



ENTERPRISE PRODUCTS PARTNERS L.P.  
ENTERPRISE PRODUCTS GP, LLC  
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

April 27, 2020

**APPROVED**  
By Nelson Velez at 4:51 pm, Jan 03, 2022

**Return Receipt Requested\*\***

Submitted via email: [Cory.Smith@state.nm.us](mailto:Cory.Smith@state.nm.us)

Mr. Cory Smith  
New Mexico Energy, Minerals & Natural Resources  
Department – Oil Conservation Division  
1000 Rio Brazos Road  
Aztec, New Mexico 87410

**RE: 2018 Annual Groundwater Monitoring Report**

Enterprise Field Services, LLC

**Lateral K-31 Pipeline Release (12/02/2011)**

Rio Arriba Co., New Mexico [SW ¼, S16 T25N R6W (36.393827° N, 107.475065° W)]

**OCD RP: 3R-440; OCD Abatement Plan No. 129**

Review of 2019 Groundwater Monitoring Report: Content satisfactory

1. Follow recommendations stated within 2020 Groundwater Monitoring Report.
  - a. Continue conducting semi-annual groundwater monitoring and sampling events, but at a reduced frequency as approved by the OCD in an email from Mr. Cory Smith dated June 8, 2020
  - b. Complete additional site-specific aquifer characterization testing
  - c. Install additional delineation wells
  - d. Prepare and submit a Stage 2 Abatement Plan (following full delineation)
  - e. Submit the Annual Monitoring Report to the OCD no later than March 31, 2022

Dear Mr. Smith:

Enterprise Products Operating LLC (Enterprise), on behalf of Enterprise Field Services, LLC, is submitting this electronic copy of the above-referenced report prepared by Ensolum, LLC (Ensolum) and dated September 27, 2019. The report is associated with the Enterprise Lateral K-31 pipeline release of natural gas and associated pipeline liquids that was discovered on December 2, 2011, in Rio Arriba County, New Mexico (the "Site"). The activities detailed in the attached report include two semi-annual groundwater monitoring and sampling (GWM&S) events that occurred between January 1, 2018 and December 31, 2018 (the "reporting period"). The monitoring activities were performed to further evaluate the concentrations of dissolved-phased hydrocarbons (DPH), or constituents of concern (COCs), in groundwater.

Based on the data and results presented in the attached report, COC concentrations are generally declining across the Site. However, the plume has not been delineation to the west-northwest of MW-5. Additionally, in comparing current COC data to historical data, COCs in the original release area (i.e. MW-1 through MW-4) have migrated to the north (i.e. MW-5, MW-6 and MW-8). COCs in the original release area have been below laboratory detection and/or the applicable *Water Quality Control Commission (WQCC) Groundwater Quality Standards (GQSs)* since March 2014 (for 6 consecutive years). As such, **Enterprise requests permission to suspend analytical testing of monitor wells MW-1 through MW-4** (until COC concentrations at the Site have declined to/below the WQCC GQSs), **and to install one additional delineation well (MW-10) to the west-northwest of MW-5** (delineating the current plume by MW-7, MW-9 and proposed MW-10). Enterprise also intends to further evaluate the dynamics of the DPH plume after concurrence that the *Stage 1 Abatement Plan* (Ensolum, revised May 7, 2019) is deemed administratively complete.

Enterprise appreciates the Oil Conservation Division's (OCD) continued assistance and guidance in bringing closure to this Site. Should you have any questions, comments or concerns, or require additional information, please feel free to contact me any time at 713-381-8780, or at [gemiller@eprod.com](mailto:gemiller@eprod.com).

Sincerely,

Gregory E. Miller, P.G.  
Supervisor, Environmental

Rodney M. Sartor  
Sr. Director, Environmental

cc: NM State Land Office, Attn: Mr. Nick Jaramillo, 310 Old Santa Fe Trail, Santa Fe, NM 87501  
ec: NMOCD, Santa Fe, NM – Mr. Jim Griswold <[Jim.Griswold@state.nm.us](mailto:Jim.Griswold@state.nm.us)>  
NMOCD, Santa Fe, NM – Mr. Brad Billings <[Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)>  
Ensolum, Houston, TX – Mr. Marc E. Gentry <[MGentry@ensolum.com](mailto:MGentry@ensolum.com)>

**\*\* Please note that due to the COVID-19 pandemic and the current "Stay Home, Work Safe" order issued for Harris County Texas, all hard copies (and associated electronic copies on CD or USB drives) of the Subject document(s) will be mailed to each recipient once Enterprise staff are allowed to return to work. In the interim, an electronic copy will be emailed as the official submittal.**

P.O. BOX 4324  
HOUSTON, TEXAS 77210-4324  
713.381.6500

1100 LOUISIANA STREET  
HOUSTON, TEXAS 77002-5227  
[www.epplp.com](http://www.epplp.com)



**LATERAL K-31 PIPELINE RELEASE (12/02/2011)  
2018 ANNUAL GROUNDWATER MONITORING REPORT**

Property:

**Lateral K-31 Pipeline Release (12/02/2011)  
SW ¼, S16 T25N R6W  
Rio Arriba County, New Mexico**


**New Mexico EMNRD OCD RP No. 3R-440**

September 27, 2019  
Ensolum Project No. 05B1226002

Prepared for:

**Enterprise Field Services, LLC  
P.O. Box 4324  
Houston, Texas 77210-4324  
Attn: Mr. Greg E. Miller, P.G.**

Prepared by:

  
\_\_\_\_\_  
Marc E. Gentry  
Principal



**LATERAL K-31 PIPELINE RELEASE (12/02/2011)  
2018 ANNUAL GROUNDWATER MONITORING REPORT  
EXECUTIVE SUMMARY**

The Lateral K-31 pipeline release (12/02/2011) site, referred to hereinafter as the "Site", is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way in the southwest (SW) 1/4 of Section 16, Township 25 North, Range 6 West, in Rio Arriba County, New Mexico.

On December 2, 2011, a pipeline release of natural gas and associated pipeline liquids was discovered at the Site and was subsequently repaired. Site assessments conducted by Animas Environmental Services, LLC (AES) during December 2011 and June 2012 identified concentrations of constituents of concern (COCs) in soils and groundwater above the New Mexico Energy, Minerals and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) *Remediation Action Levels (RALs)* and the New Mexico Water Quality Control Commission (WQCC) *Groundwater Quality Standards (GQSs)*.

During September 2012, AES advanced nine (9) additional soil borings/monitoring wells (MW-1 through MW-9) to further evaluate the extent of dissolved phase COCs in groundwater. COCs were not identified in soil above the New Mexico EMNRD OCD *RALs* at these soil boring/monitoring well boring locations. However, COCs were identified in groundwater above the WQCC *GQSs*. Groundwater monitoring events were conducted by AES during December 2012, June 2013, September 2013, and December 2013 and were subsequently conducted by Apex TITAN, Inc. (Apex). Enterprise retained Apex to perform environmental Site investigation activities between 2016 and 2018. Following a staffing change at Apex in January 2019, Enterprise reassigned management of the project to Ensolum, LLC (Ensolum). Semi-annual groundwater monitoring events are ongoing at the Site. Ensolum submitted a Stage 1 Abatement Plan to the EMNRD OCD on March 22, 2019.

Semi-annual groundwater monitoring events were conducted during June 2018 and January 2019 to further evaluate the concentrations of COCs in groundwater over time. Findings and recommendations based on these activities are as follows:

- The groundwater flow direction at the Site is generally towards the northwest, with an approximate average gradient of 0.005 feet per foot (ft/ft) across the Site.
- During the June 2018 and January 2019 sampling events, BTEX concentrations above WQCC *GQSs* were not identified in the monitoring well network.
- Results from the sampling events at the Site demonstrate generally declining COC concentrations in groundwater.

Ensolum offers the following recommendations:

- Report the groundwater monitoring results to the New Mexico EMNRD OCD;
- Continue semi-annual groundwater monitoring at the Site; and,
- Install delineation monitoring wells (downgradient and upgradient) of MW-5 to assess periodic COC exceedances and further evaluate the gradient in the north and east portions of the Site upon notification by the EMNRD OCD that the Stage 1 Abatement Plan dated March 22, 2019 has been determined to be administratively complete.

## TABLE OF CONTENTS

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|            |  |          |
|------------|--|----------|
| <b>1.0</b> | <b>INTRODUCTION.....</b>   | <b>1</b> |
| 1.1        | SITE DESCRIPTION & BACKGROUND .....                              | 1        |
| 1.2        | PROJECT OBJECTIVE .....  | 2        |
| <b>2.0</b> | <b>GROUNDWATER MONITORING – JUNE 2018 AND JANUARY 2019 .....</b> | <b>2</b> |
| 2.1        | GROUNDWATER SAMPLING PROGRAM.....                                | 2        |
| 2.2        | GROUNDWATER LABORATORY ANALYTICAL METHODS .....                  | 3        |
| 2.3        | GROUNDWATER FLOW DIRECTION.....                                  | 3        |
| 2.4        | DATA EVALUATION .....  | 3        |
| <b>3.0</b> | <b>FINDINGS AND RECOMMENDATION .....</b>                         | <b>4</b> |
| <b>4.0</b> | <b>STANDARDS OF CARE, LIMITATIONS, AND RELIANCE .....</b>        | <b>5</b> |
| 4.1        | STANDARD OF CARE .....   | 5        |
| 4.2        | LIMITATIONS .....  | 5        |
| 4.3        | RELIANCE .....   | 5        |

## **LIST OF APPENDICES**

### **Appendix A: Figures**

|           |   |
|-----------|---|
| Figure 1  | Topographic Map                             |
| Figure 2  | Site Vicinity Map                           |
| Figure 3  | Site Map                                    |
| Figure 4A | Groundwater Gradient Map (June 2018)        |
| Figure 4B | Groundwater Gradient Map (January 2019)     |
| Figure 5A | Groundwater Quality Data Map (June 2018)    |
| Figure 5B | Groundwater Quality Data Map (January 2019) |

### **Appendix B: Tables**

|         |                                |
|---------|--------------------------------|
| Table 1 | Groundwater Analytical Summary |
| Table 2 | Groundwater Elevations         |

### **Appendix C: Laboratory Data Sheets & Chain of Custody Documentation**



**LATERAL K-31 PIPELINE RELEASE (12/02/2011)  
2018 ANNUAL GROUNDWATER MONITORING REPORT**

**New Mexico EMNRD OCD RP No. 3R-440**

**Ensolum Project No. 05B1226002**

## **1.0 INTRODUCTION**

### **1.1 Site Description & Background**

|                    |   |
|--------------------|---|
| <b>Operator:</b>   | Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)   |
| <b>Site Name:</b>  | Lateral K-31 Pipeline Release (12/02/2011) (Site)   |
| <b>Location:</b>   | 36.393827° North, 107.475065° West<br>Southwest (SW) ¼ of Sections 16, Township 25 North, Range 6 West<br>Rio Arriba County, New Mexico |
| <b>Property:</b>   | New Mexico State Land Office (SLO)  |
| <b>Regulatory:</b> | New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)                                    |

On December 2, 2011, a pipeline release of natural gas and associated pipeline liquids was discovered at the Site and was subsequently repaired. An initial site assessment was conducted by Animas Environmental Services, LLC (AES) on December 8, 2011, which included the collection of soil samples from four (4) test holes (TP-1 through TP-4) completed near the release area as well as a groundwater sample from an existing off-Site monitoring well located south of the release location and associated with another operator's release site. Constituents of concern (COC) were identified in soils from two (2) of the test holes (TP-3 and TP-4) at concentrations above the New Mexico EMNRD OCD *Remediation Action Levels (RALs)*. The off-Site groundwater sample did not exhibit COC concentrations above New Mexico Water Quality Control Commission (WQCC) *Groundwater Quality Standards (GQSs)*.

During June 2012, AES advanced 12 soil borings (SB-1 through SB-12) at the Site to further delineate the extent of hydrocarbon affected soil and potentially impacted groundwater. Based on laboratory analytical results of soil and groundwater samples collected from the soil borings, COC concentrations were identified in soil above the New Mexico EMNRD OCD *RALs* and in groundwater above the WQCC *GQSs* (*Site Investigation Report, dated May 16, 2012 – AES*).

During September 2012, AES performed groundwater investigation activities and advanced nine (9) additional soil borings to further evaluate the extent of dissolved phase COCs in groundwater. Subsequent to advancement, the soil borings were completed as groundwater monitoring wells (MW-1 through MW-9). COCs were not identified in soil above the New Mexico EMNRD OCD *RALs* at these monitoring well/soil boring locations. However, COCs were identified in groundwater above the WQCC *GQSs* (*Groundwater Investigation Report, dated November 28, 2012 – AES*).

Groundwater monitoring events were conducted by AES during December 2012, June 2013, September 2013, and December 2013, and were subsequently collected by Apex. COC concentrations were identified in groundwater above WQCC standards.

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. Initial Site activities were performed in accordance with the New Mexico EMNRD OCD *Guidelines for Remediation of Leaks, Spills and Releases*, in addition to the New Mexico EMNRD OCD rules, specifically New Mexico Administrative

Enterprise Field Services, LLC  
2018 Annual Groundwater Monitoring Report  
Lateral K-31 Pipeline Release (12/02/2011)  
September 27, 2019



Code (NMAC) 19.15.29 *Release Notification*. This guidance established investigation and abatement action requirements for sites subject to reporting and/or corrective action prior to the update of the rule finalized August 14, 2018. Additionally, the New Mexico EMNRD OCD utilizes the New Mexico WQCC GQS (NMAC 20.6.2 *Groundwater and Surface Water Protection*) to evaluate groundwater conditions. NMAC 20.6.2 was amended (12/21/18). The New Mexico EMNRD OCD District 3 Office has indicated that the updated GQSs will not be enforced until sometime in 2020. Therefore, this document reflects the previous GQSs which are currently being enforced.

