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REPORT OF
LIMITED SUBSURFACE INVESTIGATION

TEXACO #122
FACILITY ID: 24742-089-003822
3030 N Memorial Parkway Northwest
Huntsville, Madison County, Alabama 35803

April 2021

Prepared for

The Pugh Group
507 Drake Avenue, Suite A
Huntsville, AL 35801

Prepared by

CDG Engineers & Associates, Inc.
3 Riverchase Ridge
Hoover, Alabama 35244

CERTIFICATION PAGE

"I hereby certify that, in my professional judgment, the components of this document and associated work satisfy the applicable requirements set forth in Chapter 335-6 of the ADEM Administrative Code, and are consistent with generally accepted professional consulting principles and practices. The information submitted herein, to the best of my knowledge and belief, is true accurate, and complete. I am aware that there are significant penalties for submitting false information."

This document has been prepared based on historical site assessment data and has been prepared to address soil and groundwater contamination at the Texaco #122 site (Facility Identification Number 24742-089-003822) in Huntsville, Madison County, Alabama. The recommended action should not be construed to apply to any other site.

Signature
David C. Dailey
Registered Engineer in the State of Alabama
Registration No. 23095

4/30/2021
Date

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1.0 INTRODUCTION

CDG Engineers & Associates, Inc. (CDG) was retained by The Pugh Group to conduct a Limited Subsurface Investigation (LSI) for the Texaco #122 facility located at 3030 N Memorial Parkway NW Huntsville, Madison County, AL 35803. The work presented in this report was conducted on behalf of The Pugh Group and was conducted in accordance with CDG's site specific scope of work.

The following sections present a summary of the work accomplished and conclusions of the investigation.

1.1 BACKGROUND

The subject property consists of one (1) parcel; Parcel Number 14-06-24-2-001-083.000. The property entrance has approximate coordinates of 34° 45' 49.32" north latitude and 86° 35' 17.00" west longitude. The target property and immediate surrounding areas include residential and commercial properties.

The subject property is located at an elevation of approximately 662 feet above sea level and gently slopes to the southeast towards an open field behind the adjacent shopping center that eventually recharges into the Tuscumbia-Fort Payne Aquifer or runoff into a bordering aquifer. Stormwater in the vicinity of the site is conveyed to the drainage ditch, until recharging a bordering aquifer confined by the limestone that occupies much of Madison county.

Soil survey data for Madison County indicates that the subject property is within an area of the Mississippian system and formation of Fort Payne Chert, Tuscumbia Limestone, and Monteagle Limestone, which principally consists of bedded bioclastic with abundant chert nodules containing interbeds of light gray chert. The Tuscumbia-Fort Payne Formation is well drained, and water can typically be found throughout the entirety of Madison County as a significant source of water. A topographic map depicting the location of the site is presented as Figure 1.

The subject property is currently an inactive retail gas station. The Pugh Group plans to sell the existing retail gas station. The property contains one (1) retail building with an attached canopy structure used to cover the fuel dispensers. The structures are in the center of the property. The facility contains three (3) 10,000 gallon underground storage tanks (USTs) containing Premium Gasoline, Midgrade Gasoline, and Unleaded Gasoline, as well as one (1) 4,000 gallon Kerosene UST, of which all are currently in temporary closure. No other USTs are listed as being onsite. The three (3) 10,000 gallon USTs are located in the concrete parking lot east of the retail store. The one (1) Kerosene UST is located south of the fueling canopy in the concrete parking lot.

Overhead power lines enter the property at the northwest property corner and run to the fueling dispensers and retail gas station. Storm sewer inlets are also located at the northwest corner of the property and run underneath the west edge of the property south. The property is serviced by city water and city sanitary sewer.

Memorial Parkway NW borders the property to the West. A Bar-B-Que Restaurant borders the subject property to the south as well, immediately to the south. The subject property is bordered by

Captains D's Restaurant to the North. Regions Banks is located West of the subject property across the Memorial Parkway NW. To the east of the property is a large grass field followed by a patch of forest running directly into a residential neighborhood.

1.2 OBJECTIVE

The objective of the Scope of Work for the LSI is to evaluate the soil and groundwater conditions in the vicinity of the USTs.

2.0 FIELD INVESTIGATION

The field investigation was implemented in accordance with CDG's scope of work developed for the site. An overview of methods, procedures, and rationale used during the field investigation is presented in the paragraphs below.

2.1 SCOPE OF WORK

CDG's scope of work for this LSI consisted of the following tasks:

- Installation of four (4) soil borings using a Terra Sonic TSi 150CC drill rig drilling rig to saturated soil conditions or refusal;
- Collection of two (2) soil sample from each boring for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tertiary butyl ether (MTBE), and naphthalene. Collection of one (1) soil sample from each boring for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tertiary butyl ether (MTBE), and naphthalene if groundwater is encountered;
- Collection of one (1) groundwater sample from each of the soil borings for analysis of BTEX, MTBE, and naphthalene;
- Sample analysis; and
- Reporting.

CDG conducted the field investigation activities on March 29th, 2021.

