AP-37

Plains
Lovington Deep 6” Line

Annual Report
2013

AMARILLO
921 North Bivins
Amarillo, Texas 79107
Phone 806.467.0607
Fax 806.467.0622

ARTESIA
408 West Texas Ave.
Artesia, New Mexico 88210
Phone 575.746.8768
Fax 575.748.8905

HOBBS
318 East Taylor Street
Hobbs, New Mexico 88241
Phone 505.393.4261
Fax 505.393.4658

MIDLAND
2901 State Highway 349
Midland, Texas 79706
Phone 432.522.2133
Fax 432.522.2180

OKLAHOMA CITY
7700 North Hudson Ave
Suite 10
Oklahoma City, Oklahoma 73116
Phone 405.486.7030
Fax 806.467.0622

SAN ANTONIO
13111 Lookout Way
San Antonio, Texas 78233
Phone 210.265.8025
Fax 210.568.2191

ENVIRONMENTAL CONSULTING
ENGINEERING
DRILLING
CONSTRUCTION
SPILL MANAGEMENT
GENERAL CONTRACTING

Toll Free: 866.742.0742
www.talonlpe.com

2013 ANNUAL GROUNDWATER MONITORING REPORT

LOVINGTON DEEP 6"
LEA COUNTY, NEW MEXICO
SRS #2002 - 10312
NMOCD REF. # AP-037

TALON/LPE PROJECT NO. 700376.051.01

Prepared by:

Brad Ivy
Project Manager

Paul Santos
Senior Engineer

TALON/LPE
2901 S. State Highway 349
Midland, Texas 79706

March 2014

Distribution List

Name	Title	Company or Agency	Mailing Address	e-mail
Jim Griswold	Environmental Engineer	NMOCD	1220 South St. Francis Drive Santa Fe, NM 87505	jim.griswold@state.nm.us
Geoffrey Leking	Environmental Engineer	NMOCD	1625 French Dr. Hobbs, NM 88231	geoffreyr.leking@state.nm.us
Brian Henington	Environmental Engineer	NMSLO – Santa Fe	P.O. Box 1148 Santa Fe, NM 87504	bhenington@slo.state.nm.us
Camille Bryant	Remediation Coordinator	Plains Pipeline	2530 Highway 214 Denver City, TX 79323	cjbryant@paalp.com
Jeff Dann	Senior Environmental Specialist	Plains Pipeline	P. O. Box 4648 Houston, TX 77210-4648	jpdann@paalp.com
File		Talon/LPE	318 East Taylor Street Hobbs, New Mexico 88240	skillingsworth@talonlpe.com

NMOCD - New Mexico Oil Conservation Division

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION AND OBJECTIVES

1.1 Site Background

The Lovington Deep 6" site is located approximately 5.8 miles southwest of Lovington in Lea County, New Mexico. A release of crude oil from the Deep 6" pipeline occurred on property which is primarily utilized as pasture/range with intermittent oil production facilities land and is owned by Chevron. The site is located within the West Lovington oil field and has no residence or surface water located within a 1,000-foot radius of the release point. The remediation area is surrounded by a barbed wire fence and is gated.

The site is situated within a physiographic region that is on the extreme south-western portion of the Southern High Plains as it grades into the Edwards Plateau to the south and southeast and the Chihuahuan Desert of the Trans-Pecos Region to the southwest.

The topography proximal to the site is typical of the Southern High Plains, essentially flat with shallow depressions, or playa lakes, dotting the landscape. The prominent surface features on the Southern High Plains are the approximately 19,250 ephemeral playa lakes; however the density of the playa lakes diminishes toward the southern extent of the Southern High Plains. During periods of rainfall, the playa lakes accumulate sheet runoff from watershed areas ranging in size from less than one square mile to several square miles. Only a small portion of drainage from rainfall occurs by streams. Playa lakes that collect storm water runoff can act as a recharge mechanism for groundwater.

The average elevation of the site area is approximately 3,915-feet above mean sea level with a slight slope to the southeast. The regional slope of the land surface in the Southern High Plains is approximately 100 feet per mile in a southeasterly direction.

In December 2002, a release of approximately 25 barrels (bbls) of crude oil occurred at the site due to corrosion of the Deep 6" pipeline. Ten (10) bbls of oil were recovered during initial response activities. Approximately 6,000 square feet of surface area was impacted by the release. During the initial remediation phase, soil that was impacted by the release was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm for treatment.

Soil remediation activities were initiated by Environmental Plus, Inc. (EPI) in 2003 and the soil phase of site remediation was closed in October 2005.

On February 5, 2007, Talon/LPE (Talon) was retained by Plains Marketing, L.P. (Plains) to assume groundwater remediation activities at the Lovington Deep 6" release site. Groundwater remediation activities at the site were previously conducted by Environmental Plus, Inc. (EPI).

1.2 Site Geology

The surficial deposits in Lea County are composed of Blackwater Draw (Illinoian) sediments, Ogallala sediments and undivided Quaternary alluvium, which is also termed 'cover sands'. The soil in the upper two (2) feet at the site is composed of gravelly loam that contains abundant eroded gravel to cobble size caliche fragments. Below the top soil is predominately

unconsolidated sand to weakly cemented sandstone which has undergone calichification of varying extent.

Below the Blackwater Draw Formation is the Ogallala Formation of Miocene to Pliocene age. The Ogallala Formation was deposited from sediments eroded from the Southern Rockies and consists mostly of eolian sediments, silty to very fine sand or loess. During the middle to late Miocene, Ogallala sediments were deposited by fluvial mechanism as paleovalley fill, which is composed of gravelly to sandy braided stream deposits that trend west to east across the Southern High Plains. During the late Miocene the west to east drainage was diverted (captured) by the Pecos River. Subsequently, the Pecos River basin has experienced deflation, which facilitated eolian deposition on the Southern High Plains during the Pliocene.

1.3 Previous Environmental Investigations

During initial assessment activities to delineate the extent of impacted soil at the site, six soil borings were advanced from December 27, 2002 through January 2, 2004. During the assessment, soil boring BH-1 encountered groundwater that was impacted by phase separated hydrocarbons (PSH). Subsequently, soil boring BH-1 was completed as groundwater monitor well, MW-2. Soil borings BH-2, BH-4, BH-5, and BH-6 were advanced in order to delineate the extent of impacted groundwater and those soil borings were completed as groundwater monitor wells MW-1, MW-3, MW-4, and MW-5.

During November and December of 2004, six (6) additional groundwater monitor wells (MW-6 through MW-11) were installed to further delineate the lateral extent of groundwater impact at the site. Finally, in July 2006, six (6) additional groundwater monitor wells (MW-12 through MW-17) were installed to complete assessment of the areal extent of impacted groundwater.

Subsequent groundwater monitoring events indicated that benzene concentrations in the down-gradient sentinel monitor well, MW-12, consistently exceeded the New Mexico Water Quality Control Commission (NMWQCC) standard. Therefore; monitor well MW-18 was installed further down-gradient in June of 2010.

PSH recovery operations have been performed at the site since March 2003, initially from hand bailing followed by a recovery system that utilizes skimmers with bladder pumps for PSH recovery. In April of 2010, a pneumatic total fluid pump was installed in monitor well MW-2. Since the total fluid pump increased groundwater production combined with an insignificant increase in PSH production, the total fluids pump was removed from MW-2 in September of 2010 and replaced with a skimmer and bladder pump. In order to help reduce down-gradient dissolved-phase concentrations, bubblers were installed in monitor wells MW-10 and MW-12 in January of 2011.

At the end of 2012, there were six (6) skimmers with bladder pumps operating in monitor wells MW-2, MW-13, MW-14, MW-15, MW-16, and MW-17. During 2012, three Mobile Duel Phase Extraction (MDPE) events were conducted on site. A total of approximately 27 bbls of liquid and vapor PSH were recovered during these events, and five (5) bbls of crude oil was recovered during 2012 by the skimmer pump system.

Because the MDPE events proved far more efficient at PSH recovery, the on-site recovery system was removed completely in January of 2013. MDPE events are conducted monthly. A

total of 33.85 bbls of combined liquid and vapor PSH were recovered during the events of 2013. Approximately 130.85 bbls of crude oil has been recovered to date by the remediation system.

1.4 Regulatory Framework

Groundwater analytical data collected from the Deep 6" site is evaluated to the New Mexico Water Quality Control Commission (NMWQCC) groundwater standards outlined below.

New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards	
Compound	**mg/L**
Benzene	0.010
Toluene	0.750
Ethylbenzene	0.750
Total Xylenes	0.620
PAH (Naphthalene)	0.030
PAH (Benzo[a]-pyrene)	0.007

The subsequent sections of this report provide summaries of the groundwater monitoring activities that were conducted at the subject site during the year 2013 as well as analytical results from each groundwater sampling event. Cumulative analytical results for including the four (4) 2013 sampling events are summarized in Table 2, in Appendix B, and Figures 1, 2a through 2d, and 3a through 3d in Appendix A. Laboratory analytical data reports and chain of custody documentation are included in Appendix C.

2.0 SITE ACTIVITIES

The sections that follow summarize groundwater monitoring and PSH recovery activities conducted at the subject site during 2013. The primary function of groundwater monitoring is to measure the depths to fluids and to collect groundwater samples from monitor wells for laboratory analysis. The objective of groundwater monitoring is to evaluate the status of the dissolved-phase and PSH plumes in order to verify the effectiveness of the groundwater remediation system as to inhibiting plume migration, reducing the volume of PSH impacting the groundwater and determining if modifications to the remediation system would improve its performance and efficiency.

2.1 Groundwater Gauging, Purging, and Sample Collection Procedures

A total of four (4) groundwater monitoring events were conducted by Talon during the year 2013 on March 14 and 21, June 13, September 29, and December 04, 2013.

During each groundwater monitoring event, all monitor wells were measured with an oil/water interface probe to determine static water levels and to determine the thickness of PSH accumulations if present. The data collected from measurements was used to construct groundwater gradient maps and PSH thickness isopleths maps. The results of the measured depths to fluids collected during the four (4) events are incorporated in Table 1 – Summary of Historical Fluid Level Measurements.

Subsequent to gauging, all monitor wells were purged using a down-hole pump equipped with vinyl tubing. The pump and tubing were decontaminated with Alconox® detergent and rinsed with distilled water after each use. Recovered purge water and water used in the decontamination process was contained in on-site 55-gallon drums. After the groundwater monitoring event, all retained water was removed with a vacuum truck. Approximately 600 gallons of purged groundwater and decontamination water was generated during the monitoring events of 2013.

Groundwater samples were collected from all monitor wells using dedicated disposable polyethylene bailers. Each groundwater sample was contained in laboratory supplied sample containers with the appropriate preservative required for the analysis requested. The groundwater samples were maintained on ice, in the custody of Talon personnel, until they were delivered to TraceAnalysis, Inc. in Midland or Lubbock, Texas for analyses.

The groundwater samples collected during all four events were quantified for benzene, toluene, ethylbenzene, and xylene (BTEX) by EPA Method SW-846 8021B and groundwater samples collected from monitor well MW-10 during the third event were analyzed for poly-nuclear aromatic hydrocarbons (PAH) by EPA Method 8270C.

2.2 Phase Separated Hydrocarbon Recovery

PSH recovery has been conducted at the site since 2003, initially by hand bailing. In 2007, an automated skimmer / bladder pump recovery system was installed at the site. The system utilized six (6) skimmers with bladder pumps in monitor wells MW-2, and MW-13 through

MW-17 for recovery of PSH and to inhibit migration of the PSH plume. The skimmer assembly consisted of bladder pumps combined with 24-inch traveling float specific gravity skimmers attachments. The skimmer system was powered by a single-phase 230 volt, 7.5 HP two stage reciprocating air compressor.

Currently, Mobile Duel Phase Extraction (MDPE) events are conducted monthly. This system utilizes vapor pulled by vacuum combined with propane to power an internal combustion engine, which also powers a compressor and the blower used to create vacuum for vapor recovery. Compressed air from the system drives pneumatic pumps placed in the various wells containing PSH. Fluid, recovered by the pumps, is retained in a 1,500-gallon poly tank. The poly tank is equipped with a high level shut off switch to prevent overflow and it is located within a secondary containment compound that is outfitted with a poly-liner. Recovered groundwater and PSH is removed from the poly tank and transported to an NMOCD approved disposal facility via vac truck at the end of the MDPE events.

During 2013 the quarterly MDPE PSH recovery system totals are as followed:

- 1st Quarter – 8.76 bbls PSH , 63 bbls water
- 2nd Quarter – 10.7 bbls PSH, 105 bbls water
- 3rd Quarter – 4.5 bbls PSH, 42.7 bbls water
- 4th Quarter – 9.8 bbls PSH, 104.5 bbls water

The total PSH recovery for 2013 is approximately 33.85 bbls. Approximately 130.85 bbls of PSH have been recovered to date from the site.

3.0 GROUNDWATER MONITORING RESULTS

The results of the laboratory analyses are summarized in Table 2 – Summary of Groundwater Analytical Data in Appendix B. Laboratory analytical data reports and chain of custody documentation are provided in Appendix C.

3.1 Groundwater Monitoring Results

The following sections present the results from the monitoring of the first water-bearing zone underlying the site.

3.1.1 Physical Characteristics of the First Water-Bearing Zone

The primary groundwater resource under the Southern High Plains, including the site, is referred to as the Ogallala Aquifer or High Plains Aquifer. The Southern portion of the Ogallala aquifer underlies an area of about 29,000 square miles (mi^2) in western Texas and eastern New Mexico, encompassing all or part of 31 counties in Texas and 6 counties in New Mexico.

The Ogallala Aquifer has experienced acute depletion from extensive irrigation and urban demand, which have exceeded the average annual recharge rate. Recharge of the Ogallala Aquifer on the Southern High Plains occurs predominately from rainfall runoff that accumulates in ephemeral streams and playa lakes as well as direct recharge in areas that contain permeable soils such as sand hills. Recharge rates vary depending on mechanism, but averages from 0 to 1.6 inches per year.

The Ogallala Aquifer is generally unconfined and the poteniometric surface generally mirrors the land surface elevation with the regional flow direction from the northwest to the southeast. The mean regional gradient is 15 feet per mile and the typical groundwater velocity averages seven inches per day. The regional hydraulic conductivity averages 17 gallons per day per square-foot and specific yield averages 16%. The depth to groundwater at the site has historically ranged from 60 to 65 feet below ground surface (bgs) and the groundwater flow direction is to the east southeast at an average of 0.0033 foot per foot or 17 feet per mile. The saturated thickness of the Ogallala formation on the High Plains ranges from 25 feet to 175 feet. The variable thickness is due to the irregularly eroded Triassic surface that underlies it.

The composition of Ogallala groundwater is defined as mixed-cation-HCO_3, therefore, Ogallala groundwater is considered hard. Problems with scale have occurred with residential and commercial water systems that use Ogallala groundwater and often treatment strategies are employed to reduce the effects of scale. The typical total dissolved solids of Ogallala groundwater in the Hobbs-Lovington area is generally less than 1,000 mg/L (ppm) in areas not impacted by oil-field brines. The pH of Ogallala water averages 7.3.

3.1.2 Groundwater Gradient and Flow Direction

The depth to fluid measurements was collected during each of the four (4) groundwater monitoring events during the year 2013. The results of the fluid level measurements are summarized in Table 1, Appendix B - Summary of Historical Fluid Level Measurements.

The collected data was used to construct potentiometric surface maps in order to interpret the groundwater gradient and flow direction. The maps, designated Figures 2a through 2d, are presented in Appendix A.

The potentiometric surface maps constructed for each of the four (4) groundwater monitoring events indicates that the groundwater flow direction is to southeast at an approximate gradient of 0.0033 feet/foot or approximately 17 feet per mile. Groundwater levels at the subject site have remained relatively stable for the year 2013 demonstrating only slight declines averaging 0.25 feet.

3.1.3 Phase Separated Hydrocarbon (PSH)

An oil/water interface probe was used to determine the thicknesses of PSH during the four (4) groundwater monitoring events. Generally, PSH thicknesses have fluctuated from quarter to quarter during the year 2013 and have exhibited both declines and increases in thickness.

In addition to potentiometric surface maps, isopleth maps were prepared depicting the measured PSH thicknesses and PSH plume geometry. PSH plume delineation and thickness isopleths maps are presented in Appendix A as Figures 3a through 3d. Currently, the PSH plume is delineated by the current monitor well geometry.

- In March 2013, PSH was observed in six (6) monitor wells MW-2 and MW-13 through MW-17. PSH thickness ranged from 0.12 feet to 3.83 feet.
- In June 2013, PSH was observed in six (6) monitor wells MW-2 and MW-13 through MW-17. PSH thickness ranged from 0.13 feet to 4.26 feet.
- In September 2013, PSH was observed in six (6) monitor wells MW-2 and MW-13 through MW-17. PSH thickness ranged from 0.13 feet to 4.42 feet.
- In December 2013, PSH was observed in six (6) monitor wells MW-2 and MW-13 through MW-17. PSH thickness ranged from 0.24 feet to 4.66 feet.

3.1.4 Groundwater Sampling Results

During the March 2013 sampling event, groundwater samples were collected from 12 monitor wells MW-1, MW-3 through MW-12 and MW-18. Samples were not collected from monitor wells MW-2 and MW-13 through MW-17, due to the presence of PSH. Laboratory analytical results of the groundwater samples exhibited the following findings:

- Benzene concentrations ranged from <0.000387 mg/L to 14.1 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-3, MW-10 and MW-12.
- Toluene concentrations ranged from <0.000465 mg/L to <0.0232 mg/L. The toluene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in the groundwater samples collected.
- Ethylbenzene concentrations ranged from <0.000442 mg/L to 0.350 mg/L. The ethylbenzene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in groundwater samples collected.
- Xylene concentrations ranged from <0.00100 mg/L to 0.182 mg/L. The xylene

concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in groundwater samples collected.

During the June 2013 sampling event, groundwater samples were collected from 12 monitor wells MW-1, MW-3 through MW-12 and MW-18. Samples were not collected from monitor wells MW-2 and MW-13 through MW-17 due to the presence of PSH. Laboratory analytical results of the groundwater samples exhibited the following findings:

- Benzene concentrations ranged from <0.000500 mg/L to 14.7 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-3, MW-10, and MW-12.
- Toluene concentrations ranged from <0.00100 mg/L to <0.050 mg/L. Toluene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any sampled monitor well.
- Ethylbenzene concentrations ranged from <0.000700 mg/L to 0.559 mg/L. The ethylbenzene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in groundwater samples collected.
- Xylene concentrations ranged from <0.00100 mg/L to 0.175 mg/L. The xylene concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in groundwater samples collected.

During the September 2013 sampling event, groundwater samples were collected from 12 monitor wells, MW-1, MW-3 through MW-12 and MW-18. Samples were not collected from monitor wells MW-2 and MW-13 through MW-17 due to the presence of PSH. Laboratory analytical results of the groundwater samples exhibited the following findings:

- Benzene concentrations ranged from <0.000567 mg/L to 19.3 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-3 and MW-10.
- Toluene concentrations ranged from <0.000518 mg/L to <0.0259 mg/L. The toluene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in the groundwater samples collected.
- Ethylbenzene concentrations ranged from <0.000518 mg/L to 0.464 mg/L. Ethylbenzene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any of the groundwater samples collected.
- Xylene concentrations ranged from <0.00100 mg/L to 0.0751 mg/L. Xylene concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in any of the groundwater samples collected.
- Total naphthalene concentrations did not exceed <0.000119 mg/L in the sample taken from MW-10. The total naphthalene concentrations did not exceed the NMWQCC groundwater standard of 0.030 in any groundwater sample collected

During the December 2013 sampling event, groundwater samples were collected from 12 monitor wells MW-1, MW-3 through MW-12 and MW-18. Samples were not collected from monitor wells MW-2 and MW-13 through MW-17, due to the presence of PSH. Laboratory analytical results of the groundwater samples exhibited the following findings:

- Benzene concentrations ranged from <0.000387 mg/L to 12.5 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-3, MW-9, MW-10, MW-12 and MW-18.
- Toluene concentrations ranged from <0.000465 mg/L to <0.0259 mg/L. The toluene concentration did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any groundwater sample collected.
- Ethylbenzene concentrations ranged from <0.000442 mg/L to 0.406 mg/L. All ethylbenzene concentrations were below the NMWQCC groundwater standard of 0.750 mg/L.
- Xylene concentrations ranged from <0.00100 mg/L to 0.0476 mg/L. The xylene concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in the groundwater samples collected.

