3R - 452

2014 AGWMR

06 / 29 / 2015

Enterprise Products

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

ENTERPRISE PRODUCTS OPERATING LLC

June 29, 2015

Submitted to the NMOCD ftp website

Mr. Glenn von Gonten
New Mexico Energy, Minerals & Natural Resources
Department – Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: ***Annual Groundwater Monitoring Report (February and November 2014 Sampling Events)***
Enterprise Field Services, LLC – Lateral K-7 Pipeline Release (7/15/2013)
Rio Arriba County, New Mexico
OCD RP: 3R-452

Dear Mr. von Gonten:

Please find attached, the above-referenced report prepared by Apex TITAN, Inc. (Apex). The report is associated with the Enterprise Field Services, LLC (Enterprise) Lateral K-7 pipeline release of natural gas condensate that was discovered on July 15, 2013.

The activities detailed in the attached *Annual Groundwater Monitoring Report* (AGMR) include the semi-annual groundwater monitoring activities completed at the site during February and November 2014, to further evaluate the concentrations of constituents of concern (COCs) in groundwater at the site. Based on available data, affected soil is still present at the site. Remaining impacted soils with concentrations exceeding regulatory standards are scheduled to be excavated, and transported to an approved landfarm for disposal/treatment. Based on the information presented in the attached report, Enterprise recommends the evaluation of total dissolved solids concentrations in groundwater at the site and continued semi-annual groundwater monitoring at the site to monitor natural attenuation of COCs in groundwater.

Enterprise appreciates the OCD's continued assistance and guidance with this project. 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.

Sincerely,

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

Rodney M. Sartor, REM
Director, Environmental

/dep
Attachment

cc: Mr. Jim Griswold – NM OCD, Santa Fe, NM
Mr. Kyle Summers – Apex, Aztec, NM
Ms. Shari Ketcham – BLM, Farmington

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

1100 LOUISIANA STREET
HOUSTON, TX 77002-5227
www.enterpriseproducts.com

ANNUAL GROUNDWATER MONITORING REPORT
(February and November 2014 Sampling Events)

Property:

Lateral K-7 Pipeline Release (7/15/2013)
SW 1/4, S15 T26N R7W
Rio Arriba County, New Mexico
OCD RP: 3R-452

June 29, 2015
Apex Project No. 7030414G013

Prepared for:

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

Prepared by:

Heather M. Woods, P.G.
Senior Project Manager

Elizabeth Scaggs, P.G.
Division Director

Annual Groundwater Monitoring Report
(February and November 2014 Sampling Events)
Lateral K-7 Pipeline Release (7/15/2013)
Executive Summary

The Lateral K-7 (7/15/2013) pipeline release site is located in the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the southwest (SW) 1/4 of Section 15, Township 26 North, Range 7 West, in Rio Arriba County, New Mexico (36.47945N, 107.56501W), referred to hereinafter as the "Site" or "subject Site". The Site is located on private land surrounded by native vegetation rangeland periodically interrupted by oil and gas production and gathering facilities, including three Enterprise natural gas gathering pipelines which traverse the area from approximately northeast to southwest.

A natural gas condensate release was discovered at the Site on July 15, 2013. During July 2013, field screening of one confirmation soil sample collected from the excavation by Animas Environmental Services (AES) indicated hydrocarbon affected soils were present at the release Site. The excavation was backfilled with clean imported fill following repair of the pipeline.

During October 2013, five (5) soil borings (SB-1 through SB-5) were advanced on-site by AES to further investigate the extent of impact to soils and groundwater. Subsequent to advancement, the soil borings were completed as groundwater monitoring wells (MW-1 through MW-5). Based on laboratory analytical results, constituent of concern (COC) concentrations in soil were identified in the area of SB-2 that were above the New Mexico Energy, Minerals and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) *Remediation Action Levels* (RALs) and in groundwater (MW-1, MW-2, and MW-3) above the New Mexico Water Quality Control Commission (WQCC) *Groundwater Quality Standards (GQSs).*

Semi-annual groundwater monitoring events were conducted on February 19, 2014, by AES, and on November 19, 2014, by Apex TITAN, Inc. (Apex) to further evaluate groundwater COC concentrations over time. Findings and recommendations based on these activities are as follows:

- **The groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3 during the February 2014 sampling event exhibited benzene concentrations ranging from 22 µg/L to 34 µg/L, which exceed the WQCC GQS of 10 µg/L**.

- **Report the groundwater monitoring results to the OCD;**

- **Based on available data, affected soil is still present at the Site. A portion of the Lateral K-7 pipeline is being exposed to replace sections of the pipeline. Excavation of the remaining impacted soils is planned in conjunction with planned replacement activities of portions of the Lateral K-7 pipeline. Impacted soils with COC concentrations exceeding OCD *RALs* will be transported to a landfarm for disposal/treatment.**

- **Evaluate total dissolved solids concentrations in groundwater at the Site; and,**

- **Continue semi-annual groundwater monitoring at the Site to evaluate natural attenuation of COCs in groundwater and determine if additional delineation of the groundwater COC plume is needed.**

TABLE OF CONTENTS

LIST OF APPENDICES

ANNUAL GROUNDWATER MONITORING REPORT
(February and November 2014 Sampling Events)

Lateral K-7 Pipeline Release (7/15/2013)
SW 1/4, S15 T26N R7W
Rio Arriba County, New Mexico
OCD RP: 3R-452

Apex Project No. 7030414G013

1.0 INTRODUCTION

1.1 Site Description & Background

The Lateral K-7 (7/15/2013) pipeline release site is located in the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the southwest (SW) 1/4 of Section 15, Township 26 North, Range 7 West, in Rio Arriba County, New Mexico (36.47945N, 107.56501W), referred to hereinafter as the "Site" or "subject Site". The Site is located on private land surrounded by native vegetation rangeland periodically interrupted by oil and gas production and gathering facilities, including three Enterprise natural gas gathering pipelines which traverse the area from approximately northeast to southwest.

A natural gas condensate release was discovered at the Site on July 15, 2013. On July 18, 2013 Enterprise initiated excavation activities and completed the appropriate pipeline repairs. One confirmation soil sample was collected from the excavation by Animas Environmental Services (AES). The excavation was then backfilled with clean imported fill. Based on initial field screening results, volatile organic compound (VOC) concentrations were above New Mexico Energy, Minerals and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) *Remediation Action Levels* (RALs) *(Continued Site Assessment Workplan, dated September 25, 2013 – AES)*.

During October 2013, five (5) soil borings (SB-1 through SB-5) were advanced on-site by AES to further investigate the extent of impact to soils and groundwater. Subsequent to advancement, the soil borings were completed as groundwater monitoring wells (MW-1 through MW-5). Based on laboratory analytical results, constituent of concern (COC) concentrations in soil were identified in the area of SB-2 that were above the OCD *RALs* and in groundwater (MW-1, MW-2, and MW-3) above the New Mexico Water Quality Control Commission (WQCC) *Groundwater Quality Standards* (GQSs) *(Groundwater Investigation Report, dated March 19, 2013 – AES).*

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

The Site location is depicted on Figure 1 of Appendix A which was reproduced from a portion of the 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 in relation to pertinent structures and general Site boundaries, is included as Figure 3 of Appendix A.

1.2 Scope of Work

The objective of the groundwater monitoring event was to further evaluate COC concentrations in groundwater at the Site.

1.3 Standard of Care, Limitations & Reliance

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

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

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

2.0 SAMPLING PROGRAM

Semi-annual groundwater sampling events were conducted on February 19, 2014 by AES, and on November 19, 2014, by Heather Woods and Ranee Deechilly, Apex environmental professionals.