2.2 SUBSURFACE INVESTIGATION

2.2.1. Utility Clearance

Prior to the installation of the soil borings, CDG arranged to have Alabama One Call, a municipal underground utility location service, identify subsurface municipal utilities located in public rights-of-way and to clear the selected boring location ns on the site. Boring locations were adjusted where necessary to maintain a minimum required distance of five (5) feet from any identified underground utility in accordance with Alabama state and federal occupational safety and health regulations.

2.2.2. Soil Borings

On March 29th, 2021, CDG mobilized to the site to advance four (4) soil borings using HSA drilling equipment. The HSA equipment was supplied and operated by CDG. Four (4) soil borings (SB-1, SB-2, SB-3, SB-4) were advanced immediately south, northeast, and northwest of the Gasoline UST tank hold. The final soil boring was placed just south of the fueling canopy.

As specified in the Scope of Work, soil borings were advanced to either auger refusal or saturated soil conditions. Auger refusal was encountered at approximately 25 feet-below land surface (ft-bls) in SB-1 and SB-4. Saturated soil conditions were encountered at 20 ft-bls in SB -2 and SB-3.

Soil in each boring was described and classified by soil type using the Unified Soil Classification System. Field screening results, soil lithology and other observations were recorded in a field notebook. The boring logs for borings SB-1 through SB-4 are presented in Appendix A.

2.2.3. Groundwater Sampling Activities

Following soil sample collection, each boring was converted to a temporary groundwater monitoring well to allow for groundwater sample collection. The temporary monitoring wells were constructed with approximately eight (8) feet of one (1)-inch diameter Schedule 40 PVC well screen (0.010-inch slot) with the remainder of each well being constructed with (1)-inch diameter PVC well casing. Two (2) groundwater samples were collected from the temporary monitoring wells.

2.2.4. Chemical Analysis

As per the Scope-of-Work, each soil boring was advanced until either saturated soil conditions or refusal was encountered. One (1) soil sample from each boring was collected from the five (5) foot interval immediately above refusal at rock or groundwater. One groundwater sample was able to be collected from each temporary monitoring well.

Groundwater samples were collected from each boring, with collection being conducted using a disposable bailer suspended by new nylon twine. Soil samples were collected from five (5) foot continuous samplers. Each soil sample was transferred into laboratory supplied containers and stored on ice prior to shipment to the lab for analysis.

Soil samples were delivered to Southerland Environmental Company, Inc., located in Birmingham, Alabama for analysis following strict and appropriate chain of custody protocols. Each sample was analyzed for BTEX, naphthalene, and MTBE constituents in accordance with Environmental Protection Agency (EPA) Method 8260B.

Soil results were compared to Alabama Department of Environmental Management (ADEM) Initial Screening Levels (ISLs) to determine if additional investigation is required.

3.0 FINDINGS

3.1 GEOLOGY AND SOILS

The facility is located within the Highland Rim Section of the Interior Low Plateaus physiographic province of Alabama. According to the Geologic Map of Alabama, the site is located in the area of Fort Payne Chert, Tuscumbia Limestone, and Monteagle Limestone which spans in broad majority of Madison county excluding the Monte Sano Mountain, Little Mountain and Keel Mountain along the eastern boarder and southeastern section of Madison County. These deposits are Mississippian in age which typically consists of bedded bioclastic with abundant chert nodules containing interbeds of light gray chert. and olive-green mudstone in the upper part.

The site is located in the Tuscumbia-Fort Payne aquifer. The aquifer is recharged throughout its outcrop by water which infiltrates and percolates through the regolith. The base of the aquifer is the contact with the underlying Chattanooga Shale (GSA, 1987).

During this investigation, sample location surface conditions consisted of approximately 3 inches of concrete. The sedimentary units beneath the site are described as a tan/red sandy clay, and a reddish brown gravelly clay.

3.2 ANALYTICAL RESULTS

3.2.1. Soil Results

A total of six (6) soil samples [SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls)] were submitted for laboratory analyses on April 2nd, 2021. A sample from the five (5) foot interval immediately above the bed rock from each boring was submitted to the laboratory for analysis of MTBE, naphthalene, and BTEX. An overview of soil sample analytical results is as follows:

- None of the soil samples returned MTBE concentrations greater than the respective ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return MTBE concentrations greater than the laboratory method detection limits (MDL).

- None of the soil samples returned naphthalene concentrations greater than the ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return naphthalene concentration greater than the MDL.

- None of the soil samples returned benzene concentrations greater than the ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return benzene concentrations greater than the laboratory method detection limits (MDL).

- None of the soil samples returned toluene concentrations greater than the ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return toluene concentrations greater than the laboratory method detection limits (MDL).

- None of the soil samples returned ethylbenzene concentrations greater than the ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return ethylbenzene concentrations greater than the laboratory method detection limits (MDL).

- None of the soil samples returned a total xylene concentration greater than the ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return total xylene concentrations greater than the laboratory method detection limits (MDL).

A summary of the soil analytical results is presented in Table 1. The analytical laboratory report is presented in Appendix B.

3.2.2. Groundwater Results

A total of two groundwater samples were collected from temporary monitoring wells installed in two (2) of the four (4) borings. The two temporary wells that produced water were found in SB-2 and SB-3.