The dissolved-phase plume is delineated to NMWQCC groundwater standards in all directions except down-gradient monitor well MW-18, which exhibited benzene concentrations slightly above NMWQCC standards only in the fourth quarter of 2013. The laboratory analytical results are summarized in Table 2 – Summary of Groundwater Analytical Results in Appendix B. Laboratory analytical data reports and chains of custody documentation are provided in Appendix C.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The following section presents a summary of the four groundwater monitoring events conducted at the Lovington Deep 6" site and Section 4.2 provides recommendations for future corrective action.

4.1 Summary of Findings

- The groundwater flow direction in the first water-bearing zone is to the east or east southeast at a gradient averaging 0.0033 ft/ft or approximately 17 feet per mile based upon the water level measurement data collected during 2013.
- Groundwater levels at the subject site have declined slightly by an average 0.25 feet over the year 2013.
- PSH has consistently impacted monitor wells MW-2 and MW-13 through MW-17 during 2013. The PSH plume underlying this site is delineated by the current monitor well array. Throughout the year 2013, PSH thicknesses have fluctuated from quarter to quarter with no discernable pattern or trend.
- The PSH recovery system has removed approximately 33.85 bbls of crude oil from the groundwater during 2013 indicating that the system is performing its function.

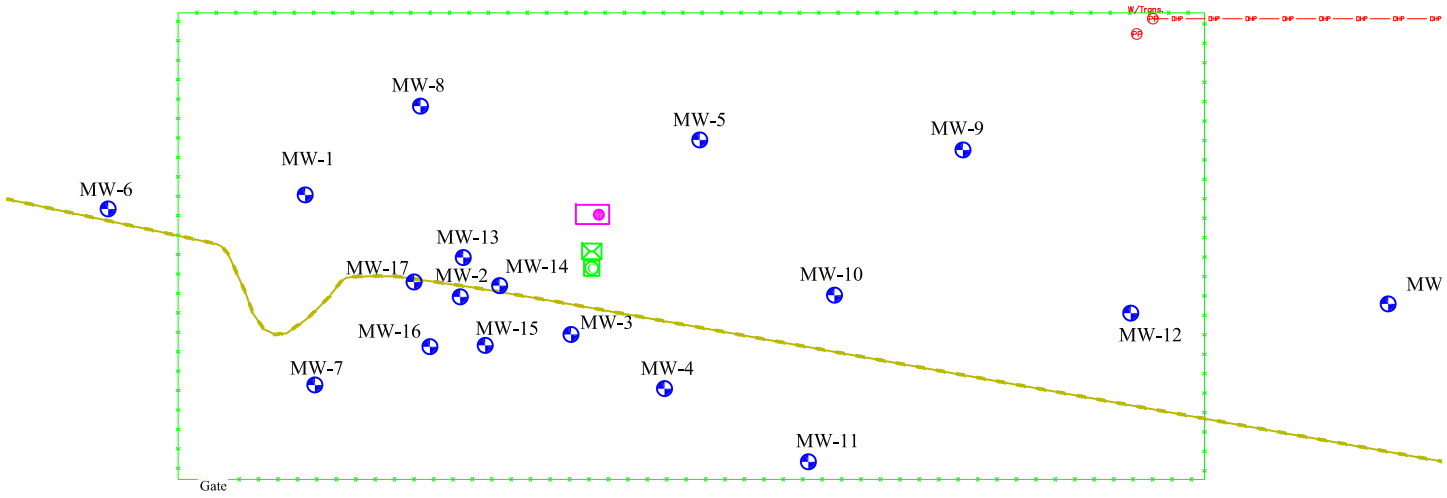
4.2 Recommendations

Based upon the results of the quarterly groundwater monitoring and PSH recovery efforts, Talon proposes the following actions:

- Perform monthly MDPE events.
- Perform quarterly groundwater monitoring events in accordance with NMOCD directives.

APPENDIX A

Figures



N

0 50 100

Scale in Feet

Legend

- Monitor Well w/ Skimmer
- Monitor Well w/Total Fluid Pump
- Monitor Well
- Proposed Monitor Well
- Power Pole W/Transformer
- Overhead Powerline
- Fence line
- Pipeline
- Compressor Shed
- Controls
- Recovery System Tank and Containment

Talon/LPE # : 700376.051.01

TALON LPE

Date: 07/14/2011

Scale: 1" = 100'

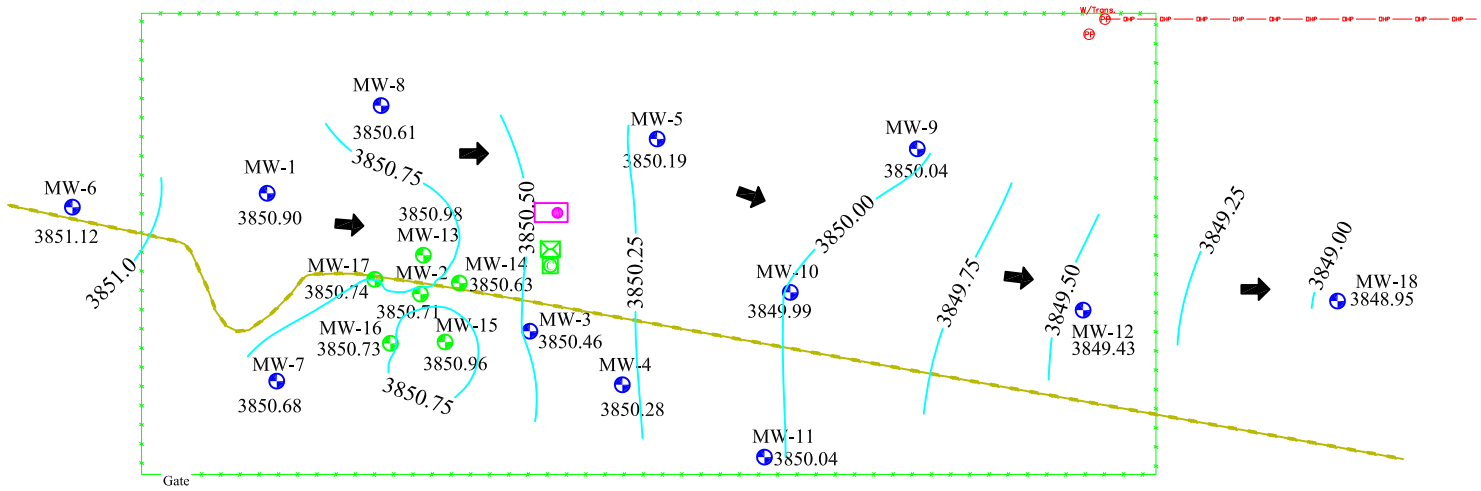
Drawn By: TJS

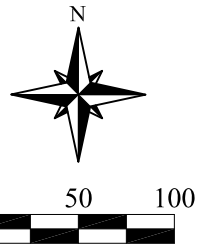
Lovington Deep 6"

SRS # 2002-10312, NMOCD REF. # AP-037

SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico

Figure 1 - Site Plan





Legend

- Monitor Well w/ Skimmer
- Monitor Well w/Total Fluid Pump
- Monitor Well
- Proposed Monitor Well
- Power Pole W/Transformer
- Overhead Powerline
- Fence line
- Pipeline
- Compressor Shed
- Controls
- Recovery System Tank and Containment
- Groundwater Gradient Contour Line
- *3850.0* - Groundwater Gradient Contour Elevation
- Groundwater Gradient Flow Direction
- *3851.15** - Anomalous Data not Used for Contouring

Talon/LPE # : 700376.051.01

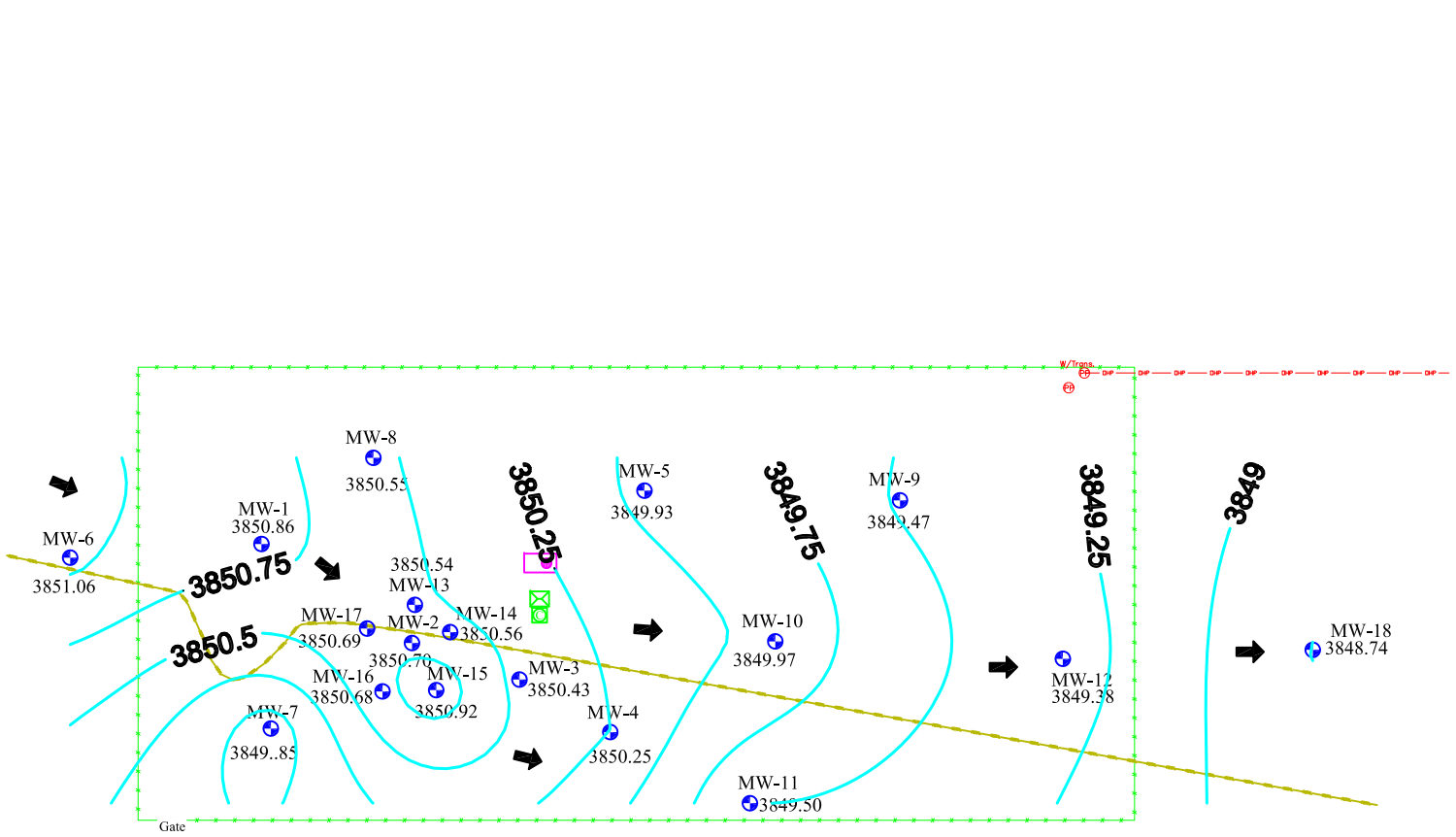
Date:	04/16/2013
Scale:	1" = 100'
Drawn By:	TJS

Lovington Deep 6"

SRS # 2002-10312, NMOCD REF. # AP-037

SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico

Figure 2a - Groundwater Gradient Map, (03/11/2013)



Talon/LPE # : 700376.051.01

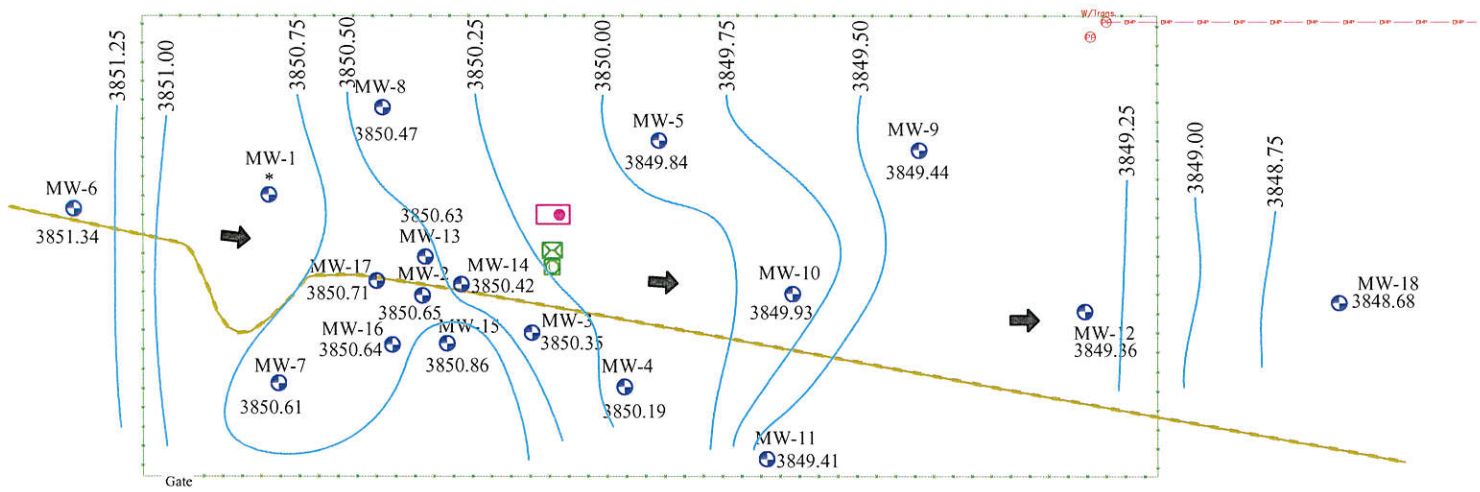
Date:	06/04/2013
Scale:	1" = 100'
Drawn By:	BCI

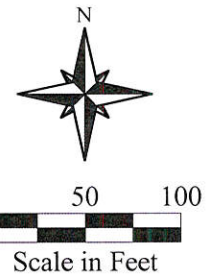
Lovington Deep 6"

SRS # 2002-10312, NMOCD REF. # AP-037

SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico

Figure 2b - Groundwater Gradient Map, (06/04/2013)





Legend

- Monitor Well w/ Skimmer
- Monitor Well w/Total Fluid Pump
- Monitor Well
- Proposed Monitor Well
- Power Pole W/Transformer
- Overhead Powerline
- Fence line
- Pipeline
- Compressor Shed
- Controls
- Recovery System Tank and Containment
- Groundwater Gradient Contour Line
- ***3850.0*** - Groundwater Gradient Contour Elevation
- Groundwater Gradient Flow Direction
- ***3851.15**** - Anomalous Data not Used for Contouring

* Well Excluded

Talon/LPE # : 700376.051.01

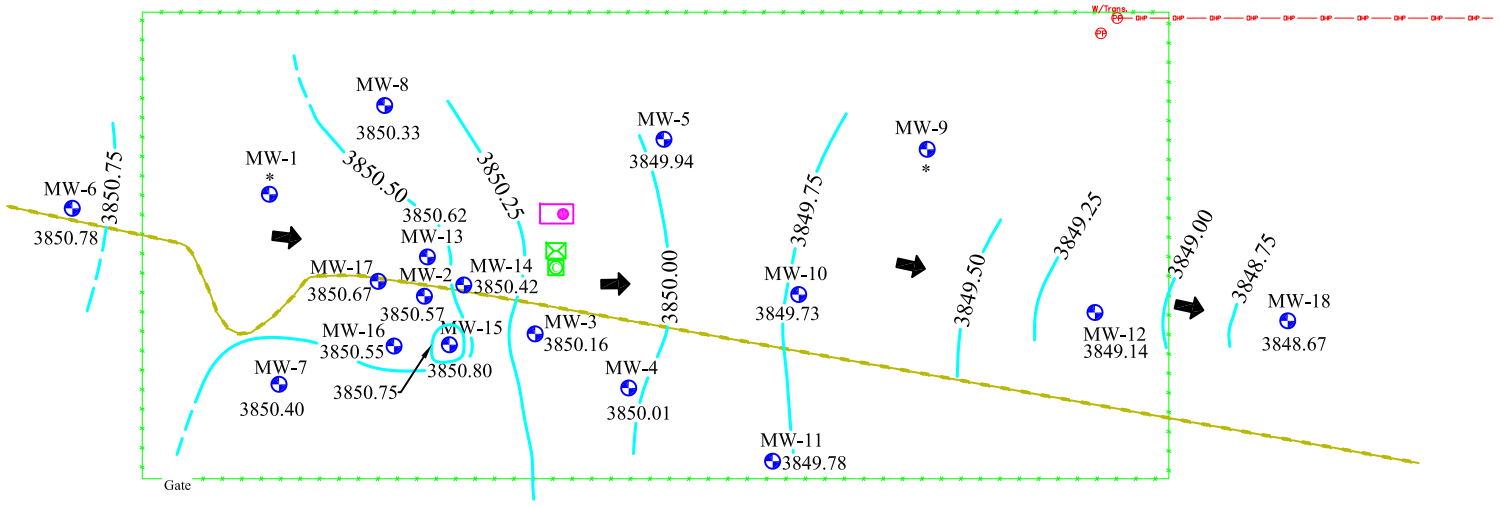
Date:	10/16/2013
Scale:	1" = 100'
Drawn By:	SMM

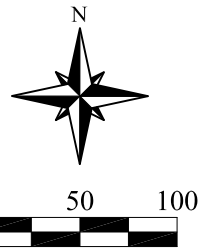
Lovington Deep 6"

SRS # 2002-10312, NMOCD REF. # AP-037

SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico

Figure 2c - Groundwater Gradient Map, (09/29/2013)





Legend

- Monitor Well w/ Skimmer
- Monitor Well w/Total Fluid Pump
- Monitor Well
- Proposed Monitor Well
- Power Pole W/Transformer
- Overhead Powerline
- Fence line
- Pipeline
- Compressor Shed
- Controls
- Recovery System Tank and Containment
- Groundwater Gradient Contour Line
- *3850.0* - Groundwater Gradient Contour Elevation
- Groundwater Gradient Flow Direction
- *3851.15** - Anomalous Data not Used for Contouring

