AP-91

Plains
8” Moore to Jal

Annual Report
2013

PLAINS
ALL AMERICAN

March 18, 2014

Mr. Jim Griswold
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Plains All American – 2013 Annual Monitoring Reports
6 Sites in Lea County, New Mexico

Dear Mr. Griswold:

Plains All American is an operator of crude oil pipelines and terminal facilities in the state of New Mexico. Plains All American actively monitors certain historical release sites exhibiting groundwater impacts, consistent with assessments and work plans developed in consultation with the New Mexico Oil Conservation Division (NMOCD). In accordance with the rules and regulations of the NMOCD, Plains All American hereby submits our Annual Monitoring reports for the following sites:

8-inch Moore to Jal #1	AP-91 (1R-0380)	Section 16, T17S, R37E, Lea County
8-inch Moore to Jal #2	AP-92 (1R-0381)	Section 16, T17S, R37E, Lea County
C.S. Cayler	AP-052	Section 06, T17S, R37E, Lea County
Hobbs Junction Mainline	AP-054	Section 26, T18S, R37E, Lea County
Kimbrough Sweet 8-inch	AP-0029	Section 03, T18S, R37E, Lea County
Lovington Deep 6-inch	AP-037	Section 06, T17S, R36E, Lea County

Talon/LPE (Talon) prepared these documents and has vouched for their accuracy and completeness, and on behalf of Plains All American, I have personally reviewed the documents and interviewed Talon personnel in order to verify the accuracy and completeness of these documents. It is based upon these inquiries and reviews that Plains All American submits the enclosed Annual Monitoring Reports for the above facilities.

If you have any questions or require further information, please contact me at (575) 441-1099.

Sincerely,

Camille Bryant
Remediation Coordinator
Plains All American

CC: Geoff Leking, NMOCD, Hobbs, NM

Enclosures

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

2013 ANNUAL GROUNDWATER MONITORING REPORT

8" MOORE TO JAL #1
LEA, COUNTY, NEW MEXICO
SRS #2002 - 10270
NMOCD REF. # AP-91

TALON/LPE PROJECT NO. 700376.044.01

Prepared by:

Brad C. Ivy
Project Manager

Paul Santos
Senior Engineer

TALON/LPE
2901 S. STATE HIGHWAY 349
MIDLANDEXAS 79706

ENVIRONMENTAL CONSULTING
ENGINEERING
DRILLING
CONSTRUCTION
SPILL MANAGEMENT
GENERAL CONTRACTING

Toll Free: 866.742.0742
www.talonlpe.com

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	2901 S. St. Hwy 349 Midland, Texas 79706	bivy@talonlpe.com

NMOCD - New Mexico Oil Conservation Division
NMSLO - New Mexico State Land Office

TABLE OF CONTENTS

APPENDICES

Appendix C Laboratory Analytical Data Reports and Chains of Custody Documentation

Appendix D NMOCD C-141

1.0 INTRODUCTION AND OBJECTIVES

1.1 Site Background

The 8" Moore to Jal #1 release site is located approximately 9.2 miles southeast of Lovington, in Lea County, New Mexico. The site is located within the West Lovington Oil Field on land owned by the State of New Mexico. No residence or surface water features are located within a 1,000-foot radius of the site.

The site is situated in a physio-geographic area 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 playas 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 and surrounding area is approximately 3,770-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 October 2002, a release of approximately 200 barrels (bbls) occurred from a Plains Pipeline, L.P. (Plains) pipeline at the site. Approximately 8,000 square feet of surface area was impacted by the release. Soil excavation and over-excavation activities were initiated in October 2002 and that activity is documented in the "Soil Over-Excavation Report and Backfill Workplan", dated May 23, 2006.

Talon/LPE (Talon) has been retained by Plains to conduct quarterly groundwater monitoring activities and operation and maintenance of the phase separated hydrocarbon (PSH) recovery system.

1.2 Site Geology

The surface 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 composed of gravelly loam that consists of 43% sand, 18% clay and 40% silt and also 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, the Ogallala was deposited by fluvial mechanism as paleo-valley fill composed of gravelly to sandy braided stream deposits that trended 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

Currently, a total of thirty-six (36) monitor wells have been installed proximal to the release point (see Figure 1). The first monitor well (MW-1), installed July 2004, was completed with a screened interval below the potentiometric surface. The second monitor well (MW-1A) was installed in September 2004, and PSH entered the casing immediately upon completion of the well. Subsequently, three (3) additional monitor wells (MW-2, MW-3, and MW-4) were installed in October of 2004, and PSH entered the casing on those wells.

In November 2007, sixteen (16) additional groundwater monitor wells were installed as proposed in the "Monitor Well Installation Workplan Moore to Jal #1", dated January 26, 2007. The purpose of the sixteen (16) monitor wells (MW-5–MW-20) was to further delineate the extent of the PSH and dissolved phase plumes. In addition to the sixteen (16) monitor well installations, monitor wells MW-1 and MW-4 were plugged and abandoned (P&A'd) on March 14, 2007 and re-drilled as a new groundwater monitor wells, MW-1A and MW-4A. Of the sixteen monitor wells that were installed, ten (10), (MW-4A, MW-5 through MW-12, and MW-15), were impacted with PSH.

During the year 2010, a total of eleven (11) specific gravity skimmers with bladder pumps were in operation in monitor wells MW-2, MW-3, MW-5, MW-7 through MW-13, and MW-15. In addition, a total of three (3) total fluids pumps were operating in monitor wells MW-1A, MW-4A, and MW-6. Also during 2010, sixteen (16) monitor wells were installed at the site (MW-21 through MW-36) to further delineate the PSH and dissolved-phase plumes. Monitor wells MW-24, MW-25, and MW-30 through MW-31 were impacted with PSH. Two (2) skimmers were added to the system in monitor wells MW-24 and MW-25 in October of 2010.

A transfer system was installed during the year 2011 that is designed to pump recovered groundwater from the site to the Rocky Smith SWD Systems, State 'E' #23 salt water disposal (SWD) (NMOCD # 307219) facility, thereby, eliminating the need to haul water to a disposal facility with a vacuum truck. The system is composed of a three (3) inch HDPE line that was installed (slip-lined) into the out of service Moore to Jal eight (8) inch pipeline from the Moore to Jal #2 site through the Moore to Jal #1 site to the C.S. Cayler site, where it is connected to the HDPE line that runs from the Cayler site to the afore referenced SWD. A five (5) HP transfer pump is used to impel the water down the HDPE line.

During the year 2011, a total of thirteen (13) specific gravity skimmers and bladder pumps

operated in monitor wells MW-2, MW-3, MW-5, MW-7 through MW-13, MW-15, MW-24, and MW-25. In addition, a total of three (3) total fluids pumps operated in monitor wells MW-1A, MW-4A, and MW-6 during 2011.

During the year 2012, a total of twelve (12) specific gravity skimmers and bladder pumps operated in monitor wells MW-2, MW-3, MW-5, MW-8 through MW-13, MW-15, MW-24, and MW-25. In addition, a total of seven (7) total fluids pumps operated in monitor wells MW-1A, MW-4A, MW-6, MW-7, MW-30, MW-31, and MW-33 during 2012.

During 2013, two (2) additional monitor wells were installed at the site (MW-37 and MW-38) to further delineate the dissolved-phase plume. Additional total fluids pumps were installed in monitor wells MW-5, MW-7, MW-8, MW-9, MW-12, MW-15, MW-16, MW-24, MW-25, MW-30, MW-31, MW-32 and MW-33. Currently, the PSH recovery system is composed of six (6) specific gravity skimmers with bladder pumps, seven (7) pneumatic total fluid pumps, and eight (8) electric total fluids pumps.

PSH recovery operations have been performed at the site since 2004. During 2013 approximately 147 barrels (bbls) of crude oil and 43,895 bbls of water were recovered by the system and approximately 1,227 bbls of crude oil has been recovered by the system to date.

1.4 Regulatory Framework

Groundwater analytical data collected from this site was evaluated to the New Mexico Water Quality Control Commission (NMWQCC) groundwater standards outlined in the table 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 sections that follow provide summaries of the four quarterly groundwater monitoring events conducted at the subject site as well as analytical results from each groundwater sampling event of 2013. Analytical results for the four (4) sampling events are summarized in Table 2 in Appendix B, and Figures 3a through 3d in Appendix A. Laboratory analytical data reports and chain of custody documentation are included in Appendix C. Historic fluid level measurements are included on Table 1 in Appendix B and gradient maps are provided as Figures 2a through 2d in Appendix A.

2.0 SITE ACTIVITIES

The sections that follow summarize groundwater monitoring and PSH recovery activities conducted at the subject site during 2013. The primary focus of groundwater monitoring activities is to measure depth to fluid measurements and 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 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 Sampling Procedures

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 maps. The results of the measured depths to fluids collected during each of 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 deposited into recovery tank, and sent to the disposal facility via the onsite transfer system. Approximately 2,200 gallons of purged groundwater and decontamination water were collected and disposed of during the monitoring events of 2013.

Groundwater samples were collected from all monitor wells that were not impacted with PSH using dedicated disposable polyethylene bailers. The groundwater samples were contained in laboratory supplied 40-ml VOA sample vials 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. or Xenco Laboratories in Midland, Texas for analyses.

The groundwater samples collected during the all four events were quantified for benzene, toluene, ethylbenzene, and xylene (BTEX) by EPA Method SW-846 8021B.

2.2 Phase Separated Hydrocarbon Recovery

PSH recovery has been conducted at the site since 2004, initially by hand bailing and then by using pneumatic pumps. In October of 2008, Talon installed a pneumatic skimmer system at the site.

During the year 2013, a total of six (6) specific gravity skimmers and bladder pumps operated in monitor wells MW-1A, MW-2, MW-3, MW-10, MW-11 and MW-13. In

addition, a total of fifteen (15) total fluids pumps operated in monitor wells MW-4A, MW-5, MW-6, MW-7, MW-8, MW-9, MW-12, MW-15, MW-16, MW-24, MW-25, MW-30 through MW-33 during 2013.

The discharge and recharge cycles for the total fluids pumps were set on timers in order to maximize PSH recovery in relation to groundwater volumes recovered. The system has been effective for increasing PSH recovery and inhibiting PSH plume and dissolved-phase migration. Talon personnel performed a minimum of weekly maintenance to the remediation system to ensure efficient operation and to minimize down time.

PSH recovered by the skimmer system and total fluids pumps was expelled to an on-site 350 barrel frac tank, which is monitored for the accumulation of water and PSH on a weekly basis. PSH is removed from the recovery tank periodically using a vacuum truck and is re-introduced to the Plains' pipeline system at the Plains operated Lea Station. Water is also removed from the recovery tank periodically with a vacuum truck and transferred to a disposal facility.

During 2013 the quarterly PSH and groundwater recovery totals are as follows:

- 1st Quarter - 51 bbls crude oil and 6797 bbls of groundwater
- 2nd Quarter - 45 bbls crude oil and 19816 bbls of groundwater
- 3rd Quarter - 28 bbls crude oil and 7509 bbls of groundwater
- 4th Quarter - 23 bbls of crude oil and 9773 bbls of groundwater

A total of approximately 1,227 bbls of PSH have been recovered at the subject site to date by both hand bailing and from the PSH recovery system since PSH recovery was initiated.

2.3 Groundwater Monitor Well Installation Activities

Due to the presence of dissolved-phase petroleum hydrocarbon concentrations above NMWQCC groundwater standards from samples collected from groundwater monitoring wells MW-28 and MW-29, two (2) additional groundwater monitoring wells (MW-37 and MW-38) were installed in December of 2013.

Talon conducted the advancement, installation, and sampling of two (2), 2-inch diameter groundwater monitoring wells, designated as MW-37 an MW-38. The wells were advanced and installed utilizing air rotary techniques. The wells were installed and sampled to determine the horizontal extent of hydrocarbon impact to groundwater in the vicinity of the release area. The location of each groundwater monitoring well is presented on Figures 2d and 3d. The monitoring wells were installed under the direction of a licensed State of New Mexico well driller.

The placement of the monitoring wells was based upon historical groundwater analytical and historical fluid level measurement data collected from all monitor wells at the site. During boring advancement, soils samples were collected on ten (10) foot intervals utilizing a grab method, and were visually and texturally classified by the supervising project geologist. All monitoring wells were constructed using flush-joint schedule 40, polyvinyl chloride (PVC) casing and factory slotted 0.010-inch screen. A sorted sand filter pack was placed around the screen from the bottom of the boring to approximately one (1) foot above the screened

interval. Above the sand pack, a two (2) foot thick bentonite seal was set to prevent the migration of contaminants to the sampling zone from the surface, and the remainder of the well annulus was filled with cement. A steel protective vault was concreted in place to protect the well from damage and surface percolation. Well development was conducted prior to setting the bentonite seal, in order to settle the sand filter pack and to maximize the flow of groundwater into the well. Approximately 120 gallons of water were generated during monitoring well development activities.

2.3.1 Well Boring Soil Sample Collection

Soil samples were collected on December 18, 2013 at 80 feet bgs, and 100 feet bgs from the soil boring for groundwater monitoring well MW-37 and 38. Soil samples were collected by Talon personnel wearing clean nitrile gloves with disposal sampling tools.
The soil samples were containerized in laboratory provided sample containers, immediately placed on ice, and transported to Xenco Laboratories in Midland, Texas for BTEX analysis using EPA SW-846 Method 8021B and TPH analysis using Texas Method TX1005 extended to C_{35}. All analytical testing was performed on a standard turn-around basis.

2.3.2 Analytical Results

Analytical results indicate BTEX concentrations in soil samples collected from the soil borings for groundwater monitoring wells MW-37 and MW-38 to be below the respective NMWQCC groundwater standards. A summary of the groundwater monitoring well soil sample analytical results is presented on Table 3.

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 chains of custody documentation are provided in Appendix C.

3.1 Groundwater Monitoring Results

The following sections present the results from the four (4) groundwater monitoring events conducted at the subject 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 64 to 72 feet below ground surface (bgs) and the groundwater flow direction is to the southeast at an average of 20 feet per mile.

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 with an average pH of 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 - Summary of Historical Fluid Level Measurements in Appendix B.

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 indicate that the groundwater flow direction is to southeast at an average gradient of 0.004 feet/foot or 21 feet per mile. Groundwater levels at the subject site have exhibited a steady decline of an average of 2.04 feet for the year 2013 and have dropped approximately 12 feet since 2004. The decline in groundwater levels appears to be associated with a regional trend of declining groundwater levels for the Ogallala Aquifer.

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. The following summarizes the status of the PSH thicknesses observed during the four groundwater monitoring events:

- In March 2013, PSH was observed in 21 monitor wells MW-1A, MW-2, MW-3, MW-4A, MW-5 through MW-13, MW-15, MW-16, MW-24, MW-25, and MW-30 through 33. PSH thicknesses ranged from 1.68 feet to 7.77 feet.
- In June 2013, PSH was observed in 21 monitor wells MW-1A, MW-2, MW-3, MW-4A, MW-5 through MW-13, MW-15, MW-16, MW-24, MW-25, and MW-30 through 33. Accurate measurements were unable to be collected from MW-5, MW-8 and MW-15 due to stuck recovery pumps. PSH thicknesses ranged from 1.63 feet to 7.68 feet.
- In September 2013, PSH was observed in 21 monitor wells MW-1A, MW-2, MW-3, MW-4A, MW-5 through MW-13, MW-15, MW-16, MW-24, MW-25, and MW-30 through 33. Accurate measurements were unable to be collected from MW-15 due to a stuck recovery pump. PSH thicknesses ranged from 0.64 feet to 7.87 feet.
- In December 2013, PSH was observed in 21 monitor wells MW-1A, MW-2, MW-3, MW-4A, MW-5 through MW-13, MW-15, MW-16, MW-24, MW-25, and MW-30 through 33. Accurate measurements were unable to be collected from MW-15 due to a stuck recovery pump. PSH thicknesses ranged from 0.30 feet to 8.56 feet.

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

3.1.4 Groundwater Analytical Results

During the first quarter, March 2013, groundwater monitoring event, groundwater samples were collected from 15 monitor wells, (MW-14, MW-17 through MW-23, MW-26 through MW-29, and MW-34 through MW-36.). Each monitor well was purged a minimum of three casing volumes and groundwater samples were collected. Groundwater samples were not collected from 21 monitor wells, MW-1A, MW-2, MW-3, MW-4A, MW-5 through MW-13, MW-15, MW-16, MW-24, MW-25, and MW-30 through MW-33 due to the presence of PSH.

Groundwater samples collected during the event exhibited the following analytical results:

- Benzene concentrations ranged from <0.00100 mg/L to 33.9 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-14, MW-28, and MW-29.

- Toluene concentrations ranged from <0.00100 mg/L to 0.477 mg/L. The toluene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any of the groundwater samples collected.
- Ethylbenzene concentrations ranged from <0.00100 mg/L to 1.22 mg/L. Ethylbenzene concentrations exceeded the NMWQCC groundwater standard of 0.750 mg/L in the groundwater samples collected from MW-29.
- Xylene concentrations ranged from <0.00100 mg/L to 0.715 mg/L. Xylene concentrations exceeded the NMWQCC groundwater standard of 0.620 mg/L in the groundwater samples collected from monitor well MW-29.

During the second quarter, June 2013, groundwater monitoring event, groundwater samples were collected from 15 monitor wells, (MW-14, MW-17 through MW-23, MW-26 through MW-29, and MW-34 through MW-36.). Each monitor well was purged a minimum of three casing volumes and groundwater samples were collected. Groundwater samples were not collected from 21 monitor wells, MW-1A, MW-2, MW-3, MW-4A, MW-5 through MW-13, MW-15, MW-16, MW-24, MW-25, and MW-30 through MW-33 due to the presence of PSH.

The groundwater samples that were collected exhibited the following analytical results:

- Benzene concentrations ranged from <0.00100 mg/L to 25.7 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-14, MW-28, and MW-29.
- Toluene concentrations ranged from <0.00100 mg/L to 0.215 mg/L. The toluene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any of the groundwater samples collected.
- Ethylbenzene concentrations ranged from <0.00100 mg/L to 0.447 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 0.0814 mg/L. The xylene concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in any of the groundwater samples collected.

During the third quarter, September 2013, groundwater monitoring event, groundwater samples were collected from 15 monitor wells, (MW-14, MW-17 through MW-23, MW-26 through MW-29, and MW-34 through MW-36.). Each monitor well was purged a minimum of three casing volumes and groundwater samples were collected. Groundwater samples were not collected from 21 monitor wells, MW-1A, MW-2, MW-3, MW-4A, MW-5 through MW-13, MW-15, MW-16, MW-24, MW-25, and MW-30 through MW-33 due to the presence of PSH.

The groundwater samples that were collected exhibited the following analytical results:

- Benzene concentrations ranged from <0.00100 mg/L to 50.5 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-14, MW-28 and MW-29.
- Toluene concentrations ranged from <0.00100 mg/L to 0.0231 mg/L. The toluene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any of the groundwater samples collected.

- Ethylbenzene concentrations ranged from <0.00100 mg/L to 0.727 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 0.129 mg/L. The xylene concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in any of the groundwater samples collected.

During the fourth quarter, December 2013, groundwater monitoring event, groundwater samples were collected from 15 monitor wells, (MW-14, MW-17 through MW-23, MW-26 through MW-29, and MW-34 through MW-36.). Each monitor well was purged a minimum of three casing volumes and groundwater samples were collected. Groundwater samples were not collected from 21 monitor wells, MW-1A, MW-2, MW-3, MW-4A, MW-5 through MW-13, MW-15, MW-16, MW-24, MW-25, and MW-30 through MW-33 due to the presence of PSH.

The groundwater samples that were collected exhibited the following analytical results:

- Benzene concentrations ranged from <0.00100 mg/L to 38.1 mg/L. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-14, MW-28, and MW-29.
- Toluene concentrations ranged from <0.00100 mg/L to <0.200 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 <0.00100 mg/L to 0.741 mg/L. The ethylbenzene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in the groundwater samples collected.
- Xylene concentrations ranged from <0.00100 mg/L to <0.200 mg/L. Xylene concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in any of the groundwater samples collected.

The results of the laboratory analyses are summarized in Table 2 – Summary of Groundwater Analytical Results in Appendix B. Laboratory analytical data reports and chain of custody documentation are provided in Appendix C.
PAH samples were not collected at the site during the year 2013 due to tech oversight. PAH sampling will resume as scheduled in 2014.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The following section presents a summary of findings in regards to the four (4) groundwater monitoring events and provides recommendations for future corrective action.

4.1 Summary of Findings

- The groundwater flow direction is to southeast at an approximate gradient of 0.0040 feet/foot or 21 feet per mile.
- Groundwater levels at the subject site have exhibited a steady decline for the year 2013 that appears to be associated with a regional trend of declining groundwater levels for the Ogallala Aquifer.
- Generally, PSH thicknesses have remained relatively stable during the year 2013.
- Currently, the PSH plume is delineated by the current monitor well array.
- Down-gradient monitor wells MW-37 and MW-38 were drilled.
- Currently, the dissolved-phase plume is delineated.
- 15 total fluids pumps and 6 skimmer pumps are currently in use.
- The PSH recovery system has removed 147 bbls of crude oil from the groundwater during 2013 indicating that the system is performing its function.

4.2 Recommendations

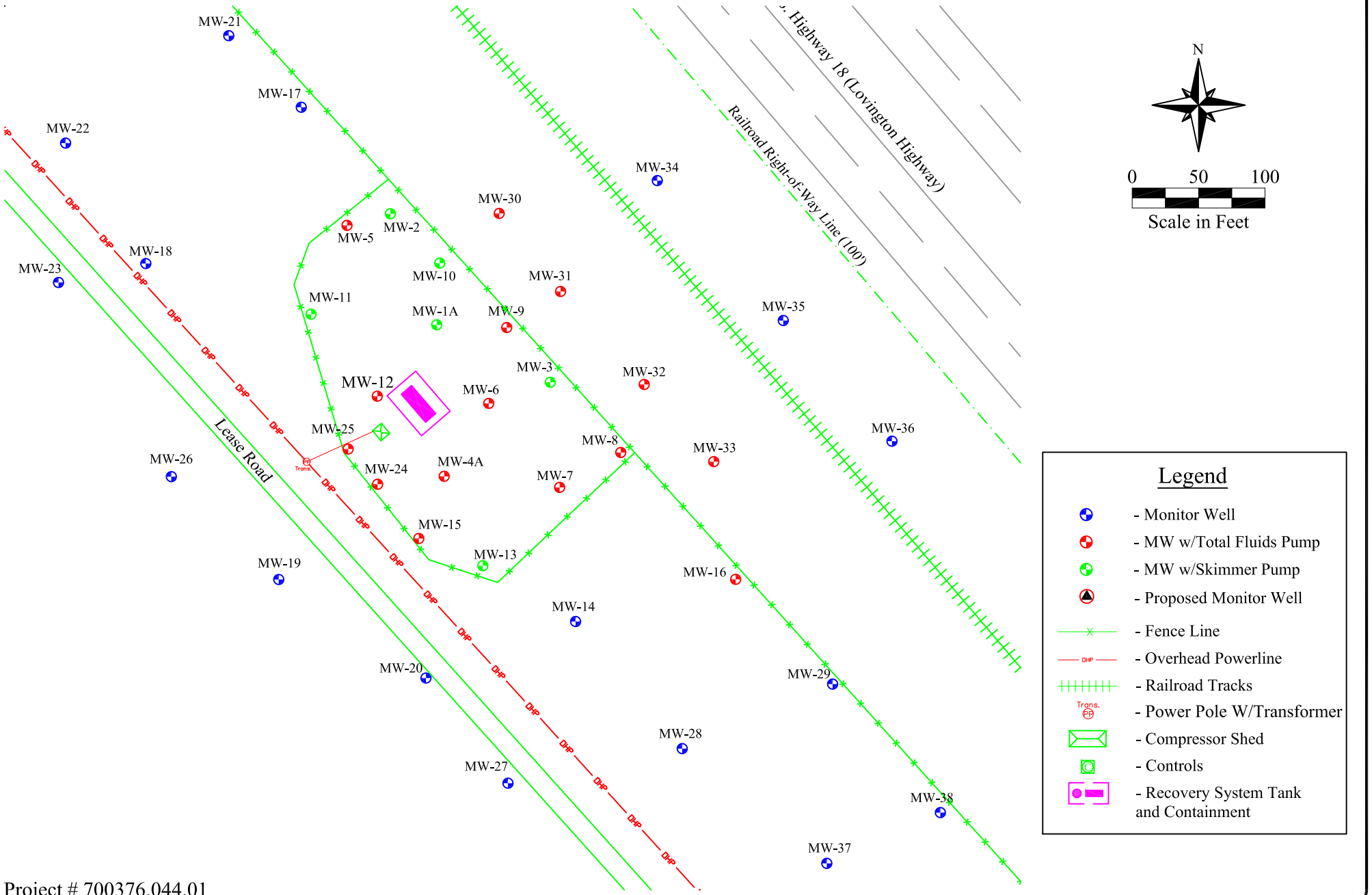
Based upon the results of the four (4) quarterly groundwater monitoring events and PSH recovery efforts, Talon proposes the following actions:

- Continue operation and maintenance of the skimmer/bladder pump and total fluids pumps recovery system. Monitor the system on a weekly basis to optimize PSH recovery efficiency.
- Add or reposition pumps as necessary to optimize PSH recovery and inhibit plume migration.
- Perform quarterly groundwater monitoring events in accordance with NMOCD directives.
- Reduce sampling schedule of up-gradient wells MW's 17, 18, 21, 22, and 23, and side-gradient wells MW's 19, 20, 26, and 27 to a semi-annual basis.