- None of the groundwater samples returned MTBE concentrations greater than the respective ADEM ISL. SB-2 GW and SB-3 GW, did not return MTBE concentrations greater than the laboratory method detection limits (MDL).

- None of the groundwater samples returned naphthalene concentrations greater than the ADEM ISL. SB-2 GW and SB-3 GW, did not return naphthalene concentrations greater than the laboratory method detection limits (MDL).

- None of the groundwater samples returned benzene concentrations greater than the ADEM ISL. SB-2 GW and SB-3 GW, did not return benzene concentrations greater than the laboratory method detection limits (MDL).

- None of the groundwater samples returned toluene concentrations greater than the ADEM ISL; however, one (1) concentration was determined to be above the method detection limits (MDL). SB-2 GW was found to have a toluene concentration of 0.001 mg/L, which is above the MDL, but below the ADEM ISL. SB-3 GW, did not return toluene concentrations greater than the laboratory MDL.

- None of the groundwater samples returned ethylbenzene concentrations greater than the ADEM ISL. SB-2 GW and SB-3 GW, did not return ethylbenzene concentrations greater than the laboratory method detection limits (MDL).

- None of the groundwater samples returned a total xylene concentration greater than the ADEM ISL. SB-2 GW and SB-3 GW, did not return total xylene concentrations greater than the laboratory method detection limits (MDL).

3.2.3. Boring Abandonment and Waste Management

After completion of the soil sampling activities, the soil borings were backfilled with bentonite pellets up to a depth of approximately one (1) ft-bls. The remaining one (1) foot was backfilled with topsoil or gravel to match the surrounding ground surface. No excess solid waste was generated during the LSI.

4.0 CONCLUSIONS AND RECOMMENDATIONS

CDG has completed this LSI of Texaco #122 facility located at 3030 N Memorial Parkway NW Huntsville, Madison County, AL 35803. Fieldwork for the LSI was conducted March 29th, 2021. Based upon the results of this investigation, the following conclusions can be made:

- Six (6) soil samples collected from the site were analyzed for naphthalene, BTEX and MTBE constituents in accordance with EPA Method 8260B. Soil sample analysis indicate that no soil samples contain detectable concentrations of naphthalene, MTBE, or any BTEX constituents.

    - None of the soil samples returned MTBE concentrations greater than the respective ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return MTBE concentrations greater than the laboratory method detection limits (MDL).

    - None of the soil samples returned naphthalene concentrations greater than the ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return naphthalene concentration greater than the MDL.

    - None of the soil samples returned benzene concentrations greater than the ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return benzene concentrations greater than the laboratory method detection limits (MDL).

    - None of the soil samples returned toluene concentrations greater than the ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return toluene concentrations greater than the laboratory method detection limits (MDL).

    - None of the soil samples returned ethylbenzene concentrations greater than the ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return ethylbenzene concentrations greater than the laboratory method detection limits (MDL).

    - None of the soil samples returned a total xylene concentration greater than the ADEM ISL. SB-1 (15-20 ft-bls), SB-1 (20-25 ft-bls), SB-2 (15-20 ft-bls), SB-3 (15-20 ft-bls), SB-4 (15-20 ft-bls), and SB-4 (20-25 ft-bls) did not return total xylene concentrations greater than the laboratory method detection limits (MDL).

- A total of two (2) groundwater samples were collected from four (4) temporary monitoring wells set in the soil borings. The two temporary wells that produced water were found in SB-2 and SB-3.

    - None of the groundwater samples returned MTBE concentrations greater than the respective ADEM ISL. SB-2 GW and SB-3 GW, did not return MTBE concentrations greater than the laboratory method detection limits (MDL).

    - None of the groundwater samples returned naphthalene concentrations greater than the ADEM ISL. SB-2 GW and SB-3 GW, did not return naphthalene concentrations greater than the laboratory method detection limits (MDL).

    - None of the groundwater samples returned benzene concentrations greater than the ADEM ISL. SB-2 GW and SB-3 GW, did not return benzene concentrations greater than the laboratory method detection limits (MDL).

    - None of the groundwater samples returned toluene concentrations greater than the ADEM ISL; however, one (1) concentration was determined to be above the method detection limits (MDL). SB-2 GW was found to have a toluene concentration of 0.001 mg/L, which is above the MDL, but below the ADEM ISL. SB-3 GW, did not return toluene concentrations greater than the laboratory MDL.

    - None of the groundwater samples returned ethylbenzene concentrations greater than the ADEM ISL. SB-2 GW and SB-3 GW, did not return ethylbenzene concentrations greater than the laboratory method detection limits (MDL).

Based on the results of this LSI, CDG recommends that no additional environmental investigative activities are warranted for the site.

