LIMITED PHASE II
ENVIRONMENTAL SITE ASSESSMENT REPORT

ALMEDA ROAD RECONSTRUCTION PROJECT
HOUSTON, HARRIS COUNTY, TEXAS

WBS NO. N-000806-0001-3

PREPARED FOR:

WALTER P. MOORE ENGINEERING, INC.

BY:

BERG♦OLIVER ASSOCIATES, INC.
HOUSTON, TEXAS

REPORT NO: 7314H-P2
NOVEMBER 2014

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November 21, 2014

Walter P. Moore Engineering, Inc.
Attn: Mr. Thusita Silva
1301 McKinney Street, Suite 1100
Houston, Texas 77010

RE: Limited Phase II Environmental Site Assessment (ESA) Report
Almeda Road Drainage & Paving Project
Houston, Harris County, Texas
WBS No. N-000806-0001-3

BOA Project No.: 7314H-P2

Mr. Silva:

EXECUTIVE SUMMARY

Berg♦Oliver Associates, Inc. is pleased to present our report summarizing the findings and conclusions of the Limited Phase II ESA conducted for the Almeda Road Drainage & Paving project in Houston, Harris County, Texas. The following provides a brief summary of the Phase II ESA:

Seven soil borings were completed at three sites of potential Recognized Environmental Conditions (RECs). Soil borings, SB-1 through SB-7 were completed to 24 feet below ground surface (bgs). Seven soil samples were collected and submitted for laboratory analytical testing. Soil samples were analyzed for total petroleum hydrocarbons (TPH) and methyl-tert butyl ether and benzene toluene, ethyl-benzene and total xylenes (MTBE/BTEX). Groundwater was collected from two soil borings, SB-5/TWP-7 and SB-7/TWP-7. Groundwater was analyzed for MTBE/BTEX and TPH.

Soil Laboratory Analytical Results

The following was reported for the soil laboratory analytical results for the three REC locations:

- The three investigated REC locations were determined not to require additional work related to soil. The soil laboratory analytical results were non-detect for MTBE/BTEX and TPH.

Groundwater and Groundwater Laboratory Analytical Results

During the Phase II ESA, groundwater was encountered from 17 to 19 feet bgs in the soil borings.

Groundwater was sampled at soil borings SB-5 and SB-7. The following is noted:

- *SB-5 Groundwater Sample*: No MTBE/BTEX or TPH analytes were detected at this temporary well point (TWP) location.
- *SB-7 Groundwater Sample*: No BTEX or TPH analytes were detected at this temporary well point (TWP) location. However, MTBE was detected and reported to be 0.026 mg/L. The concentration is below the TCEQ, TRRP $^{GW}GW_{Ing}$ PCL or Federal Primary Drinking Water Standards Maximum Concentration Levels (MCL). However, due to the detection, part of the REC location is a PPCA. If dewatering is required at the location, based on the lab results, groundwater will require special disposal practices. However, excavations are not anticipated to be completed to groundwater at this portion of the project alignment.

Recommendations

Based on the laboratory analytical results and field observations of the Limited Phase II ESA for the Almeda Road Drainage & Paving project in Houston, Harris County, Texas, the following is recommended:

Soil Laboratory Analytical Results

- Based on the soil laboratory analytical results, the soil was determined not to be a concern to construction workers. Based on the laboratory analytical results, the soil was determined to not require special handling practices. Based on the laboratory analytical results, air monitoring is not warranted at the investigated locations. Confined space protocols still apply. No additional environmental assessment is warranted.

*Groundwater Laboratory Analytical Results

Chevron/former Exxon Mobil/Exxon RAS No. 6-7451 gasoline service station (2424 Old Spanish Trail)

- *This location was only identified as having very minor groundwater impact (SB-7). A minor MTBE concentration (0.026 mg/L) was reported at this REC location. Table II presented in the Tables Appendix provide additional details on the groundwater laboratory analytical results. The area is identified as a Potentially Contaminated Area. Special handling practices of the groundwater are required, unless determined to be acceptable for discharge by pre-discharge sampling and analyses (construction-related activity). Additionally, excavations to groundwater are not proposed for the REC location. The constraints of the area are presented on *Figure 3*.
    - The Station No. range is from 13+00 to 15+00 (Almeda Road).

If you have any questions or comments, please contact me at 281-589-0898.

Regards,

Ben Price, PG
Vice President
Attachment

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1.0 INTRODUCTION

Paving improvements (street reconstruction and widening) and select below surface utilities are proposed for replacement for the Almeda Road project. Location maps (Key Map©® and United States Geological Survey Topographic Map), FIGURES 1A and 1B identify the general area of the project and are presented in the Figures of this report.

2.0 SCOPE-OF-WORK

Berg♦Oliver Associates, Inc. (BOA) was retained by Walter P. Moore & Associates, Inc. to evaluate whether the project alignment has been affected by three leaking petroleum storage tank (LPST) facilities at three Recognized Environmental Conditions (REC) locations along the road alignment. The REC locations are as follows:

1. Astrodome Medical Center Rents (2803 Old Spanish Trail/US Highway 90-A). The property is occupied by a multi-tenant strip-style retail center. An LPST event was referenced to the location. A gasoline service station was previously present at the location. The REC location is situated on the northeast corner of Almeda Road and Old Spanish Trail (US Hwy. 90-A).
2. Med Center Shell Station/Former Chevron No. 60107975 Station (2802 Old Spanish Trail). The facility has had an LPST event. An active gas station is present at the location. The REC location is situated on the southeast corner of Almeda Road and Old Spanish Trail.
3. Chevron/Old Med Center ExxonMobil-Exxon RAS No. 6-7451 (2424 Old Spanish Trail). The facility has had an LPST event. An active gas station is present at the location. The REC location is situated on the southwest corner of Almeda Road and Old Spanish Trail.

Sampling and analyses are conducted to determine whether contamination is present at the REC locations and the concentration of the contaminant(s) in the soil and/or groundwater, if any. The Phase II ESA consisted of the following:

- The Phase II ESA was conducted to determine whether RECs have affected the project alignment.
- Completed a Texas Excavation Safety (Texas 811) notification.
- Placing soil borings for soil sampling to provide adequate coverage of the investigated facilities or area. Submitted soil samples for laboratory analytical testing based upon field observations (visual and olfactory) and field screening.
- Conducted continuous field screening of soil cores at 2.0-foot intervals utilizing a photo-ionization detector (PID) calibrated to 100 ppm isobutylene standard.
- Completed up to seven soil borings at the project alignment. Converted two soil borings to temporary well point for the collection of shallow groundwater.

- Collected and submitted soil samples for laboratory analyses of methyl tert-butyl ether/benzene, toluene, ethyl-benzene and total xylenes (MTBE/BTEX) and total petroleum hydrocarbons (TPH).
- Collected and submitted two groundwater samples for laboratory analyses MTBE/BTEX and total petroleum hydrocarbons (TPH).
- Detailed site assessment activities, reviewed laboratory analytical results and presented the results and conclusions in a Limited Phase II ESA report.

3.0 PHASE II ESA ACTIVITIES

On October 6th and 7th, 2014, BOA completed seven soil borings, SB-1 through SB-7 at three locations along the project alignment. The soil borings were completed to 24 feet below ground surface (bgs). Two of the seven soil borings, SB-5 and SB-7 were converted to temporary well points, TWP-5 & TWP-7 for the collection of groundwater.

Soil borings were advanced utilizing direct push technologies inclusive of a truck-mounted hydraulically-driven sampling device consisting of a 2-inch diameter, 4-foot stainless steel sampling spoon. Soil samples were continuously collected at 2-foot intervals and field screened utilizing a photo-ionization detector (PID). PID field screenings were non-detect (0.0 ppm). Geologic stratigraphy (lithology) and subsurface characteristics were recorded by the field geologist. FIGURES 2 and 3 provide investigated site details and soil boring locations. Soil boring logs are presented in APPENDIX A.

Prior to the initial soil boring and between each 4-foot advancement, all sampling devices were thoroughly cleaned and decontaminated using a hospital grade detergent, water and distilled water. Soil samples were obtained by personnel utilizing appropriate sampling tools and wearing clean, disposable gloves. Disposable nitrile gloves were changed between each sample collection. Two discrete (grab) samples were collected from each 2-foot interval of the soil borings. One sample was placed in a disposable bag for headspace screening. The second soil sample was placed in a separate 8- or 4-ounce sterile glass containers equipped with Teflon-lined lids furnished by the testing laboratory. Each container was filled to capacity with soil to limit the amount of headspace present. All samples were labeled in the field and stored at approximately 4^{o}C prior to submission to ESC Lab Sciences for laboratory analyses. Chain-of-custody documentation accompanied the samples in accordance with standard quality assurance and quality control measures.

3.1 SOIL SAMPLING (2803 Old Spanish Trail)

Three soil borings, SB-1 through SB-3 were completed along the east side of Almeda Road, north of Old Spanish Trail/US Highway 90-Alernate. The soil borings were completed to 24 feet bgs. PID readings were non-detect (0.0 ppm). Default soil samples were collected and submitted for laboratory analyses. One soil sample was collected and submitted from each soil boring. FIGURE 2 provides site details and soil boring locations.

This REC is the location of an apparent old gasoline service station and LPST facility. The default responsible party was Astrodome Medical Center Rents (2803 OST). The facility was not reported to have groundwater impact (LPST ID No. 114185), but is situated in close proximity to and adjoins the project alignment. The facility has been issued a case closure concurrence by the TCEQ, stating, "no further action is necessary" based on the information they received. One 10,000 gallon gasoline and two 5,000 gallon gasoline steel underground storage tanks (USTs) have been permanently removed the ground at the facility. The facility was located on the northeast corner of Almeda Road and OST. The gas station has been demolished/removed. The site has been redeveloped with a strip-style retail center. Due to the close proximity of the facility to the project alignment, additional evaluation was considered appropriate.

3.2 SOIL SAMPLING (2802 Old Spanish Trail)

Two soil borings, SB-4 and SB-5 were advanced at this REC location. The soil borings were completed to 24 feet bgs. The soil borings were completed on the east side of Almeda Road, south of Old Spanish Trail (OST). The soil borings PID readings were non-detect (0.0 ppm). Default soil samples were collected and submitted for laboratory analyses. FIGURE 3 provides site details and soil boring locations. Groundwater was encountered at 17 feet (thin zone) and 21 feet bgs in soil boring SB-4 and 17 feet bgs in soil boring SB-5 at this REC location. A groundwater sample was collected from soil boring SB-5.

This REC is the location of an LPST facility and active gasoline service station, Med Center Shell. The LPST facility, Former Chevron No. 60107975 (2802 OST) was reported to have groundwater impact (LPST ID No. 114547). The facility has since been issued a case closure concurrence by the TCEQ. Three 10,000 gallon gasoline and one 1,000 gallon used oil fiberglass reinforced plastic (FRP) underground storage tank (USTs) are active at the facility. The facility is located on the southeast corner of Almeda Road and OST and adjoins the project alignment. Due to the close proximity of the facility to the project alignment, additional evaluation was considered appropriate.

3.3 SOIL SAMPLING (2424 Old Spanish Trail)

Two soil borings, SB-6 and SB-7 were completed at this REC location. The soil borings were completed to 24 feet bgs. The soil borings were advanced on the west side of Almeda Road, south of OST. PID readings were non-detect (0.0 ppm). Default soil samples were collected and submitted for laboratory analyses. FIGURE 3 provides site details and soil boring locations. Groundwater was encountered at 18 feet bgs at this REC location.

The facility is currently a Chevron-branded station. The REC is the location of an LPST facility. The LPST facility, Med Center ExxonMobil Station/Exxon RAS No. 6-7451 (2424 OST) was reported to have groundwater impact (LPST ID

No. 92183). The facility has since been issued a case closure concurrence by the TCEQ. One 12,000 gallon gasoline, one 10,000 gallon gasoline and one 8,000 gallon FRP USTs are active at the facility. One 1,000 gallon used oil FRP UST has been permanently removed the ground at the facility. The facility was formerly a tenant of a strip-style retail center. Due to the close proximity of the facility to the project alignment, additional evaluation was considered appropriate.

3.4 GROUNDWATER SAMPLING

Two of the seven soil borings were converted to temporary well points, SB-5/TWP-5 and SB-7/TWP-7. After the completion of soil borings, a ¾-inch PVC temporary well point was placed in the borings. The temporary well points were developed by slowly purging the well with a peristaltic pump and purge water was co-mingled with drummed soil cuttings. After purging and recharge, groundwater samples were collected utilizing a dedicated plastic bailer. Groundwater was transferred from the bailer into glass 40 ml VOA vials equipped with Teflon-lined lids furnished by the testing laboratory. Each container was filled to capacity with groundwater to an inverted meniscus. All samples were labeled in the field and stored at approximately 4^{o}C prior to submission to ESC Lab Sciences. Chain-of-custody documentation accompanied the samples in accordance with standard quality assurance and quality control measures. FIGURE 3 provide site details and temporary well point locations. Soil boring logs for the temporary well point and other soil borings are presented in APPENDIX A.

4.0 REGULATORY FRAMEWORK

The Texas Commission on Environmental Quality (TCEQ) administers the Environmental Protection Agency (EPA) regulations and enforcement in Texas. It has additionally established its own standards for environmental compliance. The Texas Risk Reduction Program (TRRP) administered by TCEQ, as provided for in 30 TAC Chapter 350, addresses levels of regulated compounds and allowable levels of such contaminants to protect human health, safety, and the environment. The TCEQ TRRP applies to closures, corrective actions, and remediation efforts subject to the jurisdiction of the TCEQ. The TRRP, whether residential or commercial, contains provisions for Remedy Standard A (no physical controls required) or Remedy Standard B (physical controls required). Implementation of Remedy Standard A or Remedy Standard B is a tiered process, as described in general terms below:

- Tier 1 is a risk-based analysis to derive non site-specific protective concentration limits (PCLs) for complete or reasonably anticipated to be complete exposure pathways. Tier 1 is based on default exposure factors and affected property parameters, and assumes exposure occurs at, above, or below the source area (i.e., no lateral transport) (TCEQ Subchapter D Section 350.75 (b)).
- Tier 2 is a risk-based analysis to derive site-specific PCLs for complete or reasonably anticipated to be completed exposure pathways utilizing site-specific

exposure factors, as allowable, and/or affected property parameters and Tier 1 equations. Tier 2 PCLs may also include lateral transport considerations (TCEQ, Subchapter D Section 350.75 (c)).

- Tier 3 is a risk-based analysis to derive site-specific PCLs for complete or reasonably anticipated to be completed exposure pathways. Tier 3 PCLs are based on measured natural attenuation factors and/or natural attenuation factor models/equations other than those provided for Tier 1 or 2; and may also include site-specific exposure factors, as allowable, and/or affected property parameters (TCEQ, Subchapter D Section 350.75 (d)).

The below provided soil PCLs are concentrations which are protective of human health and the environment:

* $^{GW}Soil_{Ing}$ * Groundwater Soil Ingestion ($^{GW}Soil_{Ing}$) is the groundwater protection standard for either residential or commercial use. Concentration in soil is assumed protective of groundwater considering cross-medial contamination of groundwater from contaminated soil. This is the critical PCL for special handling practices of the soil for the project.

* $^{Tot}Soil_{Comb}$ * The Total Soil Combined ($^{Tot}Soil_{Comb}$) PCLs are a combined exposure standard for residential use. The PCL considers cross-media contamination of human ingestion, inhalation and dermal pathways. This is the critical PCL for construction worker exposure concentrations.

The following details groundwater PCLs:

* $^{GW}GW_{Ing}$ * Groundwater Ingestion ($^{GW}GW_{Ing}$) is the groundwater protection standard for either residential or commercial use. The $^{GW}GW_{Ing}$ PCLs are the same as the Federal Drinking Water Standards Maximum Concentration Limits (MCLs). This will be utilized to determine whether the groundwater is acceptable for surface discharge.

MTBE/BTEX concentrations will be the environmental and exposure consideration of this project. The $^{Tot}Soil_{Comb}$ and $^{GW}GW_{Ing}$ PCLs are the action levels for this project.

5.0 SOIL/GW LABORATORY ANALYTICAL RESULTS

A total of seven soil samples were collected from the seven soil borings and soil samples were submitted to a certified laboratory for analyses. The soil samples were

analyzed for total petroleum hydrocarbons (TPH) by Texas Commission on Environmental Quality (TCEQ) Texas Method 1005, methyl tert-butyl ether/benzene, toluene, ethyl-benzene and total xylenes (MTBE/BTEX) by EPA Method SW846-8260B. Two groundwater samples were collected from two temporary well points, TWP-5 and TWP-7. Groundwater samples from TWP-5 and TWP-7 were submitted for MTBE/BTEX and TPH analyses.

