



January 16, 1991

Mr. R. R. Zielinski
Environmental Supervisor
Texaco Refining & Marketing, Inc.
100 Cutting Boulevard
Richmond, California 94804

PLTF/OEFT Exhibit 4
WIT: DENNIS BYRNE
DATE 11/22/91 ERB
ELYSE R. GARDNER, CSR

Dear Mr. Zielinski:

RESULTS OF EXCAVATION AND SOIL SAMPLING AT THE FORMER TEXACO STATION, 2375 SHORELINE DRIVE, ALAMEDA, CALIFORNIA

This letter report describes the work performed during a soil excavation on property owned by Harsch Development Company, located at 2375 Shoreline Drive, Alameda, California. This property was a Texaco Station until 1981. The excavation was performed on December 5 and 6, 1990, based on recommendations given by Clayton Environmental Consultants (Clayton) to Harsch Development Company.

In June and July 1990, Clayton conducted an investigation at the site which included monitoring well installation, groundwater sampling, trenching and soil sampling. The results of this work are presented in the Clayton report titled, "Update on Subsurface Investigative Work Completed at the Former Texaco Station at Park Street and Shoreline Drive, Alameda, California, Clayton Project No. 29196.00," dated October 15, 1990. In this report, Clayton concluded that the underground storage tanks, the dispensers along Park Street, and the fuel lines formerly located on the site were the source of total petroleum hydrocarbons as gasoline (TPH/g) and diesel (TPH/d), benzene, toluene, ethylbenzene and xylenes (BTEX) which had leaked into soil and groundwater beneath the site. The Clayton report recommended that the soil containing petroleum hydrocarbons be excavated and aerated on-site. Figure 1 is a site map taken from the Clayton report, showing Clayton's trench locations, soil sampling locations and the proposed areas of soil excavation.

Based on the conclusions of the Clayton report, Harsch Development Company asked Texaco to undertake excavation and remediation of the soil and groundwater at the site. Texaco contracted with McLaren/Hart to perform the excavation activities.

Pre-Excavation Activities

McLaren/Hart notified the Bay Area Air Quality Management District (BAAQMD) by telephone and by facsimile that an excavation of contaminated soil would be conducted at the site. On December 3, 1990, prior to any excavation work, Subtronic Corporation conducted a utility clearance at the site. All utilities near the excavation area were marked

in the field and on a site map. The area of excavation was found to be clear of utilities. For security purposes, a temporary cyclone fence was installed around the perimeter of the site and secured with padlocks.

Excavation Activities

The soil excavation was conducted on December 5 and 6, 1990 by Decon Environmental Services, Inc. under contract with McLaren/Hart. A McLaren/Hart soil scientist supervised the work, under the direction of a California-registered geologist.

Figure 1 is a site plan showing the area to be excavated, as proposed by Clayton. This area extended 70 feet in length (north of Park Boulevard) by 40 feet in width, and included the locations of both the former dispensers along Park Street and the fuel lines. Due to an error in marking the excavation area in the field, excavation was completed to a distance of only 60 feet north of Park Boulevard. However, the former locations of the fuel lines and dispensers remained within the excavated area. Excavation was completed to a depth of approximately six to seven feet below grade.

Sample Collection and Analysis Activities

A grid pattern was established for sample collection and a total of 12 soil samples were collected within the grid pattern. Figure 2 shows the excavated area and the sample locations on the grid pattern. Sample locations were recorded based on the coordinates of the grid and the depth of the sample. One hand auger boring was positioned at the point of the former waste oil tank. The boring was completed to a total depth of 6.5 feet below grade where a sample was collected for analysis. Two shallow soil samples were collected from this boring and were archived at the laboratory.

Soil samples were collected from either a backhoe bucket or hand auger in clean 2 x 6-inch brass tubes. The brass tubes were immediately sealed with aluminum foil and capped with plastic end caps. Labels, each with unique sample identification numbers, were placed on each sample tube. The sample number, location, and required analysis were recorded on a chain-of-custody form. Each sample and chain-of-custody record were given immediately to the on-site chemist. Soil samples were stored under refrigeration until analyzed, either on-site or at the laboratory.