Tables

TABLE 1:

Summary of Soil BTEX/MTBE Constituent Concentrations
Texaco #122
3030 N Memorial Parkway Northwest
Huntsville, Madison County, Alabama 35803

			Hydrocarbon Constituent Concentrations						
Soil Sample ID	Sample Date	Sample Depth (feet-bgs)	MTBE (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylene (mg/kg)	Total BTEX (mg/kg)	Naphthalene (mg/kg)
SB-1	3/29/2021	15-20	<0.005	<0.005	<0.005	<0.005	<0.015	<0.030	<0.025
	3/29/2021	20-25	<0.005	<0.005	<0.005	<0.005	<0.015	<0.030	<0.025
SB-2	3/29/2021	15-20	<0.005	<0.005	<0.005	<0.005	<0.015	<0.030	<0.025
SB-3	3/29/2021	15-20	<0.005	<0.005	<0.005	<0.005	<0.015	<0.030	<0.025
SB-4	3/29/2021	15-20	<0.005	<0.005	<0.005	<0.005	<0.015	<0.030	<0.025
	3/29/2021	20-25	<0.005	<0.005	<0.005	<0.005	<0.015	<0.030	<0.025
ADEM ISLs:			*0.00862*	*0.00845*	*3.60*	*3.61*	*62.40*		*0.579*

Notes:
All BTEX/MTBE samples analyzed in accordance with EPA Method 8260B
< - Less than symbol indicates parameter was not detected above the Quantitation Limit
Bold - indicates concentration exceeded the ADEM ISLs
mg/kg - milligrams per kilogram
bgs - below ground surface

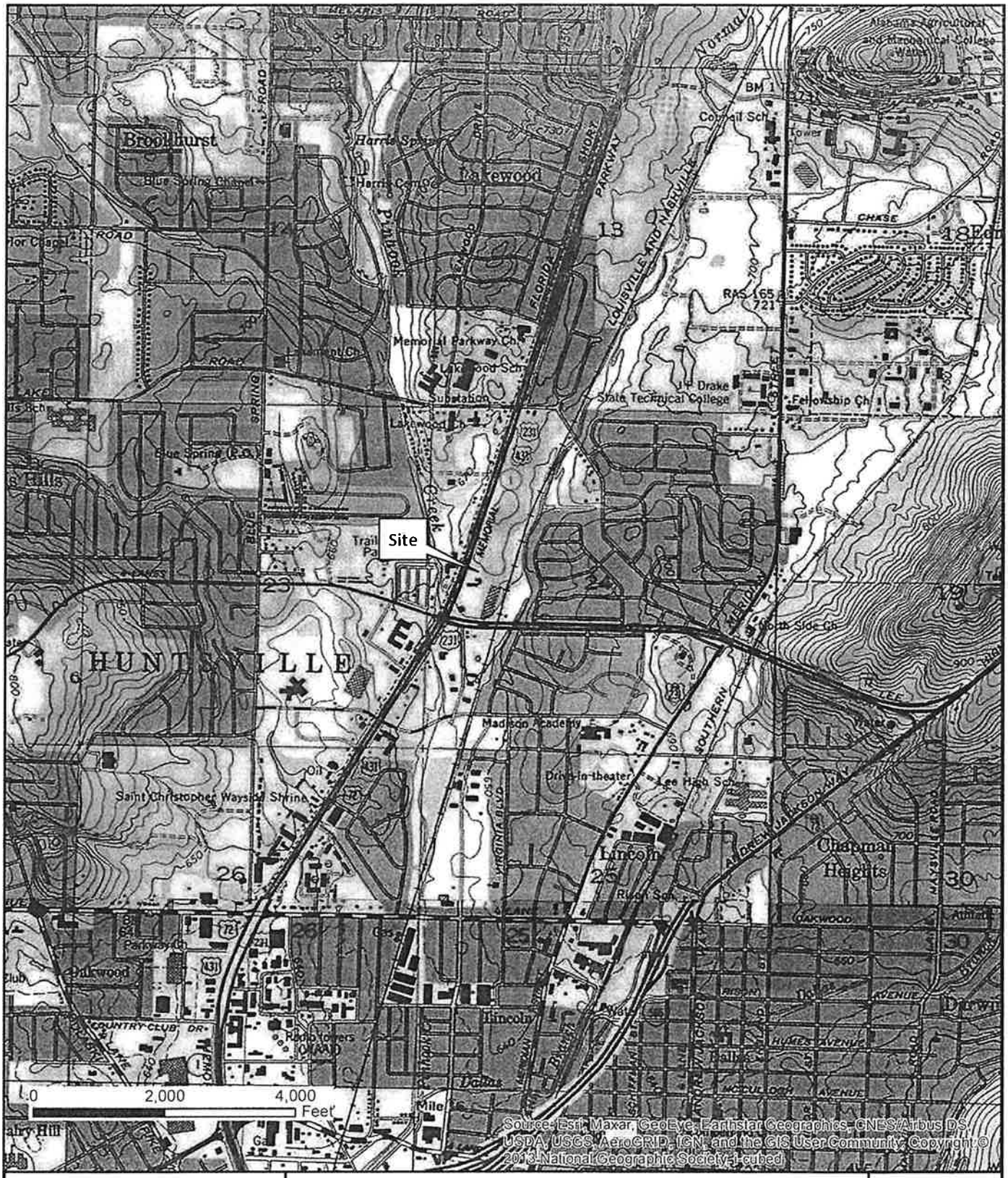
Table 2:

Summary of Groundwater BTEX/MTBE/Naphthalene Concentrations
Texaco #122
3030 N Memorial Parkway Northwest
Huntsville, Madison County, Alabama 35803