5.1 LABORATORY ANALYTICAL METHODS

Methyl tert-butyl ether/benzene, toluene, ethylbenzene, and xylene (MTBE/BTEX) and/or by SW-846 EPA Method 8260: This laboratory analysis employs a gas chromatograph (GC) equipped with a Mass Spectrometer (MS) detector to detect and quantify certain regulated, volatile organic compounds in a soil or water sample. Compounds on this list include certain chlorinated solvents used in dry cleaning and printing processes, refined petroleum products such as gasoline and diesel, and others. This method can also be used to test for BTEX compounds, which are a portion of the entire VOA list. These compounds are common components of most formulated gasolines, and their presence is a reliable indicator that a gasoline release has occurred.

Total Petroleum Hydrocarbons (TPH) by TCEQ Method 1005: This laboratory analysis utilizes a GC equipped with a flame ionization detector (FID) to quantify levels of petroleum compounds or derivatives in the range from C6 to C28, in a soil or groundwater medium. Results are reported in two to three distinct ranges, from C6 to C12, >C12 to C28 and >C28 to C35. This allows some interpretation as to the possible source of the release, based upon the indicated carbon range. Petroleum hydrocarbons are not necessarily hazardous or toxic. The analysis is designed to determine if TPH is present, and to quantify the level of petroleum hydrocarbons. This analysis is especially useful as a broad category procedure, and may indicate additional testing for the specific hazardous or toxic constituents which may be present and contribute to the TPH levels assessed. Some constituents of petroleum hydrocarbons may be hazardous or toxic, high levels of TPH require additional testing of the sample area.

5.2 SOIL LABORATORY ANALYTICAL RESULTS

Soil samples, SB-1 at 6-8 feet, SB-2 at 4-6 feet, SB-3 at 24-26 feet; SB-4 at 6-8 feet, SB-5 at 2-4 feet, SB-6 at 14-16 feet and SB-7 at 8-10 feet bgs were collected and submitted for TPH and MTBE/BTEX analyses from the soil borings. The resulting laboratory analytical data was compared to the TCEQ TRRP Total Soil Combined ($^{Tot}Soil_{Comb}$) Protective Concentration Limits (PCLs) and Groundwater Soil Ingestion ($^{GW}Soil_{Ing}$) PCLs. Soil samples compared to the TCEQ Texas TCEQ TRRP $^{Tot}Soil_{Comb}$ and $^{GW}Soil_{Ing}$ PCLs.

5.2.1 LAB ANALYTICAL RESULTS (2803 OST at Almeda Road)

Three soil samples, SB-1 at 6-8 feet bgs, SB-2 at 4-6 feet bgs and SB-3 at

24-26 feet bgs, were collected, submitted and analyzed for this REC location. The following was reported for individual MTBE/BTEX constituents for the soil samples:

- MTBE concentrations were determined to be non-detect (<0.00021 mg/kg).
- Benzene concentrations were determined to be non-detect (<0.00027 mg/kg).
- Toluene concentrations were determined to be non-detect (<0.00043 mg/kg).
- Ethyl-benzene concentrations were determined to be non-detect (<0.00030 mg/kg).
- Total xylene concentrations were determined to be non-detect (<0.00070 mg/kg).

The following was reported in the designated carbon ranges for the soil samples:

- TPH carbon ranges C_6-C_{12} were determined to be non-detect (<15 mg/kg).
- TPH carbon ranges >C_{12}-C_{28} were determined to be non-detect (<15 mg/kg).
- TPH carbon ranges >C_{28}-C_{35} were determined to be non-detect (<15 mg/kg).

No BTEX or TPH detections were reported at the REC location. TABLE I summarizes the laboratory analytical results. A copy of the laboratory analytical data is presented in APPENDIX B. Photographs of some of the field activities are presented in APPENDIX C. FIGURE 2 provides the soil boring locations and additional details.

5.2.2 LAB ANALYTICAL RESULTS (2802 OST at Almeda Road)

Two soil samples, SB-4 at 6-8 feet bgs and SB-5 at 2-4 feet bgs, were collected, submitted and analyzed for this REC location. The following was reported for individual MTBE/BTEX constituents for the soil samples:

- MTBE concentrations were determined to be non-detect (<0.00021 mg/kg).
- Benzene concentrations were determined to be non-detect (<0.00027 mg/kg).
- Toluene concentrations were determined to be non-detect (<0.00043 mg/kg).
- Ethyl-benzene concentrations were determined to be non-detect (<0.00030 mg/kg).
- Total xylene concentrations were determined to be non-detect (<0.00070 mg/kg).

The following was reported in the designated carbon ranges for the soil samples:

- TPH carbon ranges C_6-C_{12} were determined to be non-detect (<15 mg/kg).
- TPH carbon ranges >C_{12}-C_{28} were determined to be non-detect (<15 mg/kg).
- TPH carbon ranges >C_{28}-C_{35} were determined to be non-detect (<15 mg/kg).

No BTEX or TPH detections were reported at the REC location. TABLE I summarizes the laboratory analytical results. FIGURE 3 provides the soil boring locations and additional details.

5.2.3 LAB ANALYTICAL RESULTS (2424 OST at Almeda Road)

Two soil samples, SB-6 at 14-16 and SB-7 at 8-10 feet bgs, were submitted and analyzed for this REC location. The following was reported for individual MTBE/BTEX constituents for the soil samples:

- MTBE concentrations were determined to be non-detect (<0.00021 mg/kg).
- Benzene concentrations were determined to be non-detect (<0.00027 mg/kg).
- Toluene concentrations were determined to be non-detect (<0.00043 mg/kg).
- Ethyl-benzene concentrations were determined to be non-detect (<0.00030 mg/kg).
- Total xylene concentrations were determined to be non-detect (<0.00070 mg/kg).

The following was reported in the designated carbon ranges for the soil samples:

- TPH carbon ranges C_6-C_{12} were determined to be non-detect (<15 mg/kg).
- TPH carbon ranges >C_{12}-C_{28} were determined to be non-detect (<15 mg/kg).
- TPH carbon ranges >C_{28}-C_{35} were determined to be non-detect (<15 mg/kg).

No BTEX or TPH detections were reported at the REC location. TABLE I summarizes the laboratory analytical results. FIGURE 3 provides the soil boring locations and additional details.

5.3 GROUNDWATER LABORATORY ANALYTICAL RESULTS

Groundwater samples were collected at two REC locations. Groundwater samples were collected from soil borings, SB-5 and SB-7 that were converted to temporary well points, TWP-5 and TWP-7, and analyzed for MTBE/BTEX by EPA Method SW846-8260 and TPH by Texas Method 1005.

5.3.1 LAB ANALYTICAL RESULTS (2802 OST)

One groundwater sample, TWP-5 was collected from the above-noted location. The following was reported for individual MTBE/BTEX constituents for the water sample:

- The MTBE concentration was determined to be non-detect (<0.00037 mg/L).
- The benzene concentration was determined to be non-detect (<0.00033 mg/L).
- The toluene concentration was determined to be non-detect (<0.00078 mg/L).
- The ethyl-benzene concentration was determined to be non-detect (<0.00038 mg/L).
- The total xylene concentration was determined to be non-detect (<0.0011 mg/L).

The following was reported in the designated carbon ranges for the groundwater samples:

- The TPH carbon range C_6-C_{12} was determined to be non-detect (<0.60 mg/L).
- The TPH carbon range >C_{12}-C_{28} was determined to be non-detect (<0.60 mg/L).
- The TPH carbon range >C_{28}-C_{35} was determined to be non-detect (<0.60 mg/L).

No MTBE/BTEX or TPH concentrations were detected. No additional work is required at this REC location. A copy of the laboratory analytical results is presented in APPENDIX B.

5.3.2 LAB ANALYTICAL RESULTS (2424 OST)

One groundwater sample, TWP-7 was collected from the above-noted location. The following was reported for individual MTBE/BTEX constituents for the water sample:

- The MTBE concentration was determined to be 0.026 mg/L.
- The benzene concentration was determined to be non-detect (<0.00033 mg/L).
- The toluene concentration was determined to be non-detect (<0.00078

mg/L).

- The ethyl-benzene concentration was determined to be non-detect (<0.00038 mg/L).
- The total xylene concentration was determined to be non-detect (<0.0011 mg/L).

The following was reported in the designated carbon ranges for the groundwater samples:

- The TPH carbon range C_6-C_{12} was determined to be non-detect (<0.60 mg/L).
- The TPH carbon range >C_{12}-C_{28} was determined to be non-detect (<0.60 mg/L).
- The TPH carbon range >C_{28}-C_{35} was determined to be non-detect (<0.60 mg/L).

No BTEX or TPH constituents or TPH were detected at this REC location. A low level MTBE concentration was reported (0.026 mg/L). The MTBE concentration is not above TCEQ $^{GW}GW_{Ing}$ PCL and/or Federal Drinking Water Standard Maximum Concentration Limits (MCLs). Based on the detection, dewatering should be avoided or special management practices shall be required. Groundwater cannot be discharged to the surface without special handling practices of the generated water. However, if the groundwater lab results collected for discharge of the groundwater are below the discharge guidelines, groundwater may be discharged without further handling. Groundwater must be contained/stored until this occurs. However, based on BOA understanding of the project, excavations to groundwater are not proposed for this REC location.

6.0 AIR MONITORING/WASTE OR MANAGEMENT PRACTICES

Air monitoring is not warranted at the three REC investigated areas of the project. Confined space protocol still applies.

"S*pecial handling practices*" of the soil is not required at the three investigated REC location.

Special handling practices of groundwater is required, if dewatering is required in the vicinity of soil boring SB-7/temporary well point TWP-7. Based on BOA's understating of the project, excavation to groundwater is not proposed at the REC location.

8.0 CONCLUSIONS

The purpose of the assessment was to determine the absence or presence and concentration levels of petroleum hydrocarbons in soil and/or groundwater. Phase II ESA activities were conducted in accordance with Berg♦Oliver Associates, Inc. proposal/workplan dated September 16, 2014. Phase II ESA activities also were

conducted in accordance with the ASTM 1903 Standard Practice and the City of Houston criteria. The following was indicated by the laboratory analytical results:

Soil Laboratory Analytical Results

The following was reported for the soil laboratory analytical results for the three REC locations:

- The three investigated REC locations were determined not to require additional work related to soil. The soil laboratory analytical results were non-detect for MTBE/BTEX and TPH.

Groundwater and Groundwater Laboratory Analytical Results

During the Phase II ESA, groundwater was encountered from 17 to 19 feet bgs in the soil borings.

Groundwater was sampled at soil borings SB-5 and SB-7. The following is noted:

- *SB-5 Groundwater Sample*: No MTBE/BTEX or TPH analytes were detected at this temporary well point (TWP) location.
- *SB-7 Groundwater Sample*: No BTEX or TPH analytes were detected at this temporary well point (TWP) location. However, MTBE was detected and reported to be 0.026 mg/L. The concentration is below the TCEQ, TRRP $^{GW}GW_{Ing}$ PCL or Federal Primary Drinking Water Standards Maximum Concentration Levels (MCL). However, due to the detection, part of the REC location is a PPCA. If dewatering is required at the location, based on the lab results, groundwater will require special disposal practices. However, excavations are not anticipated to be completed to groundwater at this portion of the project alignment.

9.0 RECOMMENDATIONS

Based on the laboratory analytical results and field observations of the Limited Phase II Environmental Site Assessment for the Almeda Road Drainage & Paving project in Houston, Harris County, Texas, the following is noted:

Soil Laboratory Analytical Results

- Based on the soil laboratory analytical results, the soil was determined not to be a concern to construction workers. Based on the laboratory analytical results, the soil was determined to not require special handling practices. Based on the laboratory analytical results, air monitoring is not warranted at the investigated locations. Confined space protocols still apply. No additional environmental assessment is warranted.

*Groundwater Laboratory Analytical Results

Chevron/former Exxon Mobil/Exxon RAS No. 6-7451 gasoline service station (2424 Old Spanish Trail)

- *This location was only identified as having very minor groundwater impact (SB-7). A minor MTBE concentration (0.026 mg/L) was reported at this REC location. Table II presented in the Tables Appendix provide additional details on the groundwater laboratory analytical results. The area is identified as a Potentially Contaminated Area. Special handling practices of the groundwater are required, unless determined to be acceptable for discharge by pre-discharge sampling and analyses (construction-related activity). Additionally, excavations to groundwater are not proposed for the REC location. The constraints of the area are presented on *Figure 3*.
    - The Station No. range is from 13+00 to 15+00 (Almeda Road).

FIGURES

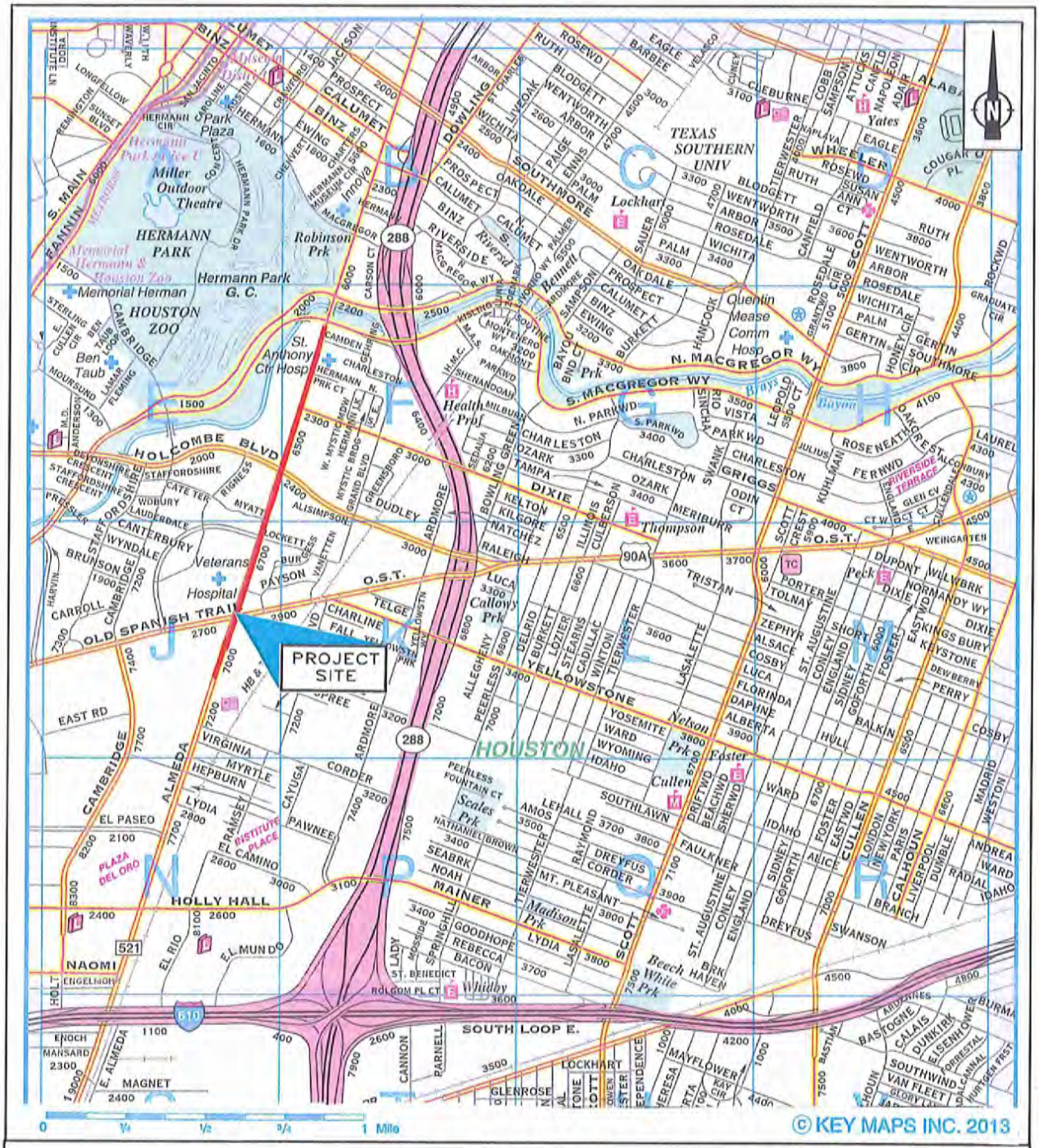


FIGURE 1A

ALMEDA ROAD DRAINAGE AND PAVING PROJECT
HARRIS COUNTY, TEXAS
WBS No. N-000806-0001-3

HARRIS COUNTY KEY MAP PAGE: 533

APPROXIMATE SCALE 1" = 1/2 MILE = 2,640'

