN

Client Sample ID: ES-26

Project: Lateral 2C-80

Collection Date: 4/21/2017 1:30:00 PM

Lab ID: 1704A18-004

Matrix: MEOH (SOIL)

Received Date: 4/22/2017 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/24/2017 11:32:58 AM	31382
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/24/2017 11:32:58 AM	31382
Surr: DNOP	104	70-130		%Rec	1	4/24/2017 11:32:58 AM	31382
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	4/24/2017 11:02:48 AM	SG42322
Surr: BFB	111	54-150		%Rec	1	4/24/2017 11:02:48 AM	SG42322
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	4/24/2017 11:02:48 AM	B42322
Toluene	ND	0.038		mg/Kg	1	4/24/2017 11:02:48 AM	B42322
Ethylbenzene	ND	0.038		mg/Kg	1	4/24/2017 11:02:48 AM	B42322
Xylenes, Total	ND	0.077		mg/Kg	1	4/24/2017 11:02:48 AM	B42322
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	4/24/2017 11:02:48 AM	B42322

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.

Analytical Report  
 Lab Order 1704A18  
 Date Reported: 4/25/2017

**CLIENT:** APEX TITAN  
**Project:** Lateral 2C-80  
**Lab ID:** 1704A18-005

**Client Sample ID:** ES-27  
**Collection Date:** 4/21/2017 1:40:00 PM  
**Received Date:** 4/22/2017 10:00:00 AM

**Matrix:** MEOH (SOIL)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/24/2017 11:55:09 AM	31382
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/24/2017 11:55:09 AM	31382
Surr: DNOP	103	70-130		%Rec	1	4/24/2017 11:55:09 AM	31382
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	4/24/2017 11:26:59 AM	SG42322
Surr: BFB	103	54-150		%Rec	1	4/24/2017 11:26:59 AM	SG42322
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.018		mg/Kg	1	4/24/2017 11:26:59 AM	B42322
Toluene	ND	0.036		mg/Kg	1	4/24/2017 11:26:59 AM	B42322
Ethylbenzene	ND	0.036		mg/Kg	1	4/24/2017 11:26:59 AM	B42322
Xylenes, Total	ND	0.072		mg/Kg	1	4/24/2017 11:26:59 AM	B42322
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	4/24/2017 11:26:59 AM	B42322

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

<b>Qualifiers:</b>	* 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.

**Analytical Report**  
 Lab Order 1704A18  
 Date Reported: 4/25/2017

**CLIENT:** APEX TITAN  
**Project:** Lateral 2C-80  
**Lab ID:** 1704A18-006

**Client Sample ID:** ES-28  
**Collection Date:** 4/21/2017 1:50:00 PM  
**Received Date:** 4/22/2017 10:00:00 AM

**Matrix:** MEOH (SOIL)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	230	9.6		mg/Kg	1	4/24/2017 12:17:17 PM	31382
Motor Oil Range Organics (MRO)	75	48		mg/Kg	1	4/24/2017 12:17:17 PM	31382
Surr: DNOP	107	70-130		%Rec	1	4/24/2017 12:17:17 PM	31382
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	79	20		mg/Kg	5	4/24/2017 11:51:04 AM	SG42322
Surr: BFB	150	54-150		%Rec	5	4/24/2017 11:51:04 AM	SG42322
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.10		mg/Kg	5	4/24/2017 11:51:04 AM	B42322
Toluene	0.90	0.20		mg/Kg	5	4/24/2017 11:51:04 AM	B42322
Ethylbenzene	0.26	0.20		mg/Kg	5	4/24/2017 11:51:04 AM	B42322
Xylenes, Total	1.9	0.41		mg/Kg	5	4/24/2017 11:51:04 AM	B42322
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	5	4/24/2017 11:51:04 AM	B42322

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

<b>Qualifiers:</b>	* 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#: 1704A18  
 25-Apr-17

**Client:** APEX TITAN  
**Project:** Lateral 2C-80

Sample ID	<b>LCS-31382</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31382</b>	RunNo:	<b>42310</b>					
Prep Date:	<b>4/24/2017</b>	Analysis Date:	<b>4/24/2017</b>	SeqNo:	<b>1329720</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.9	63.8	116			
Surr: DNOP	4.8		5.000		96.8	70	130			

Sample ID	<b>MB-31382</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31382</b>	RunNo:	<b>42310</b>					
Prep Date:	<b>4/24/2017</b>	Analysis Date:	<b>4/24/2017</b>	SeqNo:	<b>1329721</b>	Units:	<b>mg/Kg</b>			
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		101	70	130			

Sample ID	<b>1704A18-001AMS</b>	SampType:	<b>MS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>ES-23</b>	Batch ID:	<b>31382</b>	RunNo:	<b>42310</b>					
Prep Date:	<b>4/24/2017</b>	Analysis Date:	<b>4/24/2017</b>	SeqNo:	<b>1330299</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	9.5	47.39	0	87.5	51.6	130			
Surr: DNOP	4.3		4.739		90.2	70	130			

Sample ID	<b>1704A18-001AMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>ES-23</b>	Batch ID:	<b>31382</b>	RunNo:	<b>42310</b>					
Prep Date:	<b>4/24/2017</b>	Analysis Date:	<b>4/24/2017</b>	SeqNo:	<b>1330300</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.3	46.25	0	90.3	51.6	130	0.722	20	
Surr: DNOP	4.3		4.625		92.6	70	130	0	0	

**Qualifiers:**

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1704A18

25-Apr-17

**Client:** APEX TITAN

**Project:** Lateral 2C-80

Sample ID <b>RB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>SG42322</b>		RunNo: <b>42322</b>							
Prep Date:	Analysis Date: <b>4/24/2017</b>		SeqNo: <b>1330420</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	54	150			

Sample ID <b>2.5UG GRO LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>SG42322</b>		RunNo: <b>42322</b>							
Prep Date:	Analysis Date: <b>4/24/2017</b>		SeqNo: <b>1330421</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.7	76.4	125			
Surr: BFB	1100		1000		111	54	150			

Sample ID <b>1704A18-001AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>ES-23</b>	Batch ID: <b>SG42322</b>		RunNo: <b>42322</b>							
Prep Date:	Analysis Date: <b>4/24/2017</b>		SeqNo: <b>1330422</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.0	20.14	0	102	61.3	150			
Surr: BFB	910		805.8		113	54	150			

Sample ID <b>1704A18-001AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>ES-23</b>	Batch ID: <b>SG42322</b>		RunNo: <b>42322</b>							
Prep Date:	Analysis Date: <b>4/24/2017</b>		SeqNo: <b>1330423</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.0	20.14	0	98.8	61.3	150	3.38	20	
Surr: BFB	860		805.8		107	54	150	0	0	

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1704A18  
25-Apr-17

**Client:** APEX TITAN  
**Project:** Lateral 2C-80

Sample ID <b>RB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>B42322</b>		RunNo: <b>42322</b>							
Prep Date:	Analysis Date: <b>4/24/2017</b>		SeqNo: <b>1330439</b>		Units: <b>mg/Kg</b>					
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		113	66.6	132			

Sample ID <b>100NG BTEX LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>B42322</b>		RunNo: <b>42322</b>							
Prep Date:	Analysis Date: <b>4/24/2017</b>		SeqNo: <b>1330440</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.7	80	120			
Toluene	0.94	0.050	1.000	0	93.7	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.9	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.2	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		114	66.6	132			

Sample ID <b>1704A18-002AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>ES-24</b>	Batch ID: <b>B42322</b>		RunNo: <b>42322</b>							
Prep Date:	Analysis Date: <b>4/24/2017</b>		SeqNo: <b>1330441</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.69	0.018	0.7396	0	93.7	61.5	138			
Toluene	0.71	0.037	0.7396	0.006730	95.1	71.4	127			
Ethylbenzene	0.72	0.037	0.7396	0	97.2	70.9	132			
Xylenes, Total	2.2	0.074	2.219	0	98.6	76.2	123			
Surr: 4-Bromofluorobenzene	0.83		0.7396		113	66.6	132			

Sample ID <b>1704A18-002AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>ES-24</b>	Batch ID: <b>B42322</b>		RunNo: <b>42322</b>							
Prep Date:	Analysis Date: <b>4/24/2017</b>		SeqNo: <b>1330442</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.67	0.018	0.7396	0	91.0	61.5	138	2.91	20	
Toluene	0.68	0.037	0.7396	0.006730	91.2	71.4	127	4.16	20	
Ethylbenzene	0.70	0.037	0.7396	0	94.5	70.9	132	2.88	20	
Xylenes, Total	2.1	0.074	2.219	0	95.4	76.2	123	3.25	20	
Surr: 4-Bromofluorobenzene	0.83		0.7396		112	66.6	132	0	0	

**Qualifiers:**

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



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: 1704A18

RcptNo: 1

Received By: Lindsay Mangin 4/22/2017 10:00:00 AM

Completed By: Lindsay Mangin 4/22/2017 11:51:14 AM

Reviewed By: *AS* 04/24/17

### 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? 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? 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	1.3	Good	Yes			

CHAIN OF CUSTODY RECORD



Office Location Aztec, NM

Laboratory: Hall

Address: ABC, NM

Contact: A. Freeman

Phone: \_\_\_\_\_

Project Manager K. Summers PO/SO #: \_\_\_\_\_

Sampler's Name Ranee Deechilly Sampler's Signature [Signature]

Proj. No. \_\_\_\_\_ Project Name lateral 2C-80 No/Type of Containers \_\_\_\_\_

Matrix	Date	Time	COE	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AG 1L	250 ml	Glass Jar	P/O
S	4/21/17	1300	X		ES-23						1	X X
S	↓	1310	X		ES-24						1	X X
S	↓	1320	X		ES-25						1	X X
S	↓	1330	X		ES-26						1	X X
S	↓	1340	X		ES-27						1	X X
S	↓	1350	X		ES-28						1	X X
<del>_____</del>												

ANALYSIS REQUESTED

8021 RTEX  
SOIL TPT Goo/DRO/med

Lab use only  
Due Date: \_\_\_\_\_

Temp. of coolers when received (C°): 1.3

1 2 3 4 5

Page 1 of 1

Lab Sample ID (Lab Use Only)

1704A18-001  
-002  
-003  
-004  
-005  
-006

Turn around time  Normal  25% Rush  50% Rush  100% Rush SAME DAY

Relinquished by (Signature) <u>[Signature]</u>	Date: <u>4/21/17</u> Time: <u>1630</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>4/21/17</u> Time: <u>1630</u>
Relinquished by (Signature) <u>[Signature]</u>	Date: <u>4/21/17</u> Time: <u>1856</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>04/22/17</u> Time: <u>1000</u>
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 (EPR00)  
AFE # A30036  
SAME DAY

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



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

April 27, 2017

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

RE: Lateral 2C 80

OrderNo.: 1704B28

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/26/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1704B28

Date Reported: 4/27/2017

CLIENT: APEX TITAN

Client Sample ID: S-1

Project: Lateral 2C 80

Collection Date: 4/25/2017 9:30:00 AM

Lab ID: 1704B28-001

Matrix: MEOH (SOIL)

Received Date: 4/26/2017 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/26/2017 9:44:29 AM	31426
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/26/2017 9:44:29 AM	31426
Surr: DNOP	85.0	70-130		%Rec	1	4/26/2017 9:44:29 AM	31426
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	4/26/2017 9:42:46 AM	SG42379
Surr: BFB	102	54-150		%Rec	1	4/26/2017 9:42:46 AM	SG42379
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.022		mg/Kg	1	4/26/2017 9:42:46 AM	B42379
Toluene	ND	0.044		mg/Kg	1	4/26/2017 9:42:46 AM	B42379
Ethylbenzene	ND	0.044		mg/Kg	1	4/26/2017 9:42:46 AM	B42379
Xylenes, Total	ND	0.088		mg/Kg	1	4/26/2017 9:42:46 AM	B42379
Surr: 4-Bromofluorobenzene	108	66.6-132		%Rec	1	4/26/2017 9:42:46 AM	B42379

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

<b>Qualifiers:</b>	* 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#: 1704B28  
27-Apr-17

Client: APEX TITAN  
Project: Lateral 2C 80

Sample ID	<b>LCS-31426</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31426</b>	RunNo:	<b>42362</b>					
Prep Date:	<b>4/26/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1331951</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.8	63.8	116			
Surr: DNOP	4.7		5.000		93.5	70	130			

Sample ID	<b>MB-31426</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31426</b>	RunNo:	<b>42362</b>					
Prep Date:	<b>4/26/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1331952</b>	Units:	<b>mg/Kg</b>			
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	9.8		10.00		98.2	70	130			

Sample ID	<b>LCS-31439</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31439</b>	RunNo:	<b>42363</b>					
Prep Date:	<b>4/26/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1332305</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		86.0	70	130			

Sample ID	<b>MB-31439</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31439</b>	RunNo:	<b>42363</b>					
Prep Date:	<b>4/26/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1332306</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.1		10.00		80.6	70	130			

Sample ID	<b>1704B28-001AMS</b>	SampType:	<b>MS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>S-1</b>	Batch ID:	<b>31426</b>	RunNo:	<b>42363</b>					
Prep Date:	<b>4/26/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1332920</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.3	46.30	8.817	72.6	51.6	130			
Surr: DNOP	4.1		4.630		88.0	70	130			

Sample ID	<b>1704B28-001AMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>S-1</b>	Batch ID:	<b>31426</b>	RunNo:	<b>42363</b>					
Prep Date:	<b>4/26/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1332921</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.71	8.817	74.0	51.6	130	8.76	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#: 1704B28  
 27-Apr-17

**Client:** APEX TITAN  
**Project:** Lateral 2C 80

Sample ID	1704B28-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics						
Client ID:	S-1	Batch ID:	31426	RunNo:	42363						
Prep Date:	4/26/2017	Analysis Date:	4/26/2017	SeqNo:	1332921	Units:	mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	4.5		5.071		89.5	70	130	0	0		

Sample ID	LCS-31410	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics						
Client ID:	LCSS	Batch ID:	31410	RunNo:	42363						
Prep Date:	4/25/2017	Analysis Date:	4/26/2017	SeqNo:	1332922	Units:	%Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	4.5		5.000		89.5	70	130				

Sample ID	MB-31410	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics						
Client ID:	PBS	Batch ID:	31410	RunNo:	42363						
Prep Date:	4/25/2017	Analysis Date:	4/26/2017	SeqNo:	1332923	Units:	%Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	8.2		10.00		81.8	70	130				

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1704B28  
27-Apr-17

Client: APEX TITAN  
Project: Lateral 2C 80

Sample ID <b>RB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>SG42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332720</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	54	150			

Sample ID <b>2.5UG GRO LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>SG42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332721</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.7	76.4	125			
Surr: BFB	1200		1000		116	54	150			

Sample ID <b>1704B28-001AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>S-1</b>	Batch ID: <b>SG42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332722</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.4	21.97	0	102	61.3	150			
Surr: BFB	1000		878.7		117	54	150			

Sample ID <b>1704B28-001AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>S-1</b>	Batch ID: <b>SG42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332723</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.4	21.97	0	98.3	61.3	150	3.91	20	
Surr: BFB	1000		878.7		116	54	150	0	0	

**Qualifiers:**

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

**QC SUMMARY REPORT**  
**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1704B28  
 27-Apr-17

**Client:** APEX TITAN  
**Project:** Lateral 2C 80

Sample ID <b>RB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>B42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332736</b>		Units: <b>mg/Kg</b>					
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 <b>100NG BTEX LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>B42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332737</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.5	80	120			
Toluene	0.92	0.050	1.000	0	91.6	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.3	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.9	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		110	66.6	132			

**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

**Sample Log-In Check List**

Client Name: APEX AZTEC

Work Order Number: 1704828

RcptNo: 1

Received By: Sophia Campuzano

4/26/2017 7:00:00 AM

*Sophia Campuzano*

Completed By: Lindsay Mangin

4/26/2017 7:34:44 AM

*Lindsay Mangin*

Reviewed By: ENM

04/26/17

**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? Yes  No   
 (Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes  No
- 14. Is it clear what analyses were requested? Yes  No
- 15. Were all holding times able to be met? Yes  No   
 (If no, notify customer for authorization.)

