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2019 ANNUAL GROUNDWATER MONITORING REPORT

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

**Prepared For:
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HOUSTON, TEXAS**

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January 30, 2020



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TALON/LPE PROJECT NO. 700376.051.54

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NMOCD - New Mexico Oil Conservation Division

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1.0 INTRODUCTION AND OBJECTIVES

1.1 Site Background

The Lovington Deep 6" site is located approximately 5.8 miles southwest of Lovington, New Mexico in Unit H, Section 6, Township 16 South, and Range 36 East. A release of crude oil from the Deep 6" pipeline occurred on property which is primarily utilized as pasture/range with intermittent oil production facilities and is owned by Chevron. The site is located within the West Lovington oil field and has no residence or surface water located within a 1,000-foot radius of the release point. The remediation area is surrounded by a barbed wire fence and is gated.

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

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

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

In December 2002, a reported release of approximately 25 barrels (bbls) of crude oil occurred at the site due to corrosion of the Deep 6" pipeline. Ten (10) bbls of oil were recovered during initial response activities. Approximately 6,000 square feet of surface area was impacted by the release. During the initial remediation phase, soil that was impacted by the release was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm for treatment. Soil remediation activities were initiated by EPI in 2003 and the soil phase of site remediation was closed in October 2005.

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

1.2 Site Geology

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

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

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

1.3 Previous Environmental Investigations

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

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

Subsequent groundwater monitoring events indicated that benzene concentrations in the down-gradient sentinel monitor wells, MW-12 and MW-18, consistently exceeded the NMWQCC standard. Therefore two additional monitor wells MW-19 and MW-20 were installed further down-gradient on August 27, 2018.

PSH recovery operations have been performed at the site since March 2003, initially from hand bailing followed by a recovery system that utilized skimmers with bladder pumps for PSH recovery. In April of 2010, a pneumatic total fluid pump was installed in monitor well MW-2. Because the total fluid pump increased groundwater production combined with an insignificant increase in PSH production, the total fluids pump was removed from MW-2 in September of 2010 and replaced with a skimmer and bladder pump. In order to help reduce down-gradient dissolved-phase concentrations, bubblers were installed in monitor wells MW-10 and MW-12 in January of 2011. In February 20, 2016 a new compressor was installed.

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

Because the MDPE events have proven to be far more efficient at PSH recovery, the on-site

recovery system was removed completely in January of 2013. MDPE events are now conducted on a monthly basis.

Currently there are three (3) air sparge bubblers operating in monitoring wells MW-10, MW-12, and MW-18. In, 2019, MDPE events recovered an estimated total of 55.28 bbls of PSH consisting of 15.64 bbls of liquid and 39.64 bbls of vapor phase PSH. To date approximately 353.93 bbls of PSH have been recovered during the described remediation efforts.

1.4 Regulatory Framework

Groundwater analytical data collected from the Deep 6” site is evaluated to the NMWQCC groundwater standards outlined below.

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

The subsequent sections of this report provide summaries of the groundwater monitoring activities that were conducted at the subject site during the year 2019 as well as analytical results from each groundwater sampling event. Cumulative analytical results for the four (4) 2019 sampling events are summarized in Table 2, in Appendix B, and Figures 1, 2a through 2d, and 3a through 3d in Appendix A. Laboratory analytical data reports and chain of custody documentation are included in Appendix C.

2.0 SITE ACTIVITIES

The sections that follow summarize groundwater monitoring and PSH recovery activities conducted at the subject site during 2019. The primary function of groundwater monitoring is to measure the depths to fluids and to collect groundwater samples from monitor wells for laboratory analysis. The objective of groundwater monitoring is to evaluate the status of the dissolved-phase and PSH plumes in order to verify the effectiveness of the groundwater remediation system as to inhibiting plume migration, reducing the volume of PSH impacting the groundwater and determining if modifications to the remediation system would improve its performance and efficiency.

2.1 Groundwater Gauging, Purging, and Sample Collection Procedures

A total of four (4) groundwater monitoring events were conducted by Talon during the year 2019 on March 13, June 10, September 25, and December 06.

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 these measurements was used to construct groundwater gradient maps and PSH thickness isopleth maps. The results of the measured depths to fluids collected during the four (4) events are incorporated in Table 1 – Summary of Historical Fluid Level Measurements.

Subsequent to gauging, all monitor wells were purged using a down-hole pump equipped with vinyl tubing. The pump and tubing were decontaminated with Alconox® detergent and rinsed with distilled water after each use. Recovered purge water and water used in the decontamination process was contained in 55-gallon drums. After the groundwater monitoring event, all retained water was placed into the on-site storage tank and removed with a vacuum truck for disposal at Gandy Marley, NMOCD approved facility.

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

The groundwater samples collected during all four events were quantified for benzene, toluene, ethylbenzene, and xylene (BTEX) by EPA Method SW-846 8021B. Groundwater samples collected from six (6) groundwater monitoring wells during the first quarterly sampling event were analyzed for polycyclic aromatic hydrocarbons (PAH) by EPA 8270C.

2.2 Phase Separated Hydrocarbon Recovery

PSH recovery has been conducted at the site since 2003, initially by hand bailing. In 2007, an automated skimmer/bladder pump recovery system was installed at the site. The system utilized six (6) skimmers with bladder pumps in monitor wells MW-2, and MW-13 through MW-17 for recovery of PSH and to inhibit migration of the PSH plume. The skimmer assembly consisted of bladder pumps combined with 24-inch traveling float specific gravity skimmers attachments. The skimmer system was powered by a single-phase, 230-volt, 7.5 HP, two-stage reciprocating air compressor.

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

During 2019, the quarterly MDPE, PSH and groundwater recovery totals are as follows:

- 1st Quarter – 13.7 bbls PSH and 114.9 bbls of groundwater
- 2nd Quarter – 16.9 bbls PSH and 124.4 bbls of groundwater
- 3rd Quarter – 12.3 bbls PSH and 72.1 bbls of groundwater
- 4th Quarter – 12.4 bbls PSH and 121.8 bbls groundwater

The MDPE individual event recovery totals are as follows:

- January 8, 2019 – 2.62 bbls vapor, 0.76 bbls liquid
- February 5, 2019– 3.04 bbls vapor, 0.74 bbls liquid
- March 5, 2019 – 5.04 bbls vapor, 1.48 bbls liquid
- April 3, 2019– 1.93 bbls vapor, 1.55 bbls liquid
- May 8, 2019– 6.33 bbls vapor, 1.67 bbls liquid
- June 18, 2019– 4.03 bbls vapor, 1.38 bbls liquid
- July 17, 2019– 3.11 bbls vapor, 0.57 bbls liquid
- August 8, 2019– 3.95 bbls vapor, 1.12 bbls liquid
- September 5, 2019– 2.19 bbls vapor, 1.4 bbls liquid
- October 16, 2019– 1.8 bbls vapor, 1.24 bbls liquid
- November 19, 2019– 4.6 bbls vapor, 2.8 bbls liquid
- December 18, 2019– 1.0 bbls vapor, 0.93 bbls liquid

In 2019 an estimated total of 55.28 bbls of PSH were recovered during the MDPE events. Approximately 353.93 bbls of PSH consisting of 132.85 bbls of vapor phase and 221.08 bbls of liquid phase PSH have been recovered from the site to date.

3.0 GROUNDWATER MONITORING RESULTS

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

3.1 Groundwater Monitoring Results

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

3.1.1 Physical Characteristics of the First Water-Bearing Zone

The primary groundwater resource under the Southern High Plains, including the site, is referred to as the Ogallala Aquifer or High Plains Aquifer. The Southern portion of the Ogallala Aquifer underlies an area of about 29,000 square miles in western Texas and eastern New Mexico, encompassing all or part of 31 counties in Texas and six (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 potentiometric surface mimics the topography 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 (7) inches per day. The regional hydraulic conductivity averages 17 gallons per day per square-foot and specific yield averages 16%. The depth to groundwater at the site has historically ranged from 60 to 65 feet below ground surface (bgs) and the groundwater flow direction is to the east southeast at an average of 0.0038 foot per foot or 17 feet per mile. The saturated thickness of the Ogallala formation on the High Plains ranges from 25 feet to 175 feet. The variable thickness is due to the irregularly eroded Triassic surface that underlies it.

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

3.1.2 Groundwater Gradient and Flow Direction

The depth to fluid measurements were collected during each of the four (4) groundwater monitoring events during the year 2019. The results of the fluid level measurements are summarized in Table 1, Appendix B - Summary of Historical Fluid Level Measurements. The collected data was used to construct potentiometric surface maps in order to interpret the

groundwater gradient and flow direction. The maps, designated Figures 2a through 2d, are presented in Appendix A.

The potentiometric surface maps constructed for each of the four (4) groundwater monitoring events indicates that the groundwater flow direction is to the east at an approximate gradient of average 0.00367 feet/foot or approximately 19.38 feet/mile. Groundwater levels at the subject site have decreased slightly during three of the groundwater monitoring events for the year 2019.

3.1.3 Phase Separated Hydrocarbon (PSH)

An oil/water interface probe was used to determine the thicknesses of PSH during the four (4) groundwater monitoring events. Generally, PSH thicknesses have fluctuated slightly from quarter to quarter during the year 2019.

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

- In March 2019, PSH was observed in four (4) monitor wells MW-2, MW-13, MW-14, and MW-17. PSH thickness ranged from 0.02 feet to 1.70 feet.
- In June 2019, PSH was observed in three (3) monitor wells MW-13, MW-14, and MW-17. PSH thickness ranged from 0.04 feet to 1.71 feet.
- In September 2019, PSH was observed in three (3) monitor wells MW-13, MW-14, and MW-17. PSH thickness ranged from 0.02 feet to 0.87 feet.
- In December 2019, PSH was observed in three (3) monitor wells MW-13, MW-14, and MW-17. PSH thickness ranged from 0.03 feet to 0.55 feet.

3.1.4 Groundwater Sampling Results

During the March 2019 sampling event, groundwater samples were collected from sixteen (16) monitor wells MW-1, MW-3 through MW-12, MW-15, MW-16, MW-18, MW-19 and MW-20. Groundwater samples were not collected from four (4) monitor wells (MW-2, MW-13, MW-14, and MW-17) due to PSH. Laboratory analytical results of the groundwater samples exhibited the following findings:

- Benzene concentrations ranged from <0.000408 mg/L in wells MW-4 and MW-18 to 4.29 mg/L in MW-10. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in monitor wells MW-3, MW-10, MW-11, and MW-19.
- Toluene concentrations ranged from less than the laboratory method detection limits (MDLs) in all wells except, MW-3 and MW-16 with concentrations 0.00157 mg/L and 0.00222 mg/L, respectively. The toluene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any of the monitor wells sampled this quarter.
- Ethylbenzene concentrations ranged from less than the laboratory method detection limits (MDLs) in wells MW-1, MW-5, through MW-9, MW-12, MW-18, MW-19, MW-20 to 0.142 mg/L in MW-10. The ethylbenzene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any of the monitor wells sampled this quarter.

- Xylene concentrations ranged from less than the laboratory method detection limits (MDLs) in wells MW-1, MW-5 through MW-10, MW-12, MW-18 through MW-20 to 0.120 mg/L in MW-3. The xylene concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in any of the groundwater monitor wells sampled this quarter.
- Naphthalene concentrations ranged from 0.0000325 mg/L in MW-18 to 0.000122 mg/L in MW-4. Naphthalene was detected in three (3) of the six (6) wells sampled for PAH (Polycyclic Aromatic Hydrocarbons), none of which exceeded the NMWQCC standard of 0.03 mg/L. Benzo(a)pyrene concentrations were less than the laboratory method detection limits (MDLs) in all six (6) wells samples for PAH, none exceeding the NMWQCC standard of 0.007 mg/L.

During the June 2019 sampling event, groundwater samples were collected from fifteen (15) monitor wells MW-1, MW-3 through MW-5, MW-15, MW-16, MW-18, MW-19, and MW-20. Groundwater samples were not collected from five (5) monitor wells due to PSH (MW-13, MW-14, MW-17) or were dry/purged dry (MW-2 and MW-6). Laboratory analytical results of the groundwater samples exhibited the following findings:

- Benzene concentrations ranged from less than laboratory method detection limits in wells MW-1, MW-4, MW-5, MW-8, MW-9, MW-11, MW-12, MW-16, and MW-18 to 32 mg/L in MW-10. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-3, MW-7, MW-10, MW-15, MW-19, and MW-20 this quarter.
- The toluene concentrations were less than the laboratory method detection limits (MDLs) in all wells sampled and did not exceed the NMWQCC groundwater standard of 0.750 mg/L this quarter.
- Ethylbenzene concentrations ranged from less than laboratory method detection limits in wells MW-1, MW-4, MW-5, MW-7, MW-8, MW-9, MW-11, MW-12, MW-16, MW-18, MW-19, and MW-20 to 2.89 mg/L in MW-10. The ethylbenzene concentrations exceeded the NMWQCC groundwater standard of 0.750 mg/L in groundwater samples collected from monitor well MW-10 this quarter.
- Xylene concentrations ranged from less than method detection limits in wells MW-1, MW-4, MW-5, MW-7, MW-8, MW-9, MW-11, MW-12, MW-16, MW-18, MW-19, and MW-20 to 2.56 mg/L in MW-10. The xylene concentrations exceeded the NMWQCC groundwater standard of 0.620 mg/L in groundwater samples collected from monitor well MW-10 quarter.

During the September 2019 sampling event, groundwater samples were collected from fifteen (15) monitor wells MW-1, MW-3 through MW-5, MW-7 through MW-12, MW-15, MW-16, and MW-18 through MW-20. Groundwater samples were not collected from five (5) monitor wells due to PSH (MW-13, MW-14, and MW-17) or were dry (MW-2 and MW-6). Laboratory analytical results of the groundwater samples exhibited the following findings:

- Benzene concentrations ranged from <0.000408 mg/L in wells MW-1, MW-7, MW-8, MW-15, and MW-16 to 4.43 mg/L in MW-10. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-5, MW-9, MW-10, MW-11, MW-18, MW-19, and MW-20 this quarter.

- The toluene concentrations were less than the laboratory method detection limits (MDLs) in all monitor wells except monitor well MW-18, with a concentration of 0.0145 mg/L. Toluene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any wells sampled this quarter.
- Ethylbenzene concentrations ranged from <0.000657 mg/L in wells MW-1, MW-4, MW-5, MW-7 through MW-9, MW-12, MW-16, and MW-20 to 0.307 mg/L in MW-10. Ethylbenzene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any wells sampled this quarter.
- The xylene concentrations were less than the laboratory method detection limits (MDLs) in all monitor wells except in monitor wells MW-3 and MW-15, with concentrations 0.0380 mg/L and 0.0161 mg/L, respectively. Xylene concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in any of the groundwater monitor wells sampled this quarter.

During the December 2019 sampling event, groundwater samples were collected from fifteen (15) monitor wells MW-1, MW-3 through MW-5, MW-7, MW-8, MW-9, MW-10 through MW-12, MW-15, MW-16, MW-18, MW-19, and MW-20. Groundwater samples were not collected from five (5) monitor wells due to PSH (MW-13, MW-14, and MW-17) or were dry (MW-2 and MW-6). Laboratory analytical results of the groundwater samples exhibited the following findings:

- Benzene concentrations ranged from <0.000408 mg/L in wells MW-5 and MW-7 to 2.24 mg/L in MW-20. Benzene concentrations exceeded the NMWQCC groundwater standard of 0.010 mg/L in groundwater samples collected from monitor wells MW-8, MW-10, MW-18, and MW-20.
- The toluene concentrations were less than the laboratory method detection limits (MDLs) except monitor wells MW-11, MW-18, MW-19, and MW-20, with concentrations of 0.000440 mg/L, 0.00273 mg/L, 0.000720 mg/L, and 0.00218 mg/L, respectively. Toluene concentrations did not exceed the NMWQCC groundwater standard of 0.750 mg/L in any wells sampled this quarter.
- Ethylbenzene concentrations ranged from <0.000657 mg/L in wells MW-4, MW-5, MW-7, MW-9, MW-11, and MW-12 to 0.0624 mg/L in MW-15. Ethylbenzene concentration was below the NMWQCC groundwater standard of 0.750 mg/L in all wells sampled.
- Xylene concentrations ranged from <0.000630 mg/L in wells MW-1, MW-4, MW-5, MW-7 through MW-11 to 0.0369 mg/L in MW-15. The xylene concentrations did not exceed the NMWQCC groundwater standard of 0.620 mg/L in any of the groundwater monitor wells sampled this quarter.

The laboratory analytical results are summarized in Table 2 and Table 3– Summary of Historical Groundwater Analytical Results in Appendix B. Laboratory analytical data reports and chains of custody documentation are provided in Appendix C.

4.0 CONCLUSIONS AND RECOMMENDATIONS

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

4.1 Summary of Findings

- The groundwater flow direction is to east northeast with an average gradient of average 0.00367 ft/ft based on the water level measurement data collected in 2019.
- Groundwater levels at the subject site have slightly decreased at an average of 0.054 feet for the year 2019.
- PSH has impacted monitor wells MW-2, MW-13, MW-14, and MW-17 in 2019.
- Approximately 55.28 bbls of PSH was recovered during the year 2019.
- The benzene concentration in MW-10 exceeded the NMWQCC groundwater standard of 0.0100 mg/L during all sampling events. MW-10 also exceeded the NMWQCC groundwater standard of 0.0750 mg/L for ethylbenzene and 0.620 mg/L for xylenes during the June event. In addition, monitor wells MW-3, MW-11, and MW-19 exceeded the benzene NMWQCC groundwater standard of 0.0100 mg/L during the March event. Monitor wells MW-3, MW-7, MW-15, MW-19, and MW-20 exceeded the benzene NMWQCC groundwater standard of 0.0100 mg/L during the June event. Monitor wells MW-5, MW-9, MW-11, MW-18, MW-19, and MW-20 exceeded the benzene NMWQCC groundwater standard of 0.0100 mg/L during the September event. Monitor wells MW-8, MW-18, and MW-20 exceeded the benzene NMWQCC groundwater standard of 0.0100 mg/L during the December event.

4.2 Recommendations

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

- Continue monthly MDPE events.
- Perform quarterly groundwater monitoring events in accordance with NMOCD directives.
- Continue PAH sampling in wells MW-4, MW-10, MW-12, MW-18, MW-19, and MW-20 for the first quarter sampling event in 2020.

APPENDIX A

Figures

Figure 1 - Site Plan

Figure 2a - Groundwater Gradient Map - 03/13/2019

Figure 2b - Groundwater Gradient Map - 06/10/2019

Figure 2c - Groundwater Gradient Map - 09/25/2019

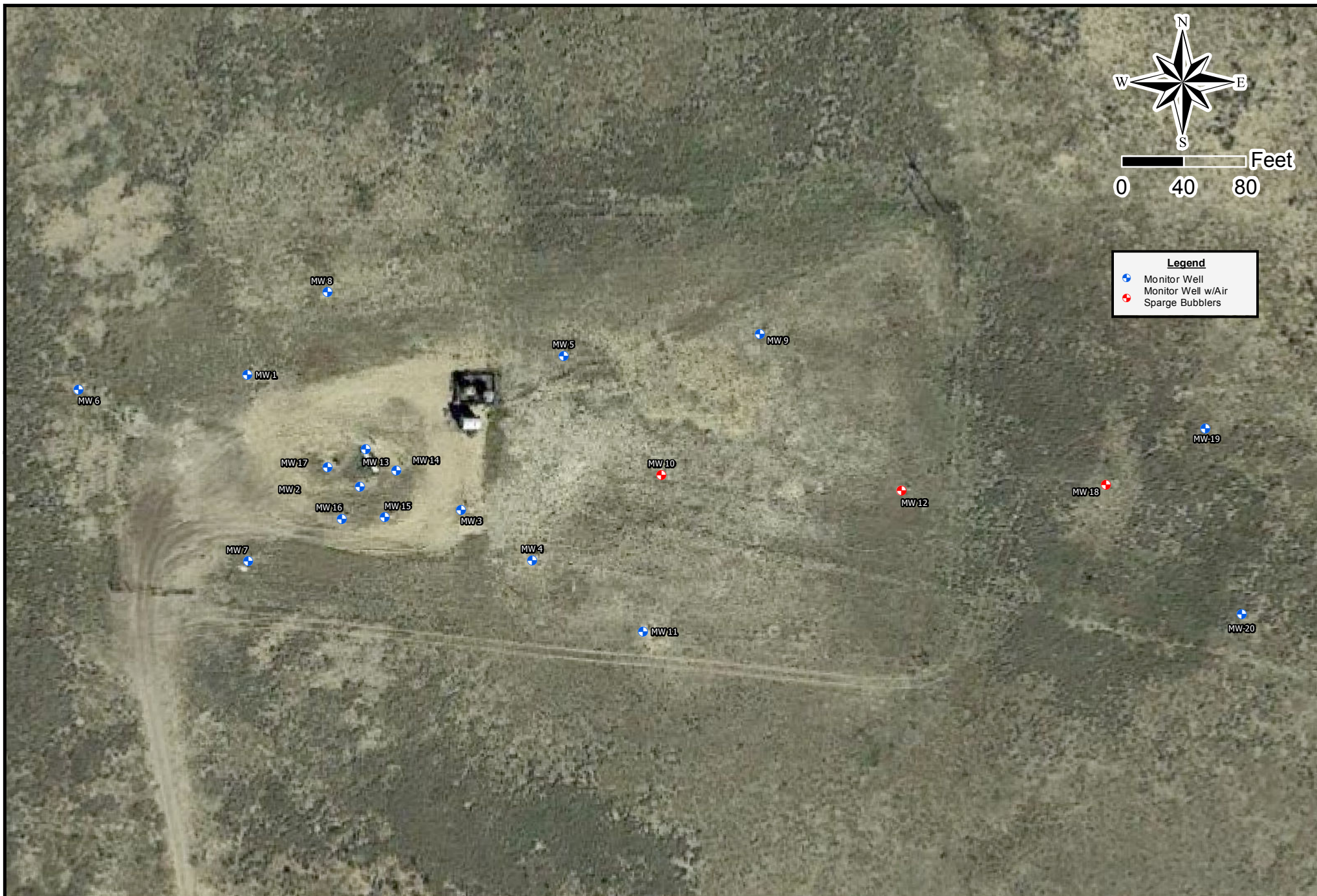
Figure 2d - Groundwater Gradient Map - 12/06/2019

Figure 3a - PSH Thickness & Groundwater Concentration Map - 03/13/2019

Figure 3b - PSH Thickness & Groundwater Concentration Map - 06/10-11/2019

Figure 3c - PSH Thickness & Groundwater Concentration Map - 09/26/2019

Figure 3d - PSH Thickness & Groundwater Concentration Map - 12/07/2019



Drafted: 11/20/2018

1 in = 80 ft

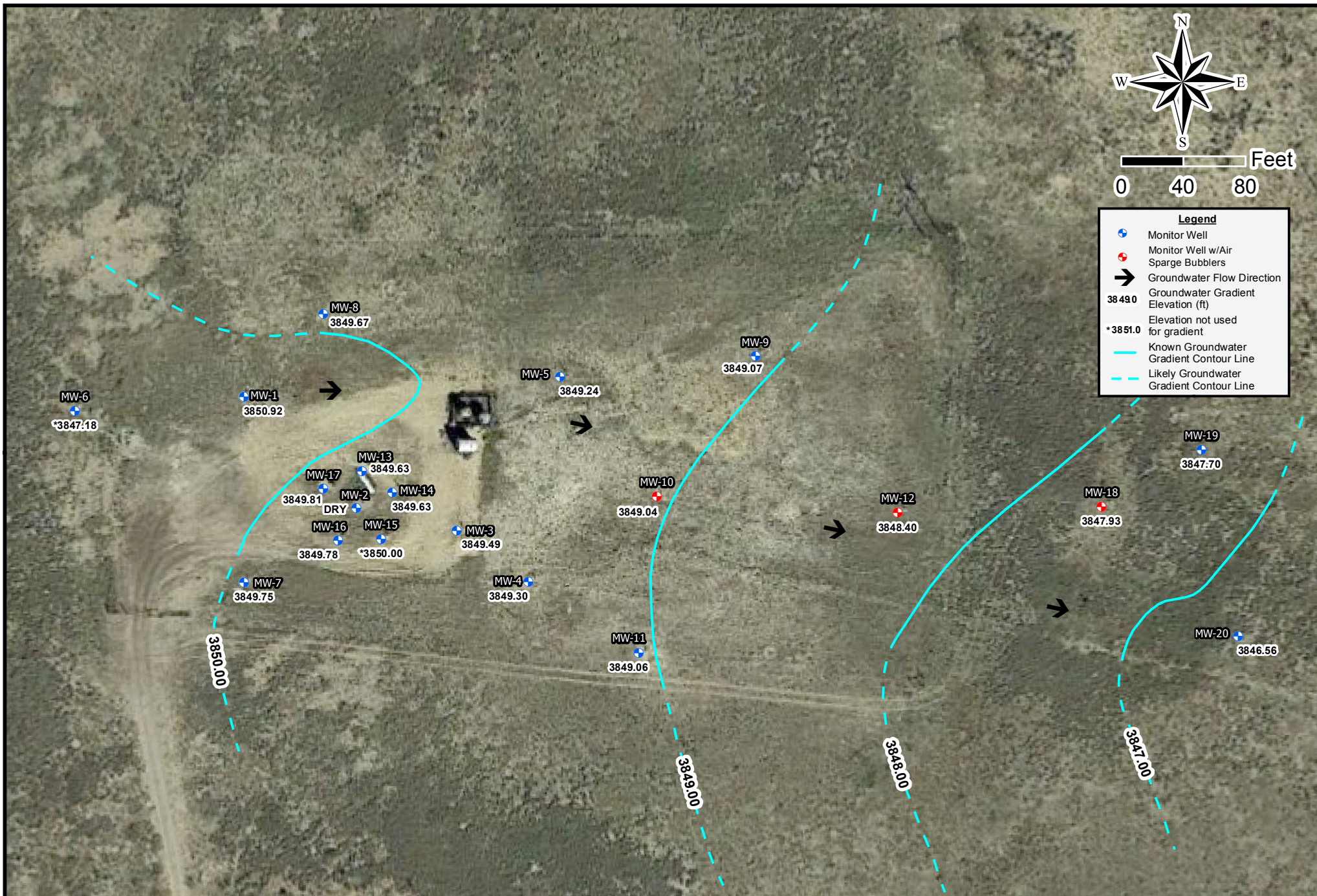
Drafted By: IJM

Lovington Deep 6"
SRS # 2002-10312, NMOCD REF. # AP-037
SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico
Figure 1 - Site Plan