The Site location is depicted on **Figure 1** of **Appendix A** which was reproduced from a portion of a United States Geological Survey (USGS) 7.5-minute series topographic map. A **Site Vicinity Map**, created from an aerial photograph, is provided as **Figure 2**, and a **Site Map**, which indicates the approximate locations of the monitoring wells and previous soil boring locations in relation to pertinent structures and general Site boundaries, is included as **Figure 3** of **Appendix A**.

## 1.2 Project Objective

The objective of the groundwater monitoring events was to further evaluate the concentrations of COCs in groundwater at the Site over time.

## 2.0 GROUNDWATER MONITORING – JUNE 2018 AND JANUARY 2019

### 2.1 Groundwater Sampling Program

Semi-annual groundwater sampling events were conducted during June 2018 and January 2019 by Apex. Information, data, and conclusions provided in the following sections and attached figures are based on information provided by Apex to Enterprise, and eyewitness accounts.

Based on information provided by Enterprise, Apex's groundwater sampling program consisted of the following:

Prior to sample collection, Apex gauged the depth to fluids in each monitoring well using an interface probe capable of detecting non-aqueous phase liquids (NAPL).

Each monitoring well was sampled utilizing micro-purge low-flow sampling techniques. Subsequent to the completion of the micro-purge process, one (1) groundwater sample was collected from each monitoring well.

Low-flow refers to the velocity with which groundwater enters the pump intake and that is imparted to the formation pore water in the immediate vicinity of the well screen. Water level drawdown provides the best indication of the stress imparted by a given flow-rate for a given hydrological situation. The objective is to pump in a manner that minimizes stress (drawdown) to the system, to the extent practical, taking into account established Site sampling objectives. Flow rates on the order of 0.1 to 0.5 liters per minute (L/min) are maintained during sampling activities, using dedicated or decontaminated sampling equipment.

The groundwater samples are collected from each monitoring well once produced groundwater is consistent in color, clarity, pH, temperature, and conductivity. Measurements are taken every three to five minutes while purging. Purging is considered complete once key parameters (especially pH and conductivity) have stabilized for three successive readings.

During the June 2018 January 2019 sampling event, the sampling technician was unable to get a bailer past the casing obstruction to sample monitoring well MW-3.



Enterprise Field Services, LLC  
2018 Annual Groundwater Monitoring Report  
Lateral K-31 Pipeline Release (12/02/2011)  
September 27, 2019



Monitoring well MW-2 was apparently destroyed by construction activity in 2014 and has not been located (and was therefore not sampled). Additional attempts will continue to be made to locate any remnants of this monitoring well to allow proper plugging and abandonment.

Groundwater samples were collected in laboratory supplied containers, labeled/sealed using the laboratory supplied labels and custody seals, and stored on ice in a cooler. The groundwater samples were relinquished to the courier for Hall Environmental Analysis Laboratory (HEAL) of Albuquerque, New Mexico under proper chain-of-custody procedures.

## 2.2 Groundwater Laboratory Analytical Methods

The groundwater samples collected from the monitoring wells during the groundwater sampling events were analyzed for BTEX utilizing Environmental Protection Agency (EPA) method SW-846 #8021/8260. The containers were pre-preserved with mercuric chloride ( $\text{HgCl}_2$ ).

A summary of the per-event analytes, sample matrix, sample frequency and EPA-approved methods for the two (2) sampling events are presented on the following table.

| Analytes | Sample Matrix | No. of Samples<br>(per event) | EPA Method       |
|----------|---------------|-------------------------------|------------------|
| BTEX     | Groundwater   | 14                            | SW-846 8021/8260 |

Laboratory analytical results are summarized in **Table 1** in **Appendix B**. The executed chain-of-custody forms and laboratory data sheets are provided in **Appendix C**.

## 2.3 Groundwater Flow Direction

Each of the monitoring wells was geospatially surveyed or re-surveyed to determine top-of-casing (TOC) elevations. Based on gauging data, the groundwater flow direction (gradient) at the Site is generally toward the northwest. The observed gradient during the June 2018 and January 2019 monitoring events averages approximately 0.005 feet per foot (ft/ft) across the Site.

Groundwater measurements collected during the June 2018 and January 2019 sampling events (as well as historical data) are presented with TOC elevations in **Table 2** (**Appendix B**). Groundwater gradient maps for the June 2018 and January 2019 gauging events are included as **Figure 4A** and **4B** (**Appendix A**).

## 2.4 Data Evaluation

Ensolum compared the BTEX laboratory analytical results or laboratory practical quantitation limits (PQLs) associated with the groundwater samples collected from monitoring wells during the June 2018 and January 2019 sampling events to the New Mexico WQCC GQSs. The results of the groundwater sample analyses are summarized in **Table 1** of **Appendix B**. Groundwater Quality Data maps are provided as **Figures 5A** and **5B** of **Appendix A**.

Monitoring well MW-3 was not sampled during the June 2018 and January 2019 sampling events due to an obstructed well screen/casing.

### June 2018 Sampling Results

The groundwater samples collected from monitoring wells MW-1 and MW-4 through MW-9 did not exhibit benzene concentrations above the laboratory PQLs, which are below the WQCC GQS of 10 micrograms

Enterprise Field Services, LLC  
2018 Annual Groundwater Monitoring Report  
Lateral K-31 Pipeline Release (12/02/2011)  
September 27, 2019



per liter ( $\mu\text{g/L}$ ).

The groundwater samples collected from monitoring wells MW-1 and MW-4 through MW-9 did not exhibit toluene concentrations above the laboratory PQLs, which are below the WQCC GQS of 750  $\mu\text{g/L}$ .

The groundwater samples collected from monitoring wells MW-5 and MW-8 exhibited ethylbenzene concentrations of 5.7  $\mu\text{g/L}$  and 1.9  $\mu\text{g/L}$ , respectively, which are below the WQCC GQS of 750  $\mu\text{g/L}$ . The groundwater samples collected from the remaining monitoring wells did not exhibit ethylbenzene concentrations above the laboratory PQLs, which are below the WQCC GQS of 750  $\mu\text{g/L}$ .

The groundwater samples collected from monitoring wells MW-1 and MW-4 through MW-9 did not exhibit total xylenes concentrations above the laboratory PQLs, which are below the WQCC GQS of 620  $\mu\text{g/L}$ .

No data qualifier flags were associated with the June 2018 analytical results.

### **January 2019 Sampling Results**

The groundwater samples collected from monitoring wells MW-1 and MW-4 through MW-9 did not exhibit benzene concentrations above the laboratory PQLs, which are below the WQCC GQS of 10  $\mu\text{g/L}$ .

The groundwater samples collected from monitoring wells MW-1 and MW-4 through MW-9 did not exhibit toluene concentrations above the laboratory PQLs, which are below the WQCC GQS of 750  $\mu\text{g/L}$ .

The groundwater sample collected from monitoring well MW-5 exhibited a ethylbenzene concentration of 3.4  $\mu\text{g/L}$ , which is below the WQCC GQS of 750  $\mu\text{g/L}$ . The groundwater samples collected from the remaining monitoring wells did not exhibit ethylbenzene concentrations above the laboratory PQLs, which are below the WQCC GQS of 750  $\mu\text{g/L}$ .

The groundwater samples collected from monitoring wells MW-1 and MW-4 through MW-9 did not exhibit total xylenes concentrations above the laboratory PQLs, which are below the WQCC GQS of 620  $\mu\text{g/L}$ .

No data qualifier flags were associated with the January 2019 analytical results.

## **3.0 FINDINGS AND RECOMMENDATION**

Semi-annual groundwater monitoring events were conducted at the Lateral K-31 Pipeline Release (12/02/2011) Site during June 2018 and January 2019. The objective of the groundwater monitoring events was to further evaluate the concentrations of COCs in groundwater at the Site with respect to WQCC GQSs.

- The groundwater flow direction at the Site is generally towards the north-northwest, with an approximate gradient of 0.005 ft/ft across the Site.
- During the June 2018 and January 2019 sampling events, the groundwater samples collected from monitoring wells MW-1 and MW-4 through MW-9 did not exhibit BTEX concentrations above WQCC GQSs.
- Results from the sampling events at the Site demonstrate generally declining COC concentrations in groundwater.

Based on the results of groundwater monitoring activities, Ensolum has the following recommendations:

- Report the groundwater monitoring results to the New Mexico EMNRD OCD;
- Continue semi-annual groundwater monitoring at the Site; and,



Enterprise Field Services, LLC  
2018 Annual Groundwater Monitoring Report  
Lateral K-31 Pipeline Release (12/02/2011)  
September 27, 2019



- Install delineation monitoring wells (downgradient and upgradient) of MW-5 to assess periodic COC exceedances and further evaluate the gradient in the north and east portions of the Site upon notification by the EMNRD OCD that the Stage 1 Abatement Plan dated March 22, 2019 has been determined to be administratively complete.

## **4.0 STANDARDS OF CARE, LIMITATIONS, AND RELIANCE**

### **4.1 Standard of Care**

Ensolum'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. Ensolum makes no warranties, express or implied, as to the services performed hereunder. Additionally, Ensolum 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, as detailed in our proposal.

### **4.2 Limitations**

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 Ensolum cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during the investigation. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Ensolum's findings, and recommendations are based solely upon data available to Ensolum at the time of these services.

### **4.3 Reliance**

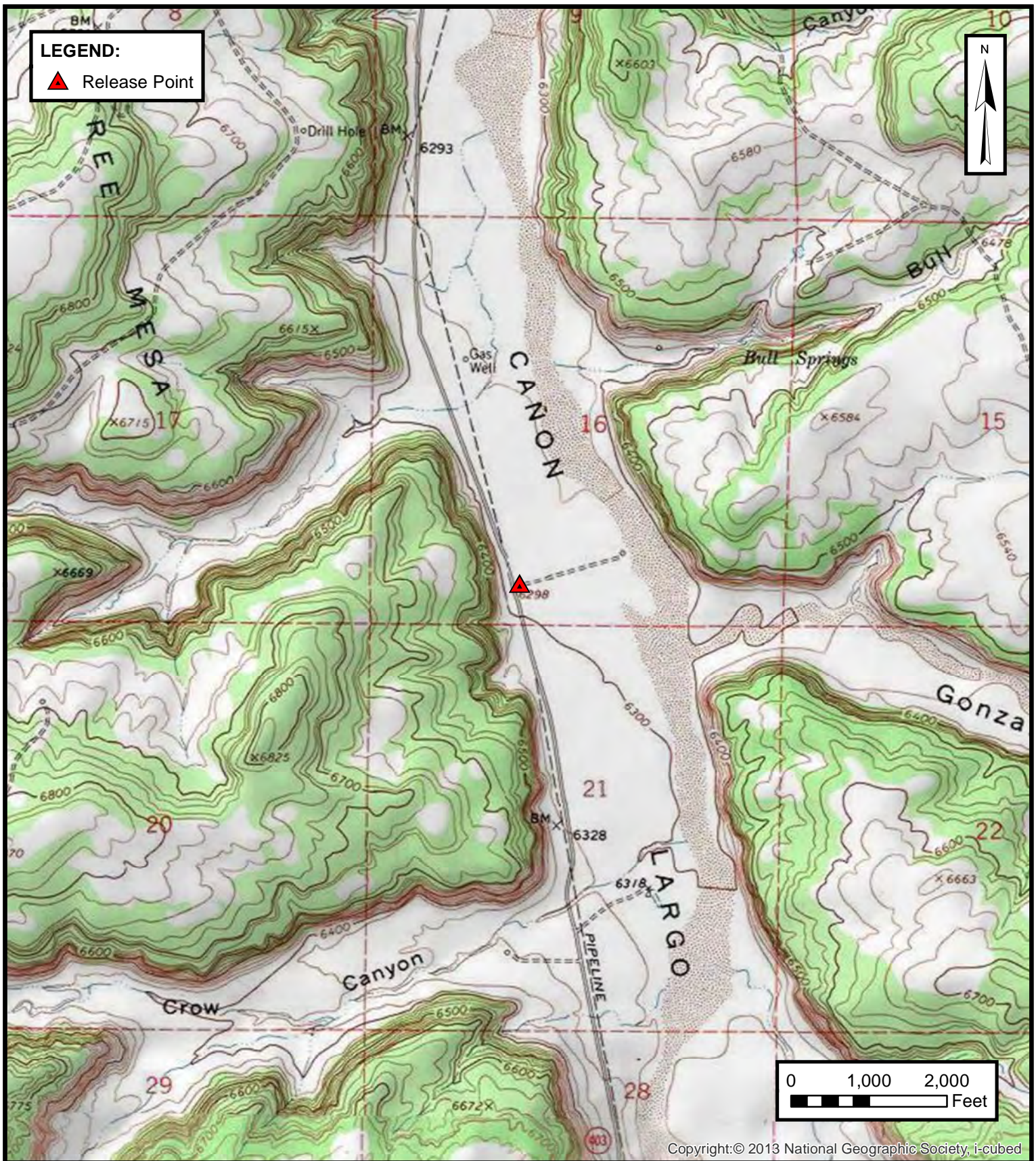
This report has been prepared for the exclusive use of Enterprise Products Operating LLC, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization Enterprise Products Operating LLC and Ensolum. 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 report, and Ensolum's Master Services Agreement. The limitation of liability defined in the agreement is the aggregate limit of Ensolum's liability to the client.