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

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

**Special Handling (if applicable)**

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

Person Notified: \_\_\_\_\_ Date: \_\_\_\_\_

By Whom: \_\_\_\_\_ Via:  eMail  Phone  Fax  In Person

Regarding: \_\_\_\_\_

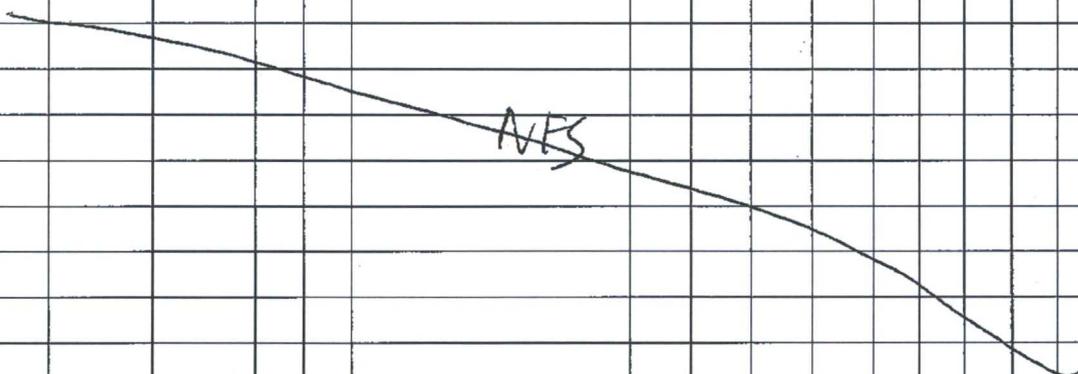
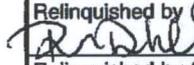
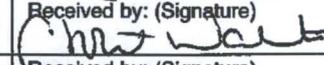
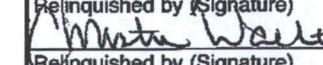
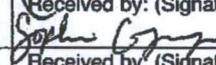
Client Instructions: \_\_\_\_\_

17. Additional remarks:

**18. Cooler Information**

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

CHAIN OF CUSTODY RECORD

 <b>APEX</b> Office Location <u>Aztec, NM</u>		Laboratory: <u>Hall</u> Address: <u>ABQ, NM</u>		ANALYSIS REQUESTED <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); display: inline-block;">                     5021 BTEX                      8015 TPH G-90/DEQ/MRD                 </div>										Lab use only Due Date: _____  Temp. of coolers when received (C°): <u>3.4</u>				
		Contact: <u>A Freeman</u> Phone: _____ PO/ISO #: _____												1    2    3    4    5 Page <u>1</u> of <u>1</u>				
Project Manager <u>K Summers</u>		Sampler's Name <u>Ranee Deechilly</u>		Sampler's Signature 		Proj. No. _____		Project Name <u>Lateral 20-80</u>				No/Type of Containers _____						
Matrix	Date	Time	CO ED	G ARB	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AG 1 L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)					
S	4/25/17	930	X		S-1								XX	1704B28-001				
<del>  </del>																		
Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush <u>SAME DAY</u>																		
Relinquished by (Signature) 		Date: <u>4/25/17</u> Time: <u>1535</u>		Received by (Signature) 		Date: <u>4/25/17</u> Time: <u>1535</u>		NOTES:  <u>Bill to Tom Long (EPCO)</u> <u>APE # A30036</u> <u>SAME DAY</u>										
Relinquished by (Signature) 		Date: <u>4/25/17</u> Time: <u>1847</u>		Received by (Signature) 		Date: <u>04/26/17</u> Time: <u>0700</u>												
Relinquished by (Signature)		Date: _____    Time: _____		Received by (Signature)		Date: _____    Time: _____												
Relinquished by (Signature)		Date: _____    Time: _____		Received by (Signature)		Date: _____    Time: _____												

Matrix Container    WW - Wastewater    W - Water    S - Soil    SD - Solid    L - Liquid    A - Air Bag    C - Charcoal tube    SL - sludge    O - Oil  
 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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

April 27, 2017

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

RE: Lateral 2C 80

OrderNo.: 1704B29

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/26/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1704B29

Date Reported: 4/27/2017

CLIENT: APEX TITAN

Client Sample ID: ES-29

Project: Lateral 2C 80

Collection Date: 4/25/2017 9:20:00 AM

Lab ID: 1704B29-001

Matrix: MEOH (SOIL)

Received Date: 4/26/2017 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/26/2017 10:11:52 AM	31426
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/26/2017 10:11:52 AM	31426
Surr: DNOP	85.8	70-130		%Rec	1	4/26/2017 10:11:52 AM	31426
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	4/26/2017 10:06:55 AM	SG42379
Surr: BFB	96.6	54-150		%Rec	1	4/26/2017 10:06:55 AM	SG42379
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.022		mg/Kg	1	4/26/2017 10:06:55 AM	B42379
Toluene	ND	0.044		mg/Kg	1	4/26/2017 10:06:55 AM	B42379
Ethylbenzene	ND	0.044		mg/Kg	1	4/26/2017 10:06:55 AM	B42379
Xylenes, Total	ND	0.088		mg/Kg	1	4/26/2017 10:06:55 AM	B42379
Surr: 4-Bromofluorobenzene	105	66.6-132		%Rec	1	4/26/2017 10:06:55 AM	B42379

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

<b>Qualifiers:</b>	* 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#: 1704B29  
27-Apr-17

**Client:** APEX TITAN  
**Project:** Lateral 2C 80

Sample ID	<b>LCS-31426</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31426</b>	RunNo:	<b>42362</b>					
Prep Date:	<b>4/26/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1331951</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.8	63.8	116			
Surr: DNOP	4.7		5.000		93.5	70	130			

Sample ID	<b>MB-31426</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31426</b>	RunNo:	<b>42362</b>					
Prep Date:	<b>4/26/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1331952</b>	Units:	<b>mg/Kg</b>			
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	9.8		10.00		98.2	70	130			

Sample ID	<b>LCS-31439</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31439</b>	RunNo:	<b>42363</b>					
Prep Date:	<b>4/26/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1332305</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		86.0	70	130			

Sample ID	<b>MB-31439</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31439</b>	RunNo:	<b>42363</b>					
Prep Date:	<b>4/26/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1332306</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.1		10.00		80.6	70	130			

Sample ID	<b>LCS-31410</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31410</b>	RunNo:	<b>42363</b>					
Prep Date:	<b>4/25/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1332922</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.5	70	130			

Sample ID	<b>MB-31410</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31410</b>	RunNo:	<b>42363</b>					
Prep Date:	<b>4/25/2017</b>	Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>1332923</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.2		10.00		81.8	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#: 1704B29  
27-Apr-17

Client: APEX TITAN  
Project: Lateral 2C 80

Sample ID <b>RB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>SG42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332720</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	54	150			

Sample ID <b>2.5UG GRO LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>SG42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332721</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.7	76.4	125			
Surr: BFB	1200		1000		116	54	150			

**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#: 1704B29  
27-Apr-17

**Client:** APEX TITAN  
**Project:** Lateral 2C 80

Sample ID <b>RB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>B42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332736</b>		Units: <b>mg/Kg</b>					
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 <b>100NG BTEX LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>B42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332737</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.5	80	120			
Toluene	0.92	0.050	1.000	0	91.6	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.3	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.9	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		110	66.6	132			

Sample ID <b>1704B29-001AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>ES-29</b>	Batch ID: <b>B42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332738</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.022	0.8780	0	91.2	61.5	138			
Toluene	0.81	0.044	0.8780	0	92.8	71.4	127			
Ethylbenzene	0.83	0.044	0.8780	0	94.0	70.9	132			
Xylenes, Total	2.5	0.088	2.634	0	96.0	76.2	123			
Surr: 4-Bromofluorobenzene	1.0		0.8780		119	66.6	132			

Sample ID <b>1704B29-001AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>ES-29</b>	Batch ID: <b>B42379</b>		RunNo: <b>42379</b>							
Prep Date:	Analysis Date: <b>4/26/2017</b>		SeqNo: <b>1332739</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.78	0.022	0.8780	0	89.0	61.5	138	2.44	20	
Toluene	0.79	0.044	0.8780	0	90.4	71.4	127	2.62	20	
Ethylbenzene	0.81	0.044	0.8780	0	92.3	70.9	132	1.90	20	
Xylenes, Total	2.5	0.088	2.634	0	93.5	76.2	123	2.56	20	
Surr: 4-Bromofluorobenzene	1.0		0.8780		117	66.6	132	0	0	

**Qualifiers:**

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



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: 1704B29

RcptNo: 1

Received By: Sophia Campuzano 4/26/2017 7:00:00 AM

*Sophia Campuzano*

Completed By: Lindsay Mangin 4/26/2017 7:37:45 AM

*Lindsay Mangin*

Reviewed By: ENM 04/26/17

### 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

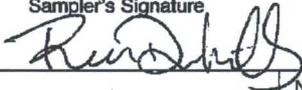
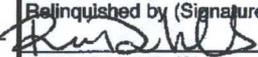
Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

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

 <b>APEX</b> Office Location <u>Aztec, NM</u>		Laboratory: <u>Hall</u> Address: <u>ABQ, NM</u>		ANALYSIS REQUESTED <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); display: inline-block;">                     8021 BTEX                      8015 TPH GPO/DPA/MBO                 </div>										Lab use only Due Date:	
		Contact: <u>A. Freeman</u> Phone: _____ PO/SO #: _____												Temp. of coolers when received (C°): <u>3.4</u>	
Project Manager <u>K. Summers</u>		Project Name <u>lateral 2C-80</u>		No/Type of Containers _____										Page <u>1</u> of <u>1</u>	
Sampler's Name <u>Ranee Deechilly</u>		Sampler's Signature 		Identifying Marks of Sample(s) <u>ES-29</u> <u>ST-00</u>										Lab Sample ID (Lab Use Only) <u>1704B29-001</u>	
Matrix	Date	Time	Code	Brand	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)		
<u>S</u>	<u>4/25/17</u>	<u>920</u>	<u>X</u>		<u>ES-29</u> <u>ST-00</u>						<u>1</u>		<u>XX</u>	<u>1704B29-001</u>	
<div style="position: relative; width: 100%; height: 100%;"> <span style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-size: 2em; opacity: 0.5;">APEX</span> </div>															
Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush <u>SAME DAY</u>															
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:	NOTES: <u>Bill to Tom Long (EPROIS)</u> <u>AFE# A30036</u> <u>Same DAY</u>							
		<u>4/25/17</u>	<u>1535</u>	<u>Tom Long</u>		<u>4/25/17</u>	<u>1535</u>								
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:								
<u>Must Wait</u>		<u>4/25/17</u>	<u>1847</u>	<u>John G...</u>		<u>04/26/17</u>	<u>0700</u>								
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:								
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:								

Matrix Container    WW - Wastewater    W - Water    S - Soil    SD - Solid    L - Liquid    A - Air Bag    C - Charcoal tube    SL - sludge    O - Oil  
 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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

May 22, 2017

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

RE: Lateral 2C-80

OrderNo.: 1705A35

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/19/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1705A35

Date Reported: 5/22/2017

CLIENT: APEX TITAN

Client Sample ID: ES-44

Project: Lateral 2C-80

Collection Date: 5/18/2017 11:00:00 AM

Lab ID: 1705A35-001

Matrix: SOIL

Received Date: 5/19/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/19/2017 10:35:38 AM	31836
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/19/2017 10:35:38 AM	31836
Surr: DNOP	98.1	70-130		%Rec	1	5/19/2017 10:35:38 AM	31836
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/19/2017 9:50:23 AM	31812
Surr: BFB	93.2	54-150		%Rec	1	5/19/2017 9:50:23 AM	31812
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	5/19/2017 9:50:23 AM	31812
Toluene	ND	0.047		mg/Kg	1	5/19/2017 9:50:23 AM	31812
Ethylbenzene	ND	0.047		mg/Kg	1	5/19/2017 9:50:23 AM	31812
Xylenes, Total	ND	0.093		mg/Kg	1	5/19/2017 9:50:23 AM	31812
Surr: 4-Bromofluorobenzene	107	66.6-132		%Rec	1	5/19/2017 9:50:23 AM	31812

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1705A35

Date Reported: 5/22/2017

CLIENT: APEX TITAN

Client Sample ID: ES-45

Project: Lateral 2C-80

Collection Date: 5/18/2017 11:10:00 AM

Lab ID: 1705A35-002

Matrix: SOIL

Received Date: 5/19/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/19/2017 10:57:48 AM	31836
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/19/2017 10:57:48 AM	31836
Surr: DNOP	98.7	70-130		%Rec	1	5/19/2017 10:57:48 AM	31836
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/19/2017 10:14:23 AM	31812
Surr: BFB	94.4	54-150		%Rec	1	5/19/2017 10:14:23 AM	31812
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	5/19/2017 10:14:23 AM	31812
Toluene	ND	0.046		mg/Kg	1	5/19/2017 10:14:23 AM	31812
Ethylbenzene	ND	0.046		mg/Kg	1	5/19/2017 10:14:23 AM	31812
Xylenes, Total	ND	0.093		mg/Kg	1	5/19/2017 10:14:23 AM	31812
Surr: 4-Bromofluorobenzene	108	66.6-132		%Rec	1	5/19/2017 10:14:23 AM	31812

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

<b>Qualifiers:</b>	* 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#: 1705A35  
 22-May-17

**Client:** APEX TITAN  
**Project:** Lateral 2C-80

Sample ID	<b>LCS-31836</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31836</b>	RunNo:	<b>42914</b>					
Prep Date:	<b>5/19/2017</b>	Analysis Date:	<b>5/19/2017</b>	SeqNo:	<b>1350527</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.7	73.2	114			
Surr: DNOP	4.5		5.000		90.0	70	130			

Sample ID	<b>MB-31836</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31836</b>	RunNo:	<b>42914</b>					
Prep Date:	<b>5/19/2017</b>	Analysis Date:	<b>5/19/2017</b>	SeqNo:	<b>1350528</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.3	70	130			

Sample ID	<b>LCS-31814</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31814</b>	RunNo:	<b>42914</b>					
Prep Date:	<b>5/18/2017</b>	Analysis Date:	<b>5/19/2017</b>	SeqNo:	<b>1351129</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		93.3	70	130			

Sample ID	<b>MB-31814</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31814</b>	RunNo:	<b>42914</b>					
Prep Date:	<b>5/18/2017</b>	Analysis Date:	<b>5/19/2017</b>	SeqNo:	<b>1351130</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		97.0	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#: 1705A35  
 22-May-17

**Client:** APEX TITAN  
**Project:** Lateral 2C-80

Sample ID <b>MB-31812</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>31812</b>		RunNo: <b>42919</b>							
Prep Date: <b>5/18/2017</b>	Analysis Date: <b>5/19/2017</b>		SeqNo: <b>1351043</b>		Units: <b>mg/Kg</b>					
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		90.9	54	150			

Sample ID <b>LCS-31812</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>31812</b>		RunNo: <b>42919</b>							
Prep Date: <b>5/18/2017</b>	Analysis Date: <b>5/19/2017</b>		SeqNo: <b>1351044</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.5	76.4	125			
Surr: BFB	1100		1000		105	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#: 1705A35