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 purged of three casing volumes or until effectively dry, utilizing a disposable bailer. Subsequent to the completion of the purging process and the recovery of groundwater to near static levels, one (1) groundwater sample was collected from each monitoring well.

Groundwater samples were collected in laboratory supplied containers and placed on ice in a cooler secured with a custody seal. The samples collected during February 2014 were shipped under proper chain-of-custody to ALS Environmental in Houston, Texas (ALS did not provide custody

seals for the sample containers), while the samples collected during November 2014 were relinquished to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico.

3.0 LABORATORY ANALYTICAL PROGRAM

The groundwater samples collected from the monitoring wells during the groundwater sampling events were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) utilizing EPA SW-846 Method #8021. The sample containers for organic analyses were pre-preserved with hydrochloric acid (HCl) for the February 2014 sampling event and mercuric chloride ($HgCl_2$) for the November 2014 sampling event.

A summary of the per-event analysis, sample type, sample frequency and EPA-approved methods are presented on the following table.

Analysis	Sample Type	No. of Samples (February/November)	EPA Method
BTEX	Groundwater	5/5	SW-846 8021

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

4.0 GROUNDWATER FLOW DIRECTION

Each of the monitoring wells has been surveyed for top-of-casing (TOC) elevations. Prior to sample collection, Apex gauged the depth to fluids in each monitoring well. The groundwater flow direction (gradient) at the Site is generally toward the north. The calculated gradient during the February and November 2014 monitoring events averages approximately 0.005 ft/ft across the Site.

Groundwater measurements collected during the February and November 2014 gauging events are presented with TOC elevations in Table 2 (Appendix B). Groundwater gradient map for the February and November 2014 events are included as Figure 4A and 4B, respectively (Appendix A).

5.0 DATA EVALUATION

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

5.1 Groundwater Samples

Apex compared BTEX concentrations or laboratory reporting limits (RLs) associated with the groundwater samples collected from monitoring wells during the February and November 2014 sampling events to the New Mexico WQCC GQSs. However, the WQCC *GQSs* may not be applicable since the initial groundwater-bearing unit may not be considered an “Underground

Source of Drinking Water" as defined in 19.15.2 NMAC *General Provisions for Oil and Gas Operations* due to potentially elevated total dissolved solids (TDS) concentrations. TDS concentrations have not yet been established for groundwater at this site and will be evaluated during the next semi-annual monitoring event. The results of the groundwater sample analyses are summarized in Table 1 of Appendix B. A Groundwater Quality Standards Exceedance Zone map for February 2014 is provided as Figure 5A of Appendix A.

February 2014:

Benzene, Toluene, Ethylbenzene, and Xylenes

The groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3 exhibited benzene concentrations ranging from 22 micrograms per liter (µg/L) (MW-3) to 34 µg/L (MW-1), which exceeded the WQCC GQS of 10 µg/L. The groundwater samples collected from the remaining monitoring wells exhibited benzene concentrations ranging from below laboratory RLs to 2.0 µg/L (MW-4), which are below the WQCC GQS of 10 µg/L.

The groundwater samples collected from monitoring wells MW-1 through MW-5 exhibited toluene concentrations ranging from below laboratory RLs to 3 µg/L (MW-3), which are below the WQCC GQS of 750 µg/L.

The groundwater samples collected from monitoring wells MW-1 through MW-5 exhibited ethylbenzene concentrations below the laboratory RLs, which are below the WQCC GQS of 750 µg/L.

The groundwater samples collected from monitoring wells MW-1 through MW-5 exhibited xylenes concentrations ranging from below laboratory RLs to 11 µg/L (MW-1), which are below the WQCC GQS of 620 µg/L.

No data qualifier flags were associated with the February 2014 analytical results.

November 2014:

Benzene, Toluene, Ethylbenzene, and Xylenes

The groundwater samples collected from monitoring wells MW-1 through MW-5 exhibited benzene concentrations ranging from below laboratory RLs to 3.3 µg/L (MW-1), which are below the WQCC GQS of 10 µg/L.

The groundwater samples collected from monitoring wells MW-1 through MW-5 exhibited toluene concentrations ranging from below the laboratory RLs to 3.9 µg/L (MW-1), which are below the WQCC GQS of 750 µg/L.

The groundwater samples collected from monitoring wells MW-1 through MW-5 exhibited ethylbenzene concentrations below laboratory RLs, which are below the WQCC GQS of 750 µg/L.

The groundwater samples collected from monitoring wells MW-1 through MW-5 exhibited xylenes concentrations ranging from below the laboratory RLs to 7.9 µg/L (MW-1), which are below the WQCC GQS of 620 µg/L.

No data qualifier flags were associated with the November 2014 analytical results.

6.0 FINDINGS

Semi-annual groundwater monitoring events were conducted at the Lateral K-7 pipeline release (7/15/2013) site during February and November 2014. The Site is located in the SW 1/4 of Section 15, Township 26 North, Range 7 West, in Rio Arriba County, New Mexico (36.47945N, 107.56501W). The Site is surrounded by native vegetation rangeland periodically interrupted by oil and gas production and gathering facilities, including three Enterprise natural gas gathering pipelines which traverse the area from approximately northeast to southwest. The objective of the groundwater monitoring events was to further evaluate the concentrations of COCs in groundwater.

- The groundwater flow direction at the Site is generally towards the north, with an approximate gradient of 0.005 ft/ft across the Site.

- **The groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3 during the February 2014 sampling event exhibited benzene concentrations ranging from 22 µg/L to 34 µg/L, which exceed the WQCC GQS of 10 µg/L**. However, samples collected from all Site monitoring wells (MW-1 through MW-5) during the November 2014 sampling event did not exhibit benzene concentrations above the WQCC GQSs.

- The groundwater samples collected from monitoring wells MW-1 through MW-5 during the February and November 2014 sampling events did not exhibit toluene, ethylbenzene, or xylenes concentrations above the respective WQCC GQSs.