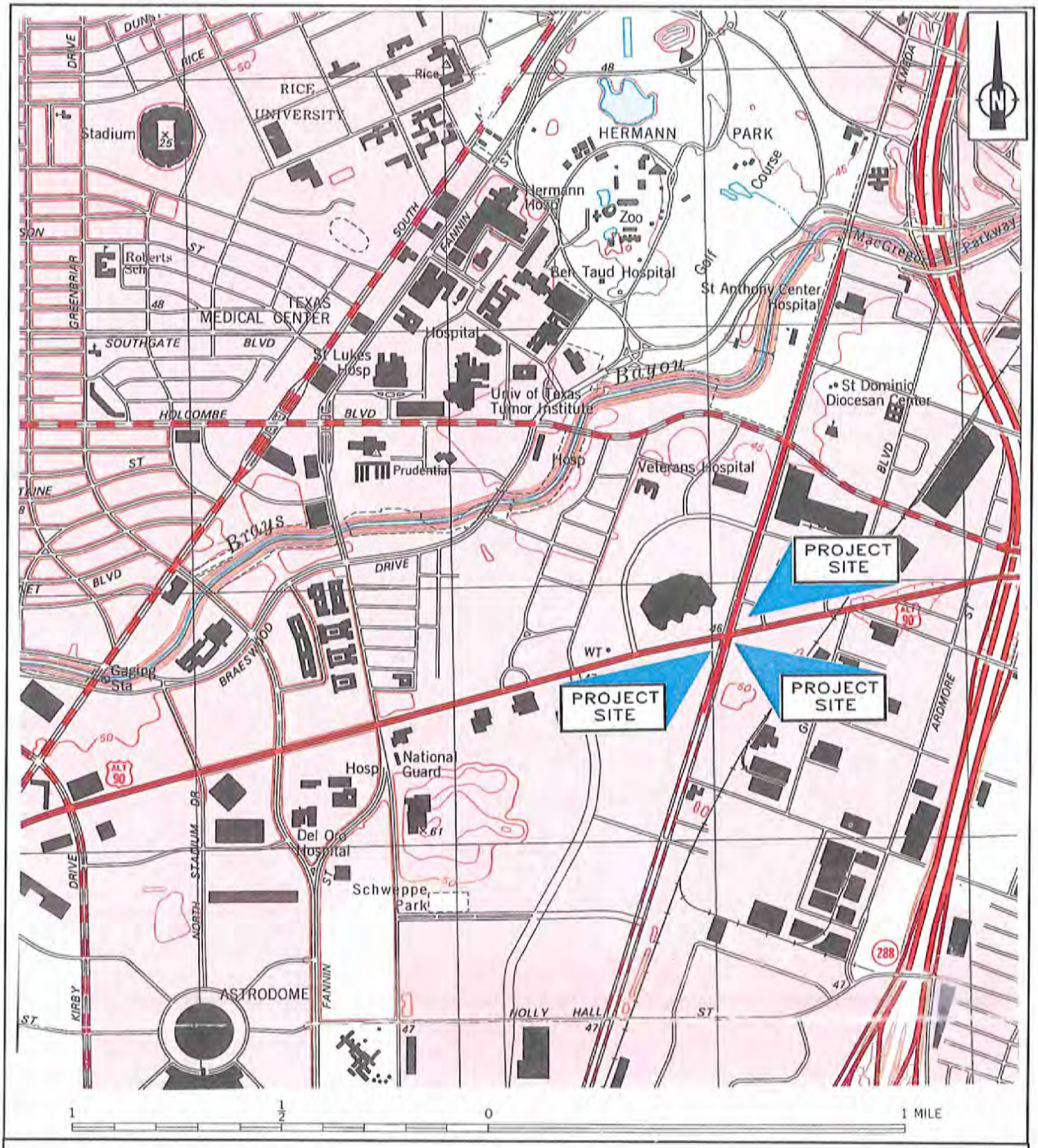
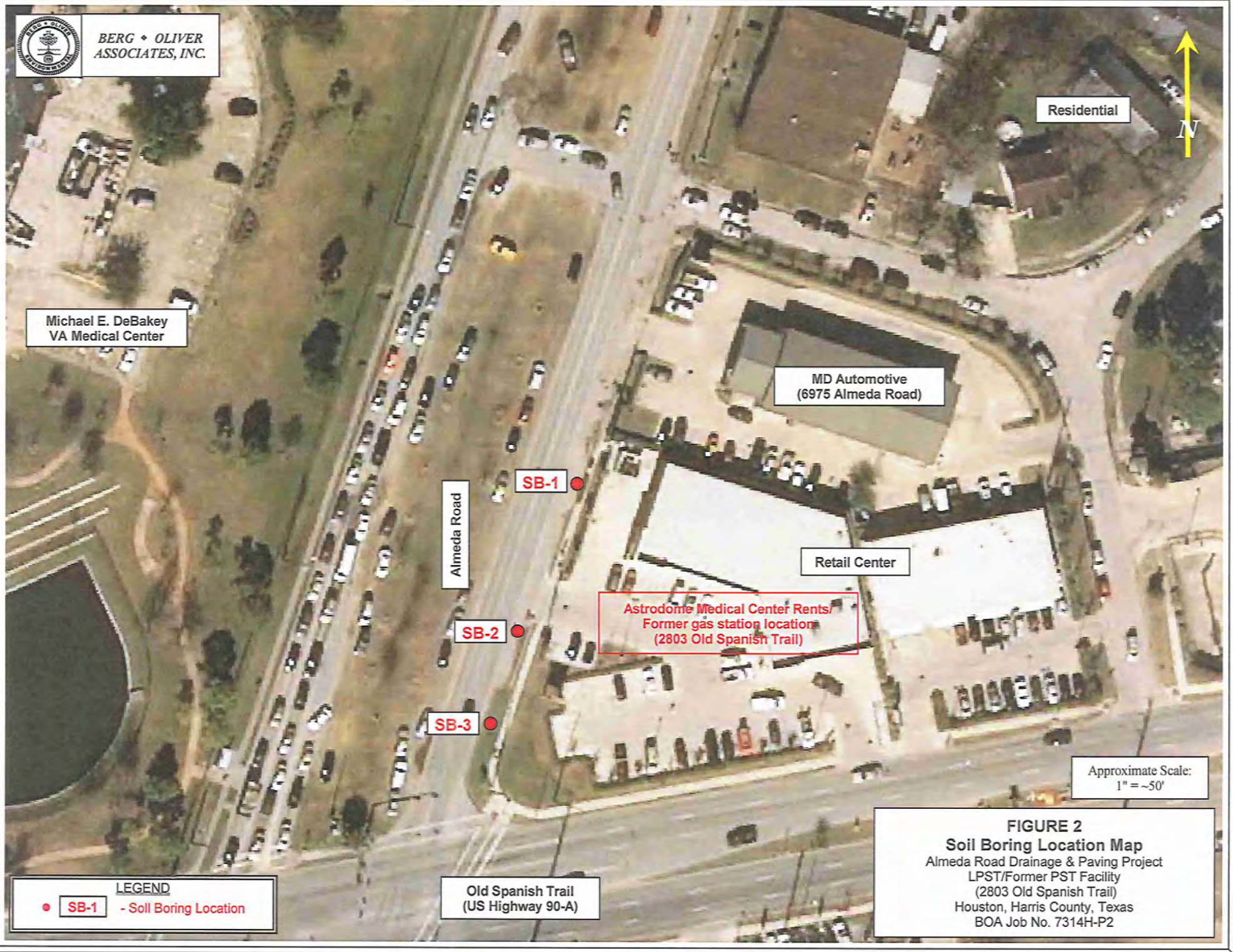


FIGURE 1B

ALMEDA ROAD DRAINAGE AND PAVING PROJECT
HARRIS COUNTY, TEXAS
WBS No. N-000806-0001-3

U.S. DEPARTMENT OF INTERIOR GEOLOGICAL SURVEY
1995 BELLAIRE QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC) MAP
APPROXIMATE SCALE: 1" = 2,000'


BERG • OLIVER
ASSOCIATES, INC.
Residential
N
Michael E. DeBakey
VA Medical Center
MD Automotive
(6975 Almeda Road)
SB-1
Almeda Road
Retail Center
Astrodome Medical Center Rents/
Former gas station location
(2803 Old Spanish Trail)
SB-2
SB-3
Approximate Scale:
1" = ~50'
LEGEND
SB-1 - Soil Boring Location
Old Spanish Trail
(US Highway 90-A)
FIGURE 2
Soil Boring Location Map
Almeda Road Drainage & Paving Project
LPST/Former PST Facility
(2803 Old Spanish Trail)
Houston, Harris County, Texas
BOA Job No. 7314H-P2


BERG • OLIVER ASSOCIATES, INC.
Old Spanish Trail (US Highway 90-A)
N
SB-4
Med Center Shell Station
Former Chevron No. 60107975 St.
(2802 Old Spanish Trail)
SB-6
SB-5
Almeda Road
Chevron/Former Med Center ExxonMobil Station
Exxon RAS No. 6-7451
(2424 Old Spanish Trail)
SB-7
LEGEND
SB-4 - Soil Boring Location
Potentially Petroleum Contaminated Area
(Grounwater Only)
Approximate Scale:
1" = ~50'
FIGURE 3
Soil Boring Location Map
Almeda Road Drainage & Paving oject
Med Center Shell/LPST-Former Chevron PST Facility
(2802 Old Spanish Trail) and
Med Center ExxonMobil/LPST-PST Facility
(2424 Old Spanish Trail)
Houston, Harris County, Texas
BOA Job No. 7314H-P2

TABLES

TABLE I

SUMMARY OF SOIL LABORATORY ANALYTICAL RESULTS - BTEX/TPH
ALMEDA ROAD DRAINAGE AND PAVING PROJECT
HOUSTON, HARRIS COUNTY, TEXAS

Sample ID	Date	Depth (feet)	MTBE (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	BTEX (mg/kg)	TPH C6-C12 (mg/kg)	TPH >C12-C28 (mg/kg)	TPH >C28-C35 (mg/kg)	Total TPH (mg/kg)
TRRP Tier 1 PCLs ($^{Tot}Soil_{Comb}$)			804	116	5,934	6,394	5,957	NA	1,600	2,300	NA	NA
TRRP Tier 1 PCLs ($^{GW}Soil_{Ing}$)			0.621	0.026	8.21	7.63	122	NA	65	200	NA	NA
SOIL BORING SOIL SAMPLES												
Astrodome Medical Center Rents (2803 Old Spanish Trail/US Hwy. 90-A)												
SB-1	11/06/14	6-8	<0.00021	<0.00027	<0.00043	<0.00030	<0.00070	ND	<15	<15	<15	ND
SB-2	11/06/14	4-6	<0.00021	<0.00027	<0.00043	<0.00030	<0.00070	ND	<15	<15	<15	ND
SB-3	11/07/14	24-26	<0.00021	<0.00027	<0.00043	<0.00030	<0.00070	ND	<15	<15	<15	ND
Med Center Shell Station/Former Chevron (2802 Old Spanish Trail)												
SB-4	11/07/14	6-8	<0.00021	<0.00027	<0.00043	<0.00030	<0.00070	ND	<15	<15	<15	ND
SB-5	11/07/14	2-4	<0.00021	<0.00027	<0.00043	<0.00030	<0.00070	ND	<15	<15	<15	ND
Chevron/Old Med Center ExxonMobil Station-Exxon RAS No. 6-7451 (2424 Old Spanish Trail)												
SB-6	11/07/14	14-16	<0.00021	<0.00027	<0.00043	<0.00030	<0.00070	ND	<15	<15	<15	ND
SB-7	11/07/14	8-10	<0.00021	<0.00027	<0.00043	<0.00030	<0.00070	ND	<15	<15	<15	ND

Notes:

1. PCLs indicates TRRP Tier 1 Tables protective concentration limits (May 2011).
2. TRRP Tier 1 PCLs ($^{Tot}Soil_{Comb}$) indicates the PCLs for the combined soil exposure pathways (Residential, 0.5-acre site).
3. TRRP Tier 1 PCLs ($^{GW}Soil_{Ing}$) indicates the PCLs for the leaching of soil concentrations into groundwater (Residential, 0.5-acre site).
4. Analyses by the following methods: BTEX - EPA Method SW846-8260; TPH - Texas Method 1005.
5. Detections are provided in bold font.
6. NA indicates Not Applicable, or Not Available.
7. ND indicates Non-Detect.

TABLE II

SUMMARY OF GROUNDWATER ANALYTICAL DATA - BTEX/TPH
ALMEDA ROAD DRAINAGE AND PAVING PROJECT
HOUSTON, HARRIS COUNTY, TEXAS

Sample ID	Date	Benzene (mg/L)	Toluene (mg/L)	Ethyl-Benzene (mg/L)	Xylenes (mg/L)	BTEX (mg/L)	MTBE (mg/L)	TPH C6-C12 (mg/L)	TPH >C12-C28 (mg/L)	TPH >C28-C35 (mg/L)	Total TPH (mg/L)
TRRP Tier 1 PCLs ($^{GW}GW_{Ing}$)		**0.005**	**1.0**	**0.7**	**10.0**	NA	**0.244**	**0.98**	**0.98**	**0.98**	NA
TRRP Tier 1 PCLs ($^{GW}GW_{Class\ 3}$)		**0.5**	**100**	**70**	**1,000**	NA	**24.4**	**97**	**97**	**97**	NA
TRRP Tier 1 PCLs ($^{Air}GW_{Inh-V}$)		**50**	**5,203**	**15,648**	**1,576**	NA	**4,038**	**4,250**	**7,497**	NA	NA
SOIL BORING/TEMPORARY WELL POINT											
Med Center Shell Station/Former Chevron (2802 Old Spanish Trail)											
SB-5/TWP-5	11/07/14	<0.00033	<0.00078	<0.00038	<0.0011	ND	<0.00037	<0.60	<0.60	<0.60	ND
Chevron/Old Med Center ExxonMobil Station-Exxon RAS No. 6-7451 (2424 Old Spanish Trail)											
SB-7/TWP-7	11/07/14	<0.00033	<0.00078	<0.00038	<0.0011	ND	**0.026**	<0.60	<0.60	<0.60	ND

Notes:

1. PCLs indicates TRRP Tier 1 Tables protective concentration limits.
2. TRRP Tier 1 PCLs ($^{GW}GW_{Ing}$) indicates the PCLs for groundwater ingestion and is the same as MCLs under Federal Drinking Water Standards.
3. TRRP Tier 1 PCLs ($^{GW}GW_{Class\ 3}$) indicates the PCLs for Class 3 groundwater conditions.
4. TRRP Tier 1 PCLs ($^{Air}GW_{Inh-V}$) indicates the PCLs for the inhalation of water vapor.
5. Analyses by the following methods: BTEX/MTBE - EPA Method SW846-8260B; TPH - Texas Method 1005
6. Detections are provided in bold font.
7. NA indicates Not Applicable, or Not Available
8. ND indicates Non-Detect
9. Shaded cell indicates PCL exceedence, if applicable
10. J indicates and estimated concentration between the method detection limit and practical quantitation limit.

APPENDIX A

Soil Boring Logs

PROJECT NO: 7314H-P2

SITE NAME: Almeda Road Drainage & Paving project

☒ BOREHOLE ☐ MONITOR WELL

BORING NUMBER : SB-1 TEMP. WELL NUMBER :

FACILITY ADDRESS: 2803 OST at Almeda Road

DRILLING COMPANY / METHOD / RIG: Alpine/Truck-Mounted Hydraulically-Driven Push Probe

DRILLER: Clay DATE: (START/FINISH) 11/06/2014 @ 12:35 to 13:15

LOGGED BY: T. Murphy TOP OF CASING ELEVATION: N/Appl.