APPENDIX A

Figures

Figure 1 - Site Plan – 12/30/2013
Figure 2a - Groundwater Gradient Map - 03/12/2013
Figure 2b - Groundwater Gradient Map - 06/13/2013
Figure 2c - Groundwater Gradient Map - 09/272013
Figure 2d - Groundwater Gradient Map - 12/11/2013
Figure 3a - PSH Thickness & Groundwater Concentration Map - 03/21-22/2013
Figure 3b - PSH Thickness & Groundwater Concentration Map - 06/13/2013
Figure 3c - PSH Thickness & Groundwater Concentration Map - 09/27/2013
Figure 3d - PSH Thickness & Groundwater Concentration Map - 12/11/2013



Project # 700376.044.01

TALON LPE

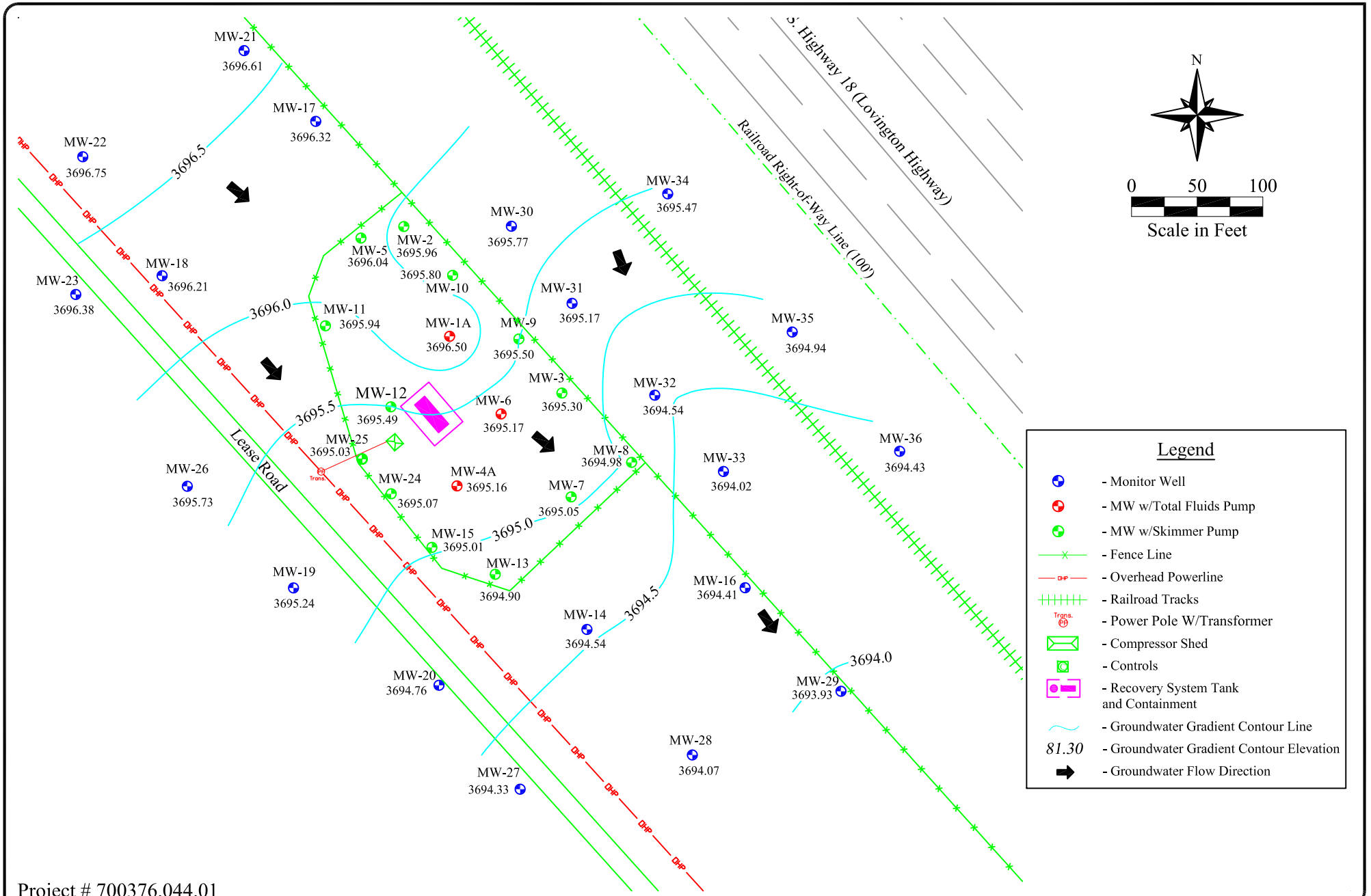
Date: 12/30/2013
Scale: 1" = 100'
Drawn By: TJS

8" Moore to Jal #1

SRS # 2002-10270, NMOCD REF. # AP-91

9.2 Miles SE of Lovington, NM, Lea County, New Mexico

Figure 1 - Site Plan



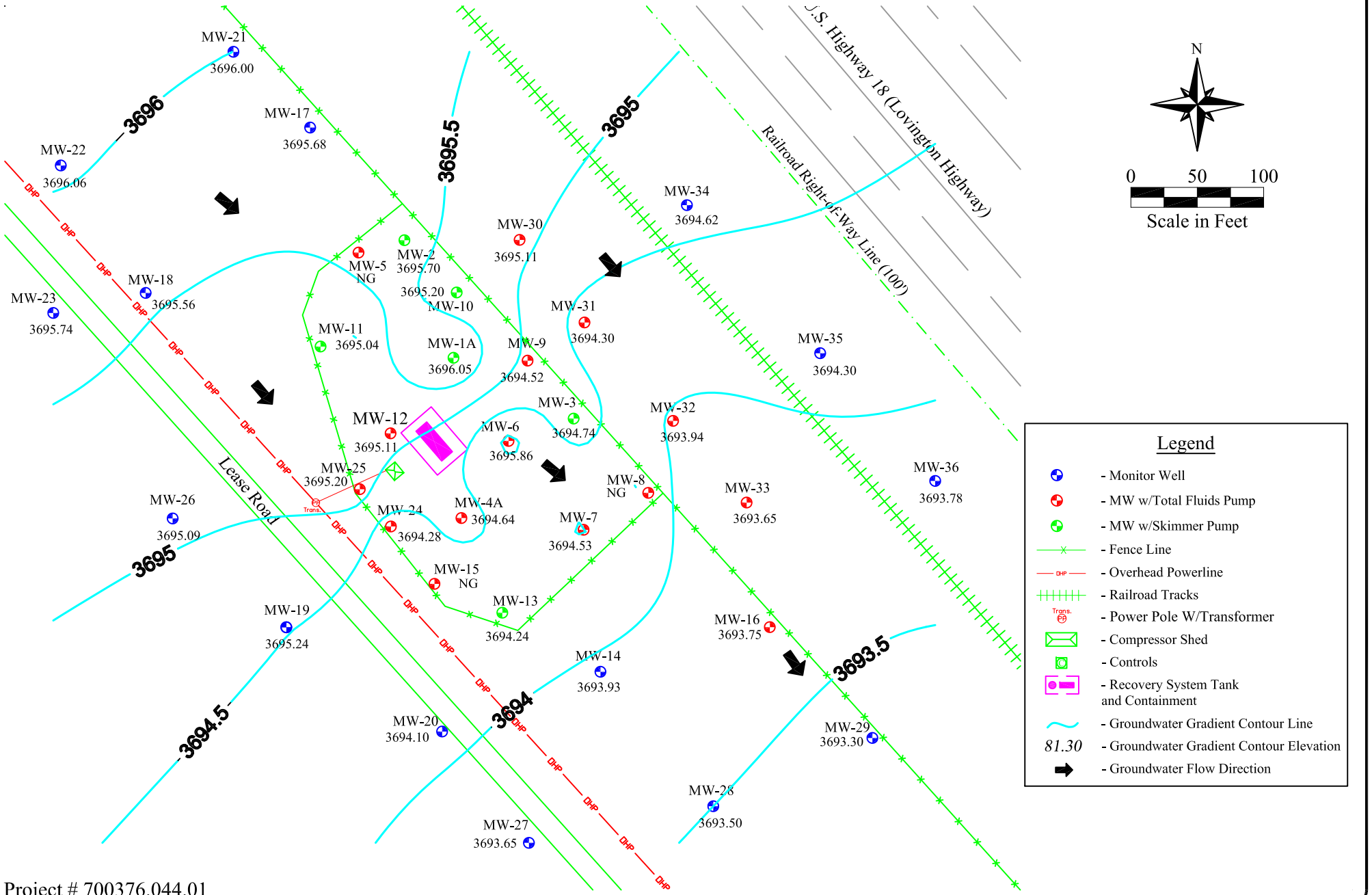
Project # 700376.044.01

TALON LPE

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

8" Moore to Jal #1

SRS # 2002-10270, NMOCD REF. # AP-91
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 2a - Groundwater Gradient Map, (03/12/2013)



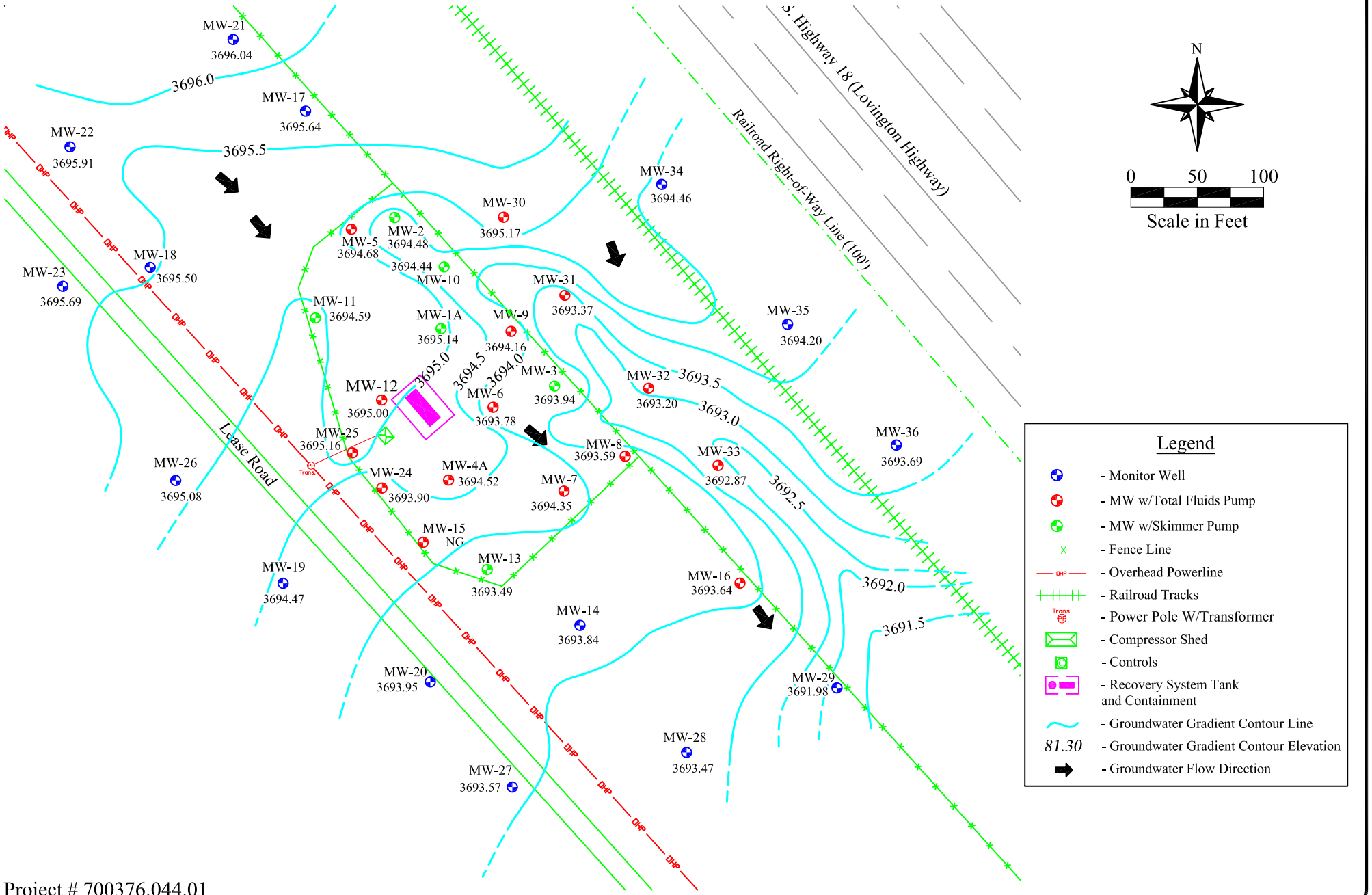
Project # 700376.044.01

TALON LPE

Date: 07/01/13
Scale: 1" = 100'
Drawn By: PSantos

8" Moore to Jal #1

SRS # 2002-10270, NMOCD REF. # AP-91
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 2b - Groundwater Gradient Map, (06/13/2013)



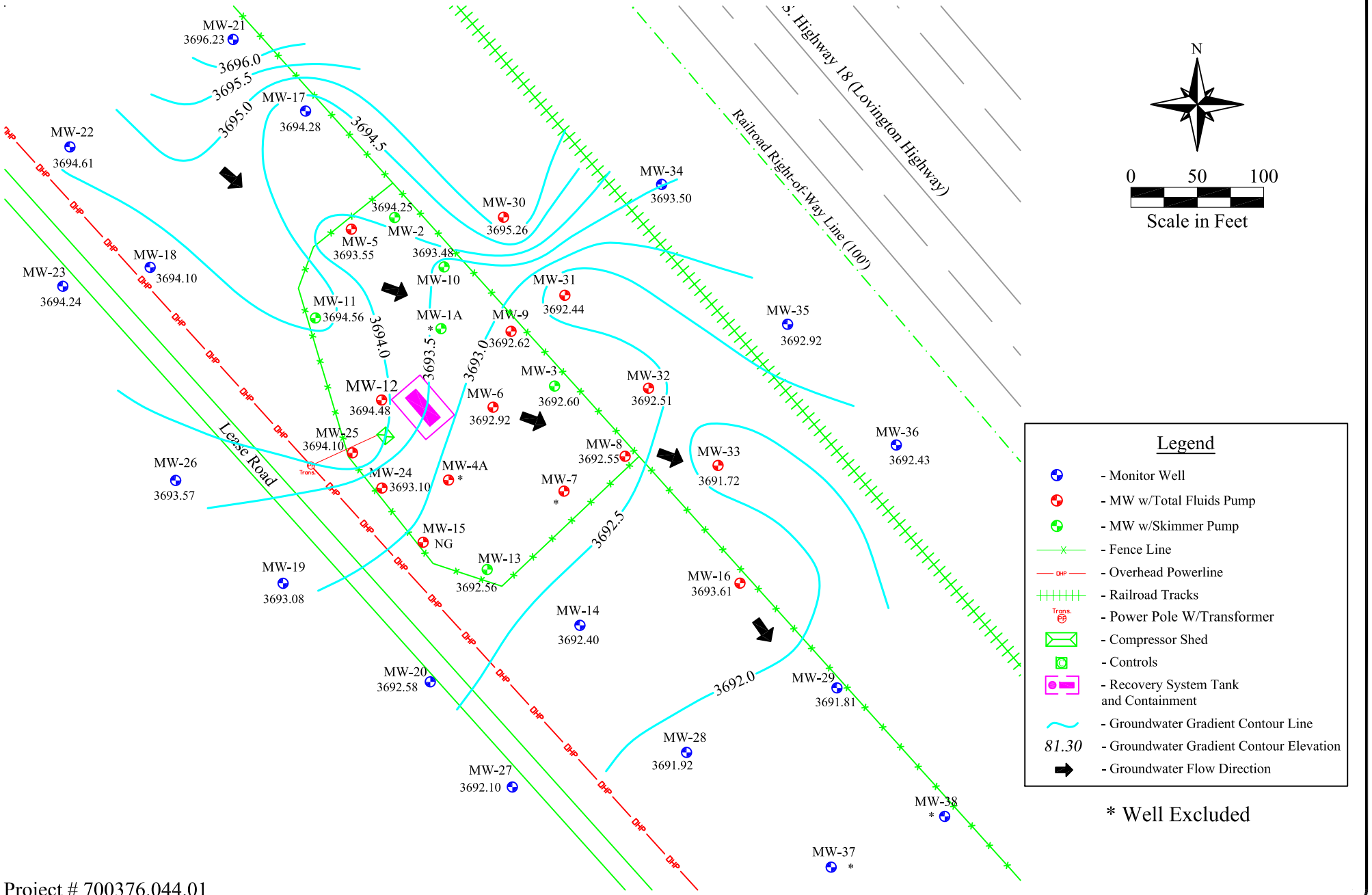
Project # 700376.044.01

TALON LPE

Date: 10/11/2013
Scale: 1" = 100'
Drawn By: TJS

8" Moore to Jal #1

SRS # 2002-10270, NMOCD REF. # AP-91
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 2c - Dynamic Groundwater Gradient Map, (09/27/2013)



Project # 700376.044.01

TALON LPE

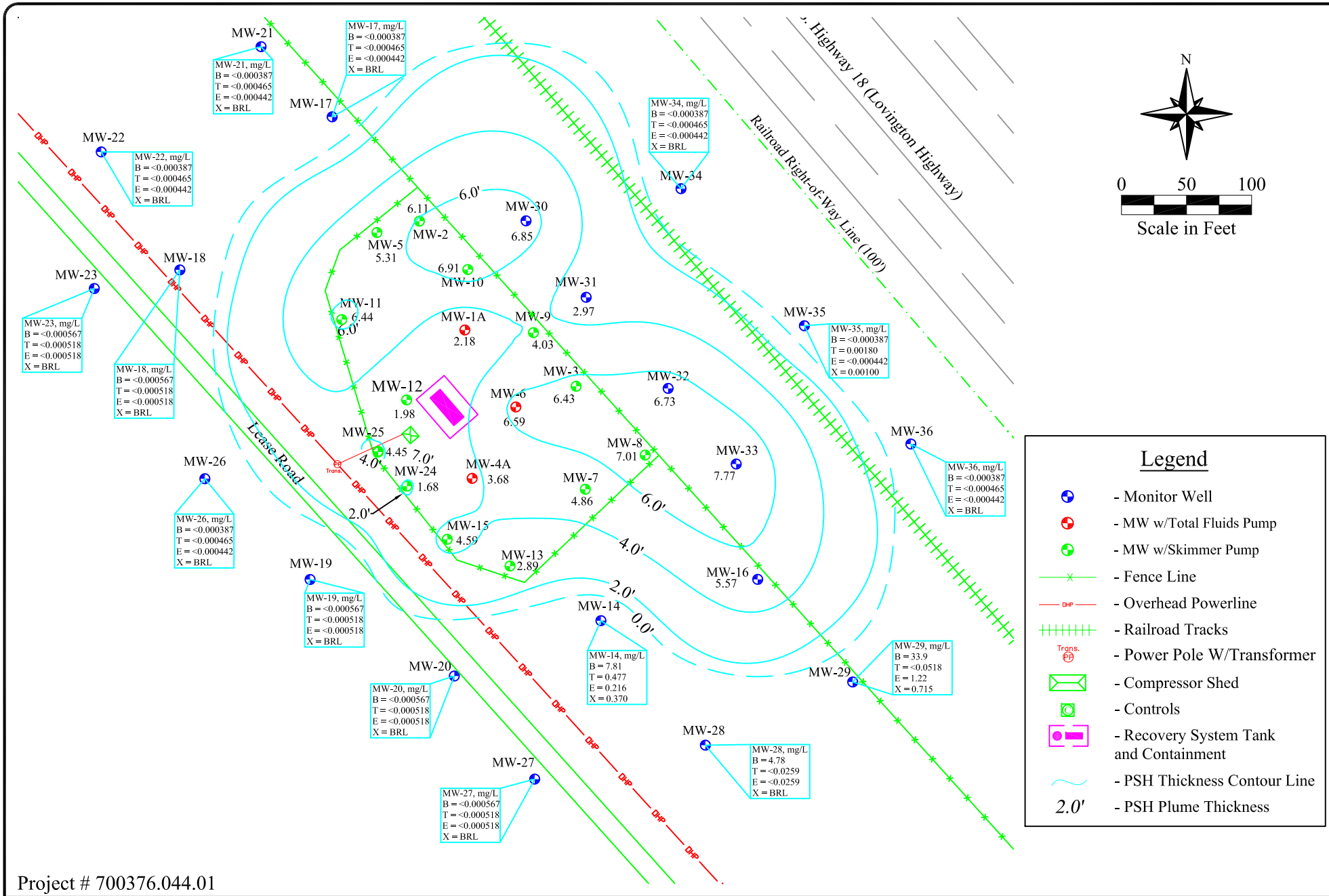
Date:	01/14/2014
Scale:	1" = 100'
Drawn By:	TJS

8" Moore to Jal #1

SRS # 2002-10270, NMOCD REF. # AP-91

9.2 Miles SE of Lovington, NM, Lea County, New Mexico

Figure 2d - Groundwater Gradient Map, (12/11/2013)