* Well Excluded

Talon/LPE # : 700376.051.01

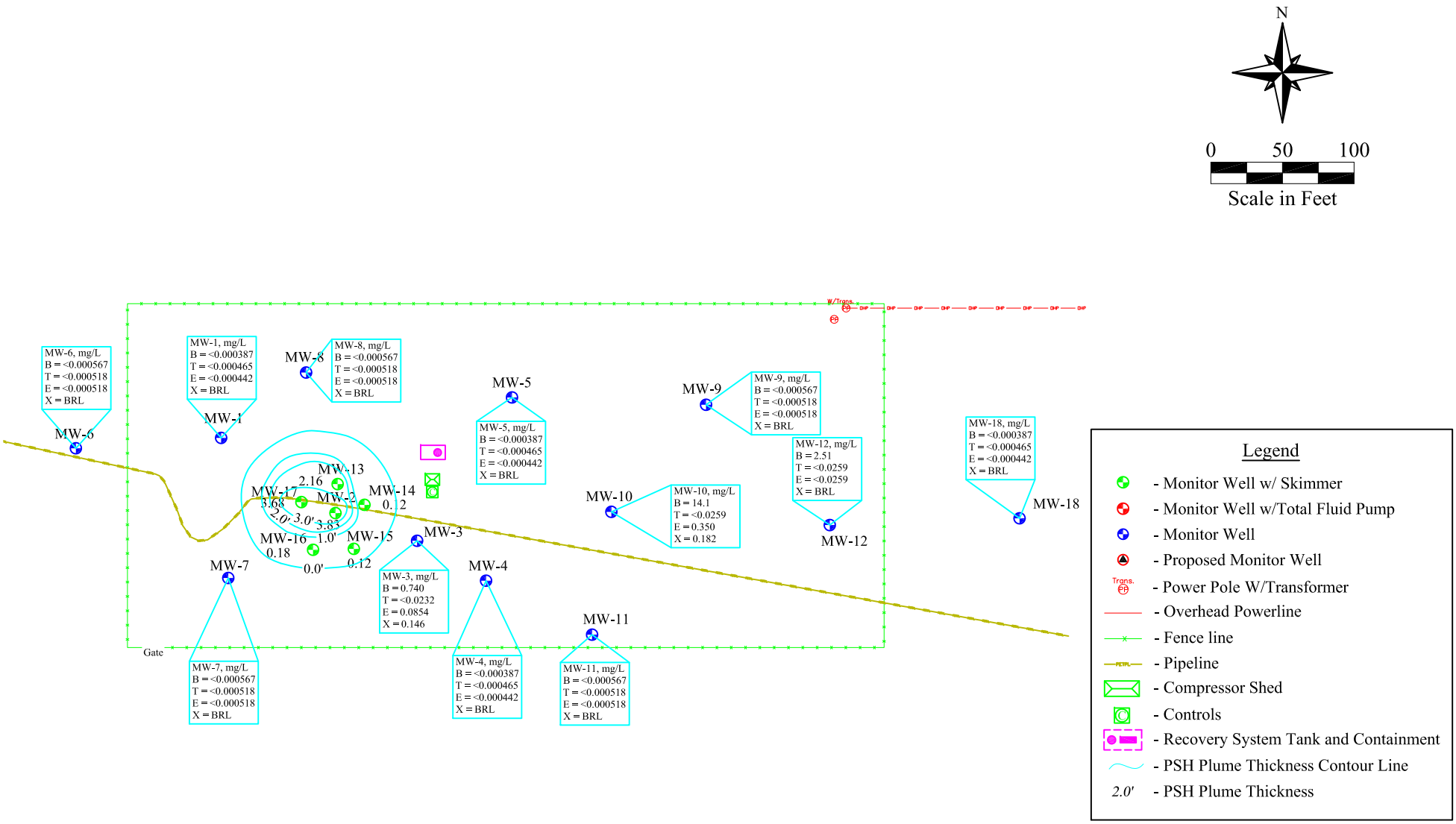
Date:	01/15/2014
Scale:	1" = 100'
Drawn By:	TJS

Lovington Deep 6"

SRS # 2002-10312, NMOCD REF. # AP-037

SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico

Figure 2d - Groundwater Gradient Map, (12/04/2013)



Talon/LPE # : 700376.051.01

TALON LPE

Date: 04/16/2013

Scale: 1" = 100'

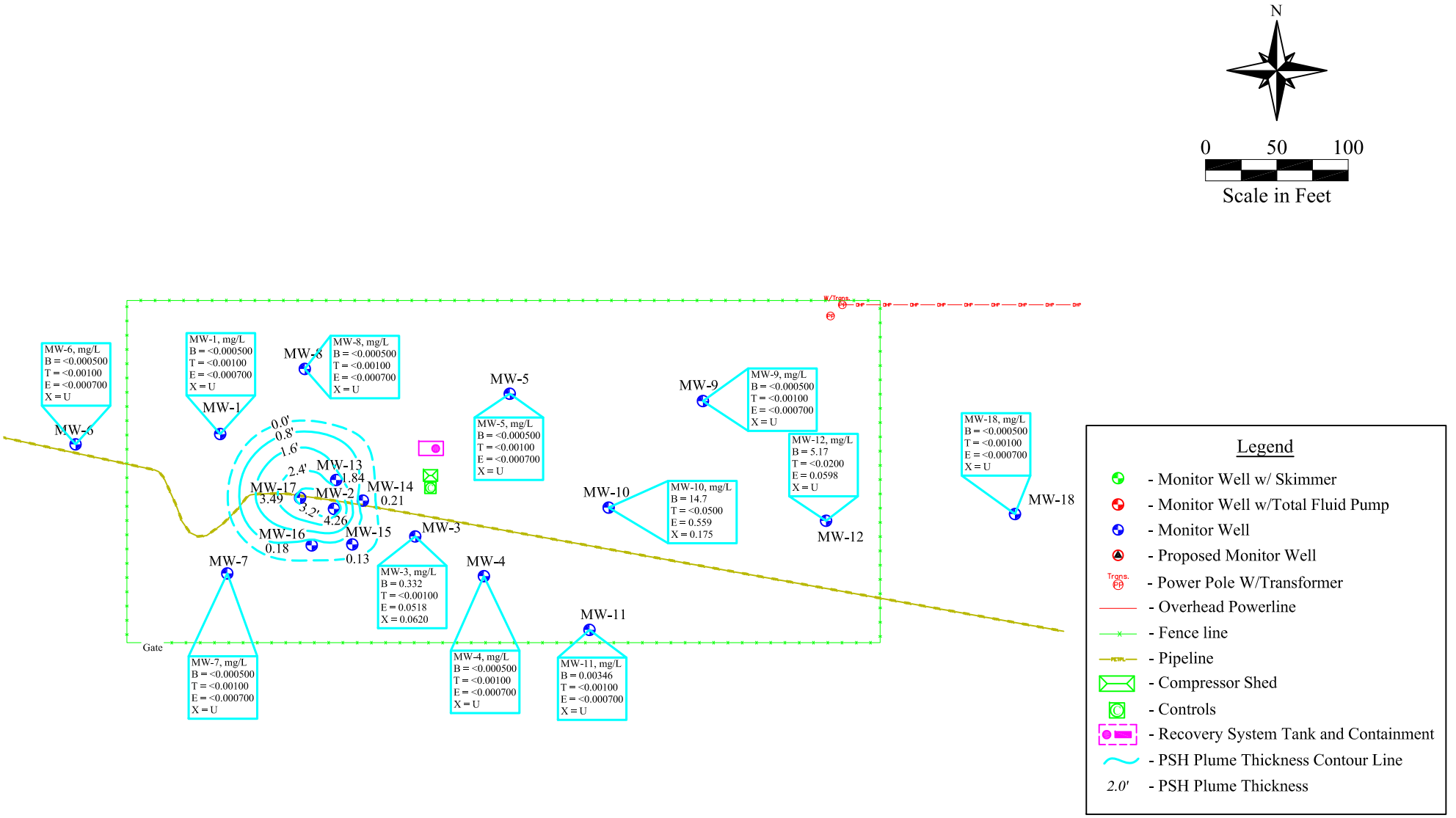
Drawn By: TJS

Lovington Deep 6"

SRS # 2002-10312, NMOCD REF. # AP-037

SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico

Figure 3a - PSH Thickness & Groundwater Concentration Map, (03/14&21/2013)



Talon/LPE # : 700376.051.01

TALON LPE

Date: 07/23/2013

Scale: 1" = 100'

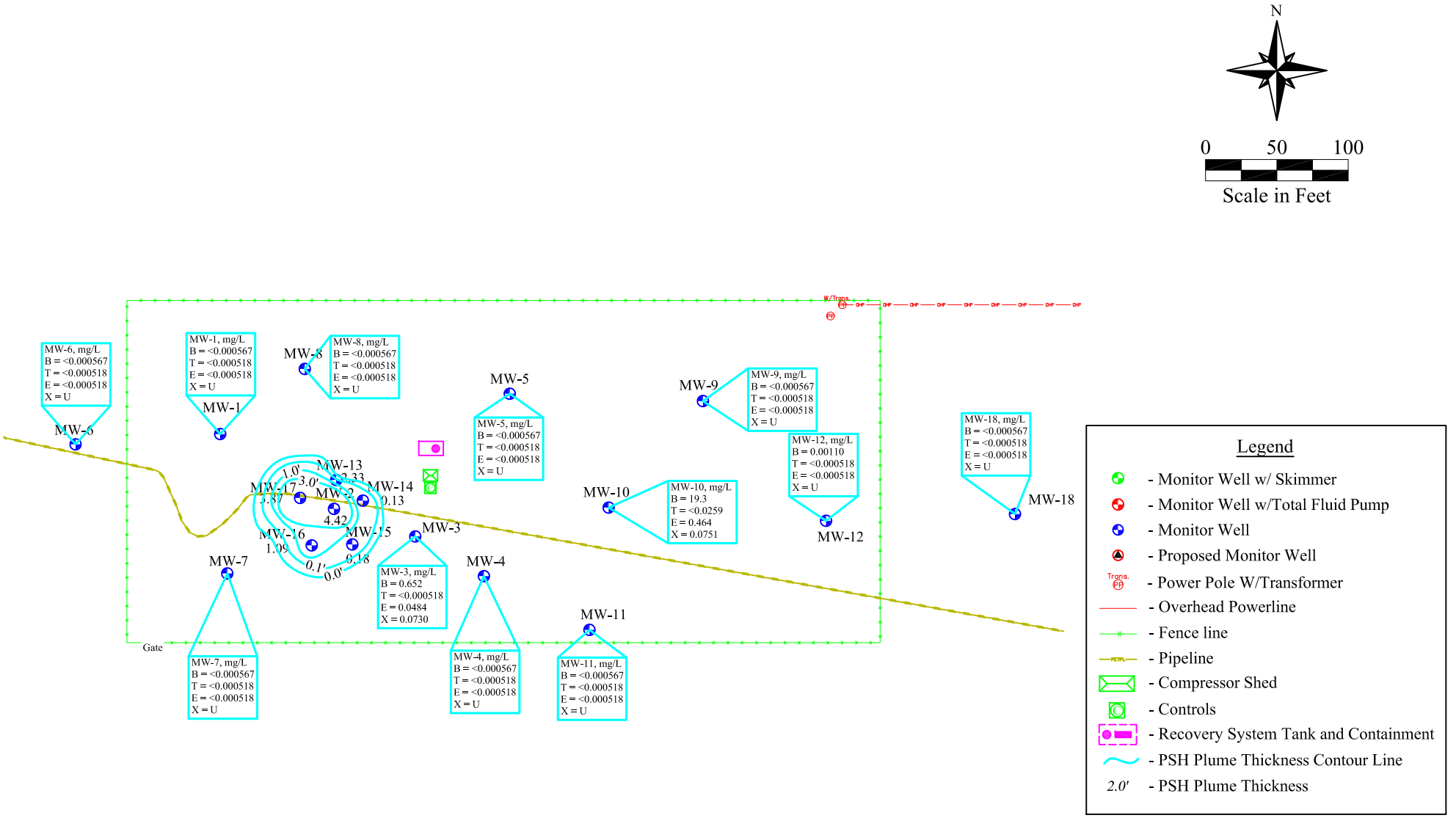
Drawn By: TJS

Lovington Deep 6"

SRS # 2002-10312, NMOCD REF. # AP-037

SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico

Figure 3b - PSH Thickness & Groundwater Concentration Map, (06/04/2013)



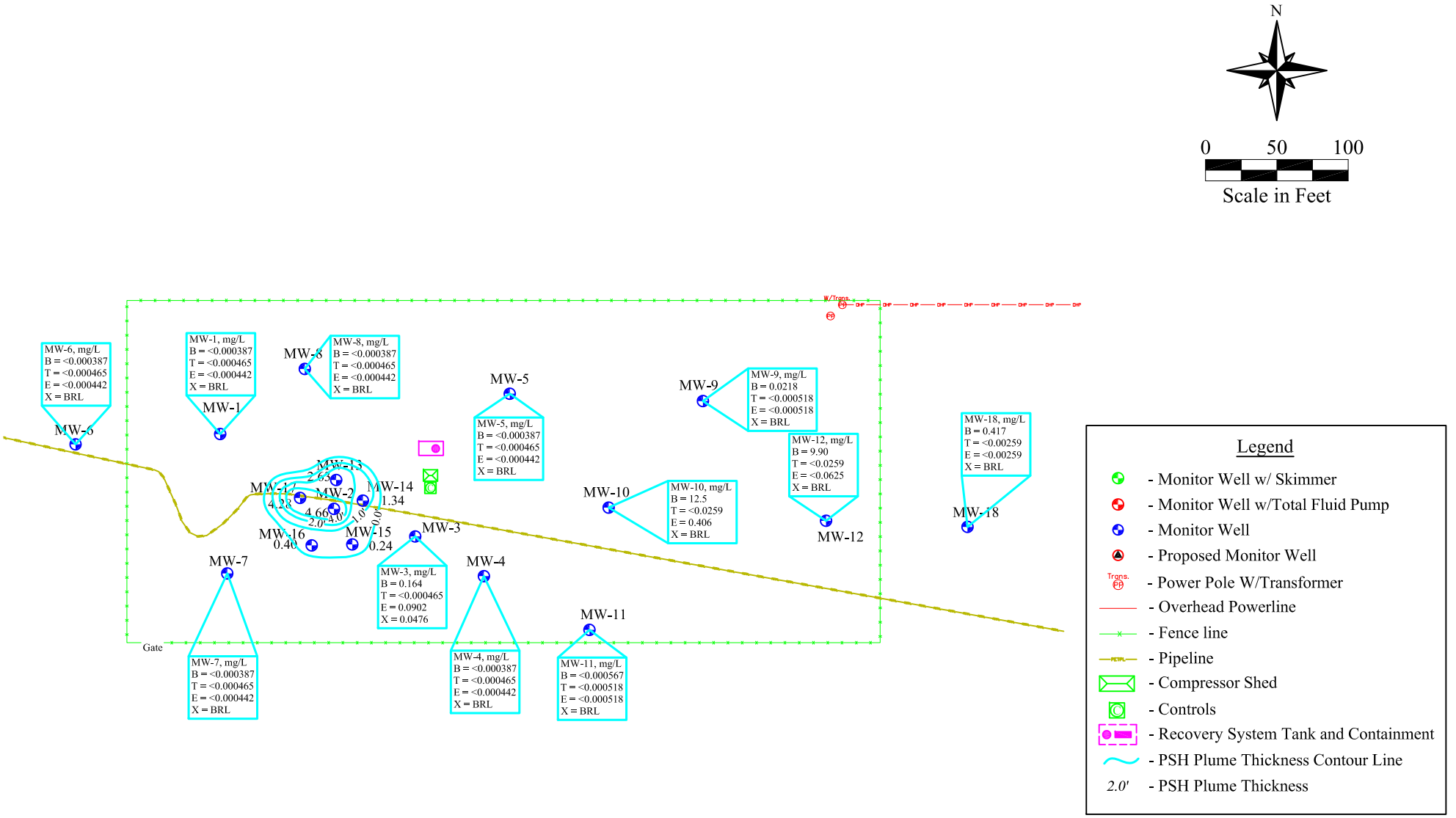
Talon/LPE # : 700376.051.01

TALON LPE

Date: 10/16/2013
Scale: 1" = 100'
Drawn By: TJS

Lovington Deep 6"

SRS # 2002-10312, NMOCD REF. # AP-037
SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico
Figure 3c - PSH Thickness & Groundwater Concentration Map, (09/29/2013)



Talon/LPE # : 700376.051.01

TALON LPE

Date:	01/15/2014
Scale:	1" = 100'
Drawn By:	TJS

Lovington Deep 6"

SRS # 2002-10312, NMOCD REF. # AP-037

SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico

Figure 3d - PSH Thickness & Groundwater Concentration Map, (12/04/2013)

APPENDIX B

Tables

Summary of Historical Fluid Level Measurements
Lovington Deep 6"
700376.051

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-1			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: 74 ft.
	01/03/12	3915.51	64.51	-	-	3851.00
	03/23/12	3915.51	64.51	-	-	3851.00
	06/06/12	3915.51	64.70	-	-	3850.81
	09/12/12	3915.51	64.75	-	-	3850.76
	12/05/12	3915.51	64.76	-	-	3850.75
	03/11/13	3915.51	64.61	-	-	3850.90
	06/04/13	3915.51	64.65	-	-	3850.86
	09/29/13	3915.51	64.69	-	-	3850.82
	12/04/13	3915.51	64.90	-	-	3850.61
MW-2			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: ____ ft.
	01/03/12	3915.04	67.95	63.61	4.34	3850.71
	03/23/12	3915.04	67.74	63.53	4.21	3850.82
	06/06/12	3915.04	66.37	64.05	2.32	3850.61
	09/12/12	3915.04	65.65	64.30	1.35	3850.52
	12/05/12	3915.04	67.58	63.83	3.75	3850.59
	03/11/13	3915.04	67.53	63.70	3.83	3850.71
	06/04/13	3915.04	67.90	63.64	4.26	3850.70
	09/29/13	3915.04	68.08	63.66	4.42	3850.65
	12/04/13	3915.04	68.36	63.70	4.66	3850.57
MW-3			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: 73 ft.
	01/03/12	3915.24	64.59	-	-	3850.65
	03/23/12	3915.24	64.71	-	-	3850.53
	06/06/12	3915.24	64.88	-	-	3850.36
	09/12/12	3915.24	64.18	-	-	3851.06
	12/05/12	3915.24	64.93	-	-	3850.31
	03/11/13	3915.24	64.78	-	-	3850.46
	06/04/13	3915.24	64.81	-	-	3850.43
	09/29/13	3915.24	64.89	-	-	3850.35
	12/04/13	3915.24	65.08	-	-	3850.16
MW-4			Diameter: 2 in.	Screened Interval: ____ ft. to ____ ft.		TD: 73.5 ft.
	01/03/12	3915.30	64.84	-	-	3850.46
	03/23/12	3915.30	64.93	-	-	3850.37
	06/06/12	3915.30	65.13	-	-	3850.17
	09/12/12	3915.30	65.13	-	-	3850.17
	12/05/12	3915.30	65.18	-	-	3850.12
	03/11/13	3915.30	65.02	-	-	3850.28
	06/04/13	3915.30	65.05	-	-	3850.25
	09/29/13	3915.30	65.11	-	-	3850.19
	12/04/13	3915.30	65.29	-	-	3850.01
MW-5			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: 74 ft.
	01/03/12	3915.26	64.82	-	-	3850.44
	03/23/12	3915.26	64.94	-	-	3850.32
	06/06/12	3915.26	65.13	-	-	3850.13
	09/12/12	3915.26	65.15	-	-	3850.11
	12/05/12	3915.26	65.17	-	-	3850.09
	03/11/13	3915.26	65.07	-	-	3850.19
	06/04/13	3915.26	65.33	-	-	3849.93
	09/29/13	3915.26	65.42	-	-	3849.84
	12/04/13	3915.26	65.32	-	-	3849.94