22-May-17

**Client:** APEX TITAN

**Project:** Lateral 2C-80

Sample ID <b>MB-31812</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>31812</b>	RunNo: <b>42919</b>								
Prep Date: <b>5/18/2017</b>	Analysis Date: <b>5/19/2017</b>	SeqNo: <b>1351066</b>	Units: <b>mg/Kg</b>							
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		107	66.6	132			

Sample ID <b>LCS-31812</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>31812</b>	RunNo: <b>42919</b>								
Prep Date: <b>5/18/2017</b>	Analysis Date: <b>5/19/2017</b>	SeqNo: <b>1351067</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	99.0	80	120			
Toluene	1.0	0.050	1.000	0	99.7	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.1	0.10	3.000	0	103	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	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  
 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: 1705A35

RcptNo: 1

Received By: Anne Thorne

5/19/2017 7:15:00 AM

*Anne Thorne*

Completed By: Anne Thorne

5/19/2017 7:40:16 AM

*Anne Thorne*

Reviewed By: ENM

05/19/17

### 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

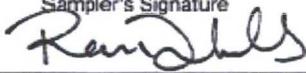
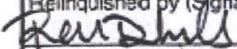
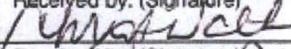
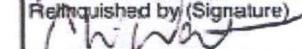
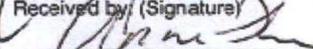
Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

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

 <b>APEX</b> Office Location <u>Aztec, NM</u>		Laboratory: <u>Hall</u> Address: <u>ABQ, NM</u>		ANALYSIS REQUESTED <div style="transform: rotate(-45deg); font-size: small;">                     801 BTEX                      8015 TPH-400/DE/MRO                 </div>					Lab use only Due Date:			
		Contact: <u>A. Freeman</u> Phone:							Temp. of coolers when received (C°): <u>1.0</u>			
Project Manager <u>K. Summers</u>		PO/SO #:		1 2 3 4 5 Page <u>1</u> of <u>1</u>								
Sampler's Name <u>Ranee Deechilly</u>		Sampler's Signature 										
Proj. No.		Project Name <u>Lateral 26-80</u>		No/Type of Containers					Lab Sample ID (Lab Use Only)			
Matrix	Date	Time	Code	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	5/18/17	1100	X	ES-44						1	XX	1705A35-00
S	5/18/17	1110	X	ES-45						1	XX	702
<del> <div style="font-size: 2em; opacity: 0.5;">NFS</div> </del>												
Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush <u>SAME DAY</u>												
Relinquished by (Signature) 		Date: <u>5/19/17</u> Time: <u>1450</u>		Received by (Signature) 		Date: <u>5/18/17</u> Time: <u>1450</u>		NOTES: Bill to Tom Long (EPROD) AFE# A36036 SAME DAY				
Relinquished by (Signature) 		Date: <u>5/18/17</u> Time: <u>1844</u>		Received by (Signature) 		Date: <u>05/19/17</u> Time: <u>0715</u>						
Relinquished by (Signature)		Date:		Received by (Signature)		Date:						
Relinquished by (Signature)		Date:		Received by (Signature)		Date:						

Matrix Container: WW - Wastewater, W - Water, S - Soil, SD - Solid, L - Liquid, A - Air Bag, C - Charcoal tube, SL - sludge, O - Oil  
 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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

April 13, 2017

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

RE: Lateral 2C 80

OrderNo.: 1704322

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/8/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Hall Environmental Analysis Laboratory, Inc.**

**Analytical Report**

Lab Order 1704322

Date Reported: 4/13/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** S-2

**Project:** Lateral 2C 80

**Collection Date:** 4/7/2017 10:00:00 AM

**Lab ID:** 1704322-001

**Matrix:** SOIL

**Received Date:** 4/8/2017 8:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/11/2017 6:42:12 PM	31157
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/11/2017 6:42:12 PM	31157
Surr: DNOP	91.9	70-130		%Rec	1	4/11/2017 6:42:12 PM	31157
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/11/2017 6:04:08 PM	31164
Surr: BFB	91.4	54-150		%Rec	1	4/11/2017 6:04:08 PM	31164
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	4/11/2017 6:04:08 PM	31164
Toluene	ND	0.048		mg/Kg	1	4/11/2017 6:04:08 PM	31164
Ethylbenzene	ND	0.048		mg/Kg	1	4/11/2017 6:04:08 PM	31164
Xylenes, Total	ND	0.096		mg/Kg	1	4/11/2017 6:04:08 PM	31164
Surr: 4-Bromofluorobenzene	115	66.6-132		%Rec	1	4/11/2017 6:04:08 PM	31164

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

<b>Qualifiers:</b>	* 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.**

**Analytical Report**

Lab Order 1704322

Date Reported: 4/13/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** S-3

**Project:** Lateral 2C 80

**Collection Date:** 4/7/2017 10:10:00 AM

**Lab ID:** 1704322-002

**Matrix:** SOIL

**Received Date:** 4/8/2017 8:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	4/11/2017 7:10:33 PM	31157
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/11/2017 7:10:33 PM	31157
Surr: DNOP	93.7	70-130		%Rec	1	4/11/2017 7:10:33 PM	31157
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/11/2017 6:27:29 PM	31164
Surr: BFB	89.8	54-150		%Rec	1	4/11/2017 6:27:29 PM	31164
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	4/11/2017 6:27:29 PM	31164
Toluene	ND	0.046		mg/Kg	1	4/11/2017 6:27:29 PM	31164
Ethylbenzene	ND	0.046		mg/Kg	1	4/11/2017 6:27:29 PM	31164
Xylenes, Total	ND	0.092		mg/Kg	1	4/11/2017 6:27:29 PM	31164
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	4/11/2017 6:27:29 PM	31164

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

<b>Qualifiers:</b>	* 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#: 1704322  
 13-Apr-17

**Client:** APEX TITAN  
**Project:** Lateral 2C 80

Sample ID	<b>LCS-31157</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31157</b>	RunNo:	<b>42017</b>					
Prep Date:	<b>4/10/2017</b>	Analysis Date:	<b>4/11/2017</b>	SeqNo:	<b>1319773</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.1	63.8	116			
Surr: DNOP	5.1		5.000		102	70	130			

Sample ID	<b>MB-31157</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31157</b>	RunNo:	<b>42017</b>					
Prep Date:	<b>4/10/2017</b>	Analysis Date:	<b>4/11/2017</b>	SeqNo:	<b>1319775</b>	Units:	<b>mg/Kg</b>			
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		110	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#: 1704322

13-Apr-17

**Client:** APEX TITAN  
**Project:** Lateral 2C 80

Sample ID <b>MB-31164</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>31164</b>	RunNo: <b>42032</b>								
Prep Date: <b>4/10/2017</b>	Analysis Date: <b>4/11/2017</b>	SeqNo: <b>1320307</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.4	54	150			

Sample ID <b>LCS-31164</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>31164</b>	RunNo: <b>42032</b>								
Prep Date: <b>4/10/2017</b>	Analysis Date: <b>4/11/2017</b>	SeqNo: <b>1320310</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.2	76.4	125			
Surr: BFB	980		1000		97.9	54	150			

Sample ID <b>1704322-002AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>S-3</b>	Batch ID: <b>31164</b>	RunNo: <b>42032</b>								
Prep Date: <b>4/10/2017</b>	Analysis Date: <b>4/11/2017</b>	SeqNo: <b>1320313</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	4.7	23.58	0	120	61.3	150			
Surr: BFB	960		943.4		102	54	150			

Sample ID <b>1704322-002AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>S-3</b>	Batch ID: <b>31164</b>	RunNo: <b>42032</b>								
Prep Date: <b>4/10/2017</b>	Analysis Date: <b>4/11/2017</b>	SeqNo: <b>1320314</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.8	24.08	0	109	61.3	150	7.68	20	
Surr: BFB	950		963.4		98.2	54	150	0	0	

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1704322

13-Apr-17

**Client:** APEX TITAN

**Project:** Lateral 2C 80

Sample ID <b>MB-31164</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>31164</b>	RunNo: <b>42032</b>								
Prep Date: <b>4/10/2017</b>	Analysis Date: <b>4/11/2017</b>	SeqNo: <b>1320337</b>	Units: <b>mg/Kg</b>							
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		113	66.6	132			

Sample ID <b>LCS-31164</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>31164</b>	RunNo: <b>42032</b>								
Prep Date: <b>4/10/2017</b>	Analysis Date: <b>4/11/2017</b>	SeqNo: <b>1320338</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	112	80	120			
Toluene	1.0	0.050	1.000	0	102	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.2	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		114	66.6	132			

Sample ID <b>1704322-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>S-2</b>	Batch ID: <b>31164</b>	RunNo: <b>42032</b>								
Prep Date: <b>4/10/2017</b>	Analysis Date: <b>4/11/2017</b>	SeqNo: <b>1320340</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.3	0.024	0.9443	0	142	61.5	138			S
Toluene	1.3	0.047	0.9443	0	136	71.4	127			S
Ethylbenzene	1.3	0.047	0.9443	0	134	70.9	132			S
Xylenes, Total	3.6	0.094	2.833	0.01969	125	76.2	123			S
Surr: 4-Bromofluorobenzene	1.1		0.9443		121	66.6	132			

Sample ID <b>1704322-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>S-2</b>	Batch ID: <b>31164</b>	RunNo: <b>42032</b>								
Prep Date: <b>4/10/2017</b>	Analysis Date: <b>4/11/2017</b>	SeqNo: <b>1320341</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.3	0.023	0.9398	0	138	61.5	138	3.57	20	
Toluene	1.2	0.047	0.9398	0	127	71.4	127	7.74	20	
Ethylbenzene	1.2	0.047	0.9398	0	125	70.9	132	7.71	20	
Xylenes, Total	3.2	0.094	2.820	0.01969	115	76.2	123	9.04	20	
Surr: 4-Bromofluorobenzene	1.1		0.9398		119	66.6	132	0	0	

**Qualifiers:**

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

**Sample Log-In Check List**

Client Name: APEX AZTEC

Work Order Number: 1704322

RcptNo: 1

Received By: Lindsay Mangin

4/8/2017 8:35:00 AM

*Lindsay Mangin*

Completed By: Ashley Gallegos

4/10/2017 8:37:50 AM

*Ashley Gallegos*

Reviewed By:

*[Signature]*

04/10/17

**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? Yes  No   
(Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes  No
- 14. Is it clear what analyses were requested? Yes  No
- 15. Were all holding times able to be met? Yes  No   
(If no, notify customer for authorization.)

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

**Special Handling (if applicable)**

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

Person Notified:		Date	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> 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	1.5	Good	Yes			

CHAIN OF CUSTODY RECORD



Office Location Aztec, NM

Laboratory: Hall

Address: ABQ, NM

Contact: A. Freeman

Phone: \_\_\_\_\_

Project Manager K. Summers

PO/SO #: \_\_\_\_\_

Sampler's Name Ranee Deechilly Sampler's Signature [Signature]

Proj. No. \_\_\_\_\_ Project Name Lateral 2C-80 No/Type of Containers \_\_\_\_\_

Matrix	Date	Time	CO2	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AG 1 L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	4/7/17	1000	X		S-2								1704322-001
S	4/7/17	1010	X		S-3								-002
<del>RES</del>													

ANALYSIS REQUESTED

8021 BTEX  
8015 TPH 600/DR/MP2

Lab use only  
Due Date: \_\_\_\_\_

Temp. of coolers when received (C°): 1.5

1 2 3 4 5

Page 1 of 1

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

Relinquished by (Signature) <u>[Signature]</u>	Date: <u>4/7/17</u>	Time: <u>1400</u>	Received by (Signature) <u>[Signature]</u>	Date: <u>4/7/17</u>	Time: <u>1400</u>
Relinquished by (Signature) <u>[Signature]</u>	Date: <u>4/7/17</u>	Time: <u>1409</u>	Received by (Signature) <u>[Signature]</u>	Date: _____	Time: <u>1409</u>
Relinquished by (Signature) <u>[Signature]</u>	Date: <u>4/7/17</u>	Time: <u>1814</u>	Received by (Signature) <u>[Signature]</u>	Date: <u>04/08/17</u>	Time: <u>0835</u>
Relinquished by (Signature) _____	Date: _____	Time: _____	Received by (Signature) _____	Date: _____	Time: _____

NOTES:

Bill to Tom Long (EPROD)

Bill no AFE A30036

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



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

April 19, 2017

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

RE: Lateral 2C 80

OrderNo.: 1704616

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/14/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Hall Environmental Analysis Laboratory, Inc.**

**Analytical Report**

Lab Order 1704616

Date Reported: 4/19/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-1

**Project:** Lateral 2C 80

**Collection Date:** 4/12/2017 3:00:00 PM

**Lab ID:** 1704616-001

**Matrix:** SOIL

**Received Date:** 4/14/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/17/2017 11:51:47 AM	31240
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/17/2017 11:51:47 AM	31240
Surr: DNOP	98.5	70-130		%Rec	1	4/17/2017 11:51:47 AM	31240
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/17/2017 1:34:55 PM	31248
Surr: BFB	91.5	54-150		%Rec	1	4/17/2017 1:34:55 PM	31248
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	4/17/2017 1:34:55 PM	31248
Toluene	ND	0.048		mg/Kg	1	4/17/2017 1:34:55 PM	31248
Ethylbenzene	ND	0.048		mg/Kg	1	4/17/2017 1:34:55 PM	31248
Xylenes, Total	ND	0.095		mg/Kg	1	4/17/2017 1:34:55 PM	31248
Surr: 4-Bromofluorobenzene	110	66.6-132		%Rec	1	4/17/2017 1:34:55 PM	31248

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1704616

Date Reported: 4/19/2017

CLIENT: APEX TITAN

Client Sample ID: ES-2

Project: Lateral 2C 80

Collection Date: 4/12/2017 3:10:00 PM

Lab ID: 1704616-002

Matrix: SOIL

Received Date: 4/14/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	4/17/2017 12:16:47 PM	31240
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/17/2017 12:16:47 PM	31240
Surr: DNOP	96.2	70-130		%Rec	1	4/17/2017 12:16:47 PM	31240
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/17/2017 1:58:27 PM	31248
Surr: BFB	92.5	54-150		%Rec	1	4/17/2017 1:58:27 PM	31248
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	4/17/2017 1:58:27 PM	31248
Toluene	ND	0.047		mg/Kg	1	4/17/2017 1:58:27 PM	31248
Ethylbenzene	ND	0.047		mg/Kg	1	4/17/2017 1:58:27 PM	31248
Xylenes, Total	ND	0.094		mg/Kg	1	4/17/2017 1:58:27 PM	31248
Surr: 4-Bromofluorobenzene	110	66.6-132		%Rec	1	4/17/2017 1:58:27 PM	31248

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

<b>Qualifiers:</b>	* 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.**

**Analytical Report**  
 Lab Order 1704616  
 Date Reported: 4/19/2017

**CLIENT:** APEX TITAN  
**Project:** Lateral 2C 80  
**Lab ID:** 1704616-003

**Client Sample ID:** ES-3  
**Collection Date:** 4/12/2017 3:20:00 PM  
**Received Date:** 4/14/2017 7:15:00 AM

**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/17/2017 12:41:42 PM	31240
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/17/2017 12:41:42 PM	31240
Surr: DNOP	100	70-130		%Rec	1	4/17/2017 12:41:42 PM	31240
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/17/2017 2:21:49 PM	31248
Surr: BFB	91.5	54-150		%Rec	1	4/17/2017 2:21:49 PM	31248
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	4/17/2017 2:21:49 PM	31248
Toluene	ND	0.050		mg/Kg	1	4/17/2017 2:21:49 PM	31248
Ethylbenzene	ND	0.050		mg/Kg	1	4/17/2017 2:21:49 PM	31248
Xylenes, Total	ND	0.10		mg/Kg	1	4/17/2017 2:21:49 PM	31248
Surr: 4-Bromofluorobenzene	104	66.6-132		%Rec	1	4/17/2017 2:21:49 PM	31248