DEPTH (FEET)	PID	SAMPLE INTERVAL	STRATIGRAPHY	USCS	SOIL DESCRIPTION AND COMMENT (CLASSIFICATION, GRAIN SIZE, COLOR, MOISTURE, ODOR, OTHER)	NOTES
0			Ground Surface		Asphalt (3")	
	0.0			Fill	Fill, Gravel with some dark brown clay (surface to 1-foot)	
	0.0			CH	Clay; Dark gray clay, fines, moist (1-foot to 6 feet)	
5	0.0					
	0.0			CH	Clay; Light brown clay, fines, moist with FE staining (6-9 feet)	SB-1 @ 6-8'; 12:42, 1-4 oz
	0.0					
10	0.0			CH	Clay; Reddish-orange with some light brown clay, fines, moist (9-12 feet)	
	0.0			CL	Sandy Clay; Reddish-orange sandy clay, fines, moist (12-17 feet)	
15	0.0					
	0.0	▼				
	0.0					
20	0.0			SP	Silty Sand; Reddish-orange with some light brown silty sand and sand, wet to moist (17-26 feet)	
	0.0					
	0.0					
25	0.0					
30					Total Depth = 26 ft	
					Note: Probe subsurface at 12:30.	
					Groundwater was encounted at 17 feet bgs.	
35						
40						
45						

FILTER SAND | BENTONITE SEAL | GROUT / CONCRETE SURFACE | ▼ WATER ENCOUNTERED

Berg ♦ Oliver Associates, Inc.

TOTAL DEPTH: 26'

SEAL MATERIAL (TYPE/INTERVAL) Bentonite to surface

SURFACE COMPLETION: ☐ FLUSH W/CONCRETE ☐ RISER W/CONCRETE

PROJECT NO: 7314H-P2

SITE NAME: Almeda Road Drainage & Paving project

☒ BOREHOLE ☐ MONITOR WELL

BORING NUMBER : SB-2 TEMP. WELL NUMBER :

FACILITY ADDRESS: 2803 OST at Almeda Road

DRILLING COMPANY / METHOD / RIG: Alpine/Truck-Mounted Hydraulically-Driven Push Probe

DRILLER: Clay DATE: (START/FINISH) 11/06/2014 @ 13:32 to 14:11

LOGGED BY: T. Murphy TOP OF CASING ELEVATION: N/Appl.

DEPTH (FEET)	PID	SAMPLE INTERVAL	STRATIGRAPHY	USCS	SOIL DESCRIPTION AND COMMENT (CLASSIFICATION, GRAIN SIZE, COLOR, MOISTURE, ODOR, OTHER)	NOTES
0			Ground Surface		Asphalt (3")	
	0.0			Fill	Fill, Gravel with some dark brown clay (surface to 1-foot)	
	0.0			CH	Clay; Dark gray clay, fines, moist (1-foot to 5 feet)	
5	0.0					SB-2 @ 4-6'; 13:39, 1-4 oz
	0.0			CH	Clay; Light brown clay, fines, moist with FE staining (5-9 feet)	
	0.0					
10	0.0			CH	Clay; Brown & light brown with with some light gray clay, fines, moist (9-14 feet)	
	0.0					
15	0.0			CL	Sandy Clay; Reddish-orange sandy clay, fines, moist (14-19 feet)	
	0.0					
20	0.0	▼				
	0.0			SP	Silty Sand; Reddish-orange silty sand and sand, wet to moist (19-26 feet)	
	0.0					
25	0.0					
30					Total Depth = 26 ft	
					Note: Probe subsurface at 13:28.	
					Groundwater was encounted at 19 feet bgs.	
35						
40						
45						

FILTER SAND | BENTONITE SEAL | GROUT / CONCRETE SURFACE | ▼ WATER ENCOUNTERED

Berg ♦ Oliver Associates, Inc.

TOTAL DEPTH: 26'

SEAL MATERIAL: (TYPE/INTERVAL) Bentonite to surface

SURFACE COMPLETION: ☐ FLUSH W/CONCRETE ☐ RISER W/CONCRETE

SHEET 1 OF 1

PROJECT NO: 7314H-P2

SITE NAME: Almeda Road Drainage & Paving project

☒ BOREHOLE ☐ MONITOR WELL

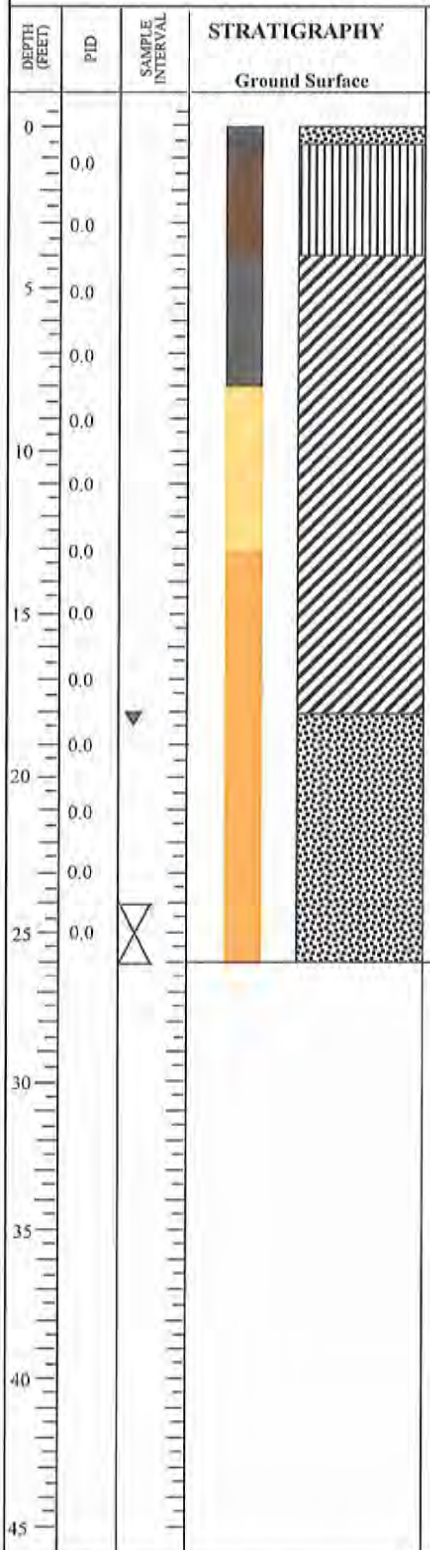
BORING NUMBER : SB-3 TEMP. WELL NUMBER :

FACILITY ADDRESS: 2803 OST at Almeda Road

DRILLING COMPANY / METHOD / RIG: Alpine/Truck-Mounted Hydraulically-Driven Push Probe

DRILLER: Clay DATE: (START/FINISH) 11/07/2014 @ 10:53 to 11:20

LOGGED BY: T. Murphy TOP OF CASING ELEVATION: N/Appl.



DEPTH (FEET)	PID	SAMPLE INTERVAL	STRATIGRAPHY	USCS	SOIL DESCRIPTION AND COMMENT (CLASSIFICATION, GRAIN SIZE, COLOR, MOISTURE, ODOR, OTHER)	NOTES
			Ground Surface			
0	0.0			Fill	Fill; Topsoil with grass and grass roots (surface to 6 inches)	
	0.0			ML	Sandy loam; Dark brown sandy loam, fines, moist (6 inches to 4 feet)	
5	0.0			CH	Clay; Dark gray clay, fines, moist (4-8 feet)	
	0.0					
	0.0			CH	Clay; Light brown and reddish-orange clay, fines, moist (8-13 feet)	
10	0.0					
	0.0					
15	0.0			CL	Sandy Clay; Reddish-orange sandy clay, fines, moist (13-18 feet)	
	0.0	▼				
	0.0					
20	0.0			SP	Silty Sand; Reddish-orange silty sand and sand, wet to moist (18-26 feet)	
	0.0					SB-3 @ 24-26'; 11:20, 1-4 oz
25	0.0					
30					Total Depth = 26 ft	
					Note: Probe subsurface at 10:50.	
35					Groundwater was encounted at 18 feet bgs.	
40						
45						

FILTER SAND | BENTONITE SEAL | GROUT / CONCRETE SURFACE | ▼ WATER ENCOUNTERED

Berg ♦ Oliver Associates, Inc.

TOTAL DEPTH: 26'

SEAL MATERIAL: (TYPE/INTERVAL) Bentonite to surface

SURFACE COMPLETION: ☐ FLUSH W/CONCRETE ☐ RISER W/CONCRETE

SHEET 1 OF 1

PROJECT NO: 7314H-P2

SITE NAME: Almeda Road Drainage & Paving project

☒ BOREHOLE ☐ MONITOR WELL

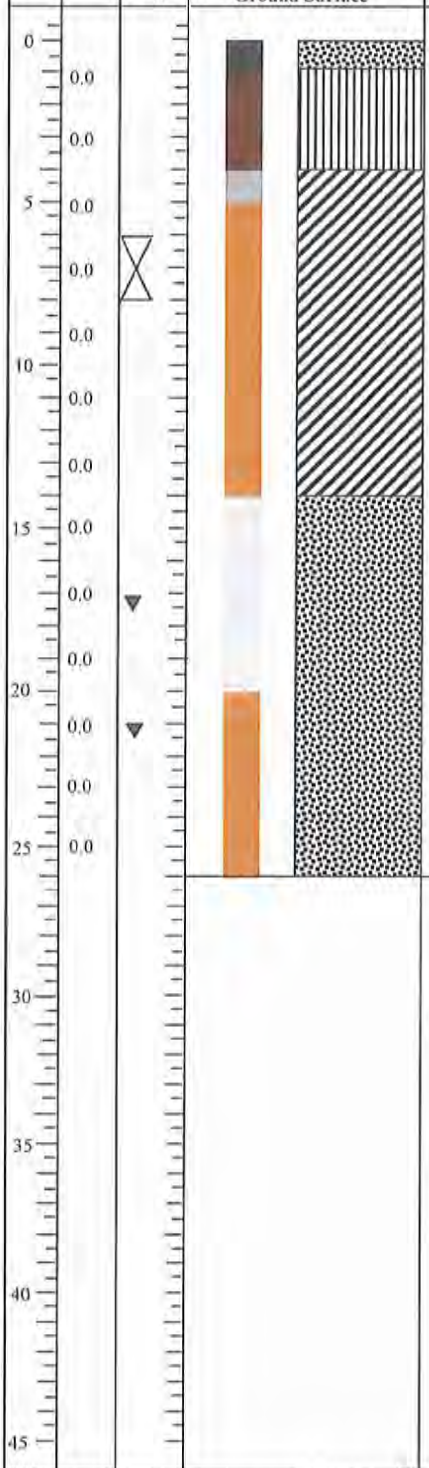
BORING NUMBER : SB-4 TEMP. WELL NUMBER :

FACILITY ADDRESS: Shell (2802 OST at Almeda Road)

DRILLING COMPANY / METHOD / RIG: Alpine/Truck-Mounted Hydraulically-Driven Push Probe

DRILLER: Clay DATE: (START/FINISH) 11/07/2014 @ 11:45 to 12:09

LOGGED BY: T. Murphy TOP OF CASING ELEVATION: N/Appl.



USCS	SOIL DESCRIPTION AND COMMENT (CLASSIFICATION, GRAIN SIZE, COLOR, MOISTURE, ODOR, OTHER)	NOTES
Fill	Fill; Topsoil with grass and grass roots (surface to 1-foot)	
ML	Sandy loam; Dark brown sandy loam, fines, moist (1-foot to 4 feet)	
CH	Clay; Gray clay (4-5 feet), brown and reddish-orange clay (5-14 feet), fines, moist (4-14 feet)	SB-4 @ 6-8'; 11:53, 1-4 oz
SP	Silty Sand; Light gray, brown and reddish-orange sandy clay, fines, moist (14-20 feet)	
SP	Silty Sand; Brwon with some light gray silty sand and sand, wet to moist (20-26 feet)	

Total Depth = 26 ft

Note: Probe subsurface at 11:40.

Groundwater was encounted at 17 (thin layer) and 21 feet bgs.

FILTER SAND ▨ BENTONITE SEAL ▩ GROUT / CONCRETE SURFACE ▼ WATER ENCOUNTERED

Berg ♦ Oliver Associates, Inc.

TOTAL DEPTH: 26'

SEAL MATERIAL: (TYPE/INTERVAL) Bentonite to surface

SURFACE COMPLETION: ☐ FLUSH W/CONCRETE ☐ RISER W/CONCRETE

PROJECT NO: 7314H-P2

SITE NAME: Almeda Road Drainage & Paving project

☒ BOREHOLE ☐ MONITOR WELL

BORING NUMBER : SB-5 TEMP. WELL NUMBER :

FACILITY ADDRESS: Shell (2802 OST at Almeda Road)

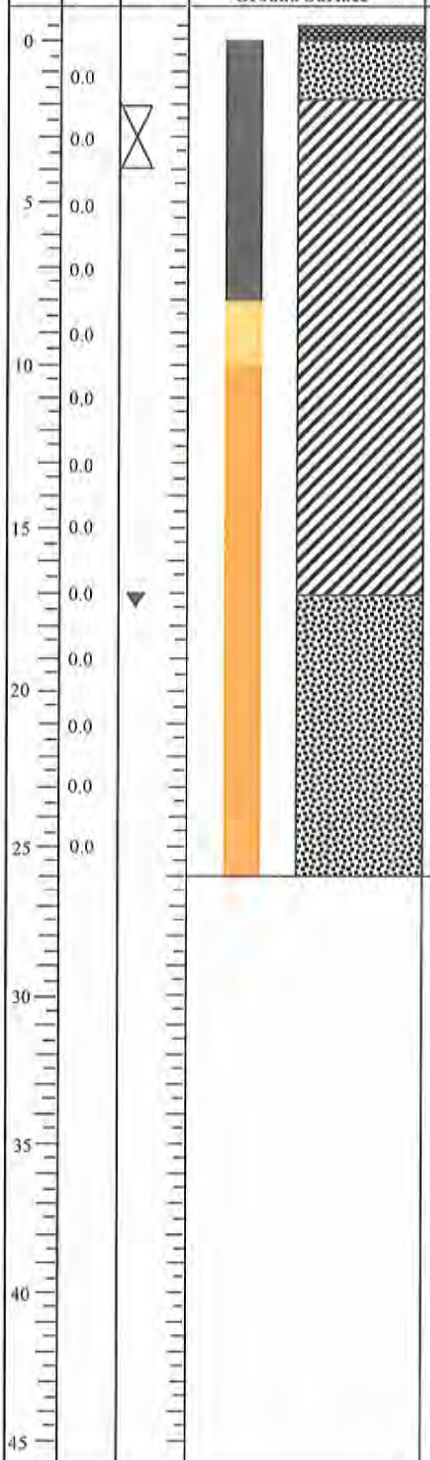
DRILLING COMPANY / METHOD / RIG: Alpine/Truck-Mounted Hydraulically-Driven Push Probe

DRILLER: Clay

DATE: (START/FINISH) 11/07/2014 @ 12:21 to 12:50

LOGGED BY: T. Murphy

TOP OF CASING ELEVATION: N/Appl.



USCS	SOIL DESCRIPTION AND COMMENT (CLASSIFICATION, GRAIN SIZE, COLOR, MOISTURE, ODOR, OTHER)	NOTES
	Asphalt (3.5")	
Fill	Fill, Gravel with some dark brown clay (surface to 2 feet)	SB-5 @ 2-4'; 12:22, 1-4 oz
CL	Sandy Clay; Dark gray sandy clay, fines, moist (2-7 feet)	
CL	Sandy Clay; Light brown sandy clay, fines, moist with FE staining (7-10 feet)	
CH	Clay; Reddish-orange and light gray clay, fines, moist, sand content increasing in depth (10-17 feet)	
SP	Silty Sand; Reddish-orange silty sand and sand, wet to moist (17-26 feet)	

Total Depth = 26 ft

Note: Probe subsurface at 12:15.
Concrete drilled at 12:14.
Groundwater was encounted at 17 feet bgs.

Groundwater sampled at 13:08.

FILTER SAND | BENTONITE SEAL | GROUT / CONCRETE SURFACE | ▼ WATER ENCOUNTERED

Berg ♦ Oliver Associates, Inc.