Summary of Historical Fluid Level Measurements
Lovington Deep 6"
700376.051

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-6			Diameter: 2 in.	Screened Interval: ____ ft. to ____ ft.		TD: 71 ft.
	01/03/12	3915.45	64.16	-	-	3851.29
	03/23/12	3915.45	64.27	-	-	3851.18
	06/06/12	3915.45	64.43	-	-	3851.02
	09/12/12	3915.45	64.45	-	-	3851.00
	12/05/12	3915.45	64.48	-	-	3850.97
	03/11/13	3915.45	64.33	-	-	3851.12
	06/04/13	3915.45	64.39	-	-	3851.06
	09/29/13	3915.45	64.11	-	-	3851.34
	12/04/13	3915.45	64.67	-	-	3850.78
MW-7			Diameter: 2 in.	Screened Interval: ____ ft. to ____ ft.		TD: 70.5 ft.
	01/03/12	3914.73	63.83	-	-	3850.90
	03/23/12	3914.73	63.94	-	-	3850.79
	06/06/12	3914.73	64.10	-	-	3850.63
	09/12/12	3914.73	64.16	-	-	3850.57
	12/05/12	3914.73	64.18	-	-	3850.55
	03/11/13	3914.73	64.05	-	-	3850.68
	06/04/13	3914.73	64.88	-	-	3849.85
	09/29/13	3914.73	64.12	-	-	3850.61
	12/04/13	3914.73	64.33	-	-	3850.40
MW-8			Diameter: 2 in.	Screened Interval: ____ ft. to ____ ft.		TD: 73 ft.
	01/03/12	3915.19	64.39	-	-	3850.80
	03/23/12	3915.19	64.48	-	-	3850.71
	06/06/12	3915.19	64.65	-	-	3850.54
	09/12/12	3915.19	64.70	-	-	3850.49
	12/05/12	3915.19	64.74	-	-	3850.45
	03/11/13	3915.19	64.58	-	-	3850.61
	06/04/13	3915.19	64.64	-	-	3850.55
	09/29/13	3915.19	64.72	-	-	3850.47
	12/04/13	3915.19	64.86	-	-	3850.33
MW-9			Diameter: 2 in.	Screened Interval: ____ ft. to ____ ft.		TD: 74 ft.
	01/03/12	3913.92	63.69	-	-	3850.23
	03/23/12	3913.92	63.79	-	-	3850.13
	06/06/12	3913.92	63.95	-	-	3849.97
	09/12/12	3913.92	64.00	-	-	3849.92
	12/05/12	3913.92	64.06	-	-	3849.86
	03/11/13	3913.92	63.88	-	-	3850.04
	06/04/13	3913.92	64.45	-	-	3849.47
	09/29/13	3913.92	64.48	-	-	3849.44
	12/04/13	3913.92	64.15	-	-	3849.77
MW-10			Diameter: 2 in.	Screened Interval: ____ ft. to ____ ft.		TD: 73 ft.
	01/03/12	3914.96	64.99	-	-	3849.97
	03/23/12	3914.96	64.87	-	-	3850.09
	06/06/12	3914.96	65.04	-	-	3849.92
	09/12/12	3914.96	65.10	-	-	3849.86
	12/05/12	3914.96	65.11	-	-	3849.85
	03/11/13	3914.96	64.97	-	-	3849.99
	06/04/13	3914.96	64.99	-	-	3849.97
	09/29/13	3914.96	65.03	-	-	3849.93
	12/04/13	3914.96	65.23	-	-	3849.73

Summary of Historical Fluid Level Measurements
Lovington Deep 6"
700376.051

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-11			Diameter: 2 in.	Screened Interval: ____ ft. to ____ ft.		TD: 70 ft.
	01/03/12	3914.40	64.14	-	-	3850.26
	03/23/12	3914.40	64.24	-	-	3850.16
	06/06/12	3914.40	64.40	-	-	3850.00
	09/12/12	3914.40	64.46	-	-	3849.94
	12/05/12	3914.40	64.68	-	-	3849.72
	03/11/13	3914.40	64.36	-	-	3850.04
	06/04/13	3914.40	64.90	-	-	3849.50
	09/29/13	3914.40	64.99	-	-	3849.41
	12/04/13	3914.40	64.62	-	-	3849.78
MW-12			Diameter: 2 in.	Screened Interval: ____ ft. to ____ ft.		TD: 77 ft.
	01/03/12	3913.97	64.36	-	-	3849.61
	03/23/12	3913.97	64.46	-	-	3849.51
	06/06/12	3913.97	64.61	-	-	3849.36
	09/12/12	3913.97	64.68	-	-	3849.29
	12/05/12	3913.97	64.68	-	-	3849.29
	03/11/13	3913.97	64.54	-	-	3849.43
	06/04/13	3913.97	64.59	-	-	3849.38
	09/29/13	3913.97	64.61	-	-	3849.36
	12/04/13	3913.97	64.83	-	-	3849.14
MW-13			Diameter: ____ in.	Screened Interval: ____ ft. to ____ ft.		TD: ____ ft.
	01/03/12	3915.83	68.33	64.41	3.92	3850.77
	03/23/12	3915.83	69.09	64.14	4.95	3850.87
	06/06/12	3915.83	69.22	64.37	4.85	3850.66
	09/12/12	3915.83	65.57	65.12	0.45	3850.64
	12/05/12	3915.83	67.75	64.76	2.99	3850.58
	03/11/13	3915.83	66.65	64.49	2.16	3850.98
	06/04/13	3915.83	66.83	64.99	1.84	3850.54
	06/29/13	3915.83	67.15	64.82	2.33	3850.63
	12/04/13	3915.83	67.41	64.78	2.63	3850.62
MW-14			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: ____ ft.
	01/03/12	3915.72	65.72	64.95	0.77	3850.64
	03/23/12	3915.72	65.75	64.82	0.93	3850.75
	06/06/12	3915.72	65.50	64.87	0.63	3850.75
	09/12/12	3915.72	67.55	64.72	2.83	3850.53
	12/05/12	3915.72	65.46	65.20	0.26	3850.48
	03/11/13	3915.72	65.19	65.07	0.12	3850.63
	06/04/13	3915.72	65.34	65.13	0.21	3850.56
	09/29/13	3915.72	65.41	65.28	0.13	3850.42
	12/04/13	3915.72	66.40	65.06	1.34	3850.44
MW-15			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: ____ ft.
	01/03/12	3915.84	64.93	64.83	0.10	3850.99
	03/23/12	3915.84	64.84	64.76	0.08	3851.07
	06/06/12	3915.84	64.99	64.95	0.04	3850.88
	09/12/12	3915.84	65.05	64.98	0.07	3850.85
	12/05/12	3915.84	65.10	65.00	0.10	3850.82
	03/11/13	3915.84	64.98	64.86	0.12	3850.96
	06/04/13	3915.84	65.03	64.90	0.13	3850.92
	09/29/13	3915.84	65.13	64.95	0.18	3850.86
	12/04/13	3915.84	65.24	65.00	0.24	3850.80

Summary of Historical Fluid Level Measurements
Lovington Deep 6"
700376.051

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-16			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: ____ ft.
	01/03/12	3915.43	65.00	64.61	0.39	3850.76
	03/23/12	3915.43	64.92	64.54	0.38	3850.83
	06/06/12	3915.43	65.38	64.69	0.69	3850.63
	09/12/12	3915.43	65.88	64.63	1.25	3850.59
	12/05/12	3915.43	65.21	64.79	0.42	3850.57
	03/11/13	3915.43	64.85	64.67	0.18	3850.73
	06/04/13	3915.43	64.90	64.72	0.18	3850.68
	09/29/13	3915.43	65.70	64.61	1.09	3850.64
	12/04/13	3915.43	65.21	64.81	0.40	3850.55
MW-17			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: ____ ft.
	01/03/12	3915.59	67.77	64.19	3.58	3850.81
	03/23/12	3915.59	66.51	64.32	2.19	3850.91
	06/06/12	3915.59	66.32	64.61	1.71	3850.70
	09/12/12	3915.59	66.02	64.75	1.27	3850.63
	12/05/12	3915.59	67.73	64.40	3.33	3850.64
	03/11/13	3915.59	67.92	64.24	3.68	3850.74
	06/04/13	3915.59	67.81	64.32	3.49	3850.69
	09/29/13	3915.59	68.11	64.24	3.87	3850.71
	12/04/13	3915.59	68.49	64.21	4.28	3850.67
MW-18			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: 80.3 ft.
	01/03/12	3912.90	63.74	-	-	3849.16
	03/23/12	3912.90	63.88	-	-	3849.02
	06/06/12	3912.90	64.03	-	-	3848.87
	09/12/12	3912.90	64.05	-	-	3848.85
	12/05/12	3912.90	64.09	-	-	3848.81
	03/11/13	3912.90	63.95	-	-	3848.95
	06/04/13	3912.90	64.16	-	-	3848.74
	09/29/13	3912.90	64.22	-	-	3848.68
	12/04/13	3912.90	64.23	-	-	3848.67

Specific Gravity: 0.835

NG - Not Gauged
NSch - Not scheduled to be gauged
Block - Well blocked/obstructed
Locate - Can not locate/find well
Dry - Well is dry
P&A - Plug and Abandon
WD - Well Destroyed

Summary of Historical Groundwater Analytical Data
Lovington Deep 6"
700376.051

Sample Designation	Date Sampled	Concentration (mg/L)				
		Benzene	Toluene	Ethylbenzene	Total Xylenes	BTEX
MW-1	06/07/12	<0.000371	<0.000347	<0.000326	BRL	-
	09/12/12	<0.000371	<0.000347	<0.000326	BRL	-
	12/06/12	<0.000310	<0.000259	<0.000291	BRL	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-
	06/04/13	<0.000500	<0.00100	<0.000700	U	U
	09/29/13	<0.000567	<0.000518	<0.000518	BRL	-
	12/04/13	<0.000387	<0.000465	<0.000442	BRL	-
MW-3	06/07/12	0.996	0.0183	0.180	0.222	-
	09/12/12	0.990	0.0133	0.235	0.251	-
	12/07/12	0.753	<0.00347	0.172	0.235	-
	03/21/13	0.740	<0.0232	0.0854	0.146	-
	06/04/13	0.332	<0.00100	0.0518	0.0620	0.446
	09/29/13	0.652	<0.00518	0.0484	0.0730	-
	12/04/13	0.164	<0.000465	0.0902	0.0476	-
MW-4	06/07/12	<0.000310	<0.000259	<0.000291	BRL	-
	09/12/12	0.00280	<0.000347	<0.000326	0.00120	-
	12/06/12	<0.000371	<0.000347	<0.000326	BRL	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-
	06/04/13	<0.000500	<0.00100	<0.000700	U	U
	09/29/13	<0.000567	<0.000518	<0.000518	BRL	-
	12/04/13	<0.000387	<0.000465	<0.000442	BRL	-
MW-5	06/07/12	<0.000310	<0.000259	<0.000291	BRL	-
	09/12/12	<0.000371	<0.000347	<0.000326	BRL	-
	12/06/12	<0.000371	<0.000347	<0.000326	BRL	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-
	06/04/13	<0.000500	<0.00100	<0.000700	U	U
	09/29/13	<0.000567	<0.000518	<0.000518	BRL	-
	12/04/13	<0.000387	<0.000465	<0.000442	BRL	-

Summary of Historical Groundwater Analytical Data
Lovington Deep 6"
700376.051

Sample Designation	Date Sampled	Concentration (mg/L)				
		Benzene	Toluene	Ethylbenzene	Total Xylenes	BTEX
MW-6	06/06/12	<0.000310	<0.000259	<0.000291	BRL	-
	09/12/12	<0.000371	<0.000347	<0.000326	BRL	-
	12/06/12	<0.000371	<0.000347	<0.000326	BRL	-
	03/14/13	<0.000567	<0.000518	<0.000518	BRL	-
	06/04/13	<0.000500	<0.00100	<0.000700	U	U
	09/29/13	<0.000567	<0.000518	<0.000518	BRL	-
	12/04/13	<0.000387	<0.000465	<0.000442	BRL	-
MW-7	06/06/12	<0.000310	<0.000259	<0.000291	BRL	-
	09/12/12	<0.000371	<0.000347	<0.000326	BRL	-
	12/06/12	0.00180	<0.000347	<0.000326	BRL	-
	03/14/13	<0.000567	<0.000518	<0.000518	BRL	-
	06/04/13	<0.000500	<0.00100	<0.000700	U	U
	09/29/13	<0.000567	<0.000518	<0.000518	BRL	-
	12/04/13	<0.000387	<0.000465	<0.000442	BRL	-
MW-8	06/06/12	<0.000310	<0.000259	<0.000291	BRL	-
	09/12/12	0.00240	<0.000347	<0.000326	BRL	-
	12/06/12	<0.000371	<0.000347	<0.000326	BRL	-
	03/14/13	<0.000567	<0.000518	<0.000518	BRL	-
	06/04/13	<0.000500	<0.00100	<0.000700	U	U
	09/29/13	<0.000567	<0.000518	<0.000518	BRL	-
	12/04/13	<0.000387	<0.000465	<0.000442	BRL	-
MW-9	06/06/12	<0.000310	<0.000259	<0.000291	0.00120	-
	09/12/12	<0.000371	<0.000347	<0.000326	BRL	-
	12/06/12	<0.000371	<0.000347	<0.000326	BRL	-
	03/14/13	<0.000567	<0.000518	<0.000518	BRL	-
	06/04/13	<0.000500	<0.00100	<0.000700	U	U
	09/29/13	<0.000567	<0.000518	<0.000518	BRL	-
	12/04/13	0.0218	<0.000518	<0.000518	BRL	-

Summary of Historical Groundwater Analytical Data
Lovington Deep 6"
700376.051

Sample Designation	Date Sampled	Concentration (mg/L)				
		Benzene	Toluene	Ethylbenzene	Total Xylenes	BTEX
MW-10	06/06/12	17.5	<0.130	0.665	BRL	-
	09/12/12	15.0	<0.0174	0.577	0.219	-
	12/06/12	19.7	<0.0174	0.706	0.224	-
	03/14/13	14.1	<0.0259	0.350	0.182	-
	06/04/13	14.7	<0.0500	0.559	0.175	15.4
	09/29/13	19.3	<0.0259	0.464	0.0751	-
	12/04/13	12.5	<0.0259	0.406	BRL	-
MW-11	06/06/12	<0.000310	<0.000259	<0.000291	BRL	-
	09/12/12	<0.000371	<0.000347	<0.000326	BRL	-
	12/06/12	<0.000310	<0.000259	<0.000291	BRL	-
	03/14/13	<0.000567	<0.000518	<0.000518	BRL	-
	06/04/13	0.00346	<0.00100	<0.000700	U	0.00346
	09/29/13	<0.000567	<0.000518	<0.000518	BRL	-
	12/04/13	<0.000567	<0.000518	<0.000518	BRL	-
MW-12	06/06/12	0.393	<0.000259	0.00160	0.00270	-
	09/12/12	0.992	<0.00347	<0.00326	BRL	-
	12/06/12	1.34	<0.00259	0.0103	BRL	-
	03/14/13	2.51	<0.0259	<0.0259	BRL	-
	06/04/13	5.17	<0.0200	0.0598	U	5.23
	09/29/13	0.00110	<0.000518	<0.000518	BRL	-
	12/04/13	9.90	<0.0259	0.0625	BRL	-
MW-18	06/17/12	0.549	<0.00259	<0.00291	BRL	-
	09/12/12	0.376	<0.00174	<0.00163	BRL	-
	12/06/12	0.356	<0.00130	<0.00146	BRL	-
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-
	06/04/13	<0.000500	<0.00100	<0.000700	U	U
	09/29/13	<0.000567	<0.000518	<0.000518	BRL	-
	12/04/13	0.417	<0.00259	<0.00259	BRL	-

Summary of Historical Groundwater Analytical Data - PAH Supplement
Lovington Deep 6"
700376.051

Sample Designation	Date Sampled	Concentration (mg/L)																		
		1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
MW-4	12/06/12	<0.000104	<0.0000874	<0.000117	<0.0000957	<0.0000757	<0.0000966	<0.0000671	<0.0000778	<0.0000764	<0.0000756	<0.0000736	<0.0000814	<0.000103	<0.000119	<0.0000957	<0.0000737	<0.000116	<0.0000788	<0.0000661
MW-7	12/06/12	<0.000104	<0.0000869	<0.000116	<0.0000952	<0.0000753	<0.0000962	<0.0000667	<0.0000774	<0.0000760	<0.0000752	<0.0000732	<0.0000810	<0.000103	<0.000118	<0.0000952	<0.0000733	<0.000115	<0.0000784	<0.0000658
MW-10	12/06/12	0.00717	0.000571	<0.000116	<0.0000952	<0.0000753	<0.0000962	<0.0000667	<0.0000774	<0.0000760	<0.0000752	<0.0000732	<0.0000810	0.000732	<0.000118	0.00123	<0.0000733	0.00282	0.000837	<0.0000658
	09/29/13	<0.000107	<0.0000899	<0.000120	<0.0000985	<0.0000779	<0.0000995	<0.0000690	<0.0000801	<0.0000786	<0.0000778	<0.0000757	<0.0000838	<0.000106	<0.000122	<0.0000985	<0.0000758	<0.000119	<0.0000812	<0.0000681
MW-12	12/06/12	0.00622	<0.0000869	<0.000116	<0.0000952	<0.0000753	<0.0000962	<0.0000667	<0.0000774	<0.0000760	<0.0000752	<0.0000732	<0.0000810	<0.000103	<0.000118	0.000536	<0.0000733	0.00624	<0.0000784	<0.0000658
MW-18	12/06/12	<0.000103	<0.0000866	<0.000116	<0.0000948	<0.0000750	<0.0000957	<0.0000664	<0.0000771	<0.0000756	<0.0000749	<0.0000729	<0.0000807	<0.000102	<0.000118	<0.0000948	<0.0000730	<0.000115	<0.0000781	<0.0000655

APPENDIX C

Laboratory Analytical Data Reports and Chains of Custody Documentation

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Brad Ivy
Talon LPE-Midland
2901 State Highway 349
Midland, TX, 79706

Report Date: March 25, 2013

Work Order: 13032204

Project Location: Hobbs, NM
Project Name: Deep 6 in.
Project Number: 700376.051.01
SRS #: 2002-10312

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
324296	MW-1	water	2013-03-21	08:40	2013-03-21
324297	MW-3	water	2013-03-21	09:05	2013-03-21
324298	MW-4	water	2013-03-21	08:10	2013-03-21
324299	MW-5	water	2013-03-21	08:25	2013-03-21
324300	MW-18	water	2013-03-21	08:55	2013-03-21

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Deep 6 in. were received by TraceAnalysis, Inc. on 2013-03-21 and assigned to work order 13032204. Samples for work order 13032204 were received intact without headspace and at a temperature of 2.6 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	84685	2013-03-22 at 10:05	99972	2013-03-22 at 10:05

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13032204 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 324296 - MW-1

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99972	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84685	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0788	mg/L	1	0.100	79	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0764	mg/L	1	0.100	76	67.3 - 120

Sample: 324297 - MW-3

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99972	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84685	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.740**	mg/L	50	0.00100
Toluene	U	1	<0.0500	mg/L	50	0.00100
Ethylbenzene		1	**0.0854**	mg/L	50	0.00100
Xylene		1	**0.146**	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			3.91	mg/L	50	5.00	78	69.8 - 120
4-Bromofluorobenzene (4-BFB)			3.93	mg/L	50	5.00	79	67.3 - 120

Sample: 324298 - MW-4

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99972	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84685	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0758	mg/L	1	0.100	76	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0779	mg/L	1	0.100	78	67.3 - 120

Sample: 324299 - MW-5

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99972	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84685	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0782	mg/L	1	0.100	78	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0749	mg/L	1	0.100	75	67.3 - 120

Sample: 324300 - MW-18

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99972	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84685	Sample Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0770	mg/L	1	0.100	77	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0747	mg/L	1	0.100	75	67.3 - 120