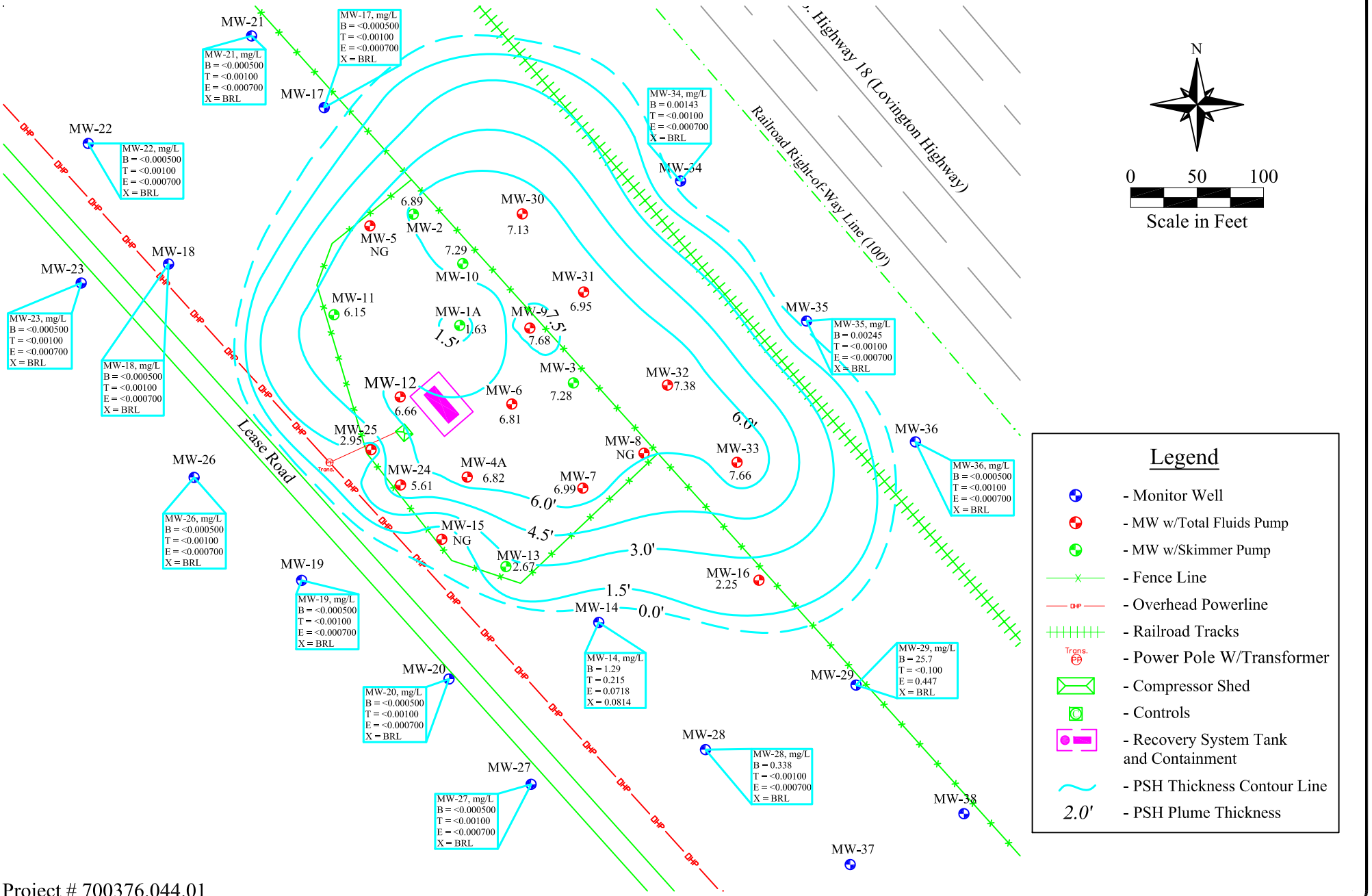
Project # 700376.044.01

TALON LPE

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

8" Moore to Jal #1

SRS # 2002-10270, NMOCD REF. # AP-91
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 3a - PSH Thickness & Groundwater Concentration Map - 03/21-22/2013

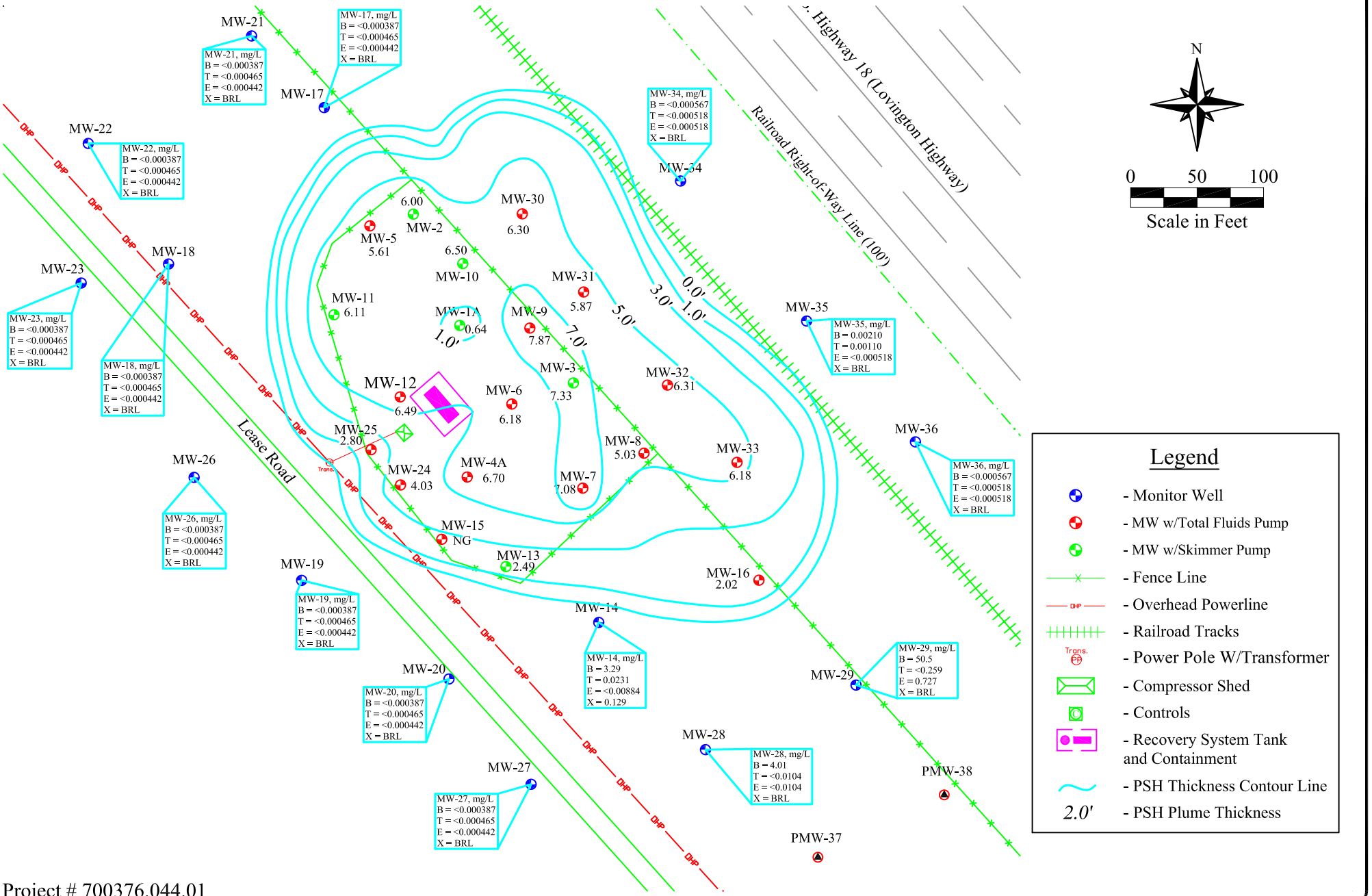


TALON LPE

Date: 01/14/2014
Scale: 1" = 100'
Drawn By: TJS

8" Moore to Jal #1

SRS # 2002-10270, NMOCD REF. # AP-91
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 3b - PSH Thickness & Groundwater Concentration Map - 06/13/2013



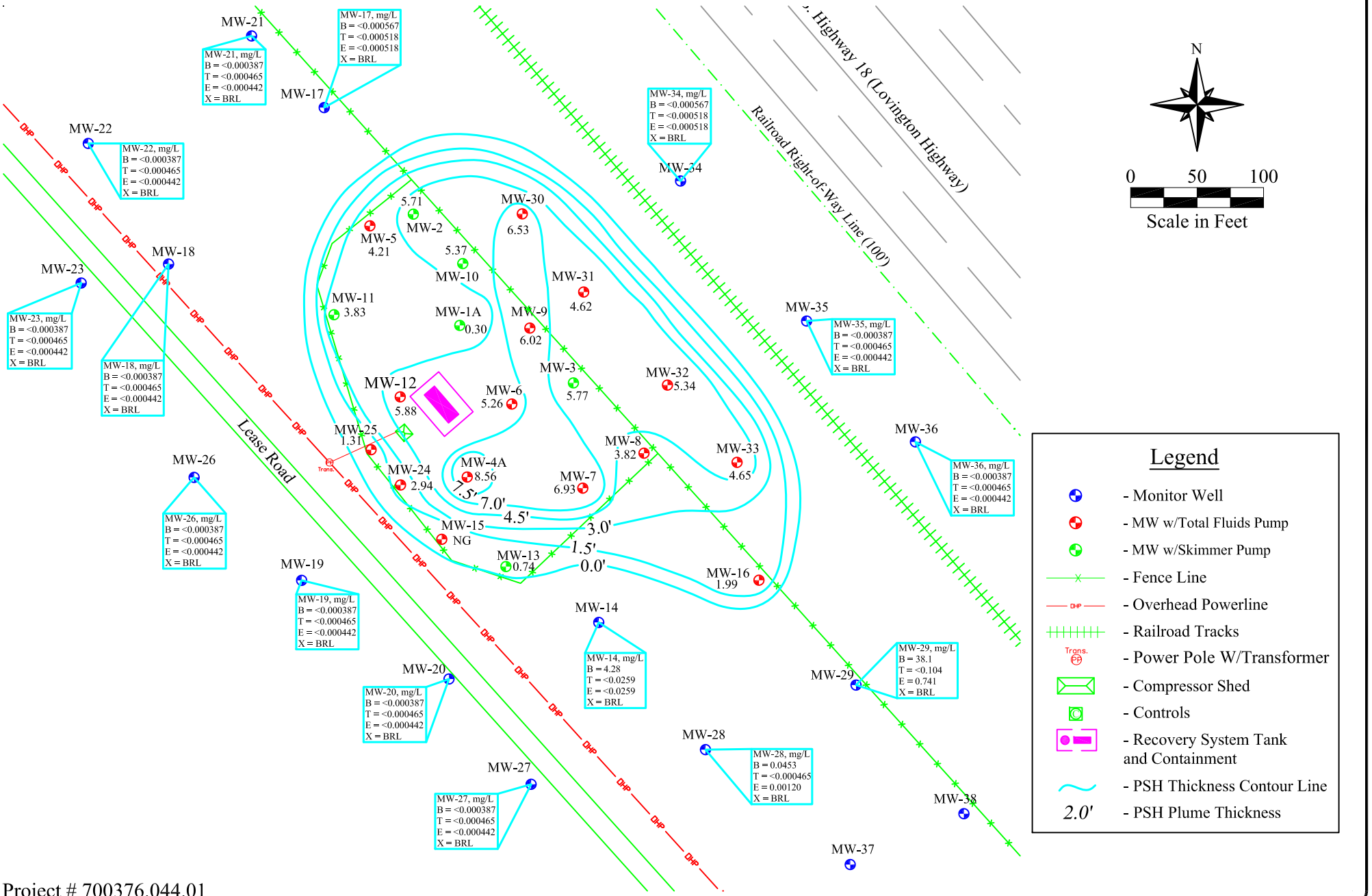
Project # 700376.044.01

TALON LPE

Date: 10/14/2013
Scale: 1" = 100'
Drawn By: TJS

8" Moore to Jal #1

SRS # 2002-10270, NMOCD REF. # AP-91
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 3c - PSH Thickness & Groundwater Concentration Map - 09/27/2013



Project # 700376.044.01

TALON LPE

Date: 01/14/2014
Scale: 1" = 100'
Drawn By: TJS

8" Moore to Jal #1

SRS # 2002-10270, NMOCD REF. # AP-91
9.2 Miles SE of Lovington, NM, Lea County, New Mexico
Figure 3d - PSH Thickness & Groundwater Concentration Map - 12/11 & 30/2013

APPENDIX B

Tables

Summary of Historical Fluid Level Measurements
Moore to Jal No.1
SRS #2002-10270

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-1A			Diameter: 4 in.	Screened Interval: 63 ft. to 83 ft.		TD: 83 ft.
	06/14/12	3768.36	73.90	70.22	3.68	3697.53
	09/25/12	3768.36	73.90	70.65	3.25	3697.17
	12/10/12	3768.36	73.89	71.08	2.81	3696.82
	03/12/13	3768.36	73.68	71.50	2.18	3696.50
	06/13/13	3768.36	73.67	72.04	1.63	3696.05
	09/27/13	3768.36	73.75	73.11	0.64	3695.14
	12/11/13	3768.36	74.06	73.76	0.30	3694.55
MW-2			Diameter: 4 in.	Screened Interval: 63 ft. to 83 ft.		TD: 83 ft.
	06/14/12	3768.35	76.49	70.13	6.36	3697.17
	09/25/12	3768.35	77.14	70.46	6.68	3696.79
	12/10/12	3768.35	77.10	70.92	6.18	3696.41
	03/12/13	3768.35	77.49	71.38	6.11	3695.96
	06/13/13	3768.35	78.40	71.51	6.89	3695.70
	09/27/13	3768.35	78.88	72.88	6.00	3694.48
	12/11/13	3768.35	78.87	73.16	5.71	3694.25
MW-3			Diameter: 4 in.	Screened Interval: 63 ft. to 83 ft.		TD: 83 ft.
	06/14/12	3767.24	71.63	70.64	0.99	3696.44
	09/25/12	3767.24	75.45	70.25	5.20	3696.13
	12/10/12	3767.24	74.97	70.85	4.12	3695.71
	03/12/13	3767.24	77.31	70.88	6.43	3695.30
	06/13/13	3767.24	78.58	71.30	7.28	3694.74
	09/27/13	3767.24	79.42	72.09	7.33	3693.94
	12/11/13	3767.24	79.46	73.69	5.77	3692.60
MW-4A			Diameter: 4 in.	Screened Interval: 55 ft. to 95 ft.		TD: 95 ft.
	06/14/12	3770.64	79.58	72.93	6.65	3696.61
	09/25/12	3770.64	80.50	73.30	7.20	3696.15
	12/10/12	3770.64	79.53	74.05	5.48	3695.69
	03/12/13	3770.64	78.55	74.87	3.68	3695.16
	06/13/13	3770.64	81.69	74.87	6.82	3694.64
	09/27/13	3770.64	81.71	75.01	6.70	3694.52
	12/11/13	3770.64	81.70	73.14	8.56	3696.09
MW-5			Diameter: 4 in.	Screened Interval: 57 ft. to 97 ft.		TD: 97 ft.
	06/14/12	3768.85	73.47	71.31	2.16	3697.18
	09/25/12	3768.85	77.00	70.96	6.04	3696.89
	12/10/12	3768.85	77.42	71.41	6.01	3696.45
	03/12/13	3768.85	77.24	71.93	5.31	3696.04
	06/13/13	3768.85	NG	-	-	NG
	09/27/13	3768.85	78.85	73.24	5.61	3694.68
	12/11/13	3768.85	78.82	74.61	4.21	3693.55
MW-6			Diameter: 4 in.	Screened Interval: 52 ft. to 92 ft.		TD: 92 ft.
	06/14/12	3769.50	79.28	71.72	7.56	3696.53
	09/25/12	3769.50	77.90	72.10	5.80	3696.44
	12/10/12	3769.50	78.86	72.78	6.08	3695.72
	03/12/13	3769.50	79.83	73.24	6.59	3695.17
	06/13/13	3769.50	81.33	74.52	6.81	3693.86
	09/27/13	3769.50	80.88	74.70	6.18	3693.78
	12/11/13	3769.50	80.97	75.71	5.26	3692.92
MW-7			Diameter: 4 in.	Screened Interval: 46 ft. to 86 ft.		TD: 86 ft.
	06/14/12	3770.20	Block	-	-	Block
	09/25/12	3770.20	Block	-	-	Block
	12/10/12	3770.20	NG	-	-	NG
	03/12/13	3770.20	79.21	74.35	4.86	3695.05
	06/13/13	3770.20	81.51	74.52	6.99	3694.53
	09/27/13	3770.20	81.76	74.68	7.08	3694.35
	12/11/13	3770.20	81.61	74.68	6.93	3694.38

Summary of Historical Fluid Level Measurements
Moore to Jal No.1
SRS #2002-10270

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-8			Diameter: 4 in.	Screened Interval: 53 ft. to 93 ft.		TD: 93 ft.
	06/14/12	3768.09	78.22	70.63	7.59	3696.21
	09/25/12	3768.09	78.55	71.02	7.53	3695.83
	12/10/12	3768.09	78.68	74.47	4.21	3692.93
	03/12/13	3768.09	78.96	71.95	7.01	3694.98
	06/13/13	3768.09	NG	-	-	NG
	09/27/13	3768.09	78.70	73.67	5.03	3693.59
	12/11/13	3768.09	78.73	74.91	3.82	3692.55
MW-9			Diameter: 4 in.	Screened Interval: 50 ft. to 90 ft.		TD: 90 ft.
	06/14/12	3767.64	77.35	69.60	7.75	3696.76
	09/25/12	3767.64	77.70	70.00	7.70	3696.37
	12/10/12	3767.64	77.65	70.51	7.14	3695.95
	03/12/13	3767.64	75.51	71.48	4.03	3695.50
	06/13/13	3767.64	79.14	71.46	7.68	3694.91
	09/27/13	3767.64	80.05	72.18	7.87	3694.16
	12/11/13	3767.64	80.05	74.03	6.02	3692.62
MW-10			Diameter: 4 in.	Screened Interval: 50 ft. to 90 ft.		TD: 90 ft.
	06/14/12	3767.51	75.68	69.53	6.15	3696.97
	09/25/12	3767.51	76.83	69.75	7.08	3696.59
	12/10/12	3767.51	77.06	70.16	6.90	3696.21
	03/12/13	3767.51	77.48	70.57	6.91	3695.80
	06/13/13	3767.51	78.40	71.11	7.29	3695.20
	09/27/13	3767.51	78.50	72.00	6.50	3694.44
	12/11/13	3767.51	78.51	73.14	5.37	3693.48
MW-11			Diameter: 4 in.	Screened Interval: 53 ft. to 93 ft.		TD: 93 ft.
	06/14/12	3769.37	77.44	71.13	6.31	3697.20
	09/25/12	3769.37	78.04	71.50	6.54	3696.79
	12/10/12	3769.37	78.38	71.91	6.47	3696.39
	03/12/13	3769.37	78.81	72.37	6.44	3695.94
	06/13/13	3769.37	79.47	73.32	6.15	3695.04
	09/27/13	3769.37	79.88	73.77	6.11	3694.59
	12/11/13	3769.37	78.01	74.18	3.83	3694.56
MW-12			Diameter: 4 in.	Screened Interval: 51 ft. to 91 ft.		TD: 91 ft.
	06/14/12	3769.68	79.03	71.58	7.45	3696.87
	09/25/12	3769.68	79.36	71.99	7.37	3696.47
	12/10/12	3769.68	78.93	72.66	6.27	3695.99
	03/12/13	3769.68	75.84	73.86	1.98	3695.49
	06/13/13	3769.68	80.13	73.47	6.66	3695.11
	09/27/13	3769.68	80.10	73.61	6.49	3695.00
	12/11/13	3769.68	80.11	74.23	5.88	3694.48
MW-13			Diameter: 4 in.	Screened Interval: 56 ft. to 96 ft.		TD: 96 ft.
	06/14/12	3771.14	76.73	74.60	2.13	3696.19
	09/25/12	3771.14	77.50	74.89	2.61	3695.82
	12/10/12	3771.14	78.05	75.30	2.75	3695.39
	03/12/13	3771.14	78.65	75.76	2.89	3694.90
	06/13/13	3771.14	79.13	76.46	2.67	3694.24
	09/27/13	3771.14	79.73	77.24	2.49	3693.49
	12/11/13	3771.14	79.20	78.46	0.74	3692.56
MW-14			Diameter: 4 in.	Screened Interval: 55 ft. to 95 ft.		TD: 95 ft.
	06/14/12	3771.62	75.79	-	-	3695.83
	09/25/12	3771.62	76.21	-	-	3695.41
	12/10/12	3771.62	76.64	-	-	3694.98
	03/12/13	3771.62	77.08	-	-	3694.54
	06/13/13	3771.62	77.69	-	-	3693.93
	09/27/13	3771.62	77.78	-	-	3693.84
	12/11/13	3771.62	79.22	-	-	3692.40

Summary of Historical Fluid Level Measurements
Moore to Jal No.1
SRS #2002-10270

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-15			Diameter: 4 in.	Screened Interval:	53 ft. to 93 ft.	TD: 93 ft.
	06/14/12	3771.49	79.92	74.17	5.75	3696.37
	09/25/12	3771.49	80.85	74.51	6.34	3695.93
	12/10/12	3771.49	76.76	75.74	1.02	3695.58
	03/12/13	3771.49	80.31	75.72	4.59	3695.01
	06/13/13	3771.49	NG	-	-	NG
	09/27/13	3771.49	NG	-	-	NG
	12/11/13	3771.49	NG	-	-	NG
MW-16			Diameter: 4 in.	Screened Interval:	55 ft. to 95 ft.	TD: 95 ft.
	06/14/12	3769.23	73.63	-	-	3695.60
	09/25/12	3769.23	74.00	73.77	0.23	3695.42
	12/10/12	3769.23	78.92	73.50	5.42	3694.84
	03/12/13	3769.23	79.47	73.90	5.57	3694.41
	06/13/13	3769.23	77.36	75.11	2.25	3693.75
	09/27/13	3769.23	77.28	75.26	2.02	3693.64
	12/11/13	3769.23	77.28	75.29	1.99	3693.61
MW-17			Diameter: 4 in.	Screened Interval:	48 ft. to 88 ft.	TD: 88 ft.
	06/14/12	3767.45	69.98	-	-	3697.47
	09/25/12	3767.45	70.33	-	-	3697.12
	12/10/12	3767.45	70.75	-	-	3696.70
	03/12/13	3767.45	71.13	-	-	3696.32
	06/13/13	3767.45	71.77	-	-	3695.68
	09/27/13	3767.45	71.81	-	-	3695.64
	12/11/13	3767.45	73.17	-	-	3694.28
MW-18			Diameter: 4 in.	Screened Interval:	48 ft. to 88 ft.	TD: 88 ft.
	06/14/12	3769.79	72.38	-	-	3697.41
	09/25/12	3769.79	72.74	-	-	3697.05
	12/10/12	3769.79	73.16	-	-	3696.63
	03/12/13	3769.79	73.58	-	-	3696.21
	06/13/13	3769.79	74.23	-	-	3695.56
	09/27/13	3769.79	74.29	-	-	3695.50
	12/11/13	3769.79	75.69	-	-	3694.10
MW-19			Diameter: 4 in.	Screened Interval:	48 ft. to 88 ft.	TD: 88 ft.
	06/14/12	3773.35	76.77	-	-	3696.58
	09/25/12	3773.35	77.14	-	-	3696.21
	12/10/12	3773.35	77.66	-	-	3695.69
	03/12/13	3773.35	78.11	-	-	3695.24
	06/13/13	3773.35	78.83	-	-	3694.52
	09/27/13	3773.35	78.88	-	-	3694.47
	12/11/13	3773.35	80.27	-	-	3693.08
MW-20			Diameter: 4 in.	Screened Interval:	54 ft. to 94 ft.	TD: 94 ft.
	06/14/12	3773.11	77.03	-	-	3696.08
	09/25/12	3773.11	77.44	-	-	3695.67
	12/10/12	3773.11	77.90	-	-	3695.21
	03/12/13	3773.11	78.35	-	-	3694.76
	06/13/13	3773.11	79.01	-	-	3694.10
	09/27/13	3773.11	79.16	-	-	3693.95
	12/11/13	3773.11	80.53	-	-	3692.58
MW-21			Diameter: 4 in.	Screened Interval:	50 ft. to 90 ft.	TD: 90 ft.
	06/14/12	3767.35	69.58	-	-	3697.77
	09/25/12	3767.35	69.98	-	-	3697.37
	12/10/12	3767.35	70.36	-	-	3696.99
	03/12/13	3767.35	70.74	-	-	3696.61
	06/13/13	3767.35	71.35	-	-	3696.00
	09/27/13	3767.35	71.31	-	-	3696.04
	12/11/13	3767.35	71.12	-	-	3696.23