## APPENDIX A

### Figures





**ENSOLUM**  
Environmental & Hydrogeologic Consultants

### TOPOGRAPHIC MAP

ENTERPRISE FIELD SERVICES, LLC  
LATERAL K-31 (12/02/2011) PIPELINE RELEASE  
SW ¼, S16 T25N R6W, Rio Arriba County, New Mexico  
36.393827° N, 107.475065° W

PROJECT NUMBER: 04E-26024

FIGURE

1

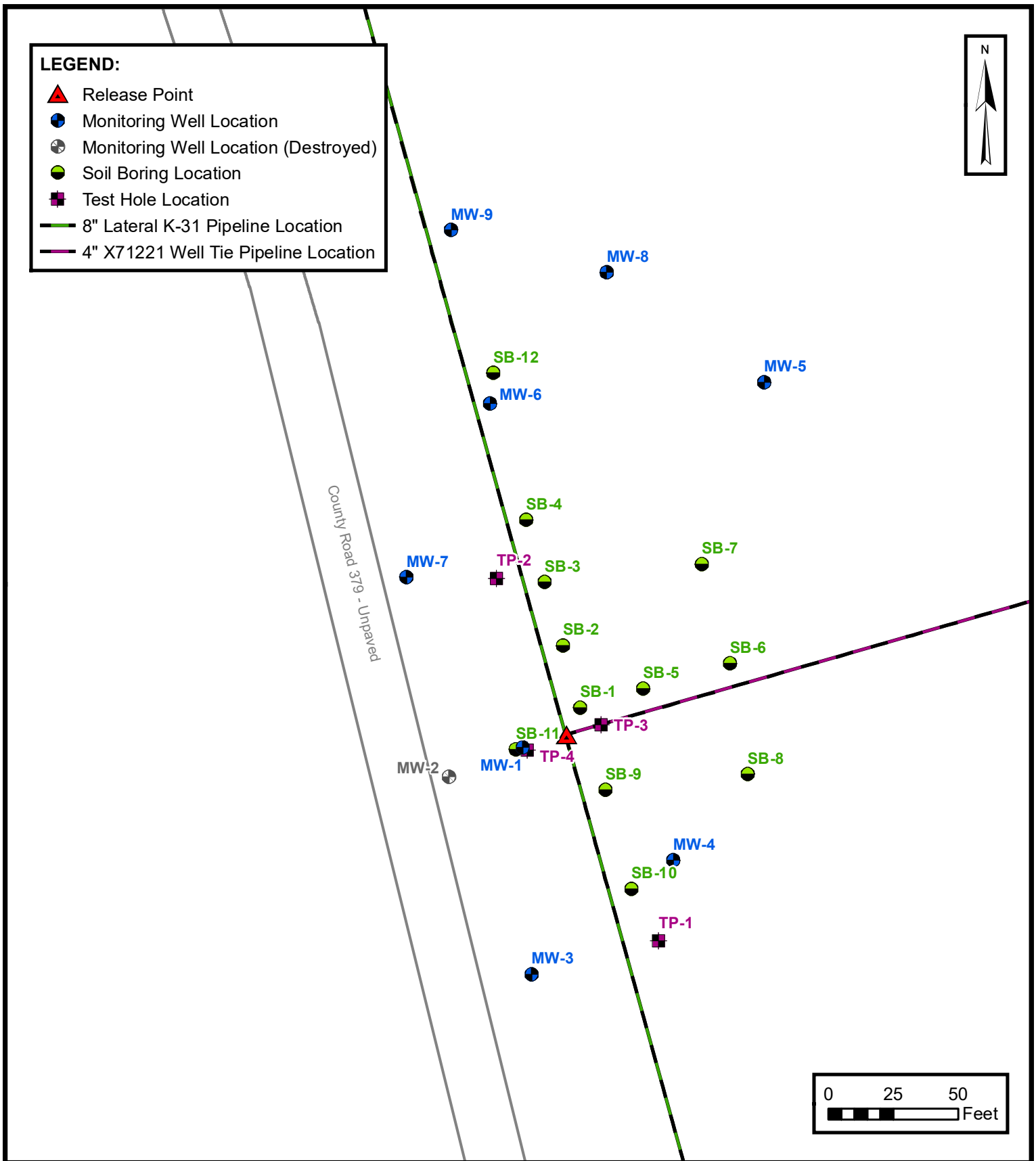


**SITE VICINITY MAP**

ENTERPRISE FIELD SERVICES, LLC  
LATERAL K-31 (12/02/2011) PIPELINE RELEASE  
SW ¼, S16 T25N R6W, Rio Arriba County, New Mexico  
36.393827° N, 107.475065° W

PROJECT NUMBER: 054226024

**FIGURE****2**



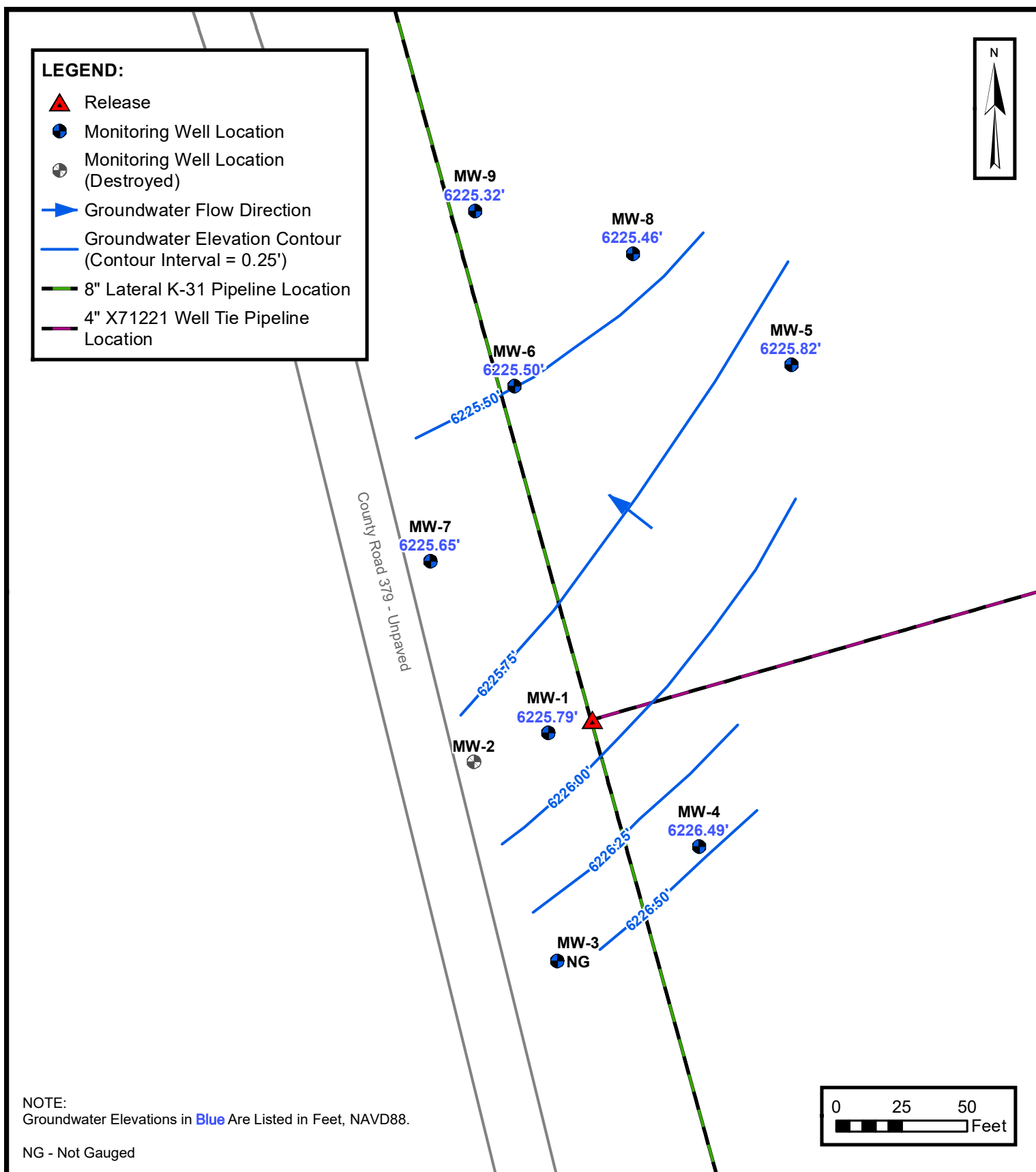
### SITE MAP

ENTERPRISE FIELD SERVICES, LLC  
LATERAL K-31 (12/02/2011) PIPELINE RELEASE  
SW ¼, S16 T25N R6W, Rio Arriba County, New Mexico  
36.393827° N, 107.475065° W