Method Blanks

Method Blank (1) QC Batch: 99972

QC Batch:	99972	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84685	QC Preparation:	2013-03-22	Prepared By:	MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000387	mg/L	0.001
Toluene		1	<0.000465	mg/L	0.001
Ethylbenzene		1	<0.000442	mg/L	0.001
Xylene		1	<0.000413	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0879	mg/L	1	0.100	88	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0789	mg/L	1	0.100	79	67.3 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 99972 | Date Analyzed: 2013-03-22 | Analyzed By: MT
Prep Batch: 84685 | QC Preparation: 2013-03-22 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0847	mg/L	1	0.100	<0.000387	85	74.4 - 120
Toluene		1	0.0833	mg/L	1	0.100	<0.000465	83	75 - 120
Ethylbenzene		1	0.0839	mg/L	1	0.100	<0.000442	84	74.7 - 120
Xylene		1	0.253	mg/L	1	0.300	<0.000413	84	75.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0812	mg/L	1	0.100	<0.000387	81	74.4 - 120	4	20
Toluene		1	0.0796	mg/L	1	0.100	<0.000465	80	75 - 120	4	20
Ethylbenzene		1	0.0803	mg/L	1	0.100	<0.000442	80	74.7 - 120	4	20
Xylene		1	0.241	mg/L	1	0.300	<0.000413	80	75.9 - 120	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0813	0.0875	mg/L	1	0.100	81	88	69.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0807	0.0827	mg/L	1	0.100	81	83	67.3 - 120

Matrix Spike (MS-1) Spiked Sample: 324294

QC Batch: 99972 | Date Analyzed: 2013-03-22 | Analyzed By: MT
Prep Batch: 84685 | QC Preparation: 2013-03-22 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0767	mg/L	1	0.100	<0.000387	77	57.7 - 120
Toluene		1	0.0745	mg/L	1	0.100	<0.000465	74	56.9 - 120
Ethylbenzene		1	0.0746	mg/L	1	0.100	<0.000442	75	62.9 - 120
Xylene		1	0.223	mg/L	1	0.300	<0.000413	74	63.2 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0879	mg/L	1	0.100	<0.000387	88	57.7 - 120	14	20
Toluene		1	0.0859	mg/L	1	0.100	<0.000465	86	56.9 - 120	14	20
Ethylbenzene		1	0.0866	mg/L	1	0.100	<0.000442	87	62.9 - 120	15	20
Xylene		1	0.260	mg/L	1	0.300	<0.000413	87	63.2 - 120	15	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0811	0.0873	mg/L	1	0.1	81	87	69.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0771	0.0802	mg/L	1	0.1	77	80	67.3 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 99972 | Date Analyzed: 2013-03-22 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0831	83	80 - 120	2013-03-22
Toluene		1	mg/L	0.100	0.0817	82	80 - 120	2013-03-22
Ethylbenzene		1	mg/L	0.100	0.0826	83	80 - 120	2013-03-22
Xylene		1	mg/L	0.300	0.248	83	80 - 120	2013-03-22

Standard (CCV-2)

QC Batch: 99972 | Date Analyzed: 2013-03-22 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0826	83	80 - 120	2013-03-22
Toluene		1	mg/L	0.100	0.0808	81	80 - 120	2013-03-22
Ethylbenzene		1	mg/L	0.100	0.0810	81	80 - 120	2013-03-22
Xylene		1	mg/L	0.300	0.243	81	80 - 120	2013-03-22

Standard (CCV-3)

QC Batch: 99972 | Date Analyzed: 2013-03-22 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0861	86	80 - 120	2013-03-22
Toluene		1	mg/L	0.100	0.0851	85	80 - 120	2013-03-22
Ethylbenzene		1	mg/L	0.100	0.0850	85	80 - 120	2013-03-22
Xylene		1	mg/L	0.300	0.256	85	80 - 120	2013-03-22

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-12-8	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 13032204

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: Tolco LPE
Phone #: 432-522-2133
Address: (Street, City, Zip) 2901 S Ave 349 Midland, TX
Fax #: 432-522-2183
Contact Person: Brad Ivy
E-mail: BIvy@tolcoLPE.com
Invoice to: (If different from above) Plains SRS# 2002-10312
Project #: 700376.051.01
Project Name: Deep "6"
Project Location (including state): Andrews, NM
Sampler Signature: Thomas C

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC	Turn Around Time if different from standard	Hold
324296	MW-1	3	VOA					X				X		3/21/13	0840		X																			
297	MW-3	3	VOA					X				X			0905		X																			
298	MW-4	3	VOA					X				X			0810		X																			
299	MW-5	3	VOA					X				X			0825		X																			
300	MW-18	3	VOA					X				X			0855		X																			

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Thomas C	Tolco	3/21/13	1630				
				Brandi Wood	Trace Lubbock	3/21/13	16:30

INST ____ °C
OBS ____ °C
COR ____ °C

INST P-2
OBS 3.2 °C
COR 2.6 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Caught

ORIGINAL COPY

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Brad Ivy
Talon LPE-Midland
2901 State Highway 349
Midland, TX, 79706

Report Date: March 18, 2013

Work Order: 13031502

Project Location: Hobbs, NM
Project Name: Deep 6 in.
Project Number: 700376.051.01
SRS #: 2002-10312

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
323452	MW-6	water	2013-03-14	10:25	2013-03-14
323453	MW-7	water	2013-03-14	10:30	2013-03-14
323454	MW-8	water	2013-03-14	10:45	2013-03-14
323455	MW-9	water	2013-03-14	10:55	2013-03-14
323456	MW-10	water	2013-03-14	11:15	2013-03-14
323457	MW-11	water	2013-03-14	10:50	2013-03-14
323458	MW-12	water	2013-03-14	11:15	2013-03-14

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Deep 6 in. were received by TraceAnalysis, Inc. on 2013-03-14 and assigned to work order 13031502. Samples for work order 13031502 were received intact without headspace and at a temperature of 2.3 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	84510	2013-03-15 at 13:26	99752	2013-03-15 at 13:26

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13031502 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 323452 - MW-6

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99752	Date Analyzed:	2013-03-15	Analyzed By:	MT
Prep Batch:	84510	Sample Preparation:	2013-03-15	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0890	mg/L	1	0.100	89	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0919	mg/L	1	0.100	92	80 - 120

Sample: 323453 - MW-7

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99752	Date Analyzed:	2013-03-15	Analyzed By:	MT
Prep Batch:	84510	Sample Preparation:	2013-03-15	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0862	mg/L	1	0.100	86	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0864	mg/L	1	0.100	86	80 - 120

Sample: 323454 - MW-8

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99752	Date Analyzed:	2013-03-15	Analyzed By:	MT
Prep Batch:	84510	Sample Preparation:	2013-03-15	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0862	mg/L	1	0.100	86	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0865	mg/L	1	0.100	86	80 - 120

Sample: 323455 - MW-9

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99752	Date Analyzed:	2013-03-15	Analyzed By:	MT
Prep Batch:	84510	Sample Preparation:	2013-03-15	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0868	mg/L	1	0.100	87	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0870	mg/L	1	0.100	87	80 - 120

Sample: 323456 - MW-10

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99752	Date Analyzed:	2013-03-15	Analyzed By:	MT
Prep Batch:	84510	Sample Preparation:	2013-03-15	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**14.1**	mg/L	50	0.00100
Toluene	U	1	<0.0500	mg/L	50	0.00100
Ethylbenzene		1	**0.350**	mg/L	50	0.00100
Xylene		1	**0.182**	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.24	mg/L	50	5.00	85	80 - 120
4-Bromofluorobenzene (4-BFB)			4.32	mg/L	50	5.00	86	80 - 120

Sample: 323457 - MW-11

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99752	Date Analyzed:	2013-03-15	Analyzed By:	MT
Prep Batch:	84510	Sample Preparation:	2013-03-15	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0871	mg/L	1	0.100	87	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0857	mg/L	1	0.100	86	80 - 120

Sample: 323458 - MW-12

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99752	Date Analyzed:	2013-03-15	Analyzed By:	MT
Prep Batch:	84510	Sample Preparation:	2013-03-15	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**2.51**	mg/L	50	0.00100
Toluene	U	1	<0.0500	mg/L	50	0.00100
Ethylbenzene	U	1	<0.0500	mg/L	50	0.00100
Xylene	U	1	<0.0500	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.26	mg/L	50	5.00	85	80 - 120
4-Bromofluorobenzene (4-BFB)			4.42	mg/L	50	5.00	88	80 - 120

Method Blanks

Method Blank (1) QC Batch: 99752

QC Batch:	99752	Date Analyzed:	2013-03-15	Analyzed By:	MT
Prep Batch:	84510	QC Preparation:	2013-03-15	Prepared By:	MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000567	mg/L	0.001
Toluene		1	<0.000518	mg/L	0.001
Ethylbenzene		1	<0.000518	mg/L	0.001
Xylene		1	<0.000548	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0887	mg/L	1	0.100	89	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0910	mg/L	1	0.100	91	80 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 99752 | Date Analyzed: 2013-03-15 | Analyzed By: MT
Prep Batch: 84510 | QC Preparation: 2013-03-15 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0900	mg/L	1	0.100	<0.000567	90	80 - 120
Toluene		1	0.0974	mg/L	1	0.100	<0.000518	97	80 - 120
Ethylbenzene		1	0.0944	mg/L	1	0.100	<0.000518	94	80 - 120
Xylene		1	0.277	mg/L	1	0.300	<0.000548	92	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0860	mg/L	1	0.100	<0.000567	86	80 - 120	4	20
Toluene		1	0.0919	mg/L	1	0.100	<0.000518	92	80 - 120	6	20
Ethylbenzene		1	0.0895	mg/L	1	0.100	<0.000518	90	80 - 120	5	20
Xylene		1	0.264	mg/L	1	0.300	<0.000548	88	80 - 120	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0878	0.0870	mg/L	1	0.100	88	87	80 - 120
4-Bromofluorobenzene (4-BFB)	0.0886	0.0866	mg/L	1	0.100	89	87	80 - 120

Matrix Spike (MS-1) Spiked Sample: 323452

QC Batch: 99752 | Date Analyzed: 2013-03-15 | Analyzed By: MT
Prep Batch: 84510 | QC Preparation: 2013-03-15 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0910	mg/L	1	0.100	<0.000567	91	64.6 - 120
Toluene		1	0.0963	mg/L	1	0.100	<0.000518	96	62.9 - 123
Ethylbenzene		1	0.0930	mg/L	1	0.100	<0.000518	93	64.2 - 123
Xylene		1	0.267	mg/L	1	0.300	<0.000548	89	63.1 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0875	mg/L	1	0.100	<0.000567	88	64.6 - 120	4	20
Toluene		1	0.0939	mg/L	1	0.100	<0.000518	94	62.9 - 123	2	20
Ethylbenzene		1	0.0933	mg/L	1	0.100	<0.000518	93	64.2 - 123	0	20
Xylene		1	0.260	mg/L	1	0.300	<0.000548	87	63.1 - 121	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0894	0.0872	mg/L	1	0.1	89	87	80 - 120
4-Bromofluorobenzene (4-BFB)	0.0890	0.0876	mg/L	1	0.1	89	88	80 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 99752 | Date Analyzed: 2013-03-15 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0909	91	80 - 120	2013-03-15
Toluene		1	mg/L	0.100	0.0978	98	80 - 120	2013-03-15
Ethylbenzene		1	mg/L	0.100	0.0941	94	80 - 120	2013-03-15
Xylene		1	mg/L	0.300	0.276	92	80 - 120	2013-03-15

Standard (CCV-2)

QC Batch: 99752 | Date Analyzed: 2013-03-15 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0890	89	80 - 120	2013-03-15
Toluene		1	mg/L	0.100	0.0937	94	80 - 120	2013-03-15
Ethylbenzene		1	mg/L	0.100	0.0909	91	80 - 120	2013-03-15
Xylene		1	mg/L	0.300	0.266	89	80 - 120	2013-03-15

Standard (CCV-3)

QC Batch: 99752 | Date Analyzed: 2013-03-15 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0861	86	80 - 120	2013-03-15
Toluene		1	mg/L	0.100	0.0890	89	80 - 120	2013-03-15
Ethylbenzene		1	mg/L	0.100	0.0855	86	80 - 120	2013-03-15
Xylene		1	mg/L	0.300	0.251	84	80 - 120	2013-03-15

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-12-8	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 13031502

Page _____ of _____

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: TALON LPE
Phone #: 432-522-2133
Address: (Street, City, Zip) 2901 S Hwy 349, Midland, Tx
Fax #: 432-522-2133
Contact Person: Brad Ivy
E-mail: ~~Bradley~~ bivy@talonlpe.com
Invoice to: (If different from above) Plains 2002-10312
Project #: 700376.051.01
Project Name: Lovington Deep 6
Project Location (including state): HOBBS, NM
Sampler Signature: Ramon C. / Parker M.

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
323452	MW-6	3	VOA											3/14/13	1025
453	MW-7	3	VOA											3/14/13	1030
454	MW-8	3	VOA											3/14/13	1045
455	MW-9	3	VOA											3/14/13	1055
456	MW-10	3	VOA											3/14/13	1115
457	MW-11	3	VOA											3/14/13	1050
458	MW-12	3	VOA											3/14/13	1115

MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC						Turn Around Time if different from standard	Hold
	X																								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
[signature]	TALON LPE	3/14/13	1600					INST ____ °C OBS ____ °C COR ____ °C
								INST ____ °C OBS ____ °C COR ____ °C
				Brenda Ward	Trac Lubbock	3/14/13	16:00	INST IR-3 °C OBS 1.9 °C COR 2.3 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review

REMARKS:

- [ ] Dry Weight Basis Required
- [ ] TRRP Report Required
- [ ] Check If Special Reporting Limits Are Needed

Carrier # Carry In

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

ORIGINAL COPY

Analytical Report 464472

for

PLAINS ALL AMERICAN EH&S

Project Manager: Brad Ivy

Lovington Deep 6"

700376.051.01

12-JUN-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

12-JUN-13

Project Manager: **Brad Ivy**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **464472**
Lovington Deep 6"
Project Address: Lea County, NM

Brad Ivy:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 464472. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 464472 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	06-04-13 10:00		464472-001
MW-3	W	06-04-13 14:15		464472-002
MW-4	W	06-04-13 13:45		464472-003
MW-5	W	06-04-13 11:15		464472-004
MW-6	W	06-04-13 15:45		464472-005
MW-7	W	06-04-13 14:45		464472-006
MW-8	W	06-04-13 10:45		464472-007
MW-9	W	06-04-13 11:45		464472-008
MW-10	W	06-04-13 12:45		464472-009
MW-11	W	06-04-13 13:15		464472-010
MW-12	W	06-04-13 12:15		464472-011
MW-18	W	06-04-13 15:15		464472-012

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lovington Deep 6"

Project Id: 700376.051.01
Contact: Brad Ivy
Project Location: Lea County, NM

Date Received in Lab: Tue Jun-04-13 04:30 pm
Report Date: 12-JUN-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	464472-001		464472-002		464472-003		464472-004		464472-005		464472-006	
	Field Id:	MW-1		MW-3		MW-4		MW-5		MW-6		MW-7	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Jun-04-13 10:00		Jun-04-13 14:15		Jun-04-13 13:45		Jun-04-13 11:15		Jun-04-13 15:45		Jun-04-13 14:45	
BTEX by EPA 8021B	***Extracted:***	Jun-06-13 16:00		Jun-06-13 16:00		Jun-06-13 16:00		Jun-06-13 16:00		Jun-06-13 16:00		Jun-06-13 16:00	
	Analyzed:	Jun-07-13 11:50		Jun-07-13 12:39		Jun-07-13 12:06		Jun-07-13 12:23		Jun-07-13 09:55		Jun-07-13 10:11	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	0.332	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00100	0.0518	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
m,p-Xylenes		ND	0.00200	0.0607	0.00200	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00100	0.00127	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total Xylenes		ND	0.00100	0.0620	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100
Total BTEX		ND	0.00100	0.446	0.00100	ND	0.00100	ND	0.00100	ND	0.00100	ND	0.00100

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Lovington Deep 6"

Project Id: 700376.051.01
Contact: Brad Ivy
Project Location: Lea County, NM

Date Received in Lab: Tue Jun-04-13 04:30 pm
Report Date: 12-JUN-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	464472-007		464472-008		464472-009		464472-010		464472-011		464472-012	
	Field Id:	MW-8		MW-9		MW-10		MW-11		MW-12		MW-18	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	Jun-04-13 10:45		Jun-04-13 11:45		Jun-04-13 12:45		Jun-04-13 13:15		Jun-04-13 12:15		Jun-04-13 15:15	
BTEX by EPA 8021B	***Extracted:***	Jun-06-13 16:00		Jun-06-13 16:00		Jun-06-13 16:00		Jun-06-13 16:00		Jun-06-13 16:00		Jun-06-13 16:00	
	Analyzed:	Jun-07-13 10:45		Jun-07-13 11:02		Jun-07-13 16:43		Jun-07-13 11:34		Jun-07-13 16:59		Jun-07-13 11:18	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		ND	0.00100	ND	0.00100	14.7	0.0500	0.00346	0.00100	5.17	0.0200	ND	0.00100
Toluene		ND	0.00200	ND	0.00200	ND	0.100	ND	0.00200	ND	0.0400	ND	0.00200
Ethylbenzene		ND	0.00100	ND	0.00100	0.559	0.0500	ND	0.00100	0.0598	0.0200	ND	0.00100
m,p-Xylenes		ND	0.00200	ND	0.00200	0.175	0.100	ND	0.00200	ND	0.0400	ND	0.00200
o-Xylene		ND	0.00100	ND	0.00100	ND	0.0500	ND	0.00100	ND	0.0200	ND	0.00100
Total Xylenes		ND	0.00100	ND	0.00100	0.175	0.0500	ND	0.00100	ND	0.0200	ND	0.00100
Total BTEX		ND	0.00100	ND	0.00100	15.4	0.0500	0.00346	0.00100	5.23	0.0200	ND	0.00100

Kelsey Brooks
Project Manager

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-1**
Lab Sample Id: 464472-001
Matrix: Water
Date Collected: 06.04.13 10.00
Date Received: 06.04.13 16.30

Analytical Method: BTEX by EPA 8021B
Tech: DYV
Analyst: DYV
Seq Number: 915781
Prep Method: SW5030B
% Moisture:
Date Prep: 06.06.13 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.07.13 11.50	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.07.13 11.50	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.07.13 11.50	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.07.13 11.50	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.07.13 11.50	U	1
Total Xylenes	1330-20-7	ND	0.00100	mg/L	06.07.13 11.50	U	1
Total BTEX		ND	0.00100	mg/L	06.07.13 11.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	80-120	06.07.13 11.50	
4-Bromofluorobenzene	460-00-4	81	%	80-120	06.07.13 11.50	

Final 1.000

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-3** Matrix: Water Date Received:06.04.13 16.30

Lab Sample Id: 464472-002 Date Collected: 06.04.13 14.15

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.06.13 16.00

Seq Number: 915781

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.332**	0.00100	mg/L	06.07.13 12.39		1
Toluene	108-88-3	ND	0.00200	mg/L	06.07.13 12.39	U	1
Ethylbenzene	100-41-4	**0.0518**	0.00100	mg/L	06.07.13 12.39		1
m,p-Xylenes	179601-23-1	**0.0607**	0.00200	mg/L	06.07.13 12.39		1
o-Xylene	95-47-6	**0.00127**	0.00100	mg/L	06.07.13 12.39		1
Total Xylenes	1330-20-7	**0.0620**	0.00100	mg/L	06.07.13 12.39		1
Total BTEX		**0.446**	0.00100	mg/L	06.07.13 12.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	80-120	06.07.13 12.39	
4-Bromofluorobenzene	460-00-4	90	%	80-120	06.07.13 12.39	

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-4** Matrix: Water Date Received:06.04.13 16.30