WELL ID	SAMPLE DATE	Concentrations of Constituents (mg/L)						
		MTBE	Naphthalene	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES	TOTAL BTEX
SB-2 GW	3/29/2021	<0.001	<0.005	<0.001	0.001	<0.001	<0.003	0.001
SB-3 GW	3/29/2021	<0.001	<0.005	<0.001	<0.001	<0.001	<0.003	<0.006
ADEM ISLs		*0.020*	*0.020*	*0.005*	*1.000*	*0.700*	*10.000*	

Notes:
1) All samples analyzed in accordance with EPA Method 8260B
2) mg/L = milligrams per liter or parts per million
3) < - Less than symbol indicates parameter was not detected above the Quantitation Limit
4) **BOLD** indicates exceedance of ADEM's Initial Screening Levels (ISLs)

Figures



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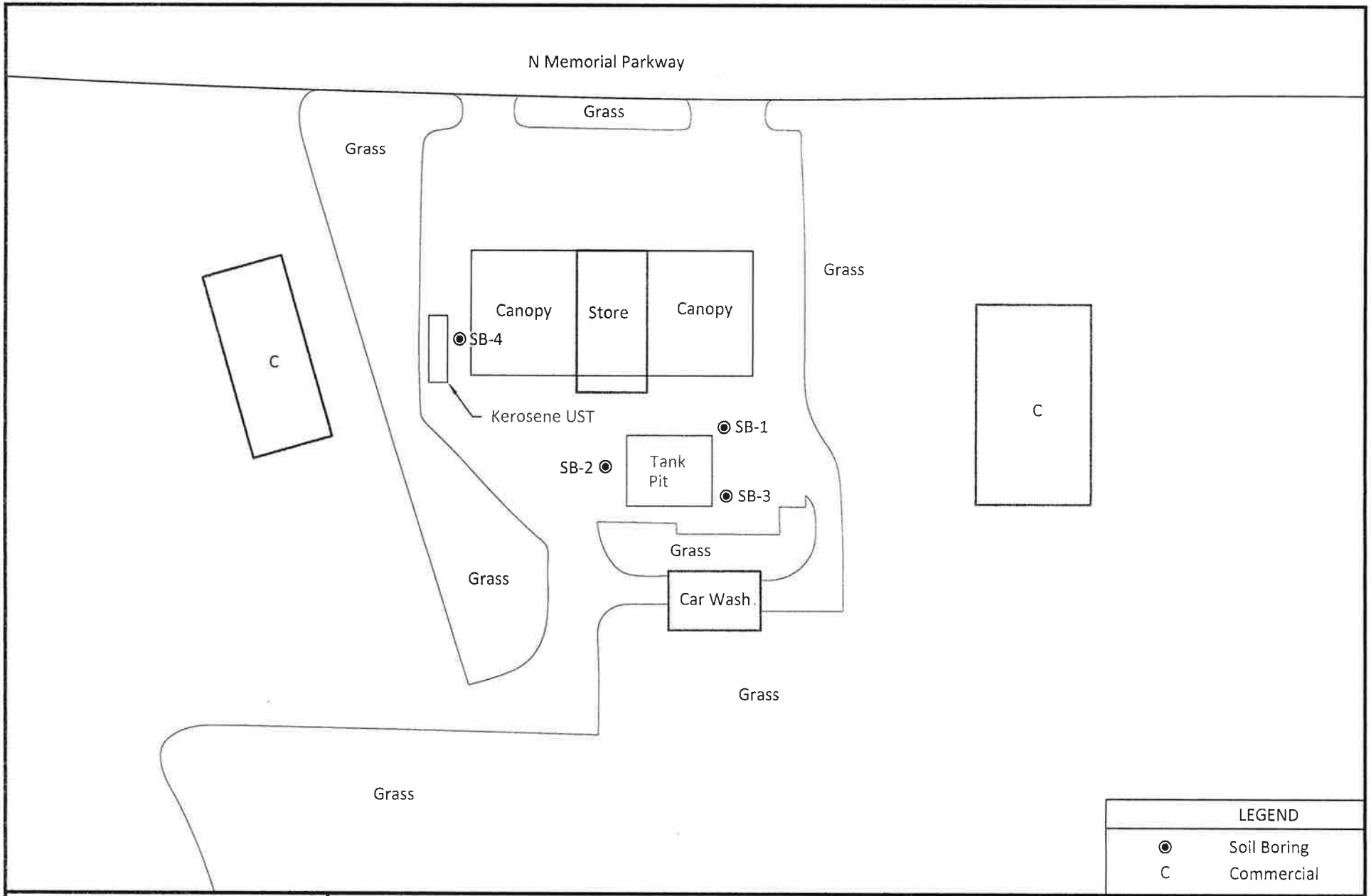
Site Location USGS Topographic Map

The Pugh Group - Texaco #122
3030 N. Memorial Parkway
Huntsville, Madison County, AL



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Site Map with Soil Boring Locations

The Pugh Group - Texaco #122
3030 N. Memorial Parkway
Huntsville, Madison County, AL