7.0 RECOMMENDATIONS

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

- **Report the groundwater monitoring results to the OCD;**

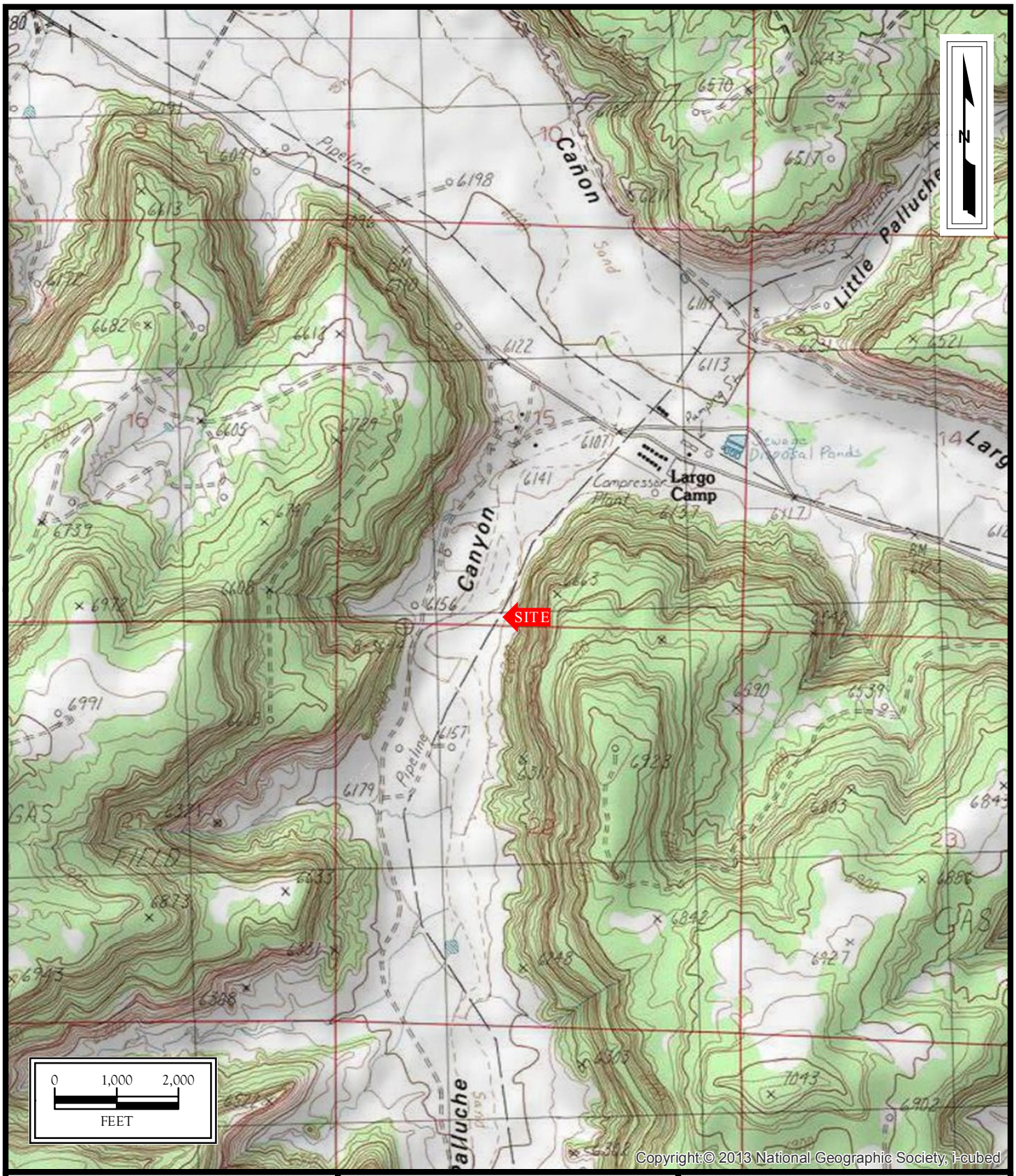
- **Based on available data, affected soil is still present at the Site. A portion of the Lateral K-7 pipeline is being exposed to replace sections of the pipeline. Excavation of the remaining impacted soils is planned in conjunction with planned replacement activities of portions of the Lateral K-7 pipeline. Impacted soils with COC concentrations exceeding OCD *RALs* will be transported to a landfarm for disposal/treatment.**

- **Evaluate TDS concentrations in groundwater at the Site; and,**

- **Continue semi-annual groundwater monitoring at the Site to evaluate natural attenuation of COCs in groundwater and determine if additional delineation of the groundwater COC plume is needed.**

APPENDIX A

Figures



Lateral K-7 (07/15/13)
Pipeline Release
SW1/4 S15 T26N R7W
Rural Rio Arriba County, New Mexico
36.47945N, 107.56501W

Project No. 7030414G013.001

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

FIGURE 1
Topographic Map
Smouse Mesa, NM Quadrangle
1985

Lateral K-7 (07/15/13)
Pipeline Release
SW1/4 S15 T26N R7W
Rural Rio Arriba County, New Mexico
36.47945N, 107.56501W

Project No. 7030414G013.001

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606 South Rio Grande, Suite A
Aztec, NM 87410
Phone: (505) 334-5200
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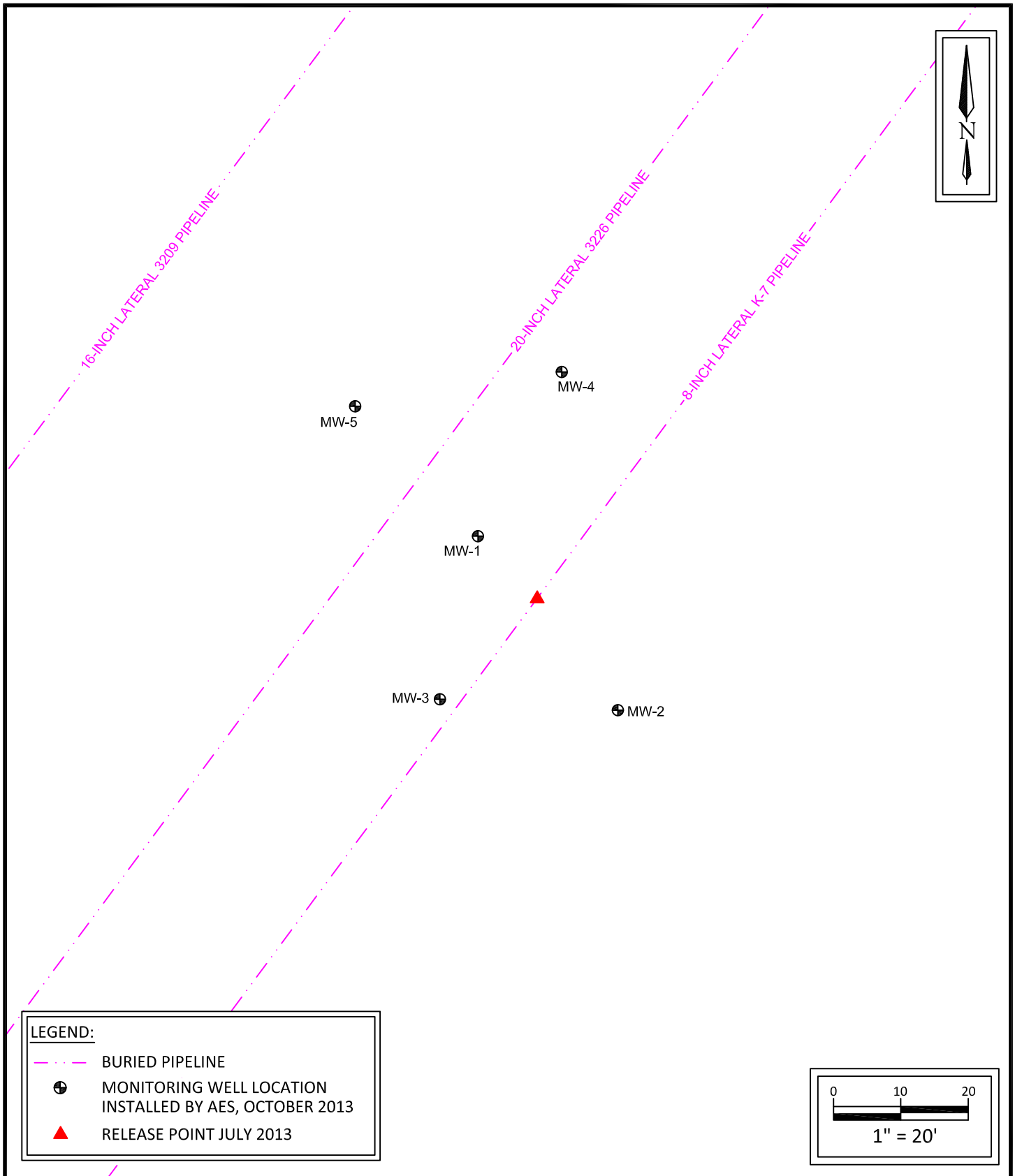
FIGURE 2
Site Vicinity Map