On-site analysis was performed by Mobile Chem Labs Inc., a California Department of Health Services (DHS) certified laboratory. These included analyses for total petroleum hydrocarbons as gasoline (TPH/g), as diesel (TPH/d), and total petroleum hydrocarbons as oil and grease (TPH/o&g), and benzene, toluene, ethylbenzene, and xylenes (BTEX).



Chlorinated volatile organic compounds (VOCs) were analyzed at Mobile Chem's off-site laboratory.

All samples collected during the excavation were analyzed for TPH/g by the LUFT Manual Method and BTEX by EPA Method 8020. At the conclusion of the excavation, an additional six samples were collected at grid location 4E (Figure 2), at a depth of 6.5 feet, because the analytical results of the initial sample detected high concentrations of TPH/g and BTEX. One of the six samples (4E-6.5-1) was analyzed for TPH/g and BTEX; additional samples collected from this area were not analyzed because these results indicated very low concentrations compared to the results of the initial sample. McLaren/Hart Analytical Laboratory, a DHS certified laboratory, performed the analysis on Sample 4E-6.5-1. Analyses for total petroleum hydrocarbons as oil and grease (TPH/o&g) were also performed on Samples 3A-4, OA-5 and 4E-6 by EPA Methods 3550 and 503e. Analyses for total petroleum hydrocarbons as diesel (TPH/d) by the LUFT Manual Method were performed on Samples OA-5 and 4E-6. Sample 4E-6 was also analyzed for volatile organic compounds by EPA Method 8240.

In addition to the soil samples collected during the excavation, a composite soil sample was subsequently collected from four locations in the stockpiled soil. This soil was mixed and then placed in four brass sample tubes. Two of the tubes were used by the laboratory (Mobile Chem Labs) and analyzed for TPH/g, TPH/d, TPH/o&g, BTEX and for VOCs by EPA Method 8240.

The hand auger sample, collected from a depth of 6.0 to 6.5 feet, was submitted to the McLaren/Hart Laboratory for TPH/o&g analysis by EPA Method 418.1, TPH/g analysis by LUFT Manual Method and for VOC analysis by EPA Method 8240.

During the excavation, a lower explosive limit (LEL) device was used to monitor combustible gases in the atmosphere of the working air space. (The LEL level was not reached during the excavation.) The working air space was also monitored with a photoionization device (PID), to measure the level of organic vapors in the air. During the excavation, the PID readings indicated that the organic vapor concentration was in excess of 20 parts per million (ppm), the level at which respirators are required. Respirators were worn by all workers at the site involved in the excavation, stockpiling and sampling.

A total of approximately 575 cubic yards of soil were excavated. Soil removed from the excavation was stockpiled on top of plastic sheeting. When the excavation was complete, the stockpiled soil was secured with plastic sheeting.

Visual observations made during the excavation indicate that the soil consists of brown silty sand and medium grained sand. Observable staining of the soil was noted at a depth of six



feet below grade along the eastern wall and at three feet below grade along the western wall of the excavation. Staining was observed along the north and south walls at a depth of three feet below grade on the west side. Moving to the east, along the north and south walls, visible staining increased in depth at approximately 20 feet east, to a depth of six feet below grade at the contact with the east wall.

Analytical Results

Table 1 presents the analytical results of all soil sampling. A "less than" symbol (<) appears opposite the detection limit for compounds that were not detected. Laboratory analytical data sheets and chain-of-custody records are included as Attachment I.