TOTAL DEPTH: 26'

SEAL MATERIAL: (TYPE/INTERVAL) Bentonite to surface

SURFACE COMPLETION: ☐ FLUSH W/CONCRETE ☐ RISER W/CONCRETE

SHEET 1 OF 1

PROJECT NO: 7314H-P2

SITE NAME: Almeda Road Drainage & Paving project

☒ BOREHOLE ☐ MONITOR WELL

BORING NUMBER: SB-6 TEMP. WELL NUMBER: _____

FACILITY ADDRESS: Chevron (2424 OST at Almeda Road)

DRILLING COMPANY / METHOD / RIG: Alpine/Truck-Mounted Hydraulically-Driven Push Probe

DRILLER: Clay

DATE: (START/FINISH) 11/07/2014 @ 13:29 to 14:01

LOGGED BY: T. Murphy

TOP OF CASING ELEVATION: N/Appl.

DEPTH (FEET)	PID	SAMPLE INTERVAL	STRATIGRAPHY	USCS	SOIL DESCRIPTION AND COMMENT (CLASSIFICATION, GRAIN SIZE, COLOR, MOISTURE, ODOR, OTHER)	NOTES
0			Ground Surface			
	0.0			Fill	Fill; Topsoil with grass and grass roots (surface to 7 inches)	
	0.0			CH	Clay; Dark gray clay, fines, moist (7 inches to 5 feet)	
5	0.0			CH	Clay; Light brown clay, fines, moist with FE staining (5-8 feet)	
	0.0					
	0.0					
10	0.0			CH	Clay; Reddish-orange clay, fines, moist (8-15 feet)	
	0.0					
	0.0					SB-6 @ 14-16'; 13:50, 1-4 oz
15	0.0			SP	Silty Sand; Brown and reddish-orange silty sand and sand, fines, wet to moist (15-22 feet)	
	0.0					
20	0.0					
	0.0					
	0.0			SM	Sand; Light brown sand, wet to moist (22-26 feet)	
25	0.0					
30					Total Depth = 26 ft	
					Note: Probe subsurface at 13:28.	
					Groundwater was encounted at 18 feet bgs.	
35						
40						
45						

FILTER SAND | BENTONITE SEAL | GROUT / CONCRETE SURFACE | ▼ WATER ENCOUNTERED

Berg ♦ Oliver Associates, Inc.

TOTAL DEPTH: 26

SEAL MATERIAL: (TYPE/INTERVAL) Bentonite to surface

SURFACE COMPLETION: ☐ FLUSH W/CONCRETE ☐ RISER W/CONCRETE

SHEET 1 OF 1

PROJECT NO: 7314H-P2

SITE NAME: Almeda Road Drainage & Paving project

☒ BOREHOLE ☐ MONITOR WELL

BORING NUMBER : SB-7 TEMP. WELL NUMBER

FACILITY ADDRESS: Chevron (2424 OST at Almeda Road)

DRILLING COMPANY / METHOD / RIG: Alpine/Truck-Mounted Hydraulically-Driven Push Probe

DRILLER: Clay DATE: (START/FINISH) 11/07/2014 @ 14:12 to 14:35

LOGGED BY: T. Murphy TOP OF CASING ELEVATION: N/Appl.

DEPTH (FEET)	PID	SAMPLE INTERVAL	STRATIGRAPHY	USCS	SOIL DESCRIPTION AND COMMENT (CLASSIFICATION, GRAIN SIZE, COLOR, MOISTURE, ODOR, OTHER)	NOTES
			Ground Surface			
0	0.0			Fill	Fill; Topsoil with grass and grass roots (surface to 6 inches)	
	0.0			CH	Clay; Dark gray clay, fines, moist (7 inches to 6 feet)	
5	0.0					
	0.0			CH	Clay; Brown clay, fines, moist with FE staining (6-8 feet)	SB-7 @ 8-10'; 14:21, 1-4 oz
	0.0			CH	Clay; Brown, gray and reddish-orange clay, fines, moist (8-12 feet)	
10	0.0					
	0.0			CL	Sandy Clay; Brown, gray and reddish-orange sandy clay, fines, moist (12-16 feet)	
15	0.0					
	0.0					
20	0.0			SP	Silty Sand; Reddish-orange with some gray silty sand and sand, fines, wet to moist (16-26 feet)	
	0.0					
25	0.0					
30					Total Depth = 26 ft	
					Note: Probe subsurface at 14:10.	
35					Groundwater was encounted at 18 feet bgs.	
					Groundwater sampled at 14:46.	
40						
45						

FILTER SAND | BENTONITE SEAL | GROUT / CONCRETE SURFACE | ▼ WATER ENCOUNTERED

Berg ♦ Oliver Associates, Inc.

TOTAL DEPTH: 26'

SEAL MATERIAL: (TYPE/INTERVAL) Bentonite to surface

SURFACE COMPLETION: ☐ FLUSH W/CONCRETE ☐ RISER W/CONCRETE

SHEET 1 OF 1

APPENDIX B

Laboratory Analytical Results

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L732820

For: Berg Oliver
Almeda Road

L732820

Lab SampleID.	Client ID
L732820-01	SB-1
L732820-02	SB-2
L732820-03	SB-3
L732820-04	SB-4
L732820-05	SB-5
L732820-06	SB-6
L732820-07	SB-7
L732820-08	SB-5/TWP-5
L732820-09	SB-7/TWP-7
L732820-10	IDW

Appendix A Laboratory Data Package Cover Page

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;

R2 Sample identification cross-reference;

R3 Test reports (analytical data sheets) for each environmental sample that includes:

a) Items consistent with NELAC 5.13 or ISO/IEC 17025 Section 5.10
b) dilution factors,
c) preparation methods,
d) cleanup methods, and
e) if required for the project, tentatively identified compounds (TICs).

R4 Surrogate recovery data including:

a) Calculated recovery (%R), and
b) The laboratory's surrogate QC limits.

R5 Test reports/summary forms for blank samples;

R6 Test reports/summary forms for laboratory control samples (LCSs) including:

a) LCS spiking amounts,
b) Calculated %R for each analyte, and
c) The laboratory's LCS QC limits.

R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:

a) Samples associated with the MS/MSD clearly identified,
b) MS/MSD spiking amounts,
c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
d) Calculated %Rs and relative percent differences (RPDs), and
e) The laboratory's MS/MSD QC limits

R8 Laboratory analytical duplicate (if applicable) recovery and precision:

a) the amount of analyte measured in the duplicate,
b) the calculated RPD, and
c) the laboratory's QC limits for analytical duplicates.

R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;

R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: [ ] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

William Mock
Operations Manager
Environmental Science Corp.

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: ESC Lab Sciences	LRC Date: 11/18/14
Project Name: Almeda Road	Laboratory Job Number: L732820-01, -02, -03, -04, -05, -06, -07, and -10
Reviewer Name: ESC Representative	Prep Batch Number(s): WG754056 TPHTX

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	✓				
		Were all departures from standard conditions described in an exception report?			✓		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	✓				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	✓				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	✓				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	✓				
		Were calculations checked by a peer or supervisor?	✓				
		Were all analyte identifications checked by a peer or supervisor?	✓				
		Were sample quantitation limits reported for all analytes not detected?	✓				
		Were all results for soil and sediment samples reported on a dry weight basis?	✓				
		Were % moisture (or solids) reported for all soil and sediment samples?	✓				
		If required for the project, TICs reported?			✓		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	✓				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	✓				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	✓				
		Were blanks analyzed at the appropriate frequency?	✓				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	✓				
		Were blank concentrations < MQL?	✓				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	✓				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	✓				
		Were LCSs analyzed at the required frequency?	✓				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	✓				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	✓				
		Was the LCSD RPD within QC limits?	✓				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	✓				
		Were MS/MSD analyzed at the appropriate frequency?	✓				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	✓				
		Were MS/MSD RPDs within laboratory QC limits?	✓				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			✓		
		Were analytical duplicates analyzed at the appropriate frequency?			✓		
		Were RPDs or relative standard deviations within the laboratory QC limits?			✓		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	✓				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	✓				
		Are unadjusted MQLs included in the laboratory data package?	✓				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	✓				
		Were all necessary corrective actions performed for the reported data?	✓				
		Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	✓				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: ESC Lab Sciences	LRC Date: 11/18/14
Project Name: Almeda Road	Laboratory Job Number: L732820-08 and 09
Reviewer Name: ESC Representative	Prep Batch Number(s): WG754210 TPHTX

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	✓				
		Were all departures from standard conditions described in an exception report?			✓		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	✓				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	✓				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	✓				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	✓				
		Were calculations checked by a peer or supervisor?	✓				
		Were all analyte identifications checked by a peer or supervisor?	✓				
		Were sample quantitation limits reported for all analytes not detected?	✓				
		Were all results for soil and sediment samples reported on a dry weight basis?	✓				
		Were % moisture (or solids) reported for all soil and sediment samples?	✓				
		If required for the project, TICs reported?			✓		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	✓				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	✓				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	✓				
		Were blanks analyzed at the appropriate frequency?	✓				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	✓				
		Were blank concentrations < MQL?	✓				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	✓				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	✓				
		Were LCSs analyzed at the required frequency?	✓				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	✓				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	✓				
		Was the LCSD RPD within QC limits?	✓				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?			✓		
		Were MS/MSD analyzed at the appropriate frequency?			✓		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			✓		
		Were MS/MSD RPDs within laboratory QC limits?			✓		
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			✓		
		Were analytical duplicates analyzed at the appropriate frequency?			✓		
		Were RPDs or relative standard deviations within the laboratory QC limits?			✓		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	✓				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	✓				
		Are unadjusted MQLs included in the laboratory data package?	✓				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	✓				
		Were all necessary corrective actions performed for the reported data?	✓				
		Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	✓				

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4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: ESC Lab Sciences	LRC Date: 11/18/14
Project Name: Almeda Road	Laboratory Job Number: L732820-01, -02, -03, -04, -05, -06, -07, and -10
Reviewer Name: ESC Representative	Prep Batch Number(s): WG754282 V8260BTEXM

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	✓				
		Were all departures from standard conditions described in an exception report?			✓		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	✓				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	✓				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	✓				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	✓				
		Were calculations checked by a peer or supervisor?	✓				
		Were all analyte identifications checked by a peer or supervisor?	✓				
		Were sample quantitation limits reported for all analytes not detected?	✓				
		Were all results for soil and sediment samples reported on a dry weight basis?	✓				
		Were % moisture (or solids) reported for all soil and sediment samples?	✓				
		If required for the project, TICs reported?			✓		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	✓				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	✓				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	✓				
		Were blanks analyzed at the appropriate frequency?	✓				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	✓				
		Were blank concentrations < MQL?	✓				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	✓				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	✓				
		Were LCSs analyzed at the required frequency?	✓				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	✓				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	✓				
		Was the LCSD RPD within QC limits?	✓				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	✓				
		Were MS/MSD analyzed at the appropriate frequency?	✓				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	✓				
		Were MS/MSD RPDs within laboratory QC limits?	✓				
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			✓		
		Were analytical duplicates analyzed at the appropriate frequency?			✓		
		Were RPDs or relative standard deviations within the laboratory QC limits?			✓		
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	✓				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	✓				
		Are unadjusted MQLs included in the laboratory data package?	✓				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	✓				
		Were all necessary corrective actions performed for the reported data?	✓				
		Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	✓				

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5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: ESC Lab Sciences	LRC Date: 11/18/14
Project Name: Almeda Road	Laboratory Job Number: L732820-08 and 09
Reviewer Name: ESC Representative	Prep Batch Number(s): WG754302 V8260BTEXM

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	✓				
		Were all departures from standard conditions described in an exception report?			✓		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	✓				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	✓				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	✓				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	✓				
		Were calculations checked by a peer or supervisor?	✓				
		Were all analyte identifications checked by a peer or supervisor?	✓				
		Were sample quantitation limits reported for all analytes not detected?	✓				
		Were all results for soil and sediment samples reported on a dry weight basis?	✓				
		Were % moisture (or solids) reported for all soil and sediment samples?	✓				
		If required for the project, TICs reported?			✓		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?	✓				
		Were surrogate percent recoveries in all samples within the laboratory QC limits?	✓				
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	✓				
		Were blanks analyzed at the appropriate frequency?	✓				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	✓				
		Were blank concentrations < MQL?	✓				
R6	OI	**Laboratory control samples (LCS):**					
		Were all COCs included in the LCS?	✓				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	✓				
		Were LCSs analyzed at the required frequency?	✓				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	✓				
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	✓				
		Was the LCSD RPD within QC limits?	✓				
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?	✓				
		Were MS/MSD analyzed at the appropriate frequency?	✓				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	✓				
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R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?			✓		
		Were analytical duplicates analyzed at the appropriate frequency?			✓		
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R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	✓				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	✓				
		Are unadjusted MQLs included in the laboratory data package?	✓				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	✓				
		Were all necessary corrective actions performed for the reported data?	✓				
		Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	✓				

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Appendix A (cont'd): Laboratory Review Checklist: Reportable Data

Laboratory Name: ESC Lab Sciences	LRC Date: 11/18/14
Project Name: Almeda Road	Laboratory Job Number: L732820-01, -02, -03, -04, -05, -06, -07, and -10
Reviewer Name: ESC Representative	Prep Batch Number(s): WG754380 TS

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-custody (C-O-C)					
R1	OI	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	✓				
		Were all departures from standard conditions described in an exception report?			✓		
R2	OI	**Sample and quality control (QC) identification**					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	✓				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	✓				
R3	OI	**Test reports**					
		Were all samples prepared and analyzed within holding times?	✓				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	✓				
		Were calculations checked by a peer or supervisor?	✓				
		Were all analyte identifications checked by a peer or supervisor?	✓				
		Were sample quantitation limits reported for all analytes not detected?	✓				
		Were all results for soil and sediment samples reported on a dry weight basis?	✓				
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		If required for the project, TICs reported?			✓		
R4	O	**Surrogate recovery data**					
		Were surrogates added prior to extraction?			✓		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			✓		
R5	OI	**Test reports/summary forms for blank samples**					
		Were appropriate type(s) of blanks analyzed?	✓				
		Were blanks analyzed at the appropriate frequency?	✓				
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		Were all COCs included in the LCS?	✓				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	✓				
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		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	✓				
		Was the LCSD RPD within QC limits?			✓		
R7	OI	**Matrix spike (MS) and matrix spike duplicate (MSD) data**					
		Were the project/method specified analytes included in the MS and MSD?			✓		
		Were MS/MSD analyzed at the appropriate frequency?			✓		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			✓		
		Were MS/MSD RPDs within laboratory QC limits?			✓		
R8	OI	**Analytical duplicate data**					
		Were appropriate analytical duplicates analyzed for each matrix?	✓				
		Were analytical duplicates analyzed at the appropriate frequency?	✓				
		Were RPDs or relative standard deviations within the laboratory QC limits?	✓				
R9	OI	**Method quantitation limits (MQLs):**					
		Are the MQLs for each method analyte included in the laboratory data package?	✓				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	✓				
		Are unadjusted MQLs included in the laboratory data package?	✓				
R10	OI	**Other problems/anomalies**					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	✓				
		Were all necessary corrective actions performed for the reported data?	✓				
		Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	✓				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
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ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Tom Murphy
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

Report Summary

Tuesday November 18, 2014

Report Number: L732820
Samples Received: 11/11/14
Client Project: 7314H-P2

Description: Almeda Road

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

ESC
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12065 Lebanon Rd.
Mt. Juliet, TN 37122
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Tom Murphy
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

November 18,2014

Date Received : November 11, 2014
Description : Almeda Road

ESC Sample # : L732820-01

Site ID :

Sample ID : SB-1

Project # : 7314H-P2

Collected By : Tom Murphy
Collection Date : 11/06/14 12:42

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Total Solids	71.7	0.0333	0.033		%		2540 G-2	11/14/14	1
Benzene	U	0.00027	0.0020	0.0070	mg/kg		8260B	11/14/14	5
Toluene	U	0.00043	0.0031	0.035	mg/kg		8260B	11/14/14	5
Ethylbenzene	U	0.00030	0.0021	0.0070	mg/kg		8260B	11/14/14	5
Total Xylenes	U	0.00070	0.0049	0.021	mg/kg		8260B	11/14/14	5
Methyl tert-butyl ether	U	0.00021	0.0015	0.0070	mg/kg		8260B	11/14/14	5
Surrogate Recovery									
Toluene-d8	102.				% Rec.		8260B	11/14/14	5
Dibromofluoromethane	96.1				% Rec.		8260B	11/14/14	5
4-Bromofluorobenzene	110.				% Rec.		8260B	11/14/14	5
TCEQ Method 1005 - TPH									
TPH C6 - C12	U	15.	21.	70.	mg/kg		TX 1005	11/14/14	1
TPH C12 - C28	U	15.	21.	70.	mg/kg		TX 1005	11/14/14	1
TPH C28 - C35	U	15.	21.	70.	mg/kg		TX 1005	11/14/14	1
TPH C6 - C35	U	15.	21.	70.	mg/kg		TX 1005	11/14/14	1
Surrogate Recovery									
o-Terphenyl	96.3				% Rec.		TX 1005	11/14/14	1