Approximate Scale in Feet

0 50 100

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Soil Boring Logs

Appendix A

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BORING AND WELL COMPLETION LOG
BORING / WELL ID SB-1

Project Name: The Pugh Group - Texaco #122	Ground Elevation (ft.): N/A	Depth Drilled Into Rock (ft.): N/A
Phase Number: 300	Groundwater Elevation (ft.): N/A	Total Depth of Boring (ft.): 25.00
Project Location: Huntsville, Alabama	Casing Elevation (ft.): N/A	Auger Size ID (in.): N/A
Log Prepared By: Sullivan Shelton	Datum Elevation: MSL	Auger Size OD (in.): N/A
Remarks:	Well Type: N/A	Type of Sampler: 10' Continuous
Driller: CDG	Well Diameter (in.): N/A	Date Started: 3/29/2021
Drilling Method: Sonic		Date Completed: 3/29/2021

Depth (feet)	Lithology	Soil Description	USCS
		CONCRETE CLAY, brown and red, fine grained, dry, stiff, no odor, moderately plastic	CL
		CLAY, brown and red, fine grained, dry, stiff, no odor, moderately plastic	CL
5		SANDY CLAY, tan and red with black and orange and brown marbling throughout, fine and medium grained, dry, moderately stiff, no odor, slightly plastic	CL
10		CLAY, gravelly, brown and red with black and tan and orange and gray marbling, fine and coarse grained, dry, stiff, no odor, moderately plastic, sub angular gravel, shale and various pieces of rock throughout	CL
15		CLAY, gravelly, brown and red, fine and coarse grained, dry, stiff, no odor, moderately plastic, sub angular gravel	CL
20		CLAY, gravelly, brown and orange with red and tan and gray marbling, fine and coarse grained, dry, stiff, no odor, moderately plastic, sub angular gravel	CL
25		Boring terminated at 25.0 feet bls.	

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BORING AND WELL COMPLETION LOG
BORING / WELL ID SB-2

Project Name: The Pugh Group - Texaco #122	Ground Elevation (ft.): N/A	Depth Drilled Into Rock (ft.): N/A
Phase Number: 300	Groundwater Elevation (ft.): N/A	Total Depth of Boring (ft.): 20.00
Project Location: Huntsville, Alabama	Casing Elevation (ft.): N/A	Auger Size ID (in.): N/A
Log Prepared By: Sullivan Shelton	Datum Elevation: MSL	Auger Size OD (in.): N/A
Remarks:	Well Type: N/A	Type of Sampler: 10' Continuous
Driller: CDG	Well Diameter (in.): N/A	Date Started: 3/29/2021
Drilling Method: Sonic		Date Completed: 3/29/2021

Depth (feet)	Lithology	Soil Description	USCS
		CONCRETE CLAY, brown and red, fine grained, dry, stiff, no odor, moderately plastic	CL
		CLAY, gravelly, brown and red with black sections, some pieces of limestone throughout, fine and coarse grained, dry, stiff, slight odor, moderately plastic, sub angular	CL
5		CLAY, gravelly, brown and red, shale and limestone pieces throughout, fine and coarse grained, dry, stiff, no odor, moderately plastic, sub angular	CL
10		CLAY, gravelly, red and brown with tan and orange and gray marbling, shale and limestone pieces, fine and coarse grained, dry, stiff, slight odor, moderately plastic, sub angular rock	CL
15		CLAY, gravelly, tan with red and gray and orange marbling, fine and coarse grained, damp, moderately stiff, slight odor, moderately plastic, sub angular gravel	CL
20		Boring terminated at 20.0 feet bls.	

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BORING AND WELL COMPLETION LOG
BORING / WELL ID SB-3

Project Name: The Pugh Group - Texaco #122	Ground Elevation (ft.): N/A	Depth Drilled Into Rock (ft.): N/A
Phase Number: 300	Groundwater Elevation (ft.): N/A	Total Depth of Boring (ft.): 20.00
Project Location: Huntsville, Alabama	Casing Elevation (ft.): N/A	Auger Size ID (in.): N/A
Log Prepared By: Sullivan Shelton	Datum Elevation: MSL	Auger Size OD (in.): N/A
Remarks:	Well Type: N/A	Type of Sampler: 10' Continuous
Driller: CDG	Well Diameter (in.): N/A	Date Started: 3/29/2021
Drilling Method: Sonic		Date Completed: 3/29/2021

Depth (feet)	Lithology	Soil Description	USCS
		CONCRETE CLAY, brown and red, fine grained, dry, stiff, no odor, moderately plastic	CL
		CLAY, gravelly, brown and red, some shale pieces, fine and coarse grained, dry, stiff, no odor, moderately plastic, sub angular gravel	CL
5		CLAY, gravelly, brown and red, shale and limestone pieces, fine and coarse grained, dry, stiff, no odor, slightly plastic, sub angular gravel	CL
10		CLAY, gravelly, tan and gray with brown and red and black marbling, shale and limestone throughout, fine and coarse grained, damp, stiff, no odor, moderately plastic, sub angular gravel	CL
15		CLAY, gravelly, tan and gray with brown and red and black marbling, shale and limestone pieces, damp, stiff, no odor, moderately plastic, sub angular gravel	CL
20		Boring terminated at 20.0 feet bls.	