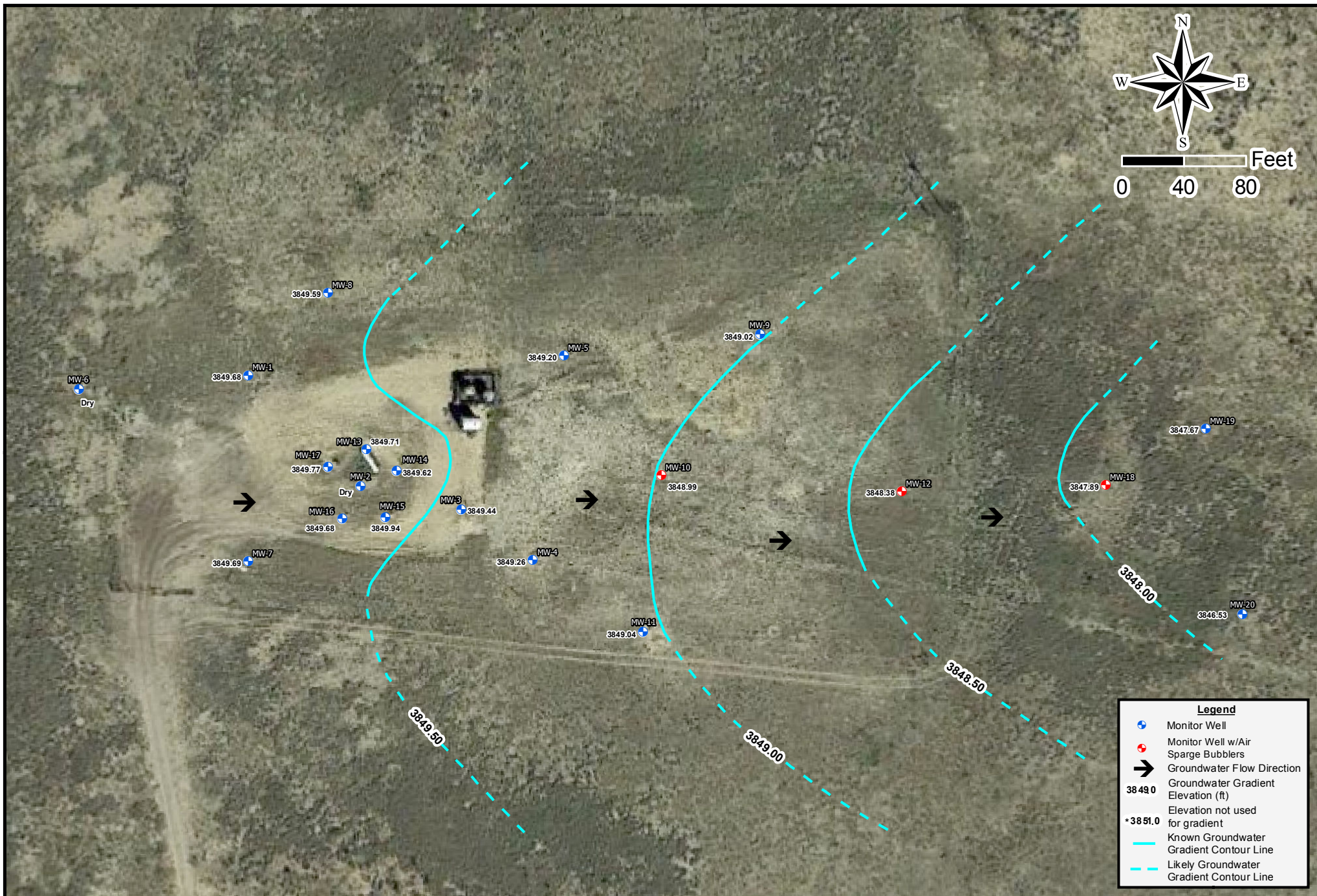
Drafted: 3/9/2020
1 in = 100 ft
Drafted By: JAI

Lovington Deep 6"
SRS # 2002-10312, NMOCD REF. # AP-037
SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico
Figure 2a - Groundwater Gradient Map (03/13/2019)



Drafted: 7/8/2019
1 in = 80 ft
Drafted By: IJM

Lovington Deep 6"
SRS # 2002-10312, NMOCD REF. # AP-037
SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico
Figure 2b - Groundwater Gradient Map (06/10/2019)



Drafted: 10/23/2019

1 in = 80 ft

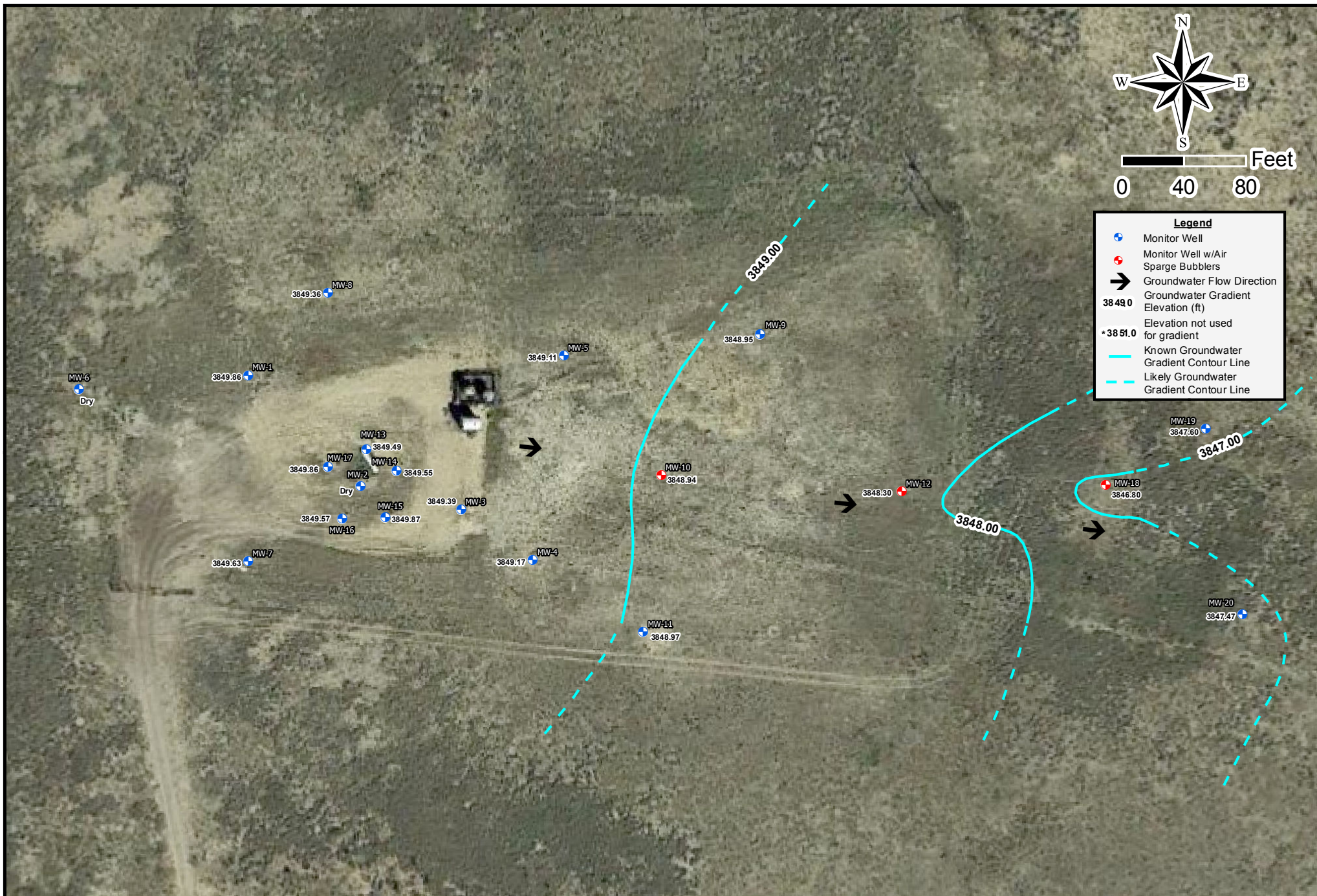
Drafted By: JAI

Lovington Deep 6"

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

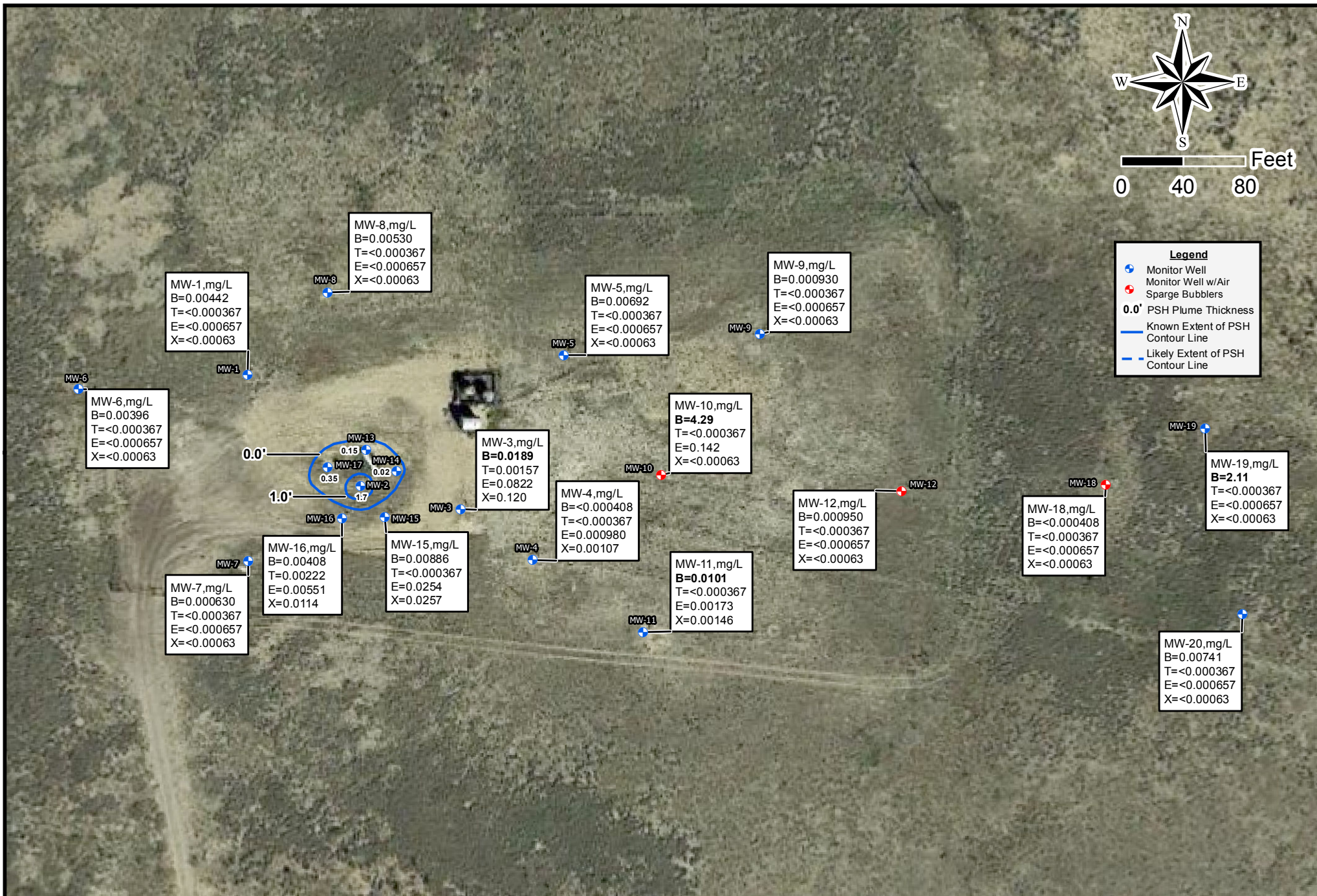
SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico

Figure 2c - Groundwater Gradient Map (09/25/2019)



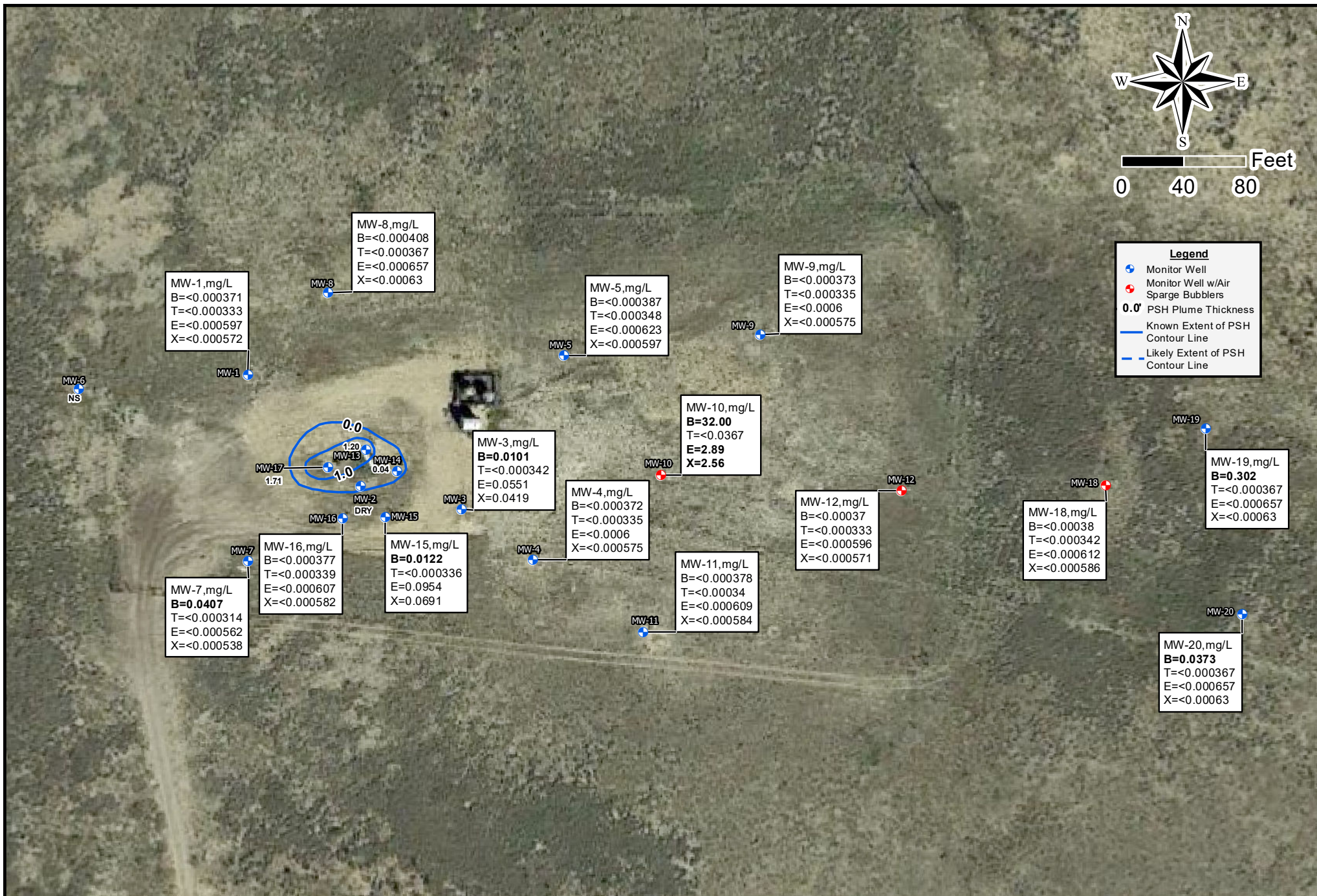
Drafted: 1/20/2020
1 in = 80 ft
Drafted By: JAI

Lovington Deep 6"
SRS # 2002-10312, NMOCD REF. # AP-037
SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico
Figure 2d - Groundwater Gradient Map (12/06/2019)



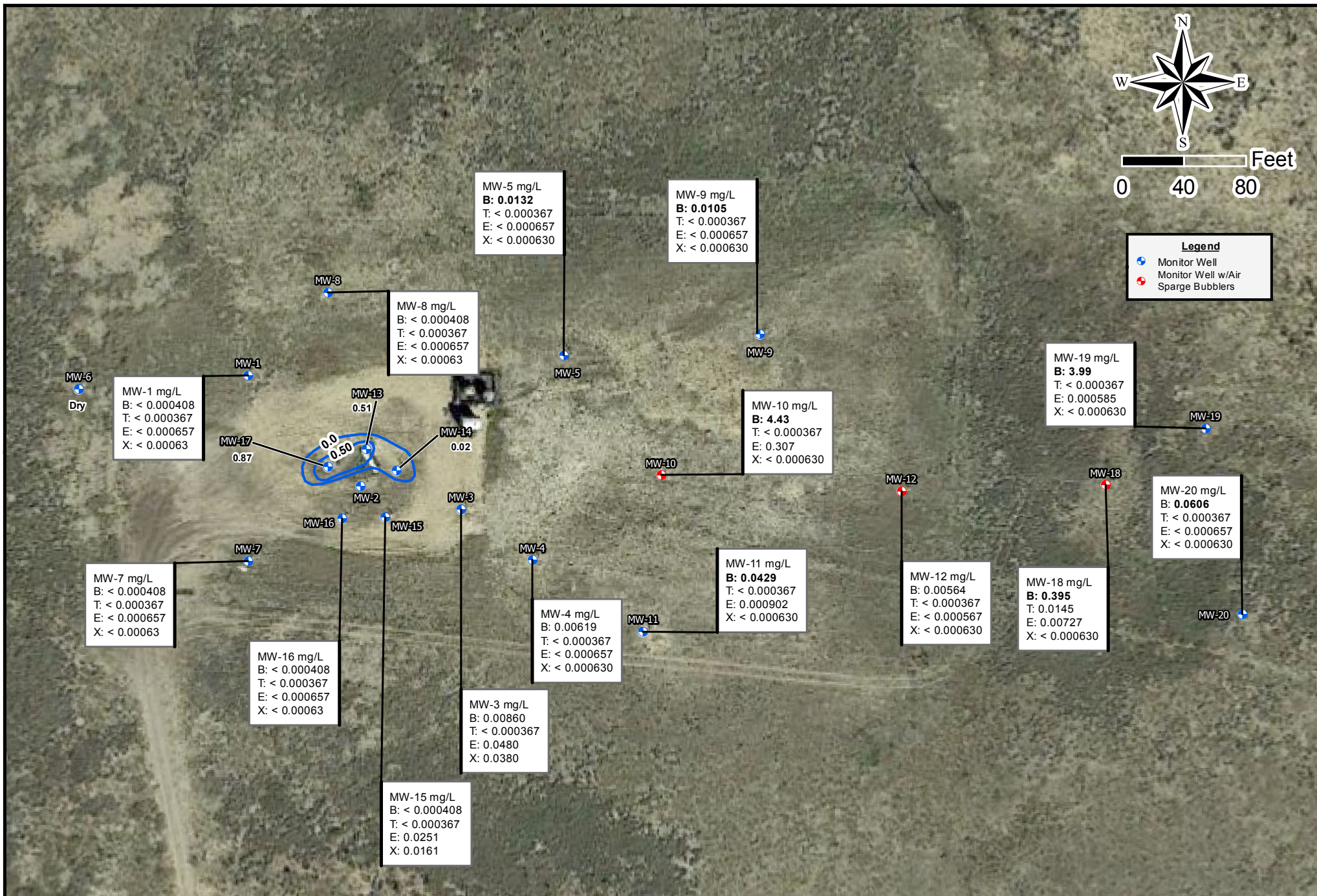
Drafted: 7/22/2019
1 in = 80 ft
Drafted By: IJM

Lovington Deep 6"
SRS # 2002-10312, NMOCD REF. # AP-037
SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico
Figure 3a - PSH Thickness and Groundwater Concentration Map - (03/13/2019)



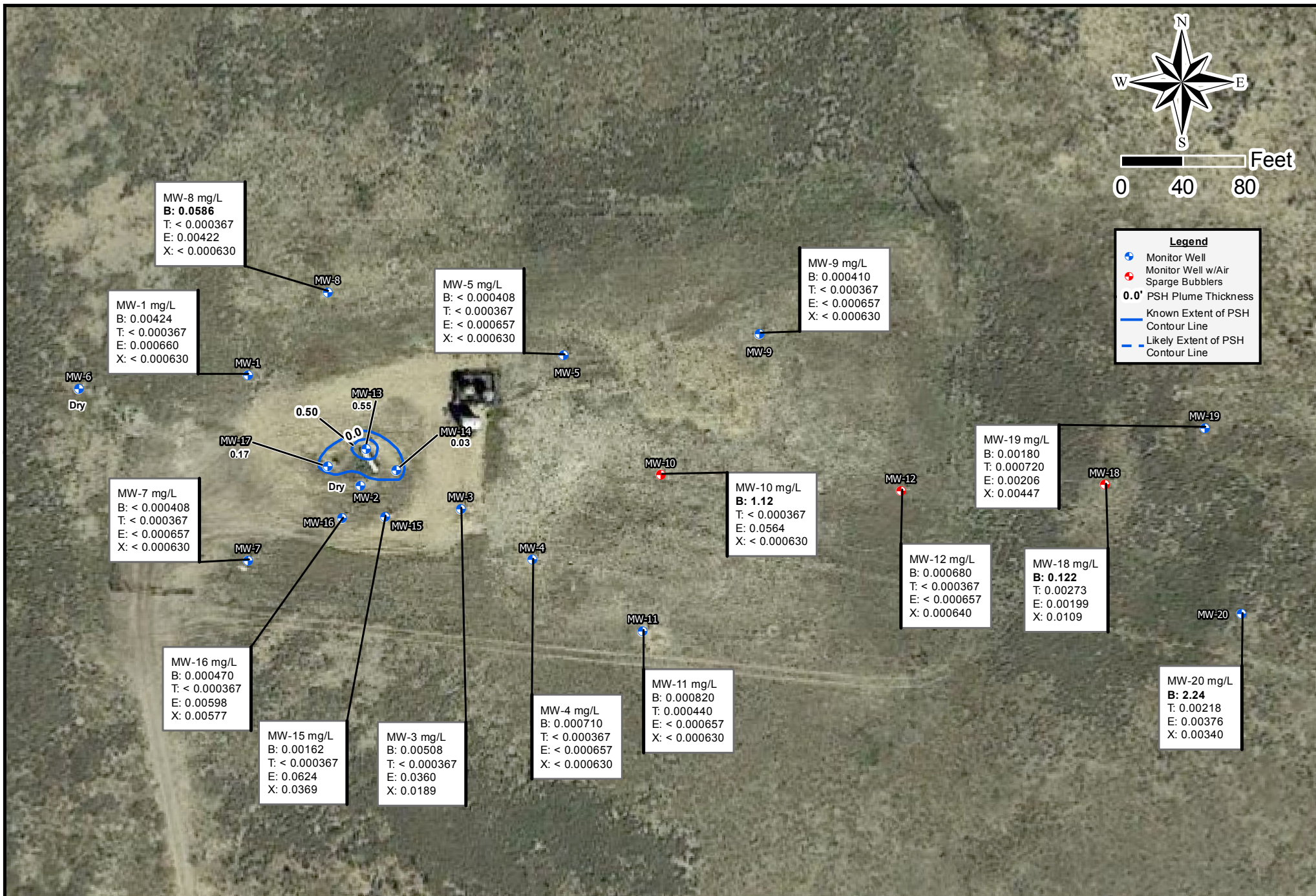
Drafted: 8/1/2019
1 in = 80 ft
Drafted By: IJM

Lovington Deep 6"
SRS # 2002-10312, NMOCD REF. # AP-037
SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico
Figure 3b - PSH Thickness and Groundwater Concentration Map - (06/10-11/2019)



Drafted: 10/23/2019
1 in = 80 ft
Drafted By: JAI

Lovington Deep 6"
SRS # 2002-10312, NMOCD REF. # AP-037
SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico
Figure 3c - PSH Thickness and Groundwater Concentration Map - (09/26/2019)



Drafted: 1/27/2020
1 in = 80 ft
Drafted By: JAI

Lovington Deep 6"
SRS # 2002-10312, NMOCD REF. # AP-037
SE 1/4 of the NE 1/4, Sec. 6, T17S, R36E, Lea County, New Mexico
Figure 3d - PSH Thickness and Groundwater Concentration Map (12/07/2019)