Lateral K-7 (07/15/13)
Pipeline Release
SW¼ S15 T26N R7W
Rural Rio Arriba County, NM
36.47945N, 107.56501W

Project No. 7030414G013

Apex TITAN, Inc.
606 S. Rio Grande, Suite A
Aztec, New Mexico 87410
Phone: (505) 334-5200
www.apexcos.com
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FIGURE 3
Site Map with
Monitoring Well Locations

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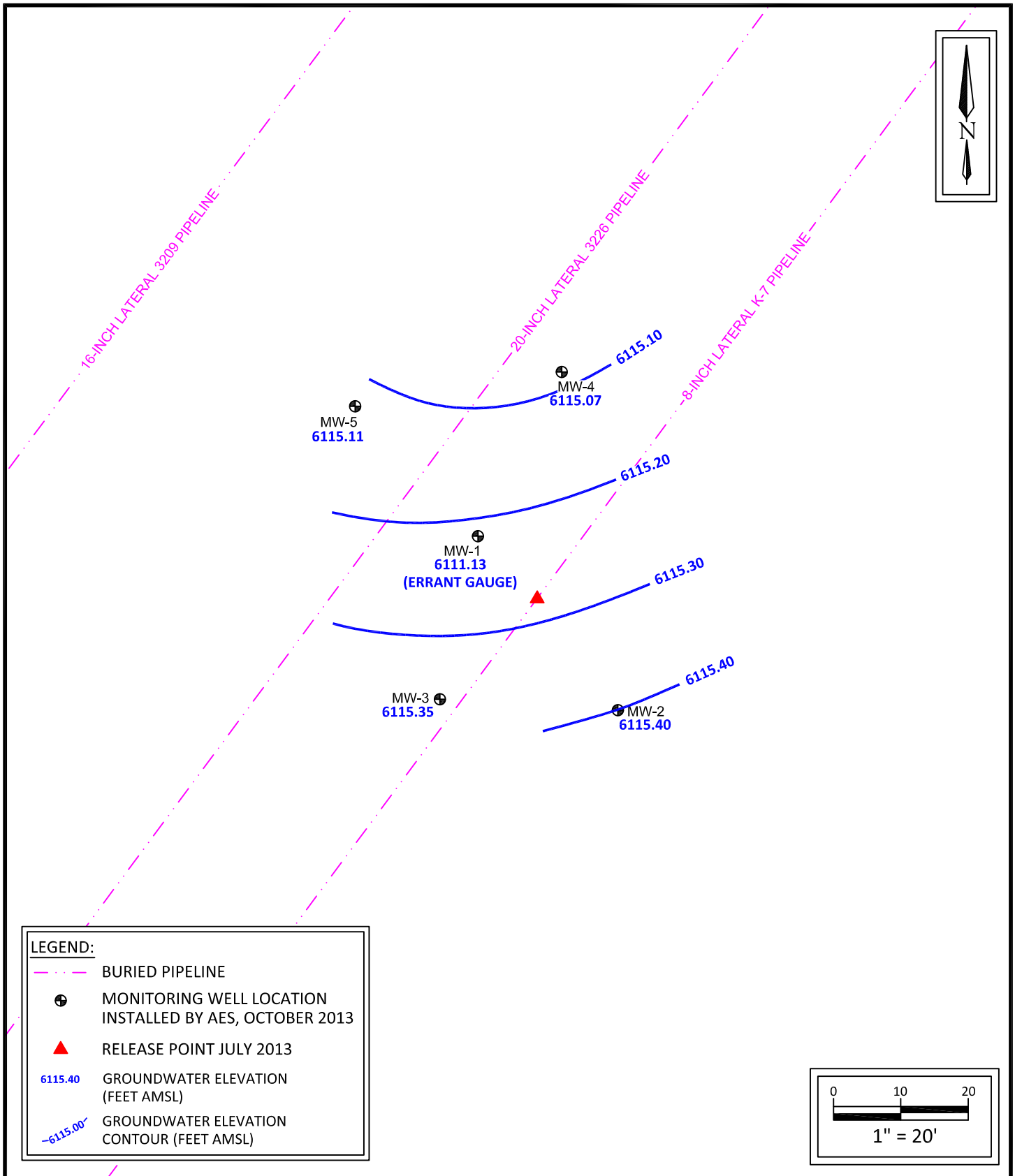

Lateral K-7 (07/15/13)
Pipeline Release
SW¼ S15 T26N R7W
Rural Rio Arriba County, NM
36.47945N, 107.56501W

Project No. 7030414G013

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

FIGURE 4A
Groundwater Gradient Map
February 2014

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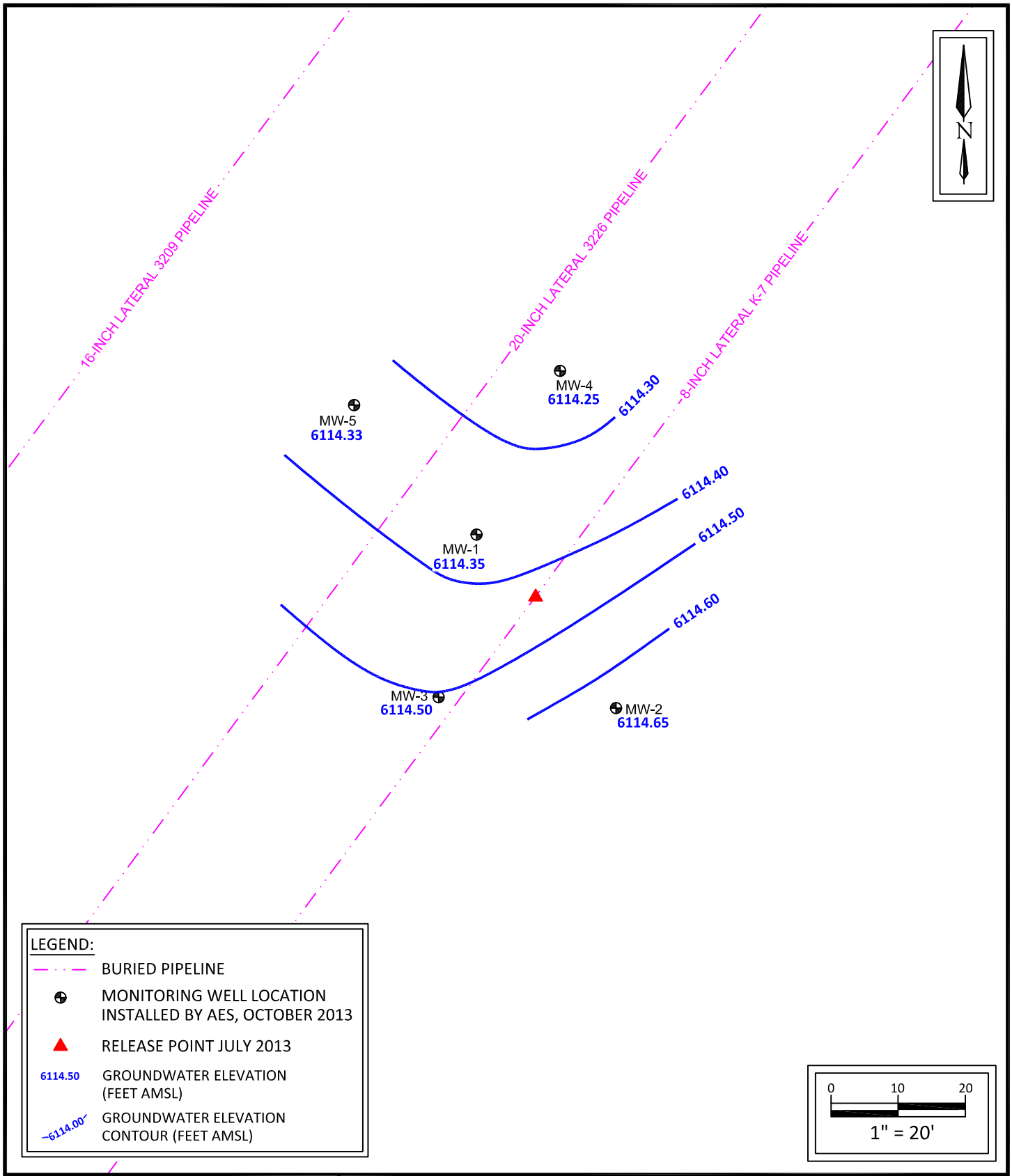