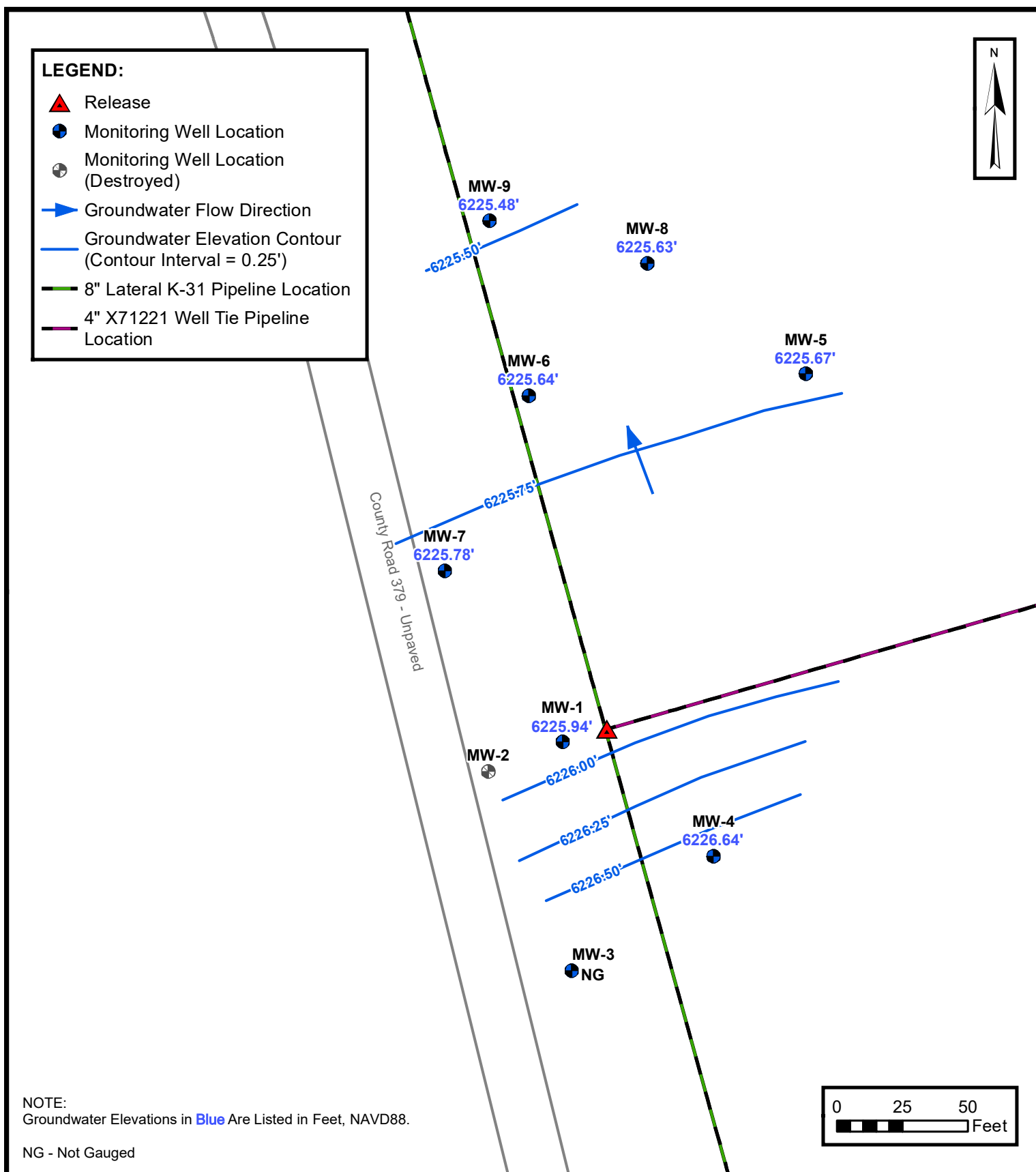
PROJECT NUMBER: 05B1226002

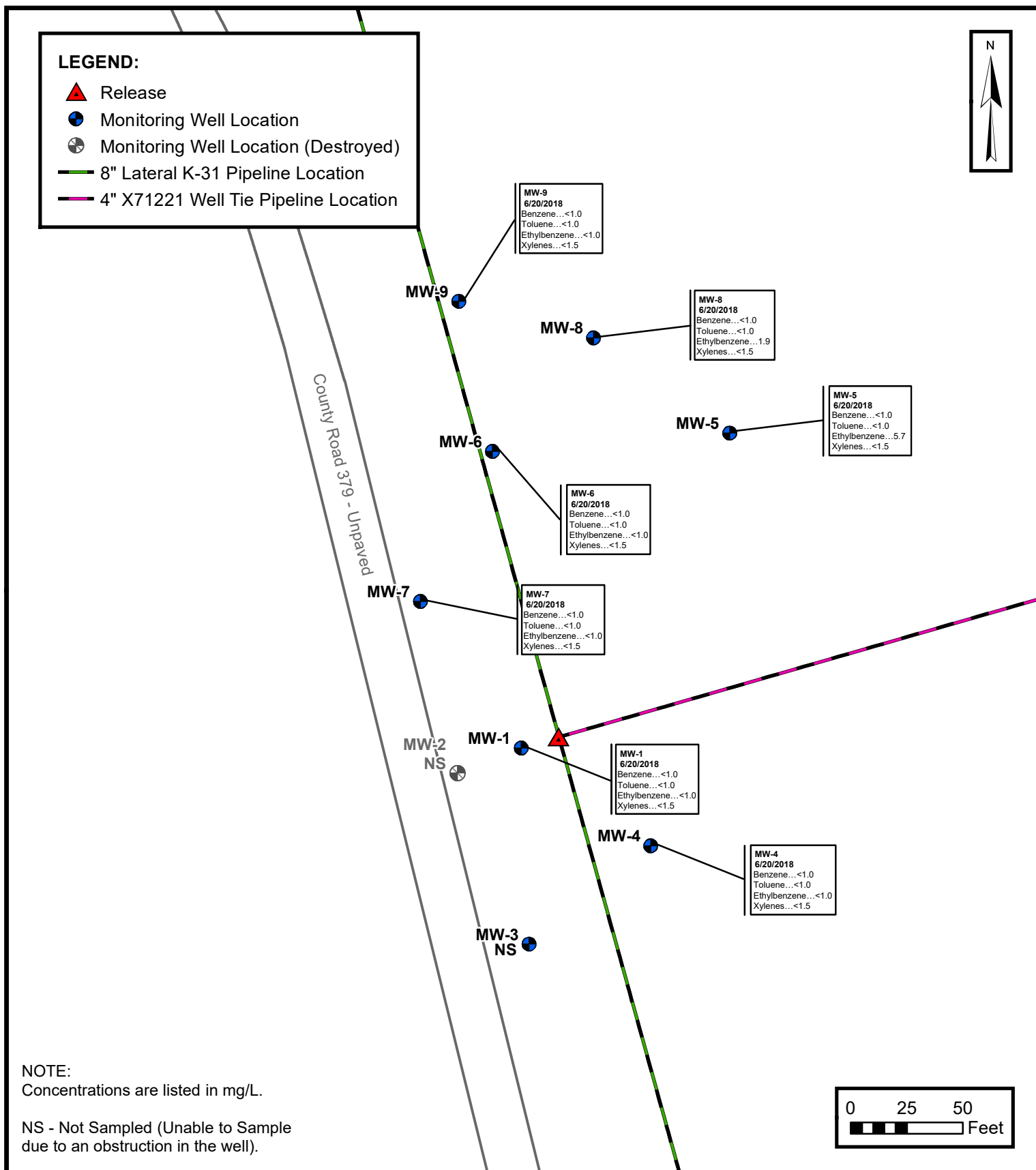
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**3**

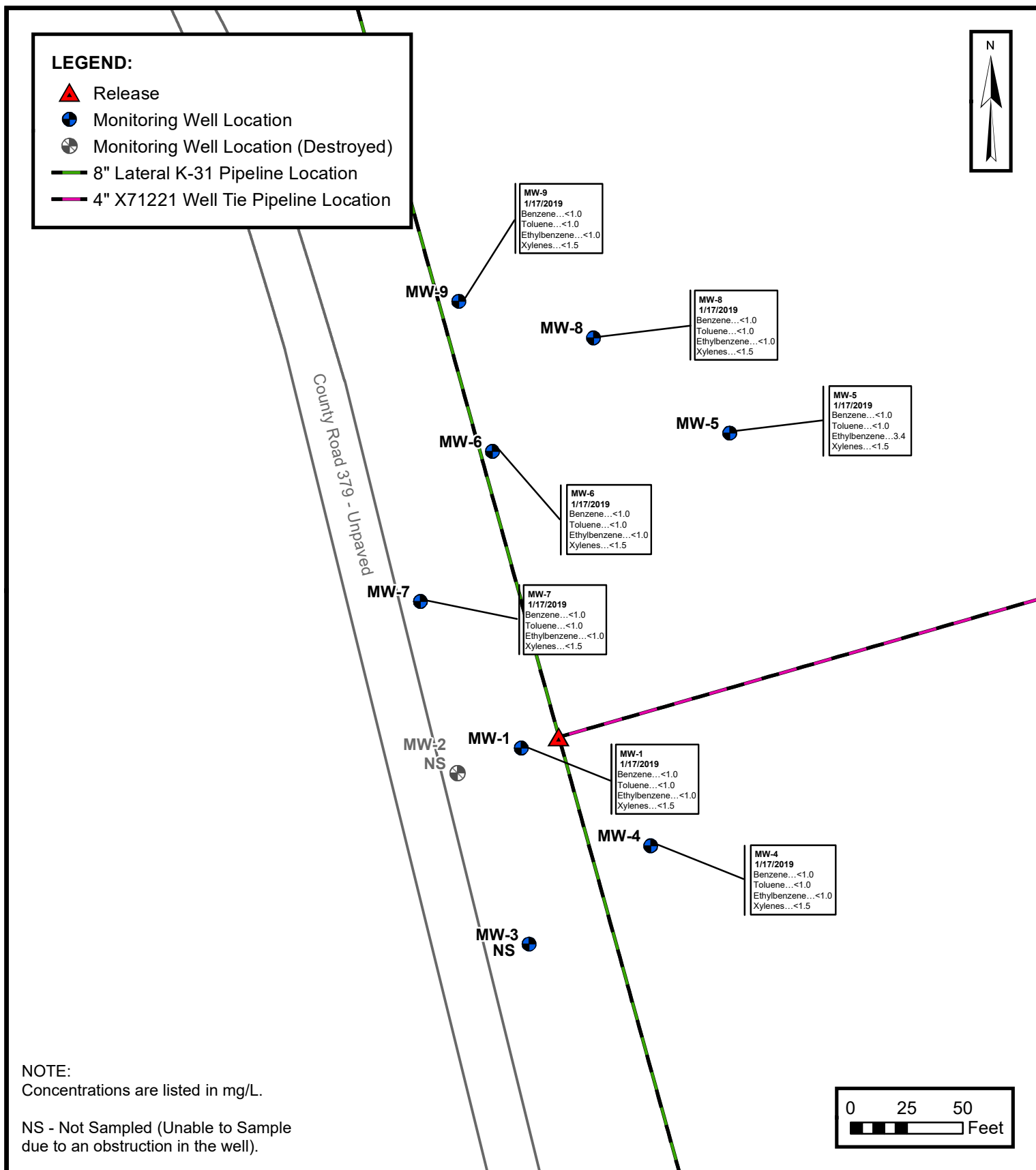














## APPENDIX B

### Tables



**TABLE 1**  
**Lateral K-31 Pipeline Release (12/02/2011)**  
**GROUNDWATER ANALYTICAL SUMMARY**

| Sample I.D.  | Date     | Benzene<br>(µg/L)                    | Toluene<br>(µg/L) | Ethylbenzene<br>(µg/L) | Xylenes<br>(µg/L) |
|--|----------|--------------------------------------|-------------------|------------------------|-------------------|
| New Mexico Water Quality Control Commission<br>Groundwater Quality Standards |          | 10                                   | 750               | 750                    | 620               |
| MW-1   | 9.5.12   | 18                                   | 2.9               | 3.3                    | 25                |
|  | 12.20.12 | 11                                   | <2.0              | <2.0                   | 5.8               |
|  | 3.21.13  | 29                                   | 14                | <2.0                   | 6.8               |
|  | 9.4.13   | 24                                   | 3.0               | <2.0                   | 10                |
|  | 12.9.13  | 42                                   | 20                | 10                     | 45                |
|  | 3.19.14  | 17                                   | 15                | <1                     | 6                 |
|  | 11.12.14 | <1.0                                 | <1.0              | <1.0                   | <2.0              |
|  | 6.17.15  | <1.0                                 | <1.0              | <1.0                   | <2.0              |
|  | 11.17.15 | <1.0                                 | <1.0              | <1.0                   | <2.0              |
|  | 6.08.16  | 4.1                                  | <1.0              | <1.0                   | <2.0              |
|  | 12.29.16 | <1.0                                 | <1.0              | <1.0                   | <1.5              |
|  | 6.30.17  | 1.8                                  | <1.0              | <1.0                   | <2.0              |
|  | 12.28.17 | <1.0                                 | <1.0              | <1.0                   | <1.5              |
| MW-2   | 9.5.12   | 9.5                                  | 9.2               | <2.0                   | 30                |
|  | 12.20.12 | 17                                   | <2.0              | <2.0                   | 41                |
|  | 3.21.13  | 18                                   | <2.0              | <2.0                   | 18                |
|  | 9.4.13   | 8.0                                  | <2.0              | <2.0                   | 4.2               |
|  | 12.9.13  | 24                                   | 13                | 11                     | 49                |
|  | 3.19.14  | <1                                   | <1                | <1                     | <3                |
|  | 11.12.14 | Monitoring Well Apparently Destroyed |                   |                        |                   |
|  | 6.17.15  |                                      |                   |                        |                   |
|  | 11.17.15 |                                      |                   |                        |                   |
|  | 6.08.16  |                                      |                   |                        |                   |
|  | 12.29.16 |                                      |                   |                        |                   |
|  | 6.30.17  |                                      |                   |                        |                   |
|  | 12.28.17 |                                      |                   |                        |                   |
|  | 6.20.18  |                                      |                   |                        |                   |
|  | 1.17.19  |                                      |                   |                        |                   |
| MW-3   | 9.5.12   | <2.0                                 | <2.0              | <2.0                   | <4.0              |
|  | 12.20.12 | <2.0                                 | <2.0              | <2.0                   | <4.0              |
|  | 3.21.13  | <2.0                                 | <2.0              | <2.0                   | <4.0              |
|  | 9.4.13   | 5.4                                  | <2.0              | <2.0                   | <4.0              |
|  | 12.9.13  | 10                                   | 15                | 9.7                    | 37                |
|  | 3.19.14  | 3.0                                  | 4.0               | <1                     | <3                |
|  | 11.12.14 | <1.0                                 | <1.0              | <1.0                   | <2.0              |
|  | 6.17.15  | 9.9                                  | <1.0              | <1.0                   | <2.0              |
|  | 11.18.15 | <1.0                                 | <1.0              | <1.0                   | <2.0              |
|  | 6.08.16  | Unable to sample                     |                   |                        |                   |
|  | 12.29.16 | <1.0                                 | <1.0              | <1.0                   | <1.5              |
|  | 6.30.17  | <1.0                                 | <1.0              | <1.0                   | <1.5              |
|  | 12.28.17 | Unable to sample                     |                   |                        |                   |
| MW-4   | 9.5.12   | <2.0                                 | <2.0              | <2.0                   | <4.0              |
|  | 12.20.12 | 19                                   | <2.0              | <2.0                   | <4.0              |
|  | 3.21.13  | 4.8                                  | <2.0              | <2.0                   | <4.0              |
|  | 9.4.13   | <2.0                                 | <2.0              | <2.0                   | <4.0              |
|  | 12.9.13  | 42                                   | 17                | 14                     | 54                |
|  | 3.19.14  | <1                                   | <1                | <1                     | <3                |
|  | 11.12.14 | 5.4                                  | <1.0              | <1.0                   | <2.0              |
|  | 6.17.15  | 7.2                                  | <1.0              | <1.0                   | <2.0              |
|  | 11.18.15 | <1.0                                 | <1.0              | <1.0                   | <2.0              |
|  | 6.08.16  | 5.1                                  | <1.0              | <1.0                   | <2.0              |
|  | 12.29.16 | <1.0                                 | <1.0              | <1.0                   | <1.5              |
|  | 6.30.17  | <1.0                                 | <1.0              | <1.0                   | <2.0              |
|  | 12.28.17 | <1.0                                 | <1.0              | <1.0                   | <1.5              |
|  | 6.20.18  | <1.0                                 | <1.0              | <1.0                   | <1.5              |
|  | 1.17.19  | <1.0                                 | <1.0              | <1.0                   | <1.5              |