APPENDIX B

Tables

Table 1 - Summary of Historical Fluid Level Measurements

Table 2 - Summary of Historical Groundwater Analytical Results for BTEX

Table 3 - Summary of Groundwater Analytical Results for PAH

Table 1 - Gauging and NAPL Thickness - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Casing Elevation (fmsl)	Top of Screen (ft)	Bottom of Screen (ft)	Date Sampled (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Groundwater Elevation (fmsl)
MW-1 4"	3915.51	54	74	03/08/2016	64.98	-	-	3850.53
				05/24/2016	65.02	-	-	3850.49
				09/08/2016	65.06	-	-	3850.45
				12/05/2016	64.76	-	-	3850.75
				03/08/2017	64.80	-	-	3850.71
				06/13/2017	65.21	-	-	3850.30
				09/12/2017	65.22	-	-	3850.29
				12/13/2017	65.28	-	-	3850.23
				03/23/2018	65.33	-	-	3850.18
				06/12/2018	65.38	-	-	3850.13
				09/10/2018	65.34	-	-	3850.17
				12/11/2018	65.49	-	-	3850.02
				03/13/2019	65.54	-	-	3849.97
				06/10/2019	64.59	-	-	3850.92
				09/25/2019	65.83	-	-	3849.68
MW-2 4"	3915.04	54	74	12/06/2019	65.65	-	-	3849.86
				03/08/2016	68.80	63.91	4.89	3850.32
				05/24/2016	68.57	64.00	4.57	3850.29
				09/08/2016	68.32	64.08	4.24	3850.26
				12/01/2016	68.67	64.10	4.57	3850.19
				03/08/2017	68.33	64.20	4.13	3850.16
				06/13/2017	68.42	64.20	4.22	3850.14
				09/12/2017	68.30	64.30	4.00	3850.08
				12/13/2017	68.00	64.40	3.60	3850.05
				03/23/2018	65.22	65.05	0.17	3849.96
				06/12/2018	67.10	64.50	2.60	3850.11
				09/10/2018	66.52	64.50	2.02	3850.21
				12/11/2018	68.28	64.60	3.68	3849.83
				03/13/2019	66.82	65.12	1.70	3849.64
				06/10/2019	DR	-	-	-
				12/06/2019	DR	-	-	-
MW-3 4"	3915.24	54	74	03/08/2016	65.16	-	-	3850.08
				05/24/2016	65.21	-	-	3850.03
				09/08/2016	65.25	-	-	3849.99
				12/05/2016	65.27	-	-	3849.97
				03/08/2017	65.33	-	-	3849.91
				06/13/2017	65.39	-	-	3849.85
				09/12/2017	65.44	-	-	3849.80
				12/13/2017	65.70	-	-	3849.54
				03/23/2018	65.50	-	-	3849.74
				06/12/2018	65.59	-	-	3849.65
				09/10/2018	65.52	-	-	3849.72
				12/11/2018	65.66	-	-	3849.58
				03/13/2019	65.69	-	-	3849.55
				06/10/2019	65.75	-	-	3849.49
				09/25/2019	65.80	-	-	3849.44
				12/06/2019	65.85	-	-	3849.39

Table 1 - Gauging and NAPL Thickness - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Casing Elevation (fmsl)	Top of Screen (ft)	Bottom of Screen (ft)	Date Sampled (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Groundwater Elevation (fmsl)
MW-4 2"	3915.3	54	74	03/08/2016	65.41	-	-	3849.89
				05/24/2016	65.44	-	-	3849.86
				09/08/2016	65.47	-	-	3849.83
				12/05/2016	65.50	-	-	3849.80
				03/08/2017	65.55	-	-	3849.75
				06/13/2017	65.61	-	-	3849.69
				09/12/2017	65.64	-	-	3849.66
				12/13/2017	65.70	-	-	3849.60
				03/23/2018	65.73	-	-	3849.57
				06/12/2018	65.81	-	-	3849.49
				09/10/2018	65.74	-	-	3849.56
				12/11/2018	65.90	-	-	3849.40
				03/13/2019	65.96	-	-	3849.34
				06/10/2019	66.00	-	-	3849.30
				09/25/2019	66.04	-	-	3849.26
				12/06/2019	66.13	-	-	3849.17
MW-5 4"	3915.26	54	74	03/08/2016	65.42	-	-	3849.84
				05/24/2016	65.47	-	-	3849.79
				09/08/2016	65.51	-	-	3849.75
				12/05/2016	65.52	-	-	3849.74
				03/08/2017	65.59	-	-	3849.67
				06/13/2017	65.65	-	-	3849.61
				09/12/2017	65.70	-	-	3849.56
				12/13/2017	65.75	-	-	3849.51
				03/23/2018	65.78	-	-	3849.48
				06/12/2018	65.90	-	-	3849.36
				09/10/2018	65.78	-	-	3849.48
				12/11/2018	65.93	-	-	3849.33
				03/13/2019	65.95	-	-	3849.31
				06/10/2019	66.02	-	-	3849.24
				09/25/2019	66.06	-	-	3849.20
				12/06/2019	66.15	-	-	3849.11
MW-6 2"	3915.45	52	72	03/08/2016	64.71	-	-	3850.74
				05/24/2016	64.74	-	-	3850.71
				09/08/2016	64.80	-	-	3850.65
				12/05/2016	64.85	-	-	3850.60
				03/08/2017	64.90	-	-	3850.55
				06/13/2017	64.91	-	-	3850.54
				09/12/2017	64.97	-	-	3850.48
				12/13/2017	65.02	-	-	3850.43
				03/23/2018	65.04	-	-	3850.41
				06/12/2018	65.11	-	-	3850.34
				09/10/2018	65.04	-	-	3850.41
				12/11/2018	65.22	-	-	3850.23
				03/13/2019	65.23	-	-	3850.22
				06/10/2019	68.27	-	-	3847.18
				09/25/2019	DR	-	-	-
				12/06/2019	DR	-	-	-

Table 1 - Gauging and NAPL Thickness - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Casing Elevation (fmsl)	Top of Screen (ft)	Bottom of Screen (ft)	Date Sampled (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Groundwater Elevation (fmsl)
MW-7 2"	3914.73	51	71	03/08/2016	64.39	-	-	3850.34
				05/24/2016	64.46	-	-	3850.27
				09/08/2016	64.49	-	-	3850.24
				12/05/2016	64.50	-	-	3850.23
				03/08/2017	64.29	-	-	3850.44
				06/13/2017	64.61	-	-	3850.12
				09/12/2017	64.67	-	-	3850.06
				12/13/2017	64.72	-	-	3850.01
				03/23/2018	65.75	-	-	3848.98
				06/12/2018	64.86	-	-	3849.87
				09/10/2018	64.78	-	-	3849.95
				12/11/2018	64.91	-	-	3849.82
				03/13/2019	64.91	-	-	3849.82
				06/10/2019	64.98	-	-	3849.75
				09/25/2019	65.04	-	-	3849.69
				12/06/2019	65.10	-	-	3849.63
MW-8 2"	3915.19	53	73	03/08/2016	64.95	-	-	3850.24
				05/24/2016	65.00	-	-	3850.19
				09/08/2016	65.04	-	-	3850.15
				12/05/2016	65.07	-	-	3850.12
				03/08/2017	65.10	-	-	3850.09
				06/13/2017	65.17	-	-	3850.02
				09/12/2017	65.21	-	-	3849.98
				12/13/2017	65.26	-	-	3849.93
				03/23/2018	65.28	-	-	3849.91
				06/12/2018	65.36	-	-	3849.83
				09/10/2018	65.31	-	-	3849.88
				12/11/2018	65.45	-	-	3849.74
				03/13/2019	65.49	-	-	3849.70
				06/10/2019	65.52	-	-	3849.67
				09/25/2019	65.60	-	-	3849.59
				12/06/2019	65.83	-	-	3849.36
MW-9 2"	3913.92	55	75	03/08/2016	64.33	-	-	3849.59
				05/24/2016	64.32	-	-	3849.60
				09/08/2016	64.35	-	-	3849.57
				12/05/2016	64.36	-	-	3849.56
				03/08/2017	63.38	-	-	3850.54
				06/13/2017	65.46	-	-	3848.46
				09/12/2017	64.53	-	-	3849.39
				12/13/2017	64.59	-	-	3849.33
				03/23/2018	64.75	-	-	3849.17
				06/12/2018	64.68	-	-	3849.24
				09/10/2018	64.71	-	-	3849.21
				12/11/2018	64.76	-	-	3849.16
				03/13/2019	64.80	-	-	3849.12
				06/10/2019	64.85	-	-	3849.07
				09/25/2019	64.90	-	-	3849.02
				12/06/2019	64.97	-	-	3848.95

Table 1 - Gauging and NAPL Thickness - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Casing Elevation (fmsl)	Top of Screen (ft)	Bottom of Screen (ft)	Date Sampled (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Groundwater Elevation (fmsl)
MW-10 2"	3914.96	53	73	03/08/2016	65.32	-	-	3849.64
				05/24/2016	65.40	-	-	3849.56
				09/08/2016	65.41	-	-	3849.55
				12/05/2016	65.48	-	-	3849.48
				03/08/2017	65.50	-	-	3849.46
				06/13/2017	65.54	-	-	3849.42
				09/12/2017	65.46	-	-	3849.50
				12/13/2017	65.66	-	-	3849.30
				03/23/2018	65.64	-	-	3849.32
				06/12/2018	65.30	-	-	3849.66
				09/10/2018	65.72	-	-	3849.24
				12/11/2018	65.82	-	-	3849.14
				03/13/2019	65.87	-	-	3849.09
				06/10/2019	65.92	-	-	3849.04
				09/25/2019	65.97	-	-	3848.99
MW-11 2"	3914.4	52	72	12/06/2019	66.02	-	-	3848.94
				03/08/2016	64.70	-	-	3849.70
				05/24/2016	65.77	-	-	3848.63
				09/08/2016	64.80	-	-	3849.60
				12/05/2016	64.81	-	-	3849.59
				03/08/2017	64.90	-	-	3849.50
				06/13/2017	64.93	-	-	3849.47
				09/12/2017	64.97	-	-	3849.43
				12/13/2017	65.04	-	-	3849.36
				03/23/2018	65.03	-	-	3849.37
				06/12/2018	65.19	-	-	3849.21
				09/10/2018	65.08	-	-	3849.32
				12/11/2018	65.21	-	-	3849.19
				03/13/2019	65.25	-	-	3849.15
				06/10/2019	65.34	-	-	3849.06
MW-12 2"	3913.97	58	78	09/25/2019	65.36	-	-	3849.04
				12/06/2019	65.43	-	-	3848.97
				03/08/2016	64.93	-	-	3849.04
				05/24/2016	64.98	-	-	3848.99
				09/08/2016	65.02	-	-	3848.95
				12/05/2016	65.05	-	-	3848.92
				03/08/2017	65.07	-	-	3848.90
				06/13/2017	65.18	-	-	3848.79
				09/12/2017	64.95	-	-	3849.02
				12/13/2017	64.76	-	-	3849.21
				03/23/2018	64.45	-	-	3849.52
				06/12/2018	65.20	-	-	3848.77
				09/10/2018	65.31	-	-	3848.66
				12/11/2018	65.45	-	-	3848.52
				03/13/2019	65.46	-	-	3848.51
				06/10/2019	65.57	-	-	3848.40
				09/25/2019	65.59	-	-	3848.38
				12/06/2019	65.67	-	-	3848.30

Table 1 - Gauging and NAPL Thickness - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Casing Elevation (fmsl)	Top of Screen (ft)	Bottom of Screen (ft)	Date Sampled (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Groundwater Elevation (fmsl)
MW-13 4"	3915.83	54	79	03/08/2016	67.60	65.10	2.50	3850.32
				05/24/2016	66.69	65.31	1.38	3850.29
				09/08/2016	66.53	65.42	1.11	3850.23
				12/01/2016	66.94	65.41	1.53	3850.17
				03/08/2017	66.80	65.42	1.38	3850.18
				06/13/2017	66.45	65.57	0.88	3850.11
				09/12/2017	66.45	65.58	0.87	3850.11
				12/13/2017	66.20	65.71	0.49	3850.04
				03/23/2018	65.81	65.80	0.01	3850.03
				06/12/2018	66.55	65.80	0.75	3849.91
				09/10/2018	65.88	65.78	0.10	3850.03
				12/11/2018	67.00	65.80	1.20	3849.83
				03/13/2019	66.27	66.12	0.15	3849.69
				06/10/2019	67.20	66.00	1.20	3849.63
MW-14 4"	3915.72	53	78	09/25/2019	66.55	66.04	0.51	3849.71
				12/06/2019	66.80	66.25	0.55	3849.49
				03/08/2016	68.35	64.91	3.44	3850.24
				05/24/2016	65.62	65.49	0.13	3850.21
				09/08/2016	65.73	65.54	0.19	3850.15
				12/01/2016	66.31	65.50	0.81	3850.09
				03/08/2017	66.25	65.50	0.75	3850.10
				06/13/2017	66.72	65.50	1.22	3850.02
				09/12/2017	67.05	65.50	1.55	3849.96
				12/13/2017	66.90	65.45	1.45	3850.03
				03/23/2018	67.75	65.42	2.33	3849.92
				06/12/2018	68.09	65.49	2.60	3849.80
				09/10/2018	65.19	65.18	0.01	3850.54
				12/11/2018	66.08	65.95	0.13	3849.75
MW-15 4"	3915.84	54	79	03/13/2019	66.05	66.03	0.02	3849.69
				06/10/2019	66.12	66.08	0.04	3849.63
				09/25/2019	66.12	66.10	0.02	3849.62
				12/06/2019	66.20	66.17	0.03	3849.55
				03/08/2016	65.81	65.20	0.61	3850.54
				05/24/2016	65.87	65.21	0.66	3850.52
				09/08/2016	65.42	65.36	0.06	3850.47
				12/01/2016	65.48	65.42	0.06	3850.41
				03/08/2017	65.45	65.40	0.05	3850.43
				06/13/2017	65.68	65.46	0.22	3850.34
				09/12/2017	65.57	65.52	0.05	3850.31
				12/13/2017	65.65	65.59	0.06	3850.24
				03/23/2018	65.68	65.59	0.09	3850.24
				06/12/2018	65.80	65.65	0.15	3850.17
				09/10/2018	65.61	-	-	3850.23
				12/11/2018	65.77	-	-	3850.07
				03/13/2019	65.79	-	-	3850.05
				06/10/2019	65.84	-	-	3850.00
				09/25/2019	65.90	-	-	3849.94
				12/06/2019	65.97	-	-	3849.87

Table 1 - Gauging and NAPL Thickness - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Casing Elevation (fmsl)	Top of Screen (ft)	Bottom of Screen (ft)	Date Sampled (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Groundwater Elevation (fmsl)
MW-16 4"	3915.43	54	79	03/08/2016	65.78	65.00	0.78	3850.30
				05/24/2016	65.85	65.00	0.85	3850.29
				09/08/2016	65.23	65.20	0.03	3850.23
				12/01/2016	65.32	65.23	0.09	3850.19
				03/08/2017	65.27	65.21	0.06	3850.21
				06/13/2017	65.35	65.29	0.06	3850.13
				09/12/2017	65.40	65.33	0.07	3850.09
				12/13/2017	65.44	65.38	0.06	3850.04
				03/23/2018	65.48	65.40	0.08	3850.02
				06/12/2018	65.65	65.45	0.20	3849.95
				09/10/2018	65.45	-	-	3849.98
				12/11/2018	65.60	-	-	3849.83
				03/13/2019	65.60	-	-	3849.83
				06/10/2019	65.65	-	-	3849.78
				09/25/2019	65.75	-	-	3849.68
				12/06/2019	65.86	-	-	3849.57
MW-17 4"	3915.59	58	78	03/08/2016	68.59	64.51	4.08	3850.41
				05/24/2016	67.19	64.85	2.34	3850.35
				09/08/2016	66.61	65.04	1.57	3850.29
				12/01/2016	67.28	65.96	1.32	3849.41
				03/08/2017	66.97	65.03	1.94	3850.24
				06/13/2017	66.65	65.14	1.51	3850.20
				09/12/2017	66.43	65.28	1.15	3850.12
				12/13/2017	66.07	65.40	0.67	3850.08
				03/23/2018	65.64	65.51	0.13	3850.06
				06/12/2018	66.50	65.44	1.06	3849.98
				09/10/2018	66.59	65.38	1.21	3850.01
				12/11/2018	67.24	65.40	1.84	3849.89
				03/13/2019	66.19	65.84	0.35	3849.69
				06/10/2019	67.21	65.50	1.71	3849.81
				09/25/2019	66.55	65.68	0.87	3849.77
				12/06/2019	65.87	65.70	0.17	3849.86
MW-18 4"	3912.9	55	80	03/08/2016	64.19	-	-	3848.71
				05/24/2016	63.45	-	-	3849.45
				09/08/2016	64.50	-	-	3848.40
				12/05/2016	64.62	-	-	3848.28
				03/08/2017	64.50	-	-	3848.40
				06/13/2017	64.70	-	-	3848.20
				09/12/2017	63.83	-	-	3849.07
				12/13/2017	64.66	-	-	3848.24
				03/23/2018	64.69	-	-	3848.21
				06/12/2018	64.75	-	-	3848.15
				09/10/2018	65.85	-	-	3847.05
				12/11/2018	64.87	-	-	3848.03
				03/13/2019	64.90	-	-	3848.00
				06/10/2019	64.97	-	-	3847.93
				09/25/2019	65.01	-	-	3847.89
				12/06/2019	66.10	-	-	3846.80

Table 1 - Gauging and NAPL Thickness - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Casing Elevation (fmsl)	Top of Screen (ft)	Bottom of Screen (ft)	Date Sampled (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Groundwater Elevation (fmsl)
MW-19 4"	3913.35	60	80	09/10/2018	65.41	-	-	3847.94
				12/11/2018	65.55	-	-	3847.80
				03/13/2019	65.58	-	-	3847.77
				06/10/2019	65.65	-	-	3847.70
				09/25/2019	65.68	-	-	3847.67
				12/06/2019	65.75	-	-	3847.60
MW-20 4"	3912.13	60	80	09/10/2018	64.31	-	-	3847.82
				12/11/2018	65.45	-	-	3846.68
				03/13/2019	64.48	-	-	3847.65
				06/10/2019	65.57	-	-	3846.56
				09/25/2019	65.60	-	-	3846.53
				12/06/2019	64.66	-	-	3847.47

Specific Gravity: 0.75

Notes:

DR = Well dry

DS = Well destroyed

NG = Well not gauged

NL = Well not located

NSA = No access

OB = Obstruction in well

PA = Well plugged and abandoned

Table 2 - Groundwater Analytical Data - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Date Sampled	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Total BTEX (mg/L)
NMOCD - Groundwater		0.01	0.75	0.75	0.62	-
MW-1	03/08/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	05/24/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	09/08/2016	<0.000504	<0.000621	<0.000763	<0.000256	-
	12/05/2016	<0.000408	<0.00100	<0.000657	<0.000642	-
	03/08/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/13/2017	0.000700 J	<0.00100	<0.000657	<0.000642	0.000700 J
	09/14/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/18/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	03/26/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/12/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	09/11/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/11/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	03/15/2019	0.00442	<0.000367	<0.000657	<0.00063	0.00442
	06/11/2019	<0.000371	<0.000333	<0.000597	<0.000572	<0.000333
	09/26/2019	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/07/2019	0.00424	<0.000367	0.000660	<0.000630	0.00490
MW-3	03/08/2016	0.127	<0.000238	0.0904	0.0707	-
	05/24/2016	0.151	<0.000238	0.129	0.107	-
	09/08/2016	0.166	<0.000621	0.132	0.123	-
	12/05/2016	0.261	<0.00100	0.217	0.234	-
	03/08/2017	0.146	<0.000367	0.143	0.146	0.435
	06/13/2017	0.159	0.00296	0.238	0.156	0.556
	09/14/2017	0.101	<0.000367	0.178	0.129	0.408
	12/18/2017	0.0232	0.000750 J	0.0325	0.0228	0.0792
	03/26/2018	0.0119	0.00131 J	0.0241	0.0171	0.0544
	06/12/2018	0.0108	<0.000512	0.0266	0.0176	0.0550
	09/11/2018	0.0132	<0.000367	0.0317	0.0184	0.0633
	12/12/2018	0.0341	<0.000512	0.0725	0.123	0.230
	03/15/2019	0.0189	0.00157	0.0822	0.120	0.222
	06/10/2019	0.0101	<0.000342	0.0551	0.0419	0.107
	09/26/2019	0.00860	<0.000367	0.0480	0.0380	0.0946
	12/07/2019	0.00508	<0.000367	0.0360	0.0189	0.0600
MW-4	03/08/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	05/24/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	09/08/2016	<0.000504	<0.000621	<0.000763	<0.000256	-
	12/05/2016	<0.000408	<0.00100	<0.000657	<0.000642	-
	03/08/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/13/2017	<0.000408	<0.00100	<0.000657	<0.000642	<0.000408
	09/14/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/18/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	03/26/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/12/2018	0.00140	<0.000512	<0.000616	<0.000270	0.00140
	09/11/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/11/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	03/15/2019	<0.000408	<0.000367	0.000980	0.00107	0.00205
	06/10/2019	<0.000372	<0.000335	<0.0006	<0.000575	<0.000335
	09/26/2019	0.00619	<0.000367	<0.000657	<0.000630	0.00619
	12/07/2019	0.000710	<0.000367	<0.000657	<0.000630	0.000710

Table 2 - Groundwater Analytical Data - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Date Sampled	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Total BTEX (mg/L)
MW-5	03/08/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	05/24/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	09/08/2016	<0.000504	<0.000621	<0.000763	<0.000256	-
	12/05/2016	<0.000408	<0.00100	<0.000657	<0.000642	-
	03/08/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/13/2017	0.000800 J	<0.00100	<0.000657	<0.000642	0.000800 J
	09/14/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/18/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	03/26/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/12/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	09/11/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/11/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	03/15/2019	0.00692	<0.000367	<0.000657	<0.00063	0.00692
	06/11/2019	<0.000387	<0.000348	<0.000623	<0.000597	<0.000348
MW-6	09/26/2019	0.0132	<0.000367	<0.000657	<0.000630	0.0132
	12/07/2019	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	03/08/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	05/24/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	09/08/2016	<0.000504	<0.000621	<0.000763	<0.000256	-
	12/05/2016	<0.000408	<0.00100	<0.000657	<0.000642	-
	03/08/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/13/2017	0.00344	<0.00100	<0.000657	<0.000642	0.00344
	09/14/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/18/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	03/26/2018	<0.000408	0.000720 J	<0.000657	<0.000630	0.000720 J
	06/12/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	09/11/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/11/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	03/14/2019	0.00396	<0.000367	<0.000657	<0.00063	0.00396
MW-7	03/08/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	05/24/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	09/08/2016	<0.000504	<0.000621	<0.000763	<0.000256	-
	12/05/2016	<0.000408	<0.00100	<0.000657	<0.000642	-
	03/08/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/13/2017	0.00481	<0.00100	<0.000657	<0.000642	0.00481
	09/14/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/18/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	03/26/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/12/2018	0.00150	<0.000512	0.00120	<0.000270	0.00270
	09/11/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/11/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	03/14/2019	0.000630	<0.000367	<0.000657	<0.00063	0.000630
	06/10/2019	0.0407	<0.000314	<0.000562	<0.000538	0.0407
	09/26/2019	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/07/2019	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367

Table 2 - Groundwater Analytical Data - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Date Sampled	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Total BTEX (mg/L)
MW-8	03/08/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	05/24/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	09/08/2016	<0.000504	<0.000621	<0.000763	<0.000256	-
	12/05/2016	<0.000408	<0.00100	<0.000657	<0.000642	-
	03/08/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/13/2017	0.00272	<0.00100	<0.000657	<0.000642	0.00272
	09/14/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/18/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	03/26/2018	<0.000408	0.000610 J	<0.000657	<0.000630	0.000610 J
	06/12/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	09/11/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/11/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	03/15/2019	0.00530	<0.000367	<0.000657	<0.00063	0.00530
	06/11/2019	<0.000408	<0.000367	<0.000657	<0.00063	<0.000367
	09/26/2019	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/07/2019	0.0586	<0.000367	0.00422	<0.000630	0.0628
MW-9	03/08/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	05/24/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	09/08/2016	<0.000504	<0.000621	<0.000763	<0.000256	-
	12/05/2016	<0.000408	<0.00100	<0.000657	<0.000642	-
	03/08/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/13/2017	0.00113 J	<0.00100	<0.000657	<0.000642	0.00113 J
	09/14/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/18/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	03/26/2018	<0.000408	0.000680 J	<0.000657	<0.000630	0.000680 J
	06/12/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	09/11/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/11/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	03/14/2019	0.000930	<0.000367	<0.000657	<0.00063	0.000930
	06/11/2019	<0.000373	<0.000335	<0.0006	<0.000575	<0.000335
	09/26/2019	0.0105	<0.000367	<0.000657	<0.000630	0.0105
	12/07/2019	0.000410	<0.000367	<0.000657	<0.000630	0.000410
MW-10	03/08/2016	2.62	<0.0119	0.222	<0.0122	-
	05/24/2016	2.38	<0.00238	0.127	0.0325	-
	09/08/2016	3.16	<0.0329	0.181	<0.0136	-
	12/05/2016	3.35	<0.0200	0.178	0.0420	-
	03/08/2017	2.69	0.0620 J	0.303	0.0790 J	3.13
	06/13/2017	0.00417	<0.00100	<0.000657	<0.000642	0.00417
	09/14/2017	11.5 D	<0.000367	0.901 D	0.0192	12.4
	12/18/2017	12.1 D	0.00857	0.953 D	0.0257	13.1
	03/26/2018	5.04	0.0270 J	0.518	<0.0315	5.59
	06/12/2018	3.94	<0.00512	0.422	<0.00270	4.36
	09/11/2018	6.30 D	0.000380 J	0.693 D	0.00625	7.00
	12/11/2018	3.65	<0.0256	0.420	<0.0135	4.07
	03/14/2019	4.29	<0.000367	0.142	<0.00063	4.43
	06/10/2019	32	<0.0367	2.89	2.56	38
	09/26/2019	4.43	<0.000367	0.307	<0.000630	4.74
	12/07/2019	1.12	<0.000367	0.0564	<0.000630	1.18