The analytical results indicate three locations within the excavated area which have TPH/g concentrations in excess of 100 parts per million (ppm): 1) Sample 0A-5, collected from the southeast corner of the excavation, had 580 ppm TPH/g, 100 ppm TPH/o&g, and 9.6 ppm, 55 ppm, 81 ppm and 21 ppm of benzene, toluene, xylenes and ethylbenzene, respectively; 2) Sample 4E-6, collected adjacent to the middle of the west wall of the excavation, had 5300 ppm TPH/g and concentrations of BTEX were each in excess of 100 ppm; and 3) Sample 1E-2, also collected along the west wall of the excavation, had a concentration of 130 ppm TPH/g, and 1 ppm, 4 ppm, 17 ppm and 3.4 ppm of benzene, toluene, xylenes and ethylbenzene, respectively.

Sample 4E-6 also contained 25 ppm of tetrachloroethylene (PCE) a chlorinated hydrocarbon compound. The presence of PCE in this sample may be related to the occurrence of PCE in soil and groundwater at the former dry cleaning site also on the Harsch property. Soil containing PCE from the dry cleaning site was aerated on the former Texaco station property (Woodward-Clyde, July 1989) and may have entered soils at the former Texaco station site.

The composite soil sample, collected from the soil stockpile, had TPH/g at 370 ppm and 100 ppm TPH/o&g. The concentration of BTEX was 1 ppm, 4 ppm, 17 ppm, and 3.4 ppm, respectively.

No compounds were detected at or above detection limits in the sample collected from the hand-auger boring located at the site of the former waste oil tank.

Soil Disposal

In order to determine an appropriate disposal method for the soil, several analyses typically required by landfills were performed on Sample 4E-6. This sample was selected because it contained the highest concentration of TPH/g and BTEX of all the samples from the



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excavation. The purpose of the analyses performed was to determine the hazardous waste characteristics of the soil as defined in the California Code of Regulations (CCR), Title 22/26 Sections 66696 through 66708. Tests were made for: aquatic toxicity, flammability, reactivity, corrosivity, and total and soluble metal concentrations. The results indicate the soil is not considered hazardous waste based on these criteria. Analyses for chlorinate volatile organic compounds by EPA Method 8240 were also performed on Sample 4E-6, the hand auger sample and the composite sample to determine if VOC concentrations were below acceptable limits for disposal at a Class III Landfill. The concentrations of VOCs and TPH/g indicate that the soil will require treatment before it can be accepted at a Class III Landfill.


Conclusions and Recommendations

Based on the analytical results of the soil samples collected within the excavated area and the composite stockpile sample, the soil, at least in some locations, has TPH/g, TPH/o&g, TPH/d and BTEX concentrations in excess of 100 ppm. The 100 ppm level was provided to Texaco by Ms. Cynthia Chapman of the Alameda County Department of Environmental Health as the required clean-up level for soil at the site.

The locations within the excavation where TPH/g or BTEX concentrations exceeded 100 ppm are the southeast corner, at a depth of five feet, and the west wall, at a depth of six feet. Sample 4E-6 had the highest concentrations of TPH/g, TPH/o&g, TPH/d and BTEX and was collected from an area within the location of the former underground gasoline tanks. McLaren/Hart recommends that a soil vapor extraction system be designed and installed in these areas to reduce in situ hydrocarbon concentrations below the designated 100 ppm clean-up level. It is our recommendation that an above-ground soil aeration/vapor extraction system be installed within the stockpiled soil to reduce hydrocarbon concentrations so that the soil can be accepted at a Class III Landfill.