Lateral K-7 (07/15/13)
Pipeline Release
SW¼ S15 T26N R7W
Rural Rio Arriba County, NM
36.47945N, 107.56501W

Project No. 7030414G013

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

FIGURE 4B
Groundwater Gradient Map
November 2014

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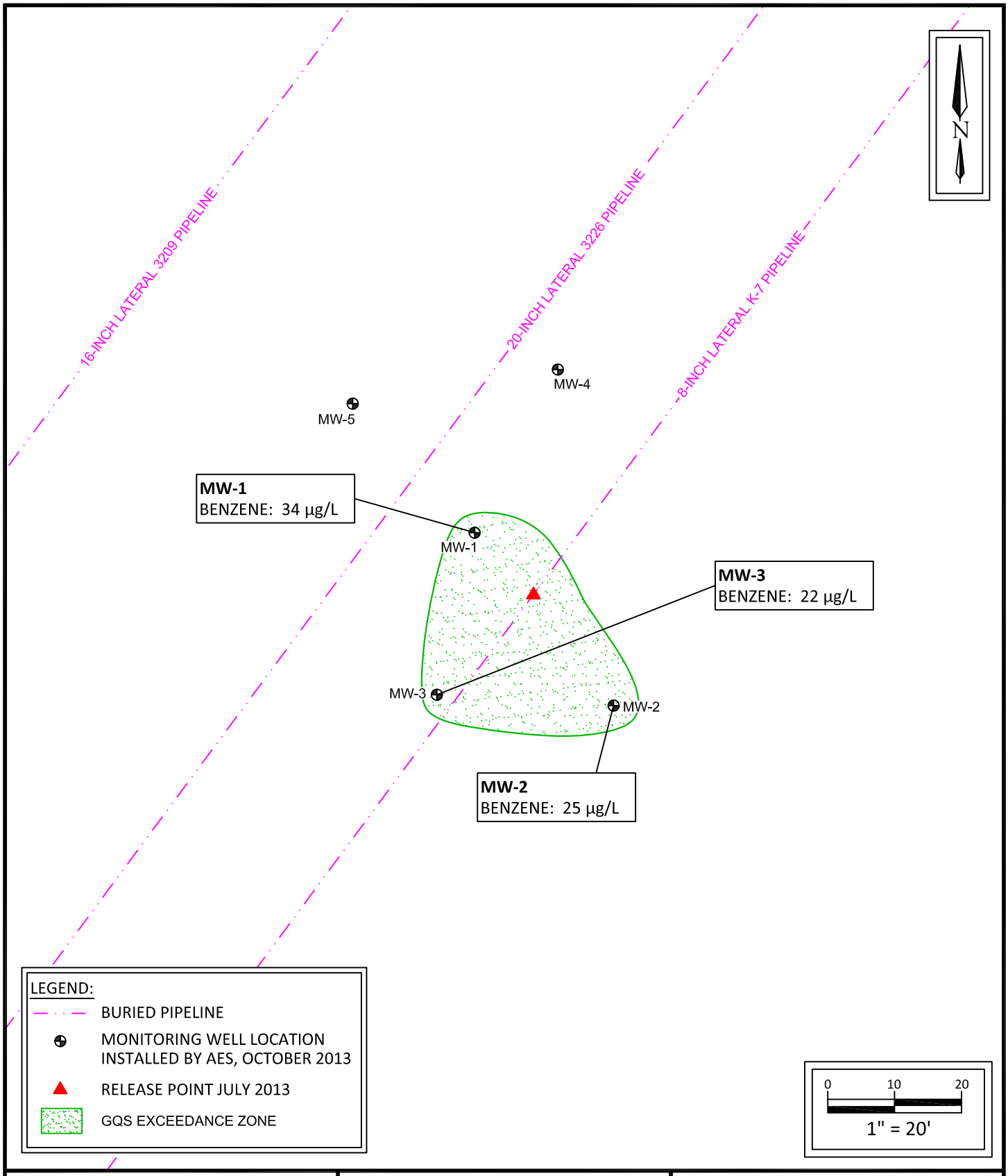

Lateral K-7 (07/15/13)
Pipeline Release
SW¼ S15 T26N R7W
Rural Rio Arriba County, NM
36.47945N, 107.56501W

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Apex TITAN, Inc.
606 S. Rio Grande, Suite A
Aztec, New Mexico 87410
Phone: (505) 334-5200
www.apexcos.com
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FIGURE 5A
Groundwater GQS Exceedance Zone Map
February 2014

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APPENDIX B

Tables

TABLE 1

Lateral K-7 Pipeline Release (7/15/2013)

GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		**10**	**750**	**750**	**620**	**NE**	**NE**
MW-1	11.21.13	**14**	3.4	<1.0	5.8	0.064	<1.0
	2.19.14	**34**	2	<1	11	NA	NA
	11.19.14	3.3	3.9	<2.0	7.9	NA	NA
MW-2	11.21.13	**26**	<2.0	<2.0	5.8	0.14	<1.0
	2.19.14	**25**	<1	<1	6	NA	NA
	11.19.14	<2.0	<2.0	<2.0	<4.0	NA	NA
MW-3	11.21.13	**35**	4.5	<2.0	12	0.19	<1.0
	2.19.14	**22**	3	<1	9	NA	NA
	11.19.14	2.6	<2.0	<2.0	<4.0	NA	NA
MW-4	11.21.13	7.4	<2.0	<2.0	<4.0	<0.10	<1.0
	2.19.14	2	<1	<1	<3	NA	NA
	11.19.14	<2.0	<2.0	<2.0	<4.0	NA	NA
MW-5	11.21.13	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0
	2.19.14	<1	<1	<1	<3	NA	NA
	11.19.14	<2.0	<2.0	<2.0	<4.0	NA	NA

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

NA = Not Analyzed

NE = Not Established

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

TABLE 2
Lateral K-7 Pipeline Release (7/15/2013)
GROUNDWATER ELEVATIONS

Well I.D.	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness	TOC Elevations (feet AMSL)	Groundwater Elevation (feet AMSL)
MW-1	11.21.13	ND	40.16	ND	6155.35	6115.19
	2.19.14	ND	44.22	ND	6155.35	6111.13
	11.19.14	ND	41.00	ND	6155.35	6114.35
MW-2	11.21.13	ND	39.63	ND	6155.10	6115.47
	2.19.14	ND	39.70	ND	6155.10	6115.40
	11.19.14	ND	40.45	ND	6155.10	6114.65
MW-3	11.21.13	ND	39.83	ND	6155.25	6115.42
	2.19.14	ND	39.90	ND	6155.25	6115.35
	11.19.14	ND	40.75	ND	6155.25	6114.50
MW-4	11.21.13	ND	39.71	ND	6154.87	6115.16
	2.19.14	ND	39.80	ND	6154.87	6115.07
	11.19.14	ND	40.62	ND	6154.87	6114.25
MW-5	11.21.13	ND	37.03	ND	6152.21	6115.18
	2.19.14	ND	37.10	ND	6152.21	6115.11
	11.19.14	ND	37.88	ND	6152.21	6114.33