Table 2 - Groundwater Analytical Data - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Date Sampled	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Total BTEX (mg/L)
MW-11	03/08/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	05/24/2016	<0.000223	<0.000238	<0.000238	<0.000243	-
	09/08/2016	<0.000504	<0.000621	<0.000763	<0.000256	-
	12/05/2016	<0.000408	<0.00100	<0.000657	<0.000642	-
	03/08/2017	0.000720 J	<0.000367	<0.000657	<0.000630	0.000720 J
	06/13/2017	0.00424	<0.00100	<0.000657	<0.000642	0.00424
	09/14/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/18/2017	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	03/26/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	06/12/2018	0.00270	<0.000512	<0.000616	<0.000270	0.00270
	09/11/2018	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/11/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	03/14/2019	0.0101	<0.000367	0.00173	0.00146	0.0133
	06/10/2019	<0.000378	<0.00034	<0.000609	<0.000584	<0.00034
	09/26/2019	0.0429	<0.000367	0.00902	<0.000630	0.0519
MW-12	12/07/2019	0.000820	0.000440	<0.000657	<0.000630	0.00126
	03/08/2016	1.88	<0.0119	<0.0119	<0.0122	-
	05/24/2016	0.634	<0.0119	<0.0119	<0.0122	-
	09/08/2016	0.162	<0.0329	<0.0404	<0.0136	-
	12/05/2016	0.0577	<0.00100	<0.000657	<0.000642	-
	03/08/2017	0.117	<0.0184	<0.0329	<0.0315	0.117
	06/13/2017	0.00768	<0.00100	<0.000657	<0.000642	0.00768
	09/14/2017	0.00496	<0.000367	0.00168 J	<0.000630	0.00664
	12/18/2017	0.0304	<0.000367	0.00627	0.00146 J	0.0381
	03/26/2018	0.000570 J	0.00103 J	<0.000657	<0.000630	0.00160 J
	06/12/2018	0.00130	<0.000512	<0.000616	0.000700 J	0.00200
	09/11/2018	0.00136 J	<0.000367	<0.000657	<0.000630	0.00136 J
	12/11/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	03/14/2019	0.000950	<0.000367	<0.000657	<0.00063	0.000950
	06/10/2019	<0.00037	<0.000333	<0.000596	<0.000571	<0.000333
MW-15	09/26/2019	0.00564	<0.000367	<0.000657	<0.000630	0.00564
	12/07/2019	0.000680	<0.000367	<0.000657	0.000640	0.00132
	09/11/2018	0.00374	0.00324	0.0468	0.0637	0.117
	12/12/2018	0.00280	<0.000512	0.0474	0.0510	0.101
	03/15/2019	0.00886	<0.000367	0.0254	0.0257	0.0599
	06/10/2019	0.0122	<0.000336	0.0954	0.0691	0.177
MW-16	09/26/2019	<0.000408	<0.000367	0.0251	0.0161	0.0412
	12/07/2019	0.00162	<0.000367	0.0624	0.0369	0.101
	09/11/2018	0.0101	0.00839	0.0242	0.0314	0.0741
	12/12/2018	0.00230	0.00120	0.00890	0.0150	0.0274
	03/15/2019	0.00408	0.00222	0.00551	0.0114	0.0232
	06/10/2019	<0.000377	<0.000339	<0.000607	<0.000582	<0.000339
	09/26/2019	<0.000408	<0.000367	<0.000657	<0.000630	<0.000367
	12/07/2019	0.000470	<0.000367	0.00598	0.00577	0.0122

Table 2 - Groundwater Analytical Data - Historical
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Date Sampled	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Total BTEX (mg/L)
MW-18	03/08/2016	0.267	<0.000238	0.000900 J	0.000500 J	-
	05/24/2016	0.0108	<0.000238	0.000800 J	0.000800 J	-
	09/08/2016	0.0715	<0.000621	0.00530	0.00610	-
	12/05/2016	0.264	<0.00100	<0.000657	<0.000642	-
	03/08/2017	0.513	<0.0184	<0.0329	<0.0315	0.513
	06/13/2017	5.45	<0.0250	<0.0164	<0.0161	5.45
	09/14/2017	0.582 D	<0.000367	0.00167 J	0.00118 J	0.585
	12/18/2017	6.82 D	<0.000367	0.00507	0.0241	6.85
	03/26/2018	3.50	0.00760 J	<0.0131	0.0132 J	3.52
	06/12/2018	3.09	<0.0256	<0.0308	<0.0135	3.09
	09/11/2018	0.0801	<0.000367	<0.000657	0.00463	0.0847
	12/11/2018	0.0310	<0.000512	<0.000616	<0.000270	0.0310
	03/14/2019	<0.000408	<0.000367	<0.000657	<0.00063	<0.000367
	06/10/2019	<0.00038	<0.000342	<0.000612	<0.000586	<0.000342
MW-19	09/25/2019	0.395	0.0145	0.00727	<0.000630	0.417
	12/07/2019	0.122	0.00273	0.00199	0.0109	0.138
	09/11/2018	2.41 D	<0.000367	<0.000657	<0.000630	2.41
	12/11/2018	6.07	<0.0102	<0.0123	<0.00540	6.07
	03/14/2019	2.11	<0.000367	<0.000657	<0.00063	2.11
	06/10/2019	0.302	<0.000367	<0.000657	<0.00063	0.302
MW-20	09/25/2019	3.99	<0.000367	0.00585	<0.000630	4.00
	12/07/2019	0.00180	0.000720	0.00206	0.00447	0.00905
	09/11/2018	0.00373	<0.000367	<0.000657	<0.000630	0.00373
	12/11/2018	<0.000480	<0.000512	<0.000616	<0.000270	<0.000270
	03/14/2019	0.00741	<0.000367	<0.000657	<0.00063	0.00741
	06/10/2019	0.0373	<0.000367	<0.000657	<0.00063	0.0373
	09/25/2019	0.0606	<0.000367	<0.000657	<0.000630	0.0606
	12/07/2019	2.24	0.00218	0.00376	0.00340	2.25

Notes:

Lab Flags noted next to values. See lab report for description.

Analyte concentration exceeds the standard for:

NMOC - Groundwater

Table 3 - Groundwater Analytical Data - Historical - PAH supplement
 Lovington Deep 6 inch
 Hobbs, NM
 SRS#: 2002-10312

Sample ID	Date Sampled	Acenaphthene (mg/l)	Acenaphthylene (mg/l)	Anthracene (mg/l)	Benzo(a)anthracene (mg/l)	Benzo(a)pyrene (mg/l)	Benzo(b)fluoranthene (mg/l)	Benzo(g,h,i)perylene (mg/l)	Benzo(k)fluoranthene (mg/l)	Chrysene (mg/l)	Dibenz(a,h)anthracene (mg/l)	Dibenzofuran (mg/l)	Fluoranthene (mg/l)	Fluorene (mg/l)	Indeno (1,2,3-c,d) pyrene (mg/l)	Naphthalene (mg/l)	Phenanthrene (mg/l)	Pyrene (mg/l)
NMOCD - Groundwater		-	-	-	-	0.007	-	-	-	-	-	-	-	-	-	0.03	-	-
MW-4	03/26/2018	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	<0.000109	0.000136 J	<0.000109	<0.000109
	03/15/2019	<0.0000041	<0.0000073	<0.0000076	<0.0000063	<0.0000095	<0.0000091	<0.0000080	<0.0000078	<0.0000088	<0.0000049	<0.0000053	<0.0000090	<0.0000055	<0.0000049	0.000122	<0.0000055	<0.0000092
MW-10	12/05/2016	0.000155	<0.0000250	<0.0000250	<0.0000250	<0.0000250	<0.0000250	<0.0000250	<0.0000250	<0.0000250	<0.0000250	0.000214	<0.0000250	0.000465	<0.0000250	<0.0000250	0.000296	<0.0000250
	03/26/2018	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	0.000985	<0.000110	0.00167	<0.000110	0.000329 J	0.00129	<0.000110
	03/14/2019	<0.0000040	<0.0000072	<0.0000075	<0.0000063	<0.0000095	<0.0000090	<0.0000079	<0.0000077	<0.0000087	<0.0000049	0.000142	<0.0000089	0.000255	<0.0000049	0.0000739	0.0000810	<0.0000091
MW-12	12/05/2016	<0.0000250	<0.0000250	<0.0000250	<0.0000250	<0.0000250	<0.0000250	<0.0000250	<0.0000250	<0.0000250	<0.0000250	0.000110	<0.0000250	0.000505	<0.0000250	<0.0000250	0.000122	0.0000626
	03/26/2018	<0.000108	<0.000108	<0.000108	<0.000108	<0.000108	<0.000108	<0.000108	<0.000108	<0.000108	<0.000108	0.000241	<0.000108	0.000473	<0.000108	0.000247 J	<0.000108	<0.000108
	03/14/2019	<0.0000041	<0.0000073	<0.0000076	<0.0000063	<0.0000095	<0.0000091	<0.0000080	<0.0000078	<0.0000088	<0.0000049	0.000157	<0.0000090	0.000322	<0.0000049	<0.0000045	<0.0000055	<0.0000092
MW-18	03/08/2016	<0.0000329	<0.0000575	<0.0000318	<0.0000714	<0.0000414	<0.0000703	<0.0000514	<0.0000555	<0.0000803	<0.0000556	<0.0000601	<0.0000632	<0.0000780	<0.0000532	<0.0000649	<0.0000511	<0.0000411
	03/26/2018	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	<0.000110	0.000829	<0.000110	<0.000110	<0.000110	0.000447	0.000388	<0.000110
	03/14/2019	<0.0000041	<0.0000073	<0.0000076	<0.0000063	<0.0000095	<0.0000091	<0.0000080	<0.0000078	<0.0000088	<0.0000049	0.0000305	<0.0000090	0.0000255	<0.0000049	0.0000325	<0.0000055	<0.0000092
MW-19	03/14/2019	<0.0000042	<0.0000075	<0.0000077	<0.0000065	<0.0000097	<0.0000093	<0.0000081	<0.0000079	<0.0000090	<0.0000050	<0.0000054	<0.0000091	<0.0000056	<0.0000050	<0.0000046	<0.0000056	<0.0000094
MW-20	03/14/2019	<0.0000041	<0.0000074	<0.0000077	<0.0000064	<0.0000096	<0.0000092	<0.0000080	<0.0000079	<0.0000089	<0.0000005	<0.0000054	<0.0000090	<0.0000055	<0.0000005	0.0000398	<0.0000056	<0.0000093

Notes:
 Lab Flags noted next to values. See lab report for description.

Analyte concentration exceeds the standard for:

NMOCD - Groundwater

APPENDIX C

Laboratory Analytical Data Reports and Chain of Custody Documentation



Analytical Report 617905

for

Talon LPE

Project Manager: David Adkins

Lovington Deep

700376.051.54

03.26.2019

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)



03.26.2019

Project Manager: **David Adkins**

Talon LPE

921 N Bivins St

Amarillo, TX 79107-0749

Reference: XENCO Report No(s): **617905**

Lovington Deep

Project Address:

David Adkins:

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) 617905. 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. 617905 will be filed for 45 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,

A handwritten signature in black ink that reads 'Wendy Walfoort'. The signature is written in a cursive, flowing style.

Wendy Walfoort

Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 617905

Talon LPE, Amarillo, TX

Lovington Deep

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-18	W	03.14.2019 12:30		617905-001
MW-20	W	03.14.2019 13:25		617905-002
MW-19	W	03.14.2019 13:55		617905-003
MW-6	W	03.14.2019 14:25		617905-004
MW-9	W	03.14.2019 14:50		617905-005
MW-10	W	03.14.2019 15:15		617905-006
MW-11	W	03.14.2019 15:42		617905-007
MW-7	W	03.14.2019 15:50		617905-008
MW-12	W	03.14.2019 15:56		617905-009
MW-1	W	03.15.2019 09:30		617905-010
MW-15	W	03.15.2019 10:05		617905-011
MW-8	W	03.15.2019 10:15		617905-012
MW-5	W	03.15.2019 10:30		617905-013
MW-16	W	03.15.2019 10:35		617905-014
MW-3	W	03.15.2019 10:45		617905-015
MW-4	W	03.15.2019 10:50		617905-016



CASE NARRATIVE

Client Name: Talon LPE

Project Name: Lovington Deep

Project ID: 700376.051.54
Work Order Number(s): 617905

Report Date: 03.26.2019
Date Received: 03.18.2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX
Lovington Deep

Sample Id: **MW-18**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-001

Date Collected: 03.14.2019 12:30

Date Received: 03.18.2019 07:45

Analytical Method: PAHs by 8270D SIM

Prep Method: 3510C

Analyst: EKL

% Moist:

Tech: EKL

Seq Number: 3082718

Date Prep: 03.19.2019 13:00

Subcontractor: SUB: T104704215-19-29

Prep seq: 7673759

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Acenaphthene	83-32-9	<0.00000410	0.0000500	0.00000408	mg/L	03.20.2019 14:56	U	1
Acenaphthylene	208-96-8	<0.00000730	0.0000500	0.00000731	mg/L	03.20.2019 14:56	U	1
Anthracene	120-12-7	<0.00000760	0.0000500	0.00000757	mg/L	03.20.2019 14:56	U	1
Benzo(a)anthracene	56-55-3	<0.00000630	0.0000500	0.00000632	mg/L	03.20.2019 14:56	U	1
Benzo(a)pyrene	50-32-8	<0.00000960	0.0000500	0.00000955	mg/L	03.20.2019 14:56	U	1
Benzo(b)fluoranthene	205-99-2	<0.00000910	0.0000500	0.00000907	mg/L	03.20.2019 14:56	U	1
Benzo(g,h,i)perylene	191-24-2	<0.00000800	0.0000500	0.00000796	mg/L	03.20.2019 14:56	U	1
Benzo(k)fluoranthene	207-08-9	<0.00000780	0.0000500	0.00000779	mg/L	03.20.2019 14:56	U	1
Chrysene	218-01-9	<0.00000880	0.0000500	0.00000880	mg/L	03.20.2019 14:56	U	1
Dibenz(a,h)anthracene	53-70-3	<0.00000500	0.0000500	0.00000495	mg/L	03.20.2019 14:56	U	1
Dibenzofuran	132-64-9	0.0000305	0.0000500	0.00000530	mg/L	03.20.2019 14:56	J	1
Fluoranthene	206-44-0	<0.00000900	0.0000500	0.00000896	mg/L	03.20.2019 14:56	U	1
Fluorene	86-73-7	0.0000255	0.0000500	0.00000546	mg/L	03.20.2019 14:56	J	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.00000500	0.0000500	0.00000495	mg/L	03.20.2019 14:56	U	1
Naphthalene	91-20-3	0.0000325	0.0000500	0.00000451	mg/L	03.20.2019 14:56	J	1
Phenanthrene	85-01-8	<0.00000550	0.0000500	0.00000550	mg/L	03.20.2019 14:56	U	1
Pyrene	129-00-0	<0.00000920	0.0000500	0.00000920	mg/L	03.20.2019 14:56	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Nitrobenzene-d5	80	41 - 128	%		
2-Fluorobiphenyl	80	55 - 135	%		
Terphenyl-D14	98	54 - 131	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX
Lovington Deep

Sample Id: **MW-18**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-001

Date Collected: 03.14.2019 12:30

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	03.25.2019 10:59	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 10:59	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	03.25.2019 10:59	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 10:59	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 10:59	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	03.25.2019 10:59	U	
Total BTEX		<0.000367		0.000367	mg/L	03.25.2019 10:59	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	117	70 - 130	%		
4-Bromofluorobenzene	114	70 - 130	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX
Lovington Deep

Sample Id: **MW-20**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-002

Date Collected: 03.14.2019 13:25

Date Received: 03.18.2019 07:45

Analytical Method: PAHs by 8270D SIM

Prep Method: 3510C

Analyst: EKL

% Moist:

Tech: EKL

Seq Number: 3082718

Date Prep: 03.19.2019 13:03

Subcontractor: SUB: T104704215-19-29

Prep seq: 7673759

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Acenaphthene	83-32-9	<0.00000410	0.0000505	0.00000412	mg/L	03.20.2019 10:57	U	1
Acenaphthylene	208-96-8	<0.00000740	0.0000505	0.00000738	mg/L	03.20.2019 10:57	U	1
Anthracene	120-12-7	<0.00000770	0.0000505	0.00000765	mg/L	03.20.2019 10:57	U	1
Benzo(a)anthracene	56-55-3	<0.00000640	0.0000505	0.00000638	mg/L	03.20.2019 10:57	U	1
Benzo(a)pyrene	50-32-8	<0.00000970	0.0000505	0.00000965	mg/L	03.20.2019 10:57	U	1
Benzo(b)fluoranthene	205-99-2	<0.00000920	0.0000505	0.00000916	mg/L	03.20.2019 10:57	U	1
Benzo(g,h,i)perylene	191-24-2	<0.00000800	0.0000505	0.00000804	mg/L	03.20.2019 10:57	U	1
Benzo(k)fluoranthene	207-08-9	<0.00000790	0.0000505	0.00000787	mg/L	03.20.2019 10:57	U	1
Chrysene	218-01-9	<0.00000890	0.0000505	0.00000889	mg/L	03.20.2019 10:57	U	1
Dibenz(a,h)anthracene	53-70-3	<0.00000500	0.0000505	0.00000500	mg/L	03.20.2019 10:57	U	1
Dibenzofuran	132-64-9	<0.00000540	0.0000505	0.00000536	mg/L	03.20.2019 10:57	U	1
Fluoranthene	206-44-0	<0.00000910	0.0000505	0.00000905	mg/L	03.20.2019 10:57	U	1
Fluorene	86-73-7	<0.00000550	0.0000505	0.00000551	mg/L	03.20.2019 10:57	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.00000500	0.0000505	0.00000500	mg/L	03.20.2019 10:57	U	1
Naphthalene	91-20-3	0.0000398	0.0000505	0.00000455	mg/L	03.20.2019 10:57	J	1
Phenanthrene	85-01-8	<0.00000560	0.0000505	0.00000556	mg/L	03.20.2019 10:57	U	1
Pyrene	129-00-0	<0.00000930	0.0000505	0.00000929	mg/L	03.20.2019 10:57	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Nitrobenzene-d5	88	41 - 128	%		
2-Fluorobiphenyl	92	55 - 135	%		
Terphenyl-D14	98	54 - 131	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX

Lovington Deep

Sample Id: **MW-20**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-002

Date Collected: 03.14.2019 13:25

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00741	0.00200	0.000408	mg/L	03.25.2019 11:19		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 11:19	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	03.25.2019 11:19	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 11:19	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 11:19	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	03.25.2019 11:19	U	
Total BTEX		0.00741		0.000367	mg/L	03.25.2019 11:19		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	117	70 - 130	%		
4-Bromofluorobenzene	115	70 - 130	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX

Lovington Deep

Sample Id: MW-19

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-003

Date Collected: 03.14.2019 13:55

Date Received: 03.18.2019 07:45

Analytical Method: PAHs by 8270D SIM

Prep Method: 3510C

Analyst: EKL

% Moist:

Tech: EKL

Seq Number: 3082718

Date Prep: 03.19.2019 13:06

Subcontractor: SUB: T104704215-19-29

Prep seq: 7673759

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Acenaphthene	83-32-9	<0.00000420	0.0000510	0.00000417	mg/L	03.20.2019 11:15	U	1
Acenaphthylene	208-96-8	<0.00000750	0.0000510	0.00000746	mg/L	03.20.2019 11:15	U	1
Anthracene	120-12-7	<0.00000770	0.0000510	0.00000773	mg/L	03.20.2019 11:15	U	1
Benzo(a)anthracene	56-55-3	<0.00000650	0.0000510	0.00000645	mg/L	03.20.2019 11:15	U	1
Benzo(a)pyrene	50-32-8	<0.00000980	0.0000510	0.00000975	mg/L	03.20.2019 11:15	U	1
Benzo(b)fluoranthene	205-99-2	<0.00000930	0.0000510	0.00000926	mg/L	03.20.2019 11:15	U	1
Benzo(g,h,i)perylene	191-24-2	<0.00000810	0.0000510	0.00000813	mg/L	03.20.2019 11:15	U	1
Benzo(k)fluoranthene	207-08-9	<0.00000800	0.0000510	0.00000795	mg/L	03.20.2019 11:15	U	1
Chrysene	218-01-9	<0.00000900	0.0000510	0.00000898	mg/L	03.20.2019 11:15	U	1
Dibenz(a,h)anthracene	53-70-3	<0.00000510	0.0000510	0.00000505	mg/L	03.20.2019 11:15	U	1
Dibenzofuran	132-64-9	<0.00000540	0.0000510	0.00000541	mg/L	03.20.2019 11:15	U	1
Fluoranthene	206-44-0	<0.00000920	0.0000510	0.00000915	mg/L	03.20.2019 11:15	U	1
Fluorene	86-73-7	<0.00000560	0.0000510	0.00000557	mg/L	03.20.2019 11:15	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.00000510	0.0000510	0.00000505	mg/L	03.20.2019 11:15	U	1
Naphthalene	91-20-3	<0.00000460	0.0000510	0.00000460	mg/L	03.20.2019 11:15	U	1
Phenanthrene	85-01-8	<0.00000560	0.0000510	0.00000562	mg/L	03.20.2019 11:15	U	1
Pyrene	129-00-0	<0.00000940	0.0000510	0.00000939	mg/L	03.20.2019 11:15	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Nitrobenzene-d5	86	41 - 128	%		
2-Fluorobiphenyl	88	55 - 135	%		
Terphenyl-D14	99	54 - 131	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX

Lovington Deep

Sample Id: **MW-19**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-003

Date Collected: 03.14.2019 13:55

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	2.11	0.200	0.0408	mg/L	03.25.2019 16:22	D	100
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 12:15	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	03.25.2019 12:15	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 12:15	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 12:15	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	03.25.2019 12:15	U	
Total BTEX		2.11		0.000367	mg/L	03.25.2019 16:22		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	122	70 - 130	%		
4-Bromofluorobenzene	109	70 - 130	%		

Sample Id: **MW-6**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-004

Date Collected: 03.14.2019 14:25

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00396	0.00200	0.000408	mg/L	03.25.2019 12:34		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 12:34	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	03.25.2019 12:34	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 12:34	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 12:34	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	03.25.2019 12:34	U	
Total BTEX		0.00396		0.000367	mg/L	03.25.2019 12:34		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	115	70 - 130	%		
4-Bromofluorobenzene	110	70 - 130	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX

Lovington Deep

Sample Id: **MW-9**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-005

Date Collected: 03.14.2019 14:50

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.000930	0.00200	0.000408	mg/L	03.25.2019 12:54	J	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 12:54	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	03.25.2019 12:54	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 12:54	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 12:54	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	03.25.2019 12:54	U	
Total BTEX		0.000930		0.000367	mg/L	03.25.2019 12:54	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	116	70 - 130	%		
4-Bromofluorobenzene	114	70 - 130	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX
Lovington Deep

Sample Id: **MW-10**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-006

Date Collected: 03.14.2019 15:15

Date Received: 03.18.2019 07:45

Analytical Method: PAHs by 8270D SIM

Prep Method: 3510C

Analyst: EKL

% Moist:

Tech: EKL

Seq Number: 3082718

Date Prep: 03.19.2019 13:09

Subcontractor: SUB: T104704215-19-29

Prep seq: 7673759

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Acenaphthene	83-32-9	<0.00000400	0.0000495	0.00000404	mg/L	03.20.2019 16:46	U	1
Acenaphthylene	208-96-8	<0.00000720	0.0000495	0.00000723	mg/L	03.20.2019 16:46	U	1
Anthracene	120-12-7	<0.00000750	0.0000495	0.00000750	mg/L	03.20.2019 16:46	U	1
Benzo(a)anthracene	56-55-3	<0.00000630	0.0000495	0.00000626	mg/L	03.20.2019 16:46	U	1
Benzo(a)pyrene	50-32-8	<0.00000950	0.0000495	0.00000946	mg/L	03.20.2019 16:46	U	1
Benzo(b)fluoranthene	205-99-2	<0.00000900	0.0000495	0.00000898	mg/L	03.20.2019 16:46	U	1
Benzo(g,h,i)perylene	191-24-2	<0.00000790	0.0000495	0.00000788	mg/L	03.20.2019 16:46	U	1
Benzo(k)fluoranthene	207-08-9	<0.00000770	0.0000495	0.00000772	mg/L	03.20.2019 16:46	U	1
Chrysene	218-01-9	<0.00000870	0.0000495	0.00000872	mg/L	03.20.2019 16:46	U	1
Dibenz(a,h)anthracene	53-70-3	<0.00000490	0.0000495	0.00000490	mg/L	03.20.2019 16:46	U	1
Dibenzofuran	132-64-9	0.000142	0.0000495	0.00000525	mg/L	03.20.2019 16:46		1
Fluoranthene	206-44-0	<0.00000890	0.0000495	0.00000888	mg/L	03.20.2019 16:46	U	1
Fluorene	86-73-7	0.000255	0.0000495	0.00000540	mg/L	03.20.2019 16:46		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.00000490	0.0000495	0.00000490	mg/L	03.20.2019 16:46	U	1
Naphthalene	91-20-3	0.0000739	0.000495	0.00000446	mg/L	03.20.2019 16:46	J	1
Phenanthrene	85-01-8	0.0000810	0.0000495	0.00000545	mg/L	03.20.2019 16:46		1
Pyrene	129-00-0	<0.00000910	0.0000495	0.00000911	mg/L	03.20.2019 16:46	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Nitrobenzene-d5	94	41 - 128	%		
2-Fluorobiphenyl	96	55 - 135	%		
Terphenyl-D14	102	54 - 131	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX

Lovington Deep

Sample Id: **MW-10**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-006

Date Collected: 03.14.2019 15:15

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	4.29	0.400	0.0816	mg/L	03.25.2019 20:50		200
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 13:13	U	1
Ethylbenzene	100-41-4	0.142	0.00200	0.000657	mg/L	03.25.2019 13:13		1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 13:13	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 13:13	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	03.25.2019 13:13	U	
Total BTEX		4.43		0.000367	mg/L	03.25.2019 20:50		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	124	70 - 130	%		
4-Bromofluorobenzene	113	70 - 130	%		

Sample Id: **MW-11**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-007

Date Collected: 03.14.2019 15:42

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0101	0.00200	0.000408	mg/L	03.25.2019 13:33		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 13:33	U	1
Ethylbenzene	100-41-4	0.00173	0.00200	0.000657	mg/L	03.25.2019 13:33	J	1
m_p-Xylenes	179601-23-1	0.00146	0.00400	0.000630	mg/L	03.25.2019 13:33	J	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 13:33	U	1
Xylenes, Total	1330-20-7	0.00146		0.000630	mg/L	03.25.2019 13:33	J	
Total BTEX		0.0133		0.000367	mg/L	03.25.2019 13:33		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	116	70 - 130	%		
4-Bromofluorobenzene	109	70 - 130	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX

Lovington Deep

Sample Id: MW-7

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-008

Date Collected: 03.14.2019 15:50

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.000630	0.00200	0.000408	mg/L	03.25.2019 15:20	J	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 15:20	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	03.25.2019 15:20	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 15:20	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 15:20	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	03.25.2019 15:20	U	
Total BTEX		0.000630		0.000367	mg/L	03.25.2019 15:20	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	114	70 - 130	%		
4-Bromofluorobenzene	116	70 - 130	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX

Lovington Deep

Sample Id: MW-12

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-009

Date Collected: 03.14.2019 15:56

Date Received: 03.18.2019 07:45

Analytical Method: PAHs by 8270D SIM

Prep Method: 3510C

Analyst: EKL

% Moist:

Tech: EKL

Seq Number: 3082718

Date Prep: 03.19.2019 13:12

Subcontractor: SUB: T104704215-19-29

Prep seq: 7673759

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Acenaphthene	83-32-9	<0.00000410	0.0000500	0.00000408	mg/L	03.20.2019 11:33	U	1
Acenaphthylene	208-96-8	<0.00000730	0.0000500	0.00000731	mg/L	03.20.2019 11:33	U	1
Anthracene	120-12-7	<0.00000760	0.0000500	0.00000757	mg/L	03.20.2019 11:33	U	1
Benzo(a)anthracene	56-55-3	<0.00000630	0.0000500	0.00000632	mg/L	03.20.2019 11:33	U	1
Benzo(a)pyrene	50-32-8	<0.00000960	0.0000500	0.00000955	mg/L	03.20.2019 11:33	U	1
Benzo(b)fluoranthene	205-99-2	<0.00000910	0.0000500	0.00000907	mg/L	03.20.2019 11:33	U	1
Benzo(g,h,i)perylene	191-24-2	<0.00000800	0.0000500	0.00000796	mg/L	03.20.2019 11:33	U	1
Benzo(k)fluoranthene	207-08-9	<0.00000780	0.0000500	0.00000779	mg/L	03.20.2019 11:33	U	1
Chrysene	218-01-9	<0.00000880	0.0000500	0.00000880	mg/L	03.20.2019 11:33	U	1
Dibenz(a,h)anthracene	53-70-3	<0.00000500	0.0000500	0.00000495	mg/L	03.20.2019 11:33	U	1
Dibenzofuran	132-64-9	0.000157	0.0000500	0.00000530	mg/L	03.20.2019 11:33		1
Fluoranthene	206-44-0	<0.00000900	0.0000500	0.00000896	mg/L	03.20.2019 11:33	U	1
Fluorene	86-73-7	0.000322	0.0000500	0.00000546	mg/L	03.20.2019 11:33		1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.00000500	0.0000500	0.00000495	mg/L	03.20.2019 11:33	U	1
Naphthalene	91-20-3	<0.00000450	0.0000500	0.00000451	mg/L	03.20.2019 11:33	U	1
Phenanthrene	85-01-8	<0.00000550	0.0000500	0.00000550	mg/L	03.20.2019 11:33	U	1
Pyrene	129-00-0	<0.00000920	0.0000500	0.00000920	mg/L	03.20.2019 11:33	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Nitrobenzene-d5	90	41 - 128	%		
2-Fluorobiphenyl	87	55 - 135	%		
Terphenyl-D14	93	54 - 131	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX
Lovington Deep

Sample Id: **MW-12**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-009

Date Collected: 03.14.2019 15:56

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.000950	0.00200	0.000408	mg/L	03.25.2019 15:44	J	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 15:44	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	03.25.2019 15:44	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 15:44	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 15:44	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	03.25.2019 15:44	U	
Total BTEX		0.000950		0.000367	mg/L	03.25.2019 15:44	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	115	70 - 130	%		
4-Bromofluorobenzene	106	70 - 130	%		

Sample Id: **MW-1**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-010

Date Collected: 03.15.2019 09:30

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00442	0.00200	0.000408	mg/L	03.25.2019 16:03		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 16:03	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	03.25.2019 16:03	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 16:03	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 16:03	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	03.25.2019 16:03	U	
Total BTEX		0.00442		0.000367	mg/L	03.25.2019 16:03		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	116	70 - 130	%		
4-Bromofluorobenzene	110	70 - 130	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX
Lovington Deep

Sample Id: **MW-15**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-011

Date Collected: 03.15.2019 10:05

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00886	0.00200	0.000408	mg/L	03.25.2019 17:37		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 17:37	U	1
Ethylbenzene	100-41-4	0.0254	0.00200	0.000657	mg/L	03.25.2019 17:37		1
m_p-Xylenes	179601-23-1	0.0247	0.00400	0.000630	mg/L	03.25.2019 17:37		1
o-Xylene	95-47-6	0.000960	0.00200	0.000642	mg/L	03.25.2019 17:37	J	1
Xylenes, Total	1330-20-7	0.0257		0.000630	mg/L	03.25.2019 17:37		
Total BTEX		0.0599		0.000367	mg/L	03.25.2019 17:37		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	115	70 - 130	%		
4-Bromofluorobenzene	108	70 - 130	%		

Sample Id: **MW-8**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-012

Date Collected: 03.15.2019 10:15

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00530	0.00200	0.000408	mg/L	03.25.2019 17:56		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 17:56	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	03.25.2019 17:56	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 17:56	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 17:56	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	03.25.2019 17:56	U	
Total BTEX		0.00530		0.000367	mg/L	03.25.2019 17:56		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	117	70 - 130	%		
4-Bromofluorobenzene	112	70 - 130	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX
Lovington Deep

Sample Id: **MW-5**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-013

Date Collected: 03.15.2019 10:30

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00692	0.00200	0.000408	mg/L	03.25.2019 18:16		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 18:16	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	03.25.2019 18:16	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 18:16	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 18:16	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	03.25.2019 18:16	U	
Total BTEX		0.00692		0.000367	mg/L	03.25.2019 18:16		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	118	70 - 130	%		
4-Bromofluorobenzene	111	70 - 130	%		

Sample Id: **MW-16**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-014

Date Collected: 03.15.2019 10:35

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00408	0.00200	0.000408	mg/L	03.25.2019 18:35		1
Toluene	108-88-3	0.00222	0.00200	0.000367	mg/L	03.25.2019 18:35		1
Ethylbenzene	100-41-4	0.00551	0.00200	0.000657	mg/L	03.25.2019 18:35		1
m_p-Xylenes	179601-23-1	0.00939	0.00400	0.000630	mg/L	03.25.2019 18:35		1
o-Xylene	95-47-6	0.00199	0.00200	0.000642	mg/L	03.25.2019 18:35	J	1
Xylenes, Total	1330-20-7	0.0114		0.000630	mg/L	03.25.2019 18:35		
Total BTEX		0.0232		0.000367	mg/L	03.25.2019 18:35		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	117	70 - 130	%		
4-Bromofluorobenzene	109	70 - 130	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX

Lovington Deep

Sample Id: MW-3

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-015

Date Collected: 03.15.2019 10:45

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0189	0.00200	0.000408	mg/L	03.25.2019 18:55		1
Toluene	108-88-3	0.00157	0.00200	0.000367	mg/L	03.25.2019 18:55	J	1
Ethylbenzene	100-41-4	0.0822	0.00200	0.000657	mg/L	03.25.2019 18:55		1
m_p-Xylenes	179601-23-1	0.0970	0.00400	0.000630	mg/L	03.25.2019 18:55		1
o-Xylene	95-47-6	0.0228	0.00200	0.000642	mg/L	03.25.2019 18:55		1
Xylenes, Total	1330-20-7	0.120		0.000630	mg/L	03.25.2019 18:55		
Total BTEX		0.222		0.000367	mg/L	03.25.2019 18:55		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	115	70 - 130	%		
4-Bromofluorobenzene	113	70 - 130	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX
Lovington Deep

Sample Id: **MW-4**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-016

Date Collected: 03.15.2019 10:50

Date Received: 03.18.2019 07:45

Analytical Method: PAHs by 8270D SIM

Prep Method: 3510C

Analyst: EKL

% Moist:

Tech: EKL

Seq Number: 3082718

Date Prep: 03.19.2019 13:15

Subcontractor: SUB: T104704215-19-29

Prep seq: 7673759

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Acenaphthene	83-32-9	<0.00000410	0.0000500	0.00000408	mg/L	03.20.2019 12:09	U	1
Acenaphthylene	208-96-8	<0.00000730	0.0000500	0.00000731	mg/L	03.20.2019 12:09	U	1
Anthracene	120-12-7	<0.00000760	0.0000500	0.00000757	mg/L	03.20.2019 12:09	U	1
Benzo(a)anthracene	56-55-3	<0.00000630	0.0000500	0.00000632	mg/L	03.20.2019 12:09	U	1
Benzo(a)pyrene	50-32-8	<0.00000960	0.0000500	0.00000955	mg/L	03.20.2019 12:09	U	1
Benzo(b)fluoranthene	205-99-2	<0.00000910	0.0000500	0.00000907	mg/L	03.20.2019 12:09	U	1
Benzo(g,h,i)perylene	191-24-2	<0.00000800	0.0000500	0.00000796	mg/L	03.20.2019 12:09	U	1
Benzo(k)fluoranthene	207-08-9	<0.00000780	0.0000500	0.00000779	mg/L	03.20.2019 12:09	U	1
Chrysene	218-01-9	<0.00000880	0.0000500	0.00000880	mg/L	03.20.2019 12:09	U	1
Dibenz(a,h)anthracene	53-70-3	<0.00000500	0.0000500	0.00000495	mg/L	03.20.2019 12:09	U	1
Dibenzofuran	132-64-9	<0.00000530	0.0000500	0.00000530	mg/L	03.20.2019 12:09	U	1
Fluoranthene	206-44-0	<0.00000900	0.0000500	0.00000896	mg/L	03.20.2019 12:09	U	1
Fluorene	86-73-7	<0.00000550	0.0000500	0.00000546	mg/L	03.20.2019 12:09	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.00000500	0.0000500	0.00000495	mg/L	03.20.2019 12:09	U	1
Naphthalene	91-20-3	0.000122	0.000500	0.00000451	mg/L	03.20.2019 12:09	J	1
Phenanthrene	85-01-8	<0.00000550	0.0000500	0.00000550	mg/L	03.20.2019 12:09	U	1
Pyrene	129-00-0	<0.00000920	0.0000500	0.00000920	mg/L	03.20.2019 12:09	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Nitrobenzene-d5	90	41 - 128	%		
2-Fluorobiphenyl	90	55 - 135	%		
Terphenyl-D14	103	54 - 131	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX
Lovington Deep

Sample Id: **MW-4**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 617905-016

Date Collected: 03.15.2019 10:50

Date Received: 03.18.2019 07:45

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	03.25.2019 19:14	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 19:14	U	1
Ethylbenzene	100-41-4	0.000980	0.00200	0.000657	mg/L	03.25.2019 19:14	J	1
m_p-Xylenes	179601-23-1	0.00107	0.00400	0.000630	mg/L	03.25.2019 19:14	J	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 19:14	U	1
Xylenes, Total	1330-20-7	0.00107		0.000630	mg/L	03.25.2019 19:14	J	
Total BTEX		0.00205		0.000367	mg/L	03.25.2019 19:14		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	118	70 - 130	%		
4-Bromofluorobenzene	110	70 - 130	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX
Lovington Deep

Sample Id: 7673759-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7673759-1-BLK

Date Collected:

Date Received:

Analytical Method: PAHs by 8270D SIM

Prep Method: 3510C

Analyst: EKL

% Moist:

Tech: EKL

Seq Number: 3082718

Date Prep: 03.18.2019 14:00

Subcontractor: SUB: T104704215-19-29

Prep seq: 7673759

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Acenaphthene	83-32-9	<0.00000410	0.0000500	0.00000408	mg/L	03.18.2019 20:21	U	1
Acenaphthylene	208-96-8	<0.00000730	0.0000500	0.00000731	mg/L	03.18.2019 20:21	U	1
Anthracene	120-12-7	<0.00000760	0.0000500	0.00000757	mg/L	03.18.2019 20:21	U	1
Benzo(a)anthracene	56-55-3	<0.00000630	0.0000500	0.00000632	mg/L	03.18.2019 20:21	U	1
Benzo(a)pyrene	50-32-8	<0.00000960	0.0000500	0.00000955	mg/L	03.18.2019 20:21	U	1
Benzo(b)fluoranthene	205-99-2	<0.00000910	0.0000500	0.00000907	mg/L	03.18.2019 20:21	U	1
Benzo(g,h,i)perylene	191-24-2	<0.00000800	0.0000500	0.00000796	mg/L	03.18.2019 20:21	U	1
Benzo(k)fluoranthene	207-08-9	<0.00000780	0.0000500	0.00000779	mg/L	03.18.2019 20:21	U	1
Chrysene	218-01-9	<0.00000880	0.0000500	0.00000880	mg/L	03.18.2019 20:21	U	1
Dibenz(a,h)anthracene	53-70-3	<0.00000500	0.0000500	0.00000495	mg/L	03.18.2019 20:21	U	1
Dibenzofuran	132-64-9	<0.00000530	0.0000500	0.00000530	mg/L	03.18.2019 20:21	U	1
Fluoranthene	206-44-0	<0.00000900	0.0000500	0.00000896	mg/L	03.18.2019 20:21	U	1
Fluorene	86-73-7	<0.00000550	0.0000500	0.00000546	mg/L	03.18.2019 20:21	U	1
Indeno(1,2,3-c,d)Pyrene	193-39-5	<0.00000500	0.0000500	0.00000495	mg/L	03.18.2019 20:21	U	1
Naphthalene	91-20-3	<0.00000450	0.0000500	0.00000451	mg/L	03.18.2019 20:21	U	1
Phenanthrene	85-01-8	<0.00000550	0.0000500	0.00000550	mg/L	03.18.2019 20:21	U	1
Pyrene	129-00-0	<0.00000920	0.0000500	0.00000920	mg/L	03.18.2019 20:21	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Nitrobenzene-d5	89	41 - 128	%		
2-Fluorobiphenyl	84	55 - 135	%		
Terphenyl-D14	105	54 - 131	%		



Certificate of Analytical Results

617905

Talon LPE, Amarillo, TX
Lovington Deep

Sample Id: 7674309-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7674309-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: SCM

% Moist:

Tech: SCM

Seq Number: 3083323

Date Prep: 03.24.2019 13:15

Prep seq: 7674309

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	03.25.2019 10:35	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	03.25.2019 10:35	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	03.25.2019 10:35	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	03.25.2019 10:35	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	03.25.2019 10:35	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	115	70 - 130	%		
4-Bromofluorobenzene	111	70 - 130	%		

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ 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: Lovington Deep

Work Orders : 617905

Project ID: 700376.051.54

Lab Batch #: 3083323

Sample: 7674309-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03.25.2019 09:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0320	0.0300	107	70-130	
4-Bromofluorobenzene	0.0307	0.0300	102	70-130	

Lab Batch #: 3083323

Sample: 7674309-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03.25.2019 09:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0321	0.0300	107	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

Lab Batch #: 3083323

Sample: 617905-001 S / MS

Batch: 1 Matrix: Ground Water

Units: mg/L

Date Analyzed: 03.25.2019 09:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0323	0.0300	108	70-130	
4-Bromofluorobenzene	0.0306	0.0300	102	70-130	

Lab Batch #: 3083323

Sample: 617905-001 SD / MSD

Batch: 1 Matrix: Ground Water

Units: mg/L

Date Analyzed: 03.25.2019 09:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0328	0.0300	109	70-130	
4-Bromofluorobenzene	0.0299	0.0300	100	70-130	

Lab Batch #: 3083323

Sample: 7674309-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03.25.2019 10:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0345	0.0300	115	70-130	
4-Bromofluorobenzene	0.0333	0.0300	111	70-130	

* 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: Lovington Deep

Work Orders : 617905

Project ID: 700376.051.54

Lab Batch #: 3082718

Sample: 7673759-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03.18.2019 20:21

SURROGATE RECOVERY STUDY

PAHs by 8270D SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Nitrobenzene-d5	0.886	1.00	89	41-128	
2-Fluorobiphenyl	0.841	1.00	84	55-135	
Terphenyl-D14	1.05	1.00	105	54-131	

Lab Batch #: 3082718

Sample: 7673759-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03.18.2019 20:39

SURROGATE RECOVERY STUDY

PAHs by 8270D SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Nitrobenzene-d5	0.894	1.00	89	41-128	
2-Fluorobiphenyl	0.844	1.00	84	55-135	
Terphenyl-D14	1.06	1.00	106	54-131	

Lab Batch #: 3082718

Sample: 7673759-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 03.18.2019 20:57

SURROGATE RECOVERY STUDY

PAHs by 8270D SIM Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Nitrobenzene-d5	0.978	1.00	98	41-128	
2-Fluorobiphenyl	1.05	1.00	105	55-135	
Terphenyl-D14	1.05	1.00	105	54-131	

* 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: Lovington Deep

Work Order #: 617905

Analyst: SCM

Lab Batch ID: 3083323

Units: mg/L

Date Prepared: 03.24.2019

Sample: 7674309-1-BKS

Batch #: 1

Project ID: 700376.051.54

Date Analyzed: 03.25.2019

Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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
Analytes											
Benzene	<0.000408	0.100	0.0932	93	0.100	0.0863	86	8	70-130	25	
Toluene	<0.000367	0.100	0.103	103	0.100	0.0986	99	4	70-130	25	
Ethylbenzene	<0.000657	0.100	0.0881	88	0.100	0.0857	86	3	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.171	86	0.200	0.171	86	0	70-130	25	
o-Xylene	<0.000642	0.100	0.0870	87	0.100	0.0878	88	1	70-130	25	

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



BS / BSD Recoveries

Project Name: Lovington Deep

Work Order #: 617905

Analyst: EKL

Lab Batch ID: 3082718

Units: mg/L

Date Prepared: 03.18.2019

Sample: 7673759-1-BKS

Batch #: 1

Project ID: 700376.051.54

Date Analyzed: 03.18.2019

Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

PAHs by 8270D SIM	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
Analytes											
Acenaphthene	<0.00000410	0.00100	0.000780	78	0.00100	0.000918	92	16	37-117	25	
Acenaphthylene	<0.00000730	0.00100	0.000784	78	0.00100	0.000914	91	15	37-119	25	
Anthracene	<0.00000760	0.00100	0.000834	83	0.00100	0.000923	92	10	45-121	25	
Benzo(a)anthracene	<0.00000630	0.00100	0.000922	92	0.00100	0.000962	96	4	51-113	25	
Benzo(a)pyrene	<0.00000960	0.00100	0.00102	102	0.00100	0.000999	100	2	45-127	25	
Benzo(b)fluoranthene	<0.00000910	0.00100	0.000958	96	0.00100	0.000994	99	4	56-110	25	
Benzo(g,h,i)perylene	<0.00000800	0.00100	0.000807	81	0.00100	0.000759	76	6	47-122	25	
Benzo(k)fluoranthene	<0.00000780	0.00100	0.00104	104	0.00100	0.00108	108	4	58-123	25	
Chrysene	<0.00000880	0.00100	0.000896	90	0.00100	0.000929	93	4	52-113	25	
Dibenz(a,h)anthracene	<0.00000500	0.00100	0.000795	80	0.00100	0.000826	83	4	48-126	25	
Dibenzofuran	<0.00000530	0.00100	0.000778	78	0.00100	0.000926	93	17	38-118	25	
Fluoranthene	<0.00000900	0.00100	0.000939	94	0.00100	0.00101	101	7	51-124	25	
Fluorene	<0.00000550	0.00100	0.000784	78	0.00100	0.000907	91	15	42-116	25	
Indeno(1,2,3-c,d)Pyrene	<0.00000500	0.00100	0.000799	80	0.00100	0.000818	82	2	48-123	25	
Naphthalene	<0.00000450	0.00100	0.000773	77	0.00100	0.000892	89	14	35-116	25	
Phenanthrene	<0.00000550	0.00100	0.000838	84	0.00100	0.000934	93	11	46-113	25	
Pyrene	<0.00000920	0.00100	0.000970	97	0.00100	0.00101	101	4	47-124	25	

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 / MSD Recoveries

Project Name: Lovington Deep

Work Order #: 617905

Lab Batch ID: 3083323

Date Analyzed: 03.25.2019

Reporting Units: mg/L

Project ID: 700376.051.54

QC- Sample ID: 617905-001 S

Batch #: 1 Matrix: Ground Water

Date Prepared: 03.24.2019

Analyst: SCM

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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
Benzene	<0.000408	0.100	0.122	122	0.100	0.121	121	1	70-130	25	
Toluene	<0.000367	0.100	0.118	118	0.100	0.113	113	4	70-130	25	
Ethylbenzene	<0.000657	0.100	0.101	101	0.100	0.0958	96	5	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.191	96	0.200	0.181	91	5	70-130	25	
o-Xylene	<0.000642	0.100	0.0961	96	0.100	0.0919	92	4	70-130	25	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

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

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.



Chain of Custody

Work Order No: 1017905

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

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Project Manager:	David Adkins	Bill to: (if different)	PLAIN ALL AMERICAN
Company Name:	Talon	Company Name:	PIPELINE
Address:	408 W. Texas Ave.	Address:	ATTN: CAMILLE BEYANT
City, State ZIP:	Artesia, NM 88210	City, State ZIP:	SR5 #
Phone:	575-616-4022 or 575-746-8905	Email:	dadkins@talonpc.com

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
State of Project:	
Reporting Level: I ☐ II ☐ III ☐ PST/UST ☐ RRP ☐ Level IV ☐	Deliverables: EDD ☐ ADAPT ☐ Other:

Project Name:	LDVINTON DEEP	Turn Around	☒	ANALYSIS REQUEST																Work Order Notes						
Project Number:	100374.051.54	Routine	☒																							
P.O. Number:	5RS # 2002-10312	Rush:																								
Sampler's Name:	MICHAEL COWIE	Due Date:																								
SAMPLE RECEIPT				Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒																			
Temperature (°C):	30.29	Thermometer ID:																								
Received Intact:	Yes ☒ No ☐	Correction Factor:	0.1																							
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:																								
Sample Custody Seals:	Yes ☒ No ☐ N/A																									
Sample Identification				Matrix	Date Sampled	Time Sampled	Depth	Number of Containers																		
MW-18	6W	3/14/19	12:30pm	N/A	4	X	X	X																		
MW-20			1:25pm		4	X	X	X																	EMAIL ANALYTICALS TO	
MW-19			1:55pm		4	X	X	X																		
MW-6			2:25pm		3	X	X	X																	CAMILLE BEYANT	
MW-9			2:50pm		3	X	X	X																		
MW-10			3:15pm		4	X	X	X																		
MW-11			3:42pm		3	X	X	X																		
MW-7			3:50pm		3	X	X	X																		
MW-12			3:56pm		4	X	X	X																		
MW-1			3:51pm		3	X	X	X																		

Total 200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO2	Na	Sr	Ti	Sn	U	V	Zn				
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010:		8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U																

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1. <i>[Signature]</i>	2. <i>[Signature]</i>	3/15/19 4:15	3. <i>[Signature]</i>	4. <i>[Signature]</i>	3/18/19 8:45
5			6		



Chain of Custody

Work Order No: 617915

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

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Project Manager:	David Adkins	Bill to: (if different)	PLANS ALL AMERICAN
Company Name:	Talon	Company Name:	PLANS ALL AMERICAN
Address:	408 W. Texas Ave.	Address:	ATTN: CAMILLE BRYANT
City, State ZIP:	Artesia, NM 88210	City, State ZIP:	SECS #
Phone:	575-616-4022 or 575-746-8905	Email:	dackins@talonpe.com

Program: UST/ST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	Work Order Comments
State of Project:	
Reporting Level: I ☐ II ☐ III ☐ IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

Project Name:	LOVINOTON DEEP	Turn Around		ANALYSIS REQUEST																Work Order Notes							
Project Number:	700376, 051, 54	Routine ☒																									
P.O. Number:	SRCS# 2002-10312	Rush:																									
Sampler's Name:	MICHAEL COLLIER	Due Date:																									
SAMPLE RECEIPT				Temp Blank:	Yes ☐ No ☒	Wet Ice:	Yes ☐ No ☒																				
Temperature (°C):				3.0/29	Thermometer ID																						
Received intact:				Yes ☒ No ☐	Correction Factor:																						
Cooler Custody Seals:				Yes ☐ No ☒	Total Containers:																						
Sample Custody Seals:				Yes ☐ No ☒																							
Sample Identification				Matrix	Date Sampled	Time Sampled	Depth	Number of Containers																TAT starts the day received by the lab, if received by 4:30pm			
								BTEX PAH																Sample Comments			
MW-15				6W	3/15/19	10:05 am	N/A	3	X																	EMAIL ANALYTICALS TO	
MW-8						10:15 am		3	X																	CAMILLE BRYANT	
MW-5						10:30 am		3	X																		
MW-110						10:35 am		3	X																		
MW-3						10:45 am		3	X																		
MW-4						10:50 am		4	X																		

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 A1 Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <u>Paul Bell</u>	<u>Buttany Cox</u>	3/15/19 4:15	<u>Buttany Cox</u>	<u>Michael</u>	3/18/19
3		4			0945
5		6			



Inter-Office Shipment

Page 1 of 1

IOS Number : **124694**

Date/Time: 03/18/19 11:39

Created by: Brianna Teel

Please send report to: Wendy Walfoort

Lab# From: **Midland**

Delivery Priority:

Address: 1211 W. Florida Ave

Lab# To: **Houston**

Air Bill No.: 774733822498

E-Mail: wendy.walfoort@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
617905-001	W	MW-18	03/14/19 12:30	SIM_PAH_D	PAHs by 8270D SIM	03/22/19	03/21/19 12:30	WEW	ACNP ACNPY ANTH BZ _i	
617905-002	W	MW-20	03/14/19 13:25	SIM_PAH_D	PAHs by 8270D SIM	03/22/19	03/21/19 13:25	WEW	ACNP ACNPY ANTH BZ _i	
617905-003	W	MW-19	03/14/19 13:55	SIM_PAH_D	PAHs by 8270D SIM	03/22/19	03/21/19 13:55	WEW	ACNP ACNPY ANTH BZ _i	
617905-006	W	MW-10	03/14/19 15:15	SIM_PAH_D	PAHs by 8270D SIM	03/22/19	03/21/19 15:15	WEW	ACNP ACNPY ANTH BZ _i	
617905-009	W	MW-12	03/14/19 15:56	SIM_PAH_D	PAHs by 8270D SIM	03/22/19	03/21/19 15:56	WEW	ACNP ACNPY ANTH BZ _i	
617905-016	W	MW-4	03/15/19 10:50	SIM_PAH_D	PAHs by 8270D SIM	03/22/19	03/22/19 10:50	WEW	ACNP ACNPY ANTH BZ _i	

Inter Office Shipment or Sample Comments:

Relinquished By:

Brianna Teel

Date Relinquished: 03/18/2019

Received By:

Travis Simmons

Date Received: 03/19/2019 09:10

Cooler Temperature: 0.9



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 124694

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Brianna Teel

Date Sent: 03/18/2019 11:39 AM

Received By: Travis Simmons

Date Received: 03/19/2019 09:10 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Travis Simmons

Date: 03/19/2019



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 03/18/2019 07:45:00 AM

Work Order #: 617905

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.9
#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 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes Xenco Stafford
#18 Water VOC samples have zero headspace?	Yes

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

Analyst: BT

PH Device/Lot#: A032690

Checklist completed by: Brianna Teel Date: 03/18/2019
Brianna Teel

Checklist reviewed by: Wendy Walfoort Date: 03/19/2019
Wendy Walfoort

Analytical Report 627511

for
Talon/LPE Co.