Results listed are dry weight basis.
U = ND (Not Detected) = Less than SDL
Note:

The reported analytical results relate only to the sample submitted
Reported: 11/18/14 13:47 Printed: 11/18/14 13:47

ESC LAB SCIENCES
YOUR LAB OF CHOICE

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Mt. Juliet, TN 37122
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Tom Murphy
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

November 18,2014

ESC Sample # : L732820-02

Date Received : November 11, 2014
Description : Almeda Road

Site ID :

Sample ID : SB-2

Project # : 7314H-P2

Collected By : Tom Murphy
Collection Date : 11/06/14 13:39

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Total Solids	74.7	0.0333	0.033		%		2540 G-2	11/14/14	1
Benzene	U	0.00027	0.0019	0.0067	mg/kg		8260B	11/14/14	5
Toluene	U	0.00043	0.0029	0.033	mg/kg		8260B	11/14/14	5
Ethylbenzene	U	0.00030	0.0020	0.0067	mg/kg		8260B	11/14/14	5
Total Xylenes	U	0.00070	0.0047	0.020	mg/kg		8260B	11/14/14	5
Methyl tert-butyl ether	U	0.00021	0.0015	0.0067	mg/kg		8260B	11/14/14	5
Surrogate Recovery									
Toluene-d8	101.				% Rec.		8260B	11/14/14	5
Dibromofluoromethane	95.8				% Rec.		8260B	11/14/14	5
4-Bromofluorobenzene	112.				% Rec.		8260B	11/14/14	5
TCEQ Method 1005 - TPH									
TPH C6 - C12	U	15.	20.	67.	mg/kg		TX 1005	11/14/14	1
TPH C12 - C28	U	15.	20.	67.	mg/kg		TX 1005	11/14/14	1
TPH C28 - C35	U	15.	20.	67.	mg/kg		TX 1005	11/14/14	1
TPH C6 - C35	U	15.	20.	67.	mg/kg		TX 1005	11/14/14	1
Surrogate Recovery									
o-Terphenyl	96.5				% Rec.		TX 1005	11/14/14	1

Results listed are dry weight basis.
U = ND (Not Detected) = Less than SDL
Note:

The reported analytical results relate only to the sample submitted
Reported: 11/18/14 13:47 Printed: 11/18/14 13:47

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Tom Murphy
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

November 18,2014

ESC Sample # : L732820-03

Date Received : November 11, 2014
Description : Almeda Road

Site ID :

Sample ID : SB-3

Project # : 7314H-P2

Collected By : Tom Murphy
Collection Date : 11/07/14 11:20

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Total Solids	83.8	0.0333	0.033		%		2540 G-2	11/14/14	1
Benzene	U	0.00027	0.0017	0.0060	mg/kg		8260B	11/14/14	5
Toluene	U	0.00043	0.0026	0.030	mg/kg		8260B	11/14/14	5
Ethylbenzene	U	0.00030	0.0018	0.0060	mg/kg		8260B	11/14/14	5
Total Xylenes	U	0.00070	0.0042	0.018	mg/kg		8260B	11/14/14	5
Methyl tert-butyl ether	U	0.00021	0.0013	0.0060	mg/kg		8260B	11/14/14	5
Surrogate Recovery									
Toluene-d8	102.				% Rec.		8260B	11/14/14	5
Dibromofluoromethane	95.8				% Rec.		8260B	11/14/14	5
4-Bromofluorobenzene	110.				% Rec.		8260B	11/14/14	5
TCEQ Method 1005 - TPH									
TPH C6 - C12	U	15.	18.	60.	mg/kg		TX 1005	11/14/14	1
TPH C12 - C28	U	15.	18.	60.	mg/kg		TX 1005	11/14/14	1
TPH C28 - C35	U	15.	18.	60.	mg/kg		TX 1005	11/14/14	1
TPH C6 - C35	U	15.	18.	60.	mg/kg		TX 1005	11/14/14	1
Surrogate Recovery									
o-Terphenyl	103.				% Rec.		TX 1005	11/14/14	1

Results listed are dry weight basis.
U = ND (Not Detected) = Less than SDL
Note:

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REPORT OF ANALYSIS

Tom Murphy
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

November 18,2014

ESC Sample # : L732820-04

Date Received : November 11, 2014
Description : Almeda Road

Site ID :

Sample ID : SB-4

Project # : 7314H-P2

Collected By : Tom Murphy
Collection Date : 11/07/14 11:53

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Total Solids	74.3	0.0333	0.033		%		2540 G-2	11/14/14	1
Benzene	U	0.00027	0.0019	0.0067	mg/kg		8260B	11/14/14	5
Toluene	U	0.00043	0.0030	0.034	mg/kg		8260B	11/14/14	5
Ethylbenzene	U	0.00030	0.0020	0.0067	mg/kg		8260B	11/14/14	5
Total Xylenes	U	0.00070	0.0047	0.020	mg/kg		8260B	11/14/14	5
Methyl tert-butyl ether	U	0.00021	0.0015	0.0067	mg/kg		8260B	11/14/14	5
Surrogate Recovery									
Toluene-d8	102.				% Rec.		8260B	11/14/14	5
Dibromofluoromethane	96.9				% Rec.		8260B	11/14/14	5
4-Bromofluorobenzene	108.				% Rec.		8260B	11/14/14	5
TCEQ Method 1005 - TPH									
TPH C6 - C12	U	15.	20.	67.	mg/kg		TX 1005	11/14/14	1
TPH C12 - C28	U	15.	20.	67.	mg/kg		TX 1005	11/14/14	1
TPH C28 - C35	U	15.	20.	67.	mg/kg		TX 1005	11/14/14	1
TPH C6 - C35	U	15.	20.	67.	mg/kg		TX 1005	11/14/14	1
Surrogate Recovery									
o-Terphenyl	99.8				% Rec.		TX 1005	11/14/14	1

Results listed are dry weight basis.
U = ND (Not Detected) = Less than SDL
Note:

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REPORT OF ANALYSIS

Tom Murphy
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

November 18,2014

ESC Sample # : L732820-05

Date Received : November 11, 2014
Description : Almeda Road

Site ID :

Sample ID : SB-5

Project # : 7314H-P2

Collected By : Tom Murphy
Collection Date : 11/07/14 12:22

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Total Solids	75.3	0.0333	0.033		%		2540 G-2	11/14/14	1
Benzene	U	0.00027	0.0018	0.0066	mg/kg		8260B	11/14/14	5
Toluene	U	0.00043	0.0029	0.033	mg/kg		8260B	11/14/14	5
Ethylbenzene	U	0.00030	0.0020	0.0066	mg/kg		8260B	11/14/14	5
Total Xylenes	U	0.00070	0.0046	0.020	mg/kg		8260B	11/14/14	5
Methyl tert-butyl ether	U	0.00021	0.0015	0.0066	mg/kg		8260B	11/14/14	5
Surrogate Recovery									
Toluene-d8	101.				% Rec.		8260B	11/14/14	5
Dibromofluoromethane	96.4				% Rec.		8260B	11/14/14	5
4-Bromofluorobenzene	114.				% Rec.		8260B	11/14/14	5
TCEQ Method 1005 - TPH									
TPH C6 - C12	U	15.	20.	66.	mg/kg		TX 1005	11/14/14	1
TPH C12 - C28	U	15.	20.	66.	mg/kg		TX 1005	11/14/14	1
TPH C28 - C35	U	15.	20.	66.	mg/kg		TX 1005	11/14/14	1
TPH C6 - C35	U	15.	20.	66.	mg/kg		TX 1005	11/14/14	1
Surrogate Recovery									
o-Terphenyl	105.				% Rec.		TX 1005	11/14/14	1

Results listed are dry weight basis.
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REPORT OF ANALYSIS

Tom Murphy
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

November 18,2014

ESC Sample # : L732820-06

Date Received : November 11, 2014
Description : Almeda Road

Site ID :

Sample ID : SB-6

Project # : 7314H-P2

Collected By : Tom Murphy
Collection Date : 11/07/14 13:50

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Total Solids	83.7	0.0333	0.033		%		2540 G-2	11/14/14	1
Benzene	U	0.00027	0.0017	0.0060	mg/kg		8260B	11/14/14	5
Toluene	U	0.00043	0.0026	0.030	mg/kg		8260B	11/14/14	5
Ethylbenzene	U	0.00030	0.0018	0.0060	mg/kg		8260B	11/14/14	5
Total Xylenes	U	0.00070	0.0042	0.018	mg/kg		8260B	11/14/14	5
Methyl tert-butyl ether	U	0.00021	0.0013	0.0060	mg/kg		8260B	11/14/14	5
Surrogate Recovery									
Toluene-d8	101.				% Rec.		8260B	11/14/14	5
Dibromofluoromethane	96.3				% Rec.		8260B	11/14/14	5
4-Bromofluorobenzene	110.				% Rec.		8260B	11/14/14	5
TCEQ Method 1005 - TPH									
TPH C6 - C12	U	15.	18.	60.	mg/kg		TX 1005	11/14/14	1
TPH C12 - C28	U	15.	18.	60.	mg/kg		TX 1005	11/14/14	1
TPH C28 - C35	U	15.	18.	60.	mg/kg		TX 1005	11/14/14	1
TPH C6 - C35	U	15.	18.	60.	mg/kg		TX 1005	11/14/14	1
Surrogate Recovery									
o-Terphenyl	103.				% Rec.		TX 1005	11/14/14	1

Results listed are dry weight basis.
U = ND (Not Detected) = Less than SDL
Note:

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REPORT OF ANALYSIS

Tom Murphy
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

November 18, 2014

ESC Sample # : L732820-07

Date Received : November 11, 2014
Description : Almeda Road

Site ID :

Sample ID : SB-7

Project # : 7314H-P2

Collected By : Tom Murphy
Collection Date : 11/07/14 14:21

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Total Solids	85.0	0.0333	0.033		%		2540 G-2	11/14/14	1
Benzene	U	0.00027	0.0016	0.0059	mg/kg		8260B	11/14/14	5
Toluene	U	0.00043	0.0026	0.029	mg/kg		8260B	11/14/14	5
Ethylbenzene	U	0.00030	0.0018	0.0059	mg/kg		8260B	11/14/14	5
Total Xylenes	U	0.00070	0.0041	0.018	mg/kg		8260B	11/14/14	5
Methyl tert-butyl ether	U	0.00021	0.0013	0.0059	mg/kg		8260B	11/14/14	5
Surrogate Recovery									
Toluene-d8	102.				% Rec.		8260B	11/14/14	5
Dibromofluoromethane	96.1				% Rec.		8260B	11/14/14	5
4-Bromofluorobenzene	110.				% Rec.		8260B	11/14/14	5
TCEQ Method 1005 - TPH									
TPH C6 - C12	U	15.	18.	59.	mg/kg		TX 1005	11/14/14	1
TPH C12 - C28	U	15.	18.	59.	mg/kg		TX 1005	11/14/14	1
TPH C28 - C35	U	15.	18.	59.	mg/kg		TX 1005	11/14/14	1
TPH C6 - C35	U	15.	18.	59.	mg/kg		TX 1005	11/14/14	1
Surrogate Recovery									
o-Terphenyl	105.				% Rec.		TX 1005	11/14/14	1

Results listed are dry weight basis.
U = ND (Not Detected) = Less than SDL
Note:

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REPORT OF ANALYSIS

Tom Murphy
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

November 18, 2014

ESC Sample # : L732820-08

Date Received : November 11, 2014
Description : Almeda Road

Site ID :

Sample ID : SB-5/TWP-5

Project # : 7314H-P2

Collected By : Tom Murphy
Collection Date : 11/07/14 13:08

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Benzene	U	0.00033	0.00033	0.0010	mg/l		8260B	11/15/14	1
Toluene	U	0.00078	0.00078	0.0050	mg/l		8260B	11/15/14	1
Ethylbenzene	U	0.00038	0.00038	0.0010	mg/l		8260B	11/15/14	1
Total Xylenes	U	0.0011	0.0011	0.0030	mg/l		8260B	11/15/14	1
Methyl tert-butyl ether	U	0.00037	0.00037	0.0010	mg/l		8260B	11/15/14	1
Surrogate Recovery									
Toluene-d8	94.9				% Rec.		8260B	11/15/14	1
Dibromofluoromethane	92.9				% Rec.		8260B	11/15/14	1
4-Bromofluorobenzene	103.				% Rec.		8260B	11/15/14	1
TCEQ Method 1005 - TPH									
TPH C6 - C12	U	0.60	0.60	0.90	mg/l		TX 1005	11/13/14	1
TPH C12 - C28	U	0.60	0.60	0.90	mg/l		TX 1005	11/13/14	1
TPH C28 - C35	U	0.60	0.60	0.90	mg/l		TX 1005	11/13/14	1
TPH C6 - C35	U	0.60	0.60	0.90	mg/l		TX 1005	11/13/14	1
Surrogate Recovery									
o-Terphenyl	94.4				% Rec.		TX 1005	11/13/14	1

U = ND (Not Detected) = Less than SDL
Note:
The reported analytical results relate only to the sample submitted.

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Reported: 11/18/14 13:47 Printed: 11/18/14 13:47

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REPORT OF ANALYSIS

Tom Murphy
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

November 18,2014

ESC Sample # : L732820-09

Date Received : November 11, 2014
Description : Almeda Road

Site ID :

Sample ID : SB-7/TWP-7

Project # : 7314H-P2

Collected By : Tom Murphy
Collection Date : 11/07/14 14:46

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Benzene	U	0.00033	0.00033	0.0010	mg/l		8260B	11/15/14	1
Toluene	U	0.00078	0.00078	0.0050	mg/l		8260B	11/15/14	1
Ethylbenzene	U	0.00038	0.00038	0.0010	mg/l		8260B	11/15/14	1
Total Xylenes	U	0.0011	0.0011	0.0030	mg/l		8260B	11/15/14	1
Methyl tert-butyl ether	0.026	0.00037	0.00037	0.0010	mg/l		8260B	11/15/14	1
Surrogate Recovery									
Toluene-d8	93.6				% Rec.		8260B	11/15/14	1
Dibromofluoromethane	92.7				% Rec.		8260B	11/15/14	1
4-Bromofluorobenzene	103.				% Rec.		8260B	11/15/14	1
TCEQ Method 1005 - TPH									
TPH C6 - C12	U	0.60	0.60	0.90	mg/l		TX 1005	11/13/14	1
TPH C12 - C28	U	0.60	0.60	0.90	mg/l		TX 1005	11/13/14	1
TPH C28 - C35	U	0.60	0.60	0.90	mg/l		TX 1005	11/13/14	1
TPH C6 - C35	U	0.60	0.60	0.90	mg/l		TX 1005	11/13/14	1
Surrogate Recovery									
o-Terphenyl	90.7				% Rec.		TX 1005	11/13/14	1

U = ND (Not Detected) = Less than SDL
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Tom Murphy
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

November 18,2014

ESC Sample # : L732820-10

Date Received : November 11, 2014
Description : Almeda Road

Site ID :

Sample ID : IDW

Project # : 7314H-P2

Collected By : Tom Murphy
Collection Date : 11/07/14 15:01

Parameter	Result	MDL	SDL	MQL	Units	Qual	Method	Date	Dil.
Total Solids	78.9	0.0333	0.033		%		2540 G-2	11/14/14	1
Benzene	U	0.00027	0.0018	0.0063	mg/kg		8260B	11/14/14	5
Toluene	U	0.00043	0.0028	0.032	mg/kg		8260B	11/14/14	5
Ethylbenzene	U	0.00030	0.0019	0.0063	mg/kg		8260B	11/14/14	5
Total Xylenes	U	0.00070	0.0044	0.019	mg/kg		8260B	11/14/14	5
Methyl tert-butyl ether	U	0.00021	0.0014	0.0063	mg/kg		8260B	11/14/14	5
Surrogate Recovery									
Toluene-d8	103.				% Rec.		8260B	11/14/14	5
Dibromofluoromethane	95.0				% Rec.		8260B	11/14/14	5
4-Bromofluorobenzene	108.				% Rec.		8260B	11/14/14	5
TCEQ Method 1005 - TPH									
TPH C6 - C12	U	15.	19.	63.	mg/kg		TX 1005	11/14/14	1
TPH C12 - C28	U	15.	19.	63.	mg/kg		TX 1005	11/14/14	1
TPH C28 - C35	U	15.	19.	63.	mg/kg		TX 1005	11/14/14	1
TPH C6 - C35	U	15.	19.	63.	mg/kg		TX 1005	11/14/14	1
Surrogate Recovery									
o-Terphenyl	96.9				% Rec.		TX 1005	11/14/14	1

