

REPORT ON ANGLE BORING

Groth Bros Oldsmobile-GMC
59 South L Street
Livermore, California

Prepared for:

Scott Company
1919 Market Street
Oakland, CA 94607

Prepared by:

Century West Engineering Corporation
7950 Dublin Blvd., Suite 210
Dublin, CA 94568

May 1, 1991
Project No. 20511-001-01

CENTURY WEST ENGINEERING

April 30, 1991

Mr. Jay Groh
Scott Company
1919 Market Street
Oakland, CA 94607

Subject: Report on Angle Boring
Groth Bros Oldsmobile-GMC
59 South L Street
Livermore, California
Scott Project No. 105728-58559-72-7001
CWEC No. 20511-001-01

Dear Mr. Groh:

This letter report summarizes the results of the recent drilling and sampling of an angle boring at the Groth Bros site in Livermore, California. Century West Engineering Corporation conducted these services on March 25, 1991, under authorization from Scott Company.

Introduction

Scott Company retained Century West Engineering to provide environmental services during the drilling of two angle borings at the subject site. The purpose of these angle borings was to determine the presence or absence of hydrocarbons beneath two motor oil USTs in order to pursue in-place closure for the USTs. Exact tank dimensions were not available; however, Groth Bros records indicate that each of the USTs has a capacity of approximately 280 gallons. These two USTs are located inside a service bay, making removal of the USTs unfeasible without demolishing the overlying building structure. Approximate site dimensions are shown on Figure 1.

Location of Borings

Scott Company requested that two angle borings be drilled, one to extend beneath each of the two tanks. However, upon examination of the site, the drilling contractor, Kvilhaug Drilling, determined that drilling beneath the north tank would not be possible. Century West Engineering proposed that a single deeper angle boring be advanced from the south side of the tanks in order to sample soil beneath each of the tanks. Both Scott Company and Groth Bros gave verbal authorization to proceed with this approach.

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After constructing a vertical profile diagram to determine necessary boring specifications, the location of the boring was placed approximately twelve feet south of the service bay, to be drilled at an angle of approximately 43 degrees from horizontal. After drilling approximately ten feet, Groth Bros discovered additional file information about the tanks that indicated that this first boring would not obtain soil samples close to the USTS. Thus, this boring was abandoned and a second boring was drilled. This second boring was located approximately 8 feet south of the service bay at an angle of 43 degrees from horizontal.

Drilling and Sampling of Angle Boring

Kvilhaug Drilling was contracted by Scott Company to drill the angle boring. Eight-inch outside diameter hollow stem augers were used to drill the soil boring to an auger depth of 18 feet (which corresponds to a vertical depth below grade of approximately eleven feet). No ground water was encountered inside the auger during drilling.

Soils were sampled in advance of the auger at auger depths of 13 and 18 feet (approximate vertical depths calculated to be eight feet and eleven feet, respectively). Soil samples were taken as follows: (1) A two-inch inside diameter California style split spoon sampler was pushed into undisturbed soil ahead of the drill bit (This step was especially difficult because of the severe drilling angle and the gravelly nature of the soils); (2) The sampler was brought to the surface and the brass liners exposed; (3) The brass liner containing the most undisturbed soil was quickly sealed with aluminum foil and plastic end caps, labeled, and wrapped tightly with tape; and (4) The sealed soil sample was immediately placed in cold storage for transport to the laboratory under formal chain-of-custody. All sampling equipment was thoroughly cleaned and decontaminated between each sample collection by triple-rinsing first with water, then with dilute tri-sodium phosphate solution, and finally with distilled water. All drilling cuttings were placed in drums and sealed pending analytical results.

After taking a soil sample at 18 feet, Kvilhaug Drilling determined that to extend the boring deeper would not be feasible, given the difficult drilling conditions. After completing the soil boring to an auger depth of 18 feet, it was determined that the auger string had drifted off line slightly, resulting in a drilling angle of 38 degrees from horizontal. Based on this measurement, the location of soil sample TB-1.1 would be approximately one foot below the south end of the south tank and the second soil sample, TB-1.2, would be approximately four feet beneath the north end of the south tank.