Summary of Historical Fluid Level Measurements
Moore to Jal No.1
SRS #2002-10270

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-22			Diameter: 4 in.	Screened Interval:	50 ft. to 90 ft.	TD: 90 ft.
	06/14/12	3769.17	71.27	-	-	3697.90
	09/25/12	3769.17	71.69	-	-	3697.48
	12/10/12	3769.17	72.06	-	-	3697.11
	03/12/13	3769.17	72.42	-	-	3696.75
	06/13/13	3769.17	73.11	-	-	3696.06
	09/27/13	3769.17	73.26	-	-	3695.91
	12/11/13	3769.17	74.56	-	-	3694.61
MW-23			Diameter: 4 in.	Screened Interval:	55 ft. to 95 ft.	TD: 110 ft.
	06/14/12	3771.00	73.38	-	-	3697.62
	09/25/12	3771.00	73.80	-	-	3697.20
	12/10/12	3771.00	74.25	73.98	0.27	3696.95
	03/12/13	3771.00	74.62	-	-	3696.38
	06/13/13	3771.00	75.26	-	-	3695.74
	09/27/13	3771.00	75.31	-	-	3695.69
	12/11/13	3771.00	76.76	-	-	3694.24
MW-24			Diameter: 4 in.	Screened Interval:	50 ft. to 90 ft.	TD: 95 ft.
	06/14/12	3770.97	80.32	73.13	7.19	3696.04
	09/25/12	3770.97	80.74	73.55	7.19	3695.62
	12/10/12	3770.97	81.16	73.98	7.18	3695.20
	03/12/13	3770.97	77.16	75.48	1.68	3695.07
	06/13/13	3770.97	80.90	75.29	5.61	3694.28
	09/27/13	3770.97	80.09	76.06	4.03	3693.90
	12/11/13	3770.97	80.08	77.14	2.94	3693.10
MW-25			Diameter: 4 in.	Screened Interval:	55 ft. to 95 ft.	TD: 110 ft.
	06/14/12	3770.54	79.40	72.64	6.76	3696.21
	09/25/12	3770.54	79.87	73.00	6.87	3695.82
	12/10/12	3770.54	80.11	73.47	6.64	3695.41
	03/12/13	3770.54	78.85	74.40	4.45	3695.03
	06/13/13	3770.54	77.55	74.60	2.95	3695.20
	09/27/13	3770.54	77.48	74.68	2.80	3695.16
	12/11/13	3770.54	77.42	76.11	1.31	3694.10
MW-26			Diameter: 4 in.	Screened Interval:	55 ft. to 95 ft.	TD: 110 ft.
	06/14/12	3772.89	75.86	-	-	3697.03
	09/25/12	3772.89	76.26	-	-	3696.63
	12/10/12	3772.89	76.74	-	-	3696.15
	03/12/13	3772.89	77.16	-	-	3695.73
	06/13/13	3772.89	77.80	-	-	3695.09
	09/27/13	3772.89	77.81	-	-	3695.08
	12/11/13	3772.89	79.32	-	-	3693.57
MW-27			Diameter: 4 in.	Screened Interval:	55 ft. to 95 ft.	TD: 110 ft.
	06/14/12	3774.53	78.84	-	-	3695.69
	09/25/12	3774.53	79.30	-	-	3695.23
	12/10/12	3774.53	79.75	-	-	3694.78
	03/12/13	3774.53	80.20	-	-	3694.33
	06/13/13	3774.53	80.88	-	-	3693.65
	09/27/13	3774.53	80.96	-	-	3693.57
	12/11/13	3774.53	82.43	-	-	3692.10
MW-28			Diameter: 4 in.	Screened Interval:	55 ft. to 95 ft.	TD: 100 ft.
	06/14/12	3772.18	76.13	-	-	3696.05
	09/25/12	3772.18	77.27	-	-	3694.91
	12/10/12	3772.18	77.69	-	-	3694.49
	03/12/13	3772.18	78.11	-	-	3694.07
	06/13/13	3772.18	78.68	-	-	3693.50
	09/27/13	3772.18	78.71	-	-	3693.47
	12/11/13	3772.18	80.26	-	-	3691.92

Summary of Historical Fluid Level Measurements
Moore to Jal No.1
SRS #2002-10270

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-29			Diameter: 4 in.	Screened Interval:	55 ft. to 95 ft.	TD: 96.2 ft.
	06/14/12	3769.79	74.65	-	-	3695.14
	09/25/12	3769.79	75.07	-	-	3694.72
	12/10/12	3769.79	75.48	-	-	3694.31
	03/12/13	3769.79	75.86	-	-	3693.93
	06/13/13	3769.79	76.49	-	-	3693.30
	09/27/13	3769.79	77.81	-	-	3691.98
	12/11/13	3769.79	77.98	-	-	3691.81
MW-30			Diameter: 4 in.	Screened Interval:	61 ft. to 91.2 ft.	TD: 91.2 ft.
	06/14/12	3766.52	75.05	68.37	6.68	3697.05
	09/25/12	3766.52	75.85	68.78	7.07	3696.57
	12/10/12	3766.52	76.25	69.20	7.05	3696.16
	03/12/13	3766.52	76.47	69.62	6.85	3695.77
	06/13/13	3766.52	77.36	70.23	7.13	3695.11
	09/27/13	3766.52	76.61	70.31	6.30	3695.17
	12/11/13	3766.52	76.71	70.18	6.53	3695.26
MW-31			Diameter: 4 in.	Screened Interval:	60 ft. to 90 ft.	TD: 90 ft.
	06/14/12	3766.45	75.89	68.40	7.49	3696.18
	09/25/12	3766.45	76.90	68.85	8.05	3695.59
	12/10/12	3766.45	76.22	69.54	6.68	3695.24
	03/12/13	3766.45	73.51	70.54	2.97	3695.17
	06/13/13	3766.45	77.36	70.41	6.95	3694.30
	09/27/13	3766.45	77.48	71.61	5.87	3693.37
	12/11/13	3766.45	77.48	72.86	4.62	3692.44
MW-32			Diameter: 4 in.	Screened Interval:	60 ft. to 90 ft.	TD: 90 ft.
	06/14/12	3766.75	76.50	69.05	7.45	3695.84
	09/25/12	3766.75	77.44	69.53	7.91	3695.24
	12/10/12	3766.75	77.93	69.92	8.01	3694.83
	03/12/13	3766.75	77.26	70.53	6.73	3694.54
	06/13/13	3766.75	78.35	70.97	7.38	3693.94
	09/27/13	3766.75	78.28	71.97	6.31	3693.20
	12/11/13	3766.75	78.25	72.91	5.34	3692.51
MW-33			Diameter: 4 in.	Screened Interval:	60 ft. to 90 ft.	TD: 90 ft.
	06/14/12	3767.44	77.44	69.80	7.64	3695.73
	09/25/12	3767.44	79.60	70.55	9.05	3694.63
	12/10/12	3767.44	77.96	71.30	6.66	3694.48
	03/12/13	3767.44	79.25	71.48	7.77	3694.02
	06/13/13	3767.44	79.54	71.88	7.66	3693.65
	09/27/13	3767.44	79.21	73.03	6.18	3692.87
	12/11/13	3767.44	79.21	74.56	4.65	3691.72
MW-34			Diameter: 4 in.	Screened Interval:	59 ft. to 89.4 ft.	TD: 89.4 ft.
	06/14/12	3766.32	69.71	-	-	3696.61
	09/25/12	3766.32	70.08	-	-	3696.24
	12/10/12	3766.32	70.47	-	-	3695.85
	03/12/13	3766.32	70.85	-	-	3695.47
	06/13/13	3766.32	71.70	-	-	3694.62
	09/27/13	3766.32	71.86	-	-	3694.46
	12/11/13	3766.32	72.82	-	-	3693.50
MW-35			Diameter: 4 in.	Screened Interval:	61 ft. to 91.1 ft.	TD: 91.1 ft.
	06/14/12	3765.67	69.59	-	-	3696.08
	09/25/12	3765.67	69.96	-	-	3695.71
	12/10/12	3765.67	70.35	-	-	3695.32
	03/12/13	3765.67	70.73	-	-	3694.94
	06/13/13	3765.67	71.37	-	-	3694.30
	09/27/13	3765.67	71.47	-	-	3694.20
	12/11/13	3765.67	72.75	-	-	3692.92

Summary of Historical Fluid Level Measurements
Moore to Jal No.1
SRS #2002-10270

Well	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Depth to PSH (ft)	PSH Thickness (ft)	Corrected Groundwater Elevation (ft)
MW-36			Diameter: 4 in.	Screened Interval: 61 ft. to 91.4 ft.		TD: 91.4 ft.
	06/14/12	3765.37	69.80	-	-	3695.57
	09/25/12	3765.37	70.16	-	-	3695.21
	12/10/12	3765.37	70.56	-	-	3694.81
	03/12/13	3765.37	70.94	-	-	3694.43
	06/13/13	3765.37	71.59	-	-	3693.78
	09/27/13	3765.37	71.68	-	-	3693.69
	12/11/13	3765.37	72.94	-	-	3692.43
MW-37			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: 103 ft.
	01/09/14		81.37	-	-	
MW-38			Diameter: 4 in.	Screened Interval: ____ ft. to ____ ft.		TD: 103 ft.
	01/09/14		79.68	-	-	

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
Moore to Jal No.1
SRS #2002-10270

Sample Designation	Date Sampled	Concentration (mg/L)						
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	MTBE
MW-14	06/15/12	1.86	0.449	0.0954	0.115	-	-	-
	09/27/12	1.04	0.198	0.0632	0.0875	-	-	-
	12/14/12	2.01	0.394	0.0940	0.150	-	-	<0.0166
	03/22/13	7.81	0.477	0.216	0.370	-	-	-
	06/13/13	1.29	0.215	0.0718	-	0.0814	1.66	-
	09/27/13	3.29	0.0231	<0.00884	0.129	-	-	-
	12/30/13	4.28	<0.0259	<0.0259	BRL	-	-	-
MW-16	06/15/12	41.8	3.91	1.52	0.951	-	-	-
MW-17	06/14/12	0.0577	0.00510	0.00230	0.00100	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	06/13/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	12/30/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-
MW-18	06/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954
	03/22/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-
	06/13/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
MW-19	06/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954
	03/22/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-
	06/13/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-

Summary of Historical Groundwater Analytical Data
Moore to Jal No.1
SRS #2002-10270

Sample Designation	Date Sampled	Concentration (mg/L)						
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	MTBE
MW-20	06/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954
	03/22/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-
	06/13/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
MW-21	06/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	06/13/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
MW-22	06/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	06/13/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
MW-23	06/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954
	03/22/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-
	06/13/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-

Summary of Historical Groundwater Analytical Data
Moore to Jal No.1
SRS #2002-10270

Sample Designation	Date Sampled	Concentration (mg/L)						
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	MTBE
MW-26	06/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	06/13/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
MW-27	06/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954
	03/22/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-
	06/13/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-
	09/27/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
MW-28	06/15/12	0.541	<0.0174	<0.0163	BRL	-	-	-
	09/27/12	2.11	<0.00259	<0.00291	0.0659	-	-	-
	12/14/12	1.54	<0.0130	<0.0146	BRL	-	-	<0.0166
	03/22/13	4.78	<0.0259	<0.0259	BRL	-	-	-
	06/13/13	0.338	<0.00100	<0.000700	-	<0.000700	0.338	-
	09/27/13	4.01	<0.0104	<0.0104	BRL	-	-	-
	12/30/13	0.0453	<0.000465	0.00120	BRL	-	-	-
MW-29	06/15/12	41.7	<0.0694	1.24	0.564	-	-	-
	09/27/12	40.3	0.292	1.61	1.10	-	-	-
	12/14/12	22.8	<0.0518	0.760	0.410	-	-	<0.0662
	03/21/13	33.9	<0.0518	1.22	0.715	-	-	-
	06/13/13	25.7	<0.100	0.447	-	<0.0700	26.1	-
	09/27/13	50.5	<0.259	0.727	BRL	-	-	-
	12/30/13	38.1	<0.104	0.741	BRL	-	-	-

Summary of Historical Groundwater Analytical Data
Moore to Jal No.1
SRS #2002-10270

Sample Designation	Date Sampled	Concentration (mg/L)						
		Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	MTBE
MW-34	06/15/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	09/26/12	0.00240	<0.000259	<0.000291	BRL	-	-	-
	12/14/12	0.00410	<0.000347	<0.000326	BRL	-	-	<0.000954
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	06/13/13	0.00143	<0.00100	<0.000700	-	<0.000700	0.00143	-
	09/27/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-
	12/30/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-
MW-35	06/15/12	0.00220	0.00180	<0.000326	BRL	-	-	-
	09/26/12	0.00460	0.00450	<0.000326	BRL	-	-	-
	12/14/12	0.00730	0.00770	<0.000326	0.00220	-	-	<0.000954
	03/21/13	<0.000387	0.00180	<0.000442	0.00100	-	-	-
	06/13/13	0.00245	<0.00100	<0.000700	-	<0.000700	0.00245	-
	09/27/13	0.00210	0.00110	<0.000518	BRL	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
MW-36	06/15/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	09/26/12	<0.000371	<0.000347	<0.000326	BRL	-	-	-
	12/14/12	<0.000371	<0.000347	<0.000326	BRL	-	-	<0.000954
	03/21/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
	06/13/13	<0.000500	<0.00100	<0.000700	-	<0.000700	U	-
	09/27/13	<0.000567	<0.000518	<0.000518	BRL	-	-	-
	12/30/13	<0.000387	<0.000465	<0.000442	BRL	-	-	-
MW-37	01/10/14	0.00100	0.00640	0.00270	0.00880	-	-	-
MW-38	01/10/14	<0.000188	<0.000160	<0.000119	BRL	-	-	-

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes, analyzed by EPA Method 8021

C6-C12, >C12-C28, >C28-C35, and C6-C35 analyzed by Method TX1005

Naphthalene and other PAH analyzed by EPA Method 8270C

C = Not Sampled

Summary of Historical Soil Analytical Data
Moore to Jal No.1
SRS #2002-10270

Sample Designation	Date Sampled	Top	Bottom	Concentration (mg/kg)												
				Benzene	Toluene	Ethylbenzene	Total Xylenes	Xylenes, Total	BTEX	TPH C6-C12	C6-C12	TPH >C12-C28	>C12-C28	>C28-C35	Carbon Ranges C28-C35	Total TPH
NW-A	09/20/06			-	-	-	-	-	-	3.50 *	-	242 *	-	-	64.5 *	-
NE-A	09/20/06			-	-	-	-	-	-	3.84 *	-	365 *	-	-	85.4 *	-
SW-A	09/20/06			-	-	-	-	-	-	3.41 *	-	168 *	-	-	49.1 *	-
SE-A	09/20/06			-	-	-	-	-	-	2.73 *	-	211 *	-	-	46.9 *	-
NW-B	09/20/06			-	-	-	-	-	-	3.81 *	-	116 *	-	-	31.0 *	-
NE-B	09/20/06			-	-	-	-	-	-	4.33 *	-	170 *	-	-	40.5 *	-
SE-B	09/20/06			-	-	-	-	-	-	2.91 *	-	144 *	-	-	42.5 *	-
SW-B	09/20/06			-	-	-	-	-	-	2.88 *	-	175 *	-	-	49.9 *	-
MW-24 70'	03/02/10			2.40	75.6	65.0	166	-	-	-	-	-	-	-	-	-
MW-23 70'	03/02/10			12.8	191	107	267	-	-	-	-	-	-	-	-	-
Stockpile Comp.	03/04/10			BRL	BRL	BRL	BRL	-	-	-	-	-	-	-	-	-
MW-33 (60-70)	08/10/10			0.364	4.93	6.21	16.4	-	-	-	-	-	-	-	-	-
MW-32 (60-70)	08/10/10			0.584	3.61	3.00	7.67	-	-	-	-	-	-	-	-	-
MW-31 (60-70)	08/10/10			0.670	4.34	3.84	10.4	-	-	-	-	-	-	-	-	-
MW-30 (60-70)	08/10/10			0.586	5.03	6.02	17.6	-	-	-	-	-	-	-	-	-
Stockpile Comp.	08/19/10			BRL	BRL	BRL	BRL	-	-	-	-	-	-	-	-	-
MW-37	12/18/13		80	<0.000498	<0.000996	<0.000498	-	<0.000498	U	-	<10.3	-	<10.3	<10.3	-	<10.3
	12/18/13		100	<0.000499	<0.000998	<0.000499	-	<0.000499	U	-	<10.4	-	<10.4	<10.4	-	<10.4
MW-38	12/18/13		80	<0.000496	<0.000992	<0.000496	-	<0.000496	U	-	<10.3	-	34.5	<10.3	-	34.5
	12/18/13		100	<0.000499	<0.000998	<0.000499	-	<0.000499	U	-	<9.98	-	44.7	<9.98	-	44.7

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 26, 2013

Work Order: 13032202

Project Location: Lovington, NM
Project Name: Moore to Jal #1
Project Number: 700376.044.01
SRS #: 2002-10270

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
324280	MW-17	water	2013-03-21	13:15	2013-03-21
324281	MW-21	water	2013-03-21	13:05	2013-03-21
324282	MW-22	water	2013-03-21	12:55	2013-03-21
324283	MW-26	water	2013-03-21	12:45	2013-03-21
324284	MW-29	water	2013-03-21	13:25	2013-03-21
324285	MW-34	water	2013-03-21	10:00	2013-03-21
324286	MW-35	water	2013-03-21	09:50	2013-03-21
324287	MW-36	water	2013-03-21	09:40	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 Moore to Jal #1 were received by TraceAnalysis, Inc. on 2013-03-21 and assigned to work order 13032202. Samples for work order 13032202 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	84684	2013-03-22 at 10:05	99969	2013-03-22 at 10:05
BTEX	S 8021B	84685	2013-03-22 at 10:05	99972	2013-03-22 at 10:05
BTEX	S 8021B	84710	2013-03-25 at 13:47	99998	2013-03-25 at 13:47

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 13032202 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: 324280 - MW-17

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	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)			0.0834	mg/L	1	0.100	83	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0811	mg/L	1	0.100	81	67.3 - 120

Sample: 324281 - MW-21

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	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)			0.0868	mg/L	1	0.100	87	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0780	mg/L	1	0.100	78	67.3 - 120

Sample: 324282 - MW-22

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	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)			0.0807	mg/L	1	0.100	81	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0799	mg/L	1	0.100	80	67.3 - 120

Sample: 324283 - MW-26

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99969	Date Analyzed:	2013-03-22	Analyzed By:	MT
Prep Batch:	84684	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)			0.0855	mg/L	1	0.100	86	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0774	mg/L	1	0.100	77	67.3 - 120

Sample: 324284 - MW-29

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	99998	Date Analyzed:	2013-03-25	Analyzed By:	MT
Prep Batch:	84710	Sample Preparation:	2013-03-25	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**33.9**	mg/L	100	0.00100
Toluene	U	1	<0.100	mg/L	100	0.00100
Ethylbenzene		1	**1.22**	mg/L	100	0.00100
Xylene		1	**0.715**	mg/L	100	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.02	mg/L	100	10.0	90	80 - 120
4-Bromofluorobenzene (4-BFB)			8.95	mg/L	100	10.0	90	80 - 120

Sample: 324285 - MW-34

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	RL Result	Units	Dilution	RL
Benzene		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		1	<0.00100	mg/L	1	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0786	mg/L	1	0.100	79	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0780	mg/L	1	0.100	78	67.3 - 120

Sample: 324286 - MW-35

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	<0.00100	mg/L	1	0.00100
Toluene		1	**0.00180**	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)			0.0817	mg/L	1	0.100	82	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0765	mg/L	1	0.100	76	67.3 - 120

Sample: 324287 - MW-36

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)			0.0769	mg/L	1	0.100	77	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0787	mg/L	1	0.100	79	67.3 - 120

Method Blanks

Method Blank (1) QC Batch: 99969

QC Batch: 99969 | Date Analyzed: 2013-03-22 | Analyzed By: MT
Prep Batch: 84684 | 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)			0.0853	mg/L	1	0.100	85	69.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0780	mg/L	1	0.100	78	67.3 - 120

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

Method Blank (1) QC Batch: 99998

QC Batch: 99998 | Date Analyzed: 2013-03-25 | Analyzed By: MT
Prep Batch: 84710 | QC Preparation: 2013-03-25 | 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)			0.0908	mg/L	1	0.100	91	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0901	mg/L	1	0.100	90	80 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 99969 | Date Analyzed: 2013-03-22 | Analyzed By: MT
Prep Batch: 84684 | QC Preparation: 2013-03-22 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0854	mg/L	1	0.100	<0.000387	85	74.4 - 120
Toluene		1	0.0849	mg/L	1	0.100	<0.000465	85	75 - 120
Ethylbenzene		1	0.0849	mg/L	1	0.100	<0.000442	85	74.7 - 120
Xylene		1	0.257	mg/L	1	0.300	<0.000413	86	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	0.0867	mg/L	1	0.100	<0.000387	87	74.4 - 120	2	20
Toluene		1	0.0854	mg/L	1	0.100	<0.000465	85	75 - 120	1	20
Ethylbenzene		1	0.0864	mg/L	1	0.100	<0.000442	86	74.7 - 120	2	20
Xylene		1	0.261	mg/L	1	0.300	<0.000413	87	75.9 - 120	2	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)	0.0849	0.0849	mg/L	1	0.100	85	85	69.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0801	0.0799	mg/L	1	0.100	80	80	67.3 - 120

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

Laboratory Control Spike (LCS-1)