Project Manager: David Adkins

Plains Lovington Deep

700376.051.54

25-JUN-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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25-JUN-19

Project Manager: **David Adkins**
Talon/LPE Co.
921 N Bivins St
Amarillo, TX 79107

Reference: XENCO Report No(s): **627511**
Plains Lovington Deep
Project Address:

David Adkins:

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) 627511. 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. 627511 will be filed for 45 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,

Jessica Kramer
Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 627511



Talon/LPE Co., Amarillo, TX

Plains Lovington Deep

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-19	W	06-10-19 11:40		627511-001
MW-18	W	06-10-19 11:15		627511-002
MW-20	W	06-10-19 12:10		627511-003
MW-7	W	06-10-19 12:50		627511-004
MW-4	W	06-10-19 13:00		627511-005
MW-11	W	06-10-19 13:55		627511-006
MW-12	W	06-10-19 14:05		627511-007
MW-9	W	06-11-19 11:15		627511-008
MW-10	W	06-10-19 14:55		627511-009
MW-5	W	06-11-19 10:45		627511-010
MW-1	W	06-11-19 09:40		627511-011
MW-15	W	06-10-19 13:30		627511-012
MW-3	W	06-10-19 14:25		627511-013
MW-16	W	06-10-19 13:00		627511-014
MW-8	W	06-11-19 11:30		627511-015



CASE NARRATIVE

Client Name: *Talon/LPE Co.*

Project Name: *Plains Lovington Deep*

Project ID: 700376.051.54
Work Order Number(s): 627511

Report Date: 25-JUN-19
Date Received: 06/13/2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results

627511



Talon/LPE Co., Amarillo, TX

Plains Lovington Deep

Sample Id: **MW-19**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-001

Date Collected: 06.10.19 11.40

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093332

Date Prep: 06.21.19 10.00

Prep seq: 7680593

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.302	0.00200	0.000408	mg/L	06.21.19 17:40		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	06.21.19 17:40	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	06.21.19 17:40	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	06.21.19 17:40	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	06.21.19 17:40	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	06.21.19 17:40	U	
Total BTEX		0.302		0.000367	mg/L	06.21.19 17:40		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	111	70 - 130	%		
4-Bromofluorobenzene	73	70 - 130	%		

Sample Id: **MW-18**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-002

Date Collected: 06.10.19 11.15

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000380	0.00186	0.000380	mg/L	06.20.19 14:19	U	1
Toluene	108-88-3	<0.000342	0.00186	0.000342	mg/L	06.20.19 14:19	U	1
Ethylbenzene	100-41-4	<0.000612	0.00186	0.000612	mg/L	06.20.19 14:19	U	1
m_p-Xylenes	179601-23-1	<0.000586	0.00372	0.000586	mg/L	06.20.19 14:19	U	1
o-Xylene	95-47-6	<0.000598	0.00186	0.000598	mg/L	06.20.19 14:19	U	1
Xylenes, Total	1330-20-7	<0.000586		0.000586	mg/L	06.20.19 14:19	U	
Total BTEX		<0.000342		0.000342	mg/L	06.20.19 14:19	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	106	70 - 130	%		
4-Bromofluorobenzene	70	70 - 130	%		



Certificate of Analytical Results

627511



Talon/LPE Co., Amarillo, TX

Plains Lovington Deep

Sample Id: **MW-20**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-003

Date Collected: 06.10.19 12.10

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093332

Date Prep: 06.21.19 10.00

Prep seq: 7680593

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0373	0.00200	0.000408	mg/L	06.21.19 18:04		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	06.21.19 18:04	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	06.21.19 18:04	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	06.21.19 18:04	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	06.21.19 18:04	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	06.21.19 18:04	U	
Total BTEX		0.0373		0.000367	mg/L	06.21.19 18:04		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	70	70 - 130	%		

Sample Id: **MW-7**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-004

Date Collected: 06.10.19 12.50

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0407	0.00171	0.000349	mg/L	06.20.19 15:51		1
Toluene	108-88-3	<0.000314	0.00171	0.000314	mg/L	06.20.19 15:51	U	1
Ethylbenzene	100-41-4	<0.000562	0.00171	0.000562	mg/L	06.20.19 15:51	U	1
m_p-Xylenes	179601-23-1	<0.000538	0.00342	0.000538	mg/L	06.20.19 15:51	U	1
o-Xylene	95-47-6	<0.000549	0.00171	0.000549	mg/L	06.20.19 15:51	U	1
Xylenes, Total	1330-20-7	<0.000538		0.000538	mg/L	06.20.19 15:51	U	
Total BTEX		0.0407		0.000314	mg/L	06.20.19 15:51		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	87	70 - 130	%		



Certificate of Analytical Results

627511



Talon/LPE Co., Amarillo, TX

Plains Lovington Deep

Sample Id: MW-4

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-005

Date Collected: 06.10.19 13.00

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000372	0.00182	0.000372	mg/L	06.20.19 16:12	U	1
Toluene	108-88-3	<0.000335	0.00182	0.000335	mg/L	06.20.19 16:12	U	1
Ethylbenzene	100-41-4	<0.000600	0.00182	0.000600	mg/L	06.20.19 16:12	U	1
m_p-Xylenes	179601-23-1	<0.000575	0.00365	0.000575	mg/L	06.20.19 16:12	U	1
o-Xylene	95-47-6	<0.000586	0.00182	0.000586	mg/L	06.20.19 16:12	U	1
Xylenes, Total	1330-20-7	<0.000575		0.000575	mg/L	06.20.19 16:12	U	
Total BTEX		<0.000335		0.000335	mg/L	06.20.19 16:12	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	71	70 - 130	%		

Sample Id: MW-11

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-006

Date Collected: 06.10.19 13.55

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000378	0.00185	0.000378	mg/L	06.20.19 16:34	U	1
Toluene	108-88-3	<0.000340	0.00185	0.000340	mg/L	06.20.19 16:34	U	1
Ethylbenzene	100-41-4	<0.000609	0.00185	0.000609	mg/L	06.20.19 16:34	U	1
m_p-Xylenes	179601-23-1	<0.000584	0.00371	0.000584	mg/L	06.20.19 16:34	U	1
o-Xylene	95-47-6	<0.000595	0.00185	0.000595	mg/L	06.20.19 16:34	U	1
Xylenes, Total	1330-20-7	<0.000584		0.000584	mg/L	06.20.19 16:34	U	
Total BTEX		<0.000340		0.000340	mg/L	06.20.19 16:34	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	70	70 - 130	%		



Certificate of Analytical Results

627511



Talon/LPE Co., Amarillo, TX

Plains Lovington Deep

Sample Id: MW-12

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-007

Date Collected: 06.10.19 14.05

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000370	0.00181	0.000370	mg/L	06.20.19 16:57	U	1
Toluene	108-88-3	<0.000333	0.00181	0.000333	mg/L	06.20.19 16:57	U	1
Ethylbenzene	100-41-4	<0.000596	0.00181	0.000596	mg/L	06.20.19 16:57	U	1
m_p-Xylenes	179601-23-1	<0.000571	0.00363	0.000571	mg/L	06.20.19 16:57	U	1
o-Xylene	95-47-6	<0.000583	0.00181	0.000583	mg/L	06.20.19 16:57	U	1
Xylenes, Total	1330-20-7	<0.000571		0.000571	mg/L	06.20.19 16:57	U	
Total BTEX		<0.000333		0.000333	mg/L	06.20.19 16:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	71	70 - 130	%		

Sample Id: MW-9

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-008

Date Collected: 06.11.19 11.15

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000373	0.00183	0.000373	mg/L	06.20.19 18:30	U	1
Toluene	108-88-3	<0.000335	0.00183	0.000335	mg/L	06.20.19 18:30	U	1
Ethylbenzene	100-41-4	<0.000600	0.00183	0.000600	mg/L	06.20.19 18:30	U	1
m_p-Xylenes	179601-23-1	<0.000575	0.00365	0.000575	mg/L	06.20.19 18:30	U	1
o-Xylene	95-47-6	<0.000586	0.00183	0.000586	mg/L	06.20.19 18:30	U	1
Xylenes, Total	1330-20-7	<0.000575		0.000575	mg/L	06.20.19 18:30	U	
Total BTEX		<0.000335		0.000335	mg/L	06.20.19 18:30	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	81	70 - 130	%		



Certificate of Analytical Results

627511



Talon/LPE Co., Amarillo, TX

Plains Lovington Deep

Sample Id: **MW-10**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-009

Date Collected: 06.10.19 14.55

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093332

Date Prep: 06.21.19 10.00

Prep seq: 7680593

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	32.2	0.200	0.0408	mg/L	06.21.19 19:36		100
Toluene	108-88-3	<0.0367	0.200	0.0367	mg/L	06.21.19 19:36	U	100
Ethylbenzene	100-41-4	2.89	0.200	0.0657	mg/L	06.21.19 19:36		100
m_p-Xylenes	179601-23-1	2.56	0.400	0.0630	mg/L	06.21.19 19:36		100
o-Xylene	95-47-6	<0.0642	0.200	0.0642	mg/L	06.21.19 19:36	U	100
Xylenes, Total	1330-20-7	2.56		0.0630	mg/L	06.21.19 19:36		
Total BTEX		37.7		0.0367	mg/L	06.21.19 19:36		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	86	70 - 130	%		

Sample Id: **MW-5**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-010

Date Collected: 06.11.19 10.45

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00190	0.000387	mg/L	06.20.19 18:51	U	1
Toluene	108-88-3	<0.000348	0.00190	0.000348	mg/L	06.20.19 18:51	U	1
Ethylbenzene	100-41-4	<0.000623	0.00190	0.000623	mg/L	06.20.19 18:51	U	1
m_p-Xylenes	179601-23-1	<0.000597	0.00380	0.000597	mg/L	06.20.19 18:51	U	1
o-Xylene	95-47-6	<0.000609	0.00190	0.000609	mg/L	06.20.19 18:51	U	1
Xylenes, Total	1330-20-7	<0.000597		0.000597	mg/L	06.20.19 18:51	U	
Total BTEX		<0.000348		0.000348	mg/L	06.20.19 18:51	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	72	70 - 130	%		



Certificate of Analytical Results

627511



Talon/LPE Co., Amarillo, TX

Plains Lovington Deep

Sample Id: **MW-1**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-011

Date Collected: 06.11.19 09.40

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000371	0.00182	0.000371	mg/L	06.20.19 19:12	U	1
Toluene	108-88-3	<0.000333	0.00182	0.000333	mg/L	06.20.19 19:12	U	1
Ethylbenzene	100-41-4	<0.000597	0.00182	0.000597	mg/L	06.20.19 19:12	U	1
m_p-Xylenes	179601-23-1	<0.000572	0.00363	0.000572	mg/L	06.20.19 19:12	U	1
o-Xylene	95-47-6	<0.000583	0.00182	0.000583	mg/L	06.20.19 19:12	U	1
Xylenes, Total	1330-20-7	<0.000572		0.000572	mg/L	06.20.19 19:12	U	
Total BTEX		<0.000333		0.000333	mg/L	06.20.19 19:12	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	107	70 - 130	%		
4-Bromofluorobenzene	70	70 - 130	%		

Sample Id: **MW-15**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-012

Date Collected: 06.10.19 13.30

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0122	0.00183	0.000373	mg/L	06.20.19 19:32		1
Toluene	108-88-3	<0.000336	0.00183	0.000336	mg/L	06.20.19 19:32	U	1
Ethylbenzene	100-41-4	0.0954	0.00183	0.000601	mg/L	06.20.19 19:32		1
m_p-Xylenes	179601-23-1	0.0679	0.00366	0.000576	mg/L	06.20.19 19:32		1
o-Xylene	95-47-6	0.00120	0.00183	0.000587	mg/L	06.20.19 19:32	J	1
Xylenes, Total	1330-20-7	0.0691		0.000576	mg/L	06.20.19 19:32		
Total BTEX		0.177		0.000336	mg/L	06.20.19 19:32		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	83	70 - 130	%		



Certificate of Analytical Results

627511



Talon/LPE Co., Amarillo, TX

Plains Lovington Deep

Sample Id: MW-3

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-013

Date Collected: 06.10.19 14.25

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0101	0.00187	0.000381	mg/L	06.20.19 19:53		1
Toluene	108-88-3	<0.000342	0.00187	0.000342	mg/L	06.20.19 19:53	U	1
Ethylbenzene	100-41-4	0.0551	0.00187	0.000613	mg/L	06.20.19 19:53		1
m_p-Xylenes	179601-23-1	0.0360	0.00373	0.000587	mg/L	06.20.19 19:53		1
o-Xylene	95-47-6	0.00594	0.00187	0.000599	mg/L	06.20.19 19:53		1
Xylenes, Total	1330-20-7	0.0419		0.000587	mg/L	06.20.19 19:53		
Total BTEX		0.107		0.000342	mg/L	06.20.19 19:53		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	106	70 - 130	%		
4-Bromofluorobenzene	76	70 - 130	%		

Sample Id: MW-16

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-014

Date Collected: 06.10.19 13.00

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000377	0.00185	0.000377	mg/L	06.20.19 20:13	U	1
Toluene	108-88-3	<0.000339	0.00185	0.000339	mg/L	06.20.19 20:13	U	1
Ethylbenzene	100-41-4	<0.000607	0.00185	0.000607	mg/L	06.20.19 20:13	U	1
m_p-Xylenes	179601-23-1	<0.000582	0.00370	0.000582	mg/L	06.20.19 20:13	U	1
o-Xylene	95-47-6	<0.000593	0.00185	0.000593	mg/L	06.20.19 20:13	U	1
Xylenes, Total	1330-20-7	<0.000582		0.000582	mg/L	06.20.19 20:13	U	
Total BTEX		<0.000339		0.000339	mg/L	06.20.19 20:13	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	109	70 - 130	%		
4-Bromofluorobenzene	70	70 - 130	%		



Certificate of Analytical Results

627511



Talon/LPE Co., Amarillo, TX

Plains Lovington Deep

Sample Id: MW-8

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 627511-015

Date Collected: 06.11.19 11.30

Date Received: 06.13.19 11.20

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093332

Date Prep: 06.21.19 10.00

Prep seq: 7680593

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	06.21.19 21:08	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	06.21.19 21:08	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	06.21.19 21:08	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	06.21.19 21:08	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	06.21.19 21:08	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	06.21.19 21:08	U	
Total BTEX		<0.000367		0.000367	mg/L	06.21.19 21:08	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	90	70 - 130	%		
4-Bromofluorobenzene	86	70 - 130	%		



Certificate of Analytical Results

627511



Talon/LPE Co., Amarillo, TX
Plains Lovington Deep

Sample Id: **7680435-1-BLK**

Matrix: Water

Sample Depth:

Lab Sample Id: 7680435-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093129

Date Prep: 06.19.19 17.00

Prep seq: 7680435

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000378	0.00185	0.000378	mg/L	06.20.19 12:31	U	1
Toluene	108-88-3	<0.000340	0.00185	0.000340	mg/L	06.20.19 12:31	U	1
Ethylbenzene	100-41-4	<0.000608	0.00185	0.000608	mg/L	06.20.19 12:31	U	1
m_p-Xylenes	179601-23-1	<0.000583	0.00370	0.000583	mg/L	06.20.19 12:31	U	1
o-Xylene	95-47-6	<0.000594	0.00185	0.000594	mg/L	06.20.19 12:31	U	1
Xylenes, Total	1330-20-7	<0.000583		0.000583	mg/L	06.20.19 12:31	U	
Total BTEX		<0.000340		0.000340	mg/L	06.20.19 12:31	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	105	70 - 130	%		
4-Bromofluorobenzene	70	70 - 130	%		

Sample Id: **7680593-1-BLK**

Matrix: Water

Sample Depth:

Lab Sample Id: 7680593-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: DVM

% Moist:

Tech: DVM

Seq Number: 3093332

Date Prep: 06.21.19 10.00

Prep seq: 7680593

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	06.21.19 16:01	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	06.21.19 16:01	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	06.21.19 16:01	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	06.21.19 16:01	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	06.21.19 16:01	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	06.21.19 16:01	U	
Total BTEX		<0.000367		0.000367	mg/L	06.21.19 16:01	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	107	70 - 130	%		
4-Bromofluorobenzene	70	70 - 130	%		

- 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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ 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: Plains Lovington Deep

Work Orders : 627511,

Project ID: 700376.051.54

Lab Batch #: 3093129

Sample: 7680435-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 06/20/19 11:09	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0308	0.0300	103	70-130
4-Bromofluorobenzene		0.0239	0.0300	80	70-130

Lab Batch #: 3093129

Sample: 7680435-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 06/20/19 11:29	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0307	0.0300	102	70-130
4-Bromofluorobenzene		0.0230	0.0300	77	70-130

Lab Batch #: 3093129

Sample: 627589-007 S / MS

Batch: 1 Matrix: Ground Water

Units: mg/L	Date Analyzed: 06/20/19 11:50	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0316	0.0300	105	70-130
4-Bromofluorobenzene		0.0212	0.0300	71	70-130

Lab Batch #: 3093129

Sample: 7680435-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L	Date Analyzed: 06/20/19 12:31	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0315	0.0300	105	70-130
4-Bromofluorobenzene		0.0211	0.0300	70	70-130

Lab Batch #: 3093332

Sample: 627589-008 S / MS

Batch: 1 Matrix: Ground Water

Units: mg/L	Date Analyzed: 06/21/19 14:48	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0299	0.0300	100	70-130
4-Bromofluorobenzene		0.0225	0.0300	75	70-130

* 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: Plains Lovington Deep

Work Orders : 627511,

Project ID: 700376.051.54

Lab Batch #: 3093332

Sample: 7680593-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 06/21/19 16:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	70-130	
4-Bromofluorobenzene	0.0210	0.0300	70	70-130	

* 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: Plains Lovington Deep

Work Order #: 627511

Project ID: 700376.051.54

Analyst: DVM

Date Prepared: 06/19/2019

Date Analyzed: 06/20/2019

Lab Batch ID: 3093129

Sample: 7680435-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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
Analytes											
Benzene	<0.000377	0.0923	0.0773	84	0.0934	0.0771	83	0	70-130	25	
Toluene	<0.000339	0.0923	0.0756	82	0.0934	0.0754	81	0	70-130	25	
Ethylbenzene	<0.000607	0.0923	0.0813	88	0.0934	0.0818	88	1	70-130	25	
m_p-Xylenes	<0.000581	0.185	0.159	86	0.187	0.161	86	1	70-130	25	
o-Xylene	<0.000593	0.0923	0.0760	82	0.0934	0.0756	81	1	70-130	25	

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: Plains Lovington Deep



Work Order #: 627511

Lab Batch #: 3093129

Date Analyzed: 06/20/2019

QC- Sample ID: 627589-007 S

Reporting Units: mg/L

Date Prepared: 06/19/2019

Batch #: 1

Project ID: 700376.051.54

Analyst: DVM

Matrix: Ground Water

MATRIX / MATRIX SPIKE RECOVERY STUDY						
BTEX by EPA 8021B	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Benzene	<0.000372	0.0911	0.0132	14	70-130	X
Toluene	<0.000334	0.0911	0.0115	13	70-130	X
Ethylbenzene	<0.000599	0.0911	0.0118	13	70-130	X
m_p-Xylenes	<0.000574	0.182	0.0220	12	70-130	X
o-Xylene	<0.000585	0.0911	0.0108	12	70-130	X

Lab Batch #: 3093332

Date Analyzed: 06/21/2019

QC- Sample ID: 627589-008 S

Reporting Units: mg/L

Date Prepared: 06/21/2019

Batch #: 1

Analyst: DVM

Matrix: Ground Water

MATRIX / MATRIX SPIKE RECOVERY STUDY						
BTEX by EPA 8021B	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Benzene	<0.000408	0.0500	0.0556	111	70-130	
Toluene	<0.000367	0.0500	0.0549	110	70-130	
Ethylbenzene	<0.000657	0.0500	0.0585	117	70-130	
m_p-Xylenes	<0.000630	0.100	0.120	120	70-130	
o-Xylene	<0.000642	0.0500	0.0627	125	70-130	

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

Relative Percent Difference [E] = $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Chain of Custody

Work Order No: 1027511

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 506-3334
Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

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Project Manager:	David Adkins	Bill to: (if different)	PLAINS ALL AMERICAN
Company Name:	Talon	Company Name:	PIPELINE
Address:	408 W. Texas Ave.	Address:	ATTN: CAMILLE BRYANT
City, State ZIP:	Artesia, NM 88210	City, State ZIP:	SR5 #
Phone:	575-616-4022 or 575-746-8905	Email:	dadkins@talonpipe.com

Work Order Comments	
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

Project Name:	PLAINS LEAKEDBY DEEP	Turn Around	
Project Number:	700376-051, 54	Routine ☒	
P.O. Number:	SR5 # 2002-10312	Rush:	
Sampler's Name:	Michael Coulee	Due Date:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Temperature (°C):	0.000	Thermometer ID:		
Received intact:	Yes ☒ No ☐	Correction Factor:		
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:		
Sample Custody Seals:	Yes ☒ No ☐ N/A			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	BTX	ANALYSIS REQUEST	Work Order Notes
MW-19	GW	6-10-19	11:40 am	N/A	3	X		TAT starts the day received by the lab, if received by 4:30pm
MW-18			11:15 am					EMAIL ANALYTICALS
MW-20			12:10 pm					TB:
MW-7			12:50 pm					CAMILLE BRYANT
MW-4			1:00 pm					
MW-11			1:35 pm					
MW-12			2:05 pm					
MW-9		6-11-19	11:15 am					
MW-10		6-10-19	2:35					
MW-5		6-11-19	10:45 am					

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U		1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<u>MAKILL</u>	<u>MAKILL</u>	06-11-19 16:45	<u>MAKILL</u>	<u>MAKILL</u>	06-11-19 16:45



Chain of Custody

Work Order No:

62751

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

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Project Manager:	David Adkins	Bill to: (if different)	PLAINS ALL AMERICAN
Company Name:	Talon	Company Name:	PURELINE
Address:	408 W. Texas Ave.	Address:	ATTN: CAMILLE BRYANT
City, State ZIP:	Artesia, NM 88210	City, State ZIP:	
Phone:	575-616-4022 or 575-746-8905	Email:	dadkins@talonlpe.com

Project Name:	PLAINS LANDFILL DEEP	Turn Around	
Project Number:	700376-051.54	Routine	☒
P.O. Number:	SRS # 2002-10312	Rush:	
Sampler's Name:	Michael Guise	Due Date:	

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADAPT ☐ Other:

Project Name:	PLAINS LANDFILL DEEP	Turn Around	
Project Number:	700376-051.54	Routine	☒
P.O. Number:	SRS # 2002-10312	Rush:	
Sampler's Name:	Michael Guise	Due Date:	

Temp Blank:	Yes ☒ No ☐	Well loc:	Yes ☒ No ☐
Temperature (°C):	0.000	Thermometer ID:	122
Received intact:	Yes ☒ No ☐	Correction Factor:	1.00
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	1
Sample Custody Seals:	Yes ☒ No ☐ N/A		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	BTX	ANALYSIS REQUEST	Work Order Notes
MW-1	W	6-11-19	9:40am	N/A	3	X		
MW-15	W	6-10-19	1:30pm					EMRI ANALYTICALS
MW-3	W		2:25pm					70
MW-14	W		1:00pm					CAMILLE BRYANT
MW-8	W	6-11-19	11:30am					

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO2	Na	Sr	Ti	Sn	U	V	Zn
Circle Method(s) and Metal(s) to be analyzed																															
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U																															
1631 / 245.1 / 7470 / 7471 : Hg																															

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Michael Guise	Camille Bryant	06-11-19 16:45	Camille Bryant	Camille Bryant	06-11-19 16:45



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Talon/LPE Co.