Sincerely,


Julie S. Menack RG #4440
Senior Hydrogeologist


Herb Hirschfeld
Associate Soil Scientist

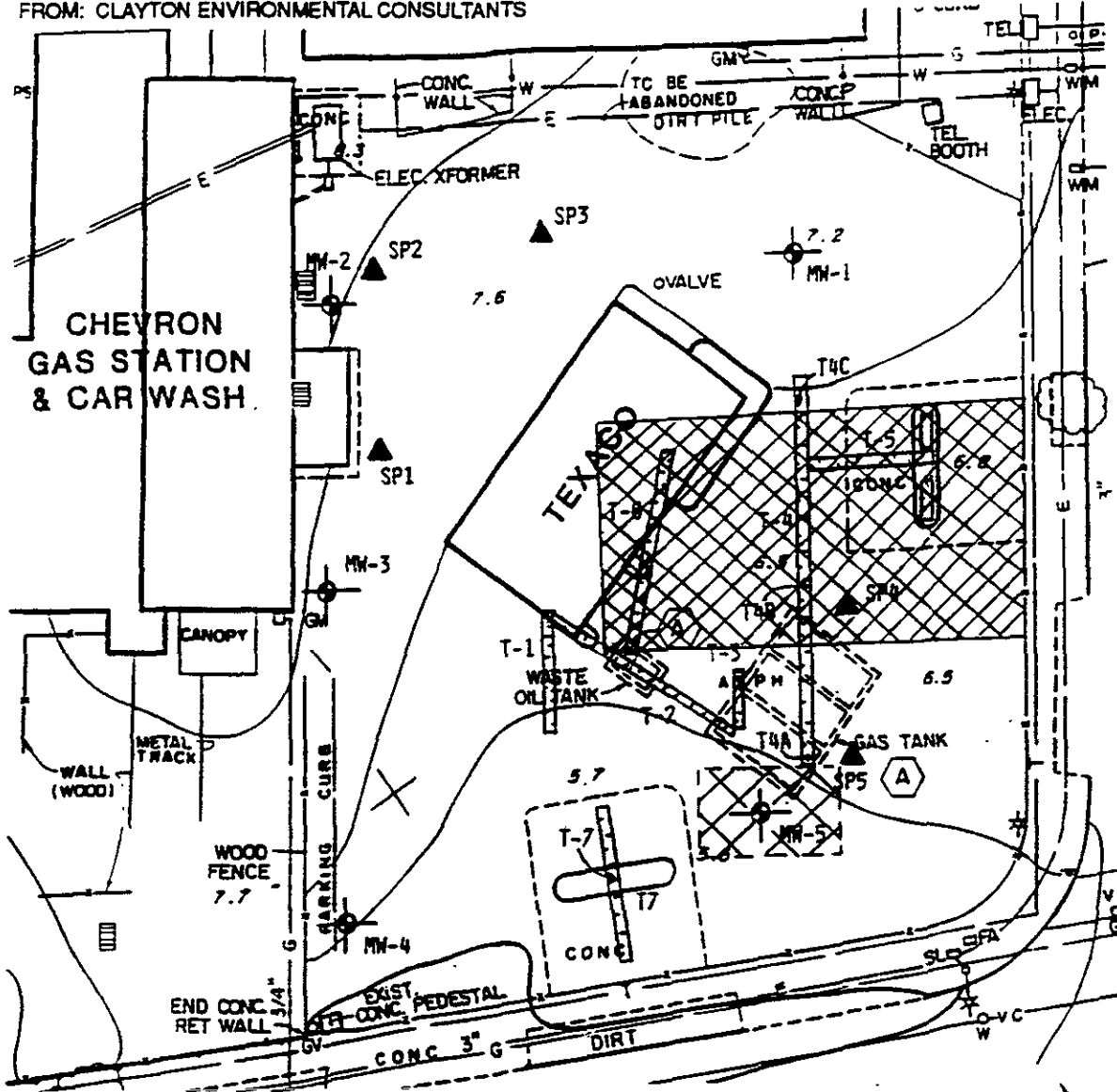
cc: Rose Coughlin, Texaco 10 UCP

0103amd2



FIGURE 1
SITE PLAN AND
AREA OF EXCAVATION
PROPOSED BY
CLAYTON ENVIRONMENTAL
CONSULTANTS

FROM: CLAYTON ENVIRONMENTAL CONSULTANTS



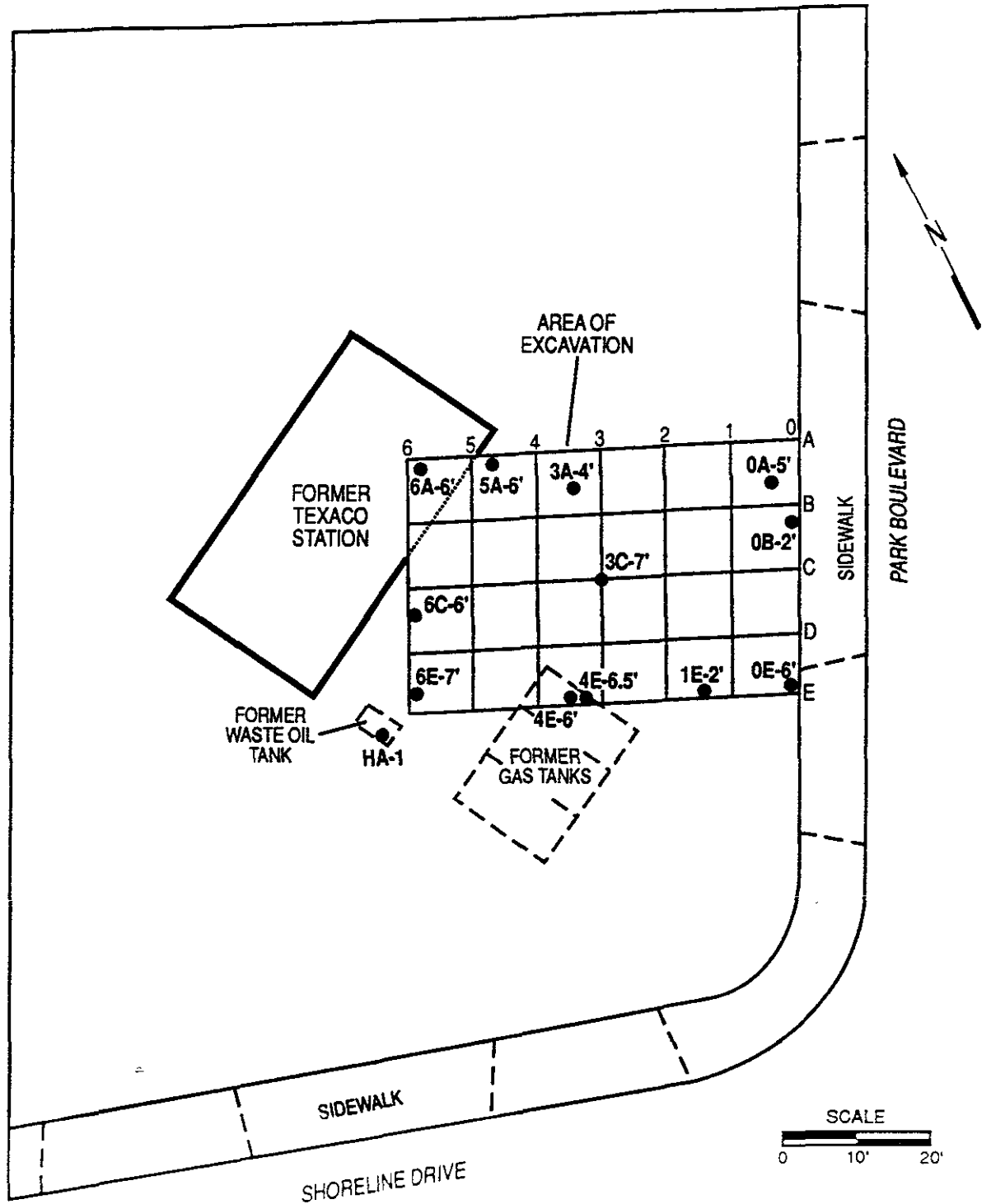
LEGEND	DESCRIPTION
○	INDUSTRIAL WASTE MANHOLE
○	SEWER MANHOLE
○	STORM SEWER MANHOLE
○	CURB BASE
○	HORIZONTAL / VERTICAL CONTROL
○	WATER VALVE
○	GAS VALVE
○	FIRE HYDRANT
○	STREET LIGHT
○	TREE
○	SAN SEWER LINE
○	STORM SEWER LINE
○	WATER LINE
○	ELECTRICAL LINE
○	TELEPHONE LINE
○	GAS LINE
○	CONCRETE LINE
○	CHAIN LINE / FENCE (WOOD)
○	WATER METER
○	GAS METER
○	CLEARING
○	WALK COVER
○	HEAVENLY / FENCE MARK
○	FIRE ALARM
○	STREET LIGHT
○	RETAINING WALL