BTOC - below top of casing
TOC - top of casing
ND - not detected

APPENDIX C

Laboratory Analytical Reports & Chain of Custody Documentation

28-Feb-2014

Heather Woods
Animas Environmental Services
624 E. Comanche
Farmington, NM 87401

Tel: (505) 436-2064
Fax: (505) 324-2022

Re: Lateral K-7 July 2013 Pipeline Release Work Order: **14021046**

Dear Heather,

ALS Environmental received 6 samples on 22-Feb-2014 09:15 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 16.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Electronically approved by: Jumoke M. Lawal

Joni S. Blankfield
Project Manager

Certificate No: T104704231-13-12

ALS Environmental

Date: 28-Feb-14

Client: Animas Environmental Services
Project: Lateral K-7 July 2013 Pipeline Release
Work Order: **14021046**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
14021046-01	MW-1	Water		2/19/2014 12:08	2/22/2014 09:15	☐
14021046-02	MW-2	Water		2/19/2014 13:01	2/22/2014 09:15	☐
14021046-03	MW-3	Water		2/19/2014 13:57	2/22/2014 09:15	☐
14021046-04	MW-4	Water		2/19/2014 11:29	2/22/2014 09:15	☐
14021046-05	MW-5	Water		2/19/2014 10:38	2/22/2014 09:15	☐
14021046-06	VBLKW-140212	Trip Blank		2/19/2014	2/22/2014 09:15	☐

Client:	Animas Environmental Services
Project:	Lateral K-7 July 2013 Pipeline Release
Work Order:	14021046

Case Narrative

A Trip Blank was received however, it was not listed on the chain of custody for analysis. The Trip Blank was logged for BTEX (8021) analysis per the Analytical Request Form.

ALS Environmental

Date: *28-Feb-14*

Client: Animas Environmental Services

Project: Lateral K-7 July 2013 Pipeline Release **Work Order:** 14021046

Sample ID: MW-1 **Lab ID:** 14021046-01

Collection Date: 2/19/2014 12:08 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX BY SW8021B			**SW8021B**			Analyst: **DNR**
m,p-Xylene	**8**		**2**	**ug/L**	1	2/26/2014 01:45 PM
o-Xylene	**3**		**1**	**ug/L**	1	2/26/2014 01:45 PM
Benzene	**34**		**1**	**ug/L**	1	2/26/2014 01:45 PM
Toluene	**2**		**1**	**ug/L**	1	2/26/2014 01:45 PM
Ethylbenzene	ND		1	ug/L	1	2/26/2014 01:45 PM
Xylenes, Total	**11**		**3**	**ug/L**	1	2/26/2014 01:45 PM
Surr: 4-Bromofluorobenzene	*111*		*75-129*	*%REC*	1	2/26/2014 01:45 PM
Surr: Trifluorotoluene	*92.8*		*75-130*	*%REC*	1	2/26/2014 01:45 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *28-Feb-14*

Client: Animas Environmental Services

Project: Lateral K-7 July 2013 Pipeline Release **Work Order:** 14021046

Sample ID: MW-2 **Lab ID:** 14021046-02

Collection Date: 2/19/2014 01:01 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX BY SW8021B			**SW8021B**			Analyst: **DNR**
m,p-Xylene	**2**		**2**	**ug/L**	1	2/26/2014 02:13 PM
o-Xylene	**4**		**1**	**ug/L**	1	2/26/2014 02:13 PM
Benzene	**25**		**1**	**ug/L**	1	2/26/2014 02:13 PM
Toluene	ND		1	ug/L	1	2/26/2014 02:13 PM
Ethylbenzene	ND		1	ug/L	1	2/26/2014 02:13 PM
Xylenes, Total	**6**		**3**	**ug/L**	1	2/26/2014 02:13 PM
Surr: 4-Bromofluorobenzene	*119*		*75-129*	*%REC*	1	2/26/2014 02:13 PM
Surr: Trifluorotoluene	*98.5*		*75-130*	*%REC*	1	2/26/2014 02:13 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *28-Feb-14*

Client: Animas Environmental Services

Project: Lateral K-7 July 2013 Pipeline Release **Work Order:** 14021046

Sample ID: MW-3 **Lab ID:** 14021046-03

Collection Date: 2/19/2014 01:57 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX BY SW8021B			**SW8021B**			Analyst: **DNR**
m,p-Xylene	**6**		**2**	**ug/L**	1	2/26/2014 02:31 PM
o-Xylene	**4**		**1**	**ug/L**	1	2/26/2014 02:31 PM
Benzene	**22**		**1**	**ug/L**	1	2/26/2014 02:31 PM
Toluene	**3**		**1**	**ug/L**	1	2/26/2014 02:31 PM
Ethylbenzene	ND		1	ug/L	1	2/26/2014 02:31 PM
Xylenes, Total	**9**		**3**	**ug/L**	1	2/26/2014 02:31 PM
Surr: 4-Bromofluorobenzene	*115*		*75-129*	*%REC*	1	2/26/2014 02:31 PM
Surr: Trifluorotoluene	*95.4*		*75-130*	*%REC*	1	2/26/2014 02:31 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *28-Feb-14*

Client: Animas Environmental Services

Project: Lateral K-7 July 2013 Pipeline Release **Work Order:** 14021046

Sample ID: MW-4 **Lab ID:** 14021046-04

Collection Date: 2/19/2014 11:29 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX BY SW8021B			**SW8021B**			Analyst: **DNR**
m,p-Xylene	ND		2	ug/L	1	2/26/2014 02:48 PM
o-Xylene	ND		1	ug/L	1	2/26/2014 02:48 PM
Benzene	**2**		**1**	**ug/L**	1	2/26/2014 02:48 PM
Toluene	ND		1	ug/L	1	2/26/2014 02:48 PM
Ethylbenzene	ND		1	ug/L	1	2/26/2014 02:48 PM
Xylenes, Total	ND		3	ug/L	1	2/26/2014 02:48 PM
Surr: 4-Bromofluorobenzene	*110*		*75-129*	*%REC*	1	2/26/2014 02:48 PM
Surr: Trifluorotoluene	*91.7*		*75-130*	*%REC*	1	2/26/2014 02:48 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *28-Feb-14*

Client: Animas Environmental Services

Project: Lateral K-7 July 2013 Pipeline Release **Work Order:** 14021046

Sample ID: MW-5 **Lab ID:** 14021046-05

Collection Date: 2/19/2014 10:38 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX BY SW8021B			**SW8021B**			Analyst: **DNR**
m,p-Xylene	ND		2	ug/L	1	2/26/2014 03:05 PM
o-Xylene	ND		1	ug/L	1	2/26/2014 03:05 PM
Benzene	ND		1	ug/L	1	2/26/2014 03:05 PM
Toluene	ND		1	ug/L	1	2/26/2014 03:05 PM
Ethylbenzene	ND		1	ug/L	1	2/26/2014 03:05 PM
Xylenes, Total	ND		3	ug/L	1	2/26/2014 03:05 PM
Surr: 4-Bromofluorobenzene	*110*		*75-129*	*%REC*	1	2/26/2014 03:05 PM
Surr: Trifluorotoluene	*92.4*		*75-130*	*%REC*	1	2/26/2014 03:05 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *28-Feb-14*