Date/ Time Received: 06/13/2019 11:20:00 AM

Work Order #: 627511

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

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?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	Yes

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/13/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/13/2019

Analytical Report 638216

**for
Talon LPE-Artesia**

Project Manager: David Adkins

Lovington Deep

700376.051.04

17-OCT-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Tampa: Florida (E87429), North Carolina (483)

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17-OCT-19

Project Manager: **David Adkins**

Talon LPE-Artesia

408 West Texas St.

Artesia, NM 88210

Reference: XENCO Report No(s): **638216**

Lovington Deep

Project Address: Lea County

David Adkins:

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) 638216. 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. 638216 will be filed for 45 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,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 638216

Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-18	W	09-25-19 14:55		638216-001
MW-19	W	09-25-19 15:20		638216-002
MW-20	W	09-25-19 15:45		638216-003
MW-3	W	09-26-19 10:00		638216-004
MW-4	W	09-26-19 09:20		638216-005
MW-11	W	09-26-19 12:15		638216-006
MW-12	W	09-26-19 11:35		638216-007
MW-9	W	09-26-19 11:10		638216-008
MW-10	W	09-26-19 11:55		638216-009
MW-5	W	09-26-19 10:40		638216-010



CASE NARRATIVE

Client Name: Talon LPE-Artesia

Project Name: Lovington Deep

Project ID: 700376.051.04
Work Order Number(s): 638216

Report Date: 17-OCT-19
Date Received: 09/26/2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3102949 BTEX by EPA 8021

Surrogate 1,4-Difluorobenzene recovered above QC limits. Matrix interferences is suspected

Samples affected are: 638216-002,638216-009.

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 638269-001 S,638216-005,638216-003,638216-002,638216-009,638216-001.

m_p-Xylenes recovered above QC limits in the Blank Spike and Duplicate. Analyte was not detected in any of the associated samples and therefore the data was accepted. Samples in the analytical batch are: 638216-001, -002, -003, -005, -006, -007, -008, -009, -010.



Certificate of Analytical Results

638216



Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW-18** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638216-001 Date Collected: 09.25.19 14.55 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3102949 Date Prep: 09.27.19 13.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687046

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.395	0.00200	0.000408	mg/L	09.30.19 10:40		1
Toluene	108-88-3	0.0145	0.00200	0.000367	mg/L	09.30.19 10:40		1
Ethylbenzene	100-41-4	0.00727	0.00200	0.000657	mg/L	09.30.19 10:40		1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	09.30.19 10:40	UH	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	09.30.19 10:40	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	09.30.19 10:40	U	
Total BTEX		0.417		0.000367	mg/L	09.30.19 10:40		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	108	70 - 130	%		
4-Bromofluorobenzene	135	70 - 130	%		**

Sample Id: **MW-19** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638216-002 Date Collected: 09.25.19 15.20 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3102949 Date Prep: 09.27.19 13.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687046

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	3.99	0.200	0.0408	mg/L	10.02.19 07:49	D	100
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	09.30.19 11:01	U	1
Ethylbenzene	100-41-4	0.00585	0.00200	0.000657	mg/L	09.30.19 11:01		1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	09.30.19 11:01	UH	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	09.30.19 11:01	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	09.30.19 11:01	U	
Total BTEX		4.00		0.000367	mg/L	10.02.19 07:49		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	189	70 - 130	%		**
4-Bromofluorobenzene	155	70 - 130	%		**



Certificate of Analytical Results

638216



Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW-20** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638216-003 Date Collected: 09.25.19 15.45 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3102949 Date Prep: 09.27.19 13.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687046

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0606	0.00200	0.000408	mg/L	09.30.19 11:21		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	09.30.19 11:21	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	09.30.19 11:21	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	09.30.19 11:21	UH	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	09.30.19 11:21	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	09.30.19 11:21	U	
Total BTEX		0.0606		0.000367	mg/L	09.30.19 11:21		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	134	70 - 130	%		**

Sample Id: **MW-3** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638216-004 Date Collected: 09.26.19 10.00 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3103168 Date Prep: 10.01.19 14.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687038

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00860	0.00200	0.000408	mg/L	10.02.19 08:09		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.02.19 08:09	U	1
Ethylbenzene	100-41-4	0.0480	0.00200	0.000657	mg/L	10.02.19 08:09		1
m_p-Xylenes	179601-23-1	0.0319	0.00400	0.000630	mg/L	10.02.19 08:09		1
o-Xylene	95-47-6	0.00614	0.00200	0.000642	mg/L	10.02.19 08:09		1
Xylenes, Total	1330-20-7	0.0380		0.000630	mg/L	10.02.19 08:09		
Total BTEX		0.0946		0.000367	mg/L	10.02.19 08:09		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	106	70 - 130	%		
4-Bromofluorobenzene	108	70 - 130	%		



Certificate of Analytical Results

638216



Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW-4** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638216-005 Date Collected: 09.26.19 09.20 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3102949 Date Prep: 09.27.19 13.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687046

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00619	0.00200	0.000408	mg/L	10.01.19 12:01		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.01.19 12:01	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	10.01.19 12:01	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.01.19 12:01	UH	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.01.19 12:01	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	10.01.19 12:01	U	
Total BTEX		0.00619		0.000367	mg/L	10.01.19 12:01		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	131	70 - 130	%		**

Sample Id: **MW-11** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638216-006 Date Collected: 09.26.19 12.15 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3102949 Date Prep: 09.27.19 13.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687046

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0429	0.00200	0.000408	mg/L	10.01.19 12:21		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.01.19 12:21	U	1
Ethylbenzene	100-41-4	0.00902	0.00200	0.000657	mg/L	10.01.19 12:21		1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.01.19 12:21	UH	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.01.19 12:21	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	10.01.19 12:21	U	
Total BTEX		0.0519		0.000367	mg/L	10.01.19 12:21		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	125	70 - 130	%		



Certificate of Analytical Results

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Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW-12** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638216-007 Date Collected: 09.26.19 11.35 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3102949 Date Prep: 09.27.19 13.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687046

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00564	0.00200	0.000408	mg/L	10.01.19 01:40		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.01.19 01:40	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	10.01.19 01:40	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.01.19 01:40	UH	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.01.19 01:40	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	10.01.19 01:40	U	
Total BTEX		0.00564		0.000367	mg/L	10.01.19 01:40		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	126	70 - 130	%		

Sample Id: **MW-9** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638216-008 Date Collected: 09.26.19 11.10 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3102949 Date Prep: 09.27.19 13.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687046

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0105	0.00200	0.000408	mg/L	10.01.19 02:00		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.01.19 02:00	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	10.01.19 02:00	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.01.19 02:00	UH	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.01.19 02:00	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	10.01.19 02:00	U	
Total BTEX		0.0105		0.000367	mg/L	10.01.19 02:00		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		



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Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW-10** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638216-009 Date Collected: 09.26.19 11.55 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3102949 Date Prep: 09.27.19 13.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687046

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	4.43	0.200	0.0408	mg/L	10.02.19 08:30	D	100
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.01.19 02:20	U	1
Ethylbenzene	100-41-4	0.307	0.00200	0.000657	mg/L	10.01.19 02:20		1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.01.19 02:20	UH	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.01.19 02:20	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	10.01.19 02:20	U	
Total BTEX		4.74		0.000367	mg/L	10.02.19 08:30		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	176	70 - 130	%		**
4-Bromofluorobenzene	152	70 - 130	%		**

Sample Id: **MW-5** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638216-010 Date Collected: 09.26.19 10.40 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3102949 Date Prep: 09.27.19 13.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687046

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0132	0.00200	0.000408	mg/L	10.01.19 02:40		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.01.19 02:40	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	10.01.19 02:40	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.01.19 02:40	UH	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.01.19 02:40	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	10.01.19 02:40	U	
Total BTEX		0.0132		0.000367	mg/L	10.01.19 02:40		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	130	70 - 130	%		



Certificate of Analytical Results

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Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **7687038-1-BLK** Matrix: Water Sample Depth:
Lab Sample Id: 7687038-1-BLK Date Collected: Date Received:
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3103168 Date Prep: 10.01.19 14.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687038

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	10.02.19 07:29	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.02.19 07:29	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	10.02.19 07:29	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.02.19 07:29	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.02.19 07:29	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	91	70 - 130	%		

Sample Id: **7687046-1-BLK** Matrix: Water Sample Depth:
Lab Sample Id: 7687046-1-BLK Date Collected: Date Received:
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3102949 Date Prep: 09.27.19 13.00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687046

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	09.30.19 09:00	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	09.30.19 09:00	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	09.30.19 09:00	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	09.30.19 09:00	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	09.30.19 09:00	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	120	70 - 130	%		

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ 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: Lovington Deep

Work Orders : 638216,

Project ID: 700376.051.04

Lab Batch #: 3102949

Sample: 7687046-1-BKS / BKS

Batch: 1 **Matrix:** Water

Units: mg/L Date Analyzed: 09/30/19 07:20		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0277	0.0300	92	70-130
4-Bromofluorobenzene		0.0375	0.0300	125	70-130

Lab Batch #: 3102949

Sample: 7687046-1-BSD / BSD

Batch: 1 **Matrix:** Water

Units: mg/L Date Analyzed: 09/30/19 07:40		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0280	0.0300	93	70-130
4-Bromofluorobenzene		0.0374	0.0300	125	70-130

Lab Batch #: 3102949

Sample: 638269-001 S / MS

Batch: 1 **Matrix:** Ground Water

Units: mg/L Date Analyzed: 09/30/19 08:00		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0298	0.0300	99	70-130
4-Bromofluorobenzene		0.0392	0.0300	131	70-130 **

Lab Batch #: 3102949

Sample: 638269-001 SD / MSD

Batch: 1 **Matrix:** Ground Water

Units: mg/L Date Analyzed: 09/30/19 08:20		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0301	0.0300	100	70-130
4-Bromofluorobenzene		0.0302	0.0300	101	70-130

Lab Batch #: 3102949

Sample: 7687046-1-BLK / BLK

Batch: 1 **Matrix:** Water

Units: mg/L Date Analyzed: 09/30/19 09:00		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
Analytes					
1,4-Difluorobenzene		0.0285	0.0300	95	70-130
4-Bromofluorobenzene		0.0360	0.0300	120	70-130

* 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: Lovington Deep

Work Orders : 638216,

Project ID: 700376.051.04

Lab Batch #: 3103168

Sample: 7687038-1-BKS / BKS

Batch: 1 **Matrix:** Water

Units: mg/L Date Analyzed: 10/02/19 05:49		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021 Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
1,4-Difluorobenzene		0.0303	0.0300	101	70-130
4-Bromofluorobenzene		0.0313	0.0300	104	70-130

Lab Batch #: 3103168

Sample: 7687038-1-BSD / BSD

Batch: 1 **Matrix:** Water

Units: mg/L Date Analyzed: 10/02/19 06:09		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021 Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
1,4-Difluorobenzene		0.0312	0.0300	104	70-130
4-Bromofluorobenzene		0.0307	0.0300	102	70-130

Lab Batch #: 3103168

Sample: 638017-001 S / MS

Batch: 1 **Matrix:** Ground Water

Units: mg/L Date Analyzed: 10/02/19 06:29		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021 Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
1,4-Difluorobenzene		0.0322	0.0300	107	70-130
4-Bromofluorobenzene		0.0325	0.0300	108	70-130

Lab Batch #: 3103168

Sample: 638017-001 SD / MSD

Batch: 1 **Matrix:** Ground Water

Units: mg/L Date Analyzed: 10/02/19 06:50		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021 Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
1,4-Difluorobenzene		0.0324	0.0300	108	70-130
4-Bromofluorobenzene		0.0328	0.0300	109	70-130

Lab Batch #: 3103168

Sample: 7687038-1-BLK / BLK

Batch: 1 **Matrix:** Water

Units: mg/L Date Analyzed: 10/02/19 07:29		SURROGATE RECOVERY STUDY			
BTEX by EPA 8021 Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R
1,4-Difluorobenzene		0.0290	0.0300	97	70-130
4-Bromofluorobenzene		0.0274	0.0300	91	70-130

* 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: Lovington Deep

Work Order #: 638216

Project ID: 700376.051.04

Analyst: KTL

Date Prepared: 10/01/2019

Date Analyzed: 10/02/2019

Lab Batch ID: 3103168

Sample: 7687038-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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
Analytes											
Benzene	<0.000408	0.100	0.100	100	0.100	0.101	101	1	70-130	25	
Toluene	<0.000367	0.100	0.103	103	0.100	0.104	104	1	70-130	25	
Ethylbenzene	<0.000657	0.100	0.0939	94	0.100	0.0963	96	3	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.185	93	0.200	0.190	95	3	70-130	25	
o-Xylene	<0.000642	0.100	0.0905	91	0.100	0.0949	95	5	70-130	25	

Analyst: KTL

Date Prepared: 09/27/2019

Date Analyzed: 09/30/2019

Lab Batch ID: 3102949

Sample: 7687046-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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
Analytes											
Benzene	<0.000408	0.100	0.108	108	0.100	0.109	109	1	70-130	25	
Toluene	<0.000367	0.100	0.107	107	0.100	0.107	107	0	70-130	25	
Ethylbenzene	<0.000657	0.100	0.127	127	0.100	0.128	128	1	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.264	132	0.200	0.269	135	2	70-130	25	H
o-Xylene	<0.000642	0.100	0.126	126	0.100	0.129	129	2	70-130	25	

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 / MSD Recoveries

Project Name: Lovington Deep

Work Order # : 638216

Project ID: 700376.051.04

Lab Batch ID: 3102949

QC- Sample ID: 638269-001 S

Batch #: 1 Matrix: Ground Water

Date Analyzed: 09/30/2019

Date Prepared: 09/27/2019

Analyst: KTL

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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
Benzene	<0.000408	0.100	0.115	115	0.100	0.120	120	4	70-130	25	
Toluene	<0.000367	0.100	0.113	113	0.100	0.104	104	8	70-130	25	
Ethylbenzene	<0.000657	0.100	0.134	134	0.100	0.111	111	19	70-130	25	X
m_p-Xylenes	<0.000630	0.200	0.279	140	0.200	0.223	112	22	70-130	25	X
o-Xylene	<0.000642	0.100	0.137	137	0.100	0.113	113	19	70-130	25	X

Lab Batch ID: 3103168

QC- Sample ID: 638017-001 S

Batch #: 1 Matrix: Ground Water

Date Analyzed: 10/02/2019

Date Prepared: 10/01/2019

Analyst: KTL

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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
Benzene	<0.000408	0.100	0.0895	90	0.100	0.0984	98	9	70-130	25	
Toluene	<0.000367	0.100	0.0835	84	0.100	0.101	101	19	70-130	25	
Ethylbenzene	<0.000657	0.100	0.0642	64	0.100	0.0924	92	36	70-130	25	XF
m_p-Xylenes	<0.000630	0.200	0.120	60	0.200	0.181	91	41	70-130	25	XF
o-Xylene	<0.000642	0.100	0.0654	65	0.100	0.0895	90	31	70-130	25	XF

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

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

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.



Work Order No. _____

Page 1 of 1

ANALYSIS REQUEST[illegible][illegible]

	As	Ba	Be	Cd	Cr	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U
ORUNA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total	200.7	200.8	200.2	200.8	200.2	200.7	200.8	200.2	200.7	200.8	200.2	200.7	200.8	200.2

Date/Time	Received by: (Signature)	Poliniquished by: (Signature)
-----------	--------------------------	-------------------------------

Revised Date 022619 Rev. 2019.1



Inter-Office Shipment

Page 1 of 1

IOS Number **48858**

Date/Time: 09/26/19 15:32

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 7763051514172

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
638216-001	W	MW-18	09/25/19 14:55	SW8021B	BTEX by EPA 8021	10/02/19	10/09/19	JKR	BR4FBZ BZ BZME EBZ T	
638216-002	W	MW-19	09/25/19 15:20	SW8021B	BTEX by EPA 8021	10/02/19	10/09/19	JKR	BR4FBZ BZ BZME EBZ T	
638216-003	W	MW-20	09/25/19 15:45	SW8021B	BTEX by EPA 8021	10/02/19	10/09/19	JKR	BR4FBZ BZ BZME EBZ T	
638216-004	W	MW-3	09/26/19 10:00	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	
638216-005	W	MW-4	09/26/19 09:20	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	
638216-006	W	MW-11	09/26/19 12:15	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	
638216-007	W	MW-12	09/26/19 11:35	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	
638216-008	W	MW-9	09/26/19 11:10	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	
638216-009	W	MW-10	09/26/19 11:55	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	
638216-010	W	MW-5	09/26/19 10:40	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Date Relinquished: 09/26/2019

Received By:

Brianna Teel

Date Received: 09/27/2019 11:27

Cooler Temperature: 0.3



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 48858

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 09/26/2019 03:32 PM

Received By: Brianna Teel

Date Received: 09/27/2019 11:27 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Brianna Teel

Date: 09/27/2019



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE-Artesia

Date/ Time Received: 09/26/2019 02:09:00 PM

Work Order #: 638216

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.4
#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 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes Subbed To Midland.
#18 Water VOC samples have zero headspace?	Yes

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 09/26/2019

Checklist reviewed by:


Jessica Kramer

Date: 09/27/2019

Analytical Report 638221

**for
Talon LPE-Artesia**

Project Manager: David Adkins

Lovington Deep

700376.051.54

04-OCT-19

Collected By: Client



**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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04-OCT-19

Project Manager: **David Adkins**

Talon LPE-Artesia

408 West Texas St.

Artesia, NM 88210

Reference: XENCO Report No(s): **638221**

Lovington Deep

Project Address: Lea County

David Adkins:

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) 638221. 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. 638221 will be filed for 45 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,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 638221

Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-16	W	09-26-19 10:20		638221-001
MW-15	W	09-26-19 10:55		638221-002
MW-1	W	09-26-19 11:20		638221-003
MW-8	W	09-26-19 11:40		638221-004
MW-7	W	09-26-19 12:10		638221-005



CASE NARRATIVE

Client Name: Talon LPE-Artesia

Project Name: Lovington Deep

Project ID: 700376.051.54
Work Order Number(s): 638221

Report Date: 04-OCT-19
Date Received: 09/26/2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3103309 BTEX by EPA 8021

Lab Sample ID 638221-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). o-Xylene recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 638221-001, -002, -003, -004, -005.

The Laboratory Control Sample for o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected. Samples affected are: 638221-001 SD.



Certificate of Analytical Results

638221

Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW-16**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 638221-001

Date Collected: 09.26.19 10.20

Date Received: 09.26.19 14.09

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3103309

Date Prep: 10.02.19 13.30

Subcontractor: SUB: T104704400-19-19

Prep seq: 7687330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	10.03.19 06:27	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.03.19 06:27	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	10.03.19 06:27	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.03.19 06:27	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.03.19 06:27	UX	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	10.03.19 06:27	U	
Total BTEX		<0.000367		0.000367	mg/L	10.03.19 06:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	129	70 - 130	%		

Sample Id: **MW-15**

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 638221-002

Date Collected: 09.26.19 10.55

Date Received: 09.26.19 14.09

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3103309

Date Prep: 10.02.19 13.30

Subcontractor: SUB: T104704400-19-19

Prep seq: 7687330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	10.03.19 06:47	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.03.19 06:47	U	1
Ethylbenzene	100-41-4	0.0251	0.00200	0.000657	mg/L	10.03.19 06:47		1
m_p-Xylenes	179601-23-1	0.0161	0.00400	0.000630	mg/L	10.03.19 06:47		1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.03.19 06:47	U	1
Xylenes, Total	1330-20-7	0.0161		0.000630	mg/L	10.03.19 06:47		
Total BTEX		0.0412		0.000367	mg/L	10.03.19 06:47		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	130	70 - 130	%		



Certificate of Analytical Results

638221

Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW-1** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638221-003 Date Collected: 09.26.19 11.20 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3103309 Date Prep: 10.02.19 13.30
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	10.03.19 07:07	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.03.19 07:07	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	10.03.19 07:07	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.03.19 07:07	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.03.19 07:07	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	10.03.19 07:07	U	
Total BTEX		<0.000367		0.000367	mg/L	10.03.19 07:07	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	124	70 - 130	%		

Sample Id: **MW-8** Matrix: Ground Water Sample Depth:
Lab Sample Id: 638221-004 Date Collected: 09.26.19 11.40 Date Received: 09.26.19 14.09
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3103309 Date Prep: 10.02.19 13.30
Subcontractor: SUB: T104704400-19-19 Prep seq: 7687330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	10.03.19 07:28	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.03.19 07:28	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	10.03.19 07:28	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.03.19 07:28	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.03.19 07:28	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	10.03.19 07:28	U	
Total BTEX		<0.000367		0.000367	mg/L	10.03.19 07:28	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		



Certificate of Analytical Results

638221

Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: MW-7

Matrix: Ground Water

Sample Depth:

Lab Sample Id: 638221-005

Date Collected: 09.26.19 12.10

Date Received: 09.26.19 14.09

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3103309

Date Prep: 10.02.19 13.30

Subcontractor: SUB: T104704400-19-19

Prep seq: 7687330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	10.03.19 07:48	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.03.19 07:48	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	10.03.19 07:48	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.03.19 07:48	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.03.19 07:48	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	10.03.19 07:48	U	
Total BTEX		<0.000367		0.000367	mg/L	10.03.19 07:48	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		



Certificate of Analytical Results

638221

Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: 7687330-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7687330-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3103309

Date Prep: 10.02.19 13.30

Subcontractor: SUB: T104704400-19-19

Prep seq: 7687330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	10.03.19 05:27	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	10.03.19 05:27	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	10.03.19 05:27	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	10.03.19 05:27	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	10.03.19 05:27	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	10.03.19 05:27	U	
Total BTEX		<0.000367		0.000367	mg/L	10.03.19 05:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	117	70 - 130	%		

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ 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: Lovington Deep

Work Orders : 638221,

Project ID: 700376.051.54

Lab Batch #: 3103309

Sample: 7687330-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/03/19 03:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	70-130	
4-Bromofluorobenzene	0.0379	0.0300	126	70-130	

Lab Batch #: 3103309

Sample: 7687330-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/03/19 04:05

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	70-130	
4-Bromofluorobenzene	0.0386	0.0300	129	70-130	

Lab Batch #: 3103309

Sample: 638221-001 S / MS

Batch: 1 Matrix: Ground Water

Units: mg/L

Date Analyzed: 10/03/19 04:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	70-130	
4-Bromofluorobenzene	0.0385	0.0300	128	70-130	

Lab Batch #: 3103309

Sample: 638221-001 SD / MSD

Batch: 1 Matrix: Ground Water

Units: mg/L

Date Analyzed: 10/03/19 04:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	70-130	
4-Bromofluorobenzene	0.0403	0.0300	134	70-130	**

Lab Batch #: 3103309

Sample: 7687330-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 10/03/19 05:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	70-130	
4-Bromofluorobenzene	0.0351	0.0300	117	70-130	

* 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: Lovington Deep

Work Order #: 638221

Project ID: 700376.051.54

Analyst: KTL

Date Prepared: 10/02/2019

Date Analyzed: 10/03/2019

Lab Batch ID: 3103309

Sample: 7687330-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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
Analytes											
Benzene	<0.000408	0.100	0.107	107	0.100	0.111	111	4	70-130	25	
Toluene	<0.000367	0.100	0.108	108	0.100	0.113	113	5	70-130	25	
Ethylbenzene	<0.000657	0.100	0.114	114	0.100	0.119	119	4	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.243	122	0.200	0.256	128	5	70-130	25	
o-Xylene	<0.000642	0.100	0.122	122	0.100	0.130	130	6	70-130	25	

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 / MSD Recoveries

Project Name: Lovington Deep

Work Order # : 638221

Project ID: 700376.051.54

Lab Batch ID: 3103309

QC- Sample ID: 638221-001 S

Batch #: 1 Matrix: Ground Water

Date Analyzed: 10/03/2019

Date Prepared: 10/02/2019

Analyst: KTL

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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
Benzene	<0.000408	0.100	0.106	106	0.100	0.109	109	3	70-130	25	
Toluene	<0.000367	0.100	0.107	107	0.100	0.112	112	5	70-130	25	
Ethylbenzene	<0.000657	0.100	0.115	115	0.100	0.120	120	4	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.240	120	0.200	0.252	126	5	70-130	25	
o-Xylene	<0.000642	0.100	0.120	120	0.100	0.139	139	15	70-130	25	X

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$

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

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.