Lab Sample Id: 464472-003 Date Collected: 06.04.13 13.45

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.06.13 16.00

Seq Number: 915781

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.07.13 12.06	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.07.13 12.06	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.07.13 12.06	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.07.13 12.06	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.07.13 12.06	U	1
Total Xylenes	1330-20-7	ND	0.00100	mg/L	06.07.13 12.06	U	1
Total BTEX		ND	0.00100	mg/L	06.07.13 12.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94	%	80-120	06.07.13 12.06	
4-Bromofluorobenzene	460-00-4	81	%	80-120	06.07.13 12.06	

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-5** Matrix: Water Date Received:06.04.13 16.30

Lab Sample Id: 464472-004 Date Collected: 06.04.13 11.15

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.06.13 16.00

Seq Number: 915781

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.07.13 12.23	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.07.13 12.23	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.07.13 12.23	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.07.13 12.23	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.07.13 12.23	U	1
Total Xylenes	1330-20-7	ND	0.00100	mg/L	06.07.13 12.23	U	1
Total BTEX		ND	0.00100	mg/L	06.07.13 12.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	80-120	06.07.13 12.23	
4-Bromofluorobenzene	460-00-4	80	%	80-120	06.07.13 12.23	

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-6** Matrix: Water Date Received:06.04.13 16.30

Lab Sample Id: 464472-005 Date Collected: 06.04.13 15.45

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.06.13 16.00

Seq Number: 915781

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.07.13 09.55	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.07.13 09.55	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.07.13 09.55	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.07.13 09.55	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.07.13 09.55	U	1
Total Xylenes	1330-20-7	ND	0.00100	mg/L	06.07.13 09.55	U	1
Total BTEX		ND	0.00100	mg/L	06.07.13 09.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	93	%	80-120	06.07.13 09.55	
4-Bromofluorobenzene	460-00-4	83	%	80-120	06.07.13 09.55	

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-7** Matrix: Water Date Received:06.04.13 16.30

Lab Sample Id: 464472-006 Date Collected: 06.04.13 14.45

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.06.13 16.00

Seq Number: 915781

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.07.13 10.11	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.07.13 10.11	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.07.13 10.11	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.07.13 10.11	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.07.13 10.11	U	1
Total Xylenes	1330-20-7	ND	0.00100	mg/L	06.07.13 10.11	U	1
Total BTEX		ND	0.00100	mg/L	06.07.13 10.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	95	%	80-120	06.07.13 10.11	
4-Bromofluorobenzene	460-00-4	86	%	80-120	06.07.13 10.11	

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-8** Matrix: Water Date Received:06.04.13 16.30

Lab Sample Id: 464472-007 Date Collected: 06.04.13 10.45

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.06.13 16.00

Seq Number: 915781

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.07.13 10.45	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.07.13 10.45	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.07.13 10.45	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.07.13 10.45	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.07.13 10.45	U	1
Total Xylenes	1330-20-7	ND	0.00100	mg/L	06.07.13 10.45	U	1
Total BTEX		ND	0.00100	mg/L	06.07.13 10.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	80-120	06.07.13 10.45	
4-Bromofluorobenzene	460-00-4	81	%	80-120	06.07.13 10.45	

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-9** Matrix: Water Date Received:06.04.13 16.30

Lab Sample Id: 464472-008 Date Collected: 06.04.13 11.45

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.06.13 16.00

Seq Number: 915781

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.07.13 11.02	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.07.13 11.02	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.07.13 11.02	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.07.13 11.02	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.07.13 11.02	U	1
Total Xylenes	1330-20-7	ND	0.00100	mg/L	06.07.13 11.02	U	1
Total BTEX		ND	0.00100	mg/L	06.07.13 11.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	93	%	80-120	06.07.13 11.02	
4-Bromofluorobenzene	460-00-4	80	%	80-120	06.07.13 11.02	

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-10** Matrix: Water Date Received:06.04.13 16.30

Lab Sample Id: 464472-009 Date Collected: 06.04.13 12.45

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.06.13 16.00

Seq Number: 915781

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**14.7**	0.0500	mg/L	06.07.13 16.43		50
Toluene	108-88-3	ND	0.100	mg/L	06.07.13 16.43	U	50
Ethylbenzene	100-41-4	**0.559**	0.0500	mg/L	06.07.13 16.43		50
m,p-Xylenes	179601-23-1	**0.175**	0.100	mg/L	06.07.13 16.43		50
o-Xylene	95-47-6	ND	0.0500	mg/L	06.07.13 16.43	U	50
Total Xylenes	1330-20-7	**0.175**	0.0500	mg/L	06.07.13 16.43		50
Total BTEX		**15.4**	0.0500	mg/L	06.07.13 16.43		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	80-120	06.07.13 16.43	
4-Bromofluorobenzene	460-00-4	95	%	80-120	06.07.13 16.43	

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-11** Matrix: Water Date Received:06.04.13 16.30

Lab Sample Id: 464472-010 Date Collected: 06.04.13 13.15

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.06.13 16.00

Seq Number: 915781

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00346**	0.00100	mg/L	06.07.13 11.34		1
Toluene	108-88-3	ND	0.00200	mg/L	06.07.13 11.34	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.07.13 11.34	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.07.13 11.34	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.07.13 11.34	U	1
Total Xylenes	1330-20-7	ND	0.00100	mg/L	06.07.13 11.34	U	1
Total BTEX		**0.00346**	0.00100	mg/L	06.07.13 11.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	94	%	80-120	06.07.13 11.34	
4-Bromofluorobenzene	460-00-4	81	%	80-120	06.07.13 11.34	

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-12**
Lab Sample Id: 464472-011
Matrix: Water
Date Collected: 06.04.13 12.15
Date Received: 06.04.13 16.30

Analytical Method: BTEX by EPA 8021B
Tech: DYV
Analyst: DYV
Seq Number: 915781
Prep Method: SW5030B
% Moisture:
Date Prep: 06.06.13 16.00

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**5.17**	0.0200	mg/L	06.07.13 16.59		20
Toluene	108-88-3	ND	0.0400	mg/L	06.07.13 16.59	U	20
Ethylbenzene	100-41-4	**0.0598**	0.0200	mg/L	06.07.13 16.59		20
m,p-Xylenes	179601-23-1	ND	0.0400	mg/L	06.07.13 16.59	U	20
o-Xylene	95-47-6	ND	0.0200	mg/L	06.07.13 16.59	U	20
Total Xylenes	1330-20-7	ND	0.0200	mg/L	06.07.13 16.59	U	20
Total BTEX		**5.23**	0.0200	mg/L	06.07.13 16.59		20

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	80-120	06.07.13 16.59	
4-Bromofluorobenzene	460-00-4	103	%	80-120	06.07.13 16.59	

Certificate of Analytical Results 464472

PLAINS ALL AMERICAN EH&S, Midland, TX

Lovington Deep 6"

Sample Id: **MW-18** Matrix: Water Date Received:06.04.13 16.30

Lab Sample Id: 464472-012 Date Collected: 06.04.13 15.15

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.06.13 16.00

Seq Number: 915781

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.07.13 11.18	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.07.13 11.18	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.07.13 11.18	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.07.13 11.18	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.07.13 11.18	U	1
Total Xylenes	1330-20-7	ND	0.00100	mg/L	06.07.13 11.18	U	1
Total BTEX		ND	0.00100	mg/L	06.07.13 11.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	92	%	80-120	06.07.13 11.18	
4-Bromofluorobenzene	460-00-4	81	%	80-120	06.07.13 11.18	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

\+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

PLAINS ALL AMERICAN EH&S

Lovington Deep 6"

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 915781 Matrix: Water Date Prep: 06.06.13

MB Sample Id: 639339-1-BLK LCS Sample Id: 639339-1-BKS LCSD Sample Id: 639339-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.104	104	0.0993	99	70-125	5	25	mg/L	06.07.13 08:50	
Toluene	<0.00200	0.100	0.0980	98	0.0934	93	70-125	5	25	mg/L	06.07.13 08:50	
Ethylbenzene	<0.00100	0.100	0.0993	99	0.0947	95	71-129	5	25	mg/L	06.07.13 08:50	
m,p-Xylenes	<0.00200	0.200	0.196	98	0.186	93	70-131	5	25	mg/L	06.07.13 08:50	
o-Xylene	<0.00100	0.100	0.101	101	0.0965	97	71-133	5	25	mg/L	06.07.13 08:50	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		107		104		80-120	%	06.07.13 08:50
4-Bromofluorobenzene	81		116		112		80-120	%	06.07.13 08:50

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 915781 Matrix: Water Date Prep: 06.06.13

Parent Sample Id: 464472-005 MS Sample Id: 464472-005 S MSD Sample Id: 464472-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.106	106	0.113	113	70-125	6	25	mg/L	06.07.13 12:55	
Toluene	<0.00200	0.100	0.0948	95	0.101	101	70-125	6	25	mg/L	06.07.13 12:55	
Ethylbenzene	<0.00100	0.100	0.0934	93	0.0989	99	71-129	6	25	mg/L	06.07.13 12:55	
m,p-Xylenes	<0.00200	0.200	0.179	90	0.192	96	70-131	7	25	mg/L	06.07.13 12:55	
o-Xylene	<0.00100	0.100	0.0948	95	0.101	101	71-133	6	25	mg/L	06.07.13 12:55	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	107		106		80-120	%	06.07.13 12:55
4-Bromofluorobenzene	107		107		80-120	%	06.07.13 12:55

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Brad Ivy
Company Name: Talon/LPE
Company Address: 921 N. Bivins St.
City/State/Zip: Amarillo, Tx 79107
Telephone No: 432-478-5414 Fax No: 806-467-0622
Sampler Signature: Miguel Barrio e-mail: Bivy@talonlpe.com

Project Name: Lovington Deep 6"
Project #: 700376.051.01
Project Loc: Lea Co., NM
PO #: Plains
Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only) ORDER #: 464472

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge; GW=Groundwater S=Soil/Solid; NP=Non-Potable Specify Other	Analyze For: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	MW-1			6.4.13	10:00	G	3	X		X						GW								X				X
	MW-3				14:15																							
	MW-4				13:45																							
	MW-5				11:15																							
	MW-6				15:45																							
	MW-7				14:45																							
	MW-8				10:45																							
	MW-9				11:45																							
	MW-10				12:45																							
	MW-11				13:15																							

Special Instructions: 6.4.13

Relinquished by:	Date	Time	Received by:	Date	Time
Miguel Barrio	6-4-13	16:30	Perla Resendez	6-4-13	16:30
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Shawnee Smith	06-5-13	13:20

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star 1.0		
Temperature Upon Receipt: 5.9 °C		

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Brad Ivy
Company Name: Talon/LPE
Company Address: 921 N. Bivins St
City/State/Zip: Amarillo, Tx 79107
Telephone No: 432-978-5414 Fax No: 806-467-0622
Sampler Signature: [signature] e-mail: BIvy@Talonlpe.com

Project Name: Lovington Deep 6"
Project #: 700376.057.01
Project Loc: Lea Co., NM
PO #: Plains
Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only) ORDER #: 464472

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TOTAL: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	MW-12			6.4.13	12:15	G	3	X		X						GW								X				X
	MW-18			↓	15:15	↓	↓	↓		↓						↓								↓				↓

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	6.4.13	16:30	Xerla Resendiz	6-4-13	16:30
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: [signature]	Date 6-5-13	Time 13:00

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star		

Temperature Upon Receipt: 5 @ 1.0 °C

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 06/04/2013 04:30:00 PM

Work Order #: 464472

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 06/05/2013

Checklist reviewed by: Kelsey Brooks Date: 06/05/2013

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Brad Ivy
Talon LPE-Amarillo
921 North Bivins
Amarillo, TX, 79107

Report Date: October 10, 2013

Work Order: 13100203

Project Location: Lea Co. New Mexico
Project Name: Lovington Deep 6"
Project Number: 700376.051.01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
343035	MW-1	water	2013-09-29	12:00	2013-10-01
343036	MW-3	water	2013-09-29	12:20	2013-10-01
343037	MW-4	water	2013-09-29	12:40	2013-10-01
343038	MW-5	water	2013-09-29	13:00	2013-10-01
343039	MW-6	water	2013-09-29	13:20	2013-10-01
343040	MW-7	water	2013-09-29	13:40	2013-10-01
343041	MW-8	water	2013-09-29	14:00	2013-10-01
343042	MW-9	water	2013-09-29	14:20	2013-10-01
343043	MW-10	water	2013-09-29	14:40	2013-10-01
343044	MW-11	water	2013-09-29	15:00	2013-10-01
343045	MW-12	water	2013-09-29	15:20	2013-10-01
343046	MW-18	water	2013-09-29	15:40	2013-10-01

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Lovington Deep 6" were received by TraceAnalysis, Inc. on 2013-10-01 and assigned to work order 13100203. Samples for work order 13100203 were received intact without headspace and at a temperature of 2.8 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	89534	2013-10-03 at 15:28	105713	2013-10-03 at 15:28
PAH	S 8270D	89658	2013-10-04 at 15:00	105853	2013-10-10 at 11:24

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13100203 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 343035 - MW-1

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.104	mg/L	1	0.100	104	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.104	mg/L	1	0.100	104	74.6 - 120

Sample: 343036 - MW-3

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.652**	mg/L	10	0.00100
Toluene	U	1	<0.0100	mg/L	10	0.00100
Ethylbenzene		1	**0.0484**	mg/L	10	0.00100
Xylene		1	**0.0730**	mg/L	10	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.06	mg/L	10	1.00	106	75.4 - 120
4-Bromofluorobenzene (4-BFB)			1.06	mg/L	10	1.00	106	74.6 - 120

Sample: 343037 - MW-4

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.104	mg/L	1	0.100	104	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.103	mg/L	1	0.100	103	74.6 - 120

Sample: 343038 - MW-5

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.102	mg/L	1	0.100	102	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.101	mg/L	1	0.100	101	74.6 - 120

Sample: 343039 - MW-6

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.105	mg/L	1	0.100	105	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.105	mg/L	1	0.100	105	74.6 - 120

Sample: 343040 - MW-7

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.104	mg/L	1	0.100	104	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.104	mg/L	1	0.100	104	74.6 - 120

Sample: 343041 - MW-8

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.106	mg/L	1	0.100	106	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.106	mg/L	1	0.100	106	74.6 - 120

Sample: 343042 - MW-9

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		0.122	mg/L	1	0.100	122	75.4 - 120
4-Bromofluorobenzene (4-BFB)				0.118	mg/L	1	0.100	118	74.6 - 120

Sample: 343043 - MW-10

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**19.3**	mg/L	50	0.00100
Toluene	U	1	<0.0500	mg/L	50	0.00100
Ethylbenzene		1	**0.464**	mg/L	50	0.00100
Xylene		1	**0.0751**	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			5.60	mg/L	50	5.00	112	75.4 - 120
4-Bromofluorobenzene (4-BFB)			6.01	mg/L	50	5.00	120	74.6 - 120

Sample: 343043 - MW-10

Laboratory:	Lubbock				
Analysis:	PAH	Analytical Method:	S 8270D	Prep Method:	S 3510C
QC Batch:	105853	Date Analyzed:	2013-10-10	Analyzed By:	MN
Prep Batch:	89658	Sample Preparation:	2013-10-04	Prepared By:	MN

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Naphthalene	U	1	<0.000197	mg/L	0.985	0.000200
2-Methylnaphthalene	U	1	<0.000197	mg/L	0.985	0.000200
1-Methylnaphthalene	U		<0.000197	mg/L	0.985	0.000200
Acenaphthylene	U	1	<0.000197	mg/L	0.985	0.000200
Acenaphthene	U	1	<0.000197	mg/L	0.985	0.000200
Dibenzofuran	U	1	<0.000197	mg/L	0.985	0.000200
Fluorene	U	1	<0.000197	mg/L	0.985	0.000200
Anthracene	Qs,U	1	<0.000197	mg/L	0.985	0.000200
Phenanthrene	U	1	<0.000197	mg/L	0.985	0.000200
Fluoranthene	Qs,U	1	<0.000197	mg/L	0.985	0.000200
Pyrene	U	1	<0.000197	mg/L	0.985	0.000200
Benzo(a)anthracene	Qc,U	1	<0.000197	mg/L	0.985	0.000200
Chrysene	U	1	<0.000197	mg/L	0.985	0.000200
Benzo(b)fluoranthene	U	1	<0.000197	mg/L	0.985	0.000200
Benzo(k)fluoranthene	U	1	<0.000197	mg/L	0.985	0.000200
Benzo(a)pyrene	U	1	<0.000197	mg/L	0.985	0.000200
Indeno(1,2,3-cd)pyrene	U	1	<0.000197	mg/L	0.985	0.000200
Dibenzo(a,h)anthracene	U	1	<0.000197	mg/L	0.985	0.000200

continued ...

sample 343043 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzo(g,h,i)perylene	U	1	<0.000197	mg/L	0.985	0.000200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0515	mg/L	0.985	0.0800	64	40 - 110
2-Fluorobiphenyl			0.0479	mg/L	0.985	0.0800	60	50 - 110
Terphenyl-d14			0.0846	mg/L	0.985	0.0800	106	50 - 135

Sample: 343044 - MW-11

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.105	mg/L	1	0.100	105	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.105	mg/L	1	0.100	105	74.6 - 120

Sample: 343045 - MW-12

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.00110**	mg/L	1	0.00100

continued . . .

sample 343045 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.106	mg/L	1	0.100	106	75.4 - 120
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	0.120	mg/L	1	0.100	120	74.6 - 120

Sample: 343046 - MW-18

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105713	Date Analyzed:	2013-10-03	Analyzed By:	JS
Prep Batch:	89534	Sample Preparation:	2013-10-03	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.106	mg/L	1	0.100	106	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.106	mg/L	1	0.100	106	74.6 - 120

Method Blanks

Method Blank (1) QC Batch: 105713

QC Batch: 105713 | Date Analyzed: 2013-10-03 | Analyzed By: JS
Prep Batch: 89534 | QC Preparation: 2013-10-03 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000567	mg/L	0.001
Toluene		1	<0.000518	mg/L	0.001
Ethylbenzene		1	<0.000518	mg/L	0.001
Xylene		1	<0.000548	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.105	mg/L	1	0.100	105	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.104	mg/L	1	0.100	104	74.6 - 120

Method Blank (1) QC Batch: 105853

QC Batch: 105853 | Date Analyzed: 2013-10-10 | Analyzed By: MN
Prep Batch: 89658 | QC Preparation: 2013-10-04 | Prepared By: MN

Parameter	Flag	Cert	MDL Result	Units	RL
Naphthalene		1	<0.000121	mg/L	0.0002
2-Methylnaphthalene		1	<0.0000913	mg/L	0.0002
1-Methylnaphthalene			<0.000109	mg/L	0.0002
Acenaphthylene		1	<0.000100	mg/L	0.0002
Acenaphthene		1	<0.000122	mg/L	0.0002
Dibenzofuran		1	<0.000108	mg/L	0.0002
Fluorene		1	<0.000100	mg/L	0.0002
Anthracene		1	<0.0000791	mg/L	0.0002
Phenanthrene		1	<0.0000824	mg/L	0.0002
Fluoranthene		1	<0.000124	mg/L	0.0002
Pyrene		1	<0.0000691	mg/L	0.0002
Benzo(a)anthracene		1	<0.000101	mg/L	0.0002
Chrysene		1	<0.0000769	mg/L	0.0002
Benzo(b)fluoranthene		1	<0.0000813	mg/L	0.0002
Benzo(k)fluoranthene		1	<0.0000790	mg/L	0.0002
Benzo(a)pyrene		1	<0.0000701	mg/L	0.0002

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
Indeno(1,2,3-cd)pyrene		1	<0.0000770	mg/L	0.0002
Dibenzo(a,h)anthracene		1	<0.0000851	mg/L	0.0002
Benzo(g,h,i)perylene		1	<0.0000798	mg/L	0.0002

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5			0.0427	mg/L	1	0.0800	53	40 - 110
2-Fluorobiphenyl			0.0412	mg/L	1	0.0800	52	50 - 110
Terphenyl-d14			0.0540	mg/L	1	0.0800	68	50 - 135

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 105713 | Date Analyzed: 2013-10-03 | Analyzed By: JS
Prep Batch: 89534 | QC Preparation: 2013-10-03 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0981	mg/L	1	0.100	<0.000567	98	74.3 - 120
Toluene		1	0.0994	mg/L	1	0.100	<0.000518	99	77.6 - 120
Ethylbenzene		1	0.101	mg/L	1	0.100	<0.000518	101	78.5 - 120
Xylene		1	0.305	mg/L	1	0.300	<0.000548	102	77.6 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0998	mg/L	1	0.100	<0.000567	100	74.3 - 120	2	20
Toluene		1	0.0998	mg/L	1	0.100	<0.000518	100	77.6 - 120	0	20
Ethylbenzene		1	0.101	mg/L	1	0.100	<0.000518	101	78.5 - 120	0	20
Xylene		1	0.306	mg/L	1	0.300	<0.000548	102	77.6 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.100	0.102	mg/L	1	0.100	100	102	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.100	0.102	mg/L	1	0.100	100	102	74.6 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 105853 | Date Analyzed: 2013-10-10 | Analyzed By: MN
Prep Batch: 89658 | QC Preparation: 2013-10-04 | Prepared By: MN

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene		1	0.0444	mg/L	1	0.0800	<0.000121	56	40 - 100
2-Methylnaphthalene		1	0.0415	mg/L	1	0.0800	<0.0000913	52	45 - 105
1-Methylnaphthalene			0.0429	mg/L	1	0.0800	<0.000109	54	34.3 - 120
Acenaphthylene		1	0.0483	mg/L	1	0.0800	<0.000100	60	55 - 105
Acenaphthene		1	0.0437	mg/L	1	0.0800	<0.000122	55	45 - 110

continued ...

control spikes continued ...