QC Batch: 99998 | Date Analyzed: 2013-03-25 | Analyzed By: MT
Prep Batch: 84710 | QC Preparation: 2013-03-25 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0911	mg/L	1	0.100	<0.000567	91	80 - 120
Toluene		1	0.0964	mg/L	1	0.100	<0.000518	96	80 - 120
Ethylbenzene		1	0.0961	mg/L	1	0.100	<0.000518	96	80 - 120
Xylene		1	0.283	mg/L	1	0.300	<0.000548	94	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	0.0878	mg/L	1	0.100	<0.000567	88	80 - 120	4	20
Toluene		1	0.0934	mg/L	1	0.100	<0.000518	93	80 - 120	3	20
Ethylbenzene		1	0.0923	mg/L	1	0.100	<0.000518	92	80 - 120	4	20
Xylene		1	0.274	mg/L	1	0.300	<0.000548	91	80 - 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)	0.0930	0.0895	mg/L	1	0.100	93	90	80 - 120
4-Bromofluorobenzene (4-BFB)	0.0901	0.0868	mg/L	1	0.100	90	87	80 - 120

Matrix Spike (MS-1) Spiked Sample: 324268

QC Batch: 99969 | Date Analyzed: 2013-03-22 | Analyzed By: MT
Prep Batch: 84684 | QC Preparation: 2013-03-22 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0865	mg/L	1	0.100	<0.000387	86	57.7 - 120
Toluene		1	0.0855	mg/L	1	0.100	<0.000465	86	56.9 - 120
Ethylbenzene		1	0.0859	mg/L	1	0.100	<0.000442	86	62.9 - 120
Xylene		1	0.258	mg/L	1	0.300	<0.000413	86	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	0.0856	mg/L	1	0.100	<0.000387	86	57.7 - 120	1	20
Toluene		1	0.0847	mg/L	1	0.100	<0.000465	85	56.9 - 120	1	20
Ethylbenzene		1	0.0850	mg/L	1	0.100	<0.000442	85	62.9 - 120	1	20
Xylene		1	0.256	mg/L	1	0.300	<0.000413	85	63.2 - 120	1	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)	0.0867	0.0818	mg/L	1	0.1	87	82	69.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0833	0.0840	mg/L	1	0.1	83	84	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

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
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

Matrix Spike (MS-1) Spiked Sample: 324288

QC Batch:	99998	Date Analyzed:	2013-03-25	Analyzed By:	MT
Prep Batch:	84710	QC Preparation:	2013-03-25	Prepared By:	MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.07	mg/L	10	1.00	1.2	87	64.6 - 120
Toluene		1	1.58	mg/L	10	1.00	0.617	96	62.9 - 123
Ethylbenzene		1	0.974	mg/L	10	1.00	0.0535	92	64.2 - 123
Xylene		1	3.02	mg/L	10	3.00	0.29	91	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	1.98	mg/L	10	1.00	1.2	78	64.6 - 120	4	20
Toluene		1	1.51	mg/L	10	1.00	0.617	89	62.9 - 123	4	20
Ethylbenzene		1	0.934	mg/L	10	1.00	0.0535	88	64.2 - 123	4	20
Xylene		1	2.88	mg/L	10	3.00	0.29	86	63.1 - 121	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)	0.973	0.946	mg/L	10	1	97	95	80 - 120
4-Bromofluorobenzene (4-BFB)	0.895	0.869	mg/L	10	1	90	87	80 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 99969 | 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	0.0858	86	80 - 120	2013-03-22
Toluene		1	mg/L	0.100	0.0853	85	80 - 120	2013-03-22
Ethylbenzene		1	mg/L	0.100	0.0862	86	80 - 120	2013-03-22
Xylene		1	mg/L	0.300	0.260	87	80 - 120	2013-03-22

Standard (CCV-2)

QC Batch: 99969 | 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	0.0857	86	80 - 120	2013-03-22
Toluene		1	mg/L	0.100	0.0848	85	80 - 120	2013-03-22
Ethylbenzene		1	mg/L	0.100	0.0846	85	80 - 120	2013-03-22
Xylene		1	mg/L	0.300	0.254	85	80 - 120	2013-03-22

Standard (CCV-3)

QC Batch: 99969 | 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	0.0855	86	80 - 120	2013-03-22
Toluene		1	mg/L	0.100	0.0834	83	80 - 120	2013-03-22
Ethylbenzene		1	mg/L	0.100	0.0834	83	80 - 120	2013-03-22
Xylene		1	mg/L	0.300	0.250	83	80 - 120	2013-03-22

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

Standard (CCV-1)

QC Batch: 99998 Date Analyzed: 2013-03-25 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	0.0943	94	80 - 120	2013-03-25
Toluene		1	mg/L	0.100	0.0991	99	80 - 120	2013-03-25
Ethylbenzene		1	mg/L	0.100	0.0982	98	80 - 120	2013-03-25
Xylene		1	mg/L	0.300	0.290	97	80 - 120	2013-03-25

Standard (CCV-2)

QC Batch: 99998 Date Analyzed: 2013-03-25 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	0.0865	86	80 - 120	2013-03-25
Toluene		1	mg/L	0.100	0.0921	92	80 - 120	2013-03-25
Ethylbenzene		1	mg/L	0.100	0.0940	94	80 - 120	2013-03-25
Xylene		1	mg/L	0.300	0.270	90	80 - 120	2013-03-25

Standard (CCV-3)

QC Batch: 99998 Date Analyzed: 2013-03-25 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	0.0894	89	80 - 120	2013-03-25
Toluene		1	mg/L	0.100	0.0957	96	80 - 120	2013-03-25
Ethylbenzene		1	mg/L	0.100	0.0952	95	80 - 120	2013-03-25
Xylene		1	mg/L	0.300	0.281	94	80 - 120	2013-03-25

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 # 13032202

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: TOLOW LPE — Phone #: 432-522-2133

Address: (Street, City, Zip) 2901 S Hwy 349, Midland, TX — Fax #: 432-522-2183

Contact Person: BRAD IVY — E-mail: BIvy@tolowLPE.com

Invoice to: (If different from above) PLAINS SRS# 2002-10270

Project #: JAL #1 700376.044.01 — Project Name: JAL #1

Project Location (including state): HOBBS, NM — Sampler Signature: Ramon Lc

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
324280	MW-17	3	VOA	X				X				X		3/21/13	1315		X																								
281	MW-21 R	3	VOA	X				X				X			1305		X																								
282	MW-22	3	VOA	X				X				X			1255		X																								
283	MW-26	3	VOA	X				X				X			1245		X																								
284	MW-29	3	VOA	X				X				X			1325		X																								
285	MW-34	3	VOA	X				X				X			1000		X																								
286	MW-35	3	VOA	X				X				X			0950		X																								
287	MW-36	3	VOA	X				X				X		↓	0940		X																								

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Ramon C	TOLOW	3/21/13	1630					INST ____ OBS ____ °C COR ____ °C
								INST ____ OBS ____ °C COR ____ °C
				Brandi Ward	TA Lubbock	3/21/13	16:30	INST P.2 OBS 3.2 °C COR 2.6 °C

LAB USE ONLY

Int Cool 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 # Campbell

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 29, 2013

Work Order: 13032227

Project Location: Lovington, NM
Project Name: Moore to Jal #1
Project Number: 700376.044.01
SRS #: 2002-10270

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
324410	MW-14	water	2013-03-22	08:40	2013-03-22
324411	MW-18	water	2013-03-22	09:45	2013-03-22
324412	MW-19	water	2013-03-22	09:20	2013-03-22
324413	MW-20	water	2013-03-22	09:00	2013-03-22
324414	MW-23	water	2013-03-22	10:05	2013-03-22
324415	MW-27	water	2013-03-22	08:15	2013-03-22
324416	MW-28	water	2013-03-22	08:25	2013-03-22

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 Moore to Jal #1 were received by TraceAnalysis, Inc. on 2013-03-22 and assigned to work order 13032227. Samples for work order 13032227 were received intact without headspace and at a temperature of 1.8 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	84714	2013-03-25 at 13:47	100002	2013-03-25 at 13:47
BTEX	S 8021B	84793	2013-03-27 at 12:53	100090	2013-03-27 at 12:53

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 13032227 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: 324410 - MW-14

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100090	Date Analyzed:	2013-03-27	Analyzed By:	MT
Prep Batch:	84793	Sample Preparation:	2013-03-27	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qs	1	**7.81**	mg/L	100	0.00100
Toluene	Qs	1	**0.477**	mg/L	100	0.00100
Ethylbenzene	Qs	1	**0.216**	mg/L	100	0.00100
Xylene	Qs	1	**0.370**	mg/L	100	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			8.80	mg/L	100	10.0	88	80 - 120
4-Bromofluorobenzene (4-BFB)			8.63	mg/L	100	10.0	86	80 - 120

Sample: 324411 - MW-18

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100090	Date Analyzed:	2013-03-27	Analyzed By:	MT
Prep Batch:	84793	Sample Preparation:	2013-03-27	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0852	mg/L	1	0.100	85	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0869	mg/L	1	0.100	87	80 - 120

Sample: 324412 - MW-19

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100090	Date Analyzed:	2013-03-27	Analyzed By:	MT
Prep Batch:	84793	Sample Preparation:	2013-03-27	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0862	mg/L	1	0.100	86	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0861	mg/L	1	0.100	86	80 - 120

Sample: 324413 - MW-20

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100002	Date Analyzed:	2013-03-25	Analyzed By:	MT
Prep Batch:	84714	Sample Preparation:	2013-03-25	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)			0.0875	mg/L	1	0.100	88	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0844	mg/L	1	0.100	84	80 - 120

Sample: 324414 - MW-23

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100002	Date Analyzed:	2013-03-25	Analyzed By:	MT
Prep Batch:	84714	Sample Preparation:	2013-03-25	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)			0.0870	mg/L	1	0.100	87	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0850	mg/L	1	0.100	85	80 - 120

Sample: 324415 - MW-27

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100002	Date Analyzed:	2013-03-25	Analyzed By:	MT
Prep Batch:	84714	Sample Preparation:	2013-03-25	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)			0.0850	mg/L	1	0.100	85	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0831	mg/L	1	0.100	83	80 - 120

Sample: 324416 - MW-28

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	100002	Date Analyzed:	2013-03-25	Analyzed By:	MT
Prep Batch:	84714	Sample Preparation:	2013-03-25	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**4.78**	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)			4.22	mg/L	50	5.00	84	80 - 120
4-Bromofluorobenzene (4-BFB)			4.27	mg/L	50	5.00	85	80 - 120

Method Blanks

Method Blank (1) QC Batch: 100002

QC Batch: 100002 | Date Analyzed: 2013-03-25 | Analyzed By: MT
Prep Batch: 84714 | QC Preparation: 2013-03-25 | 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)			0.0902	mg/L	1	0.100	90	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0899	mg/L	1	0.100	90	80 - 120

Method Blank (1) QC Batch: 100090

QC Batch: 100090 | Date Analyzed: 2013-03-27 | Analyzed By: MT
Prep Batch: 84793 | QC Preparation: 2013-03-27 | 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)			0.0862	mg/L	1	0.100	86	80 - 120
4-Bromofluorobenzene (4-BFB)			0.0862	mg/L	1	0.100	86	80 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 100002 | Date Analyzed: 2013-03-25 | Analyzed By: MT
Prep Batch: 84714 | QC Preparation: 2013-03-25 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0874	mg/L	1	0.100	<0.000567	87	80 - 120
Toluene		1	0.0932	mg/L	1	0.100	<0.000518	93	80 - 120
Ethylbenzene		1	0.0955	mg/L	1	0.100	<0.000518	96	80 - 120
Xylene		1	0.278	mg/L	1	0.300	<0.000548	93	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	0.0881	mg/L	1	0.100	<0.000567	88	80 - 120	1	20
Toluene		1	0.0914	mg/L	1	0.100	<0.000518	91	80 - 120	2	20
Ethylbenzene		1	0.0915	mg/L	1	0.100	<0.000518	92	80 - 120	4	20
Xylene		1	0.272	mg/L	1	0.300	<0.000548	90	80 - 120	2	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)	0.0871	0.0891	mg/L	1	0.100	87	89	80 - 120
4-Bromofluorobenzene (4-BFB)	0.0857	0.0874	mg/L	1	0.100	86	87	80 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100090 | Date Analyzed: 2013-03-27 | Analyzed By: MT
Prep Batch: 84793 | QC Preparation: 2013-03-27 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene [1]		1	0.0885	mg/L	1	0.100	<0.000567	88	80 - 120
Toluene		1	0.0944	mg/L	1	0.100	<0.000518	94	80 - 120
Ethylbenzene		1	0.0947	mg/L	1	0.100	<0.000518	95	80 - 120
Xylene		1	0.280	mg/L	1	0.300	<0.000548	93	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	0.0858	mg/L	1	0.100	<0.000567	86	80 - 120	3	20
Toluene		1	0.0927	mg/L	1	0.100	<0.000518	93	80 - 120	2	20
Ethylbenzene		1	0.0924	mg/L	1	0.100	<0.000518	92	80 - 120	2	20
Xylene		1	0.274	mg/L	1	0.300	<0.000548	91	80 - 120	2	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)	0.0882	0.0857	mg/L	1	0.100	88	86	80 - 120
4-Bromofluorobenzene (4-BFB)	0.0845	0.0827	mg/L	1	0.100	84	83	80 - 120

Matrix Spike (MS-1) Spiked Sample: 324361

QC Batch: 100002 | Date Analyzed: 2013-03-25 | Analyzed By: MT
Prep Batch: 84714 | QC Preparation: 2013-03-25 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0878	mg/L	1	0.100	<0.000567	88	64.6 - 120
Toluene		1	0.0933	mg/L	1	0.100	<0.000518	93	62.9 - 123
Ethylbenzene		1	0.0930	mg/L	1	0.100	<0.000518	93	64.2 - 123
Xylene		1	0.274	mg/L	1	0.300	0.0008	91	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	0.0881	mg/L	1	0.100	<0.000567	88	64.6 - 120	0	20
Toluene		1	0.0942	mg/L	1	0.100	<0.000518	94	62.9 - 123	1	20
Ethylbenzene		1	0.0934	mg/L	1	0.100	<0.000518	93	64.2 - 123	0	20
Xylene		1	0.275	mg/L	1	0.300	0.0008	91	63.1 - 121	0	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)	0.0949	0.0923	mg/L	1	0.1	95	92	80 - 120
4-Bromofluorobenzene (4-BFB)	0.0936	0.0909	mg/L	1	0.1	94	91	80 - 120

Matrix Spike (MS-1) Spiked Sample: 324410

QC Batch: 100090 | Date Analyzed: 2013-03-27 | Analyzed By: MT
Prep Batch: 84793 | QC Preparation: 2013-03-27 | Prepared By: MT

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	Qs	1	7.96	mg/L	100	10.0	7.81	2	64.6 - 120
Toluene	Qs	Qs	1	0.469	mg/L	100	10.0	0.477	0	62.9 - 123
Ethylbenzene	Qs	Qs	1	0.213	mg/L	100	10.0	0.216	0	64.2 - 123
Xylene	Qs	Qs	1	0.368	mg/L	100	30.0	0.37	0	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	Qs	Qs	1	7.77	mg/L	100	10.0	7.81	0	64.6 - 120	2	20
Toluene	Qs	Qs	1	0.466	mg/L	100	10.0	0.477	0	62.9 - 123	1	20
Ethylbenzene	Qs	Qs	1	0.206	mg/L	100	10.0	0.216	0	64.2 - 123	3	20
Xylene	Qs	Qs	1	0.360	mg/L	100	30.0	0.37	0	63.1 - 121	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)	8.75	8.70	mg/L	100	10	88	87	80 - 120
4-Bromofluorobenzene (4-BFB)	8.73	8.61	mg/L	100	10	87	86	80 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 100002 | Date Analyzed: 2013-03-25 | 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	0.0900	90	80 - 120	2013-03-25
Toluene		1	mg/L	0.100	0.0960	96	80 - 120	2013-03-25
Ethylbenzene		1	mg/L	0.100	0.0958	96	80 - 120	2013-03-25
Xylene		1	mg/L	0.300	0.283	94	80 - 120	2013-03-25

Standard (CCV-2)

QC Batch: 100002 | Date Analyzed: 2013-03-25 | 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	0.0928	93	80 - 120	2013-03-25
Toluene		1	mg/L	0.100	0.0962	96	80 - 120	2013-03-25
Ethylbenzene		1	mg/L	0.100	0.0968	97	80 - 120	2013-03-25
Xylene		1	mg/L	0.300	0.284	95	80 - 120	2013-03-25

Standard (CCV-3)

QC Batch: 100002 | Date Analyzed: 2013-03-25 | 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	0.0902	90	80 - 120	2013-03-25
Toluene		1	mg/L	0.100	0.0943	94	80 - 120	2013-03-25
Ethylbenzene		1	mg/L	0.100	0.0924	92	80 - 120	2013-03-25
Xylene		1	mg/L	0.300	0.273	91	80 - 120	2013-03-25

Standard (CCV-1)

QC Batch: 100090 | Date Analyzed: 2013-03-27 | 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	0.0908	91	80 - 120	2013-03-27
Toluene		1	mg/L	0.100	0.0970	97	80 - 120	2013-03-27
Ethylbenzene		1	mg/L	0.100	0.0966	97	80 - 120	2013-03-27
Xylene		1	mg/L	0.300	0.285	95	80 - 120	2013-03-27

Standard (CCV-2)

QC Batch: 100090 | Date Analyzed: 2013-03-27 | 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	0.0869	87	80 - 120	2013-03-27
Toluene		1	mg/L	0.100	0.0920	92	80 - 120	2013-03-27
Ethylbenzene		1	mg/L	0.100	0.0953	95	80 - 120	2013-03-27
Xylene		1	mg/L	0.300	0.277	92	80 - 120	2013-03-27

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

Result Comments

1 MS/MSD not spiked due to prep error.

Attachments

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

LAB Order ID # 13032227

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: TRLOW LPE — Phone #: 432-522-2133

Address: (Street, City, Zip) 2901 S Dwy 349, Midland TX — Fax #: 432-522-2183

Contact Person: BRAD IVY — E-mail: BIvy @ trlow LP.com

Invoice to: (If different from above) PLAINS SRS# 2002-10270

Project #: 703760 04401 — Project Name: JAL #1

Project Location (including state): Jal, NM — Sampler Signature: Tommy Low

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
384410	MW-14	3	VOA	X					X				X			3/22/13	0840		X																							
411	MW-18	3	VOA	X					X				X				0945		X																							
412	MW-19	3	VOA	X					X				X				0920		X																							
413	MW-20	3	VOA	X					X				X				0900		X																							
414	MW-23	3	VOA	X					X				X				1005		X																							
415	MW-27	3	VOA	X					X				X				0915		X																							
416	MW-28	3	VOA	X					X				X				0825		X																							

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Tommy Low	Trlow	3/22/13	1345					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:	INST 2.2 °C OBS 2.4 °C COR 1.8 °C

LAB USE ONLY

Int Cool Y / N

Headspace Y / N / NA

Log-in-Review BM

REMARKS:

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

Carrier # Caruth

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

ORIGINAL COPY

Analytical Report 465179

for

PLAINS ALL AMERICAN EH&S

Project Manager: Brad Ivy

Moore to Jal #1

700376.044.01

20-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)

20-JUN-13

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

Reference: XENCO Report No(s): **465179**
Moore to Jal #1
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) 465179. 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. 465179 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 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-14	W	06-13-13 14:00		465179-001
MW-17	W	06-13-13 09:00		465179-002
MW-18	W	06-13-13 09:45		465179-003
MW-19	W	06-13-13 11:55		465179-004
MW-20	W	06-13-13 10:15		465179-005
MW-21	W	06-13-13 09:15		465179-006
MW-22	W	06-13-13 09:30		465179-007
MW-23	W	06-13-13 10:00		465179-008
MW-26	W	06-13-13 10:30		465179-009
MW-27	W	06-13-13 10:45		465179-010
MW-28	W	06-13-13 13:30		465179-011
MW-29	W	06-13-13 14:15		465179-012
MW-34	W	06-13-13 12:30		465179-013
MW-35	W	06-13-13 12:45		465179-014
MW-36	W	06-13-13 13:00		465179-015

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S

Project Name: Moore to Jal #1

Project ID: *700376.044.01*
Work Order Number(s): *465179*

Report Date: *20-JUN-13*
Date Received: *06/13/2013*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-916584 BTEX by EPA 8021
SW8021BM

Batch 916584, Benzene recovered below QC limits in the Matrix Spike Duplicate.
Samples affected are: 465179-001, -002.
The Laboratory Control Sample for Benzene is within laboratory Control Limits

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id: **MW-14** Matrix: Water Date Received:06.13.13 17.30

Lab Sample Id: 465179-001 Date Collected: 06.13.13 14.00

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.18.13 15.30

Seq Number: 916584

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**1.29**	0.00500	mg/L	06.19.13 11.38		5
Toluene	108-88-3	**0.215**	0.0100	mg/L	06.19.13 11.38		5
Ethylbenzene	100-41-4	**0.0718**	0.00500	mg/L	06.19.13 11.38		5
m_p-Xylenes	179601-23-1	**0.0353**	0.0100	mg/L	06.19.13 11.38		5
o-Xylene	95-47-6	**0.0461**	0.00500	mg/L	06.19.13 11.38		5
Xylenes, Total	1330-20-7	**0.0814**	0.00500	mg/L	06.19.13 11.38		5
Total BTEX		**1.66**	0.00500	mg/L	06.19.13 11.38		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	80-120	06.19.13 11.38	
4-Bromofluorobenzene	460-00-4	86	%	80-120	06.19.13 11.38	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id: **MW-17** Matrix: Water Date Received:06.13.13 17.30

Lab Sample Id: 465179-002 Date Collected: 06.13.13 09.00

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.18.13 15.30

Seq Number: 916584

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.19.13 15.07	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 15.07	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 15.07	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 15.07	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 15.07	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 15.07	U	1
Total BTEX		ND	0.00100	mg/L	06.19.13 15.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104	%	80-120	06.19.13 15.07	
4-Bromofluorobenzene	460-00-4	80	%	80-120	06.19.13 15.07	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id: **MW-18** Matrix: Water Date Received:06.13.13 17.30

Lab Sample Id: 465179-003 Date Collected: 06.13.13 09.45

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.18.13 16.00

Seq Number: 916588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.19.13 02.34	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 02.34	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 02.34	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 02.34	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 02.34	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 02.34	U	1
Total BTEX		ND	0.00100	mg/L	06.19.13 02.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	80-120	06.19.13 02.34	
4-Bromofluorobenzene	460-00-4	84	%	80-120	06.19.13 02.34	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id: **MW-19** Matrix: Water Date Received:06.13.13 17.30

Lab Sample Id: 465179-004 Date Collected: 06.13.13 11.55

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.18.13 16.00

Seq Number: 916588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.19.13 14.19	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 14.19	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 14.19	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 14.19	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 14.19	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 14.19	U	1
Total BTEX		ND	0.00100	mg/L	06.19.13 14.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	80-120	06.19.13 14.19	
4-Bromofluorobenzene	460-00-4	80	%	80-120	06.19.13 14.19	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id: **MW-20** Matrix: Water Date Received:06.13.13 17.30

Lab Sample Id: 465179-005 Date Collected: 06.13.13 10.15

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.18.13 16.00

Seq Number: 916588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.19.13 14.35	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 14.35	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 14.35	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 14.35	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 14.35	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 14.35	U	1
Total BTEX		ND	0.00100	mg/L	06.19.13 14.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	80-120	06.19.13 14.35	
4-Bromofluorobenzene	460-00-4	84	%	80-120	06.19.13 14.35	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id: **MW-21** Matrix: Water Date Received:06.13.13 17.30