Results listed are dry weight basis.
U = ND (Not Detected) = Less than SDL
Note:

The reported analytical results relate only to the sample submitted
Reported: 11/18/14 13:47 Printed: 11/18/14 13:47

Summary of Remarks For Samples Printed
11/18/14 at 13:47:40

TSR Signing Reports: 134
R5 - Desired TAT

Sample: L732820-01 Account: BEROLIHTX Received: 11/11/14 09:00 Due Date: 11/18/14 00:00 RPT Date: 11/18/14 13:47

Sample: L732820-02 Account: BEROLIHTX Received: 11/11/14 09:00 Due Date: 11/18/14 00:00 RPT Date: 11/18/14 13:47

Sample: L732820-03 Account: BEROLIHTX Received: 11/11/14 09:00 Due Date: 11/18/14 00:00 RPT Date: 11/18/14 13:47

Sample: L732820-04 Account: BEROLIHTX Received: 11/11/14 09:00 Due Date: 11/18/14 00:00 RPT Date: 11/18/14 13:47

Sample: L732820-05 Account: BEROLIHTX Received: 11/11/14 09:00 Due Date: 11/18/14 00:00 RPT Date: 11/18/14 13:47

Sample: L732820-06 Account: BEROLIHTX Received: 11/11/14 09:00 Due Date: 11/18/14 00:00 RPT Date: 11/18/14 13:47

Sample: L732820-07 Account: BEROLIHTX Received: 11/11/14 09:00 Due Date: 11/18/14 00:00 RPT Date: 11/18/14 13:47

Sample: L732820-08 Account: BEROLIHTX Received: 11/11/14 09:00 Due Date: 11/18/14 00:00 RPT Date: 11/18/14 13:47

Sample: L732820-09 Account: BEROLIHTX Received: 11/11/14 09:00 Due Date: 11/18/14 00:00 RPT Date: 11/18/14 13:47

Sample: L732820-10 Account: BEROLIHTX Received: 11/11/14 09:00 Due Date: 11/18/14 00:00 RPT Date: 11/18/14 13:47

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Quality Control Summary
SDG: L732820
Berg Oliver

Test:	Total Solids by Method 2540 G-2011		
Project No:	7314H-P2	Matrix:	Soil - mg/kg
Project:	Almeda Road	EPA ID:	TN00003
Collection Date:	11/6/2014	**Analytic Batch:**	**WG754380**
Analysis Date:	11/14/2014 7:56:00 AM	Analyst:	607
Instrument ID:	LOGBAL3		
Sample Numbers:	L732820-01, -02, -03, -04, -05, -06, -07, -10		

Method Blank

Analyte	CAS	PQL	MDL	Qualifier
Total Solids	TSOLIDS	< 0.100	< 0.0333	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Total Solids	1	50	49.903	99.8	85 - 115	

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Quality Control Summary
SDG: L732820
Berg Oliver

Test:	Total Solids by Method 2540 G-2011		
Project No:	7314H-P2	Matrix:	Soil - mg/kg
Project:	Almeda Road	EPA ID:	TN00003
Collection Date:	11/6/2014	**Analytic Batch:**	**WG754380**
Analysis Date:	11/14/2014 7:56:00 AM	Analyst:	607
Instrument ID:	LOGBAL3		
Sample Numbers:	L732820-01, -02, -03, -04, -05, -06, -07, -10		

Sample Duplicate

L732820-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Total Solids	1	74.678	74.190	0.66	5	

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Quality Control Summary
SDG: L732820
Berg Oliver

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	7314H-P2	Matrix:	Soil - mg/kg
Project:	Almeda Road	EPA ID:	TN00003
Collection Date:	11/6/2014	**Analytic Batch:**	**WG754282**
Analysis Date:	11/14/2014 9:22:00 PM	Analyst:	644
Instrument ID:	VOCMS28		
Sample Numbers:	L732820-01, -02, -03, -04, -05, -06, -07, -10		

Method Blank

Analyte	CAS	PQL	MDL	Qualifier
Benzene	71-43-2	< 0.00100	< 0.000270	
Ethylbenzene	100-41-4	< 0.00100	< 0.000297	
Methyl tert-butyl ether	1634-04-4	< 0.00100	< 0.000212	
Toluene	108-88-3	< 0.00500	< 0.000434	
Xylenes, Total	1330-20-7	< 0.00300	< 0.000698	

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Est. 1970

Quality Control Summary
SDG: L732820
Berg Oliver

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	7314H-P2	Matrix:	Water - mg/L
Project:	Almeda Road	EPA ID:	TN00003
Collection Date:	11/6/2014	**Analytic Batch:**	**WG754302**
Analysis Date:	11/15/2014 1:44:00 AM	Analyst:	644
Instrument ID:	VOCMS21		
Sample Numbers:	L732820-08, -09		

Method Blank

Analyte	CAS	PQL	MDL	Qualifier
Benzene	71-43-2	< 0.00100	< 0.000331	
Ethylbenzene	100-41-4	< 0.00100	< 0.000384	
Methyl tert-butyl ether	1634-04-4	< 0.00100	< 0.000367	
Toluene	108-88-3	< 0.00500	< 0.000780	
Xylenes, Total	1330-20-7	< 0.00300	< 0.00106	

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Quality Control Summary
SDG: L732820
Berg Oliver

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	7314H-P2	Matrix:	Soil - mg/kg
Project:	Almeda Road	EPA ID:	TN00003
Collection Date:	11/6/2014	**Analytic Batch:**	**WG754282**
Analysis Date:	11/14/2014 9:22:00 PM	Analyst:	644
Instrument ID:	VOCMS28		
Sample Numbers:	L732820-01, -02, -03, -04, -05, -06, -07, -10		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Benzene	1	0.025	0.0242	97	77.1 - 121	
Ethylbenzene	1	0.025	0.0281	112	79.7 - 122	
Methyl tert-butyl ether	1	0.025	0.0253	101	73 - 129	
Toluene	1	0.025	0.0250	99.8	79.7 - 118	
Xylenes, Total	1	0.075	0.0856	114	78.8 - 121	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Benzene	1	0.025	0.0233	93.4	77.1 - 121	
Ethylbenzene	1	0.025	0.0263	105	79.7 - 122	
Methyl tert-butyl ether	1	0.025	0.0248	99.1	73 - 129	
Toluene	1	0.025	0.0246	98.6	79.7 - 118	
Xylenes, Total	1	0.075	0.0811	108	78.8 - 121	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control RPD Limits	RPD Qual
Benzene	1	0.025	0.0242	97	0.0233	93.4	77.1 - 121		3.79	20	
Ethylbenzene	1	0.025	0.0281	112	0.0263	105	79.7 - 122		6.74	20	
Methyl tert-butyl ether	1	0.025	0.0253	101	0.0248	99.1	73 - 129		2.21	20	
Toluene	1	0.025	0.0250	99.8	0.0246	98.6	79.7 - 118		1.24	20	
Xylenes, Total	1	0.075	0.0856	114	0.0811	108	78.8 - 121		5.32	20	

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Quality Control Summary
SDG: L732820
Berg Oliver

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	7314H-P2	Matrix:	Water - mg/L
Project:	Almeda Road	EPA ID:	TN00003
Collection Date:	11/6/2014	**Analytic Batch:**	**WG754302**
Analysis Date:	11/15/2014 1:44:00 AM	Analyst:	644
Instrument ID:	VOCMS21		
Sample Numbers:	L732820-08, -09		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Benzene	1	0.025	0.0235	93.8	74.8 - 121	
Ethylbenzene	1	0.025	0.0284	114	78.8 - 122	
Methyl tert-butyl ether	1	0.025	0.0225	90.1	71.2 - 126	
Toluene	1	0.025	0.0253	101	79.7 - 116	
Xylenes, Total	1	0.075	0.0857	114	78.7 - 121	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Benzene	1	0.025	0.0234	93.5	74.8 - 121	
Ethylbenzene	1	0.025	0.0289	116	78.8 - 122	
Methyl tert-butyl ether	1	0.025	0.0205	82.2	71.2 - 126	
Toluene	1	0.025	0.0254	102	79.7 - 116	
Xylenes, Total	1	0.075	0.0859	115	78.7 - 121	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control RPD Limits	RPD Qual
Benzene	1	0.025	0.0235	93.8	0.0234	93.5	74.8 - 121		0.34	20	
Ethylbenzene	1	0.025	0.0284	114	0.0289	116	78.8 - 122		1.6	20	
Methyl tert-butyl ether	1	0.025	0.0225	90.1	0.0205	82.2	71.2 - 126		9.23	20	
Toluene	1	0.025	0.0253	101	0.0254	102	79.7 - 116		0.71	20	
Xylenes, Total	1	0.075	0.0857	114	0.0859	115	78.7 - 121		0.22	20	

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Quality Control Summary
SDG: L732820
Berg Oliver

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	7314H-P2	Matrix:	Soil - mg/kg
Project:	Almeda Road	EPA ID:	TN00003
Collection Date:	11/6/2014	**Analytic Batch:**	**WG754282**
Analysis Date:	11/14/2014 9:22:00 PM	Analyst:	644
Instrument ID:	VOCMS28		
Sample Numbers:	L732820-01, -02, -03, -04, -05, -06, -07, -10		

Matrix Spike / Matrix Spike Duplicate

L732820-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Benzene	5	0.025	<0.0014	0.1170	93.6	0.1167	93.3	54.3 - 133		0.27	20	
Ethylbenzene	5	0.025	<0.0015	0.1284	103	0.1286	103	61.4 - 133		0.2	20	
Methyl tert-butyl ether	5	0.025	<0.0011	0.1209	96.8	0.1185	94.8	57.7 - 134		2.01	20	
Toluene	5	0.025	<0.0022	0.1202	95.8	0.1204	95.9	61.4 - 130		0.17	20	
Xylenes, Total	5	0.075	<0.0035	0.3943	105	0.3937	105	63.3 - 131		0.17	20	

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Quality Control Summary
SDG: L732820
Berg Oliver

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	7314H-P2	Matrix:	Water - mg/L
Project:	Almeda Road	EPA ID:	TN00003
Collection Date:	11/6/2014	**Analytic Batch:**	**WG754302**
Analysis Date:	11/15/2014 1:44:00 AM	Analyst:	644
Instrument ID:	VOCMS21		
Sample Numbers:	L732820-08, -09		

Matrix Spike / Matrix Spike Duplicate

L732820-08

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Benzene	1	0.025	<0.0003	0.0225	89.9	0.0239	95.5	54.3 - 133		6	20	
Ethylbenzene	1	0.025	<0.0004	0.0278	111	0.0291	116	61.4 - 133		4.43	20	
Methyl tert-butyl ether	1	0.025	<0.0004	0.0204	81.6	0.0213	85.3	57.7 - 134		4.44	20	
Toluene	1	0.025	<0.0008	0.0245	98.1	0.0252	101	61.4 - 130		2.71	20	
Xylenes, Total	1	0.075	<0.0011	0.0830	111	0.0869	116	63.3 - 131		4.52	20	

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Quality Control Summary
SDG: L732820
Berg Oliver

Test:	TPHTX by Method TX1005		
Project No:	7314H-P2	Matrix:	Soil - mg/kg
Project:	Almeda Road	EPA ID:	TN00003
Collection Date:	11/6/2014	**Analytic Batch:**	**WG754056**
Analysis Date:	11/14/2014 4:21:00 PM	Analyst:	543
Instrument ID:	SVGC26	Prep Date:	11/11/2014
Sample Numbers:	L732820-01, -02, -03, -04, -05, -06, -07, -10		

Method Blank

Analyte	CAS	PQL	MDL	Qualifier
TPH C12 - C28	TPH C12 - C28	< 50.0	< 15.0	
TPH C28 - C35	TPH C28 - C35	< 50.0	< 15.0	
TPH C6 - C12	TPH C6 - C12	< 50.0	< 15.0	
TPH C6 - C35		< 50.0	< 15.0	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH C12 - C28	1	250	246.88	98.8	75 - 125	
TPH C6 - C12	1	250	250.32	100	75 - 125	
TPH C6 - C35	1	500	497.20	99.4	75 - 125	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH C12 - C28	1	250	242.95	97.2	75 - 125	
TPH C6 - C12	1	250	246.10	98.4	75 - 125	
TPH C6 - C35	1	500	489.05	97.8	75 - 125	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control RPD Limits	RPD Qual
TPH C12 - C28	1	250	246.88	98.8	242.95	97.2	75 - 125		1.6	20	
TPH C6 - C12	1	250	250.32	100	246.10	98.4	75 - 125		1.7	20	
TPH C6 - C35	1	500	497.20	99.4	489.05	97.8	75 - 125		1.65	20	

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Quality Control Summary
SDG: L732820
Berg Oliver

Test:	TPHTX by Method TX1005		
Project No:	7314H-P2	Matrix:	Water - mg/L
Project:	Almeda Road	EPA ID:	TN00003
Collection Date:	11/6/2014	**Analytic Batch:**	**WG754210**
Analysis Date:	11/13/2014 12:59:00 AM	Analyst:	543
Instrument ID:	SVGC25	Prep Date:	11/12/2014
Sample Numbers:	L732820-08, -09		

Method Blank

Analyte	CAS	PQL	MDL	Qualifier
TPH C12 - C28	TPH C12 - C28	< 0.900	< 0.600	
TPH C28 - C35	TPH C28 - C35	< 0.900	< 0.600	
TPH C6 - C12	TPH C6 - C12	< 0.900	< 0.600	
TPH C6 - C35		< 0.900	< 0.600	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH C12 - C28	1	41.66	37.889	90.9	75 - 125	
TPH C6 - C12	1	41.66	37.529	90.1	75 - 125	
TPH C6 - C35	1	83.3	75.418	90.5	75 - 125	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH C12 - C28	1	41.66	38.385	92.1	75 - 125	
TPH C6 - C12	1	41.66	38.074	91.4	75 - 125	
TPH C6 - C35	1	83.3	76.459	91.8	75 - 125	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control RPD Limits	RPD Qual
TPH C12 - C28	1	41.66	37.889	90.9	38.385	92.1	75 - 125		1.3	20	
TPH C6 - C12	1	41.66	37.529	90.1	38.074	91.4	75 - 125		1.44	20	
TPH C6 - C35	1	83.3	75.418	90.5	76.459	91.8	75 - 125		1.37	20	

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Quality Control Summary
SDG: L732820
Berg Oliver

Test:	TPHTX by Method TX1005		
Project No:	7314H-P2	Matrix:	Soil - mg/kg
Project:	Almeda Road	EPA ID:	TN00003
Collection Date:	11/6/2014	**Analytic Batch:**	**WG754056**
Analysis Date:	11/14/2014 4:21:00 PM	Analyst:	543
Instrument ID:	SVGC26	Prep Date:	11/11/2014
Sample Numbers:	L732820-01, -02, -03, -04, -05, -06, -07, -10		

Matrix Spike / Matrix Spike Duplicate

L732820-07

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
TPH C12 - C28	1	250	<15	255.09	102	251.50	101	75 - 125		1.41	20	
TPH C6 - C12	1	250	<15	252.03	101	250.80	100	75 - 125		0.49	20	
TPH C6 - C35	1	500	<15	507.12	101	502.31	100	75 - 125		0.95	20	

Company Name/Address:
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

Billing Information: Same

Report to: Tom Murphy | Email To: on File

Project Description: Almeda Road | City/State Collected: Houston, TX

Phone: 281-589-0497 | Client Project #: 7314H-P2 | Lab Project #

Fax: 281-589-0007 | Site/Facility ID #: | P.O. #:

Collected by (print): Tom Murphy

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day 200%
____ Next Day 100%
____ Two Day 50%
____ Three Day 25%