Param		F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dibenzofuran			1	0.0505	mg/L	1	0.0800	<0.000108	63	55 - 105
Fluorene			1	0.0453	mg/L	1	0.0800	<0.000100	57	50 - 110
Anthracene	Qs	Qs	1	0.0378	mg/L	1	0.0800	<0.0000791	47	55 - 110
Phenanthrene			1	0.0404	mg/L	1	0.0800	<0.0000824	50	50 - 115
Fluoranthene	Qs	Qs	1	0.0383	mg/L	1	0.0800	<0.000124	48	55 - 115
Pyrene			1	0.0451	mg/L	1	0.0800	<0.0000691	56	50 - 130
Benzo(a)anthracene			1	0.0544	mg/L	1	0.0800	<0.000101	68	55 - 110
Chrysene			1	0.0859	mg/L	1	0.0800	<0.0000769	107	55 - 110
Benzo(b)fluoranthene			1	0.0460	mg/L	1	0.0800	<0.0000813	58	45 - 120
Benzo(k)fluoranthene			1	0.0603	mg/L	1	0.0800	<0.0000790	75	45 - 125
Benzo(a)pyrene			1	0.0499	mg/L	1	0.0800	<0.0000701	62	55 - 110
Indeno(1,2,3-cd)pyrene			1	0.0537	mg/L	1	0.0800	<0.0000770	67	45 - 125
Dibenzo(a,h)anthracene			1	0.0702	mg/L	1	0.0800	<0.0000851	88	40 - 125
Benzo(g,h,i)perylene			1	0.0481	mg/L	1	0.0800	<0.0000798	60	40 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Naphthalene		1	0.0441	mg/L	1	0.0800	<0.000121	55	40 - 100	1	20
2-Methylnaphthalene		1	0.0430	mg/L	1	0.0800	<0.0000913	54	45 - 105	4	20
1-Methylnaphthalene			0.0444	mg/L	1	0.0800	<0.000109	56	34.3 - 120	3	20
Acenaphthylene		1	0.0492	mg/L	1	0.0800	<0.000100	62	55 - 105	2	20
Acenaphthene		1	0.0457	mg/L	1	0.0800	<0.000122	57	45 - 110	4	20
Dibenzofuran		1	0.0528	mg/L	1	0.0800	<0.000108	66	55 - 105	4	20
Fluorene		1	0.0483	mg/L	1	0.0800	<0.000100	60	50 - 110	6	20
Anthracene	Qs	Qs 1	0.0398	mg/L	1	0.0800	<0.0000791	50	55 - 110	5	20
Phenanthrene		1	0.0425	mg/L	1	0.0800	<0.0000824	53	50 - 115	5	20
Fluoranthene	Qs	Qs 1	0.0398	mg/L	1	0.0800	<0.000124	50	55 - 115	4	20
Pyrene		1	0.0474	mg/L	1	0.0800	<0.0000691	59	50 - 130	5	20
Benzo(a)anthracene		1	0.0547	mg/L	1	0.0800	<0.000101	68	55 - 110	0	20
Chrysene		1	0.0869	mg/L	1	0.0800	<0.0000769	109	55 - 110	1	20
Benzo(b)fluoranthene		1	0.0477	mg/L	1	0.0800	<0.0000813	60	45 - 120	4	20
Benzo(k)fluoranthene		1	0.0622	mg/L	1	0.0800	<0.0000790	78	45 - 125	3	20
Benzo(a)pyrene		1	0.0506	mg/L	1	0.0800	<0.0000701	63	55 - 110	1	20
Indeno(1,2,3-cd)pyrene		1	0.0544	mg/L	1	0.0800	<0.0000770	68	45 - 125	1	20
Dibenzo(a,h)anthracene		1	0.0737	mg/L	1	0.0800	<0.0000851	92	40 - 125	5	20
Benzo(g,h,i)perylene		1	0.0496	mg/L	1	0.0800	<0.0000798	62	40 - 125	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Nitrobenzene-d5	0.0594	0.0592	mg/L	1	0.0800	74	74	40 - 110
2-Fluorobiphenyl	0.0562	0.0577	mg/L	1	0.0800	70	72	50 - 110
Terphenyl-d14	0.0640	0.0689	mg/L	1	0.0800	80	86	50 - 135

Matrix Spike (MS-1) Spiked Sample: 343036

QC Batch: 105713 | Date Analyzed: 2013-10-03 | Analyzed By: JS
Prep Batch: 89534 | QC Preparation: 2013-10-03 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.67	mg/L	10	1.00	0.652	102	50.2 - 129
Toluene		1	0.969	mg/L	10	1.00	<0.00518	97	58.1 - 129
Ethylbenzene		1	1.07	mg/L	10	1.00	0.0484	102	58.1 - 127
Xylene		1	3.10	mg/L	10	3.00	0.073	101	53.1 - 128

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.61	mg/L	10	1.00	0.652	96	50.2 - 129	4	20
Toluene		1	0.902	mg/L	10	1.00	<0.00518	90	58.1 - 129	7	20
Ethylbenzene		1	1.00	mg/L	10	1.00	0.0484	95	58.1 - 127	7	20
Xylene		1	2.92	mg/L	10	3.00	0.073	95	53.1 - 128	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.04	1.02	mg/L	10	1	104	102	75.4 - 120
4-Bromofluorobenzene (4-BFB)	1.02	1.01	mg/L	10	1	102	101	74.6 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 105713 | Date Analyzed: 2013-10-03 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0987	99	80 - 120	2013-10-03
Toluene		1	mg/L	0.100	0.0998	100	80 - 120	2013-10-03
Ethylbenzene		1	mg/L	0.100	0.104	104	80 - 120	2013-10-03
Xylene		1	mg/L	0.300	0.308	103	80 - 120	2013-10-03

Standard (CCV-2)

QC Batch: 105713 | Date Analyzed: 2013-10-03 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.120	120	80 - 120	2013-10-03
Toluene		1	mg/L	0.100	0.117	117	80 - 120	2013-10-03
Ethylbenzene		1	mg/L	0.100	0.118	118	80 - 120	2013-10-03
Xylene		1	mg/L	0.300	0.356	119	80 - 120	2013-10-03

Standard (CCV-3)

QC Batch: 105713 | Date Analyzed: 2013-10-03 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.103	103	80 - 120	2013-10-03
Toluene		1	mg/L	0.100	0.102	102	80 - 120	2013-10-03
Ethylbenzene		1	mg/L	0.100	0.105	105	80 - 120	2013-10-03
Xylene		1	mg/L	0.300	0.317	106	80 - 120	2013-10-03

Standard (CCV-1)

QC Batch: 105853 Date Analyzed: 2013-10-10 Analyzed By: MN

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		1	mg/L	60.0	68.4	114	80 - 120	2013-10-10
2-Methylnaphthalene		1	mg/L	60.0	65.2	109	80 - 120	2013-10-10
1-Methylnaphthalene			mg/L	60.0	68.6	114	80 - 120	2013-10-10
Acenaphthylene		1	mg/L	60.0	67.6	113	80 - 120	2013-10-10
Acenaphthene		1	mg/L	60.0	63.8	106	80 - 120	2013-10-10
Dibenzofuran		1	mg/L	60.0	64.6	108	80 - 120	2013-10-10
Fluorene		1	mg/L	60.0	68.8	115	80 - 120	2013-10-10
Anthracene		1	mg/L	60.0	63.5	106	80 - 120	2013-10-10
Phenanthrene		1	mg/L	60.0	62.0	103	80 - 120	2013-10-10
Fluoranthene		1	mg/L	60.0	58.2	97	80 - 120	2013-10-10
Pyrene		1	mg/L	60.0	70.4	117	80 - 120	2013-10-10
Benzo(a)anthracene	Qc	Qc	1	mg/L	60.0	75.7	126	80 - 120	2013-10-10
Chrysene		1	mg/L	60.0	67.9	113	80 - 120	2013-10-10
Benzo(b)fluoranthene		1	mg/L	60.0	63.9	106	80 - 120	2013-10-10
Benzo(k)fluoranthene		1	mg/L	60.0	67.4	112	80 - 120	2013-10-10
Benzo(a)pyrene		1	mg/L	60.0	68.2	114	80 - 120	2013-10-10
Indeno(1,2,3-cd)pyrene		1	mg/L	60.0	65.2	109	80 - 120	2013-10-10
Dibenzo(a,h)anthracene		1	mg/L	60.0	61.5	102	80 - 120	2013-10-10
Benzo(g,h,i)perylene		1	mg/L	60.0	66.7	111	80 - 120	2013-10-10

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Nitrobenzene-d5			77.3	mg/L	1	60.0	129	-
2-Fluorobiphenyl			62.5	mg/L	1	60.0	104	-
Terphenyl-d14			71.0	mg/L	1	60.0	118	-

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 13100203

Page 1 of 2

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Brandon & Clark
3403 Industrial Blvd.
Hobbs, NM 88240
Tel (575) 392-7561
Fax (575) 392-4508

Company Name: Talon / LPE
Phone #: 806-350-8877
Address: (Street, City, Zip) 921 N. Bivins (Amarillo, Tx 79107)
Fax #: 806-467-0622
Contact Person: Brad Ivy
E-mail: Bivy@talonlpe.com
Invoice to: (If different from above) Plains (SRS# 2002-10312)
Project #: 720376.051.01
Project Name: Levington Deep 6"
Project Location (including state): Lea Co., NM
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC						Turn Around Time if different from standard	Hold
343035	MW-1	3		X				X				X		9.29.13	12:00		X																								
036	MW-3	3		X				X				X		9.29.13	12:20		X																								
037	MW-4	3		X				X				X		9.29.13	12:40		X																								
038	MW-5	3		X				X				X		9.29.13	13:00		X																								
039	MW-6	3		X				X				X		9.29.13	13:20		X																								
040	MW-7	3		X				X				X		9.29.13	13:40		X																								
041	MW-8	3		X				X				X		9.29.13	14:00		X																								
042	MW-9	3		X				X				X		9.29.13	14:20		X																								
043	MW-10	4		X				X				X		9.29.13	14:40		X			X																				
044	MW-11	3		X				X				X		9.29.13	15:00		X																								
045	MW-12	3		X				X				X		9.29.13	15:20		X																								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	Talon/LPE	10/1/13	3:02 pm					INST ____ °C OBS ____ °C COR ____ °C
								INST ____ °C OBS ____ °C COR ____ °C
				Brenda Ward	TA Lubbock	10/1/13	3:02 pm	INST +0.3 °C OBS 2.9 °C COR 2.8 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review MA

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Carrier # Carry In

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

ORIGINAL COPY

LAB Order ID # 13100203

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Brandon & Clark
3403 Industrial Blvd.
Hobbs, NM 88240
Tel (575) 392-7561
Fax (575) 392-4508

Company Name: | **Phone #:**

Address: (Street, City, Zip) | **Fax #:**

Contact Person: | **E-mail:**

Invoice to:
(If different from above)

Project #: 700376.051.01 | **Project Name:** Kimbrough Sweet 8

Project Location (including state): | **Sampler Signature:**

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC					Turn Around Time if different from standard	Hold
343046	MW-18	3		X				X				X		9-25-13	15:40		X																								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	Talon	10/1/13	3:02 pm					INST ____ OBS ____ °C COR ____ °C
								INST ____ OBS ____ °C COR ____ °C
				Brenda Ward	TA Lubbock	10/1/13	3:02 pm	INST IR-3 OBS 2.9 °C COR 2.8 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review NA

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Canyon

ORIGINAL COPY

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Brad Ivy
Talon LPE-Amarillo
921 North Bivins
Amarillo, TX, 79107

Report Date: December 19, 2013

Work Order: 13121123

Project Location: Lea Co. New Mexico
Project Name: Lovington Deep 6"
Project Number: 700376.051.01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
348477	MW-1	water	2013-12-04	12:45	2013-12-10
348478	MW-3	water	2013-12-04	13:45	2013-12-10
348479	MW-4	water	2013-12-04	13:40	2013-12-10
348480	MW-5	water	2013-12-04	12:00	2013-12-10
348481	MW-6	water	2013-12-04	15:00	2013-12-10
348482	MW-7	water	2013-12-04	14:30	2013-12-10
348483	MW-8	water	2013-12-04	14:45	2013-12-10
348484	MW-9	water	2013-12-04	12:05	2013-12-10
348485	MW-10	water	2013-12-04	13:00	2013-12-10
348486	MW-11	water	2013-12-04	13:00	2013-12-10
348487	MW-12	water	2013-12-04	12:35	2013-12-10
348488	MW-18	water	2013-12-04	13:30	2013-12-10

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Report Contents

Case Narrative

Samples for project Lovington Deep 6" were received by TraceAnalysis, Inc. on 2013-12-10 and assigned to work order 13121123. Samples for work order 13121123 were received intact without headspace and at a temperature of 2.8 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	91013	2013-12-11 at 16:13	107491	2013-12-11 at 16:13
BTEX	S 8021B	91050	2013-12-12 at 15:22	107543	2013-12-12 at 15:22
BTEX	S 8021B	91129	2013-12-17 at 14:26	107647	2013-12-17 at 14:26

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13121123 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 348477 - MW-1

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107491	Date Analyzed:	2013-12-11	Analyzed By:	JS
Prep Batch:	91013	Sample Preparation:	2013-12-11	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.113	mg/L	1	0.100	113	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0983	mg/L	1	0.100	98	67.5 - 120

Sample: 348478 - MW-3

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107491	Date Analyzed:	2013-12-11	Analyzed By:	JS
Prep Batch:	91013	Sample Preparation:	2013-12-11	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.164**	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene		1	**0.0902**	mg/L	1	0.00100
Xylene		1	**0.0476**	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0746	mg/L	1	0.100	75	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0785	mg/L	1	0.100	78	67.5 - 120

Sample: 348479 - MW-4

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107491	Date Analyzed:	2013-12-11	Analyzed By:	JS
Prep Batch:	91013	Sample Preparation:	2013-12-11	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0910	mg/L	1	0.100	91	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0869	mg/L	1	0.100	87	67.5 - 120

Sample: 348480 - MW-5

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107491	Date Analyzed:	2013-12-11	Analyzed By:	JS
Prep Batch:	91013	Sample Preparation:	2013-12-11	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.107	mg/L	1	0.100	107	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.104	mg/L	1	0.100	104	67.5 - 120

Sample: 348481 - MW-6

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107491	Date Analyzed:	2013-12-11	Analyzed By:	JS
Prep Batch:	91013	Sample Preparation:	2013-12-11	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0798	mg/L	1	0.100	80	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0709	mg/L	1	0.100	71	67.5 - 120

Sample: 348482 - MW-7

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107491	Date Analyzed:	2013-12-11	Analyzed By:	JS
Prep Batch:	91013	Sample Preparation:	2013-12-11	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0947	mg/L	1	0.100	95	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0969	mg/L	1	0.100	97	67.5 - 120

Sample: 348483 - MW-8

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107491	Date Analyzed:	2013-12-11	Analyzed By:	JS
Prep Batch:	91013	Sample Preparation:	2013-12-11	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.108	mg/L	1	0.100	108	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0979	mg/L	1	0.100	98	67.5 - 120

Sample: 348484 - MW-9

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107543	Date Analyzed:	2013-12-12	Analyzed By:	JS
Prep Batch:	91050	Sample Preparation:	2013-12-12	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.0218**	mg/L	1	0.00100
Toluene	Qc,Qs,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	Qc,Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.116	mg/L	1	0.100	116	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.104	mg/L	1	0.100	104	74.6 - 120

Sample: 348485 - MW-10

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107543	Date Analyzed:	2013-12-12	Analyzed By:	JS
Prep Batch:	91050	Sample Preparation:	2013-12-12	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**12.5**	mg/L	50	0.00100
Toluene	Qc,Qs,U	1	<0.0500	mg/L	50	0.00100
Ethylbenzene		1	**0.406**	mg/L	50	0.00100
Xylene	Qc,Qs	1	<0.0500	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			5.29	mg/L	50	5.00	106	75.4 - 120
4-Bromofluorobenzene (4-BFB)			5.10	mg/L	50	5.00	102	74.6 - 120

Sample: 348486 - MW-11

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107543	Date Analyzed:	2013-12-12	Analyzed By:	JS
Prep Batch:	91050	Sample Preparation:	2013-12-12	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.00100	mg/L	1	0.00100
Toluene	Qc,Qs,U	1	<0.00100	mg/L	1	0.00100
Ethylbenzene	U	1	<0.00100	mg/L	1	0.00100
Xylene	Qc,Qs,U	1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.114	mg/L	1	0.100	114	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.103	mg/L	1	0.100	103	74.6 - 120

Sample: 348487 - MW-12

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107543	Date Analyzed:	2013-12-12	Analyzed By:	JS
Prep Batch:	91050	Sample Preparation:	2013-12-12	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**9.90**	mg/L	50	0.00100
Toluene	Qc,Qs,U	1	<0.0500	mg/L	50	0.00100
Ethylbenzene		1	**0.0625**	mg/L	50	0.00100
Xylene	Qc,Qs,U	1	<0.0500	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			5.26	mg/L	50	5.00	105	75.4 - 120
4-Bromofluorobenzene (4-BFB)			5.12	mg/L	50	5.00	102	74.6 - 120

Sample: 348488 - MW-18

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	107647	Date Analyzed:	2013-12-17	Analyzed By:	JS
Prep Batch:	91129	Sample Preparation:	2013-12-17	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.417**	mg/L	5	0.00100
Toluene	U	1	<0.00500	mg/L	5	0.00100
Ethylbenzene	U	1	<0.00500	mg/L	5	0.00100
Xylene	U	1	<0.00500	mg/L	5	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.530	mg/L	5	0.500	106	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.475	mg/L	5	0.500	95	74.6 - 120

Method Blanks

Method Blank (1) QC Batch: 107491

QC Batch: 107491 | Date Analyzed: 2013-12-11 | Analyzed By: JS
Prep Batch: 91013 | QC Preparation: 2013-12-11 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000387	mg/L	0.001
Toluene		1	<0.000465	mg/L	0.001
Ethylbenzene		1	<0.000442	mg/L	0.001
Xylene		1	<0.000413	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.106	mg/L	1	0.100	106	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0952	mg/L	1	0.100	95	67.5 - 120