Lab Sample Id: 465179-006 Date Collected: 06.13.13 09.15

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.18.13 16.00

Seq Number: 916588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.19.13 08.23	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 08.23	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 08.23	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 08.23	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 08.23	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 08.23	U	1
Total BTEX		ND	0.00100	mg/L	06.19.13 08.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	80-120	06.19.13 08.23	
4-Bromofluorobenzene	460-00-4	82	%	80-120	06.19.13 08.23	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id: **MW-22** Matrix: Water Date Received:06.13.13 17.30

Lab Sample Id: 465179-007 Date Collected: 06.13.13 09.30

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.18.13 16.00

Seq Number: 916588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.19.13 08.55	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 08.55	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 08.55	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 08.55	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 08.55	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 08.55	U	1
Total BTEX		ND	0.00100	mg/L	06.19.13 08.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	80-120	06.19.13 08.55	
4-Bromofluorobenzene	460-00-4	83	%	80-120	06.19.13 08.55	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id:	**MW-23**	Matrix:	Water	Date Received:	06.13.13 17.30
Lab Sample Id:	465179-008	Date Collected:	06.13.13 10.00		
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	DYV			% Moisture:	
Analyst:	DYV	Date Prep:	06.18.13 16.00		
Seq Number:	916588				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.19.13 03.06	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 03.06	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 03.06	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 03.06	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 03.06	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 03.06	U	1
Total BTEX		ND	0.00100	mg/L	06.19.13 03.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	108	%	80-120	06.19.13 03.06	
4-Bromofluorobenzene	460-00-4	86	%	80-120	06.19.13 03.06	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id: **MW-26** Matrix: Water Date Received:06.13.13 17.30

Lab Sample Id: 465179-009 Date Collected: 06.13.13 10.30

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.18.13 16.00

Seq Number: 916588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.19.13 09.12	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 09.12	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 09.12	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 09.12	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 09.12	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 09.12	U	1
Total BTEX		ND	0.00100	mg/L	06.19.13 09.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	80-120	06.19.13 09.12	
4-Bromofluorobenzene	460-00-4	83	%	80-120	06.19.13 09.12	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id:	**MW-27**	Matrix:	Water	Date Received:	06.13.13 17.30
Lab Sample Id:	465179-010	Date Collected:	06.13.13 10.45		
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	DYV			% Moisture:	
Analyst:	DYV	Date Prep:	06.18.13 16.00		
Seq Number:	916588				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.19.13 02.50	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 02.50	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 02.50	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 02.50	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 02.50	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 02.50	U	1
Total BTEX		ND	0.00100	mg/L	06.19.13 02.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	80-120	06.19.13 02.50	
4-Bromofluorobenzene	460-00-4	83	%	80-120	06.19.13 02.50	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id: **MW-28** Matrix: Water Date Received:06.13.13 17.30

Lab Sample Id: 465179-011 Date Collected: 06.13.13 13.30

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.18.13 16.00

Seq Number: 916588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.338**	0.00100	mg/L	06.19.13 03.22		1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 03.22	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 03.22	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 03.22	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 03.22	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 03.22	U	1
Total BTEX		**0.338**	0.00100	mg/L	06.19.13 03.22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	116	%	80-120	06.19.13 03.22	
4-Bromofluorobenzene	460-00-4	87	%	80-120	06.19.13 03.22	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id:	**MW-29**	Matrix:	Water	Date Received:	06.13.13 17.30
Lab Sample Id:	465179-012	Date Collected:	06.13.13 14.15		
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	DYV			% Moisture:	
Analyst:	DYV	Date Prep:	06.20.13 08.30		
Seq Number:	916697				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**25.7**	0.100	mg/L	06.20.13 09.35		100
Toluene	108-88-3	ND	0.200	mg/L	06.20.13 09.35	U	100
Ethylbenzene	100-41-4	**0.447**	0.100	mg/L	06.20.13 09.35		100
m_p-Xylenes	179601-23-1	ND	0.200	mg/L	06.20.13 09.35	U	100
o-Xylene	95-47-6	ND	0.100	mg/L	06.20.13 09.35	U	100
Xylenes, Total	1330-20-7	ND	0.100	mg/L	06.20.13 09.35	U	100
Total BTEX		**26.1**	0.100	mg/L	06.20.13 09.35		100

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	117	%	80-120	06.20.13 09.35	
4-Bromofluorobenzene	460-00-4	80	%	80-120	06.20.13 09.35	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id:	**MW-34**	Matrix:	Water	Date Received:	06.13.13 17.30
Lab Sample Id:	465179-013	Date Collected:	06.13.13 12.30		
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	DYV			% Moisture:	
Analyst:	DYV	Date Prep:	06.18.13 16.00		
Seq Number:	916588				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00143**	0.00100	mg/L	06.19.13 08.39		1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 08.39	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 08.39	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 08.39	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 08.39	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 08.39	U	1
Total BTEX		**0.00143**	0.00100	mg/L	06.19.13 08.39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	80-120	06.19.13 08.39	
4-Bromofluorobenzene	460-00-4	83	%	80-120	06.19.13 08.39	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id:	**MW-35**	Matrix:	Water	Date Received:	06.13.13 17.30
Lab Sample Id:	465179-014	Date Collected:	06.13.13 12.45		
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	DYV			% Moisture:	
Analyst:	DYV	Date Prep:	06.18.13 16.00		
Seq Number:	916588				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00245**	0.00100	mg/L	06.19.13 04.26		1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 04.26	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 04.26	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 04.26	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 04.26	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 04.26	U	1
Total BTEX		**0.00245**	0.00100	mg/L	06.19.13 04.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	80-120	06.19.13 04.26	
4-Bromofluorobenzene	460-00-4	81	%	80-120	06.19.13 04.26	

Certificate of Analytical Results 465179

PLAINS ALL AMERICAN EH&S, Midland, TX

Moore to Jal #1

Sample Id: **MW-36** Matrix: Water Date Received:06.13.13 17.30

Lab Sample Id: 465179-015 Date Collected: 06.13.13 13.00

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B

Tech: DYV % Moisture:

Analyst: DYV Date Prep: 06.18.13 16.00

Seq Number: 916588

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00100	mg/L	06.19.13 14.51	U	1
Toluene	108-88-3	ND	0.00200	mg/L	06.19.13 14.51	U	1
Ethylbenzene	100-41-4	ND	0.00100	mg/L	06.19.13 14.51	U	1
m_p-Xylenes	179601-23-1	ND	0.00200	mg/L	06.19.13 14.51	U	1
o-Xylene	95-47-6	ND	0.00100	mg/L	06.19.13 14.51	U	1
Xylenes, Total	1330-20-7	ND	0.00100	mg/L	06.19.13 14.51	U	1
Total BTEX		ND	0.00100	mg/L	06.19.13 14.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	80-120	06.19.13 14.51	
4-Bromofluorobenzene	460-00-4	82	%	80-120	06.19.13 14.51	

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

Moore to Jal #1

Analytical Method: **BTEX by EPA 8021** Prep Method: SW5030B
Seq Number: 916584 Matrix: Water Date Prep: 06.18.13
MB Sample Id: 639893-1-BLK LCS Sample Id: 639893-1-BKS LCSD Sample Id: 639893-1-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	0.102	102	0.103	103	70-125	1	25	mg/L	06.18.13 18:16	
Toluene	<0.00200	0.100	0.0887	89	0.0893	89	70-125	1	25	mg/L	06.18.13 18:16	
Ethylbenzene	<0.00100	0.100	0.0847	85	0.0844	84	71-129	0	25	mg/L	06.18.13 18:16	
m_p-Xylenes	<0.00200	0.200	0.170	85	0.169	85	70-131	1	25	mg/L	06.18.13 18:16	
o-Xylene	<0.00100	0.100	0.0871	87	0.0872	87	71-133	0	25	mg/L	06.18.13 18:16	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		106		108		80-120	%	06.18.13 18:16
4-Bromofluorobenzene	80		89		92		80-120	%	06.18.13 18:16

Analytical Method: **BTEX by EPA 8021** Prep Method: SW5030B
Seq Number: 916588 Matrix: Water Date Prep: 06.18.13
MB Sample Id: 639894-1-BLK LCS Sample Id: 639894-1-BKS LCSD Sample Id: 639894-1-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	0.105	105	0.102	102	70-125	3	25	mg/L	06.19.13 00:58	
Toluene	<0.00200	0.100	0.0895	90	0.0877	88	70-125	2	25	mg/L	06.19.13 00:58	
Ethylbenzene	<0.00100	0.100	0.0869	87	0.0843	84	71-129	3	25	mg/L	06.19.13 00:58	
m_p-Xylenes	<0.00200	0.200	0.173	87	0.167	84	70-131	4	25	mg/L	06.19.13 00:58	
o-Xylene	<0.00100	0.100	0.0882	88	0.0862	86	71-133	2	25	mg/L	06.19.13 00:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		97		96		80-120	%	06.19.13 00:58
4-Bromofluorobenzene	85		95		94		80-120	%	06.19.13 00:58

Analytical Method: **BTEX by EPA 8021** Prep Method: SW5030B
Seq Number: 916697 Matrix: Water Date Prep: 06.20.13
MB Sample Id: 639979-1-BLK LCS Sample Id: 639979-1-BKS LCSD Sample Id: 639979-1-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	0.0960	96	0.105	105	70-125	9	25	mg/L	06.20.13 08:25	
Toluene	<0.00200	0.100	0.0885	89	0.0962	96	70-125	8	25	mg/L	06.20.13 08:25	
Ethylbenzene	<0.00100	0.100	0.0879	88	0.0955	96	71-129	8	25	mg/L	06.20.13 08:25	
m_p-Xylenes	<0.00200	0.200	0.176	88	0.191	96	70-131	8	25	mg/L	06.20.13 08:25	
o-Xylene	<0.00100	0.100	0.0913	91	0.0991	99	71-133	8	25	mg/L	06.20.13 08:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		115		114		80-120	%	06.20.13 08:25
4-Bromofluorobenzene	81		98		95		80-120	%	06.20.13 08:25

PLAINS ALL AMERICAN EH&S

Moore to Jal #1

Analytical Method: **BTEX by EPA 8021** Prep Method: SW5030B
Seq Number: 916584 Matrix: Water Date Prep: 06.18.13
Parent Sample Id: 465179-001 MS Sample Id: 465179-001 S MSD Sample Id: 465179-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	1.29	0.500	1.76	94	1.55	52	70-125	13	25	mg/L	06.19.13 12:26	X
Toluene	0.215	0.500	0.629	83	0.611	79	70-125	3	25	mg/L	06.19.13 12:26	
Ethylbenzene	0.0718	0.500	0.508	87	0.455	77	71-129	11	25	mg/L	06.19.13 12:26	
m_p-Xylenes	0.0353	1.00	0.917	88	0.847	81	70-131	8	25	mg/L	06.19.13 12:26	
o-Xylene	0.0461	0.500	0.499	91	0.477	86	71-133	5	25	mg/L	06.19.13 12:26	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		91		80-120	%	06.19.13 12:26
4-Bromofluorobenzene	99		103		80-120	%	06.19.13 12:26

Analytical Method: **BTEX by EPA 8021** Prep Method: SW5030B
Seq Number: 916588 Matrix: Water Date Prep: 06.18.13
Parent Sample Id: 465179-008 MS Sample Id: 465179-008 S MSD Sample Id: 465179-008 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	0.100	100	0.0966	97	70-125	3	25	mg/L	06.19.13 04:42	
Toluene	<0.00200	0.100	0.0867	87	0.0857	86	70-125	1	25	mg/L	06.19.13 04:42	
Ethylbenzene	<0.00100	0.100	0.0830	83	0.0832	83	71-129	0	25	mg/L	06.19.13 04:42	
m_p-Xylenes	<0.00200	0.200	0.164	82	0.165	83	70-131	1	25	mg/L	06.19.13 04:42	
o-Xylene	<0.00100	0.100	0.0843	84	0.0848	85	71-133	1	25	mg/L	06.19.13 04:42	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		80-120	%	06.19.13 04:42
4-Bromofluorobenzene	91		90		80-120	%	06.19.13 04:42

Analytical Method: **BTEX by EPA 8021** Prep Method: SW5030B
Seq Number: 916697 Matrix: Water Date Prep: 06.20.13
Parent Sample Id: 465103-001 MS Sample Id: 465103-001 S MSD Sample Id: 465103-001 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	0.119	119	0.118	118	70-125	1	25	mg/L	06.20.13 13:17	
Toluene	<0.00200	0.100	0.0994	99	0.0977	98	70-125	2	25	mg/L	06.20.13 13:17	
Ethylbenzene	<0.00100	0.100	0.0883	88	0.0885	89	71-129	0	25	mg/L	06.20.13 13:17	
m_p-Xylenes	<0.00200	0.200	0.175	88	0.177	89	70-131	1	25	mg/L	06.20.13 13:17	
o-Xylene	<0.00100	0.100	0.0892	89	0.0895	90	71-133	0	25	mg/L	06.20.13 13:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		98		80-120	%	06.20.13 13:17
4-Bromofluorobenzene	83		81		80-120	%	06.20.13 13:17

Xenco Laboratories

ie 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:
e-mail: Bivy@talonlpe.com

Project Name: MOORE TO Jal #1
Project #: 700376.044.01
Project Loc: Lea Co., NM
PO #: Plains SRS# 2002-10270
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(ab use only)
ORDER #: 465179

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	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-14			6.13.13	14:00		3	X		X						GW								X				X
	MW-17				09:00		3	X		X						GW								X				X
	MW-18				09:45		3	X		X						GW								X				X
	MW-19				11:55		3	X		X						GW								X				X
	MW-20				10:15		3	X		X						GW								X				X
	MW-21				09:15		3	X		X						GW								X				X
	MW-22				09:30		3	X		X						GW								X				X
	MW-23				10:00		3	X		X						GW								X				X
	MW-26				10:30		3	X		X						GW								X				X
	MW-27				10:45		3	X		X						GW								X				X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	6.13.13	17:30		6/13/13	5:30
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

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: As Read 3.2 °C Corrected

Final 1.000

Xenco Laboratories

ie 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: MOORE #2 Jal #1
Project #: 700376.044.01
Project Loc: Lea Co., NM
PO #: Plains SRS# 2002-10270
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

ab use only)
ORDER #: 465179

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	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-28			6-13-13	13:30		3	X		X						GW									X				X
	MW-29				14:15		3	X		X						GW									X				X
	MW-34				12:30		3	X		X						GW									X				X
	MW-35				12:45		3	X		X						GW									X				Y
	MW-36			↓	13:00		3	X		X						GW									X				X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	6-13-13	17:31	[signature]	6/13/13	5:32 PM
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

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. ? by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt:	As Read	Corrected
	3.2 °C	

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 06/13/2013 05:30:00 PM

Work Order #: 465179

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)?	3.2
#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)?	**No**
#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?	**N/A**

*** 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: 06/17/2013

Checklist reviewed by: Kelsey Brooks Date: 06/17/2013

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 7, 2013

Work Order: 13100206

Project Location: Lea Co. New Mexico
Project Name: Moore to Jal #1
Project Number: 700376.044.01
SRS #: 2002-10270

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
343062	MW-14	water	2013-09-27	10:40	2013-10-01
343063	MW-17	water	2013-09-27	08:00	2013-10-01
343064	MW-18	water	2013-09-27	08:40	2013-10-01
343065	MW-19	water	2013-09-27	09:00	2013-10-01
343066	MW-20	water	2013-09-27	09:20	2013-10-01
343067	MW-21	water	2013-09-27	07:40	2013-10-01
343068	MW-22	water	2013-09-27	07:20	2013-10-01
343069	MW-23	water	2013-09-27	08:20	2013-10-01
343070	MW-26	water	2013-09-27	07:00	2013-10-01
343071	MW-27	water	2013-09-27	09:40	2013-10-01
343072	MW-28	water	2013-09-27	10:00	2013-10-01
343073	MW-29	water	2013-09-27	10:20	2013-10-01
343074	MW-34	water	2013-09-27	06:00	2013-10-01
343075	MW-35	water	2013-09-27	06:20	2013-10-01
343076	MW-36	water	2013-09-27	06:40	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.

This report consists of a total of 27 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

Report Contents

Case Narrative

Samples for project Moore to Jal #1 were received by TraceAnalysis, Inc. on 2013-10-01 and assigned to work order 13100206. Samples for work order 13100206 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	89498	2013-10-02 at 13:56	105674	2013-10-02 at 13:56
BTEX	S 8021B	89499	2013-10-02 at 13:57	105675	2013-10-02 at 13:57
BTEX	S 8021B	89534	2013-10-03 at 15:28	105713	2013-10-03 at 15:28
BTEX	S 8021B	89560	2013-10-04 at 12:35	105741	2013-10-04 at 12:35

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 13100206 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: 343062 - MW-14

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105741	Date Analyzed:	2013-10-04	Analyzed By:	MT
Prep Batch:	89560	Sample Preparation:	2013-10-04	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**3.29**	mg/L	20	0.00100
Toluene		1	**0.0231**	mg/L	20	0.00100
Ethylbenzene		1	<0.0200	mg/L	20	0.00100
Xylene		1	**0.129**	mg/L	20	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/L	20	2.00	82	68.8 - 120
4-Bromofluorobenzene (4-BFB)			1.73	mg/L	20	2.00	86	67.5 - 120

Sample: 343063 - MW-17

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105741	Date Analyzed:	2013-10-04	Analyzed By:	MT
Prep Batch:	89560	Sample Preparation:	2013-10-04	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)			0.0800	mg/L	1	0.100	80	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0795	mg/L	1	0.100	80	67.5 - 120

Sample: 343064 - MW-18

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105741	Date Analyzed:	2013-10-04	Analyzed By:	MT
Prep Batch:	89560	Sample Preparation:	2013-10-04	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)			0.0777	mg/L	1	0.100	78	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0765	mg/L	1	0.100	76	67.5 - 120

Sample: 343065 - MW-19

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0824	mg/L	1	0.100	82	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0757	mg/L	1	0.100	76	67.5 - 120

Sample: 343066 - MW-20

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0924	mg/L	1	0.100	92	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0880	mg/L	1	0.100	88	67.5 - 120

Sample: 343067 - MW-21

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0932	mg/L	1	0.100	93	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0831	mg/L	1	0.100	83	67.5 - 120

Sample: 343068 - MW-22

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0934	mg/L	1	0.100	93	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0892	mg/L	1	0.100	89	67.5 - 120

Sample: 343069 - MW-23

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0967	mg/L	1	0.100	97	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0912	mg/L	1	0.100	91	67.5 - 120

Sample: 343070 - MW-26

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0956	mg/L	1	0.100	96	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0907	mg/L	1	0.100	91	67.5 - 120

Sample: 343071 - MW-27

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105675	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89499	Sample Preparation:	2013-10-02	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0946	mg/L	1	0.100	95	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0821	mg/L	1	0.100	82	67.5 - 120

Sample: 343072 - MW-28

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	**4.01**	mg/L	20	0.00100
Toluene	U	1	<0.0200	mg/L	20	0.00100
Ethylbenzene	U	1	<0.0200	mg/L	20	0.00100
Xylene	U	1	<0.0200	mg/L	20	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/L	20	2.00	100	75.4 - 120
4-Bromofluorobenzene (4-BFB)			2.14	mg/L	20	2.00	107	74.6 - 120

Sample: 343073 - MW-29

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	**50.5**	mg/L	500	0.00100
Toluene	U	1	<0.500	mg/L	500	0.00100
Ethylbenzene		1	**0.727**	mg/L	500	0.00100
Xylene	U	1	<0.500	mg/L	500	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			50.2	mg/L	500	50.0	100	75.4 - 120
4-Bromofluorobenzene (4-BFB)			52.6	mg/L	500	50.0	105	74.6 - 120

Sample: 343074 - MW-34

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: 343075 - MW-35

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105674	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89498	Sample Preparation:	2013-10-02	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qs	1	**0.00210**	mg/L	1	0.00100
Toluene		1	**0.00110**	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)			0.0957	mg/L	1	0.100	96	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0948	mg/L	1	0.100	95	74.6 - 120

Sample: 343076 - MW-36

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	105674	Date Analyzed:	2013-10-02	Analyzed By:	JS
Prep Batch:	89498	Sample Preparation:	2013-10-02	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qs,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)			0.0936	mg/L	1	0.100	94	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0928	mg/L	1	0.100	93	74.6 - 120

Method Blanks

Method Blank (1) QC Batch: 105674

QC Batch: 105674 | Date Analyzed: 2013-10-02 | Analyzed By: JS
Prep Batch: 89498 | QC Preparation: 2013-10-02 | 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)			0.0953	mg/L	1	0.100	95	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0952	mg/L	1	0.100	95	74.6 - 120

Method Blank (1) QC Batch: 105675

QC Batch: 105675 | Date Analyzed: 2013-10-02 | Analyzed By: JS
Prep Batch: 89499 | QC Preparation: 2013-10-02 | 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)			0.0897	mg/L	1	0.100	90	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0854	mg/L	1	0.100	85	67.5 - 120

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: 105741

QC Batch: 105741 | Date Analyzed: 2013-10-04 | Analyzed By: MT
Prep Batch: 89560 | QC Preparation: 2013-10-04 | 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)			0.0698	mg/L	1	0.100	70	68.8 - 120
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	0.0649	mg/L	1	0.100	65	67.5 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 105674 | Date Analyzed: 2013-10-02 | Analyzed By: JS
Prep Batch: 89498 | QC Preparation: 2013-10-02 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0936	mg/L	1	0.100	<0.000567	94	74.3 - 120
Toluene		1	0.0943	mg/L	1	0.100	<0.000518	94	77.6 - 120
Ethylbenzene		1	0.0997	mg/L	1	0.100	<0.000518	100	78.5 - 120
Xylene		1	0.292	mg/L	1	0.300	<0.000548	97	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	0.0894	mg/L	1	0.100	<0.000567	89	74.3 - 120	5	20
Toluene		1	0.0904	mg/L	1	0.100	<0.000518	90	77.6 - 120	4	20
Ethylbenzene		1	0.0957	mg/L	1	0.100	<0.000518	96	78.5 - 120	4	20
Xylene		1	0.281	mg/L	1	0.300	<0.000548	94	77.6 - 120	4	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)	0.0925	0.0887	mg/L	1	0.100	92	89	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.0935	0.0897	mg/L	1	0.100	94	90	74.6 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 105675 | Date Analyzed: 2013-10-02 | Analyzed By: JS
Prep Batch: 89499 | QC Preparation: 2013-10-02 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0879	mg/L	1	0.100	<0.000387	88	71.6 - 120
Toluene		1	0.0903	mg/L	1	0.100	<0.000465	90	71.6 - 120
Ethylbenzene		1	0.0899	mg/L	1	0.100	<0.000442	90	71.1 - 120
Xylene		1	0.277	mg/L	1	0.300	<0.000413	92	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	0.0895	mg/L	1	0.100	<0.000387	90	71.6 - 120	2	20
Toluene		1	0.0919	mg/L	1	0.100	<0.000465	92	71.6 - 120	2	20
Ethylbenzene		1	0.0909	mg/L	1	0.100	<0.000442	91	71.1 - 120	1	20
Xylene		1	0.279	mg/L	1	0.300	<0.000413	93	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)	0.0951	0.0856	mg/L	1	0.100	95	86	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0869	0.0874	mg/L	1	0.100	87	87	67.5 - 120