Description of Subsurface Soils

During drilling and sampling, the well boring was logged and classified according to the Unified Soil Classification System (USCS). Soils encountered during drilling were similar throughout and consisted of gray to gray brown clayey gravel (USCS GC). The gravel consisted of 1/8-inch to 2-inch pebbles and cobbles in a silt and clay matrix. No hydrocarbon staining or odor was observed in any subsurface soils. A boring log for the angle boring is contained in Appendix A.

Laboratory Analysis of Soil Samples

Both soil samples were analyzed for the following constituents: (1) Total Petroleum Hydrocarbons (TPH) as diesel, motor oil, jet fuel/kerosene (EPA Method 8015 Modified); and (2) Benzene, Toluene, Xylenes, and Ethylbenzene (BTXE) (EPA Method 8020) using Western Environmental Science and Technology (WEST), a California certified analytical laboratory.

Analytical Results

Analytical results of the two soil samples are summarized in Table 1. Laboratory data reports and chain-of-custody records are included in Appendix B.

Sample ID	Auger Depth (ft)	Vertical Depth (ft)	Constituent (ppm)				
			Motor Oil	Benzene	Toluene	Xylenes	Ethylbenzene
TB-1.1	13	8	88	ND	ND	ND	ND
TB-1.2	18	11	260	ND	ND	ND	ND
Detection Limit			10	0.005	0.005	0.005	0.005

ND = Not detected

Discussion

Analytical results of the two angle boring samples indicate elevated levels of motor oil TPH beneath the two USTs. However, the environmental risk associated with this motor

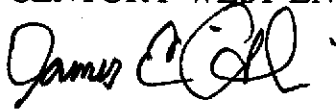
Mr. Jay Groh
Scott Company
April 30, 1991
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oil laden soil is probably not significant because: (1) The two USTs have been cleaned and abandoned, eliminating them as a potential source of contamination in the future; (2) No detectable BTXE constituents were found in either of the soil samples; (3) A significant portion of the Groth Bros facility is covered in asphalt, and the USTs themselves are covered by concrete and a building structure; (4) The gravelly soils encountered beneath the tanks contained significant amounts of clay sized particles which would slow the rate of downward migration of motor oil; and (5) Regional ground water depth in the site area is approximately 40 feet deep and is less likely to be impacted by a release of motor oil from the USTs.

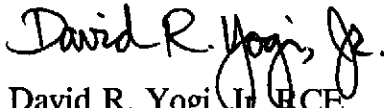
We appreciate the opportunity to provide these environmental services to you. If you have questions or require additional information, please contact us.