Chain of Custody

Work Order No: 438221

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296 Casabad, NM (432) 704-5440
Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

www.xenco.com Page 1 of 1

Project Manager:	DAVID ADKINS	Bill to: (if different)	PLAINS ALL AMERICAN
Company Name:	TAKEN	Company Name:	PEELINE
Address:	408 W. TEXAS AVE	Address:	ATKINS CAMPUS BRYANT
City, State ZIP:	ATKINS NM 88410	City, State ZIP:	
Phone:	515-746-8716	Email:	adkins@takex.com

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting Level: I ☐ Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADAPT ☐ Other:

Project Name:	LOUISIANA DEEP	Turn Around	
Project Number:	700376, 051, 54	Routine	☒
Project Location:	CEA County	Rush:	
Sampler's Name:	MICHAEL C. CALDERA	Due Date:	
PO #:	2002-10312	Quote #:	

SAMPLE RECEIPT	Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐
Temperature (°C):	1.4	Thermometer ID	T-NM-007	
Received Intact:	Yes ☒ No ☐	Correction Factor:	-0.2	
Cooler Custody Seals:	Yes ☒ No ☐ N/A	Total Containers:	15	
Sample Custody Seals:	Yes ☐ No ☒ N/A			

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Preservative Codes
MW-16		LS	9/26/19	10:20am	N/A	3	BTEX	MeOH: Me None: NO HNO3: HN H2SO4: H2 HCL: HL NaOH: Na Zn Acetate+ NaOH: Zn
MW-15				10:55am		1		
MW-1				11:20am		1		EMAIL ANALYTICALS TO CAMILLE BRYANT
MW-8				11:40am		1		
MW-7			9/26/19	12:10am	N/A	3		

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<u>Michael Caldera</u>	<u>Adkins</u>	9/26/19 14:01			



Inter-Office Shipment

Page 1 of 1

IOS Number **48860**

Date/Time: 09/26/19 15:41

Created by: Elizabeth McClellan

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 7763051514172

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
638221-001	W	MW-16	09/26/19 10:20	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	
638221-002	W	MW-15	09/26/19 10:55	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	
638221-003	W	MW-1	09/26/19 11:20	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	
638221-004	W	MW-8	09/26/19 11:40	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	
638221-005	W	MW-7	09/26/19 12:10	SW8021B	BTEX by EPA 8021	10/02/19	10/10/19	JKR	BR4FBZ BZ BZME EBZ T	

Inter Office Shipment or Sample Comments:

Relinquished By:

Elizabeth McClellan

Date Relinquished: 09/26/2019

Received By:

Brianna Teel

Date Received: 09/27/2019 11:27

Cooler Temperature: 0.3



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 48860

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Elizabeth McClellan

Date Sent: 09/26/2019 03:41 PM

Received By: Brianna Teel

Date Received: 09/27/2019 11:27 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Brianna Teel

Date: 09/27/2019



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE-Artesia

Date/ Time Received: 09/26/2019 02:09:00 PM

Work Order #: 638221

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.4
#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 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes Subbed to Midland
#18 Water VOC samples have zero headspace?	Yes

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

Analyst:

PH Device/Lot#:

Checklist completed by:


Elizabeth McClellan

Date: 09/26/2019

Checklist reviewed by:


Jessica Kramer

Date: 09/27/2019



Analytical Report 645533

for

Talon LPE-Artesia

Project Manager: David Adkins

Lovington Deep

700376 051 54

12.13.2019

Collected By: Client

**1089 N Canal Street
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TN102385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



12.13.2019

Project Manager: **David Adkins**

Talon LPE-Artesia

408 West Texas St.

Artesia, NM 88210

Reference: XENCO Report No(s): **645533**

Lovington Deep

Project Address: Artesia, NM

David Adkins:

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) 645533. 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. 645533 will be filed for 45 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,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Assistant

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



Sample Cross Reference 645533

Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW18	W	12.07.2019 16:15		645533-001
MW19	W	12.07.2019 15:10		645533-002
MW20	W	12.07.2019 14:40		645533-003
MW7	W	12.07.2019 12:15		645533-004
MW4	W	12.07.2019 12:54		645533-005
MW11	W	12.07.2019 08:35		645533-006
MW12	W	12.07.2019 09:00		645533-007
MW9	W	12.07.2019 09:30		645533-008
MW5	W	12.07.2019 10:20		645533-009
MW10	W	12.07.2019 10:45		645533-010
MW8	W	12.07.2019 11:05		645533-011
MW1	W	12.07.2019 11:50		645533-012
MW15	W	12.07.2019 13:00		645533-013
MW16	W	12.07.2019 13:36		645533-014
MW3	W	12.07.2019 14:15		645533-015



CASE NARRATIVE

Client Name: Talon LPE-Artesia

Project Name: Lovington Deep

Project ID: 700376 051 54
Work Order Number(s): 645533

Report Date: 12.13.2019
Date Received: 12.09.2019

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3110198 BTEX by EPA 8021

Surrogate 1,4-Difluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 645533-003.



Certificate of Analytical Results

645533

Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW18**

Matrix: Water

Sample Depth:

Lab Sample Id: 645533-001

Date Collected: 12.07.2019 16:15

Date Received: 12.09.2019 08:00

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3110198

Date Prep: 12.11.2019 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.122	0.00200	0.000408	mg/L	12.11.2019 18:06		1
Toluene	108-88-3	0.00273	0.00200	0.000367	mg/L	12.11.2019 18:06		1
Ethylbenzene	100-41-4	0.00199	0.00200	0.000657	mg/L	12.11.2019 18:06	J	1
m_p-Xylenes	179601-23-1	0.00744	0.00400	0.000630	mg/L	12.11.2019 18:06		1
o-Xylene	95-47-6	0.00349	0.00200	0.000642	mg/L	12.11.2019 18:06		1
Xylenes, Total	1330-20-7	0.0109		0.000630	mg/L	12.11.2019 18:06		
Total BTEX		0.138		0.000367	mg/L	12.11.2019 18:06		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	108	70 - 130	%		
4-Bromofluorobenzene	98	70 - 130	%		

Sample Id: **MW19**

Matrix: Water

Sample Depth:

Lab Sample Id: 645533-002

Date Collected: 12.07.2019 15:10

Date Received: 12.09.2019 08:00

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3110198

Date Prep: 12.11.2019 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00180	0.00200	0.000408	mg/L	12.11.2019 18:26	J	1
Toluene	108-88-3	0.000720	0.00200	0.000367	mg/L	12.11.2019 18:26	J	1
Ethylbenzene	100-41-4	0.00206	0.00200	0.000657	mg/L	12.11.2019 18:26		1
m_p-Xylenes	179601-23-1	0.00319	0.00400	0.000630	mg/L	12.11.2019 18:26	J	1
o-Xylene	95-47-6	0.00128	0.00200	0.000642	mg/L	12.11.2019 18:26	J	1
Xylenes, Total	1330-20-7	0.00447		0.000630	mg/L	12.11.2019 18:26		
Total BTEX		0.00905		0.000367	mg/L	12.11.2019 18:26		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	93	70 - 130	%		



Certificate of Analytical Results

645533

Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW20**

Matrix: Water

Sample Depth:

Lab Sample Id: 645533-003

Date Collected: 12.07.2019 14:40

Date Received: 12.09.2019 08:00

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3110198

Date Prep: 12.11.2019 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	2.24	0.200	0.0408	mg/L	12.12.2019 15:58	D	100
Toluene	108-88-3	0.00218	0.00200	0.000367	mg/L	12.11.2019 18:47		1
Ethylbenzene	100-41-4	0.00376	0.00200	0.000657	mg/L	12.11.2019 18:47		1
m_p-Xylenes	179601-23-1	0.00217	0.00400	0.000630	mg/L	12.11.2019 18:47	J	1
o-Xylene	95-47-6	0.00123	0.00200	0.000642	mg/L	12.11.2019 18:47	J	1
Xylenes, Total	1330-20-7	0.00340		0.000630	mg/L	12.11.2019 18:47		
Total BTEX		2.25		0.000367	mg/L	12.12.2019 15:58		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	153	70 - 130	%		**
4-Bromofluorobenzene	104	70 - 130	%		

Sample Id: **MW7**

Matrix: Water

Sample Depth:

Lab Sample Id: 645533-004

Date Collected: 12.07.2019 12:15

Date Received: 12.09.2019 08:00

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3110301

Date Prep: 12.12.2019 10:15

Subcontractor: SUB: T104704400-19-19

Prep seq: 7692251

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.12.2019 14:57	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.12.2019 14:57	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.12.2019 14:57	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.12.2019 14:57	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.12.2019 14:57	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	12.12.2019 14:57	U	
Total BTEX		<0.000367		0.000367	mg/L	12.12.2019 14:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	85	70 - 130	%		
4-Bromofluorobenzene	115	70 - 130	%		



Certificate of Analytical Results

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Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW4** Matrix: Water Sample Depth:
Lab Sample Id: 645533-005 Date Collected: 12.07.2019 12:54 Date Received: 12.09.2019 08:00
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3110198 Date Prep: 12.11.2019 09:00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.000710	0.00200	0.000408	mg/L	12.11.2019 19:27	J	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.11.2019 19:27	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.11.2019 19:27	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.11.2019 19:27	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.11.2019 19:27	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	12.11.2019 19:27	U	
Total BTEX		0.000710		0.000367	mg/L	12.11.2019 19:27	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	93	70 - 130	%		

Sample Id: **MW11** Matrix: Water Sample Depth:
Lab Sample Id: 645533-006 Date Collected: 12.07.2019 08:35 Date Received: 12.09.2019 08:00
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3110198 Date Prep: 12.11.2019 09:00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.000820	0.00200	0.000408	mg/L	12.11.2019 19:47	J	1
Toluene	108-88-3	0.000440	0.00200	0.000367	mg/L	12.11.2019 19:47	J	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.11.2019 19:47	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.11.2019 19:47	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.11.2019 19:47	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	12.11.2019 19:47	U	
Total BTEX		0.00126		0.000367	mg/L	12.11.2019 19:47	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	94	70 - 130	%		



Certificate of Analytical Results

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Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW12**

Matrix: Water

Sample Depth:

Lab Sample Id: 645533-007

Date Collected: 12.07.2019 09:00

Date Received: 12.09.2019 08:00

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3110198

Date Prep: 12.11.2019 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.000680	0.00200	0.000408	mg/L	12.11.2019 20:07	J	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.11.2019 20:07	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.11.2019 20:07	U	1
m_p-Xylenes	179601-23-1	0.000640	0.00400	0.000630	mg/L	12.11.2019 20:07	J	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.11.2019 20:07	U	1
Xylenes, Total	1330-20-7	0.000640		0.000630	mg/L	12.11.2019 20:07	J	
Total BTEX		0.00132		0.000367	mg/L	12.11.2019 20:07	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	91	70 - 130	%		

Sample Id: **MW9**

Matrix: Water

Sample Depth:

Lab Sample Id: 645533-008

Date Collected: 12.07.2019 09:30

Date Received: 12.09.2019 08:00

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3110198

Date Prep: 12.11.2019 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.000410	0.00200	0.000408	mg/L	12.11.2019 20:27	J	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.11.2019 20:27	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.11.2019 20:27	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.11.2019 20:27	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.11.2019 20:27	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	12.11.2019 20:27	U	
Total BTEX		0.000410		0.000367	mg/L	12.11.2019 20:27	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	94	70 - 130	%		



Certificate of Analytical Results

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Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW5** Matrix: Water Sample Depth:
Lab Sample Id: 645533-009 Date Collected: 12.07.2019 10:20 Date Received: 12.09.2019 08:00
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3110198 Date Prep: 12.11.2019 09:00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.11.2019 20:47	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.11.2019 20:47	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.11.2019 20:47	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.11.2019 20:47	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.11.2019 20:47	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	12.11.2019 20:47	U	
Total BTEX		<0.000367		0.000367	mg/L	12.11.2019 20:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	94	70 - 130	%		

Sample Id: **MW10** Matrix: Water Sample Depth:
Lab Sample Id: 645533-010 Date Collected: 12.07.2019 10:45 Date Received: 12.09.2019 08:00
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3110198 Date Prep: 12.11.2019 09:00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	1.12	0.200	0.0408	mg/L	12.12.2019 16:18	D	100
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.11.2019 22:06	U	1
Ethylbenzene	100-41-4	0.0564	0.00200	0.000657	mg/L	12.11.2019 22:06		1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.11.2019 22:06	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.11.2019 22:06	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	12.11.2019 22:06	U	
Total BTEX		1.18		0.000367	mg/L	12.12.2019 16:18		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	120	70 - 130	%		
4-Bromofluorobenzene	85	70 - 130	%		



Certificate of Analytical Results

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Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW8** Matrix: Water Sample Depth:
Lab Sample Id: 645533-011 Date Collected: 12.07.2019 11:05 Date Received: 12.09.2019 08:00
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3110198 Date Prep: 12.11.2019 09:00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0586	0.00200	0.000408	mg/L	12.11.2019 22:26		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.11.2019 22:26	U	1
Ethylbenzene	100-41-4	0.00422	0.00200	0.000657	mg/L	12.11.2019 22:26		1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.11.2019 22:26	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.11.2019 22:26	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	12.11.2019 22:26	U	
Total BTEX		0.0628		0.000367	mg/L	12.11.2019 22:26		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	89	70 - 130	%		

Sample Id: **MW1** Matrix: Water Sample Depth:
Lab Sample Id: 645533-012 Date Collected: 12.07.2019 11:50 Date Received: 12.09.2019 08:00
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3110198 Date Prep: 12.11.2019 09:00
Subcontractor: SUB: T104704400-19-19 Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00424	0.00200	0.000408	mg/L	12.11.2019 22:46		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.11.2019 22:46	U	1
Ethylbenzene	100-41-4	0.000660	0.00200	0.000657	mg/L	12.11.2019 22:46	J	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.11.2019 22:46	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.11.2019 22:46	U	1
Xylenes, Total	1330-20-7	<0.000630		0.000630	mg/L	12.11.2019 22:46	U	
Total BTEX		0.00490		0.000367	mg/L	12.11.2019 22:46		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	93	70 - 130	%		



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Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW15**

Matrix: Water

Sample Depth:

Lab Sample Id: 645533-013

Date Collected: 12.07.2019 13:00

Date Received: 12.09.2019 08:00

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3110198

Date Prep: 12.11.2019 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00162	0.00200	0.000408	mg/L	12.11.2019 23:07	J	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.11.2019 23:07	U	1
Ethylbenzene	100-41-4	0.0624	0.00200	0.000657	mg/L	12.11.2019 23:07		1
m_p-Xylenes	179601-23-1	0.0369	0.00400	0.000630	mg/L	12.11.2019 23:07		1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.11.2019 23:07	U	1
Xylenes, Total	1330-20-7	0.0369		0.000630	mg/L	12.11.2019 23:07		
Total BTEX		0.101		0.000367	mg/L	12.11.2019 23:07		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	105	70 - 130	%		
4-Bromofluorobenzene	111	70 - 130	%		

Sample Id: **MW16**

Matrix: Water

Sample Depth:

Lab Sample Id: 645533-014

Date Collected: 12.07.2019 13:36

Date Received: 12.09.2019 08:00

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3110198

Date Prep: 12.11.2019 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.000470	0.00200	0.000408	mg/L	12.11.2019 23:27	J	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.11.2019 23:27	U	1
Ethylbenzene	100-41-4	0.00598	0.00200	0.000657	mg/L	12.11.2019 23:27		1
m_p-Xylenes	179601-23-1	0.00492	0.00400	0.000630	mg/L	12.11.2019 23:27		1
o-Xylene	95-47-6	0.000850	0.00200	0.000642	mg/L	12.11.2019 23:27	J	1
Xylenes, Total	1330-20-7	0.00577		0.000630	mg/L	12.11.2019 23:27		
Total BTEX		0.0122		0.000367	mg/L	12.11.2019 23:27		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	100	70 - 130	%		



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Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: **MW3**

Matrix: Water

Sample Depth:

Lab Sample Id: 645533-015

Date Collected: 12.07.2019 14:15

Date Received: 12.09.2019 08:00

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3110198

Date Prep: 12.11.2019 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.00508	0.00200	0.000408	mg/L	12.11.2019 23:47		1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.11.2019 23:47	U	1
Ethylbenzene	100-41-4	0.0360	0.00200	0.000657	mg/L	12.11.2019 23:47		1
m_p-Xylenes	179601-23-1	0.0179	0.00400	0.000630	mg/L	12.11.2019 23:47		1
o-Xylene	95-47-6	0.000990	0.00200	0.000642	mg/L	12.11.2019 23:47	J	1
Xylenes, Total	1330-20-7	0.0189		0.000630	mg/L	12.11.2019 23:47		
Total BTEX		0.0600		0.000367	mg/L	12.11.2019 23:47		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	105	70 - 130	%		
4-Bromofluorobenzene	108	70 - 130	%		



Certificate of Analytical Results

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Talon LPE-Artesia, Artesia, NM

Lovington Deep

Sample Id: 7692131-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7692131-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3110198

Date Prep: 12.11.2019 09:00

Subcontractor: SUB: T104704400-19-19

Prep seq: 7692131

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.11.2019 15:45	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.11.2019 15:45	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.11.2019 15:45	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.11.2019 15:45	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.11.2019 15:45	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	93	70 - 130	%		

Sample Id: 7692251-1-BLK

Matrix: Water

Sample Depth:

Lab Sample Id: 7692251-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: KTL

% Moist:

Tech: KTL

Seq Number: 3110301

Date Prep: 12.12.2019 10:15

Subcontractor: SUB: T104704400-19-19

Prep seq: 7692251

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000408	0.00200	0.000408	mg/L	12.12.2019 14:17	U	1
Toluene	108-88-3	<0.000367	0.00200	0.000367	mg/L	12.12.2019 14:17	U	1
Ethylbenzene	100-41-4	<0.000657	0.00200	0.000657	mg/L	12.12.2019 14:17	U	1
m_p-Xylenes	179601-23-1	<0.000630	0.00400	0.000630	mg/L	12.12.2019 14:17	U	1
o-Xylene	95-47-6	<0.000642	0.00200	0.000642	mg/L	12.12.2019 14:17	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	83	70 - 130	%		
4-Bromofluorobenzene	105	70 - 130	%		

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ 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: Lovington Deep

Work Orders : 645533

Project ID: 700376 051 54

Lab Batch #: 3110198

Sample: 7692131-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.11.2019 14:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	70-130	
4-Bromofluorobenzene	0.0301	0.0300	100	70-130	

Lab Batch #: 3110198

Sample: 7692131-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.11.2019 14:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	70-130	
4-Bromofluorobenzene	0.0316	0.0300	105	70-130	

Lab Batch #: 3110198

Sample: 645634-001 S / MS

Batch: 1 Matrix: Storm Water

Units: mg/L

Date Analyzed: 12.11.2019 14:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	70-130	
4-Bromofluorobenzene	0.0301	0.0300	100	70-130	

Lab Batch #: 3110198

Sample: 645634-001 SD / MSD

Batch: 1 Matrix: Storm Water

Units: mg/L

Date Analyzed: 12.11.2019 15:06

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	70-130	
4-Bromofluorobenzene	0.0299	0.0300	100	70-130	

Lab Batch #: 3110198

Sample: 7692131-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.11.2019 15:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	70-130	
4-Bromofluorobenzene	0.0279	0.0300	93	70-130	

* 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: Lovington Deep

Work Orders : 645533

Project ID: 700376 051 54

Lab Batch #: 3110301

Sample: 7692251-1-BKS / BKS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.12.2019 12:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	70-130	
4-Bromofluorobenzene	0.0319	0.0300	106	70-130	

Lab Batch #: 3110301

Sample: 7692251-1-BSD / BSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.12.2019 12:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	70-130	
4-Bromofluorobenzene	0.0351	0.0300	117	70-130	

Lab Batch #: 3110301

Sample: 645811-002 S / MS

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.12.2019 13:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	70-130	
4-Bromofluorobenzene	0.0353	0.0300	118	70-130	

Lab Batch #: 3110301

Sample: 645811-002 SD / MSD

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.12.2019 13:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	70-130	
4-Bromofluorobenzene	0.0355	0.0300	118	70-130	

Lab Batch #: 3110301

Sample: 7692251-1-BLK / BLK

Batch: 1 Matrix: Water

Units: mg/L

Date Analyzed: 12.12.2019 14:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	70-130	
4-Bromofluorobenzene	0.0316	0.0300	105	70-130	

* 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: Lovington Deep

Work Order #: 645533

Project ID: 700376 051 54

Analyst: KTL

Date Prepared: 12.11.2019

Date Analyzed: 12.11.2019

Lab Batch ID: 3110198

Sample: 7692131-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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
Analytes											
Benzene	<0.000408	0.100	0.104	104	0.100	0.104	104	0	70-130	25	
Toluene	<0.000367	0.100	0.0985	99	0.100	0.0989	99	0	70-130	25	
Ethylbenzene	<0.000657	0.100	0.0953	95	0.100	0.0963	96	1	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.193	97	0.200	0.196	98	2	70-130	25	
o-Xylene	<0.000642	0.100	0.0944	94	0.100	0.0965	97	2	70-130	25	

Analyst: KTL

Date Prepared: 12.12.2019

Date Analyzed: 12.12.2019

Lab Batch ID: 3110301

Sample: 7692251-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021	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
Analytes											
Benzene	<0.000408	0.100	0.107	107	0.100	0.101	101	6	70-130	25	
Toluene	<0.000367	0.100	0.102	102	0.100	0.101	101	1	70-130	25	
Ethylbenzene	<0.000657	0.100	0.0987	99	0.100	0.0998	100	1	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.198	99	0.200	0.204	102	3	70-130	25	
o-Xylene	<0.000642	0.100	0.0961	96	0.100	0.101	101	5	70-130	25	

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 / MSD Recoveries

Project Name: Lovington Deep

Work Order #: 645533

Lab Batch ID: 3110198

Date Analyzed: 12.11.2019

Reporting Units: mg/L

QC- Sample ID: 645634-001 S

Date Prepared: 12.11.2019

Project ID: 700376 051 54

Batch #: 1 Matrix: Storm Water

Analyst: KTL

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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
Benzene	<0.000408	0.100	0.103	103	0.100	0.0976	98	5	70-130	25	
Toluene	<0.000367	0.100	0.0959	96	0.100	0.0923	92	4	70-130	25	
Ethylbenzene	<0.000657	0.100	0.0928	93	0.100	0.0884	88	5	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.187	94	0.200	0.178	89	5	70-130	25	
o-Xylene	<0.000642	0.100	0.0938	94	0.100	0.0893	89	5	70-130	25	

Lab Batch ID: 3110301

Date Analyzed: 12.12.2019

Reporting Units: mg/L

QC- Sample ID: 645811-002 S

Date Prepared: 12.12.2019

Batch #: 1 Matrix: Water

Analyst: KTL

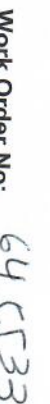
MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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
Benzene	<0.000408	0.100	0.107	107	0.100	0.102	102	5	70-130	25	
Toluene	<0.000367	0.100	0.105	105	0.100	0.100	100	5	70-130	25	
Ethylbenzene	<0.000657	0.100	0.102	102	0.100	0.0986	99	3	70-130	25	
m_p-Xylenes	<0.000630	0.200	0.208	104	0.200	0.201	101	3	70-130	25	
o-Xylene	<0.000642	0.100	0.102	102	0.100	0.0994	99	3	70-130	25	

Matrix Spike Percent Recovery $[D] = 100 * (C - A) / B$
Relative Percent Difference $RPD = 200 * |(C - F) / (C + F)|$

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

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.



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Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RCC ☐ Superfund ☐

State of Project:

Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables: EDD ☐ ADAPT ☐ Other: _____

ANALYSIS REQUEST										Preservative Codes
Press. Code										MeOH: Me None: NO HNO ₃ : HN

H ₂ SO ₄ : H ₂
HCl: HL
NaOH: Na
Zn Acetate+ NaOH: Zn
TAT starts the day received by the lab if

[illegible]

1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenoco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Bill Fogg</i>	<i>[Signature]</i>	12/6/19 08:00	2		
3			4		
5			6		



Chain of Custody

Work Order No: 645533

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 689-6701

www.xenoco.com Page 2 of 2

Project Manager:	DAVID ADKINS	Bill to: (if different)	DAVID ADKINS
Company Name:	TALON LPE	Company Name:	AT&T CAMILLE BRYANT
Address:	4108 Texas St	Address:	AT&T CAMILLE BRYANT
City, State ZIP:	ARLINGTON TEXAS 76010	City, State ZIP:	5835 2002-10312
Phone:	535 441 4835	Email:	ADKINS@TALONLPE.COM

Program: ☐ UST/ST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project: ☐ Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Reporting Level: ☐ Level II ☐ Level III ☐ Level IV ☐
Deliverables: ☐ EDD ☐ ADAPT ☐ Other: ☐

Project Name:	LOUNGTON DEED	Turn Around	☒
Project Number:	700376 05154	Routine	☒
Project Location:		Rush:	
Sampler's Name:	BILL RIGGS	Due Date:	
PO #:	5835 2002-10312	Quote #:	

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):				Thermometer ID		
Received Intact:	Yes	No		Correction Factor:		
Cooler Custody Seals:	Yes	No		Total Containers:		
Sample Custody Seals:	Yes	No				

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Preservative Codes	Sample Comments
	MW8	GW	12-7-19	11:05 AM		3		MeOH: Me	EMAIL ANALYTICALS TO CAMILLE BRYANT
	MW1	GW	12-7-19	11:50 AM		3		None: NO	
	MW15	GW	12-7-19	1 PM		3		HNO3: HN	
	MW16	GW	12-7-19	1:36 PM		3		H2SO4: H2	
	MW3	GW	12-7-19	2:15 PM		3		HCL: HL	
								NaOH: Na	
								Zn Acetate+ NaOH: Zn	
								TAT starts the day received by the lab, if received by 4:00pm	

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed	TCLP / SPLP 6010:	8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenoco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenoco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenoco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenoco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		12/9/19 08:00			



Inter-Office Shipment

Page 1 of 1

IOS Number **53778**

Date/Time: 12/09/19 11:29

Created by: Martha Castro

Please send report to: Jessica Kramer

Lab# From: **Carlsbad**

Delivery Priority:

Address: 1089 N Canal Street

Lab# To: **Midland**

Air Bill No.: 7771922236835

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
645533-001	W	MW18	12/07/19 16:15	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-002	W	MW19	12/07/19 15:10	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-003	W	MW20	12/07/19 14:40	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-004	W	MW7	12/07/19 12:15	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-005	W	MW4	12/07/19 12:54	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-006	W	MW11	12/07/19 08:35	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-007	W	MW12	12/07/19 09:00	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-008	W	MW9	12/07/19 09:30	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-009	W	MW5	12/07/19 10:20	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-010	W	MW10	12/07/19 10:45	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-011	W	MW8	12/07/19 11:05	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-012	W	MW1	12/07/19 11:50	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-013	W	MW15	12/07/19 13:00	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-014	W	MW16	12/07/19 13:36	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	
645533-015	W	MW3	12/07/19 14:15	SW8021B	BTEX by EPA 8021	12/13/19	12/21/19	JKR	BR4FBZ BZ BZME EBZ T	

Inter Office Shipment or Sample Comments:

Relinquished By:

Martha Castro

Date Relinquished: 12/09/2019

Received By:

Brianna Teel

Date Received: 12/10/2019 11:52

Cooler Temperature: 0.6



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 53778

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sent By: Martha Castro

Date Sent: 12/09/2019 11:29 AM

Received By: Brianna Teel

Date Received: 12/10/2019 11:52 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 12/10/2019



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Talon LPE-Artesia

Date/ Time Received: 12/09/2019 08:00:00 AM

Work Order #: 645533

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T NM 7

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	Yes
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No Xenco Midland
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Martha Castro

Date: 12/09/2019

Checklist reviewed by: Jessica Kramer

Date: 12/12/2019