**TABLE 1**  
**Lateral K-31 Pipeline Release (12/02/2011)**  
**GROUNDWATER ANALYTICAL SUMMARY**

| Sample I.D.  | Date     | Benzene<br>(µg/L) | Toluene<br>(µg/L) | Ethylbenzene<br>(µg/L) | Xylenes<br>(µg/L) |
|--|----------|-------------------|-------------------|------------------------|-------------------|
| New Mexico Water Quality Control Commission<br>Groundwater Quality Standards |          | 10                | 750               | 750                    | 620               |
| MW-5   | 9.5.12   | 10                | <2.0              | <2.0                   | <4.0              |
|  | 12.20.12 | 10                | <2.0              | <2.0                   | <4.0              |
|  | 3.21.13  | 9.0               | <2.0              | <2.0                   | <4.0              |
|  | 9.4.13   | 9.3               | <2.0              | <2.0                   | <4.0              |
|  | 12.9.13  | 48                | 9.3               | 9.7                    | 36                |
|  | 3.19.14  | 27                | <1                | 2                      | <3                |
|  | 11.12.14 | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 6.17.15  | 52                | <1.0              | 1.4                    | <2.0              |
|  | 11.18.15 | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 6.08.16  | 230               | <1.0              | 8.5                    | <2.0              |
|  | 12.29.16 | 14                | <1.0              | 2.1                    | <1.5              |
|  | 6.30.17  | 2.4               | <1.0              | 1.8                    | <2.0              |
|  | 12.28.17 | 42                | <1.0              | 11                     | <1.5              |
| MW-6   | 6.20.18  | <1.0              | <1.0              | 5.7                    | <1.5              |
|  | 1.17.19  | <1.0              | <1.0              | 3.4                    | <1.5              |
|  | 9.5.12   | 37                | 8.3               | <2.0                   | 14                |
|  | 12.20.12 | 82                | 5.8               | <2.0                   | <4.0              |
|  | 3.21.13  | 130               | 5.1               | <2.0                   | <4.0              |
|  | 9.4.13   | 40                | 22                | <2.0                   | 13                |
|  | 12.9.13  | 210               | 20                | 12                     | 51                |
|  | 3.19.14  | 77                | 8.0               | 1.0                    | 4.0               |
|  | 11.12.14 | 19                | <1.0              | <1.0                   | <2.0              |
|  | 6.17.15  | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 11.18.15 | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 6.08.16  | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 12.29.16 | <1.0              | <1.0              | <1.0                   | <1.5              |
| MW-7   | 6.30.17  | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 12.28.17 | <1.0              | <1.0              | <1.0                   | <1.5              |
|  | 6.20.18  | <1.0              | <1.0              | <1.0                   | <1.5              |
|  | 1.17.19  | <1.0              | <1.0              | <1.0                   | <1.5              |
|  | 9.5.12   | 3.6               | <2.0              | <2.0                   | <4.0              |
|  | 12.20.12 | 5.9               | <2.0              | <2.0                   | <4.0              |
|  | 3.21.13  | <2.0              | <2.0              | <2.0                   | <4.0              |
|  | 9.4.13   | 6.2               | <2.0              | <2.0                   | <4.0              |
|  | 12.9.13  | 30                | 17                | 14                     | 56                |
|  | 3.19.14  | <1                | <1                | <1                     | <3                |
|  | 11.12.14 | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 6.17.15  | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 11.17.15 | <1.0              | <1.0              | <1.0                   | <2.0              |
| MW-8   | 6.08.16  | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 12.29.16 | <1.0              | <1.0              | <1.0                   | <1.5              |
|  | 6.30.17  | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 12.28.17 | <1.0              | <1.0              | <1.0                   | <1.5              |
|  | 6.20.18  | <1.0              | <1.0              | <1.0                   | <1.5              |
|  | 1.17.19  | <1.0              | <1.0              | <1.0                   | <1.5              |
|  | 9.5.12   | 20                | <2.0              | <2.0                   | <4.0              |
|  | 12.20.12 | 25                | <2.0              | <2.0                   | <4.0              |
|  | 3.21.13  | 26                | <2.0              | <2.0                   | <4.0              |
|  | 9.4.13   | 34                | <2.0              | <2.0                   | <4.0              |
|  | 12.9.13  | 200               | 14                | 11                     | 46                |
|  | 3.19.14  | 57                | <1                | <1                     | <3                |
|  | 11.12.14 | 5.8               | <1.0              | <1.0                   | <2.0              |
|  | 6.17.15  | 1.5               | <1.0              | <1.0                   | <2.0              |
|  | 11.18.15 | 1.7               | <1.0              | <1.0                   | <2.0              |
|  | 6.08.16  | 4.2               | <1.0              | <1.0                   | <2.0              |
|  | 12.29.16 | 1.3               | <1.0              | <1.0                   | <1.5              |
|  | 6.30.17  | 1.2               | <1.0              | <1.0                   | <2.0              |
|  | 12.28.17 | <1.0              | <1.0              | <1.0                   | <1.5              |
|  | 6.20.18  | <1.0              | <1.0              | 1.9                    | <1.5              |
|  | 1.17.19  | <1.0              | <1.0              | <1.0                   | <1.5              |





| TABLE 1  |          |                   |                   |                        |                   |
|--|----------|-------------------|-------------------|------------------------|-------------------|
| Lateral K-31 Pipeline Release (12/02/2011)                                   |          |                   |                   |                        |                   |
| GROUNDWATER ANALYTICAL SUMMARY   |          |                   |                   |                        |                   |
| Sample I.D.  | Date     | Benzene<br>(µg/L) | Toluene<br>(µg/L) | Ethylbenzene<br>(µg/L) | Xylenes<br>(µg/L) |
| New Mexico Water Quality Control Commission<br>Groundwater Quality Standards |          | 10                | 750               | 750                    | 620               |
| MW-9   | 9.5.12   | <2.0              | <2.0              | <2.0                   | <4.0              |
|  | 12.20.12 | <2.0              | <2.0              | <2.0                   | <4.0              |
|  | 3.21.13  | <2.0              | <2.0              | <2.0                   | <4.0              |
|  | 9.4.13   | <2.0              | <2.0              | <2.0                   | <4.0              |
|  | 12.9.13  | 4.0               | 7.1               | 6.0                    | 24                |
|  | 3.19.14  | <1                | <1                | <1                     | <3                |
|  | 11.12.14 | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 6.17.15  | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 11.17.15 | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 6.08.16  | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 12.29.16 | <1.0              | <1.0              | <1.0                   | <1.5              |
|  | 6.30.17  | <1.0              | <1.0              | <1.0                   | <2.0              |
|  | 12.28.17 | <1.0              | <1.0              | <1.0                   | <1.5              |
|  | 6.20.18  | <1.0              | <1.0              | <1.0                   | <1.5              |
|  | 1.17.19  | <1.0              | <1.0              | <1.0                   | <1.5              |

Note: Concentrations in **bold** and yellow exceed the applicable WQCC GQS

µg/L = microgram per liter

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



**TABLE 2**  
**Lateral K-31 Pipeline Release (12/02/2011)**  
**GROUNDWATER ELEVATIONS**

| Well I.D. | Date     | Depth to Product<br>(feet BTOC)      | Depth to Water<br>(feet BTOC) | Product Thickness<br>(feet) | TOC Elevations<br>(feet AMSL) | Groundwater Elevation*<br>(feet AMSL) |
|-----------|----------|--------------------------------------|-------------------------------|-----------------------------|-------------------------------|---------------------------------------|
| MW-1      | 9.5.12   | ND                                   | 19.44                         | ND                          | 6245.24                       | 6225.80                               |
|           | 12.20.12 | ND                                   | 19.02                         | ND                          |                               | 6226.22                               |
|           | 3.21.13  | ND                                   | 18.59                         | ND                          |                               | 6226.65                               |
|           | 9.4.13   | ND                                   | 19.49                         | ND                          |                               | 6225.75                               |
|           | 12.9.13  | ND                                   | 18.80                         | ND                          |                               | 6226.44                               |
|           | 3.19.14  | ND                                   | 18.40                         | ND                          |                               | 6226.84                               |
|           | 11.12.14 | ND                                   | 19.11                         | ND                          |                               | 6226.13                               |
|           | 6.17.15  | ND                                   | 18.70                         | ND                          |                               | 6226.54                               |
|           | 11.17.15 | ND                                   | 19.08                         | ND                          |                               | 6226.16                               |
|           | 6.08.16  | ND                                   | 18.80                         | ND                          |                               | 6226.44                               |
|           | 12.29.16 | ND                                   | 19.18                         | ND                          |                               | 6226.06                               |
|           | 6.30.17  | ND                                   | 19.13                         | ND                          |                               | 6226.11                               |
|           | 12.28.17 | ND                                   | 19.16                         | ND                          |                               | 6226.08                               |
|           | 6.20.18  | ND                                   | 19.45                         | ND                          |                               | 6225.79                               |
| 1.17.19   | ND       | 19.30                                | ND                            | 6225.94                     |                               |                                       |
| MW-2      | 9.5.12   | ND                                   | 16.69                         | ND                          | 6242.58                       | 6225.89                               |
|           | 12.20.12 | ND                                   | 16.33                         | ND                          |                               | 6226.25                               |
|           | 3.21.13  | ND                                   | 15.90                         | ND                          |                               | 6226.68                               |
|           | 9.4.13   | ND                                   | 16.72                         | ND                          |                               | 6225.86                               |
|           | 12.9.13  | ND                                   | 16.14                         | ND                          |                               | 6226.44                               |
|           | 3.19.14  | ND                                   | 15.72                         | ND                          |                               | 6226.86                               |
|           | 11.12.14 | Monitoring Well Apparently Destroyed |                               |                             |                               |                                       |
|           | 6.17.15  |                                      |                               |                             |                               |                                       |
|           | 11.17.15 |                                      |                               |                             |                               |                                       |
|           | 6.08.16  |                                      |                               |                             |                               |                                       |
|           | 12.29.16 |                                      |                               |                             |                               |                                       |
|           | 6.30.17  |                                      |                               |                             |                               |                                       |
|           | 12.28.17 |                                      |                               |                             |                               |                                       |
|           | 6.20.18  |                                      |                               |                             |                               |                                       |
| 1.17.19   |          |                                      |                               |                             |                               |                                       |
| MW-3      | 9.5.12   | ND                                   | 18.93                         | ND                          | 6245.48                       | 6226.55                               |
|           | 12.20.12 | ND                                   | 18.51                         | ND                          |                               | 6226.97                               |
|           | 3.21.13  | ND                                   | 18.07                         | ND                          |                               | 6227.41                               |
|           | 9.4.13   | ND                                   | 18.97                         | ND                          |                               | 6226.51                               |
|           | 12.9.13  | ND                                   | 18.30                         | ND                          |                               | 6227.18                               |
|           | 3.19.14  | ND                                   | 17.89                         | ND                          |                               | 6227.59                               |
|           | 11.12.14 | ND                                   | 18.59                         | ND                          |                               | 6226.89                               |
|           | 6.17.15  | ND                                   | 18.20                         | ND                          |                               | 6227.28                               |
|           | 11.17.15 | ND                                   | 18.56                         | ND                          |                               | 6226.92                               |
|           | 6.08.16  | ND                                   | 18.30                         | ND                          |                               | 6227.18                               |
|           | 12.29.16 | ND                                   | 18.66                         | ND                          |                               | 6226.82                               |
|           | 6.30.17  | ND                                   | 18.64                         | ND                          |                               | 6226.84                               |
|           | 12.28.17 | NG                                   | NG                            | NG                          |                               | NG                                    |
|           | 6.20.18  | NG                                   | NG                            | NG                          |                               | NG                                    |
| 1.17.19   | NG       | NG                                   | NG                            | NG                          |                               |                                       |
| MW-4      | 9.5.12   | ND                                   | 17.55                         | ND                          | 6244.08                       | 6226.53                               |
|           | 12.20.12 | ND                                   | 17.14                         | ND                          |                               | 6226.94                               |
|           | 3.21.13  | ND                                   | 16.71                         | ND                          |                               | 6227.37                               |
|           | 9.4.13   | ND                                   | 17.59                         | ND                          |                               | 6226.49                               |
|           | 12.9.13  | ND                                   | 16.93                         | ND                          |                               | 6227.15                               |
|           | 3.19.14  | ND                                   | 16.51                         | ND                          |                               | 6227.57                               |
|           | 11.12.14 | ND                                   | 17.24                         | ND                          |                               | 6226.84                               |
|           | 6.17.15  | ND                                   | 16.83                         | ND                          |                               | 6227.25                               |
|           | 11.17.15 | ND                                   | 17.21                         | ND                          |                               | 6226.87                               |
|           | 6.08.16  | ND                                   | 16.93                         | ND                          |                               | 6227.15                               |
|           | 12.29.16 | ND                                   | 17.30                         | ND                          |                               | 6226.78                               |
|           | 6.30.17  | ND                                   | 17.27                         | ND                          |                               | 6226.81                               |
|           | 12.28.17 | ND                                   | 17.30                         | ND                          |                               | 6226.78                               |
|           | 6.20.18  | ND                                   | 17.59                         | ND                          |                               | 6226.49                               |
|           | 1.17.19  | ND                                   | 17.44                         | ND                          |                               | 6226.64                               |