Very truly yours,

CENTURY WEST ENGINEERING CORPORATION



James E. Gribi
Project Geologist

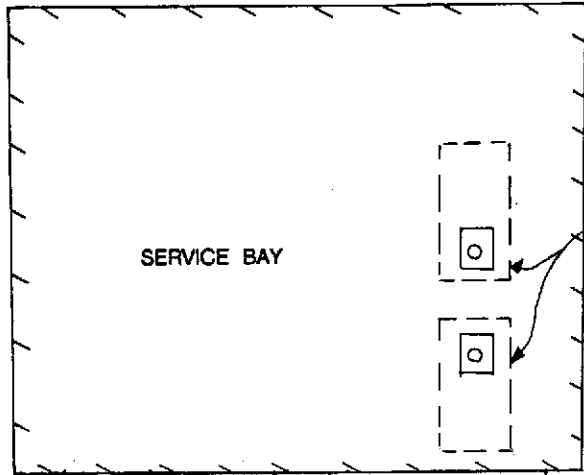


David R. Yogi, Jr. PCE
Branch Manager

JEG:DRY;ct

→ Not shown
site specific

SOUTH M STREET



280-GALLON USTS

SERVICE BAY

ASPHALT COVER

TB-1

WATER OIL

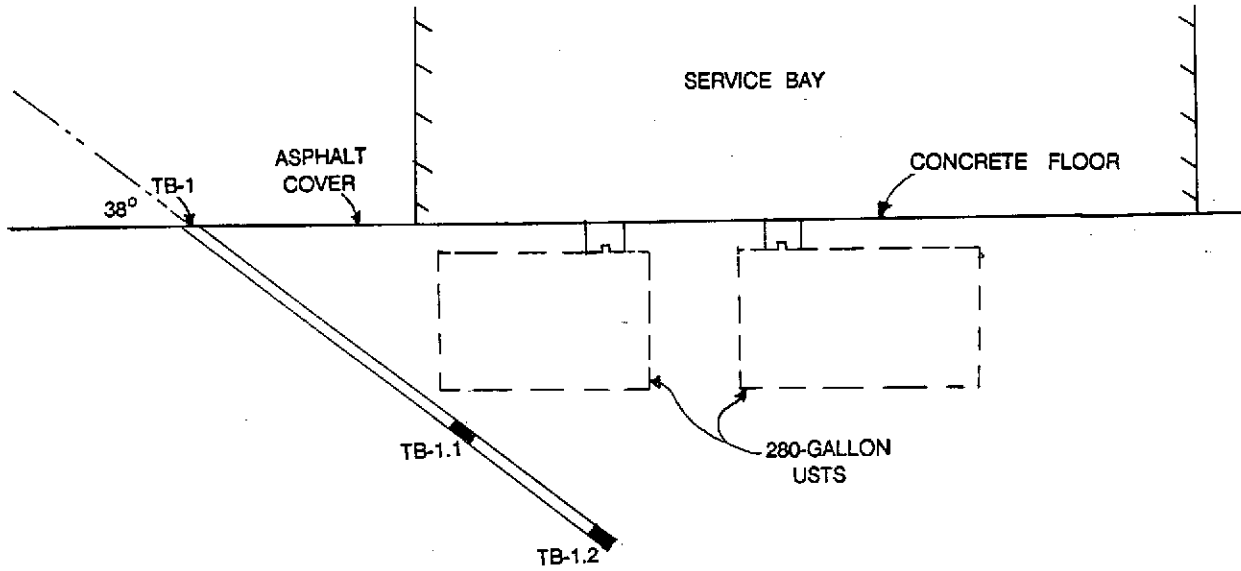
SITE PLAN

0 5 10 15 20 25

APPROX. SCALE IN FEET

S

N



SERVICE BAY

ASPHALT COVER

CONCRETE FLOOR

38°

TB-1

TB-1.1

TB-1.2

280-GALLON USTS

SITE PROFILE

0 5 10 15

APPROX. SCALE IN FEET

DESIGN BY		CHECKED BY	
SURVEY BY		SCALE	
DRAWN BY	JEG	DWG. NO.	

FIGURE 1
 SITE PLAN & PROFILE
 CWEC 20511-001-01

APPROVED
 DATE
 4-25-91



CENTURY SURVEYING EQUIPMENT CO. 8100

Site Location: Groth Bros, Livermore		Boring ID: TB-1		Total Depth: 18'(13'Vert.)	
Boring Location: South of motor oil USTs		Elevation: NA		Initial GW Depth: None	
Purpose: Exploratory angle boring		Logged By: Jim Gribi		Final GW Depth: None	
Date: March 27, 1991		Blank Casing:		From: To:	
Consulting Firm: Century West Engineering		Perforations:		From: To:	
Project Number: 20511-001-01		Filter Sand:		From: To:	
Drilling Contractor: Kvilhaug Drilling		Bentonite:		From: To:	
Drilling Method: Hollow stem auger		Grout:		From: 18' To: 0.0'	
Depth	Sample ID	Blow Counts	Profile	Soil Description	Remarks
01 02 03 04 05				0.0 - 0.5 Asphalt and fill gravel.	Beginning angle 43° Ending angle 38°
06 07 08 09 10				0.5 - 18.0 Gray to grayish brown clayey GRAVEL, 1/8" to 1-1/2" diam. pebbles and cobbles, moist to occas. wet, no HC odor or stain.	
11 12 13 14 15	TB-1.1	none		As above with some large grey 1" to 2.5" cobbles from 12 to 18 feet, moist, no HC odor or stain.	TB-1.1 Auger depth 13' Vert. depth 8'
16 17 18 19 20	TB-1.2	none		Total auger depth: 18 feet Total vertical depth: 11 feet No ground water encountered	TB-1.2 Auger depth 18' Vert. depth 11'
21 22 23 24 25					