Client: Animas Environmental Services

Project: Lateral K-7 July 2013 Pipeline Release **Work Order:** 14021046

Sample ID: VBLKW-140212 **Lab ID:** 14021046-06

Collection Date: 2/19/2014 **Matrix:** TRIP BLANK

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX BY SW8021B			**SW8021B**			Analyst: **DNR**
m,p-Xylene	ND		2	ug/L	1	2/26/2014 01:28 PM
o-Xylene	ND		1	ug/L	1	2/26/2014 01:28 PM
Benzene	ND		1	ug/L	1	2/26/2014 01:28 PM
Toluene	ND		1	ug/L	1	2/26/2014 01:28 PM
Ethylbenzene	ND		1	ug/L	1	2/26/2014 01:28 PM
Xylenes, Total	ND		3	ug/L	1	2/26/2014 01:28 PM
Surr: 4-Bromofluorobenzene	*119*		*75-129*	*%REC*	1	2/26/2014 01:28 PM
Surr: Trifluorotoluene	*99.5*		*75-130*	*%REC*	1	2/26/2014 01:28 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 14021046
Client: Animas Environmental Services
Project: Lateral K-7 July 2013 Pipeline Release

DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
Batch ID R161951 **Test Name:** BTEX by SW8021B						
14021046-01 ^	MW-1	Water	2/19/2014 12:08:00 PM			2/26/2014 01:45 PM
14021046-02 ^	MW-2		2/19/2014 1:01:00 PM			2/26/2014 02:13 PM
14021046-03 ^	MW-3		2/19/2014 1:57:00 PM			2/26/2014 02:31 PM
14021046-04 ^	MW-4		2/19/2014 11:29:00 AM			2/26/2014 02:48 PM
14021046-05 ^	MW-5		2/19/2014 10:38:00 AM			2/26/2014 03:05 PM
14021046-06 ^	VBLKW-140212	Trip Blank	2/19/2014			2/26/2014 01:28 PM

Batch ID: **R161951** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-140226-R161951** Units: **µg/L** Analysis Date: **2/26/2014 10:48 AM**

Client ID: Run ID: **BTEX1_140226A** SeqNo: **3543665** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	ND	2.0								
o-Xylene	ND	1.0								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 4-Bromofluorobenzene	34.33	1.0	*30*	*0*	*114*	*75-129*	*0*			
Surr: Trifluorotoluene	29.44	1.0	*30*	*0*	*98.1*	*75-130*	*0*			

LCS Sample ID: **BLCSS1-140226-R161951** Units: **µg/L** Analysis Date: **2/26/2014 10:13 AM**

Client ID: Run ID: **BTEX1_140226A** SeqNo: **3543664** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	44.05	2.0	40	0	110	75-125				
o-Xylene	22.12	1.0	20	0	111	75-125				
Benzene	21.48	1.0	20	0	107	75-126				
Toluene	21.64	1.0	20	0	108	75-125				
Ethylbenzene	21.79	1.0	20	0	109	75-125				
Xylenes, Total	66.16	3.0	60	0	110	75-125				
Surr: 4-Bromofluorobenzene	33.92	1.0	*30*	*0*	*113*	*75-129*	*0*			
Surr: Trifluorotoluene	29.18	1.0	*30*	*0*	*97.3*	*75-130*	*0*			

MS Sample ID: **14021044-03AMS** Units: **µg/L** Analysis Date: **2/26/2014 11:26 AM**

Client ID: Run ID: **BTEX1_140226A** SeqNo: **3543667** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	45.68	2.0	40	0	114	75-125				
o-Xylene	22.06	1.0	20	0	110	75-125				
Benzene	22.94	1.0	20	0	115	75-126				
Toluene	23.01	1.0	20	0	115	75-125				
Ethylbenzene	22.94	1.0	20	0	115	75-125				
Xylenes, Total	67.74	3.0	60	0	113	75-125				
Surr: 4-Bromofluorobenzene	34.43	1.0	*30*	*0*	*115*	*75-129*	*0*			
Surr: Trifluorotoluene	29	1.0	*30*	*0*	*96.7*	*75-130*	*0*			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Animas Environmental Services
Work Order: 14021046
Project: Lateral K-7 July 2013 Pipeline Release

QC BATCH REPORT

Batch ID: **R161951** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **14021044-03AMSD** Units: **µg/L** Analysis Date: **2/26/2014 11:43 AM**

Client ID: Run ID: **BTEX1_140226A** SeqNo: **3543668** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	46.43	2.0	40	0	116	75-125	45.68	1.61	20	
o-Xylene	22.48	1.0	20	0	112	75-125	22.06	1.93	20	
Benzene	22.94	1.0	20	0	115	75-126	22.94	0.0178	20	
Toluene	23.18	1.0	20	0	116	75-125	23.01	0.737	20	
Ethylbenzene	23.16	1.0	20	0	116	76-125	22.94	0.938	20	
Xylenes, Total	68.91	3.0	60	0	115	75-125	67.74	1.71	20	
Surr: 4-Bromofluorobenzene	34.63	1.0	*30*	*0*	*115*	*75-129*	*34.43*	*0.576*	*20*	
Surr: Trifluorotoluene	29.16	1.0	*30*	*0*	*97.2*	*75-130*	*29*	*0.535*	*20*	

The following samples were analyzed in this batch:

14021046-01A	14021046-02A	14021046-03A
14021046-04A	14021046-05A	14021046-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Animas Environmental Services
Project: Lateral K-7 July 2013 Pipeline Release
WorkOrder: **14021046**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
ug/L	Micrograms per Liter

ALS Environmental

Sample Receipt Checklist

Client Name: **ANIMAS ENVIRONMENTAL SERV** Date/Time Received: **22-Feb-14 09:15**

Work Order: **14021046** Received by: **SAY**

Checklist completed by Bethany McDaniel 24-Feb-14 Reviewed by: Joni S. Blankfield 28-Feb-14

eSignature / Date / eSignature / Date

Matrices: water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	0.2C/0.2C c/u	IR3	
Cooler(s)/Kit(s):	5708		
Date/Time sample(s) sent to storage:			
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

ALS Environmental

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Middletown, PA +1 717 944 5541
Spring City, PA +1 610 948 4903
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

Page _____ of _____

COC ID: 101515

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Lateral K-7 July 2013 Pipeline Releas	A	BTEX (8021)
Work Order		Project Number	ARF W-AES-02-12-14-JES-02	B	
Company Name	Animas Environmental Services	Bill To Company	Enterprise Products	C	
Send Report To	Heather Woods	Invoice Attn	Farah Ullah		
Address	624 E. Cornanche	Address	1100 Louisiana		
City/State/Zip	Farmington, NM 87401	City/State/Zip	Hosuton, TX 77002		
Phone	(505) 564-2281	Phone	(713) 381-4357		
Fax	(505) 324-2022	Fax			
e-Mail Address	hwoods@animasenvironmental.com	e-Mail Address		J	

14021046

ANIMAS ENVIRONMENTAL SERVICES: Animas Environmental Services

Project: Lateral K-7 Pipeline Release

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-1	2/19/2014	1208	H2O	HCL	3	X										
2	MW-2		1301			3	X										
3	MW-3		1357			3	X										
4	MW-4		1129			3	X										
5	MW 5		1038			3	X										
6																	
7																	
8																	
9																	
10																	