Method Blank (1) QC Batch: 107543

QC Batch: 107543 | Date Analyzed: 2013-12-12 | Analyzed By: JS
Prep Batch: 91050 | QC Preparation: 2013-12-12 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000567	mg/L	0.001
Toluene		1	<0.000518	mg/L	0.001
Ethylbenzene		1	<0.000518	mg/L	0.001
Xylene		1	<0.000548	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.110	mg/L	1	0.100	110	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.102	mg/L	1	0.100	102	74.6 - 120

Method Blank (1) QC Batch: 107647

QC Batch: 107647 | Date Analyzed: 2013-12-17 | Analyzed By: JS
Prep Batch: 91129 | QC Preparation: 2013-12-17 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.000567	mg/L	0.001
Toluene		1	<0.000518	mg/L	0.001
Ethylbenzene		1	<0.000518	mg/L	0.001
Xylene		1	<0.000548	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.107	mg/L	1	0.100	107	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0944	mg/L	1	0.100	94	74.6 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 107491 | Date Analyzed: 2013-12-11 | Analyzed By: JS
Prep Batch: 91013 | QC Preparation: 2013-12-11 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.101	mg/L	1	0.100	<0.000387	101	71.6 - 120
Toluene		1	0.102	mg/L	1	0.100	<0.000465	102	71.6 - 120
Ethylbenzene		1	0.100	mg/L	1	0.100	<0.000442	100	71.1 - 120
Xylene		1	0.304	mg/L	1	0.300	<0.000413	101	72.5 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0968	mg/L	1	0.100	<0.000387	97	71.6 - 120	4	20
Toluene		1	0.102	mg/L	1	0.100	<0.000465	102	71.6 - 120	0	20
Ethylbenzene		1	0.0987	mg/L	1	0.100	<0.000442	99	71.1 - 120	1	20
Xylene		1	0.300	mg/L	1	0.300	<0.000413	100	72.5 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0888	0.0929	mg/L	1	0.100	89	93	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0850	0.0900	mg/L	1	0.100	85	90	67.5 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 107543 | Date Analyzed: 2013-12-12 | Analyzed By: JS
Prep Batch: 91050 | QC Preparation: 2013-12-12 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.119	mg/L	1	0.100	<0.000567	119	74.3 - 120
Toluene	Qs Qs	1	0.121	mg/L	1	0.100	<0.000518	121	77.6 - 120
Ethylbenzene		1	0.120	mg/L	1	0.100	<0.000518	120	78.5 - 120
Xylene	Qs Qs	1	0.365	mg/L	1	0.300	<0.000548	122	77.6 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.115	mg/L	1	0.100	<0.000567	115	74.3 - 120	3	20
Toluene		1	0.117	mg/L	1	0.100	<0.000518	117	77.6 - 120	3	20
Ethylbenzene		1	0.116	mg/L	1	0.100	<0.000518	116	78.5 - 120	3	20
Xylene		1	0.353	mg/L	1	0.300	<0.000548	118	77.6 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			0.115	0.108	mg/L	1	0.100	115	108	75.4 - 120
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	0.121	0.115	mg/L	1	0.100	121	115	74.6 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 107647 | Date Analyzed: 2013-12-17 | Analyzed By: JS
Prep Batch: 91129 | QC Preparation: 2013-12-17 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.111	mg/L	1	0.100	<0.000567	111	74.3 - 120
Toluene		1	0.110	mg/L	1	0.100	<0.000518	110	77.6 - 120
Ethylbenzene		1	0.109	mg/L	1	0.100	<0.000518	109	78.5 - 120
Xylene		1	0.327	mg/L	1	0.300	<0.000548	109	77.6 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.115	mg/L	1	0.100	<0.000567	115	74.3 - 120	3	20
Toluene		1	0.115	mg/L	1	0.100	<0.000518	115	77.6 - 120	4	20
Ethylbenzene		1	0.112	mg/L	1	0.100	<0.000518	112	78.5 - 120	2	20
Xylene		1	0.337	mg/L	1	0.300	<0.000548	112	77.6 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.105	0.106	mg/L	1	0.100	105	106	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.106	0.107	mg/L	1	0.100	106	107	74.6 - 120

Matrix Spike (MS-1) Spiked Sample: 348469

QC Batch: 107491 | Date Analyzed: 2013-12-11 | Analyzed By: JS
Prep Batch: 91013 | QC Preparation: 2013-12-11 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0954	mg/L	1	0.100	<0.000387	95	54.2 - 120
Toluene		1	0.101	mg/L	1	0.100	<0.000465	101	55.6 - 120
Ethylbenzene		1	0.0976	mg/L	1	0.100	<0.000442	98	59.6 - 120
Xylene		1	0.294	mg/L	1	0.300	<0.000413	98	61.4 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0952	mg/L	1	0.100	<0.000387	95	54.2 - 120	0	20
Toluene		1	0.0975	mg/L	1	0.100	<0.000465	98	55.6 - 120	4	20
Ethylbenzene		1	0.0954	mg/L	1	0.100	<0.000442	95	59.6 - 120	2	20
Xylene		1	0.289	mg/L	1	0.300	<0.000413	96	61.4 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0852	0.0820	mg/L	1	0.1	85	82	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0916	0.0821	mg/L	1	0.1	92	82	67.5 - 120

Matrix Spike (MS-1) Spiked Sample: 348609

QC Batch: 107543 | Date Analyzed: 2013-12-12 | Analyzed By: JS
Prep Batch: 91050 | QC Preparation: 2013-12-12 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.111	mg/L	1	0.100	<0.000567	111	50.2 - 129
Toluene		1	0.113	mg/L	1	0.100	<0.000518	113	58.1 - 129
Ethylbenzene		1	0.112	mg/L	1	0.100	<0.000518	112	58.1 - 127
Xylene		1	0.339	mg/L	1	0.300	<0.000548	113	53.1 - 128

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.0961	mg/L	1	0.100	<0.000567	96	50.2 - 129	14	20
Toluene		1	0.0970	mg/L	1	0.100	<0.000518	97	58.1 - 129	15	20

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		1	0.0949	mg/L	1	0.100	<0.000518	95	58.1 - 127	16	20
Xylene		1	0.290	mg/L	1	0.300	<0.000548	97	53.1 - 128	16	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.110	0.109	mg/L	1	0.1	110	109	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.115	0.112	mg/L	1	0.1	115	112	74.6 - 120

Matrix Spike (MS-1) Spiked Sample: 349052

QC Batch: 107647 | Date Analyzed: 2013-12-17 | Analyzed By: JS
Prep Batch: 91129 | QC Preparation: 2013-12-17 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.120	mg/L	1	0.100	<0.000567	120	50.2 - 129
Toluene		1	0.119	mg/L	1	0.100	<0.000518	119	58.1 - 129
Ethylbenzene		1	0.117	mg/L	1	0.100	<0.000518	117	58.1 - 127
Xylene		1	0.353	mg/L	1	0.300	<0.000548	118	53.1 - 128

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	0.126	mg/L	1	0.100	<0.000567	126	50.2 - 129	5	20
Toluene		1	0.127	mg/L	1	0.100	<0.000518	127	58.1 - 129	6	20
Ethylbenzene		1	0.123	mg/L	1	0.100	<0.000518	123	58.1 - 127	5	20
Xylene		1	0.371	mg/L	1	0.300	<0.000548	124	53.1 - 128	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.107	0.110	mg/L	1	0.1	107	110	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.110	0.112	mg/L	1	0.1	110	112	74.6 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 107491 | Date Analyzed: 2013-12-11 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0980	98	80 - 120	2013-12-11
Toluene		1	mg/L	0.100	0.0996	100	80 - 120	2013-12-11
Ethylbenzene		1	mg/L	0.100	0.0984	98	80 - 120	2013-12-11
Xylene		1	mg/L	0.300	0.299	100	80 - 120	2013-12-11

Standard (CCV-2)

QC Batch: 107491 | Date Analyzed: 2013-12-11 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0967	97	80 - 120	2013-12-11
Toluene		1	mg/L	0.100	0.102	102	80 - 120	2013-12-11
Ethylbenzene		1	mg/L	0.100	0.0979	98	80 - 120	2013-12-11
Xylene		1	mg/L	0.300	0.297	99	80 - 120	2013-12-11

Standard (CCV-3)

QC Batch: 107491 | Date Analyzed: 2013-12-11 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.0963	96	80 - 120	2013-12-11
Toluene		1	mg/L	0.100	0.101	101	80 - 120	2013-12-11
Ethylbenzene		1	mg/L	0.100	0.0973	97	80 - 120	2013-12-11
Xylene		1	mg/L	0.300	0.296	99	80 - 120	2013-12-11

Standard (CCV-1)

QC Batch: 107543 Date Analyzed: 2013-12-12 Analyzed By: JS

Param		Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene			1	mg/L	0.100	0.119	119	80 - 120	2013-12-12
Toluene	Qc	Qc	1	mg/L	0.100	0.122	122	80 - 120	2013-12-12
Ethylbenzene			1	mg/L	0.100	0.120	120	80 - 120	2013-12-12
Xylene	Qc	Qc	1	mg/L	0.300	0.368	123	80 - 120	2013-12-12

Standard (CCV-2)

QC Batch: 107543 Date Analyzed: 2013-12-12 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.113	113	80 - 120	2013-12-12
Toluene		1	mg/L	0.100	0.113	113	80 - 120	2013-12-12
Ethylbenzene		1	mg/L	0.100	0.110	110	80 - 120	2013-12-12
Xylene		1	mg/L	0.300	0.334	111	80 - 120	2013-12-12

Standard (CCV-3)

QC Batch: 107543 Date Analyzed: 2013-12-12 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.113	113	80 - 120	2013-12-12
Toluene		1	mg/L	0.100	0.113	113	80 - 120	2013-12-12
Ethylbenzene		1	mg/L	0.100	0.110	110	80 - 120	2013-12-12
Xylene		1	mg/L	0.300	0.334	111	80 - 120	2013-12-12

Standard (CCV-1)

QC Batch: 107647 Date Analyzed: 2013-12-17 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.114	114	80 - 120	2013-12-17
Toluene		1	mg/L	0.100	0.114	114	80 - 120	2013-12-17
Ethylbenzene		1	mg/L	0.100	0.113	113	80 - 120	2013-12-17
Xylene		1	mg/L	0.300	0.338	113	80 - 120	2013-12-17

Standard (CCV-2)

QC Batch: 107647 Date Analyzed: 2013-12-17 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/L	0.100	0.118	118	80 - 120	2013-12-17
Toluene		1	mg/L	0.100	0.118	118	80 - 120	2013-12-17
Ethylbenzene		1	mg/L	0.100	0.114	114	80 - 120	2013-12-17
Xylene		1	mg/L	0.300	0.344	114	80 - 120	2013-12-17

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 13121123

Page 1 of 2

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Brandon & Clark
3403 Industrial Blvd.
Hobbs, NM 88240
Tel (575) 392-7561
Fax (575) 392-4508

Company Name: Talon/LPE
Phone #: 806-467-0607
Address: (Street, City, Zip) 921 N. Bivins
Fax #: 806-467-0622
Contact Person: Brad Ivy
E-mail: Bivy@talonlpe.com
Invoice to: (If different from above) Plains: (SRS # 2002-10312)
Project #: 100376.051.01
Project Name: Covington Deep 6"
Project Location (including state): Lea Co., NM
Sampler Signature: Brad Davis

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE		PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE		SAMPLING: DATE	TIME
348477	MW-1	3		X					X				X			12.4.13	12:45
478	MW-3	3		X					X				X			12.4.13	13:45
479	MW-4	3		X					X				X			12.4.13	13:40
480	MW-5	3		X					X				X			12.4.13	12:00
481	MW-6	3		X					X				X			12.4.13	15:00
482	MW-7	3		X					X				X			12.4.13	14:30
483	MW-8	3		X					X				X			12.4.13	14:45
484	MW-9	3		X					X				X			12.4.13	12:45
485	MW-10	3		X					X				X			12.4.13	13:00
486	MW-11	3		X					X				X			12.4.13	13:00
487	MW-12	3		X					X				X			12.4.13	12:35

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC						Turn Around Time if different from standard	Hold
	X																								
	X																								
	X																								
	X																								
	X																								
	X																								
	X																								
	X																								
	X																								
	X																								
	X																								

Relinquished by: Company: Date: Time:
Mandi Davis — Talon — 12.10.13

Received by: Company: Date: Time:
BLS — BTL — 12-10-13

INST ____ °C
OBS ____ °C
COR ____ °C

Relinquished by: Company: Date: Time:

Received by: Company: Date: Time:

INST ____ °C
OBS ____ °C
COR ____ °C

Relinquished by: Company: Date: Time:

Received by: Company: Date: Time:
TA — 12/11/13 — 9:30

INST 1.2.3 °C
OBS 3.9 °C
COR 3.8 °C

LAB USE ONLY

Intact Y / N
Headspace Y / N / NA
Log-in-Review MA

REMARKS:

☐ Dry Weight Basis Required
☐ TRRP Report Required
☐ Check If Special Reporting Limits Are Needed

Carrier # LS EQ 421874

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

ORIGINAL COPY

LAB Order ID # 13121123

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Brandon & Clark
3403 Industrial Blvd.
Hobbs, NM 88240
Tel (575) 392-7561
Fax (575) 392-4508

Company Name: Talon / LPE
Phone #: 806-467-0607
Address: (Street, City, Zip) 921 N. Bivins
Fax #: 806-467-0622
Contact Person: Brad Ivy
E-mail: Bivy@talonlpe.com
Invoice to: (If different from above) Plains (SRS# 2002-10312)
Project #: 700376.051.01
Project Name: Lovington Deep 6"
Project Location (including state): Lea Co, NM
Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
348488	MW-18	3		X				X				X		12-4-13	13:30

MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC	Turn Around Time if different from standard	Hold
	X																				

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	Talon	12/10/13		RCJ	B+C	12-10-13		INST ___ °C OBS ___ °C COR ___ °C
								INST ___ °C OBS ___ °C COR ___ °C
								INST 1.3 °C OBS 2.9 °C COR 2.5 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N (NA)
Log-in-Review MT

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Carrier # FS 1042187041

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

ORIGINAL COPY

APPENDIX D

NMOCD C-141

PLAINS ALL AMERICAN

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised March 17, 1999

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action ☐ Initial Report ☒ Final Report

RP-1274

Name of Company: Plains All American Pipeline, L.P. (formerly Link Energy and EOTT)	**Contact:** Camille Reynolds
Address: 3112 W. US Hwy 82, Lovington, NM 88260	**Telephone No.:** 505.441.0965
Facility Name: Lovington Deep 6"	**Facility Type:** Crude Oil Pipeline

Surface Owner: Darr Angell	**Mineral Owner:**	**Lease No.:**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	
H	6	17S	36E					**County:** Lea **Lat.:** 32°52'1.132"N **Lon:** 103°23'16.570"W

NATURE OF RELEASE

Type of Release: Crude Oil	**Volume of Release**: 25 bbls	**Volume Recovered:** 10 bbls
Source of Release: 6" steel pipeline	**Date and Hour of Occurrence:** 12-12-02 8:00 AM	**Date and Hour of Discovery:** 12-12-02 10:00 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?** Paul Sheeley and Sylvia Dickie, Hobbs NMOCD (left messages) Confirmed with Sylvia Dickie at 11:45 AM 12-12-02	
By Whom? Pat McCasland (Environmental Plus, Inc.)	**Date and Hour:** NMOCD notified on 12-12-02 10:30 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse.** NA	

If a Watercourse was Impacted, Describe Fully.* NA

Describe Cause of Problem and Remedial Action Taken.* The cause of the leak was internal/external corrosion. The contaminated soil was stockpiled on a plastic barrier. Disposing at South Monument SWF

Describe Area Affected and Cleanup Action Taken.* The crude oil release was excavated: impacted soil was placed adjacent to the excavation, confirmation soil samples were collected form the floor & walls of the excavation. Once confirmation samples were below NMOCD regulatory standards, a 20 mil synthetic liner was installed on the floor of the excavation area, 10,500 cubic yards of stockpiled soil previously processed through a shredder was placed in the excavation area once the impacted soil was deemed acceptable under the NMMOCD-approved VOC readings of <100.0 ppm, the site was restored to natural grade.

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

Signature:	**OIL CONSERVATION DIVISION**	
Printed Name: Camille Reynolds	**Approved by District Supervisor:**	
Title: Remediation Coordinator	**Approval Date:**	**Expiration Date:**
Date: July 30, 2007 **Phone:** 505.441.0965	**Conditions of Approval:**	**Attached** ☐

* Attach Additional Sheets If Necessary

EOTT Energy Pipeline
Site Information and Metrics

Incident Date and NMOCD Notified?: Discovered 12-12-02 NMOCD verbally notified on 12-12-02	
SITE: Lovington Deep 6"	**Assigned Site Reference #:** 2002-10312
Company: EOTT Energy Pipeline	
Street Address: 5805 East Highway 80	
Mailing Address: P.O. Box 1660	
City, State, Zip: Midland, Texas 79703	
Representative: Frank Hernandez, District Environmental Supervisor	
Representative Telephone: 915.638.3799	
Telephone:	
Fluid volume released (bbls): 25 bbls	**Recovered (bbls):** 10
>25 bbls : Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days. (Also applies to unauthorized releases >500 mcf Natural Gas)	
5-25 bbls: Submit form C-141 within 15 days (Also applies to unauthorized releases of 50-500 mcf Natural Gas)	
Leak, Spill, or Pit (LSP) Name: Lovington Deep 6"	
Source of contamination: 6" Steel Crude Oil Pipeline	
Land Owner, i.e., BLM, ST, Fee, Other: Darr Angell	
LSP Dimensions: 140' X 75'	
LSP Area: Spill Area ~6,000 ft^2	
Location of Reference Point (RP):	
Location distance and direction from RP:	
Latitude: 32º 52' 1.132"N	
Longitude: 103º 23' 16.570"W	
Elevation above mean sea level: ~3,918 'amsl	
Feet from South Section Line:	
Feet from West Section Line:	
Location- Unit or ¼¼: UL-H SE ¼ of the NE ¼	
Location- Section: 6	
Location- Township: 17S	
Location- Range: 36E	
Surface water body within 1000 ' radius of site: None	
Domestic water wells within 1000' radius of site: None	
Agricultural water wells within 1000' radius of site: None	
Public water supply wells within 1000' radius of site: None	
Depth from land surface to ground water (DG): ~50.0 feet	
Depth of contamination (DC): ?	
Depth to ground water (DG – DC = DtGW): <50 feet	

1. Ground Water	**2. Wellhead Protection Area**	**3. Distance to Surface Water Body**
If Depth to GW <50 feet: *20 points*	If <1000' from water source, or;<200' from private domestic water source: *20 points*	<200 horizontal feet: *20 points*
If Depth to GW 50 to 99 feet: *10 points*		200-100 horizontal feet: *10 points*
If Depth to GW >100 feet: *0 points*	If >1000' from water source, or; >200' from private domestic water source: *0 points*	>1000 horizontal feet: *0 points*
Ground water Score = 20	***Wellhead Protection Area Score= 0***	***Surface Water Score= 0***
Site Rank (1+2+3) = 20		

Total Site Ranking Score and Acceptable Concentrations

Parameter	**>19 (Surface to 50.0'bgs)**	10-19	0-9
Benzene[1]	**10 ppm**	10 ppm	10 ppm
BTEX[1]	**50 ppm**	50 ppm	50 ppm
TPH	**100 ppm**	1000 ppm	5000 ppm

[1]100 ppm field VOC headspace measurement may be substituted for lab analysis