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BORING AND WELL COMPLETION LOG
BORING / WELL ID SB-4

Project Name: The Pugh Group - Texaco #122	Ground Elevation (ft.): N/A	Depth Drilled Into Rock (ft.): N/A
Phase Number: 300	Groundwater Elevation (ft.): N/A	Total Depth of Boring (ft.): 25.00
Project Location: Huntsville, Alabama	Casing Elevation (ft.): N/A	Auger Size ID (in.): N/A
Log Prepared By: Sullivan Shelton	Datum Elevation: MSL	Auger Size OD (in.): N/A
Remarks:	Well Type: N/A	Type of Sampler: 10' Continuous
Driller: CDG	Well Diameter (in.): N/A	Date Started: 3/29/2021
Drilling Method: Sonic		Date Completed: 3/29/2021

Depth (feet)	Lithology	Soil Description	USCS
		CONCRETE CLAY, brown with red and black and tan marbling, fine grained, dry, stiff, no odor, moderately plastic	CL
		CLAY, gravelly, red with orange and brown marbling, some pieces of shale and limestone throughout, fine and coarse grained, dry, stiff, no odor, moderately plastic, sub angular gravel	CL
5		CLAY, gravelly, brown with red and orange marbling, pieces of shale and limestone throughout, fine and coarse grained, dry, stiff, no odor, moderately plastic, sub angular gravel	CL
10		CLAY, gravelly, tan and red with brown and red marbling, pieces of shale and limestone throughout, fine and coarse grained, dry, stiff, no odor, moderately plastic, sub angular gravel	CL
15		CLAY, gravelly, tan and red with brown and gray marbling, pieces of shale and limestone throughout, fine and coarse grained, dry, stiff, no odor, moderately plastic, sub angular gravel	CL
20		CLAY, gravelly, brown with orange and red and tan marbling, fine and coarse grained, damp, stiff, no odor, moderately plastic, sub angular gravel	CL
25		Boring terminated at 25.0 feet bls.	

CDG

Engineering. Environmental. Answers.

Laboratory Analytical Reports

Appendix B

Sutherland
Environmental Company, Inc.
2515 5th Avenue South
Birmingham, AL 35233
PHONE: (205)581-9500
E-mail: suthlab@bellsouth.net

CHAIN OF CUSTODY ANALYSIS REQUEST

SEND REPORT TO:
Name: Sullivan Shelton
Company: CDG Engineers & Associates Inc
Address: 3 Riverchase Ridge, Hoover, AL 35244
Phone#: 251-622-8856 Cell # —
E-mail(s): Sullivan.Shelton@cdge.com PDF: yes no

Invoice # 44771
Page ___ of ___

Client P.O. #

CLIENT: Tesaco #122
PROJECT NAME/#: CDG Engineers
SAMPLER(S): (print) Sullivan Shelton
DATE DELIVERED: 4/2/21

LAB ID	FIELD ID	DATE Collected	TIME Collected	SAMPLE DESCRIPTION (matrix)	S2603 BTEX/MTBE/naphth								Number of sample containers
225170	SB-2 GW	03/29/21	16:24	GW	X								2
225 171	SB-3 GW	"	15:31	GW	X								2
225 172	SB-1 15-20		15:15	Soil	X								1
225 173	SB-1 20-25		14:35	Soil	X								1
225 174	SB-2 15-20		16:10		X								1
225 175	SB-3 15-20		15:14		X								1
													1
225 176	SB-4 15-20		16:59		X								1
225 177	SB-4 20-25	—	17:29		X								1
													1

Preservative: (a)HCL, (b)HNO_3, (c)H_2SO_4, (d)NaOH, (e) $Na_2S_2O_3$, (f) H_3PO_4, (g)Zn Acetate **Preservative:**
Container type: (a) Amber, (g) Glass, (p) Plastic, (v) VOC Vial, (air) air bag **Container:**

Last revised 12/13/19

Relinquished by Sampler: Sullivan Shelton Signed:	Date: 04/02/21	Time: 13:55	Received by: Signed:	Date	Time
Relinquished by: Signed:	Date	Time	Received by: Signed:	Date	Time
Relinquished by: Signed:	Date	Time	Received in Lab by: Signed:	Date: 4/2/21	Time: 1355

Turn Around Time
Standard: X **RUSH:** ___ 3-DAY 2-DAY 1-DAY SAME DAY

Remarks:

Refrigerated upon receipt: yes no

Sutherland

Environmental Company, Inc.

2515 5th Avenue South
Birmingham, AL 35233
205-581-9500

Client:	CDG Engineers	Report Date:	April 6, 2021
Attention:	Mr. Sullivan Shelton	Reference #	44771
Address:	3 Riverchase Ridge	P.O. #	verbal
	Birmingham, AL 35244	Project ID:	Texaco #122

Sample Matrix:	water	Analytical	
Date Received:	4/2/21	Analyst:	Heard/Hageman
Date Collected:	3/29/21	Date of Analysis:	4/3/21
Sample Collector:	S. Shelton	Method:	***EPA Method 8260B***

VOLATILE ORGANICS - BTEX/MTBE/NAPHTHALENE

	FIELD ID	FIELD ID					
	SB-2 GW	SB-3 GW					
Volatile	LAB ID	LAB ID					Detection
Organic, mg/L	225170	225171					Limit, ppm
Benzene	BDL	BDL					0.001
Toluene	**0.001**	BDL					0.001
Ethylbenzene	BDL	BDL					0.001
Xylenes, o,m,p	BDL	BDL					0.003
MTBE	BDL	BDL					0.001
Naphthalene	BDL	BDL					0.005

BDL = Below Detection Limit, Method
Detection Limit is Method Detection Limit
All results expressed as ppm (mg/L) of analyte
Samples preserved with HCL and refrigerated at 4 degrees C

MH / QAQC

EPA Laboratory ID AL01084

Respectfully submitted,

Kevin Doriety

Kevin Doriety
Analytical Chemist

Sutherland

Environmental Company, Inc.