**TABLE 2**  
**Lateral K-31 Pipeline Release (12/02/2011)**  
**GROUNDWATER ELEVATIONS**

| Well I.D. | Date     | Depth to Product<br>(feet BTOC) | Depth to Water<br>(feet BTOC) | Product Thickness<br>(feet) | TOC Elevations<br>(feet AMSL) | Groundwater Elevation*<br>(feet AMSL) |
|-----------|----------|---------------------------------|-------------------------------|-----------------------------|-------------------------------|---------------------------------------|
| MW-5      | 9.5.12   | ND                              | 15.88                         | ND                          | 6241.41                       | 6225.53                               |
|           | 12.20.12 | ND                              | 15.44                         | ND                          |                               | 6225.97                               |
|           | 3.21.13  | ND                              | 15.00                         | ND                          |                               | 6226.41                               |
|           | 9.4.13   | ND                              | 15.91                         | ND                          |                               | 6225.50                               |
|           | 12.9.13  | ND                              | 15.20                         | ND                          |                               | 6226.21                               |
|           | 3.19.14  | ND                              | 14.81                         | ND                          |                               | 6226.60                               |
|           | 11.12.14 | ND                              | 15.54                         | ND                          |                               | 6225.87                               |
|           | 6.17.15  | ND                              | 15.14                         | ND                          |                               | 6226.27                               |
|           | 11.17.15 | ND                              | 15.50                         | ND                          |                               | 6225.91                               |
|           | 6.08.16  | ND                              | 15.22                         | ND                          |                               | 6226.19                               |
|           | 12.29.16 | ND                              | 15.60                         | ND                          |                               | 6225.81                               |
|           | 6.30.17  | ND                              | 15.59                         | ND                          |                               | 6225.82                               |
|           | 12.30.17 | ND                              | 15.57                         | ND                          |                               | 6225.84                               |
|           | 6.20.18  | ND                              | 15.59                         | ND                          |                               | 6225.82                               |
|           | 1.17.19  | ND                              | 15.74                         | ND                          |                               | 6225.67                               |
| MW-6      | 9.5.12   | ND                              | 17.41                         | ND                          | 6242.91                       | 6225.50                               |
|           | 12.20.12 | ND                              | 16.97                         | ND                          |                               | 6225.94                               |
|           | 3.21.13  | ND                              | 16.53                         | ND                          |                               | 6226.38                               |
|           | 9.4.13   | ND                              | 17.45                         | ND                          |                               | 6225.46                               |
|           | 12.9.13  | ND                              | 16.75                         | ND                          |                               | 6226.16                               |
|           | 3.19.14  | ND                              | 16.34                         | ND                          |                               | 6226.57                               |
|           | 11.12.14 | ND                              | 17.06                         | ND                          |                               | 6225.85                               |
|           | 6.17.15  | ND                              | 16.66                         | ND                          |                               | 6226.25                               |
|           | 11.17.15 | ND                              | 17.03                         | ND                          |                               | 6225.88                               |
|           | 6.08.16  | ND                              | 16.74                         | ND                          |                               | 6226.17                               |
|           | 12.29.16 | ND                              | 17.13                         | ND                          |                               | 6225.78                               |
|           | 6.30.17  | ND                              | 17.11                         | ND                          |                               | 6225.80                               |
|           | 12.28.17 | ND                              | 17.10                         | ND                          |                               | 6225.81                               |
|           | 6.20.18  | ND                              | 17.41                         | ND                          |                               | 6225.50                               |
|           | 1.17.19  | ND                              | 17.27                         | ND                          |                               | 6225.64                               |
| MW-7      | 9.5.12   | ND                              | 17.61                         | ND                          | 6243.27                       | 6225.66                               |
|           | 12.20.12 | ND                              | 17.18                         | ND                          |                               | 6226.09                               |
|           | 3.21.13  | ND                              | 16.74                         | ND                          |                               | 6226.53                               |
|           | 9.4.13   | ND                              | 17.65                         | ND                          |                               | 6225.62                               |
|           | 12.9.13  | ND                              | 16.96                         | ND                          |                               | 6226.31                               |
|           | 3.19.14  | ND                              | 16.55                         | ND                          |                               | 6226.72                               |
|           | 11.12.14 | ND                              | 17.29                         | ND                          |                               | 6225.98                               |
|           | 6.17.15  | ND                              | 16.87                         | ND                          |                               | 6226.40                               |
|           | 11.17.15 | ND                              | 17.25                         | ND                          |                               | 6226.02                               |
|           | 6.08.16  | ND                              | 16.96                         | ND                          |                               | 6226.31                               |
|           | 12.29.16 | ND                              | 17.36                         | ND                          |                               | 6225.91                               |
|           | 6.30.17  | ND                              | 17.30                         | ND                          |                               | 6225.97                               |
|           | 12.28.17 | ND                              | 17.32                         | ND                          |                               | 6225.95                               |
|           | 6.20.18  | ND                              | 17.62                         | ND                          |                               | 6225.65                               |
|           | 1.17.19  | ND                              | 17.49                         | ND                          |                               | 6225.78                               |
| MW-8      | 9.5.12   | ND                              | 16.55                         | ND                          | 6242.01                       | 6225.46                               |
|           | 12.20.12 | ND                              | 16.09                         | ND                          |                               | 6225.92                               |
|           | 3.21.13  | ND                              | 15.65                         | ND                          |                               | 6226.36                               |
|           | 9.4.13   | ND                              | 16.57                         | ND                          |                               | 6225.44                               |
|           | 12.9.13  | ND                              | 15.86                         | ND                          |                               | 6226.15                               |
|           | 3.19.14  | ND                              | 15.46                         | ND                          |                               | 6226.55                               |
|           | 11.12.14 | ND                              | 16.18                         | ND                          |                               | 6225.83                               |
|           | 6.17.15  | ND                              | 15.79                         | ND                          |                               | 6226.22                               |
|           | 11.17.15 | ND                              | 16.17                         | ND                          |                               | 6225.84                               |
|           | 6.08.16  | ND                              | 15.90                         | ND                          |                               | 6226.11                               |
|           | 12.29.16 | ND                              | 16.25                         | ND                          |                               | 6225.76                               |
|           | 6.30.17  | ND                              | 16.25                         | ND                          |                               | 6225.76                               |
|           | 12.28.17 | ND                              | 16.23                         | ND                          |                               | 6225.78                               |
|           | 6.20.18  | ND                              | 16.55                         | ND                          |                               | 6225.46                               |
|           | 1.17.19  | ND                              | 16.38                         | ND                          |                               | 6225.63                               |



**TABLE 2**  
**Lateral K-31 Pipeline Release (12/02/2011)**  
**GROUNDWATER ELEVATIONS**

| Well I.D. | Date     | Depth to Product<br>(feet BTOC) | Depth to Water<br>(feet BTOC) | Product Thickness<br>(feet) | TOC Elevations<br>(feet AMSL) | Groundwater Elevation*<br>(feet AMSL) |
|-----------|----------|---------------------------------|-------------------------------|-----------------------------|-------------------------------|---------------------------------------|
| MW-9      | 9.5.12   | ND                              | 16.33                         | ND                          | 6241.59                       | 6225.26                               |
|           | 12.20.12 | ND                              | 15.84                         | ND                          |                               | 6225.75                               |
|           | 3.21.13  | ND                              | 15.39                         | ND                          |                               | 6226.20                               |
|           | 9.4.13   | ND                              | 16.32                         | ND                          |                               | 6225.27                               |
|           | 12.9.13  | ND                              | 15.61                         | ND                          |                               | 6225.98                               |
|           | 3.19.14  | ND                              | 15.21                         | ND                          |                               | 6226.38                               |
|           | 11.12.14 | ND                              | 15.95                         | ND                          |                               | 6225.64                               |
|           | 6.17.15  | ND                              | 15.52                         | ND                          |                               | 6226.07                               |
|           | 11.17.15 | ND                              | 15.88                         | ND                          |                               | 6225.71                               |
|           | 6.08.16  | ND                              | 15.60                         | ND                          |                               | 6225.99                               |
|           | 12.29.16 | ND                              | 15.98                         | ND                          |                               | 6225.61                               |
|           | 6.30.17  | ND                              | 15.97                         | ND                          |                               | 6225.62                               |
|           | 12.28.17 | ND                              | 15.94                         | ND                          |                               | 6225.65                               |
|           | 6.20.18  | ND                              | 16.27                         | ND                          |                               | 6225.32                               |
|           | 1.17.19  | ND                              | 16.11                         | ND                          |                               | 6225.48                               |

BTOC - Below Top of Casing

TOC - Top of Casing

ND - Not Detected

NG - Not Gauged

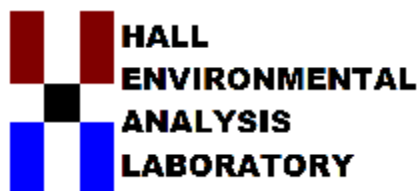
AMSL - Above Mean Sea Level (North American Vertical Datum 1988)



## APPENDIX C

### Laboratory Data Sheets & Chain of Custody Documentation

---



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

June 25, 2018

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

RE: Lateral K 31 2011

OrderNo.: 1806D41

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 7 sample(s) on 6/21/2018 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 #NM0901

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



## Analytical Report

Lab Order 1806D41

Date Reported: 6/25/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-4

Project: Lateral K 31 2011

Collection Date: 6/20/2018 9:20:00 AM

Lab ID: 1806D41-001

Matrix: AQUEOUS

Received Date: 6/21/2018 7:11:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch  |
|--|--------|--------|------|-------|----|----------------------|--------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |        |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 3:46:49 PM | R52146 |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 3:46:49 PM | R52146 |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 3:46:49 PM | R52146 |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 6/21/2018 3:46:49 PM | R52146 |
| Surr: 4-Bromofluorobenzene                   | 114    | 70-130 |      | %Rec  | 1  | 6/21/2018 3:46:49 PM | R52146 |
| Surr: Toluene-d8                             | 104    | 70-130 |      | %Rec  | 1  | 6/21/2018 3:46:49 PM | R52146 |

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 8 |
|                    | D   | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |             |
|                    | H   | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |             |
|                    | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |             |
|                    | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |             |
|                    | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |

## Analytical Report

Lab Order 1806D41

Date Reported: 6/25/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-1

Project: Lateral K 31 2011

Collection Date: 6/20/2018 9:50:00 AM

Lab ID: 1806D41-002

Matrix: AQUEOUS

Received Date: 6/21/2018 7:11:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch  |
|--|--------|--------|------|-------|----|----------------------|--------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |        |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 4:10:10 PM | R52146 |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 4:10:10 PM | R52146 |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 4:10:10 PM | R52146 |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 6/21/2018 4:10:10 PM | R52146 |
| Surr: 4-Bromofluorobenzene                   | 113    | 70-130 |      | %Rec  | 1  | 6/21/2018 4:10:10 PM | R52146 |
| Surr: Toluene-d8                             | 105    | 70-130 |      | %Rec  | 1  | 6/21/2018 4:10:10 PM | R52146 |

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                                    |
|                    | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |
|                    | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

Page 2 of 8

## Analytical Report

Lab Order 1806D41

Date Reported: 6/25/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-7

Project: Lateral K 31 2011

Collection Date: 6/20/2018 10:20:00 AM

Lab ID: 1806D41-003

Matrix: AQUEOUS

Received Date: 6/21/2018 7:11:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch              |
|--|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 4:33:28 PM | R52146             |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 4:33:28 PM | R52146             |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 4:33:28 PM | R52146             |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 6/21/2018 4:33:28 PM | R52146             |
| Surr: 4-Bromofluorobenzene                   | 110    | 70-130 |      | %Rec  | 1  | 6/21/2018 4:33:28 PM | R52146             |
| Surr: Toluene-d8                             | 105    | 70-130 |      | %Rec  | 1  | 6/21/2018 4:33:28 PM | R52146             |

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                                    |
|                    | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |
|                    | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

Page 3 of 8

## Analytical Report

Lab Order 1806D41

Date Reported: 6/25/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-6

Project: Lateral K 31 2011

Collection Date: 6/20/2018 10:50:00 AM

Lab ID: 1806D41-004

Matrix: AQUEOUS

Received Date: 6/21/2018 7:11:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch  |
|--|--------|--------|------|-------|----|----------------------|--------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |        |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 4:56:50 PM | R52146 |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 4:56:50 PM | R52146 |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 4:56:50 PM | R52146 |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 6/21/2018 4:56:50 PM | R52146 |
| Surr: 4-Bromofluorobenzene                   | 110    | 70-130 |      | %Rec  | 1  | 6/21/2018 4:56:50 PM | R52146 |
| Surr: Toluene-d8                             | 107    | 70-130 |      | %Rec  | 1  | 6/21/2018 4:56:50 PM | R52146 |

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 4 of 8 |
|                    | D   | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |             |
|                    | H   | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |             |
|                    | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |             |
|                    | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |             |
|                    | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |

## Analytical Report

Lab Order 1806D41

Date Reported: 6/25/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-9

Project: Lateral K 31 2011

Collection Date: 6/20/2018 11:20:00 AM

Lab ID: 1806D41-005

Matrix: AQUEOUS

Received Date: 6/21/2018 7:11:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch  |
|--|--------|--------|------|-------|----|----------------------|--------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    | Analyst: <b>AG</b>   |        |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 5:20:15 PM | R52146 |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 5:20:15 PM | R52146 |
| Ethylbenzene                                 | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 5:20:15 PM | R52146 |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 6/21/2018 5:20:15 PM | R52146 |
| Surr: 4-Bromofluorobenzene                   | 113    | 70-130 |      | %Rec  | 1  | 6/21/2018 5:20:15 PM | R52146 |
| Surr: Toluene-d8                             | 101    | 70-130 |      | %Rec  | 1  | 6/21/2018 5:20:15 PM | R52146 |

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 5 of 8 |
|                    | D   | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |             |
|                    | H   | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |             |
|                    | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |             |
|                    | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |             |
|                    | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |

## Analytical Report

Lab Order 1806D41

Date Reported: 6/25/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-8

Project: Lateral K 31 2011

Collection Date: 6/20/2018 11:50:00 AM

Lab ID: 1806D41-006

Matrix: AQUEOUS

Received Date: 6/21/2018 7:11:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch              |
|--|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 5:43:35 PM | R52146             |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 5:43:35 PM | R52146             |
| Ethylbenzene                                 | 1.9    | 1.0    |      | µg/L  | 1  | 6/21/2018 5:43:35 PM | R52146             |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 6/21/2018 5:43:35 PM | R52146             |
| Surr: 4-Bromofluorobenzene                   | 116    | 70-130 |      | %Rec  | 1  | 6/21/2018 5:43:35 PM | R52146             |
| Surr: Toluene-d8                             | 108    | 70-130 |      | %Rec  | 1  | 6/21/2018 5:43:35 PM | R52146             |