APPENDIX B

LABORATORY DATA REPORTS AND
CHAIN-OF-CUSTODY RECORDS



March 29, 1991
Sample Log 2393

Jim Gribi
Century West Engineering
7950 Dublin Blvd., Suite 210
Dublin, CA 94568

Subject: Analytical Results for 2 Soil Sample(s)
Identified as: Project # 20511-001-01 (Groth Bros.)
Received: 03/27/91

Dear Mr. Gribi:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on March 29, 1991 and describes procedures used to analyze the samples.


Sample(s) were received in brass sleeves that were sealed with aluminum foil and plastic endcaps. Each sample was transported and received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 8020/Purge-and-Trap)
"TPH as Diesel, Motor Oil, Jet/Kerosene" (Mod. 8015/Extraction)

Please refer to the following table(s) for summarized analytical results and contact us if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:


Stewart Podolsky
Senior Chemist



March 29, 1991
Sample Log 2393

Sample: TB-1.1

From : Project # 20511-001-01 (Groth Bros.)
Received : 03/27/91
Matrix : Soil

--all concentrations are units of mg/kg--

Parameter / (Reporting Limit)	Measured Value
Benzene (.005)	<.005
Toluene (.005)	<.005
Ethylbenzene (.005)	<.005
Total Xylenes (.005)	<.005
Extractable TPH (10)	Diesel : <10 Motor Oil : 88



March 29, 1991
Sample Log 2393

Sample: TB-1.2

From : Project # 20511-001-01 (Groth Bros.)
Received : 03/27/91
Matrix : Soil

--all concentrations are units of mg/kg--

Parameter / (Reporting Limit)	Measured Value
Benzene (.005)	<.005
Toluene (.005)	<.005
Ethylbenzene (.005)	<.005
Total Xylenes (.005)	<.005
Extractable TPH (10)	Diesel : <10 Motor Oil : 260



1046 Olive Drive, Suite 3
Davis, CA 95616
916-753-9500
FAX #: 916-753-6091

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: *JIM GRIBI / Jay Groh* → Scott Co
Phone #: *415/351-7774*

ANALYSIS REQUEST **OTHER** **SPECIAL HANDLING**

Address: *Century West*
7950 Dublin Blvd, Ste 210
FAX #: *415/551-7776*

Project Number: *Dublin CA 94568*
20511-001-01
Project Name: *Groth Bros*

Project Location: *Livermore*
Sampler Signature: *[Signature]*

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix					Method Preserved					Sampling		BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270) <i>3550</i>	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	Waste Extraction Test (WET)	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD	RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
				WATER	SOIL	AIR	SLUDGE	OTHER	HCl	HNO3	ICE	NONE	OTHER	DATE	TIME																							
<i>TB-1.1</i>		<i>1</i>	<i>6.25</i>		<i>X</i>								<i>X</i>				<i>X</i>																					
<i>TB-1.2</i>		<i>1</i>	<i>6.25</i>		<i>X</i>								<i>X</i>				<i>X</i>																					

Relinquished by: <i>[Signature]</i>	Date Time: <i>3/27/91 3:35</i>	Received by: _____	Remarks: <i>Not use EPA 3550 Extraction</i> <i>- look for Motor oil & DSL.</i> <i>- 2wk TAT</i> <i>- Report to Jim & To Jay - Tray</i> <i>PL568</i>
Relinquished by: _____	Date Time: _____	Received by: _____	
Relinquished by: _____	Date Time: <i>3/27/91 11:55</i>	Received by Laboratory: <i>Judy A Jumper</i>	