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: 105741 | Date Analyzed: 2013-10-04 | Analyzed By: MT
Prep Batch: 89560 | QC Preparation: 2013-10-04 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0851	mg/L	1	0.100	<0.000387	85	71.6 - 120
Toluene		1	0.0894	mg/L	1	0.100	<0.000465	89	71.6 - 120
Ethylbenzene		1	0.0888	mg/L	1	0.100	<0.000442	89	71.1 - 120
Xylene		1	0.273	mg/L	1	0.300	<0.000413	91	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	0.0871	mg/L	1	0.100	<0.000387	87	71.6 - 120	2	20
Toluene		1	0.0905	mg/L	1	0.100	<0.000465	90	71.6 - 120	1	20
Ethylbenzene		1	0.0904	mg/L	1	0.100	<0.000442	90	71.1 - 120	2	20
Xylene		1	0.277	mg/L	1	0.300	<0.000413	92	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)	0.0825	0.0837	mg/L	1	0.100	82	84	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0856	0.0876	mg/L	1	0.100	86	88	67.5 - 120

Matrix Spike (MS-1) Spiked Sample: 343072

QC Batch: 105674 | Date Analyzed: 2013-10-02 | Analyzed By: JS
Prep Batch: 89498 | QC Preparation: 2013-10-02 | Prepared By: JS

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	Qs	1	2.33	mg/L	1	0.100	2.32	10	50.2 - 129
Toluene			1	0.0851	mg/L	1	0.100	0.0008	84	58.1 - 129
Ethylbenzene			1	0.0912	mg/L	1	0.100	0.001	90	58.1 - 127
Xylene			1	0.276	mg/L	1	0.300	0.001	92	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	Qs	Qs	1	2.31	mg/L	1	0.100	2.32	-8	50.2 - 129	1	20
Toluene			1	0.0893	mg/L	1	0.100	0.0008	88	58.1 - 129	5	20

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		1	0.0977	mg/L	1	0.100	0.001	97	58.1 - 127	7	20
Xylene		1	0.292	mg/L	1	0.300	0.001	97	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)	0.108	0.109	mg/L	1	0.1	108	109	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.112	0.114	mg/L	1	0.1	112	114	74.6 - 120

Matrix Spike (MS-1) Spiked Sample: 343055

QC Batch: 105675 | Date Analyzed: 2013-10-02 | Analyzed By: JS
Prep Batch: 89499 | QC Preparation: 2013-10-02 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0564	mg/L	1	0.100	<0.000387	56	54.2 - 120
Toluene		1	0.0582	mg/L	1	0.100	<0.000465	58	55.6 - 120
Ethylbenzene	Qs	Qs	0.0566	mg/L	1	0.100	<0.000442	57	59.6 - 120
Xylene	Qs	Qs	0.172	mg/L	1	0.300	<0.000413	57	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	Qr	Qr	0.0869	mg/L	1	0.100	<0.000387	87	54.2 - 120	43	20
Toluene	Qr	Qr	0.0898	mg/L	1	0.100	<0.000465	90	55.6 - 120	43	20
Ethylbenzene	Qr	Qr	0.0886	mg/L	1	0.100	<0.000442	89	59.6 - 120	44	20
Xylene	Qr	Qr	0.272	mg/L	1	0.300	<0.000413	91	61.4 - 120	45	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)	0.0881	0.0858	mg/L	1	0.1	88	86	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0784	0.0888	mg/L	1	0.1	78	89	67.5 - 120

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

Matrix Spike (MS-1) Spiked Sample: 343062

QC Batch: 105741 | Date Analyzed: 2013-10-04 | Analyzed By: MT
Prep Batch: 89560 | QC Preparation: 2013-10-04 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		[1]	4.86	mg/L	20	2.00	3.29	78	54.2 - 120
Toluene		[1]	1.69	mg/L	20	2.00	0.0231	83	55.6 - 120
Ethylbenzene		[1]	1.66	mg/L	20	2.00	0.0181	82	59.6 - 120
Xylene		[1]	5.16	mg/L	20	6.00	0.129	84	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]	4.90	mg/L	20	2.00	3.29	80	54.2 - 120	1	20
Toluene		[1]	1.72	mg/L	20	2.00	0.0231	85	55.6 - 120	2	20
Ethylbenzene		[1]	1.71	mg/L	20	2.00	0.0181	84	59.6 - 120	3	20
Xylene		[1]	5.34	mg/L	20	6.00	0.129	87	61.4 - 120	3	20

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

continued ...

matrix spikes continued . . .

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.52	1.78	mg/L	20	2	76	89	68.8 - 120
4-Bromofluorobenzene (4-BFB)	1.62	1.72	mg/L	20	2	81	86	67.5 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 105674 Date Analyzed: 2013-10-02 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	0.0940	94	80 - 120	2013-10-02
Toluene		1	mg/L	0.100	0.0947	95	80 - 120	2013-10-02
Ethylbenzene		1	mg/L	0.100	0.0966	97	80 - 120	2013-10-02
Xylene		1	mg/L	0.300	0.290	97	80 - 120	2013-10-02

Standard (CCV-2)

QC Batch: 105674 Date Analyzed: 2013-10-02 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	0.0920	92	80 - 120	2013-10-02
Toluene		1	mg/L	0.100	0.0911	91	80 - 120	2013-10-02
Ethylbenzene		1	mg/L	0.100	0.0931	93	80 - 120	2013-10-02
Xylene		1	mg/L	0.300	0.280	93	80 - 120	2013-10-02

Standard (CCV-1)

QC Batch: 105675 Date Analyzed: 2013-10-02 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	0.0891	89	80 - 120	2013-10-02
Toluene		1	mg/L	0.100	0.0917	92	80 - 120	2013-10-02
Ethylbenzene		1	mg/L	0.100	0.0904	90	80 - 120	2013-10-02
Xylene		1	mg/L	0.300	0.276	92	80 - 120	2013-10-02

Standard (CCV-2)

QC Batch: 105675 Date Analyzed: 2013-10-02 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	0.0884	88	80 - 120	2013-10-02
Toluene		1	mg/L	0.100	0.0908	91	80 - 120	2013-10-02
Ethylbenzene		1	mg/L	0.100	0.0881	88	80 - 120	2013-10-02
Xylene		1	mg/L	0.300	0.267	89	80 - 120	2013-10-02

Standard (CCV-3)

QC Batch: 105675 Date Analyzed: 2013-10-02 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	0.0881	88	80 - 120	2013-10-02
Toluene		1	mg/L	0.100	0.0904	90	80 - 120	2013-10-02
Ethylbenzene		1	mg/L	0.100	0.0875	88	80 - 120	2013-10-02
Xylene		1	mg/L	0.300	0.267	89	80 - 120	2013-10-02

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: 105741 Date Analyzed: 2013-10-04 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	0.0850	85	80 - 120	2013-10-04
Toluene		1	mg/L	0.100	0.0880	88	80 - 120	2013-10-04
Ethylbenzene		1	mg/L	0.100	0.0869	87	80 - 120	2013-10-04
Xylene		1	mg/L	0.300	0.266	89	80 - 120	2013-10-04

Standard (CCV-2)

QC Batch: 105741 Date Analyzed: 2013-10-04 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	0.0864	86	80 - 120	2013-10-04

continued ...

standard continued . . .

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Toluene		1	mg/L	0.100	0.0895	90	80 - 120	2013-10-04
Ethylbenzene		1	mg/L	0.100	0.0882	88	80 - 120	2013-10-04
Xylene		1	mg/L	0.300	0.270	90	80 - 120	2013-10-04

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 # 1300206

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: ~~Jason Shubert~~ Brad Ivy
E-mail: ~~Jshubert@talonlpe.com~~ Bivy@talonlpe.com
Invoice to: (If different from above) Talon/LPE, Ltd. Plains (SRS # 2002-102702)
Project #: 700376.044.01
Project Name: Moore to Jal #1
Project Location (including state): Lea Co., NM
Sampler Signature: Miguel Ramirez

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
343062	MW-14	3		X				X				X		9.27.13	10:40		X																							
063	MW-17	3		X				X				X		9.27.13	8:00		X																							
064	MW-18	3		X				X				X		9.27.13	8:40		X																							
065	MW-19	3		X				X				X		9.27.13	9:00		X																							
066	MW-20	3		X				X				X		9.27.13	9:20		X																							
067	MW-21	3		X				X				X		9.27.13	7:40		X																							
068	MW-22	3		X				X				X		9.27.13	7:20		X																							
069	MW-23	3		X				X				X		9.27.13	8:20		X																							
070	MW-26	3		X				X				X		9.27.13	7:00		X																							
071	MW-27	3		X				X				X		9.27.13	9:40		X																							
072	MW-28	3		X				X				X		9.27.13	10:00		X																							

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Miguel Ramirez	Talon/LPE	10/1/13	3:02					INST ___ °C OBS ___ °C COR ___ °C
								INST ___ °C OBS ___ °C COR ___ °C
				Brenda Ward	TA Lubbock	10/1/13	3:02 pm	INST IR-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 # Campbell

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

ORIGINAL COPY

LAB Order ID # 131002O6

Page 2 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 #: 806-356-8877
Address: (Street, City, Zip) 921 N. Bivins Amarillo, TX 79107
Fax #: 806-467-0622
Contact Person: ~~Jason Shubert~~ Brad Ivy
E-mail: ~~Jshubert@talonlpe.com~~ Billy@talon-lpe.com
Invoice to:
(If different from above) ~~Talon / LPE, Ltd.~~ (SCS# 2002-10270)
Project #: 700376.044.01
Project Name: Moore to Jal #1
Project Location (including state): Lea Co., NM
Sampler Signature: Mark Ramos

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
343073	MW-29	3		X				X				X		9-27-13	10:20		X																							
074	MW-34	3		X				X				X		9-27-13	6:00		X																							
075	MW-35	3		X				X				X		9-27-13	6:20		X																							
076	MW-36	3		X				X				X		9-27-13	6:40		X																							

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Mark Ramos	Talon/LPE							INST ____ °C OBS ____ °C COR ____ °C
								INST ____ °C OBS ____ °C COR ____ °C
				Brenda Ward	TA LUBBOCK	10/1/13	3:02 pm	INST ~~17.3~~ °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

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

Carrier # Courier

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: January 9, 2014

Work Order: 14010304

Project Location: Lea Co. New Mexico
Project Name: Moore to Jal #1
Project Number: 700376.044.01
SRS #: 2002-10270

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
350562	MW-14	water	2013-12-30	08:30	2013-12-31
350563	MW-17	water	2013-12-30	08:50	2013-12-31
350564	MW-18	water	2013-12-30	09:20	2013-12-31
350565	MW-19	water	2013-12-30	11:00	2013-12-31
350566	MW-20	water	2013-12-30	10:00	2013-12-31
350567	MW-21	water	2013-12-30	10:20	2013-12-31
350568	MW-22	water	2013-12-30	10:40	2013-12-31
350569	MW-23	water	2013-12-30	11:20	2013-12-31
350570	MW-26	water	2013-12-30	09:40	2013-12-31
350571	MW-27	water	2013-12-30	11:40	2013-12-31
350572	MW-28	water	2013-12-30	12:00	2013-12-31
350573	MW-29	water	2013-12-30	12:20	2013-12-31
350574	MW-34	water	2013-12-30	12:40	2013-12-31
350575	MW-35	water	2013-12-30	13:00	2013-12-31
350576	MW-36	water	2013-12-30	13:20	2013-12-31

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.

This report consists of a total of 24 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

Report Contents

Case Narrative

Samples for project Moore to Jal #1 were received by TraceAnalysis, Inc. on 2013-12-31 and assigned to work order 14010304. Samples for work order 14010304 were received damaged without headspace and at a temperature of 1.0 C. Several frozen VOAs.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	91425	2014-01-03 at 15:28	108023	2014-01-03 at 15:28
BTEX	S 8021B	91428	2014-01-03 at 15:28	108030	2014-01-03 at 15:28
BTEX	S 8021B	91507	2014-01-08 at 15:44	108141	2014-01-08 at 15:44

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 14010304 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: 350562 - MW-14

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108141	Date Analyzed:	2014-01-08	Analyzed By:	MT
Prep Batch:	91507	Sample Preparation:	2014-01-08	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
Benzene		1	**4.28**		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		1		<0.0500	mg/L	50	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.70	mg/L	50	5.00	94	75.4 - 120
4-Bromofluorobenzene (4-BFB)			4.50	mg/L	50	5.00	90	74.6 - 120

Sample: 350563 - MW-17

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108141	Date Analyzed:	2014-01-08	Analyzed By:	MT
Prep Batch:	91507	Sample Preparation:	2014-01-08	Prepared By:	MT

Parameter	Flag	Cert	Result	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)			0.0957	mg/L	1	0.100	96	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0874	mg/L	1	0.100	87	74.6 - 120

Sample: 350564 - MW-18

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108023	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91425	Sample Preparation:	2014-01-03	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0848	mg/L	1	0.100	85	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0862	mg/L	1	0.100	86	67.5 - 120

Sample: 350565 - MW-19

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108023	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91425	Sample Preparation:	2014-01-03	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0848	mg/L	1	0.100	85	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0865	mg/L	1	0.100	86	67.5 - 120

Sample: 350566 - MW-20

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108023	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91425	Sample Preparation:	2014-01-03	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0929	mg/L	1	0.100	93	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0925	mg/L	1	0.100	92	67.5 - 120

Sample: 350567 - MW-21

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108023	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91425	Sample Preparation:	2014-01-03	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0794	mg/L	1	0.100	79	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0801	mg/L	1	0.100	80	67.5 - 120

Sample: 350568 - MW-22

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108030	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91428	Sample Preparation:	2014-01-03	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	Jb	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	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0975	mg/L	1	0.100	98	67.5 - 120

Sample: 350569 - MW-23

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108030	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91428	Sample Preparation:	2014-01-03	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	Jb	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	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0972	mg/L	1	0.100	97	67.5 - 120

Sample: 350570 - MW-26

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108030	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91428	Sample Preparation:	2014-01-03	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)			0.0906	mg/L	1	0.100	91	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0860	mg/L	1	0.100	86	67.5 - 120

Sample: 350571 - MW-27

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108030	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91428	Sample Preparation:	2014-01-03	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)			0.0939	mg/L	1	0.100	94	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0952	mg/L	1	0.100	95	67.5 - 120

Sample: 350572 - MW-28

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108030	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91428	Sample Preparation:	2014-01-03	Prepared By:	JS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene		1	**0.0453**		mg/L	1	0.00100
Toluene	U	1	<0.00100		mg/L	1	0.00100
Ethylbenzene		1	**0.00120**		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)			0.0857	mg/L	1	0.100	86	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0889	mg/L	1	0.100	89	67.5 - 120

Sample: 350573 - MW-29

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108141	Date Analyzed:	2014-01-08	Analyzed By:	MT
Prep Batch:	91507	Sample Preparation:	2014-01-08	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene		1	**38.1**		mg/L	200	0.00100
Toluene	U	1	<0.200		mg/L	200	0.00100
Ethylbenzene		1	**0.741**		mg/L	200	0.00100
Xylene		1	<0.200		mg/L	200	0.00100

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			18.5	mg/L	200	20.0	92	75.4 - 120
4-Bromofluorobenzene (4-BFB)			18.2	mg/L	200	20.0	91	74.6 - 120

Sample: 350574 - MW-34

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108141	Date Analyzed:	2014-01-08	Analyzed By:	MT
Prep Batch:	91507	Sample Preparation:	2014-01-08	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)			0.0964	mg/L	1	0.100	96	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0886	mg/L	1	0.100	89	74.6 - 120

Sample: 350575 - MW-35

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108030	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91428	Sample Preparation:	2014-01-03	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0922	mg/L	1	0.100	92	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0922	mg/L	1	0.100	92	67.5 - 120

Sample: 350576 - MW-36

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	108030	Date Analyzed:	2014-01-03	Analyzed By:	JS
Prep Batch:	91428	Sample Preparation:	2014-01-03	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)			0.0800	mg/L	1	0.100	80	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0804	mg/L	1	0.100	80	67.5 - 120

Method Blanks

Method Blank (1) QC Batch: 108023

QC Batch: 108023 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91425 | QC Preparation: 2014-01-03 | 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	0.00240	mg/L	0.001

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0938	mg/L	1	0.100	94	68.8 - 120
4-Bromofluorobenzene (4-BFB)			0.0944	mg/L	1	0.100	94	67.5 - 120

Method Blank (1) QC Batch: 108030

QC Batch: 108030 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91428 | QC Preparation: 2014-01-03 | 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	0.000600	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)			0.0994	mg/L	1	0.100	99	67.5 - 120

Method Blank (1) QC Batch: 108141

QC Batch: 108141 | Date Analyzed: 2014-01-08 | Analyzed By: MT
Prep Batch: 91507 | QC Preparation: 2014-01-08 | 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)			0.0954	mg/L	1	0.100	95	75.4 - 120
4-Bromofluorobenzene (4-BFB)			0.0861	mg/L	1	0.100	86	74.6 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 108023 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91425 | QC Preparation: 2014-01-03 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0954	mg/L	1	0.100	<0.000387	95	71.6 - 120
Toluene		1	0.0974	mg/L	1	0.100	<0.000465	97	71.6 - 120
Ethylbenzene		1	0.0959	mg/L	1	0.100	<0.000442	96	71.1 - 120
Xylene		1	0.287	mg/L	1	0.300	0.0024	95	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	0.0951	mg/L	1	0.100	<0.000387	95	71.6 - 120	0	20
Toluene		1	0.0972	mg/L	1	0.100	<0.000465	97	71.6 - 120	0	20
Ethylbenzene		1	0.0958	mg/L	1	0.100	<0.000442	96	71.1 - 120	0	20
Xylene		1	0.289	mg/L	1	0.300	0.0024	96	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)	0.0968	0.0911	mg/L	1	0.100	97	91	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0982	0.0974	mg/L	1	0.100	98	97	67.5 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 108030 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91428 | QC Preparation: 2014-01-03 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0956	mg/L	1	0.100	<0.000387	96	71.6 - 120
Toluene		1	0.0971	mg/L	1	0.100	<0.000465	97	71.6 - 120
Ethylbenzene		1	0.0956	mg/L	1	0.100	<0.000442	96	71.1 - 120
Xylene		1	0.285	mg/L	1	0.300	0.0006	95	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	0.0966	mg/L	1	0.100	<0.000387	97	71.6 - 120	1	20
Toluene		1	0.0991	mg/L	1	0.100	<0.000465	99	71.6 - 120	2	20
Ethylbenzene		1	0.0971	mg/L	1	0.100	<0.000442	97	71.1 - 120	2	20
Xylene		1	0.290	mg/L	1	0.300	0.0006	96	72.5 - 120	2	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)	0.0920	0.0923	mg/L	1	0.100	92	92	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0975	0.0967	mg/L	1	0.100	98	97	67.5 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 108141 | Date Analyzed: 2014-01-08 | Analyzed By: MT
Prep Batch: 91507 | QC Preparation: 2014-01-08 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.101	mg/L	1	0.100	<0.000567	101	74.3 - 120
Toluene		1	0.103	mg/L	1	0.100	<0.000518	103	77.6 - 120
Ethylbenzene		1	0.104	mg/L	1	0.100	<0.000518	104	78.5 - 120
Xylene		1	0.303	mg/L	1	0.300	<0.000548	101	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	0.102	mg/L	1	0.100	<0.000567	102	74.3 - 120	1	20
Toluene		1	0.103	mg/L	1	0.100	<0.000518	103	77.6 - 120	0	20
Ethylbenzene		1	0.103	mg/L	1	0.100	<0.000518	103	78.5 - 120	1	20
Xylene		1	0.300	mg/L	1	0.300	<0.000548	100	77.6 - 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)	0.0965	0.0955	mg/L	1	0.100	96	96	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.100	0.0972	mg/L	1	0.100	100	97	74.6 - 120

Matrix Spike (MS-1) Spiked Sample: 350233

QC Batch: 108023 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91425 | QC Preparation: 2014-01-03 | Prepared By: JS

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	Qs	1	0.0517	mg/L	1	0.100	<0.000387	52	54.2 - 120
Toluene	Qs	Qs	1	0.0526	mg/L	1	0.100	<0.000465	53	55.6 - 120
Ethylbenzene	Qs	Qs	1	0.0519	mg/L	1	0.100	0.0008	51	59.6 - 120
Xylene	Qs	Qs	1	0.158	mg/L	1	0.300	0.0093	50	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	0.0627	mg/L	1	0.100	<0.000387	63	54.2 - 120	19	20
Toluene		1	0.0637	mg/L	1	0.100	<0.000465	64	55.6 - 120	19	20
Ethylbenzene	Qr	Qr	1	0.0638	mg/L	1	0.100	0.0008	63	59.6 - 120	21	20
Xylene	Qr	Qr	1	0.196	mg/L	1	0.300	0.0093	62	61.4 - 120	22	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)	0.0929	0.0922	mg/L	1	0.1	93	92	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0977	0.0962	mg/L	1	0.1	98	96	67.5 - 120

Matrix Spike (MS-1) Spiked Sample: 350568

QC Batch: 108030 | Date Analyzed: 2014-01-03 | Analyzed By: JS
Prep Batch: 91428 | QC Preparation: 2014-01-03 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	0.0936	mg/L	1	0.100	<0.000387	94	54.2 - 120
Toluene		1	0.0960	mg/L	1	0.100	<0.000465	96	55.6 - 120
Ethylbenzene		1	0.0943	mg/L	1	0.100	<0.000442	94	59.6 - 120
Xylene		1	0.282	mg/L	1	0.300	<0.000413	94	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	0.0868	mg/L	1	0.100	<0.000387	87	54.2 - 120	8	20
Toluene		1	0.0883	mg/L	1	0.100	<0.000465	88	55.6 - 120	8	20

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		1	0.0874	mg/L	1	0.100	<0.000442	87	59.6 - 120	8	20
Xylene		1	0.261	mg/L	1	0.300	<0.000413	87	61.4 - 120	8	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)	0.0884	0.0883	mg/L	1	0.1	88	88	68.8 - 120
4-Bromofluorobenzene (4-BFB)	0.0962	0.0956	mg/L	1	0.1	96	96	67.5 - 120

Matrix Spike (MS-1) Spiked Sample: 350552

QC Batch:	108141	Date Analyzed:	2014-01-08	Analyzed By:	MT
Prep Batch:	91507	QC Preparation:	2014-01-08	Prepared By:	MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.93	mg/L	10	1.00	0.955	98	50.2 - 129
Toluene		1	1.21	mg/L	10	1.00	0.23	98	58.1 - 129
Ethylbenzene		1	0.962	mg/L	10	1.00	<0.00518	96	58.1 - 127
Xylene		1	3.02	mg/L	10	3.00	0.203	94	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	1.88	mg/L	10	1.00	0.955	92	50.2 - 129	3	20
Toluene		1	1.19	mg/L	10	1.00	0.23	96	58.1 - 129	2	20
Ethylbenzene		1	0.950	mg/L	10	1.00	<0.00518	95	58.1 - 127	1	20
Xylene		1	2.97	mg/L	10	3.00	0.203	92	53.1 - 128	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)	0.937	0.947	mg/L	10	1	94	95	75.4 - 120
4-Bromofluorobenzene (4-BFB)	0.985	0.987	mg/L	10	1	98	99	74.6 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 108023 | Date Analyzed: 2014-01-03 | 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	0.0961	96	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0985	98	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0979	98	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.295	98	80 - 120	2014-01-03

Standard (CCV-2)

QC Batch: 108023 | Date Analyzed: 2014-01-03 | 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	0.0966	97	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0977	98	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0960	96	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.287	96	80 - 120	2014-01-03

Standard (CCV-3)