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1704616

Date Reported: 4/19/2017

CLIENT: APEX TITAN

Client Sample ID: ES-4

Project: Lateral 2C 80

Collection Date: 4/12/2017 3:30:00 PM

Lab ID: 1704616-004

Matrix: SOIL

Received Date: 4/14/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/17/2017 1:06:50 PM	31240
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/17/2017 1:06:50 PM	31240
Surr: DNOP	98.4	70-130		%Rec	1	4/17/2017 1:06:50 PM	31240
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/17/2017 2:45:11 PM	31248
Surr: BFB	93.3	54-150		%Rec	1	4/17/2017 2:45:11 PM	31248
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	4/17/2017 2:45:11 PM	31248
Toluene	ND	0.048		mg/Kg	1	4/17/2017 2:45:11 PM	31248
Ethylbenzene	ND	0.048		mg/Kg	1	4/17/2017 2:45:11 PM	31248
Xylenes, Total	ND	0.097		mg/Kg	1	4/17/2017 2:45:11 PM	31248
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	4/17/2017 2:45:11 PM	31248

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

<b>Qualifiers:</b>	* 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.**

**Analytical Report**

Lab Order 1704616

Date Reported: 4/19/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-5

**Project:** Lateral 2C 80

**Collection Date:** 4/12/2017 3:40:00 PM

**Lab ID:** 1704616-005

**Matrix:** SOIL

**Received Date:** 4/14/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/17/2017 1:31:40 PM	31240
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/17/2017 1:31:40 PM	31240
Surr: DNOP	86.2	70-130		%Rec	1	4/17/2017 1:31:40 PM	31240
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/17/2017 3:08:36 PM	31248
Surr: BFB	91.7	54-150		%Rec	1	4/17/2017 3:08:36 PM	31248
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	4/17/2017 3:08:36 PM	31248
Toluene	ND	0.047		mg/Kg	1	4/17/2017 3:08:36 PM	31248
Ethylbenzene	ND	0.047		mg/Kg	1	4/17/2017 3:08:36 PM	31248
Xylenes, Total	ND	0.094		mg/Kg	1	4/17/2017 3:08:36 PM	31248
Surr: 4-Bromofluorobenzene	107	66.6-132		%Rec	1	4/17/2017 3:08:36 PM	31248

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

<b>Qualifiers:</b>	* 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#: 1704616

19-Apr-17

Client: APEX TITAN

Project: Lateral 2C 80

Sample ID	<b>MB-31240</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31240</b>	RunNo:	<b>42155</b>					
Prep Date:	<b>4/14/2017</b>	Analysis Date:	<b>4/17/2017</b>	SeqNo:	<b>1324298</b>	Units:	<b>mg/Kg</b>			
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	8.7		10.00		87.0	70	130			

Sample ID	<b>LCS-31240</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31240</b>	RunNo:	<b>42147</b>					
Prep Date:	<b>4/14/2017</b>	Analysis Date:	<b>4/17/2017</b>	SeqNo:	<b>1324408</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	80.8	63.8	116			
Surr: DNOP	4.2		5.000		83.3	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#: 1704616

19-Apr-17

**Client:** APEX TITAN

**Project:** Lateral 2C 80

Sample ID <b>MB-31248</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>31248</b>	RunNo: <b>42172</b>								
Prep Date: <b>4/14/2017</b>	Analysis Date: <b>4/17/2017</b>	SeqNo: <b>1324670</b>	Units: <b>mg/Kg</b>							
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		90.9	54	150			

Sample ID <b>LCS-31248</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>31248</b>	RunNo: <b>42172</b>								
Prep Date: <b>4/14/2017</b>	Analysis Date: <b>4/17/2017</b>	SeqNo: <b>1324671</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.5	76.4	125			
Surr: BFB	990		1000		99.1	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#: 1704616

19-Apr-17

**Client:** APEX TITAN

**Project:** Lateral 2C 80

Sample ID <b>MB-31248</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>31248</b>		RunNo: <b>42172</b>							
Prep Date: <b>4/14/2017</b>	Analysis Date: <b>4/17/2017</b>		SeqNo: <b>1324705</b>				Units: <b>mg/Kg</b>			
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 <b>LCS-31248</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>31248</b>		RunNo: <b>42172</b>							
Prep Date: <b>4/14/2017</b>	Analysis Date: <b>4/17/2017</b>		SeqNo: <b>1324709</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	110	80	120			
Toluene	1.0	0.050	1.000	0	104	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.5	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		114	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 |

**Sample Log-In Check List**

Client Name: **APEX AZTEC** Work Order Number: **1704616** RcptNo: **1**

Received By: **Lindsay Mangin** 4/14/2017 7:15:00 AM *[Signature]*  
 Completed By: **Lindsay Mangin** 4/14/2017 8:14:03 AM *[Signature]*  
 Reviewed By: *AS* *4/14/17*

**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 ✓ # of preserved bottles checked for pH: Adjusted?
- 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
- 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	1.8	Good	Yes			

CHAIN OF CUSTODY RECORD



Office Location Aztec, NM

Laboratory: Hertl Environmental

Address: ABQ, NM

Contact: A. Freeman

Phone: \_\_\_\_\_

Project Manager K. Summers

PO/SO #: \_\_\_\_\_

Sampler's Name  
Ranee Deechilly

Sampler's Signature  
R. Dechilly

Proj. No. \_\_\_\_\_ Project Name Lateral 20-80 No./Type of Containers \_\_\_\_\_

Matrix	Date	Time	Cold	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AG 1 L.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	4/12/17	1500	X		ES-1								1704/616-001
S	↓	1510	X		ES-2								-002
S	↓	1520	X		ES-3								-003
S	↓	1530	X		ES-4								-004
S	↓	1540	X		ES-5								-005
<del>AFS</del>													

ANALYSIS REQUESTED

BURL BTEX  
BALS TRIT 620/DPG/MRO

Lab use only  
Due Date: \_\_\_\_\_  
Temp. of coolers when received (C°): 1.8  
1 2 3 4 5  
Page 1 of 1

Turn around time  Normal  25% Rush  50% Rush  100% Rush See notes

Relinquished by (Signature) <u>[Signature]</u>	Date: <u>4/13/17</u> Time: <u>1331</u>	Received by (Signature) <u>[Signature]</u>	Date: <u>4/13/17</u> Time: <u>1331</u>
Relinquished by (Signature) <u>[Signature]</u>	Date: <u>4/13/17</u> Time: <u>1900</u>	Received by (Signature) <u>[Signature]</u>	Date: <u>04/21/17</u> Time: <u>0715</u>
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 (EPDOD)  
AFE A30036  
Need samples back  
Tuesday 4/18/17 by 3pm

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



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

April 19, 2017

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

RE: Lateral 2C-80

OrderNo.: 1704734

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/18/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Hall Environmental Analysis Laboratory, Inc.**

**Analytical Report**

Lab Order 1704734

Date Reported: 4/19/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-6

**Project:** Lateral 2C-80

**Collection Date:** 4/17/2017 11:00:00 AM

**Lab ID:** 1704734-001

**Matrix:** MEOH (SOIL)

**Received Date:** 4/18/2017 6:48:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/18/2017 10:17:04 AM	31287
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/18/2017 10:17:04 AM	31287
Surr: DNOP	94.0	70-130		%Rec	1	4/18/2017 10:17:04 AM	31287
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	4/18/2017 11:32:42 AM	31284
Surr: BFB	93.1	54-150		%Rec	1	4/18/2017 11:32:42 AM	31284
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	4/18/2017 11:32:42 AM	31284
Toluene	ND	0.038		mg/Kg	1	4/18/2017 11:32:42 AM	31284
Ethylbenzene	ND	0.038		mg/Kg	1	4/18/2017 11:32:42 AM	31284
Xylenes, Total	ND	0.076		mg/Kg	1	4/18/2017 11:32:42 AM	31284
Surr: 4-Bromofluorobenzene	110	66.6-132		%Rec	1	4/18/2017 11:32:42 AM	31284

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1704734

Date Reported: 4/19/2017

CLIENT: APEX TITAN

Client Sample ID: ES-7

Project: Lateral 2C-80

Collection Date: 4/17/2017 11:10:00 AM

Lab ID: 1704734-002

Matrix: MEOH (SOIL) Received Date: 4/18/2017 6:48:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/18/2017 10:41:45 AM	31287
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/18/2017 10:41:45 AM	31287
Surr: DNOP	89.5	70-130		%Rec	1	4/18/2017 10:41:45 AM	31287
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	4/18/2017 11:56:15 AM	31284
Surr: BFB	92.6	54-150		%Rec	1	4/18/2017 11:56:15 AM	31284
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	4/18/2017 11:56:15 AM	31284
Toluene	ND	0.037		mg/Kg	1	4/18/2017 11:56:15 AM	31284
Ethylbenzene	ND	0.037		mg/Kg	1	4/18/2017 11:56:15 AM	31284
Xylenes, Total	ND	0.074		mg/Kg	1	4/18/2017 11:56:15 AM	31284
Surr: 4-Bromofluorobenzene	109	66.6-132		%Rec	1	4/18/2017 11:56:15 AM	31284

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: ES-8

Project: Lateral 2C-80

Collection Date: 4/17/2017 11:20:00 AM

Lab ID: 1704734-003

Matrix: MEOH (SOIL)

Received Date: 4/18/2017 6:48:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/18/2017 11:06:19 AM	31287
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/18/2017 11:06:19 AM	31287
Surr: DNOP	90.8	70-130		%Rec	1	4/18/2017 11:06:19 AM	31287
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	4/18/2017 12:19:46 PM	31284
Surr: BFB	92.5	54-150		%Rec	1	4/18/2017 12:19:46 PM	31284
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.018		mg/Kg	1	4/18/2017 12:19:46 PM	31284
Toluene	ND	0.035		mg/Kg	1	4/18/2017 12:19:46 PM	31284
Ethylbenzene	ND	0.035		mg/Kg	1	4/18/2017 12:19:46 PM	31284
Xylenes, Total	ND	0.071		mg/Kg	1	4/18/2017 12:19:46 PM	31284
Surr: 4-Bromofluorobenzene	108	66.6-132		%Rec	1	4/18/2017 12:19:46 PM	31284

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.**

**Analytical Report**

Lab Order 1704734

Date Reported: 4/19/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-9

**Project:** Lateral 2C-80

**Collection Date:** 4/17/2017 11:30:00 AM

**Lab ID:** 1704734-004

**Matrix:** MEOH (SOIL)

**Received Date:** 4/18/2017 6:48:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/18/2017 11:31:14 AM	31287
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/18/2017 11:31:14 AM	31287
Surr: DNOP	94.0	70-130		%Rec	1	4/18/2017 11:31:14 AM	31287
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	4/18/2017 12:43:17 PM	31284
Surr: BFB	93.7	54-150		%Rec	1	4/18/2017 12:43:17 PM	31284
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.018		mg/Kg	1	4/18/2017 12:43:17 PM	31284
Toluene	ND	0.037		mg/Kg	1	4/18/2017 12:43:17 PM	31284
Ethylbenzene	ND	0.037		mg/Kg	1	4/18/2017 12:43:17 PM	31284
Xylenes, Total	ND	0.073		mg/Kg	1	4/18/2017 12:43:17 PM	31284
Surr: 4-Bromofluorobenzene	110	66.6-132		%Rec	1	4/18/2017 12:43:17 PM	31284

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

<b>Qualifiers:</b>	* 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#: 1704734

19-Apr-17

Client: APEX TITAN

Project: Lateral 2C-80

Sample ID	MB-31240	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	31240	RunNo:	42155					
Prep Date:	4/14/2017	Analysis Date:	4/17/2017	SeqNo:	1324298	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.7		10.00		87.0	70	130			

## Qualifiers:

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1704734  
19-Apr-17

Client: APEX TITAN  
Project: Lateral 2C-80

Sample ID	<b>MB-31284</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31284</b>	RunNo:	<b>42191</b>					
Prep Date:	<b>4/17/2017</b>	Analysis Date:	<b>4/18/2017</b>	SeqNo:	<b>1325839</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		93.1	54	150			

Sample ID	<b>LCS-31284</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31284</b>	RunNo:	<b>42191</b>					
Prep Date:	<b>4/17/2017</b>	Analysis Date:	<b>4/18/2017</b>	SeqNo:	<b>1325840</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.1	76.4	125			
Surr: BFB	1000		1000		99.8	54	150			

Sample ID	<b>MB-31275</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31275</b>	RunNo:	<b>42191</b>					
Prep Date:	<b>4/17/2017</b>	Analysis Date:	<b>4/18/2017</b>	SeqNo:	<b>1325850</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	930		1000		92.8	54	150			

Sample ID	<b>LCS-31275</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31275</b>	RunNo:	<b>42191</b>					
Prep Date:	<b>4/17/2017</b>	Analysis Date:	<b>4/18/2017</b>	SeqNo:	<b>1325851</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		101	54	150			

**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#: 1704734  
 19-Apr-17

**Client:** APEX TITAN  
**Project:** Lateral 2C-80

Sample ID <b>MB-31284</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>31284</b>	RunNo: <b>42191</b>								
Prep Date: <b>4/17/2017</b>	Analysis Date: <b>4/18/2017</b>	SeqNo: <b>1325867</b>	Units: <b>mg/Kg</b>							
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		113	66.6	132			

Sample ID <b>LCS-31284</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>31284</b>	RunNo: <b>42191</b>								
Prep Date: <b>4/17/2017</b>	Analysis Date: <b>4/18/2017</b>	SeqNo: <b>1325868</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	116	80	120			
Toluene	1.1	0.050	1.000	0	106	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.9	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		116	66.6	132			

**Qualifiers:**

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



Hall Environmental Analysis Laboratory  
 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: **1704734** RcptNo: **1**

Received By: **Lindsay Mangin** 4/18/2017 6:48:00 AM  
 Completed By: **Lindsay Mangin** 4/18/2017 7:28:52 AM  
 Reviewed By: **ENM** 04/18/17

*Lindsay Mangin*  
*Lindsay Mangin*

**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? Yes  No
- 13. Are matrices correctly identified on Chain of Custody? Yes  No
- 14. Is it clear what analyses were requested? Yes  No
- 15. Were all holding times able to be met? Yes  No

# 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:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> 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