2515 5th Avenue South
Birmingham, AL 35233
205-581-9500

Client:	CDG Engineers	Report Date:	April 6, 2021
Attention:	Mr. Sullivan Shelton	Reference #	44771
Address:	3 Riverchase Ridge	P.O. #	verbal
	Birmingham, AL 35244	Project ID:	Texaco #122

Sample Matrix:	soil	Analytical	
Date Received:	4/2/21	Analyst:	Heard/Hageman
Date Collected:	3/29/21	Date of Analysis:	3/5/21
Sample Collector:	S. Shelton	Method:	***EPA Method 8260B***

VOLATILE ORGANICS - BTEX/MTBE/NAPHTHALENE

	FIELD ID	FIELD ID	FIELD ID	FIELD ID	FIELD ID	FIELD ID	
	SB-1 15-20	SB-1 20-25	SB-2 15-20	SB-3 15-20	SB-4 15-20	SB-4 20-25	
Volatile Organic, ppm	LAB ID 225172	LAB ID 225173	LAB ID 225174	LAB ID 225175	LAB ID 225176	LAB ID 225177	Detection Limit, ppm
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	0.005
Toluene	BDL	BDL	BDL	BDL	BDL	BDL	0.005
Ethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	0.005
Xylenes, o,m,p	BDL	BDL	BDL	BDL	BDL	BDL	0.015
MTBE	BDL	BDL	BDL	BDL	BDL	BDL	0.005
Naphthalene	BDL	BDL	BDL	BDL	BDL	BDL	0.025

BDL = Below Detection Limit
Detection Limit is Practical Quantitation Limit
All results expressed as ppm (mg/Kg) of analyte

MH / QAQC

EPA Laboratory ID AL01084

Respectfully submitted,

Kevin Doriety

Kevin Doriety
Analytical Chemist

Quality Environmental Analytical Services

Sutherland Environmental Read and Review Checklist

1. Is the client and the sample collector(s) accurately noted on report?	NO	YES	NO	YES
2. Do all dates match the COC on the report?	NO	YES	NO	YES
3. Is the purchase order ID (PO) and project ID accurately noted on report?	NO	YES	NO	YES
4. Are all methods and method references correct on report?	NO	YES	NO	YES
5. Do the Field ID(s) and the Lab ID(s) correspond to the COC?	NO	YES	NO	YES
6. Is the report formatted correctly?	NO	YES	NO	YES
7. Does the following information on report correspond to the printout information from the analytical instrumentation:				
Sample Matrix	NO	YES	NO	YES
Analyst	NO	YES	NO	YES
Analysis Date/Time	NO	YES	NO	YES
Analyte concentration	NO	YES	NO	YES
Units	NO	YES	NO	YES
Dilution Factors/Conversions	NO	YES	NO	YES
Detection/Reporting/Quant. Limits	NO	YES	NO	YES
QC Reviewed:		YES		YES
***Initial*:**	MJH		KD	

* MJH = Michael Heard, KD = Kevin Doriety, MSH = Matt Hageman, KH = Kelly Hester

PDF: S. Shelton

Notes: _____

Invoice # 44771

Sutherland Environmental Co., Inc.

Sutherland Environmental Company Inc.

Sample Check-in Form

Date Received: 4/2/21 **Invoice #** 44771

Method of Delivery: Hand **Client:** CDG

1. Did any containers arrive broken?	YES	~~NO~~	
* If so, please state field ID with analysis of broken sample(s)			
2. Were cooler(s) sealed upon arrival?	~~YES~~	NO	NA
3. Were the samples received at the proper teamperature (4°C +/- 2°C)?	~~YES~~	NO	NA
4. Did a chain of custody accompany the samples?	~~YES~~	NO	
* Was it properly filled out?	~~YES~~	NO	
5. Were correct containers used for the analysis requested?	~~YES~~	NO	
6. Were all containers properly preserved?	~~YES~~	NO	NA
7. Were all water samples received at the proper pH?	~~YES~~	NO	NA
8. If VOA vials were present, was there any head space?	YES	~~NO~~	NA
* If so, please state field ID of deficient sample(s):			
9. Were all containers properly labeled and match chain of custody?	~~YES~~	NO	
10. Did containers arrive within holding time of analysis?	~~YES~~	NO	
* If not, please state field ID and analysis of sample(s) out of holding time:			
11. Was client informed of any/all deficiencies in sample check-in?	YES	NO	~~NA~~
12. Were any samples rejected?	YES	~~NO~~	
* If so, please state field ID of rejected sample(s):			

Sample Custodian (signed): [signature]