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 6 of 8 |
|                    | D   | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |             |
|                    | H   | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |             |
|                    | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |             |
|                    | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |             |
|                    | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |



## Analytical Report

Lab Order 1806D41

Date Reported: 6/25/2018

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-5

Project: Lateral K 31 2011

Collection Date: 6/20/2018 12:20:00 PM

Lab ID: 1806D41-007

Matrix: AQUEOUS

Received Date: 6/21/2018 7:11:00 AM

| Analyses                                     | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch              |
|--|--------|--------|------|-------|----|----------------------|--------------------|
| <b>EPA METHOD 8260: VOLATILES SHORT LIST</b> |        |        |      |       |    |                      | Analyst: <b>AG</b> |
| Benzene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 6:06:56 PM | R52146             |
| Toluene                                      | ND     | 1.0    |      | µg/L  | 1  | 6/21/2018 6:06:56 PM | R52146             |
| Ethylbenzene                                 | 5.7    | 1.0    |      | µg/L  | 1  | 6/21/2018 6:06:56 PM | R52146             |
| Xylenes, Total                               | ND     | 1.5    |      | µg/L  | 1  | 6/21/2018 6:06:56 PM | R52146             |
| Surr: 4-Bromofluorobenzene                   | 109    | 70-130 |      | %Rec  | 1  | 6/21/2018 6:06:56 PM | R52146             |
| Surr: Toluene-d8                             | 105    | 70-130 |      | %Rec  | 1  | 6/21/2018 6:06:56 PM | R52146             |

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 7 of 8 |
|                    | D   | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |             |
|                    | H   | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits                |             |
|                    | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |             |
|                    | PQL | Practical Quantitative Limit                          | 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#: **1806D41****25-Jun-18**

**Client:** APEX TITAN  
**Project:** Lateral K 31 2011

|                            |                          |                  |           |                |   |             |           |      |          |      |
|----------------------------|--------------------------|------------------|-----------|----------------|---|-------------|-----------|------|----------|------|
| Sample ID                  | 100ng btex lcs           | SampType: LCS4   |           |                | TestCode: EPA Method 8260: Volatiles Short List |             |           |      |          |      |
| Client ID:                 | BatchQC                  | Batch ID: R52146 |           |                | RunNo: 52146                                    |             |           |      |          |      |
| Prep Date:                 | Analysis Date: 6/21/2018 |                  |           | SeqNo: 1707858 |   | Units: µg/L |           |      |          |      |
| Analyte                    | Result                   | PQL              | SPK value | SPK Ref Val    | %REC  | LowLimit    | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                    | 22                       | 1.0              | 20.00     | 0              | 112   | 80          | 120       |      |          |      |
| Toluene                    | 21                       | 1.0              | 20.00     | 0              | 104   | 80          | 120       |      |          |      |
| Ethylbenzene               | 21                       | 1.0              | 20.00     | 0              | 107   | 80          | 120       |      |          |      |
| Xylenes, Total             | 62                       | 1.5              | 60.00     | 0              | 104   | 80          | 120       |      |          |      |
| Surr: 4-Bromofluorobenzene | 9.9                      |                  | 10.00     |                | 99.1  | 70          | 130       |      |          |      |
| Surr: Toluene-d8           | 9.9                      |                  | 10.00     |                | 99.4  | 70          | 130       |      |          |      |

|                            |        |                          |           |             |   |          |             |      |          |      |
|----------------------------|--------|--------------------------|-----------|-------------|---|----------|-------------|------|----------|------|
| Sample ID                  | rb     | SampType: MBLK           |           |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:                 | PBW    | Batch ID: R52146         |           |             | RunNo: 52146                                    |          |             |      |          |      |
| Prep Date:                 |        | Analysis Date: 6/21/2018 |           |             | SeqNo: 1707874                                  |          | Units: µg/L |      |          |      |
| Analyte                    | Result | PQL                      | SPK value | SPK Ref Val | %REC  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                    | ND     | 1.0                      |           |             |   |          |             |      |          |      |
| Toluene                    | ND     | 1.0                      |           |             |   |          |             |      |          |      |
| Ethylbenzene               | ND     | 1.0                      |           |             |   |          |             |      |          |      |
| Xylenes, Total             | ND     | 1.5                      |           |             |   |          |             |      |          |      |
| Surr: 4-Bromofluorobenzene | 11     |                          | 10.00     |             | 111   | 70       | 130         |      |          |      |
| Surr: Toluene-d8           | 10     |                          | 10.00     |             | 101   | 70       | 130         |      |          |      |

**Qualifiers:**

|   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | 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: 1806D41

RcptNo: 1

Received By: Isaiah Ortiz

6/21/2018 7:11:00 AM

IO

Completed By: Ashley Gallegos

6/21/2018 12:15:18 PM

AG

Reviewed By: IO

6/21/18

Labeled by: JAB 06/21/18

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐5. Sample(s) in proper container(s)? Yes ☒ No ☐6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐9. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐10. Were any sample containers received broken? Yes ☐ No ☒11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

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

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(&lt;2 or &gt;12 unless noted)

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

Checked by: JAB

### Special Handling (if applicable)

15. 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: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.8     | Good      | Not Present |         |           |           |

## CHAIN OF CUSTODY RECORD



**APEX**

Office Location 606 S Rio Grande Suite A

Aztec NM 87410

Project Manager K Summers

Sampler's Name Chad Argenti

Laboratory: Lab

Address: 4901 Hawkins NE Albuquerque NM 87109

Contact: A Fleener

Phone: 505-345-3975

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

Sampler's Signature [Signature]

Project Name Letter K-31 (2011)

| Proj. No.   | Matrix | Date    | Time | Identifying Marks of Sample(s) | No/Type of Containers |    |        |           | P/O |
|-------------|--------|---------|------|--------------------------------|-----------------------|----|--------|-----------|-----|
|             |        |         |      |                                | VOA                   | AG | 250 ml | Glass Jar |     |
| 70504010182 | W      | 6/20/18 | 920  | mw-4                           | 3                     |    |        |           |     |
|             | W      | 6/20/18 | 950  | mw-1                           | 3                     |    |        |           |     |
|             | W      | 6/20/18 | 1020 | mw-7                           | 3                     |    |        |           |     |
|             | W      | 6/20/18 | 1050 | mw-6                           | 3                     |    |        |           |     |
|             | W      | 6/20/18 | 1130 | mw-9                           | 3                     |    |        |           |     |
|             | W      | 6/20/18 | 1150 | mw-8                           | 3                     |    |        |           |     |
|             | W      | 6/20/18 | 1200 | mw-5                           | 3                     |    |        |           |     |

Project Name Letter K-31 (2011)

Project No. 70504010182

Matrix W

Date 6/20/18

Time 920

Identifying Marks of Sample(s) mw-4

No/Type of Containers 3

P/O

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

Relinquished by (Signature) [Signature] Date 6/20/18 Time 1524

Relinquished by (Signature) [Signature] Date 6/20/18 Time 182

Relinquished by (Signature) [Signature] Date 6/20/18 Time 182

Relinquished by (Signature) [Signature] Date 6/20/18 Time 182

ANALYSIS REQUESTED

1806D41-001

-002

-003

-004

-005

-006

-007

Lab Sample ID (Lab Use Only)

1806D41-001

-002

-003

-004

-005

-006

-007

Temp. of coolers when received (C°): 1.8

1 2 3 4 5

Page 0 of 0

NOTES:

B-11 to Apex

(Corp Rate)

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



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

January 22, 2019

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

RE: Lateral K 31 2011

OrderNo.: 1901742

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 7 sample(s) on 1/18/2019 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 #NM0901

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 1901742

Date Reported: 1/22/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-9

Project: Lateral K 31 2011

Collection Date: 1/17/2019 9:00:00 AM

Lab ID: 1901742-001

Matrix: AQUEOUS

Received Date: 1/18/2019 7:50:00 AM

| Analyses                              | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch       |
|---------------------------------------|--------|--------|------|-------|----|----------------------|-------------|
| EPA METHOD 8260: VOLATILES SHORT LIST |        |        |      |       |    |                      | Analyst: AG |
| Benzene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 3:40:45 AM | B57143      |
| Toluene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 3:40:45 AM | B57143      |
| Ethylbenzene                          | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 3:40:45 AM | B57143      |
| Xylenes, Total                        | ND     | 1.5    |      | µg/L  | 1  | 1/22/2019 3:40:45 AM | B57143      |
| Surr: 4-Bromofluorobenzene            | 107    | 70-130 |      | %Rec  | 1  | 1/22/2019 3:40:45 AM | B57143      |
| Surr: Toluene-d8                      | 101    | 70-130 |      | %Rec  | 1  | 1/22/2019 3:40:45 AM | B57143      |

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                                    |
|             | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|             |     |   |    |   |

Page 1 of 9

## Analytical Report

Lab Order 1901742

Date Reported: 1/22/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-8

Project: Lateral K 31 2011

Collection Date: 1/17/2019 9:50:00 AM

Lab ID: 1901742-002

Matrix: AQUEOUS

Received Date: 1/18/2019 7:50:00 AM

| Analyses                              | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch       |
|---------------------------------------|--------|--------|------|-------|----|----------------------|-------------|
| EPA METHOD 8260: VOLATILES SHORT LIST |        |        |      |       |    |                      | Analyst: AG |
| Benzene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 4:09:00 AM | B57143      |
| Toluene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 4:09:00 AM | B57143      |
| Ethylbenzene                          | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 4:09:00 AM | B57143      |
| Xylenes, Total                        | ND     | 1.5    |      | µg/L  | 1  | 1/22/2019 4:09:00 AM | B57143      |
| Surr: 4-Bromofluorobenzene            | 106    | 70-130 |      | %Rec  | 1  | 1/22/2019 4:09:00 AM | B57143      |
| Surr: Toluene-d8                      | 103    | 70-130 |      | %Rec  | 1  | 1/22/2019 4:09:00 AM | B57143      |

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                                    |
|             | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

Page 2 of 9

## Analytical Report

Lab Order 1901742

Date Reported: 1/22/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-6

Project: Lateral K 31 2011

Collection Date: 1/17/2019 10:35:00 AM

Lab ID: 1901742-003

Matrix: AQUEOUS

Received Date: 1/18/2019 7:50:00 AM

| Analyses                              | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch       |
|---------------------------------------|--------|--------|------|-------|----|----------------------|-------------|
| EPA METHOD 8260: VOLATILES SHORT LIST |        |        |      |       |    |                      | Analyst: AG |
| Benzene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 4:37:16 AM | B57143      |
| Toluene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 4:37:16 AM | B57143      |
| Ethylbenzene                          | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 4:37:16 AM | B57143      |
| Xylenes, Total                        | ND     | 1.5    |      | µg/L  | 1  | 1/22/2019 4:37:16 AM | B57143      |
| Surr: 4-Bromofluorobenzene            | 105    | 70-130 |      | %Rec  | 1  | 1/22/2019 4:37:16 AM | B57143      |
| Surr: Toluene-d8                      | 102    | 70-130 |      | %Rec  | 1  | 1/22/2019 4:37:16 AM | B57143      |

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

|             |     |   |    |   |             |
|-------------|-----|---|----|---|-------------|
| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           | Page 3 of 9 |
|             | 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                                    |             |
|             | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |             |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |



## Analytical Report

Lab Order 1901742

Date Reported: 1/22/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-7

Project: Lateral K 31 2011

Collection Date: 1/17/2019 11:25:00 AM

Lab ID: 1901742-004

Matrix: AQUEOUS

Received Date: 1/18/2019 7:50:00 AM

| Analyses                              | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch       |
|---------------------------------------|--------|--------|------|-------|----|----------------------|-------------|
| EPA METHOD 8260: VOLATILES SHORT LIST |        |        |      |       |    |                      | Analyst: AG |
| Benzene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 5:05:31 AM | B57143      |
| Toluene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 5:05:31 AM | B57143      |
| Ethylbenzene                          | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 5:05:31 AM | B57143      |
| Xylenes, Total                        | ND     | 1.5    |      | µg/L  | 1  | 1/22/2019 5:05:31 AM | B57143      |
| Surr: 4-Bromofluorobenzene            | 103    | 70-130 |      | %Rec  | 1  | 1/22/2019 5:05:31 AM | B57143      |
| Surr: Toluene-d8                      | 100    | 70-130 |      | %Rec  | 1  | 1/22/2019 5:05:31 AM | B57143      |

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                                    |
|             | PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
|             | S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

Page 4 of 9

## Analytical Report

Lab Order 1901742

Date Reported: 1/22/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-1

Project: Lateral K 31 2011

Collection Date: 1/17/2019 12:10:00 PM

Lab ID: 1901742-005

Matrix: AQUEOUS

Received Date: 1/18/2019 7:50:00 AM

| Analyses                              | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch       |
|---------------------------------------|--------|--------|------|-------|----|----------------------|-------------|
| EPA METHOD 8260: VOLATILES SHORT LIST |        |        |      |       |    |                      | Analyst: AG |
| Benzene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 5:33:46 AM | B57143      |
| Toluene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 5:33:46 AM | B57143      |
| Ethylbenzene                          | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 5:33:46 AM | B57143      |
| Xylenes, Total                        | ND     | 1.5    |      | µg/L  | 1  | 1/22/2019 5:33:46 AM | B57143      |
| Surr: 4-Bromofluorobenzene            | 106    | 70-130 |      | %Rec  | 1  | 1/22/2019 5:33:46 AM | B57143      |
| Surr: Toluene-d8                      | 103    | 70-130 |      | %Rec  | 1  | 1/22/2019 5:33:46 AM | B57143      |