 <b>APEX</b> Office Location <u>Aztec</u>		Laboratory: <u>Hall</u> Address: <u>ABQ</u>		ANALYSIS REQUESTED <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 2em; font-weight: bold;">APEX 8021 TITAN GRIP/PRO/RO 8015</div>										Lab use only Due Date:		
		Contact: <u>A. Freeman</u> Phone: _____												Temp. of coolers when received (C°): <u>67</u>		
Project Manager <u>R. Summers</u>		PO/SO #: _____		Sampler's Name <u>Ryle Summers</u>		Sampler's Signature 		Page <u>1</u> of <u>1</u>								
Proj. No. _____		Project Name <u>Lateral 2C-80</u>				No/Type of Containers _____				Lab Sample ID (Lab Use Only) <u>1704734-001</u> <u>-002</u> <u>-003</u> <u>-004</u>						
Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1L					250 ml	Glass Jar	P/O
<u>S</u>	<u>4/7/17</u>	<u>1100</u>	<u>X</u>		<u>ES-6</u>										<u>1</u>	<u>1</u>
		<u>1110</u>			<u>ES-7</u>										<u>1</u>	<u>1</u>
		<u>1120</u>			<u>ES-8</u>										<u>1</u>	<u>1</u>
		<u>1130</u>			<u>ES-9</u>										<u>1</u>	<u>1</u>
<del>                     NFS                      R.S.                 </del>																
Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush																
Relinquished by (Signature) <u>[Signature]</u>		Date: <u>4/17/17</u> Time: <u>1659</u>		Received by (Signature) <u>[Signature]</u>		Date: <u>4/17/17</u> Time: <u>1659</u>		NOTES: <u>Bill Tom Long</u> <u>AFE# A30036</u> <u>Some Day</u>								
Relinquished by (Signature) <u>[Signature]</u>		Date: <u>4/17/17</u> Time: <u>2028</u>		Received by (Signature) <u>[Signature]</u>		Date: <u>04/18/17</u> Time: <u>0648</u>										
Relinquished by (Signature) _____		Date: _____    Time: _____		Received by (Signature) _____		Date: _____    Time: _____										
Relinquished by (Signature) _____		Date: _____    Time: _____		Received by (Signature) _____		Date: _____    Time: _____										

Matrix Container    WW - Wastewater    W - Water    S - Soil    SD - Solid    L - Liquid    A - Air Bag    C - Charcoal tube    SL - sludge    O - Oil  
 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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

April 24, 2017

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

RE: Lateral 2C-80

OrderNo.: 1704961

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 13 sample(s) on 4/21/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1704961

Date Reported: 4/24/2017

CLIENT: APEX TITAN

Client Sample ID: ES-10

Project: Lateral 2C-80

Collection Date: 4/20/2017 12:00:00 PM

Lab ID: 1704961-001

Matrix: MEOH (SOIL)

Received Date: 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/21/2017 9:23:31 AM	31360
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/21/2017 9:23:31 AM	31360
Surr: DNOP	84.6	70-130		%Rec	1	4/21/2017 9:23:31 AM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	4/21/2017 9:42:53 AM	31352
Surr: BFB	95.7	54-150		%Rec	1	4/21/2017 9:42:53 AM	31352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.022		mg/Kg	1	4/21/2017 9:42:53 AM	31352
Toluene	ND	0.044		mg/Kg	1	4/21/2017 9:42:53 AM	31352
Ethylbenzene	ND	0.044		mg/Kg	1	4/21/2017 9:42:53 AM	31352
Xylenes, Total	ND	0.088		mg/Kg	1	4/21/2017 9:42:53 AM	31352
Surr: 4-Bromofluorobenzene	113	66.6-132		%Rec	1	4/21/2017 9:42:53 AM	31352

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

<b>Qualifiers:</b>	* 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.**

**Analytical Report**  
 Lab Order 1704961  
 Date Reported: 4/24/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-11

**Project:** Lateral 2C-80

**Collection Date:** 4/20/2017 12:10:00 PM

**Lab ID:** 1704961-002

**Matrix:** MEOH (SOIL)

**Received Date:** 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/21/2017 10:21:39 AM	31360
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/21/2017 10:21:39 AM	31360
Surr: DNOP	106	70-130		%Rec	1	4/21/2017 10:21:39 AM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	4/21/2017 10:06:25 AM	31352
Surr: BFB	95.9	54-150		%Rec	1	4/21/2017 10:06:25 AM	31352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.019		mg/Kg	1	4/21/2017 10:06:25 AM	31352
Toluene	ND	0.037		mg/Kg	1	4/21/2017 10:06:25 AM	31352
Ethylbenzene	ND	0.037		mg/Kg	1	4/21/2017 10:06:25 AM	31352
Xylenes, Total	ND	0.075		mg/Kg	1	4/21/2017 10:06:25 AM	31352
Surr: 4-Bromofluorobenzene	113	66.6-132		%Rec	1	4/21/2017 10:06:25 AM	31352

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1704961

Date Reported: 4/24/2017

CLIENT: APEX TITAN

Client Sample ID: ES-12

Project: Lateral 2C-80

Collection Date: 4/20/2017 12:20:00 PM

Lab ID: 1704961-003

Matrix: MEOH (SOIL)

Received Date: 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/21/2017 10:43:44 AM	31360
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	4/21/2017 10:43:44 AM	31360
Surr: DNOP	106	70-130		%Rec	1	4/21/2017 10:43:44 AM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/21/2017 10:29:50 AM	31352
Surr: BFB	94.6	54-150		%Rec	1	4/21/2017 10:29:50 AM	31352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	4/21/2017 10:29:50 AM	31352
Toluene	ND	0.048		mg/Kg	1	4/21/2017 10:29:50 AM	31352
Ethylbenzene	ND	0.048		mg/Kg	1	4/21/2017 10:29:50 AM	31352
Xylenes, Total	ND	0.097		mg/Kg	1	4/21/2017 10:29:50 AM	31352
Surr: 4-Bromofluorobenzene	111	66.6-132		%Rec	1	4/21/2017 10:29:50 AM	31352

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.**

**Analytical Report**  
 Lab Order 1704961  
 Date Reported: 4/24/2017

**CLIENT:** APEX TITAN  
**Project:** Lateral 2C-80  
**Lab ID:** 1704961-004

**Client Sample ID:** ES-13  
**Collection Date:** 4/20/2017 12:30:00 PM  
**Matrix:** MEOH (SOIL) **Received Date:** 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/21/2017 11:05:46 AM	31360
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/21/2017 11:05:46 AM	31360
Surr: DNOP	100	70-130		%Rec	1	4/21/2017 11:05:46 AM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	4/21/2017 10:53:22 AM	31352
Surr: BFB	95.2	54-150		%Rec	1	4/21/2017 10:53:22 AM	31352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.021		mg/Kg	1	4/21/2017 10:53:22 AM	31352
Toluene	ND	0.041		mg/Kg	1	4/21/2017 10:53:22 AM	31352
Ethylbenzene	ND	0.041		mg/Kg	1	4/21/2017 10:53:22 AM	31352
Xylenes, Total	ND	0.082		mg/Kg	1	4/21/2017 10:53:22 AM	31352
Surr: 4-Bromofluorobenzene	111	66.6-132		%Rec	1	4/21/2017 10:53:22 AM	31352

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.

Analytical Report

Lab Order 1704961

Date Reported: 4/24/2017

CLIENT: APEX TITAN

Client Sample ID: ES-14

Project: Lateral 2C-80

Collection Date: 4/20/2017 12:40:00 PM

Lab ID: 1704961-005

Matrix: MEOH (SOIL)

Received Date: 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/21/2017 11:27:54 AM	31360
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	4/21/2017 11:27:54 AM	31360
Surr: DNOP	107	70-130		%Rec	1	4/21/2017 11:27:54 AM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	4/21/2017 11:16:55 AM	31352
Surr: BFB	95.7	54-150		%Rec	1	4/21/2017 11:16:55 AM	31352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.021		mg/Kg	1	4/21/2017 11:16:55 AM	31352
Toluene	ND	0.042		mg/Kg	1	4/21/2017 11:16:55 AM	31352
Ethylbenzene	ND	0.042		mg/Kg	1	4/21/2017 11:16:55 AM	31352
Xylenes, Total	ND	0.084		mg/Kg	1	4/21/2017 11:16:55 AM	31352
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	4/21/2017 11:16:55 AM	31352

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

<b>Qualifiers:</b>	* 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.**

**Analytical Report**

Lab Order 1704961

Date Reported: 4/24/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-15

**Project:** Lateral 2C-80

**Collection Date:** 4/20/2017 12:50:00 PM

**Lab ID:** 1704961-006

**Matrix:** MEOH(SOIL)

**Received Date:** 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	4/21/2017 11:49:51 AM	31360
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/21/2017 11:49:51 AM	31360
Surr: DNOP	106	70-130		%Rec	1	4/21/2017 11:49:51 AM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	4/21/2017 11:40:29 AM	31352
Surr: BFB	95.9	54-150		%Rec	1	4/21/2017 11:40:29 AM	31352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.018		mg/Kg	1	4/21/2017 11:40:29 AM	31352
Toluene	ND	0.035		mg/Kg	1	4/21/2017 11:40:29 AM	31352
Ethylbenzene	ND	0.035		mg/Kg	1	4/21/2017 11:40:29 AM	31352
Xylenes, Total	ND	0.071		mg/Kg	1	4/21/2017 11:40:29 AM	31352
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	4/21/2017 11:40:29 AM	31352

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1704961

Date Reported: 4/24/2017

CLIENT: APEX TITAN

Client Sample ID: ES-16

Project: Lateral 2C-80

Collection Date: 4/20/2017 1:00:00 PM

Lab ID: 1704961-007

Matrix: MEOH (SOIL)

Received Date: 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/21/2017 12:11:52 PM	31360
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/21/2017 12:11:52 PM	31360
Surr: DNOP	109	70-130		%Rec	1	4/21/2017 12:11:52 PM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	4/21/2017 12:04:02 PM	31352
Surr: BFB	95.5	54-150		%Rec	1	4/21/2017 12:04:02 PM	31352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	4/21/2017 12:04:02 PM	31352
Toluene	ND	0.038		mg/Kg	1	4/21/2017 12:04:02 PM	31352
Ethylbenzene	ND	0.038		mg/Kg	1	4/21/2017 12:04:02 PM	31352
Xylenes, Total	ND	0.077		mg/Kg	1	4/21/2017 12:04:02 PM	31352
Surr: 4-Bromofluorobenzene	110	66.6-132		%Rec	1	4/21/2017 12:04:02 PM	31352

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

<b>Qualifiers:</b>	* 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.**

**Analytical Report**  
 Lab Order 1704961  
 Date Reported: 4/24/2017

**CLIENT:** APEX TITAN  
**Project:** Lateral 2C-80  
**Lab ID:** 1704961-008

**Client Sample ID:** ES-17  
**Collection Date:** 4/20/2017 1:10:00 PM  
**Matrix:** MEOH (SOIL) **Received Date:** 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/21/2017 12:33:50 PM	31360
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/21/2017 12:33:50 PM	31360
Surr: DNOP	111	70-130		%Rec	1	4/21/2017 12:33:50 PM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	4/21/2017 12:27:29 PM	31352
Surr: BFB	95.2	54-150		%Rec	1	4/21/2017 12:27:29 PM	31352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	4/21/2017 12:27:29 PM	31352
Toluene	ND	0.045		mg/Kg	1	4/21/2017 12:27:29 PM	31352
Ethylbenzene	ND	0.045		mg/Kg	1	4/21/2017 12:27:29 PM	31352
Xylenes, Total	ND	0.091		mg/Kg	1	4/21/2017 12:27:29 PM	31352
Surr: 4-Bromofluorobenzene	109	66.6-132		%Rec	1	4/21/2017 12:27:29 PM	31352

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

<b>Qualifiers:</b>	* 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.**

**Analytical Report**

Lab Order 1704961

Date Reported: 4/24/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-18

**Project:** Lateral 2C-80

**Collection Date:** 4/20/2017 1:20:00 PM

**Lab ID:** 1704961-009

**Matrix:** MEOH (SOIL)

**Received Date:** 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/21/2017 12:56:03 PM	31360
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/21/2017 12:56:03 PM	31360
Surr: DNOP	112	70-130		%Rec	1	4/21/2017 12:56:03 PM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	4/21/2017 12:50:56 PM	31352
Surr: BFB	95.2	54-150		%Rec	1	4/21/2017 12:50:56 PM	31352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.018		mg/Kg	1	4/21/2017 12:50:56 PM	31352
Toluene	ND	0.035		mg/Kg	1	4/21/2017 12:50:56 PM	31352
Ethylbenzene	ND	0.035		mg/Kg	1	4/21/2017 12:50:56 PM	31352
Xylenes, Total	ND	0.071		mg/Kg	1	4/21/2017 12:50:56 PM	31352
Surr: 4-Bromofluorobenzene	110	66.6-132		%Rec	1	4/21/2017 12:50:56 PM	31352

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1704961

Date Reported: 4/24/2017

CLIENT: APEX TITAN

Client Sample ID: ES-19

Project: Lateral 2C-80

Collection Date: 4/20/2017 1:30:00 PM

Lab ID: 1704961-010

Matrix: MEOH (SOIL)

Received Date: 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/21/2017 1:18:12 PM	31360
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/21/2017 1:18:12 PM	31360
Surr: DNOP	108	70-130		%Rec	1	4/21/2017 1:18:12 PM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	4/21/2017 1:14:24 PM	31352
Surr: BFB	95.2	54-150		%Rec	1	4/21/2017 1:14:24 PM	31352
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.020		mg/Kg	1	4/21/2017 1:14:24 PM	31352
Toluene	ND	0.040		mg/Kg	1	4/21/2017 1:14:24 PM	31352
Ethylbenzene	ND	0.040		mg/Kg	1	4/21/2017 1:14:24 PM	31352
Xylenes, Total	ND	0.080		mg/Kg	1	4/21/2017 1:14:24 PM	31352
Surr: 4-Bromofluorobenzene	108	66.6-132		%Rec	1	4/21/2017 1:14:24 PM	31352

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.

Analytical Report

Lab Order 1704961

Date Reported: 4/24/2017

CLIENT: APEX TITAN

Client Sample ID: ES-20

Project: Lateral 2C-80

Collection Date: 4/20/2017 1:40:00 PM

Lab ID: 1704961-011

Matrix: MEOH (SOIL)

Received Date: 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/21/2017 1:40:13 PM	31360
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/21/2017 1:40:13 PM	31360
Surr: DNOP	112	70-130		%Rec	1	4/21/2017 1:40:13 PM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	4/21/2017 11:15:25 AM	SG42287
Surr: BFB	98.8	54-150		%Rec	1	4/21/2017 11:15:25 AM	SG42287
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.021		mg/Kg	1	4/21/2017 11:15:25 AM	B42287
Toluene	ND	0.042		mg/Kg	1	4/21/2017 11:15:25 AM	B42287
Ethylbenzene	ND	0.042		mg/Kg	1	4/21/2017 11:15:25 AM	B42287
Xylenes, Total	ND	0.083		mg/Kg	1	4/21/2017 11:15:25 AM	B42287
Surr: 4-Bromofluorobenzene	108	66.6-132		%Rec	1	4/21/2017 11:15:25 AM	B42287

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1704961

Date Reported: 4/24/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-21

**Project:** Lateral 2C-80

**Collection Date:** 4/20/2017 1:50:00 PM

**Lab ID:** 1704961-012

**Matrix:** MEOH (SOIL)

**Received Date:** 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	63	9.5		mg/Kg	1	4/21/2017 2:02:35 PM	31360
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/21/2017 2:02:35 PM	31360
Surr: DNOP	112	70-130		%Rec	1	4/21/2017 2:02:35 PM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	8.8	3.5		mg/Kg	1	4/21/2017 11:39:37 AM	SG42287
Surr: BFB	176	54-150	S	%Rec	1	4/21/2017 11:39:37 AM	SG42287
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.018		mg/Kg	1	4/21/2017 11:39:37 AM	B42287
Toluene	ND	0.035		mg/Kg	1	4/21/2017 11:39:37 AM	B42287
Ethylbenzene	ND	0.035		mg/Kg	1	4/21/2017 11:39:37 AM	B42287
Xylenes, Total	0.16	0.070		mg/Kg	1	4/21/2017 11:39:37 AM	B42287
Surr: 4-Bromofluorobenzene	104	66.6-132		%Rec	1	4/21/2017 11:39:37 AM	B42287

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: Lateral 2C-80  
 Lab ID: 1704961-013