APPROXIMATE SCALE



○	MH-2	MONITORING WELL LOCATION
▲	SP3	SAMPLE LOCATION FOR AERATING SOILS
—	T-1	TRENCH LOCATION
⤵	T4C	SAMPLE LOCATION FROM TRENCHES
▨		PROPOSED SOIL EXCAVATION
▤		SUMP LOCATION

FIGURE 2
EXCAVATED AREA AND
SOIL SAMPLING LOCATIONS



LEGEND

● SAMPLE LOCATION

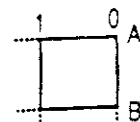

 EXCAVATED AREA

TABLE 1
EXCAVATION SOIL SAMPLING RESULTS
TEXACO SHORELINE, ALAMEDA

McLaren Sample I.D.	Location	Concentration (ppm)								
		Benzene	Toluene	Xylenes	Ethyl- benzene	TPH/G	TPH/D	TPH/O&G	2-Hex- anone	PCE
56551	3A-4'	<0.005	<0.005	<0.005	<0.005	<1.0	*N.A.	<50	N.A.	N.A.
56552	0B-2'	<0.005	<0.005	<0.005	<0.005	<1.0	N.A.	N.A.	N.A.	N.A.
56553	0A-5'	9.6	55	81	21	580	<5.0	100	N.A.	N.A.
56554	0E-6'	3.4	5.2	6.7	1.5	48	N.A.	N.A.	N.A.	N.A.
**56555	4E-6'	150/85	620/680	715/850	190/260	5300	180	400	<0.05	25
56568	4E-6.5'	0.13	0.14	0.2	0.06	2.	N.A.	N.A.	N.A.	N.A.
56557	5A-6'	<0.005	0.006	0.008	<0.005	<1.0	N.A.	N.A.	N.A.	N.A.
56558	1E-2'	1	4	17	3.4	130	N.A.	N.A.	N.A.	N.A.
56563	6A-6'	<0.005	<0.005	0.009	<0.005	<1.0	N.A.	N.A.	N.A.	N.A.
56564	6C-6'	<0.005	<0.005	0.006	<0.005	<1.0	N.A.	N.A.	N.A.	N.A.
56565	6E-7'	<0.005	0.007	0.011	<0.005	<1.0	N.A.	N.A.	N.A.	N.A.
56566	3C-7'	0.19	1	2.4	0.55	17	N.A.	N.A.	N.A.	N.A.
55054	HA-1	<0.005	<0.005	<0.005	<0.005	<1.0	N.A.	<5.0	<0.005	<0.005
**56559/60	Composite	2.9/8.1	11/12	44/35	9.2/15	370	<5.0	100	12	<0.005

* N.A. indicates sample not analyzed for constituent.

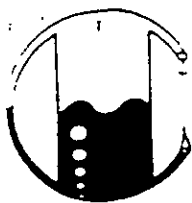
** BTXE analyzed by EPA 8020 (first number) and EPA 8240 (second number).

TPH - total petroleum hydrocarbons as gasoline (G), diesel (D), or oil and grease (O&G).

PCE - tetrachloroethylene.

ATTACHMENT I

**SOIL ANALYTICAL DATA SHEETS
AND CHAIN-OF-CUSTODY RECORDS**



MOBILE CHEM LABS INC.