QC Batch: 108023 | Date Analyzed: 2014-01-03 | 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	0.0958	96	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0975	98	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0947	95	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.283	94	80 - 120	2014-01-03

Standard (CCV-1)

QC Batch: 108030 Date Analyzed: 2014-01-03 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	0.0951	95	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0967	97	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0949	95	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.284	94	80 - 120	2014-01-03

Standard (CCV-2)

QC Batch: 108030 Date Analyzed: 2014-01-03 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	0.0966	97	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0983	98	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0963	96	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.287	96	80 - 120	2014-01-03

Standard (CCV-3)

QC Batch: 108030 Date Analyzed: 2014-01-03 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	0.0932	93	80 - 120	2014-01-03
Toluene		1	mg/L	0.100	0.0945	94	80 - 120	2014-01-03
Ethylbenzene		1	mg/L	0.100	0.0931	93	80 - 120	2014-01-03
Xylene		1	mg/L	0.300	0.277	92	80 - 120	2014-01-03

Standard (CCV-1)

QC Batch: 108141 Date Analyzed: 2014-01-08 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	0.104	104	80 - 120	2014-01-08
Toluene		1	mg/L	0.100	0.105	105	80 - 120	2014-01-08
Ethylbenzene		1	mg/L	0.100	0.106	106	80 - 120	2014-01-08
Xylene		1	mg/L	0.300	0.309	103	80 - 120	2014-01-08

Standard (CCV-2)

QC Batch: 108141 Date Analyzed: 2014-01-08 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	0.101	101	80 - 120	2014-01-08
Toluene		1	mg/L	0.100	0.102	102	80 - 120	2014-01-08
Ethylbenzene		1	mg/L	0.100	0.102	102	80 - 120	2014-01-08
Xylene		1	mg/L	0.300	0.299	100	80 - 120	2014-01-08

Standard (CCV-3)

QC Batch: 108141 Date Analyzed: 2014-01-08 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	0.101	101	80 - 120	2014-01-08
Toluene		1	mg/L	0.100	0.102	102	80 - 120	2014-01-08
Ethylbenzene		1	mg/L	0.100	0.102	102	80 - 120	2014-01-08
Xylene		1	mg/L	0.300	0.300	100	80 - 120	2014-01-08

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 # 1401030H

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 Amarillo, TX 79107
Fax #: 806-467-0622
Contact Person: Brad Ivy
E-mail: bivy@talonlpe.com cjoryant@paalp.com
Invoice to: (If different from above) Plains: SRS# 2002-10270
Project #: 200376.044.01
Project Name: 8" Moore to Jal #1
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
360562	MW-14	3		X				X				X		12-30-13	8:30		X																									
563	MW-17	3		X				X				X		12-30-13	8:50		X																									
564	MW-18	3		X				X				X		12-30-13	9:20		X																									
565	MW-19	3		X				X				X		12-30-13	11:00		X																									
566	MW-20	3		X				X				X		12-30-13	10:00		X																									
567	MW-21	3		X				X				X		12-30-13	10:20		X																									
568	MW-22	3		X				X				X		12-30-13	10:40		X																									
569	MW-23	3		X				X				X		12-30-13	11:20		X																									
570	MW-26	3		X				X				X		12-30-13	9:40		X																									
571	MW-27	3		X				X				X		12-30-13	11:40		X																									
572	MW-28	3		X				X				X		12-30-13	12:00		X																									

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	Talon/LPE	12-31-13	16:30	John G	Brandon Clark	12-31-13	4:30	INST ____ OBS 4 °C COR ____ °C
								INST ____ OBS ____ °C COR ____ °C
				Brandy Ward	TA Lubbock	1/3/14	9:00	INST IR-3 OBS 1.1 °C COR 1.0 °C

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

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.

Carrier # LS ZQ421875

ORIGINAL COPY

LAB Order ID # 14010304

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 Amarillo, Tx 79107 — Fax #: 806-467-0622

Contact Person: Brad Ivy — E-mail: bivy@talonlpe — Cbryant@pcalp.com

Invoice to: (If different from above) Plains: SRS# 2002-10270

Project #: 700376.044.01 — Project Name: 8" Moore to Jal #1

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
350573	MW-29	3		X				X				X		12-30-13	12:20		X																									
574	MW-34	3		X				X				X		12-30-13	12:40		X																									
575	MW-35	3		X				X				X		12-30-13	13:00		X																									
576	MW-36	3		X				X				X		12-30-13	13:20		X																									

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	Talon/lpe	12.31.13	16:30	John C	Brandon Clark	12-31-13	4:30	INST ___ °C OBS 3 °C COR ___ °C
								INST ___ °C OBS ___ °C COR ___ °C
				Brenda Ward	TA Lubbock	1/1/14	9:00	INST ___ °C OBS ___ °C COR ___ °C

LAB USE ONLY

Intact Y / N

Headspace Y / N / NA

Log-in-Review BC

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.

ORIGINAL COPY

Carrier # LS 29421875

Analytical Report 476341

for

PLAINS ALL AMERICAN EH&S

Project Manager: Brad Ivy

Jal #1

700376.044.01

27-DEC-13

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-13-15-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)

27-DEC-13

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

Reference: XENCO Report No(s): **476341**
Jal #1
Project Address: New Mexico

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) 476341. 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. 476341 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 476341

PLAINS ALL AMERICAN EH&S, Midland, TX

Jal #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-38	S	12-18-13 10:50	- 80 ft	476341-001
MW-38	S	12-18-13 12:30	- 100 ft	476341-002
MW-37	S	12-18-13 16:40	- 80 ft	476341-003
MW-37	S	12-18-13 18:10	- 100 ft	476341-004

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Hits Summary 476341

PLAINS ALL AMERICAN EH&S, Midland, TX

Jal #1

Sample Id : **MW-38**
Lab Sample Id : 476341-001
Sample Depth : 80 ft

Matrix : Soil
Date Collected : 12.18.13 10.50
Date Received : 12.20.13 15.35

% Moisture : 4.77
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 930772

Prep Method: TX1005P
Date Prep: 12.20.13 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1028	34.5	mg/kg	12.21.13 19.58		1
Total TPH	PHC635	34.5	mg/kg	12.21.13 19.58		1

Hits Summary 476341

PLAINS ALL AMERICAN EH&S, Midland, TX

Jal #1

Sample Id : **MW-38**
Lab Sample Id : 476341-002
Sample Depth : 100 ft

Matrix : Soil
Date Collected : 12.18.13 12.30
Date Received : 12.20.13 15.35

% Moisture : 1.2
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 930772

Prep Method: TX1005P
Date Prep: 12.20.13 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1028	44.7	mg/kg	12.21.13 21.31		1
Total TPH	PHC635	44.7	mg/kg	12.21.13 21.31		1

Certificate of Analysis Summary 476341

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Jal #1

Project Id: 700376.044.01
Contact: Brad Ivy
Project Location: New Mexico

Date Received in Lab: Fri Dec-20-13 03:35 pm
Report Date: 27-DEC-13
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	476341-001		476341-002		476341-003		476341-004					
	Field Id:	MW-38		MW-38		MW-37		MW-37					
	Depth:	80 ft		100 ft		80 ft		100 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Dec-18-13 10:50		Dec-18-13 12:30		Dec-18-13 16:40		Dec-18-13 18:10					
BTEX by EPA 8021	***Extracted:***	Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00					
	Analyzed:	Dec-20-13 18:52		Dec-20-13 19:08		Dec-20-13 19:24		Dec-20-13 19:40					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		ND	0.000992	ND	0.000998	ND	0.000996	ND	0.000998				
Toluene		ND	0.00198	ND	0.00200	ND	0.00199	ND	0.00200				
Ethylbenzene		ND	0.000992	ND	0.000998	ND	0.000996	ND	0.000998				
m_p-Xylenes		ND	0.00198	ND	0.00200	ND	0.00199	ND	0.00200				
o-Xylene		ND	0.000992	ND	0.000998	ND	0.000996	ND	0.000998				
Xylenes, Total		ND	0.000992	ND	0.000998	ND	0.000996	ND	0.000998				
Total BTEX		ND	0.000992	ND	0.000998	ND	0.000996	ND	0.000998				
Percent Moisture	***Extracted:***												
	Analyzed:	Dec-20-13 16:10		Dec-20-13 16:10		Dec-20-13 16:10		Dec-20-13 16:10					
	Units/RL:	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		4.77	1.00	1.20	1.00	4.26	1.00	4.86	1.00				
TPH by SW8015 Mod	***Extracted:***	Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00		Dec-20-13 16:00					
	Analyzed:	Dec-21-13 19:58		Dec-21-13 21:31		Dec-21-13 22:02		Dec-21-13 22:32					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	15.7	ND	15.2	ND	15.7	ND	15.8				
C12-C28 Diesel Range Hydrocarbons		34.5	15.7	44.7	15.2	ND	15.7	ND	15.8				
C28-C35 Oil Range Hydrocarbons		ND	15.7	ND	15.2	ND	15.7	ND	15.8				
Total TPH		34.5	15.7	44.7	15.2	ND	15.7	ND	15.8				

Kelsey Brooks
Project Manager

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 quantitation 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

Form 2 - Surrogate Recoveries

Project Name: Jal #1

Work Orders : 476341,

Project ID: 700376.044.01

Lab Batch #: 930559 **Sample:** 476341-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 18:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 930559 **Sample:** 476341-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 19:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 930559 **Sample:** 476341-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 19:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 930559 **Sample:** 476341-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 19:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

Lab Batch #: 930772 **Sample:** 476341-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/13 19:58

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.6	120	70-135	
o-Terphenyl	58.5	49.8	117	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Jal #1

Work Orders : 476341,

Project ID: 700376.044.01

Lab Batch #: 930772 **Sample:** 476341-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/13 21:31

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.1	99.8	94	70-135	
o-Terphenyl	43.6	49.9	87	70-135	

Lab Batch #: 930772 **Sample:** 476341-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/13 22:02

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.1	100	93	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 930772 **Sample:** 476341-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/13 22:32

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.9	126	70-135	
o-Terphenyl	61.0	50.0	122	70-135	

Lab Batch #: 930559 **Sample:** 648874-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/20/13 17:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Lab Batch #: 930772 **Sample:** 648883-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/13 19:27

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	60.5	50.0	121	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Jal #1

Work Orders : 476341, **Project ID:** 700376.044.01

Lab Batch #: 930559 **Sample:** 648874-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/20/13 16:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 930772 **Sample:** 648883-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/13 18:24

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	63.4	50.0	127	70-135	

Lab Batch #: 930559 **Sample:** 648874-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/20/13 16:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 930772 **Sample:** 648883-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/21/13 18:56

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	52.1	50.0	104	70-135	

Lab Batch #: 930559 **Sample:** 476306-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/20/13 16:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Jal #1

Work Orders : 476341,

Project ID: 700376.044.01

Lab Batch #: 930772 **Sample:** 476341-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/13 20:29

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.8	114	70-135	
o-Terphenyl	64.0	49.9	128	70-135	

Lab Batch #: 930772 **Sample:** 476341-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/21/13 21:00

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.8	111	70-135	
o-Terphenyl	64.0	49.9	128	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Jal #1

Work Order #: 476341 **Project ID:** 700376.044.01

Analyst: ARM **Date Prepared:** 12/20/2013 **Date Analyzed:** 12/20/2013

Lab Batch ID: 930559 **Sample:** 648874-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0980	98	0.100	0.0986	99	1	70-130	35	
Toluene	<0.00200	0.100	0.0964	96	0.100	0.0984	98	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0930	93	0.100	0.0942	94	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.188	94	0.200	0.191	96	2	70-135	35	
o-Xylene	<0.00100	0.100	0.0953	95	0.100	0.0965	97	1	71-133	35	

Analyst: ARM **Date Prepared:** 12/20/2013 **Date Analyzed:** 12/21/2013

Lab Batch ID: 930772 **Sample:** 648883-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	942	94	1000	956	96	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1010	101	1000	1030	103	2	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Jal #1

Work Order #: 476341

Lab Batch #: 930559 **Project ID:** 700376.044.01

Date Analyzed: 12/20/2013 **Date Prepared:** 12/20/2013 **Analyst:** ARM

QC- Sample ID: 476306-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	<0.00102	0.102	0.0893	88	70-130	
Toluene	<0.00204	0.102	0.0877	86	70-130	
Ethylbenzene	<0.00102	0.102	0.0833	82	71-129	
m_p-Xylenes	<0.00204	0.204	0.167	82	70-135	
o-Xylene	<0.00102	0.102	0.0837	82	71-133	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Jal #1

Work Order # : 476341 **Project ID:** 700376.044.01

Lab Batch ID: 930772 **QC- Sample ID:** 476341-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/21/2013 **Date Prepared:** 12/20/2013 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.7	1050	1030	98	1050	957	91	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	34.5	1050	995	91	1050	990	91	1	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Sample Duplicate Recovery

Project Name: Jal #1

Work Order #: 476341

Lab Batch #: 930480 **Project ID:** 700376.044.01

Date Analyzed: 12/20/2013 13:50 **Date Prepared:** 12/20/2013 **Analyst:** WRU

QC- Sample ID: 476319-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	24.5	27.2	10	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 12/20/2013 03:35:00 PM

Work Order #: 476341

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)?	4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#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)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**N/A**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

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

Analyst:	PH Device/Lot#:

Checklist completed by: Candace James Date: 12/20/2013
Candace James

Checklist reviewed by: Kelsey Brooks Date: 12/20/2013
Kelsey Brooks

XENCO Laboratories

☐ 11381 Meadowglen, Suite L, Houston TX 77082 **281-589-0692**
☐ 5309 Wurzbach, Suite 104, San Antonio, TX 78238 **210-509-3334**
☐ 11078 Morrison Lane, Suite D, Dallas, TX 75229 **972-481-9999**
☐ 5757 N.W. 158th Street, Miami Lakes, Fl 33014 **305-823-8500**
☐ 2618 South Falkenburg Rd, Riverview, Fl 33569 **813-620-2000**

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

LAB ONLY: 476341

Serial #: 188917 Page 1 of 1

Company-City: Talon LPE Phone

TAT: 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Project Name: ☐ Previously performed at XENCO Site: Jal #1 Project ID: 700376.044.01

Proj. Manager (PM): Brad Ivy

Fax Results to ☐ PM or e-mail to: WTB, Brad Ivy, Camille Bryant Fax No:

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O
Bill to: Plains SRS # 2007 1070

Quote No: P.O No: ☐ Call for a P.O.

Reg Program: CLP AFCEE **TRRP** DW UST State Other:

Target DLs (DW CRDL TRRP QAPP MDLs See Lab PM Attached Call)

TRRP PCLs: Tier 1 Tier 2 Residential Industrial

LPST No.:(Required)

Sampler Name: Wesley G Brown Signature:

	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	BTEX by 8021 8260 602 624 Other	BTEX-MTBE by 8021 8260 624 Other	TPH by TX1005 FL-Pro 1664 8015GRO 8015DRO 418.1	PAHs by 8270 8310	Metals by 6020 200.8 8RCRA Tot Pb TCLP8 13PP 23TAL	VOCs by 8021 8260 624 VOA VOH PPs TCL	SVOCs by 8270 625 PAHs BN&A TCL PPs	FL Preburn - Revised: Virgin Non-Virgin	TAT 5h 12h 24h 48h 3d 5d 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Disposal Hold Analysis (Surcharges will apply)	Sample Clean-ups are pre-approved	Remarks
1	MW-38 80'	12-18-13	1050	80	S		X	1	40z	G			X	X										
2	MW-38 100'	12-18-13	1230	100	S		X	1	40z	G			X	X										
3	MW-39 80	12-18-13	1640	80	S		X	1	40z	G			X	X										
4	MW-39 100'	12-18-13	1810	100	S		X	1	40z	G			X	X										
5																								
6																								
7																								
8																								
9																								
10																								

	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1		12-20-13 1535		12-20-13 15:35
2				
3			Lab:	

Rush Charges are Pre-Approved upon requesting them.
Instructions:
All XENCO Standard Terms and Conditions Apply.
Containers Received: 4 Cooler Temperature: 3.1 = 4°C

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool,<4C) (**C**), None (**NA**), See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**V**), 1L (1), 500ml (**5**), Tedlar Bag (**B**), Wipe (**W**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Other (**O**) _____

Matrix: Air (A), Product (P), Solid(S), Water (W)

SDBE Committed to Excellence in Service and Quality since 1990 www.xenco.com

XENCO Laboratories

☐ 11381 Meadowglen, Suite L, Houston TX 77082 **281-589-0692**
☐ 5309 Wurzbach, Suite 104, San Antonio, TX 78238 **210-509-3334**
☐ 11078 Morrison Lane, Suite D, Dallas, TX 75229 **972-481-9999**
☐ 5757 N.W. 158th Street, Miami Lakes, Fl 33014 **305-823-8500**
☐ 2618 South Falkenburg Rd, Riverview, Fl 33569 **813-620-2000**

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

LAB ONLY: 476341

Serial #: 188917 Page 1 of 1

Company-City: Talon LPE Phone

TAT: 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Project Name: ☐ Previously performed at XENCO Site: Jal #1 Project ID: 700376.044.01

Proj. Manager (PM): Brad Ivy

Fax Results to: ☐ PM or Fax No:
e-mail to: WTB, Brad Ivy, Camille Bryant

Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O
Bill to: Plains SRS # 2007 1070

Quote No: P.O No: ☐ Call for a P.O.

Reg Program: CLP AFCEE **TRRP** DW UST State Other:

Target DLs (DW CRDL TRRP QAPP MDLs See Lab PM Attached Call)

TRRP PCLs: Tier 1 Tier 2 Residential Industrial

LPST No.:(Required)

Sampler Name: Wesley G Brown Signature:

	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives
1	MW-38 80'	12-18-13	1050	80	S		X	1	4oz	G	
2	MW-38 100'	12-18-13	1230	100	S		X	1	4oz	G	
3	MW-39 80	12-18-13	1640	80	S		X	1	4oz	G	
4	MW-39 100'	12-18-13	1810	100	S		X	1	4oz	G	
5											
6											
7											
8											
9											
10											

	BTEX by 8021	602 624 Other	BTEX-MTBE by 8021	8260 624 Other	TPH by TX1005 FL-Pro 1664 8015GRO 8015DRO 418.1	PAHs by 8270 8310	Metals by 6020 200.8 8RCRA Tot Pb TCLP8 13PP 23TAL	VOCs by 8021 8260 624 VOA VOH PPs TCL	SVOCs by 8270 625 PAHs BN&A TCL PPs	FL Preburn - Revised: Virgin Non-Virgin	TAT 5h 12h 24h 48h 3d 5d 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Disposal Hold Analysis (Surcharges will apply)	Sample Clean-ups are pre-approved
1			X	X	X									
2			X	X	X									
3			X	X	X									
4			X	X	X									
5														
6														
7														
8														
9														
10														

Remarks

	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1		12-20-13 1535		12-20-13 15:35
2				
3			Lab:	

Rush Charges are Pre-Approved upon requesting them.
Instructions:
All XENCO Standard Terms and Conditions Apply.
Containers Received: 4 Cooler Temperature: 3.1 = 4°C

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool,<4C) (**C**), None (**NA**), See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**V**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Wipe (**W**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Other (**O**) _____

Matrix: Air (A), Product (P), Solid(S), Water (W)

SDBE Committed to Excellence in Service and Quality since 1990 www.xenco.com

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 12/20/2013 03:35:00 PM

Work Order #: 476341

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)?	4
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#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)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**N/A**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

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

Analyst:	PH Device/Lot#:

Checklist completed by: Candace James Date: 12/20/2013
Candace James

Checklist reviewed by: Kelsey Brooks Date: 12/20/2013
Kelsey Brooks

APPENDIX D

NMOCD C-141

EOTT Site Information and Metrics	Incident Date: **10-18-02 @ 10:00 AM**	NMOCD Notified: 10-18-02 @ 11:00 AM Pat McCasland EPI left message with Paul Sheeley and sent page to the "ON-CALL" representative

SITE: 8" Moore to Jal #1	Assigned Site Reference #: 2002-10270
Company: EOTT	
Street Address: PO Box 1660	
Mailing Address: 5805 East Highway 80	
City, State, Zip: Midland, Texas 79702	
Representative: Frank Hernandez	
Representative Telephone: 915.638.3799	
Telephone:	
Fluid volume released (bbls): 200 bbls	Recovered (bbls): 0 bbls
>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: 8" Moore to Jal #1	
Source of contamination: 8" Steel Pipeline	
Land Owner, i.e., BLM, ST, Fee, Other: State of New Mexico	
LSP Dimensions ~200' x 40'	
LSP Area: 8,000 sqft ft^2	
Location of Reference Point (RP)	
Location distance and direction from RP	
Latitude: 32º 50' 12.36"N	
Longitude: 103º 15' 26.234"W.	
Elevation above mean sea level:	
Feet from South Section Line	
Feet from West Section Line	
Location- Unit or ¼¼: SE¼ of the NW¼	Unit Letter: F
Location- Section: 16	
Location- Township: T17S	
Location- Range: R37E	
Surface water body within 1000 ' radius of site: none	
Surface water body within 1000 ' radius of site:	
Domestic water wells within 1000' radius of site: none	
Domestic water wells within 1000' radius of site:	
Agricultural water wells within 1000' radius of site: none	
Agricultural water wells within 1000' radius of site:	
Public water supply wells within 1000' radius of site: none	
Public water supply wells within 1000' radius of site:	
Depth from land surface to ground water (DG) ~66'bgs	
Depth of contamination (DC) – ?	
Depth to ground water (DG – DC = DtGW) - ?	

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 = 10	*Wellhead Protection Area Score= 0*	*Surface Water Score= 0*
Site Rank (1+2+3) = 10		

Total Site Ranking Score and Acceptable Concentrations

Parameter	>19	**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

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 October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **EOTT**	Contact **Frank Hernandez**
Address PO Box 1660 5805 East Highway 80 Midland, Texas 79702	Telephone No. 915.638.3799
Facility Name 8" Moore to Jal #1	Facility Type 8" Steel Pipeline

Surface Owner	Mineral Owner	Lease No.
State of New Mexico		

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County: Lea Lat. 32° 50' 12.36"N Lon. 103° 15' 26.234"W.
16	16	T17S	R37E					

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 200 bbls barrels	Volume Recovered 0 bbls barrels
Source of Release 8" Steel Pipeline	Date and Hour of Occurrence EOTT	Date and Hour of Discovery 10-18-02 @ 8:00 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Paul Sheeley	
By Whom? Pat McCasland, EPI	Date and Hour 10-18-02 @ 11:00 AM Pat McCasland EPI left message with Paul Sheeley and sent page to the "ON-CALL" representative	
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.*
8" Steel Pipeline Site will be delineated to determine the vertical and horizontal extents of contamination. Contaminated soil will be blended on site or disposed of.

Describe Area Affected and Cleanup Action Taken.*
8,000 sqft ~200' x 40' Site will be delineated to determine the vertical and horizontal extents of contamination. Contaminated soil will be blended on site or disposed of. Remedial Goals: TPH 8015m = 1000 mg/Kg, Benzene = 10 mg/Kg, and BTEX, i.e., the mass sum of Benzene, Ethyl Benzene, Toluene, and Xylenes = 50 mg/Kg.

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: Frank Hernandez	Approved by District Supervisor:	
Title: District Environmental Supervisor	Approval Date:	Expiration Date:
Date: October 23, 2003 Phone: 915.638.3799	Conditions of Approval:	Attached ☐

* Attach Additional Sheets If Necessary