Date Results Needed

Email? ___No ✓Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH (TxTCE)	MTBE/BTEX (8260)									Rem./Contaminant	Sample # (lab only)
SB-1	Grab	SS	6-8'	11/6/14	1242	1	X	X										-01
SB-2			4-6'	↓	1339		X	X										02
SB-3			24-26	11/7/14	1120		X	X										03
SB-4			6-8'		1153		X	X										04
SB-5			2-4'		1222		X	X										05
SB-6			14-16'		1350		X	X										06
SB-7			8-10'		1421	↓	X	X										07
SB-5/TWP-5	↓	GW		↓	1308	5	X	X										08
SB-7/TWP-7		GW			1446	5	X	X										09

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Relinquished by: (Signature) | Date: 11/10/14 | Time: 1013 | Received by: (Signature) | 11/10/14 1255

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____

Relinquished by: (Signature) | Date: 11/10/14 | Time: 1900 | Received by: (Signature) 6127 6739 5321

Temp: 3.1 °C | Bottles Received: 18

Relinquished by: (Signature) | Date: | Time: | Received for lab by: (Signature)

Date: 11/11/14 | Time: 09:10

Hold #

Condition: (lab use only) JWS

COC Seal Intact: ___Y ___N ___NA

pH Checked: | NCF:

Chain of Custody Page ___ of ___

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Phone: 800-767-5859
Fax: 615-758-5859

L# L732820
C086

Acctnum: BEROLIHTX
Template:
Prelogin:
TSR:
Cooler:
Shipped Via:

Company Name/Address:
Berg Oliver
14701 Saint Mary's Lane, Suite 400
Houston, TX 77079

Billing Information: Same

Report to: Tom Murph — Email To: on File

Project Description: Almeda Road — City/State Collected: Houston, TX

Phone: 281-589-0497 — Client Project #: 7314H-PZ — Lab Project #

Fax: 281-589-0607 — Site/Facility ID #: — P.O. #:

Collected by (print): Tom Murph

Collected by (signature): [signature] — Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified) — Same Day ....200% — Next Day ....100% — Two Day ....50% — Three Day 25%

Date Results Needed: ✓

Email? ___No ___Yes — FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody — Page ___ of ___

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Phone: 800-767-5859
Fax: 615-758-5859

L# 732820

Table #:

Acctnum: BEROLIHTX

Template:

Prelogin:

TSR:

Cooler:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH (TX1005)	MTBE/BTEX (8260)	Rem./Contaminant	Sample # (lab only)
10W	Comp	SS	—	11/7/14	1501	1	X	X		-10

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other ___

pH ___ Temp ___

Flow ___ Other ___

Remarks:

Hold #:

Condition: (lab use only) JWS OK

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ ___
[signature]	11/10/14	1013	[signature] 11/10/14 1355	
Relinquished by: (Signature)	Date: 11/10/14	Time: 1900	Received by: (Signature)	Temp: 3.1 °C Bottles Received: 18
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/11/14 Time: 09:30

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

APPENDIX C

Photographs

View of push drilling activities at soil boring SB-1.

Close-up view of push drilling at SB-1.

Another view at SB-1.

View of push drilling activity at SB-2.

View of sampling supplies, equipment and field notes for the Phase II ESA.

View of subsurface clearance for conflicts at SB-2.

SITE PHOTOGRAPHS

Almeda Road Drainage & Paving Project
WBS No. N-000806-0001-3
Houston, Texas

View of push drilling at SB-3.

View of push drilling at SB-4.

Another view of preclearance activities (SB-4).

View of push drilling at soil boring SB-5.

Another view of preclearance activities for subsurface conflicts at SB-5.

View of the temporary well point at SB-5.

SITE PHOTOGRAPHS
Almeda Road Drainage & Paving Project
WBS No. N-000806-0001-3
Houston, Texas

View of push drilling activities at soil boring SB-6.

View of push drilling at SB-6.

View of push drilling at SB-7.

View of preclearance at SB-7.

SITE PHOTOGRAPHS
Almeda Road Drainage & Paving Project
WBS No. N-000806-0001-3
Houston, Texas

APPENDIX D

Qualifications of Environmental Professionals

TOM MURPHY
PROJECT MANAGER
ENVIRONMENTAL ENGINEERING SERVICES

EDUCATION
Southwest Texas State University: B. S., Geography-Resource and Environmental Studies/Biology, 1993

REGISTRATION/TRAINING
40/8-Hour CFR 1910.120, OSHA Training and Refreshers (HazWop)
40 CFR 265.16, Hazardous Waste Management Certification
49 CFR 172 & 173, DOT Hazardous Materials Training
29 CFR 1919.134, Respirator Fit Test/Training
RRC Rule 36 & API-RP 49, Hydrogen Sulfide Training
ExxonMobil LPS and OIMS Training
Facility, Client or Site-Specific Safety Training and Protocol

PROFESSIONAL EXPERIENCE
Project Manager
Project Geologist/Scientist/Manager
Field Geologist
Bioremedial Field Engineer
Specialization:
Spill response and assessment/remediation to closure
Environmental site assessments
Remediation systems installation and system design
General construction experience
Regulatory and data interpretation
Surveying/mapping/site plans

PROFESSIONAL HISTORY
Berg-Oliver Associates, Inc., Project Manager, December 2004 to present
BNC Environmental Services, Inc., Project Geologist/Scientist/Manager, October 2001 to December 2004.
Eco-Systems, Inc., Project Scientist, March 2001 to October 2001.
Self-Employed, Environmental Consultant/Scientist, November 2000 to March 2001.
Associated Environmental Consultants, Inc., Project Manager, August 1995 to November 2000.
Self-Employed, Environmental Consultant, April 1995 to August 1995.
Sybron Chemicals, Inc., Bioremedial Field Engineer, October 1993 to April 1995.

REPRESENTATIVE EXPERIENCE
Mr. Murphy is a mid to senior-level project manager with over 15 years of diverse environmental experience. His responsibilities have included: conducting surface and/or subsurface soil and groundwater investigations, Affected Property Assessment Reports (APARs), Phase II ESAs, Phase IIIs, spill response and environmental management, project management, conducting over two thousand Phase I ESAs/due diligence, and transaction screens. Experience and preparation of cost proposals, project coordination, health and safety plans and supervisory duties of sub-contractors, bioremedial equipment project design/set-up, various remediation technology projects, equipment and design for treating petroleum-contaminated soil and groundwater, equipment set-up/construction, QA/QC, monitor well advancement, supervision of sampling discharge effluents and storm water, groundwater monitoring, EPA/TCEQ & RRC protocol, expediting projects, treatability studies and contaminant plume mapping. He has project experience in field assessments and remediation projects for banks, developers, brokers, institutions, companies, corporations and the Texas Commission on Environmental Quality Leaking Petroleum Storage Tank (LPST) RPR Division. Mr. Murphy excels in the application of technical knowledge, site-specific factors, data analysis, report preparation to existing and potential clients. Knowledgeable in government environmental acts and regulations. Representative projects include:

- Performed numerous Subsurface Investigations and Phase II-Environmental Site Assessments for various clients to determine the presence of adverse environmental conditions.

- Conducting spill response activities and delineations predominantly for pipeline-related enterprises and bulk storage facilities inclusive of: air monitoring, subcontractor supervision, excavation and over-excavation, sampling, waste disposal (waste profiling/characterization, transportation and disposal) and closure under Railroad Commission of Texas or TCEQ. Representative clients:
  - ExxonMobil Pipeline Co. (EMPCo.)
  - BP Pipelines North America (NA), Inc.
  - Valero Logistics Operations, L.P.
  - Kinder Morgan
  - Shell Oil Products US, Motiva and Equilon
  - TEPPCO

- Prepared a pilot project leading to a contracted waste water line build-up treatment plan, technical documents, cost proposal for the City of Houston (waste water line bioremedation).

- LPST remediation equipment set-up and design, petroleum contaminant reduction, TCEQ approved closure of several LPST sites and supervision of LPST sites

- Experience in all phases of construction including bioremedial equipment installation, sampling protocol of water and/or soils, and closure of site. Field Engineer for numerous site assessments throughout the Gulf Coast region. Construction of bioremediation systems to convert pump and treat contaminated ground water including recovery/treatment/microbe and nutrient injection systems. Projects:
  - Houston Lighting & Power-Spring Branch, Houston, bioreactor system; and
  - Wilburforce Road, Houston-First Interstate (successor Wells Fargo Bank), bioreactor.

- Field experience with soil injection, bioreactors, air strippers, and vacuum heaps and air sparging to treat soil/groundwater contaminants. Field Engineer for various remediation projects of oil and petroleum-contaminated soils. Field experience in soil vapor extraction equipment (SVE) including a specially designed bio-treated fluid separator. Constructed a vapor extraction system with a biological scrubber to extend carbon polishing efficiency and/or the potential for breakthrough or fugitive releases, and reduction of overall total emissions. System also included method to remove groundwater from vapor extraction wells, which tended to accumulate due to excessive rainfall and shallow groundwater effects. Constructed, maintained and operated landfarms for various clients. Provided technical and consulting services during the operation of the landfarm, including biological health analyses sampling, data interpretation, report presentation and closure. Other Environmental Projects:
  - Numerous due diligence assessments and affected property assessments for various clients
  - Non-producing "old oilfield" asset assessments (Chevron Environmental Management Company and Chevron Business and Real Estate Services)
  - Several States, Monitoring and assessments of natural gas compressor stations (El Paso Energy Corporation-Tennessee Gas Pipeline and Southern Natural Gas)
  - Texas – Hydrostatic water treatment projects
  - Texas – Wastewater permitting and discharge analyses (Williams Energy-Williams Gas Pipeline and EMPCo.)
  - Numerous crude oil and refined product spill delineations
  - Texas City, Texas – BP-Amoco pipeline release assessment affecting sanitary sewer system
  - Texas – Assessments of Shell Oil Products US and related enterprises-Equiva, Motiva and Equilon
  - Pasadena, Texas – Kinder Morgan Texas Pipeline, Assessment to evaluate off-site source of corrosion to pipeline

- Remediation and landfarms (Chevron Environmental Management Co., First Interstate (successor Wells Fargo Bank), Kinder Morgan, Genesis Crude Oil, L.P., Valero Logistics Operations, L.P., TEPPCO, Specialty Lubricants and Commercial Metals)
- Angleton, Texas – First Interstate (successor Wells Fargo Bank), specialty soil vapor extraction system
- Rockport and Marshall, Texas-First Interstate (successor Wells Fargo Bank), vacuum heap/augmented with automated microbial/nutrient additive system

- Administrative duties, supervision, cost proposals, report preparation, regulatory document preparation, client project status reports. Supervision and field experience in soil boring/monitor well drilling advancement, logging, decommissioning and soil sampling criteria. Installation of numerous soil borings and groundwater monitoring wells at various sites.

- Field experience in groundwater monitoring, low flow sampling, flow interpretation, and contaminant plume mapping. Experience in a variety of mapping, site plan creation/surveying, geographic information systems, regulatory databases and land-use planning.

- Performed over sixteen hundred Phase I Site Assessments for various clients including oil companies (Chevron Environmental Management Co., ChevronTexaco Business and Real Estate Services, Shell Oil Products US, Weatherford International, Inc., EMPCo., etc.) banks, lending agencies, private individuals and/or businesses and corporations. Performed site assessments on all types of properties and facilities including vacant and developing properties, office buildings, office/warehouses, machine shops, and industrial properties. Performed PCS PrimeCo., Sprint, NEXTEL, and American Tower Company pad site assessments. Project Budgets $2,500-$5,500: Locations: Texas, Louisiana, North Carolina, Ohio, Virginia, West Virginia

- Performed and managed various site clean-ups (hazardous and non-hazardous materials/items). Sampling events of abandoned drums and containers with unidentified substances, laboratory supervision, obtaining waste codes, arranging pick-up by certified waste hauling enterprises and appropriate final disposal activities.

ASSOCIATIONS AND ORGANIZATIONS

The Society of Texas Environmental Professionals
National Association of Environmental Professionals (in-active)

BENJAMIN M. PRICE, GEOLOGIST
VICE PRESIDENT AND PROJECT MANAGER
ENVIRONMENTAL ENGINEERING SERVICES

EDUCATION
Master of Science, Geology, Texas A&M University (1991)
Bachelor of Science, Geology, Florida Atlantic University

CERTIFICATIONS/AFFILIATIONS
Certified Wetland Delineator 1997
Society of Wetland Scientists
Certified Environmental Auditor, 1997
Registered Environmental Manager (R.E.M. #10916)
Texas Association of Environmental Professionals
National Registry of Environmental Professional
Federal Energy Regulatory Commission (FERC) Training and Certification
National Environmental Policy Act (NEPA) Training and Certification
Texas Department of Transportation Certification No. 6550
TxDOT precertified in 2.3.1, 2.4.1, 2.6.1, and 2.13.1

EXPERIENCE
Mr. Price is an environmental scientist with diverse experience in both business and technical aspects of the environmental industry. Utilizing his extensive background in geological and biological disciplines, he has developed expertise in environmental regulations, property assessments, hazardous waste testing and evaluation, wetland evaluation, endangered species audits, health and safety issues, and silviculture activities. Mr. Price specializes in site investigations relating to hazardous material and petroleum product contamination. His experience with the petroleum industry and contaminated site remediation allows him to effectively consult on cost efficient solutions to environmental impairment concerns. Mr. Price is involved with problem solving related to environmental and ecological issues, especially those which may hinder property transfer, land development activities, or oil and gas activities. He has developed a unique working relationship with many federal and state resource agencies responsible for project permitting and approval.

REPRESENTATIVE PROJECTS

- *Alamo Lumber Company, City of Houston, Texas: Subsurface Investigation and Remediation.* Project Manager for the conduct of Phase I, Phase II, and Phase III investigations and level three remediation of soil and groundwater. Contaminates of concern included Pentachlorophenol (PCP) and various Dioxins. The project required agency supervision and approvals.

- *U. S. 59 and Grand Parkway, private development project, Fort Bend County, Texas: Limited Environmental Assessment.* Project Hazards Manager for the preparation of a Limited Environmental Assessment (EA) for a 500-acre land development between the Brazos River and Highway 59 (Southwest Freeway) bisected by the Grand Parkway. The project involved assessment and documentation of environmental issues, such as wetlands, hazardous waste, historic/archaeological investigation and preservation, threatened and endangered species, surface hydrology, and flood plains.

- *Houston Comprehensive Bikeway Program, City of Houston, all locations, Environmental Assessment.* Project Coordinator for the preparation of an Environmental Assessment (EA) for the comprehensive bikeways program covering 100 lineal miles and involving a TxDOT EA for ISTEA funding. The project involved the preparation of NEPA documentation and assessments of environmental issues, such as wetlands, hazardous waste, historic preservation, threatened and endangered species, air quality, noise, water quality, hydrology, and flood plains.

- *Stafford-Staffordshire Road Expansion of roadway, City of Stafford, east Fort Bend County, Environmental Assessment.* Project Coordinator for the preparation of a TxDOT Environmental Assessment (EA) for the expansion of Stafford-Staffordshire Road through three jurisdictions (Harris County, City of Stafford, and City of Missouri City). The project involved preparation of a NEPA environmental assessment, including wetlands, hazardous waste, historic preservation, threatened and endangered species, air quality, water quality, hydrology, and flood plains.

- *Sienna Plantation, private client, east Fort Bend County, Texas: Environmental Assessment and Planning.* Project Coordinator for an approximate 11,000-acre project involving current and long range environmental planning. The project involved assessment, permitting, and mitigation for many different tracts and sections of the development. Specific tasks included evaluation of existing wetlands, creation of constructed wetlands, overall project planning, hazardous waste assessments, historic/cultural/archaeological preservation, threatened and endangered species, coordination, land management, and contractor supervision.

- *Independence Boulevard, Murphy Road Detention and Drainage Facilities, City of Missouri City, east Fort Bend County, Texas: Environmental Assessments.* Project Coordinator for the preparation of an Environmental Assessment for the extension of Murphy Road, the Environmental Assessment for the Murphy Road Detention and Drainage Improvements, and other environmental evaluations for the City of Missouri City, Texas. Projects involved preparation of Section 404 permit documentation, and assessment of environmental issues, such as wetlands, hazardous waste, historic/archaeological investigation and preservation, and threatened and endangered species.

- *Sugarland Oil and Gas, private oil company, northeast Fort Bend County: Field Assessment and Compliance Review.* Project Coordinator for the environmental assessment and compliance review of a large oil field located around a salt dome structure. The property contained over 125 known oil and gas wells. Environmental evaluation included the evaluation of each currently producing and non-producing historic well site for hazardous material, toxic material, and petroleum products. Phase II site investigation and characterization is still ongoing.