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

|             |     |   |    |   |             |
|-------------|-----|---|----|---|-------------|
| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           | Page 5 of 9 |
|             | 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                                    |             |
|             | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |             |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |

## Analytical Report

Lab Order 1901742

Date Reported: 1/22/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-4

Project: Lateral K 31 2011

Collection Date: 1/17/2019 12:45:00 PM

Lab ID: 1901742-006

Matrix: AQUEOUS

Received Date: 1/18/2019 7:50:00 AM

| Analyses                              | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch       |
|---------------------------------------|--------|--------|------|-------|----|----------------------|-------------|
| EPA METHOD 8260: VOLATILES SHORT LIST |        |        |      |       |    |                      | Analyst: AG |
| Benzene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 6:02:02 AM | B57143      |
| Toluene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 6:02:02 AM | B57143      |
| Ethylbenzene                          | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 6:02:02 AM | B57143      |
| Xylenes, Total                        | ND     | 1.5    |      | µg/L  | 1  | 1/22/2019 6:02:02 AM | B57143      |
| Surr: 4-Bromofluorobenzene            | 109    | 70-130 |      | %Rec  | 1  | 1/22/2019 6:02:02 AM | B57143      |
| Surr: Toluene-d8                      | 99.1   | 70-130 |      | %Rec  | 1  | 1/22/2019 6:02:02 AM | B57143      |

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

|             |     |   |    |   |             |
|-------------|-----|---|----|---|-------------|
| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.              | B  | Analyte detected in the associated Method Blank           | Page 6 of 9 |
|             | 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                                    |             |
|             | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |             |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |             |

## Analytical Report

Lab Order 1901742

Date Reported: 1/22/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN

Client Sample ID: MW-5

Project: Lateral K 31 2011

Collection Date: 1/17/2019 1:40:00 PM

Lab ID: 1901742-007

Matrix: AQUEOUS

Received Date: 1/18/2019 7:50:00 AM

| Analyses                              | Result | PQL    | Qual | Units | DF | Date Analyzed        | Batch       |
|---------------------------------------|--------|--------|------|-------|----|----------------------|-------------|
| EPA METHOD 8260: VOLATILES SHORT LIST |        |        |      |       |    |                      | Analyst: AG |
| Benzene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 7:27:28 AM | B57143      |
| Toluene                               | ND     | 1.0    |      | µg/L  | 1  | 1/22/2019 7:27:28 AM | B57143      |
| Ethylbenzene                          | 3.4    | 1.0    |      | µg/L  | 1  | 1/22/2019 7:27:28 AM | B57143      |
| Xylenes, Total                        | ND     | 1.5    |      | µg/L  | 1  | 1/22/2019 7:27:28 AM | B57143      |
| Surr: 4-Bromofluorobenzene            | 112    | 70-130 |      | %Rec  | 1  | 1/22/2019 7:27:28 AM | B57143      |
| Surr: Toluene-d8                      | 100    | 70-130 |      | %Rec  | 1  | 1/22/2019 7:27:28 AM | B57143      |

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                                    |
|             | PQL | Practical Quantitative Limit                          | RL | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

Page 7 of 9



## QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1901742

22-Jan-19

Client: APEX TITAN  
Project: Lateral K 31 2011

|                             |            |                |           |             |                                       |          |           |      |          |      |
|-----------------------------|------------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | 100ng lcs2 | SampType:      | LCS       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                  | LCSW       | Batch ID:      | B57143    | RunNo:      | 57143                                 |          |           |      |          |      |
| Prep Date:                  |            | Analysis Date: | 1/21/2019 | SeqNo:      | 1911565                               | Units:   | µg/L      |      |          |      |
| Analyte                     | Result     | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 21         | 1.0            | 20.00     | 0           | 103                                   | 70       | 130       |      |          |      |
| Toluene                     | 19         | 1.0            | 20.00     | 0           | 95.1                                  | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 11         |                | 10.00     |             | 107                                   | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 11         |                | 10.00     |             | 106                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 11         |                | 10.00     |             | 108                                   | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 9.9        |                | 10.00     |             | 98.8                                  | 70       | 130       |      |          |      |

|                             |                |                |           |             |                                       |          |           |      |          |      |
|-----------------------------|----------------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | 1901742-006ams | SampType:      | MS        | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                  | MW-4           | Batch ID:      | B57143    | RunNo:      | 57143                                 |          |           |      |          |      |
| Prep Date:                  |                | Analysis Date: | 1/22/2019 | SeqNo:      | 1911572                               | Units:   | µg/L      |      |          |      |
| Analyte                     | Result         | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 21             | 1.0            | 20.00     | 0           | 107                                   | 70       | 130       |      |          |      |
| Toluene                     | 19             | 1.0            | 20.00     | 0           | 96.4                                  | 70       | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 10             |                | 10.00     |             | 103                                   | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 11             |                | 10.00     |             | 107                                   | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 11             |                | 10.00     |             | 109                                   | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 9.8            |                | 10.00     |             | 98.2                                  | 70       | 130       |      |          |      |

|                             |                 |                |           |             |                                       |          |           |      |          |      |
|-----------------------------|-----------------|----------------|-----------|-------------|---------------------------------------|----------|-----------|------|----------|------|
| Sample ID                   | 1901742-006amsd | SampType:      | MSD       | TestCode:   | EPA Method 8260: Volatiles Short List |          |           |      |          |      |
| Client ID:                  | MW-4            | Batch ID:      | B57143    | RunNo:      | 57143                                 |          |           |      |          |      |
| Prep Date:                  |                 | Analysis Date: | 1/22/2019 | SeqNo:      | 1911573                               | Units:   | µg/L      |      |          |      |
| Analyte                     | Result          | PQL            | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 21              | 1.0            | 20.00     | 0           | 103                                   | 70       | 130       | 3.38 | 20       |      |
| Toluene                     | 18              | 1.0            | 20.00     | 0           | 90.3                                  | 70       | 130       | 6.60 | 20       |      |
| Surr: 1,2-Dichloroethane-d4 | 11              |                | 10.00     |             | 109                                   | 70       | 130       | 0    | 0        |      |
| Surr: 4-Bromofluorobenzene  | 11              |                | 10.00     |             | 106                                   | 70       | 130       | 0    | 0        |      |
| Surr: Dibromofluoromethane  | 11              |                | 10.00     |             | 114                                   | 70       | 130       | 0    | 0        |      |
| Surr: Toluene-d8            | 9.9             |                | 10.00     |             | 98.9                                  | 70       | 130       | 0    | 0        |      |

|                |        |                          |           |             |   |          |             |      |          |      |
|----------------|--------|--------------------------|-----------|-------------|---|----------|-------------|------|----------|------|
| Sample ID      | rb2    | SampType: MBLK           |           |             | TestCode: EPA Method 8260: Volatiles Short List |          |             |      |          |      |
| Client ID:     | PBW    | Batch ID: B57143         |           |             | RunNo: 57143                                    |          |             |      |          |      |
| Prep Date:     |        | Analysis Date: 1/22/2019 |           |             | SeqNo: 1911576                                  |          | Units: µg/L |      |          |      |
| Analyte        | Result | PQL                      | SPK value | SPK Ref Val | %REC  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene        | ND     | 1.0                      |           |             |   |          |             |      |          |      |
| Toluene        | ND     | 1.0                      |           |             |   |          |             |      |          |      |
| Ethylbenzene   | ND     | 1.0                      |           |             |   |          |             |      |          |      |
| Xylenes, Total | ND     | 1.5                      |           |             |   |          |             |      |          |      |

## 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                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

Page 8 of 9

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

WO#: 1901742

22-Jan-19

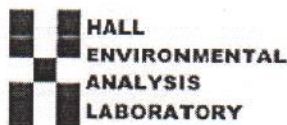
**Client:** APEX TITAN  
**Project:** Lateral K 31 2011

| Sample ID: <b>rb2</b>       | SampType: <b>MBLK</b>           | TestCode: <b>EPA Method 8260: Volatiles Short List</b> |           |             |      |          |           |      |          |      |
|-----------------------------|---------------------------------|--|-----------|-------------|------|----------|-----------|------|----------|------|
| Client ID: <b>PBW</b>       | Batch ID: <b>B57143</b>         | RunNo: <b>57143</b>                                    |           |             |      |          |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>1/22/2019</b> | SeqNo: <b>1911576</b> Units: <b>µg/L</b>               |           |             |      |          |           |      |          |      |
| Analyte                     | Result                          | PQL  | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 1,2-Dichloroethane-d4 | 11                              |  | 10.00     |             | 111  | 70       | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10                              |  | 10.00     |             | 105  | 70       | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 11                              |  | 10.00     |             | 110  | 70       | 130       |      |          |      |
| Surr: Toluene-d8            | 11                              |  | 10.00     |             | 105  | 70       | 130       |      |          |      |

**Qualifiers:**

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

Page 9 of 9



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

## Sample Log-In Check List

Client Name: APEX AZTEC

Work Order Number: 1901742

RptNo: 1

Received By: Isaiah Ortiz 1/18/2019 7:50:00 AM

Completed By: Isaiah Ortiz 1/18/2019 9:24:07 AM

Reviewed By: JO

CB: DAD 1/18/19

1/18/19

I-01

I-01

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐  
 2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
 4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐  
 5. Sample(s) in proper container(s)? Yes ☒ No ☐  
 6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
 7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
 8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
 9. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐  
 10. Were any sample containers received broken? Yes ☐ No ☒  
 11. Does paperwork match bottle labels?  
 (Note discrepancies on chain of custody) Yes ☒ No ☐  
 12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
 13. Is it clear what analyses were requested? Yes ☒ No ☐  
 14. 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: DAD 1/18/19

Special Handling (if applicable)

15. 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: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 2.1                     | Good      | Yes         |         |           |           |



## CHAIN OF CUSTODY RECORD

**APEX**

Office Location: 606 S Rio Grande Suite A  
Altec, NM 87470  
 Project Manager: X Summers  
 Sampler's Name: Renee Deochilly

Laboratory: Han Environmental Analysis Laboratory  
 Address: 4901 Hawkins Ave Albuquerque, NM 87107  
 Contact: A. Freeman  
 Phone: 505-345-3475  
 PO/SO #: 72504012182

Sampler's Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_

Project No.: 72504012182      Project Name: Lateral L-31 (2011)

| Matrix | Date    | Time | C<br>C<br>G | G<br>S<br>P<br>D | Identifying Marks of Sample(s) | Start Depth | End Depth | VOL | # of Containers | No Type of Containers |
|--------|---------|------|-------------|------------------|--------------------------------|-------------|-----------|-----|-----------------|-----------------------|
| NW     | 11/7/19 | 900  |             |                  | MW-9                           |             |           | 3   |                 |                       |
| NW     | 11/7/19 | 950  |             |                  | MW-8                           |             |           | 3   |                 |                       |
| NW     | 11/7/19 | 1035 |             |                  | MW-6                           |             |           | 3   |                 |                       |
| NW     | 11/7/19 | 1125 |             |                  | MW-7                           |             |           | 3   |                 |                       |
| NW     | 11/7/19 | 1210 |             |                  | MW-1                           |             |           | 3   |                 |                       |
| NW     | 11/7/19 | 1245 |             |                  | MW-4                           |             |           | 3   |                 |                       |
| NW     | 11/7/19 | 1340 |             |                  | MW-5                           |             |           | 3   |                 |                       |

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

Requisitioned by (Signature): \_\_\_\_\_ Date: 11/7/19 Time: 1710  
 Requisitioned by (Signature): \_\_\_\_\_ Date: 11/7/19 Time: 1950  
 Relinquished by (Signature): \_\_\_\_\_ Date: 11/7/19 Time: 1950  
 Relinquished by (Signature): \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

- Matrix: WW - Wastewater; VOA - Volatile Organic Analytes
- W - Water; AWC - Another / Our Client's Lab
- S - Soil
- SD - Solid
- L - Liquid; 950 mL - Glass wide mouth
- A - Air Bag
- C - Charcoal tube; PRC - Plastic or other
- SL - sludge
- O - Oil

Lab Use Only Due Date: \_\_\_\_\_ Temp. of coolers when received (C°): Z J C Page 1 of 1

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



**District I**

1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS

Action 32123

**CONDITIONS**

|   |  |
|---|--|
| Operator:<br>Enterprise Field Services, LLC<br>PO Box 4324<br>Houston, TX 77210 | OGRID:<br>241602   |
|   | Action Number:<br>32123  |
|   | Action Type:<br>[UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT) |

**CONDITIONS**

| Created By | Condition   | Condition Date |
|------------|---|----------------|
| nvelez     | Review of 2019 Groundwater Monitoring Report: Content satisfactory 1. Follow recommendations stated within 2020 Groundwater Monitoring Report. a. Continue conducting semi-annual groundwater monitoring and sampling events, but at a reduced frequency as approved by the OCD in an email from Mr. Cory Smith dated June 8, 2020 b. Complete additional site-specific aquifer characterization testing c. Install additional delineation wells d. Prepare and submit a Stage 2 Abatement Plan (following full delineation) e. Submit the Annual Monitoring Report to the OCD no later than March 31, 2022 | 1/3/2022       |