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Phone (415) 372-3700 • Fax (415) 372-6955

McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501
Attn: Julie Menack
Project Manager

Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120001

Sample Description

Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
3-4-A #1 SOIL

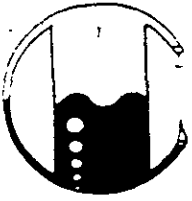
ANALYSIS

	<u>Detection Limit</u>	<u>Sample Results</u>
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

MOBILE CHEM LABS


Ronald G. Evans
Lab Director



MOBILE CHEM LABS INC.

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McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501
Attn: Julie Menack
Project Manager

Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120002

Sample Description

Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
0-B-2 #2 SOIL

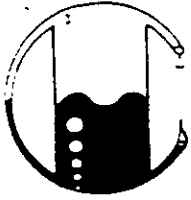
ANALYSIS

	Detection Limit ----- ppm	Sample Results ----- ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

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Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120003

Sample Description

Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
0-5-A #3 SOIL

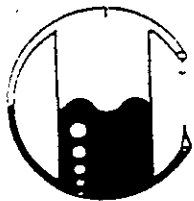
ANALYSIS

	Detection Limit ----- ppm	Sample Results ----- ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	580
Benzene	0.005	9.6
Toluene	0.005	55
Xylenes	0.005	81
Ethylbenzene	0.005	21

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

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Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120004

Sample Description

Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
0-6'-E #4 SOIL

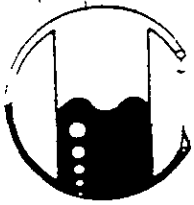
ANALYSIS

	<u>Detection Limit</u>	<u>Sample Results</u>
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	48
Benzene	0.005	3.4
Toluene	0.005	5.2
Xylenes	0.005	6.7
Ethylbenzene	0.005	1.5

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

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Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120005

Sample Description

Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
4-6'-E #5 SOIL

ANALYSIS

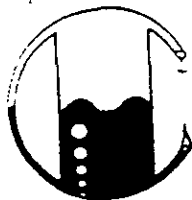
	Detection Limit ----- ppm	Sample Results ----- ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	5,300
Benzene	0.005	150
Toluene	0.005	620
Xylenes	0.005	715
Ethylbenzene	0.005	190

QA/QC: Sample blank is none detected
Duplicate Deviation is 3.6%

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

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Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120006

Sample Description

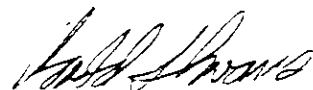
Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
5-6'-A #6 SOIL

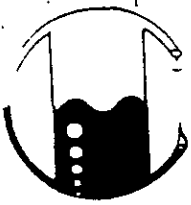
ANALYSIS

	Detection Limit	Sample Results
	----- ppm	----- ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	0.006
Xylenes	0.005	0.008
Ethylbenzene	0.005	<0.005

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

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Project Manager

Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120007

Sample Description

Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
1-2'-E #7 SOIL

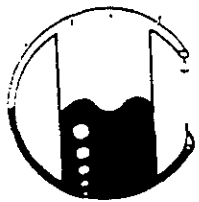
ANALYSIS

	Detection Limit	Sample Results
	----- ppm	----- ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	130
Benzene	0.005	1.0
Toluene	0.005	4.0
Xylenes	0.005	17
Ethylbenzene	0.005	3.4

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

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Project Manager

Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120012

Sample Description

Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
6-6'-A #8 SOIL

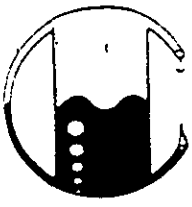
ANALYSIS

	<u>Detection Limit</u>	<u>Sample Results</u>
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	0.009
Ethylbenzene	0.005	<0.005

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

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Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120013

Sample Description

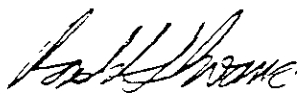
Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
6-6'-C #9 SOIL