Client Sample ID: ES-22  
 Collection Date: 4/20/2017 2:00:00 PM  
 Matrix: MEOH (SOIL) Received Date: 4/21/2017 7:38:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/21/2017 2:24:57 PM	31360
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/21/2017 2:24:57 PM	31360
Surr: DNOP	115	70-130		%Rec	1	4/21/2017 2:24:57 PM	31360
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	4/21/2017 12:03:54 PM	SG42287
Surr: BFB	95.1	54-150		%Rec	1	4/21/2017 12:03:54 PM	SG42287
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	4/21/2017 12:03:54 PM	B42287
Toluene	ND	0.039		mg/Kg	1	4/21/2017 12:03:54 PM	B42287
Ethylbenzene	ND	0.039		mg/Kg	1	4/21/2017 12:03:54 PM	B42287
Xylenes, Total	ND	0.078		mg/Kg	1	4/21/2017 12:03:54 PM	B42287
Surr: 4-Bromofluorobenzene	102	66.6-132		%Rec	1	4/21/2017 12:03:54 PM	B42287

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#: 1704961

24-Apr-17

**Client:** APEX TITAN

**Project:** Lateral 2C-80

Sample ID	<b>LCS-31359</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31359</b>	RunNo:	<b>42271</b>					
Prep Date:	<b>4/21/2017</b>	Analysis Date:	<b>4/21/2017</b>	SeqNo:	<b>1328164</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		93.5	70	130			

Sample ID	<b>MB-31359</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31359</b>	RunNo:	<b>42271</b>					
Prep Date:	<b>4/21/2017</b>	Analysis Date:	<b>4/21/2017</b>	SeqNo:	<b>1328165</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		108	70	130			

Sample ID	<b>MB-31360</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31360</b>	RunNo:	<b>42274</b>					
Prep Date:	<b>4/21/2017</b>	Analysis Date:	<b>4/21/2017</b>	SeqNo:	<b>1328407</b>	Units:	<b>mg/Kg</b>			
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			

Sample ID	<b>LCS-31360</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31360</b>	RunNo:	<b>42274</b>					
Prep Date:	<b>4/21/2017</b>	Analysis Date:	<b>4/21/2017</b>	SeqNo:	<b>1328408</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.9	63.8	116			
Surr: DNOP	4.5		5.000		89.6	70	130			

**Qualifiers:**

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1704961

24-Apr-17

Client: APEX TITAN

Project: Lateral 2C-80

Sample ID	<b>MB-31352</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31352</b>	RunNo:	<b>42286</b>					
Prep Date:	<b>4/20/2017</b>	Analysis Date:	<b>4/21/2017</b>	SeqNo:	<b>1329583</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		95.5	54	150			

Sample ID	<b>LCS-31352</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31352</b>	RunNo:	<b>42286</b>					
Prep Date:	<b>4/20/2017</b>	Analysis Date:	<b>4/21/2017</b>	SeqNo:	<b>1329584</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.8	76.4	125			
Surr: BFB	1000		1000		103	54	150			

Sample ID	<b>RB</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>SG42287</b>	RunNo:	<b>42287</b>					
Prep Date:		Analysis Date:	<b>4/21/2017</b>	SeqNo:	<b>1329608</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	940		1000		93.9	54	150			

Sample ID	<b>2.5UG GRO LCS</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>SG42287</b>	RunNo:	<b>42287</b>					
Prep Date:		Analysis Date:	<b>4/21/2017</b>	SeqNo:	<b>1329609</b>	Units:	<b>mg/Kg</b>			
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	76.4	125			
Surr: BFB	1100		1000		106	54	150			

**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#: 1704961

24-Apr-17

**Client:** APEX TITAN

**Project:** Lateral 2C-80

Sample ID <b>MB-31352</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>31352</b>	RunNo: <b>42286</b>								
Prep Date: <b>4/20/2017</b>	Analysis Date: <b>4/21/2017</b>	SeqNo: <b>1329596</b>	Units: <b>mg/Kg</b>							
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	1.2		1.000		115	66.6	132			

Sample ID <b>LCS-31352</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>31352</b>	RunNo: <b>42286</b>								
Prep Date: <b>4/20/2017</b>	Analysis Date: <b>4/21/2017</b>	SeqNo: <b>1329597</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	107	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	1.0	0.050	1.000	0	100	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.9	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		117	66.6	132			

Sample ID <b>RB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>B42287</b>	RunNo: <b>42287</b>								
Prep Date:	Analysis Date: <b>4/21/2017</b>	SeqNo: <b>1329623</b>	Units: <b>mg/Kg</b>							
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		104	66.6	132			

Sample ID <b>100NG BTEX LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>B42287</b>	RunNo: <b>42287</b>								
Prep Date:	Analysis Date: <b>4/21/2017</b>	SeqNo: <b>1329624</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.5	80	120			
Toluene	0.92	0.050	1.000	0	91.6	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.1	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.3	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		109	66.6	132			

**Qualifiers:**

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



Hall Environmental Analysis Laboratory  
 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: 1704961

RcptNo: 1

Received By: Lindsay Mangin 4/21/2017 7:38:00 AM

*Lindsay Mangin*

Completed By: Lindsay Mangin 4/21/2017 8:04:33 AM

*Lindsay Mangin*

Reviewed By: *SRE 04/20/17*  
*04/21/17 sre*

**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: (<2 or >12 unless noted)
- 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ✓ No Adjusted?
- 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 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	1.3	Good	Yes			

CHAIN OF CUSTODY RECORD



Office Location Aztec, NM

Project Manager K. Summers

Laboratory: Hall

Address: ABQ, NM

Contact: A. Freeman

Phone: \_\_\_\_\_

PO/SO #: \_\_\_\_\_

ANALYSIS REQUESTED

8021 BTEX  
8015 TPH GRO / DRO / MPO

Lab use only  
Due Date: \_\_\_\_\_

Temp. of coolers when received (C°): 13

1	2	3	4	5
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Page 1 of 2

Sampler's Name: Ranee Dechilly      Sampler's Signature: Ranee Dechilly

Proj. No.: \_\_\_\_\_      Project Name: Lateral 2C-80      No/Type of Containers: \_\_\_\_\_

Matrix	Date	Time	Coed	Drawn	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AG 1 L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	4/20/17	1200	X		ES-10						1	X X	1704961-001
		1210			ES-11								-002
		1220			ES-12								-003
		1230			ES-13								-004
		1240			ES-14								-005
		1250			ES-15								-006
		1300			ES-16								-007
		1310			ES-17								-008
		1320			ES-18								-009
		1330			ES-19								-010

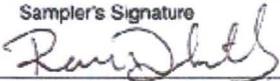
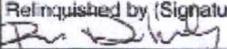
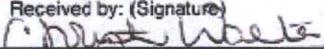
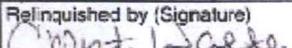
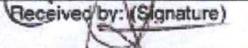
Turn around time     Normal     25% Rush     50% Rush     400% Rush    SAME DAY

Relinquished by (Signature): <u>Ranee Dechilly</u>	Date: <u>4/20/17</u> Time: <u>1545</u>	Received by (Signature): <u>Tom Long</u>	Date: <u>4/20/17</u> Time: <u>1545</u>
Relinquished by (Signature): <u>Christi Wertz</u>	Date: <u>4/20/17</u> Time: <u>1950</u>	Received by (Signature): <u>Tom Long</u>	Date: <u>4/20/17</u> Time: <u>17035</u>
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 (EPR00)  
AFE # A30036  
SAME DAY

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

CHAIN OF CUSTODY RECORD

 <b>APEX</b> Office Location <u>Aztec, NM</u>		Laboratory: <u>Hall</u> Address: <u>ABQ, NM</u>		ANALYSIS REQUESTED <div style="transform: rotate(-90deg); position: absolute; left: 50%; top: 50%; font-size: 2em; font-weight: bold;">                     50% BTEX                      50% TPH C-20/DRO/MRO                 </div>										Lab use only Due Date:	
		Contact: <u>A. Fraiman</u> Phone:												Temp. of coolers when received (C°): <u>1.3</u>	
Project Manager <u>K. Summers</u>		PO/SO #:		Page <u>2</u> of <u>2</u>											
Sampler's Name <u>Ranee Deechilly</u>		Sampler's Signature 													
Proj. No.		Project Name <u>Lateral 20-80</u>		No./Type of Containers											
Matrix	Date	Time	COED	BAR	Identifying Marks of Samples	Start Depth	End Depth	VOA	AG 1 L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)		
S	4/20/17	1340	X		ES-20						1		X	X	1704961-011
		1350			ES-21						1		X	X	012
↓	↓	1400	↓		ES-22						1		X	X	013
<div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); opacity: 0.5; font-size: 2em;">                         N/A                     </div>															
Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush <u>SAME DAY</u>															
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:	NOTES: Bill to Tom Long (EPR00) APE # A30036 <u>SAME DAY</u>							
		4/20/17	1545			4/20/17	1545								
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:								
		4/20/17	1950			4/20/17	0730								
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:								
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:								

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    AG - Amber / Or Glass 1 Liter    250 ml - Glass wide mouth    P/O - Plastic or other



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

May 17, 2017

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

RE: Lateral 2C-80

OrderNo.: 1705778

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 5 sample(s) on 5/16/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1705778

Date Reported: 5/17/2017

CLIENT: APEX TITAN

Client Sample ID: ES-31

Project: Lateral 2C-80

Collection Date: 5/15/2017 2:00:00 PM

Lab ID: 1705778-001

Matrix: SOIL

Received Date: 5/16/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/16/2017 8:54:28 AM	31757
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/16/2017 8:54:28 AM	31757
Surr: DNOP	85.0	70-130		%Rec	1	5/16/2017 8:54:28 AM	31757
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.1		mg/Kg	1	5/16/2017 10:00:45 AM	31750
Surr: BFB	92.9	54-150		%Rec	1	5/16/2017 10:00:45 AM	31750
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.026		mg/Kg	1	5/16/2017 10:00:45 AM	31750
Toluene	ND	0.051		mg/Kg	1	5/16/2017 10:00:45 AM	31750
Ethylbenzene	ND	0.051		mg/Kg	1	5/16/2017 10:00:45 AM	31750
Xylenes, Total	ND	0.10		mg/Kg	1	5/16/2017 10:00:45 AM	31750
Surr: 4-Bromofluorobenzene	105	66.6-132		%Rec	1	5/16/2017 10:00:45 AM	31750

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.

Analytical Report

Lab Order 1705778

Date Reported: 5/17/2017

CLIENT: APEX TITAN

Client Sample ID: ES-32

Project: Lateral 2C-80

Collection Date: 5/15/2017 2:10:00 PM

Lab ID: 1705778-002

Matrix: SOIL

Received Date: 5/16/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/16/2017 9:16:33 AM	31757
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/16/2017 9:16:33 AM	31757
Surr: DNOP	83.6	70-130		%Rec	1	5/16/2017 9:16:33 AM	31757
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.3		mg/Kg	1	5/16/2017 10:24:58 AM	31750
Surr: BFB	95.8	54-150		%Rec	1	5/16/2017 10:24:58 AM	31750
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.026		mg/Kg	1	5/16/2017 10:24:58 AM	31750
Toluene	0.094	0.053		mg/Kg	1	5/16/2017 10:24:58 AM	31750
Ethylbenzene	ND	0.053		mg/Kg	1	5/16/2017 10:24:58 AM	31750
Xylenes, Total	ND	0.11		mg/Kg	1	5/16/2017 10:24:58 AM	31750
Surr: 4-Bromofluorobenzene	106	66.6-132		%Rec	1	5/16/2017 10:24:58 AM	31750

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1705778

Date Reported: 5/17/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-33

**Project:** Lateral 2C-80

**Collection Date:** 5/15/2017 2:20:00 PM

**Lab ID:** 1705778-003

**Matrix:** SOIL

**Received Date:** 5/16/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/16/2017 9:38:27 AM	31757
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/16/2017 9:38:27 AM	31757
Surr: DNOP	85.2	70-130		%Rec	1	5/16/2017 9:38:27 AM	31757
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.4		mg/Kg	1	5/16/2017 10:48:59 AM	31750
Surr: BFB	92.4	54-150		%Rec	1	5/16/2017 10:48:59 AM	31750
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.027		mg/Kg	1	5/16/2017 10:48:59 AM	31750
Toluene	ND	0.054		mg/Kg	1	5/16/2017 10:48:59 AM	31750
Ethylbenzene	ND	0.054		mg/Kg	1	5/16/2017 10:48:59 AM	31750
Xylenes, Total	ND	0.11		mg/Kg	1	5/16/2017 10:48:59 AM	31750
Surr: 4-Bromofluorobenzene	105	66.6-132		%Rec	1	5/16/2017 10:48:59 AM	31750

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

<b>Qualifiers:</b>	* 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.

Analytical Report  
 Lab Order 1705778  
 Date Reported: 5/17/2017

CLIENT: APEX TITAN

Client Sample ID: ES-34

Project: Lateral 2C-80

Collection Date: 5/15/2017 2:30:00 PM

Lab ID: 1705778-004

Matrix: SOIL

Received Date: 5/16/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/16/2017 10:00:38 AM	31757
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/16/2017 10:00:38 AM	31757
Surr: DNOP	85.3	70-130		%Rec	1	5/16/2017 10:00:38 AM	31757
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	5/16/2017 11:13:00 AM	31750
Surr: BFB	91.7	54-150		%Rec	1	5/16/2017 11:13:00 AM	31750
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.021		mg/Kg	1	5/16/2017 11:13:00 AM	31750
Toluene	ND	0.042		mg/Kg	1	5/16/2017 11:13:00 AM	31750
Ethylbenzene	ND	0.042		mg/Kg	1	5/16/2017 11:13:00 AM	31750
Xylenes, Total	ND	0.084		mg/Kg	1	5/16/2017 11:13:00 AM	31750
Surr: 4-Bromofluorobenzene	104	66.6-132		%Rec	1	5/16/2017 11:13:00 AM	31750

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

<b>Qualifiers:</b>	* 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.