Page 15 of 16

Sampler(s) Please Print & Sign: Lavina Lamone

Shipment Method: Fed Ex

Required Turnaround Time: (Check Box) ☑ Std 10 WK Days ☐ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Notes:
Relinquished by:	Date: 02/22/14	Time: 0915	Received by (Laboratory):	Cooler ID / Cooler Temp.
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

QC Package: (Check One Box Below)
☑ Level II Std QC ☐ Level III Std QC/Raw Data ☐ Level IV SW846/CLP ☐ Other / EDD ☐ TRRP CheckList ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL
Date: 2/21/2014 Time:
Name: Jesse Sprague
Company: AES

Seal Broken By:
Date: 2/22/14

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL
Date: 2/21/2013 Time:
Name: Jesse Sprague
Company: AES

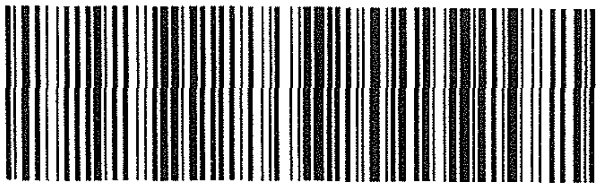
Seal Broken By:
Date: 2/22/14

FedEx
TRK# 0215 8042 5199 1595

SATURDAY 12:00P
PRIORITY OVERNIGHT

77099
TX-US
IAH

X0 SGRA



0952 21FEB14 FMNA 51AC1/562F/650D

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

November 26, 2014

Heather Woods
APEX TITAN
606 S. Rio Grande Unit A
Aztec, NM 87410
TEL: (505) 716-2787
FAX

RE: Lateral K-7 July 2013 OrderNo.: 1411843

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 11/20/2014 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Lateral K-7 July 2013
Lab Order: 1411843

Lab ID: 1411843-001 **Collection Date:** 11/19/2014 12:04:00 PM
Client Sample ID: MW-1 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	3.3	2.0		µg/L	2	11/21/2014 6:56:05 PM	R22716
Toluene	3.9	2.0		µg/L	2	11/21/2014 6:56:05 PM	R22716
Ethylbenzene	ND	2.0		µg/L	2	11/21/2014 6:56:05 PM	R22716
Xylenes, Total	7.9	4.0		µg/L	2	11/21/2014 6:56:05 PM	R22716
Surr: 4-Bromofluorobenzene	102	66.6-167		%REC	2	11/21/2014 6:56:05 PM	R22716

Lab ID: 1411843-002 **Collection Date:** 11/19/2014 12:11:00 PM
Client Sample ID: MW-2 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	2.0		µg/L	2	11/21/2014 7:23:05 PM	R22716
Toluene	ND	2.0		µg/L	2	11/21/2014 7:23:05 PM	R22716
Ethylbenzene	ND	2.0		µg/L	2	11/21/2014 7:23:05 PM	R22716
Xylenes, Total	ND	4.0		µg/L	2	11/21/2014 7:23:05 PM	R22716
Surr: 4-Bromofluorobenzene	105	66.6-167		%REC	2	11/21/2014 7:23:05 PM	R22716

Lab ID: 1411843-003 **Collection Date:** 11/19/2014 12:33:00 PM
Client Sample ID: MW-3 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	2.6	2.0		µg/L	2	11/21/2014 7:50:11 PM	R22716
Toluene	ND	2.0		µg/L	2	11/21/2014 7:50:11 PM	R22716
Ethylbenzene	ND	2.0		µg/L	2	11/21/2014 7:50:11 PM	R22716
Xylenes, Total	ND	4.0		µg/L	2	11/21/2014 7:50:11 PM	R22716
Surr: 4-Bromofluorobenzene	100	66.6-167		%REC	2	11/21/2014 7:50:11 PM	R22716

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
E	Value above quantitation range
J	Analyte detected below quantitation limits
O	RSD is greater than RSDlimit
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Lateral K-7 July 2013
Lab Order: 1411843

Lab ID: 1411843-004 **Collection Date:** 11/19/2014 11:11:00 AM
Client Sample ID: MW-4 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	2.0		µg/L	2	11/21/2014 8:17:36 PM	R22716
Toluene	ND	2.0		µg/L	2	11/21/2014 8:17:36 PM	R22716
Ethylbenzene	ND	2.0		µg/L	2	11/21/2014 8:17:36 PM	R22716
Xylenes, Total	ND	4.0		µg/L	2	11/21/2014 8:17:36 PM	R22716
Surr: 4-Bromofluorobenzene	101	66.6-167		%REC	2	11/21/2014 8:17:36 PM	R22716

Lab ID: 1411843-005 **Collection Date:** 11/19/2014 11:05:00 AM
Client Sample ID: MW-5 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	2.0		µg/L	2	11/21/2014 10:34:30 PM	R22716
Toluene	ND	2.0		µg/L	2	11/21/2014 10:34:30 PM	R22716
Ethylbenzene	ND	2.0		µg/L	2	11/21/2014 10:34:30 PM	R22716
Xylenes, Total	ND	4.0		µg/L	2	11/21/2014 10:34:30 PM	R22716
Surr: 4-Bromofluorobenzene	106	66.6-167		%REC	2	11/21/2014 10:34:30 PM	R22716

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
E	Value above quantitation range
J	Analyte detected below quantitation limits
O	RSD is greater than RSDlimit
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411843**

26-Nov-14

Client: APEX TITAN

Project: Lateral K-7 July 2013

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **R22716**	RunNo: **22716**
Prep Date:	Analysis Date: **11/21/2014**	SeqNo: **670142** 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	2.0								
Surr: 4-Bromofluorobenzene	23		20.00		113	66.6	167			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **R22716**	RunNo: **22716**
Prep Date:	Analysis Date: **11/21/2014**	SeqNo: **670143** 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	80	120			
Toluene	21	1.0	20.00	0	104	80	120			
Ethylbenzene	21	1.0	20.00	0	105	80	120			
Xylenes, Total	66	2.0	60.00	0	110	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		106	66.6	167			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **APEX AZTEC** Work Order Number: **1411843** RcptNo: 1

Received by/date: 11/20/14

Logged By: **Lindsay Mangin** 11/20/2014 7:15:00 AM

Completed By: **Lindsay Mangin** 11/20/2014 8:06:30 AM

Reviewed By: 11/20/14

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

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

Adjusted?

Checked by:

Special Handling (if applicable)

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

Person Notified: Date:

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

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location Aztec, NM

Project Manager Heather Woods

Laboratory: Hall Environmental

Address: Albuquerque, NM

Contact: Andy Freeman

Phone:

PO/SO #: 7030414G013

Lab use only
Due Date:

Temp. of coolers when received (C°): 2.5

1	2	3	4	5

Page 1 of 1

Sampler's Name: Heather Woods and Ranee Deechilly

Sampler's Signature: Heather M. Woods

Proj. No.: 7030414G013

Project Name: Lateral K-7 July 2013

No/Type of Containers: 40 mL

ANALYSIS REQUESTED: 8021 BTEX

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	8021 BTEX	Lab Sample ID (Lab Use Only)
W	11/19/14	1204			MW-1			3					X	1411843-001
W	11/19/14	1211			MW-2			3					X	-002
W	11/19/14	1233			MW-3			3					X	-003
W	11/19/14	1111			MW-4			3					X	-004
W	11/19/14	1105			MW-5			3					X	-005

NES HW

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Heather M. Woods	11/19/14	1710	Mustin Wolte	11/19/14	1710
Mustin Wolte	11/19/14	1800		11/20/14	0715

NOTES: Bill Enterprise Corporate Rate to Apex

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

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