**Analytical Report**  
 Lab Order 1705778  
 Date Reported: 5/17/2017

**CLIENT:** APEX TITAN  
**Project:** Lateral 2C-80  
**Lab ID:** 1705778-005

**Client Sample ID:** ES-35  
**Collection Date:** 5/15/2017 2:40:00 PM  
**Received Date:** 5/16/2017 7:20:00 AM

**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/16/2017 10:22:35 AM	31757
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/16/2017 10:22:35 AM	31757
Surr: DNOP	85.8	70-130		%Rec	1	5/16/2017 10:22:35 AM	31757
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/16/2017 11:37:10 AM	31750
Surr: BFB	90.9	54-150		%Rec	1	5/16/2017 11:37:10 AM	31750
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	5/16/2017 11:37:10 AM	31750
Toluene	ND	0.048		mg/Kg	1	5/16/2017 11:37:10 AM	31750
Ethylbenzene	ND	0.048		mg/Kg	1	5/16/2017 11:37:10 AM	31750
Xylenes, Total	ND	0.096		mg/Kg	1	5/16/2017 11:37:10 AM	31750
Surr: 4-Bromofluorobenzene	102	66.6-132		%Rec	1	5/16/2017 11:37:10 AM	31750

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#: 1705778  
 17-May-17

**Client:** APEX TITAN  
**Project:** Lateral 2C-80

Sample ID	<b>LCS-31757</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31757</b>	RunNo:	<b>42805</b>					
Prep Date:	<b>5/16/2017</b>	Analysis Date:	<b>5/16/2017</b>	SeqNo:	<b>1346453</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.5	73.2	114			
Surr: DNOP	4.7		5.000		93.8	70	130			

Sample ID	<b>MB-31757</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31757</b>	RunNo:	<b>42805</b>					
Prep Date:	<b>5/16/2017</b>	Analysis Date:	<b>5/16/2017</b>	SeqNo:	<b>1346454</b>	Units:	<b>mg/Kg</b>			
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	8.3		10.00		83.4	70	130			

Sample ID	<b>LCS-31741</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31741</b>	RunNo:	<b>42804</b>					
Prep Date:	<b>5/15/2017</b>	Analysis Date:	<b>5/16/2017</b>	SeqNo:	<b>1346873</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.9		5.000		77.5	70	130			

Sample ID	<b>MB-31741</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31741</b>	RunNo:	<b>42804</b>					
Prep Date:	<b>5/15/2017</b>	Analysis Date:	<b>5/16/2017</b>	SeqNo:	<b>1346874</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.5		10.00		84.9	70	130			

**Qualifiers:**

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705778

17-May-17

Client: APEX TITAN

Project: Lateral 2C-80

Sample ID <b>MB-31750</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>31750</b>	RunNo: <b>42820</b>								
Prep Date: <b>5/15/2017</b>	Analysis Date: <b>5/16/2017</b>	SeqNo: <b>1347048</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	980		1000		97.5	54	150			

Sample ID <b>LCS-31750</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>31750</b>	RunNo: <b>42820</b>								
Prep Date: <b>5/15/2017</b>	Analysis Date: <b>5/16/2017</b>	SeqNo: <b>1347049</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.9	76.4	125			
Surr: BFB	1100		1000		105	54	150			

### 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#: 1705778

17-May-17

Client: APEX TITAN

Project: Lateral 2C-80

Sample ID	MB-31750	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	31750	RunNo:	42820					
Prep Date:	5/15/2017	Analysis Date:	5/16/2017	SeqNo:	1347081	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	LCS-31750	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	31750	RunNo:	42820					
Prep Date:	5/15/2017	Analysis Date:	5/16/2017	SeqNo:	1347082	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	93.7	80	120			
Toluene	0.95	0.050	1.000	0	94.8	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.2	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.3	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	66.6	132			

**Qualifiers:**

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



Hall Environmental Analysis Laboratory  
 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: 1705778

RcptNo: 1

Received By: Anne Thorne

5/16/2017 7:20:00 AM

*Anne Thorne*

Completed By: Anne Thorne

5/18/2017 7:40:45 AM

*Anne Thorne*

Reviewed By:

*aj*

5/16/17

**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? Yes  No   
(Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes  No
- 14. Is it clear what analyses were requested? Yes  No
- 15. Were all holding times able to be met? Yes  No   
(If no, notify customer for authorization.)

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

**Special Handling (If applicable)**

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

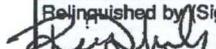
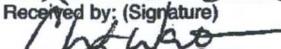
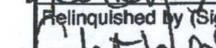
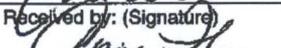
Person Notified: _____	Date: _____
By Whom: _____	Via: <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding: _____	
Client Instructions: _____	

17. Additional remarks:

**18. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Yes			

CHAIN OF CUSTODY RECORD

 <b>APEX</b> Office Location <u>Aztec, NM</u>		Laboratory: <u>Acil</u> Address: <u>ABQ, NM</u>		ANALYSIS REQUESTED <div style="transform: rotate(-90deg); position: absolute; top: 50%; left: 50%; font-size: small;">                     2021 BTEX                      2015 TPH GRO/PRO/MRO                 </div>										Lab use only Due Date:			
		Contact: <u>A. Freeman</u> Phone:												Temp. of coolers when received (C°): 1 2 3 4 5 Page <u>1</u> of <u>1</u>			
Project Manager <u>K. Summers</u>		PO/SO #:		Sampler's Name <u>Ranee Deechilly</u>		Sampler's Signature 											
Proj. No.		Project Name <u>Lateral 2C-80</u>				No/Type of Containers											
Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 L.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)				
S	5/15/17	1400	X		ES-31								X	Y	1705778-001		
		1410			ES-32										202		
		1420			ES-33										203		
		1430			ES-34										204		
		1440			ES-35										205		
NFS																	
Turn around time <input type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input checked="" type="checkbox"/> 100% Rush <u>SAME DAY</u>																	
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:	NOTES:  Bill to Tom Long (EPRO) AFE # A30036  SAME DAY									
		5/15/17	1745			5/15/17	1745										
		5/15/17	1853			5/15/17	0720										
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:										
Relinquished by (Signature)		Date:	Time:	Received by (Signature)		Date:	Time:										

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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

May 25, 2017

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

RE: Lateral 2C-80

OrderNo.: 1705858

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 5 sample(s) on 5/17/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1705858

Date Reported: 5/25/2017

CLIENT: APEX TITAN

Client Sample ID: ES-36

Project: Lateral 2C-80

Collection Date: 5/16/2017 1:20:00 PM

Lab ID: 1705858-001

Matrix: SOIL

Received Date: 5/17/2017 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: <b>AG</b>
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	5/17/2017 12:00:56 PM	R42857
Surr: BFB	93.3	70-130		%Rec	1	5/17/2017 12:00:56 PM	R42857
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/17/2017 10:35:59 AM	31779
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/17/2017 10:35:59 AM	31779
Surr: DNOP	73.8	70-130		%Rec	1	5/17/2017 10:35:59 AM	31779
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: <b>AG</b>
Benzene	ND	0.020		mg/Kg	1	5/17/2017 12:00:56 PM	A42857
Toluene	ND	0.041		mg/Kg	1	5/17/2017 12:00:56 PM	A42857
Ethylbenzene	ND	0.041		mg/Kg	1	5/17/2017 12:00:56 PM	A42857
Xylenes, Total	ND	0.081		mg/Kg	1	5/17/2017 12:00:56 PM	A42857
Surr: 1,2-Dichloroethane-d4	97.3	70-130		%Rec	1	5/17/2017 12:00:56 PM	A42857
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	5/17/2017 12:00:56 PM	A42857
Surr: Dibromofluoromethane	110	70-130		%Rec	1	5/17/2017 12:00:56 PM	A42857
Surr: Toluene-d8	114	70-130		%Rec	1	5/17/2017 12:00:56 PM	A42857

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1705858

Date Reported: 5/25/2017

CLIENT: APEX TITAN

Client Sample ID: ES-37

Project: Lateral 2C-80

Collection Date: 5/16/2017 1:30:00 PM

Lab ID: 1705858-002

Matrix: SOIL

Received Date: 5/17/2017 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: <b>AG</b>
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	5/17/2017 12:30:57 PM	R42857
Surr: BFB	95.8	70-130		%Rec	1	5/17/2017 12:30:57 PM	R42857
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/17/2017 12:26:45 PM	31779
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/17/2017 12:26:45 PM	31779
Surr: DNOP	75.4	70-130		%Rec	1	5/17/2017 12:26:45 PM	31779
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: <b>AG</b>
Benzene	ND	0.020		mg/Kg	1	5/17/2017 12:30:57 PM	A42857
Toluene	ND	0.041		mg/Kg	1	5/17/2017 12:30:57 PM	A42857
Ethylbenzene	ND	0.041		mg/Kg	1	5/17/2017 12:30:57 PM	A42857
Xylenes, Total	ND	0.081		mg/Kg	1	5/17/2017 12:30:57 PM	A42857
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	5/17/2017 12:30:57 PM	A42857
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	5/17/2017 12:30:57 PM	A42857
Surr: Dibromofluoromethane	110	70-130		%Rec	1	5/17/2017 12:30:57 PM	A42857
Surr: Toluene-d8	113	70-130		%Rec	1	5/17/2017 12:30:57 PM	A42857

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.

Analytical Report

Lab Order 1705858

Date Reported: 5/25/2017

CLIENT: APEX TITAN

Client Sample ID: ES-38

Project: Lateral 2C-80

Collection Date: 5/16/2017 1:40:00 PM

Lab ID: 1705858-003

Matrix: SOIL

Received Date: 5/17/2017 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: <b>AG</b>
Gasoline Range Organics (GRO)	ND	4.4		mg/Kg	1	5/17/2017 1:00:16 PM	R42857
Surr: BFB	92.9	70-130		%Rec	1	5/17/2017 1:00:16 PM	R42857
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/17/2017 11:20:07 AM	31779
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/17/2017 11:20:07 AM	31779
Surr: DNOP	75.8	70-130		%Rec	1	5/17/2017 11:20:07 AM	31779
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: <b>AG</b>
Benzene	ND	0.022		mg/Kg	1	5/17/2017 1:00:16 PM	A42857
Toluene	ND	0.044		mg/Kg	1	5/17/2017 1:00:16 PM	A42857
Ethylbenzene	ND	0.044		mg/Kg	1	5/17/2017 1:00:16 PM	A42857
Xylenes, Total	ND	0.088		mg/Kg	1	5/17/2017 1:00:16 PM	A42857
Surr: 1,2-Dichloroethane-d4	96.6	70-130		%Rec	1	5/17/2017 1:00:16 PM	A42857
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	5/17/2017 1:00:16 PM	A42857
Surr: Dibromofluoromethane	109	70-130		%Rec	1	5/17/2017 1:00:16 PM	A42857
Surr: Toluene-d8	116	70-130		%Rec	1	5/17/2017 1:00:16 PM	A42857

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

<b>Qualifiers:</b>	* 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: Lateral 2C-80  
 Lab ID: 1705858-004

Client Sample ID: EW-1  
 Collection Date: 5/16/2017 1:50:00 PM  
 Received Date: 5/17/2017 7:30:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: <b>AG</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/17/2017 1:29:21 PM	R42857
Surr: BFB	91.9	70-130		%Rec	1	5/17/2017 1:29:21 PM	R42857
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/17/2017 11:42:11 AM	31779
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/17/2017 11:42:11 AM	31779
Surr: DNOP	76.9	70-130		%Rec	1	5/17/2017 11:42:11 AM	31779
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: <b>AG</b>
Benzene	ND	0.025		mg/Kg	1	5/17/2017 1:29:21 PM	A42857
Toluene	ND	0.049		mg/Kg	1	5/17/2017 1:29:21 PM	A42857
Ethylbenzene	ND	0.049		mg/Kg	1	5/17/2017 1:29:21 PM	A42857
Xylenes, Total	ND	0.099		mg/Kg	1	5/17/2017 1:29:21 PM	A42857
Surr: 1,2-Dichloroethane-d4	99.8	70-130		%Rec	1	5/17/2017 1:29:21 PM	A42857
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	5/17/2017 1:29:21 PM	A42857
Surr: Dibromofluoromethane	107	70-130		%Rec	1	5/17/2017 1:29:21 PM	A42857
Surr: Toluene-d8	118	70-130		%Rec	1	5/17/2017 1:29:21 PM	A42857

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

<b>Qualifiers:</b>	* 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:** EW-2

**Project:** Lateral 2C-80

**Collection Date:** 5/16/2017 2:00:00 PM

**Lab ID:** 1705858-005

**Matrix:** SOIL

**Received Date:** 5/17/2017 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: <b>AG</b>
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	5/17/2017 1:58:15 PM	R42857
Surr: BFB	90.4	70-130		%Rec	1	5/17/2017 1:58:15 PM	R42857
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/17/2017 12:04:35 PM	31779
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/17/2017 12:04:35 PM	31779
Surr: DNOP	79.2	70-130		%Rec	1	5/17/2017 12:04:35 PM	31779
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: <b>AG</b>
Benzene	ND	0.018		mg/Kg	1	5/17/2017 1:58:15 PM	A42857
Toluene	ND	0.037		mg/Kg	1	5/17/2017 1:58:15 PM	A42857
Ethylbenzene	ND	0.037		mg/Kg	1	5/17/2017 1:58:15 PM	A42857
Xylenes, Total	ND	0.073		mg/Kg	1	5/17/2017 1:58:15 PM	A42857
Surr: 1,2-Dichloroethane-d4	95.7	70-130		%Rec	1	5/17/2017 1:58:15 PM	A42857
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	5/17/2017 1:58:15 PM	A42857
Surr: Dibromofluoromethane	109	70-130		%Rec	1	5/17/2017 1:58:15 PM	A42857
Surr: Toluene-d8	112	70-130		%Rec	1	5/17/2017 1:58:15 PM	A42857

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

<b>Qualifiers:</b>	* 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#: 1705858  
 25-May-17

**Client:** APEX TITAN  
**Project:** Lateral 2C-80

Sample ID <b>MB-31779</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>31779</b>		RunNo: <b>42843</b>							
Prep Date: <b>5/17/2017</b>	Analysis Date: <b>5/17/2017</b>		SeqNo: <b>1347977</b>				Units: <b>mg/Kg</b>			
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	7.3		10.00		73.2	70	130			

Sample ID <b>LCS-31779</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>31779</b>		RunNo: <b>42848</b>							
Prep Date: <b>5/17/2017</b>	Analysis Date: <b>5/17/2017</b>		SeqNo: <b>1348461</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.8	73.2	114			
Surr: DNOP	4.6		5.000		92.8	70	130			

**Qualifiers:**

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

**QC SUMMARY REPORT**  
**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1705858  
 25-May-17

**Client:** APEX TITAN  
**Project:** Lateral 2C-80

Sample ID <b>rb</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8260B: Volatiles Short List</b>							
Client ID: <b>PBS</b>	Batch ID: <b>A42857</b>		RunNo: <b>42857</b>							
Prep Date:	Analysis Date: <b>5/17/2017</b>		SeqNo: <b>1348266</b>		Units: <b>mg/Kg</b>					
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	0.53		0.5000		105	70	130			
Surr: 4-Bromofluorobenzene	0.56		0.5000		111	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		101	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			

Sample ID <b>100ng lcs</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8260B: Volatiles Short List</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>A42857</b>		RunNo: <b>42857</b>							
Prep Date:	Analysis Date: <b>5/17/2017</b>		SeqNo: <b>1348776</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.3	0.025	1.000	0	125	70	130			
Toluene	1.2	0.050	1.000	0	116	70	130			
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		106	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		107	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		101	70	130			
Surr: Toluene-d8	0.50		0.5000		99.4	70	130			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- 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#: 1705858  
 25-May-17

**Client:** APEX TITAN  
**Project:** Lateral 2C-80

Sample ID <b>rb</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>R42857</b>		RunNo: <b>42857</b>							
Prep Date:	Analysis Date: <b>5/17/2017</b>		SeqNo: <b>1348274</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	480		500.0		96.2	70	130			

Sample ID <b>2.5ug gro lcs</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>R42857</b>		RunNo: <b>42857</b>							
Prep Date:	Analysis Date: <b>5/17/2017</b>		SeqNo: <b>1348779</b>				Units: <b>mg/Kg</b>			
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	70	130			
Surr: BFB	490		500.0		98.8	70	130			

**Qualifiers:**

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



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: 1705858

RcptNo: 1

Received By: Anne Thorne

5/17/2017 7:30:00 AM

*Anne Thorne*

Completed By: Anne Thorne

5/17/2017 7:52:16 AM

*Anne Thorne*

Reviewed By: ENM

05/17/17

### 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:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> 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



Office Location Aztec, NM

Laboratory: Hall  
 Address: ABC, NM  
 Contact: A. Freeman  
 Phone: \_\_\_\_\_  
 PO/SO #: \_\_\_\_\_

ANALYSIS  
REQUESTED

Lab use only  
 Due Date: \_\_\_\_\_  
 Temp. of coolers when received (C°): 10  
 1 2 3 4 5  
 Page 1 of 1

Project Manager K. Summers  
 Sampler's Name Ranee Deechilly Sampler's Signature Ranee Deechilly

Proj. No. \_\_\_\_\_ Project Name Lateral 2C-80 No/Type of Containers \_\_\_\_\_

Matrix	Date	Time	CoEd	G ar b	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 L	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	5/16/17	1320	X		ES-36								1705855-01
		1330			ES-37								02
		1340			ES-38								03
		1350			EW-1								04
		1400			EW-2								05
<del>NFS</del>													

80% BTEX  
 80% TPH  
 7PH GAS/DAY/MO

Turn around time  Normal  25% Rush  50% Rush  100% Rush SAME DAY

Relinquished by (Signature) <u>Ranee Deechilly</u>	Date: <u>5/16/17</u> Time: <u>1637</u>	Received by (Signature) <u>[Signature]</u>	Date: <u>5/16/17</u> Time: <u>1637</u>
Relinquished by (Signature) <u>[Signature]</u>	Date: <u>5/16/17</u> Time: <u>1857</u>	Received by (Signature) <u>[Signature]</u>	Date: <u>05/17/17</u> Time: <u>0730</u>
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 (EPRON)  
 AFE # A30036  
 SAME DAY

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



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

May 19, 2017

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

RE: Lateral 2C 80

OrderNo.: 1705936

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 5 sample(s) on 5/18/2017 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1705936

Date Reported: 5/19/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-39

**Project:** Lateral 2C 80

**Collection Date:** 5/17/2017 11:00:00 AM

**Lab ID:** 1705936-001

**Matrix:** MEOH (SOIL)

**Received Date:** 5/18/2017 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/18/2017 10:18:00 AM	31809
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/18/2017 10:18:00 AM	31809
Surr: DNOP	95.3	70-130		%Rec	1	5/18/2017 10:18:00 AM	31809
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/18/2017 12:33:23 PM	G42888
Surr: BFB	102	54-150		%Rec	1	5/18/2017 12:33:23 PM	G42888
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	5/18/2017 12:33:23 PM	B42888
Toluene	ND	0.047		mg/Kg	1	5/18/2017 12:33:23 PM	B42888
Ethylbenzene	ND	0.047		mg/Kg	1	5/18/2017 12:33:23 PM	B42888
Xylenes, Total	ND	0.094		mg/Kg	1	5/18/2017 12:33:23 PM	B42888
Surr: 4-Bromofluorobenzene	110	66.6-132		%Rec	1	5/18/2017 12:33:23 PM	B42888

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.

Analytical Report

Lab Order 1705936

Date Reported: 5/19/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-40

**Project:** Lateral 2C 80

**Collection Date:** 5/17/2017 11:10:00 AM

**Lab ID:** 1705936-002

**Matrix:** MEOH (SOIL)

**Received Date:** 5/18/2017 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/18/2017 10:40:13 AM	31809
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/18/2017 10:40:13 AM	31809
Surr: DNOP	94.5	70-130		%Rec	1	5/18/2017 10:40:13 AM	31809
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/18/2017 1:44:20 PM	G42888
Surr: BFB	102	54-150		%Rec	1	5/18/2017 1:44:20 PM	G42888
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	5/18/2017 1:44:20 PM	B42888
Toluene	ND	0.049		mg/Kg	1	5/18/2017 1:44:20 PM	B42888
Ethylbenzene	ND	0.049		mg/Kg	1	5/18/2017 1:44:20 PM	B42888
Xylenes, Total	ND	0.097		mg/Kg	1	5/18/2017 1:44:20 PM	B42888
Surr: 4-Bromofluorobenzene	109	66.6-132		%Rec	1	5/18/2017 1:44:20 PM	B42888

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1705936

Date Reported: 5/19/2017

**CLIENT:** APEX TITAN

**Client Sample ID:** ES-41

**Project:** Lateral 2C 80

**Collection Date:** 5/17/2017 11:20:00 AM

**Lab ID:** 1705936-003

**Matrix:** MEOH (SOIL)

**Received Date:** 5/18/2017 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/18/2017 11:02:19 AM	31809
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/18/2017 11:02:19 AM	31809
Surr: DNOP	93.2	70-130		%Rec	1	5/18/2017 11:02:19 AM	31809
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.1		mg/Kg	1	5/18/2017 2:54:54 PM	G42888
Surr: BFB	102	54-150		%Rec	1	5/18/2017 2:54:54 PM	G42888
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	5/18/2017 2:54:54 PM	B42888
Toluene	ND	0.051		mg/Kg	1	5/18/2017 2:54:54 PM	B42888
Ethylbenzene	ND	0.051		mg/Kg	1	5/18/2017 2:54:54 PM	B42888
Xylenes, Total	ND	0.10		mg/Kg	1	5/18/2017 2:54:54 PM	B42888
Surr: 4-Bromofluorobenzene	108	66.6-132		%Rec	1	5/18/2017 2:54:54 PM	B42888

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

<b>Qualifiers:</b>	* 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.

Analytical Report  
 Lab Order 1705936  
 Date Reported: 5/19/2017

**CLIENT:** APEX TITAN  
**Project:** Lateral 2C 80  
**Lab ID:** 1705936-004

**Client Sample ID:** ES-42  
**Collection Date:** 5/17/2017 11:30:00 AM  
**Matrix:** MEOH (SOIL) **Received Date:** 5/18/2017 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/18/2017 11:24:59 AM	31809
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/18/2017 11:24:59 AM	31809
Surr: DNOP	93.0	70-130		%Rec	1	5/18/2017 11:24:59 AM	31809
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/18/2017 3:18:24 PM	G42888
Surr: BFB	103	54-150		%Rec	1	5/18/2017 3:18:24 PM	G42888
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	5/18/2017 3:18:24 PM	B42888
Toluene	ND	0.048		mg/Kg	1	5/18/2017 3:18:24 PM	B42888
Ethylbenzene	ND	0.048		mg/Kg	1	5/18/2017 3:18:24 PM	B42888
Xylenes, Total	ND	0.097		mg/Kg	1	5/18/2017 3:18:24 PM	B42888
Surr: 4-Bromofluorobenzene	108	66.6-132		%Rec	1	5/18/2017 3:18:24 PM	B42888

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

<b>Qualifiers:</b>	* 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.

Analytical Report

Lab Order 1705936

Date Reported: 5/19/2017

CLIENT: APEX TITAN

Client Sample ID: ES-43

Project: Lateral 2C 80

Collection Date: 5/17/2017 3:00:00 PM

Lab ID: 1705936-005

Matrix: MEOH (SOIL)

Received Date: 5/18/2017 6:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/18/2017 11:47:07 AM	31809
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/18/2017 11:47:07 AM	31809
Surr: DNOP	96.7	70-130		%Rec	1	5/18/2017 11:47:07 AM	31809
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.1		mg/Kg	1	5/18/2017 5:16:25 PM	G42888
Surr: BFB	102	54-150		%Rec	1	5/18/2017 5:16:25 PM	G42888
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	5/18/2017 5:16:25 PM	B42888
Toluene	ND	0.051		mg/Kg	1	5/18/2017 5:16:25 PM	B42888
Ethylbenzene	ND	0.051		mg/Kg	1	5/18/2017 5:16:25 PM	B42888
Xylenes, Total	ND	0.10		mg/Kg	1	5/18/2017 5:16:25 PM	B42888
Surr: 4-Bromofluorobenzene	107	66.6-132		%Rec	1	5/18/2017 5:16:25 PM	B42888

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

<b>Qualifiers:</b>	* 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#: 1705936  
19-May-17

Client: APEX TITAN  
Project: Lateral 2C 80

Sample ID	<b>LCS-31809</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31809</b>	RunNo:	<b>42876</b>					
Prep Date:	<b>5/18/2017</b>	Analysis Date:	<b>5/18/2017</b>	SeqNo:	<b>1349092</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.5	73.2	114			
Surr: DNOP	4.6		5.000		91.5	70	130			

Sample ID	<b>MB-31809</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31809</b>	RunNo:	<b>42876</b>					
Prep Date:	<b>5/18/2017</b>	Analysis Date:	<b>5/18/2017</b>	SeqNo:	<b>1349093</b>	Units:	<b>mg/Kg</b>			
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	9.0		10.00		89.7	70	130			

Sample ID	<b>MB-31799</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>31799</b>	RunNo:	<b>42879</b>					
Prep Date:	<b>5/17/2017</b>	Analysis Date:	<b>5/18/2017</b>	SeqNo:	<b>1349181</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.2		10.00		92.1	70	130			

Sample ID	<b>LCS-31799</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>31799</b>	RunNo:	<b>42879</b>					
Prep Date:	<b>5/17/2017</b>	Analysis Date:	<b>5/18/2017</b>	SeqNo:	<b>1349182</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.4	70	130			

Sample ID	<b>1705936-001AMS</b>	SampType:	<b>MS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>ES-39</b>	Batch ID:	<b>31809</b>	RunNo:	<b>42879</b>					
Prep Date:	<b>5/18/2017</b>	Analysis Date:	<b>5/18/2017</b>	SeqNo:	<b>1349516</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	9.9	49.31	5.337	85.8	55.8	122			
Surr: DNOP	4.5		4.931		90.7	70	130			

Sample ID	<b>1705936-001AMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>ES-39</b>	Batch ID:	<b>31809</b>	RunNo:	<b>42879</b>					
Prep Date:	<b>5/18/2017</b>	Analysis Date:	<b>5/18/2017</b>	SeqNo:	<b>1349517</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	9.9	49.46	5.337	94.0	55.8	122	8.43	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#: 1705936  
19-May-17

Client: APEX TITAN  
Project: Lateral 2C 80

Sample ID: 1705936-001AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: ES-39	Batch ID: 31809	RunNo: 42879
Prep Date: 5/18/2017	Analysis Date: 5/18/2017	SeqNo: 1349517 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		4.946		94.9	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 |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1705936

19-May-17

**Client:** APEX TITAN

**Project:** Lateral 2C 80

Sample ID <b>RB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>G42888</b>		RunNo: <b>42888</b>							
Prep Date:	Analysis Date: <b>5/18/2017</b>		SeqNo: <b>1349875</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	990		1000		99.5	54	150			

Sample ID <b>2.5UG GRO LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>G42888</b>		RunNo: <b>42888</b>							
Prep Date:	Analysis Date: <b>5/18/2017</b>		SeqNo: <b>1349876</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	76.4	125			
Surr: BFB	1100		1000		108	54	150			

Sample ID <b>1705936-002AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>ES-40</b>	Batch ID: <b>G42888</b>		RunNo: <b>42888</b>							
Prep Date:	Analysis Date: <b>5/18/2017</b>		SeqNo: <b>1349879</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.9	24.27	0	111	61.3	150			
Surr: BFB	1100		970.9		112	54	150			

Sample ID <b>1705936-002AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>ES-40</b>	Batch ID: <b>G42888</b>		RunNo: <b>42888</b>							
Prep Date:	Analysis Date: <b>5/18/2017</b>		SeqNo: <b>1349880</b>				Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.9	24.27	0	108	61.3	150	2.23	20	
Surr: BFB	1100		970.9		113	54	150	0	0	

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1705936

19-May-17

**Client:** APEX TITAN

**Project:** Lateral 2C 80

Sample ID <b>RB</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>B42888</b>		RunNo: <b>42888</b>							
Prep Date:	Analysis Date: <b>5/18/2017</b>		SeqNo: <b>1349905</b>		Units: <b>mg/Kg</b>					
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		105	66.6	132			

Sample ID <b>100NG BTEX LCS</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>B42888</b>		RunNo: <b>42888</b>							
Prep Date:	Analysis Date: <b>5/18/2017</b>		SeqNo: <b>1349906</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	88.4	80	120			
Toluene	0.88	0.050	1.000	0	87.5	80	120			
Ethylbenzene	0.87	0.050	1.000	0	87.4	80	120			
Xylenes, Total	2.6	0.10	3.000	0	87.1	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		109	66.6	132			

Sample ID <b>1705936-001AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>ES-39</b>	Batch ID: <b>B42888</b>		RunNo: <b>42888</b>							
Prep Date:	Analysis Date: <b>5/18/2017</b>		SeqNo: <b>1349912</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.023	0.9372	0	88.9	61.5	138			
Toluene	0.81	0.047	0.9372	0.01654	84.7	71.4	127			
Ethylbenzene	0.82	0.047	0.9372	0	87.4	70.9	132			
Xylenes, Total	2.5	0.094	2.812	0.03475	87.1	76.2	123			
Surr: 4-Bromofluorobenzene	1.0		0.9372		109	66.6	132			

Sample ID <b>1705936-001AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>ES-39</b>	Batch ID: <b>B42888</b>		RunNo: <b>42888</b>							
Prep Date:	Analysis Date: <b>5/18/2017</b>		SeqNo: <b>1349914</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.023	0.9372	0	89.8	61.5	138	1.02	20	
Toluene	0.82	0.047	0.9372	0.01654	85.2	71.4	127	0.647	20	
Ethylbenzene	0.82	0.047	0.9372	0	87.3	70.9	132	0.0767	20	
Xylenes, Total	2.5	0.094	2.812	0.03475	87.5	76.2	123	0.382	20	
Surr: 4-Bromofluorobenzene	1.0		0.9372		108	66.6	132	0	0	

**Qualifiers:**

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



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: 1705936

RcptNo: 1

Received By: Ashley Gallegos 5/18/2017 6:45:00 AM  
 Completed By: Ashley Gallegos 5/18/2017 7:18:22 AM  
 Reviewed By: *[Signature]* 5/18/17

*[Signature]*  
*[Signature]*

### 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? Yes  No  # of preserved bottles checked for pH: \_\_\_\_\_  
(Note discrepancies on chain of custody) ( <2 or >12 unless noted)
- 13. Are matrices correctly identified on Chain of Custody? Yes  No  Adjusted? \_\_\_\_\_
- 14. Is it clear what analyses were requested? Yes  No
- 15. Were all holding times able to be met? Yes  No  Checked by: \_\_\_\_\_  
(If no, notify customer for authorization.)

### 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	3.5	Good	Yes			

CHAIN OF CUSTODY RECORD

**APEX**  
 Office Location Aztec, NM  
 Project Manager K. Summers

Laboratory: Hall  
 Address: ABQ, NM  
 Contact: A. Freeman  
 PO/SO #:

ANALYSIS REQUESTED  
*8021 BITEX  
 8015 TPH PRO/PRO/MPD*

Lab use only  
 Due Date:  
 Temp. of coolers when received (C°): 40.5°C  
3.5  
 1 2 3 4 5  
 Page \_\_\_\_\_ of \_\_\_\_\_

Sampler's Name Ranee Deechilly Sampler's Signature Ranee Deechilly

Proj. No. \_\_\_\_\_ Project Name Lateral 20-80 No/Type of Containers \_\_\_\_\_

Matrix	Date	Time	COED	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1L	250 ml	Glass Jar	P/D	Lab Sample ID (Lab Use Only)
S	5/17/17	1100	X	ES-39								1705936-001
		1110		ES-40								-002
		1120		ES-41								-003
		1130		ES-42								-004
		1500		ES-43								-005

*AFS*

Turn around time  Normal  25% Rush  50% Rush  100% Rush Results by 5/19/17

Relinquished by (Signature) <u>Ranee Deechilly</u>	Date: <u>5/17/17</u> Time: <u>1747</u>	Received by (Signature) <u>[Signature]</u>	Date: <u>5/17/17</u> Time: <u>1747</u>
Relinquished by (Signature) <u>[Signature]</u>	Date: <u>5/17/17</u> Time: <u>1900</u>	Received by (Signature) <u>[Signature]</u>	Date: <u>5/18/17</u> Time: <u>0045</u>
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 (EP200)  
 AFE # A 30036  
 Need samples by Friday 5/19/17

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