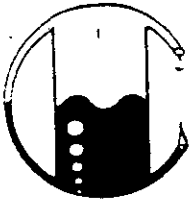
ANALYSIS

	Detection Limit	Sample Results
	----- ppm	----- ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	0.006
Ethylbenzene	0.005	<0.005

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

MOBILE CHEM LABS


Ronald G. Evans
Lab Director



MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501
Attn: Julie Menack
Project Manager

Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120014

Sample Description

Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
6-7'-E #10 SOIL

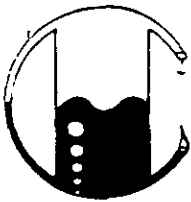
ANALYSIS

	Detection Limit ----- ppm	Sample Results ----- ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	0.007
Xylenes	0.005	0.011
Ethylbenzene	0.005	<0.005

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

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McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501
Attn: Julie Menack
Project Manager

Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120015

Sample Description

Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
Center @ 7' #11 SOIL

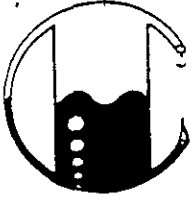
ANALYSIS

	Detection Limit ----- ppm	Sample Results ----- ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	17
Benzene	0.005	0.19
Toluene	0.005	1.0
Xylenes	0.005	2.4
Ethylbenzene	0.005	0.55

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

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McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501
Attn: Julie Menack
Project Manager

Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

Sample Number

V120008

Sample Description


Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
C1-1 SOIL

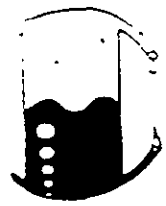
ANALYSIS

	Detection Limit	Sample Results
	----- ppm	----- ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	370
Benzene	0.005	2.9
Toluene	0.005	11
Xylenes	0.005	44
Ethylbenzene	0.005	9.2

Note: Analysis was performed using EPA methods 5030 and TPH
LUFT with method 8020 used for BTX distinction.

MOBILE CHEM LABS


Ronald G. Evans
Lab Director



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Phone (415) 372-3700 • Fax (415) 372-6955

McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501
Attn: Julie Menack
Project Manager

Date Sampled: 12-05/06-90
Date Received: 12-05/06-90
Date Reported: 12-06-90

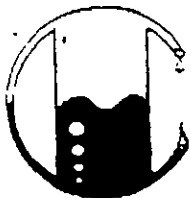
Sample Number	Description	Detection	SOIL
		Limit	Total Petroleum
		ppm	Hydrocarbons as Diesel
		ppm	ppm
Texaco - Alameda 2375 Shoreline Drive Project No.: 88706-002			
V120003	0-5-A #3	5.0	<5.0
V120008	C1-1	5.0	<5.0

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA method 3550 and TPH LUFT.

MOBILE CHEM LABS

Ronald G. Evans
Lab Director



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Phone (415) 372-3700 • Fax (415) 372-6955

McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501
Attn: Julie Menack
Project Manager

Date Sampled: 12-05-90
Date Received: 12-06-90
Date Reported: 01-08-91

Sample Number	Description	Detection Limit ppm	SOIL Total Petroleum Hydrocarbons as Diesel ppm
V120005	4-6'-E #5	5.0	180

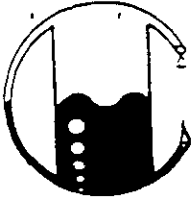
Texaco - Alameda
2375 Shoreline Drive
Project No.: 88706-002

QA/QC: Sample blank is none detected
Spike Recovery on V120005 is 96%
Duplicate Deviation on V120005 is 3.9%

Note: Analysis was performed using EPA method 3550 and TPH LUFT.

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Lab Director



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McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501
Attn: Julie Menack
Project Manager

Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-05-90

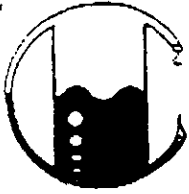
Sample Number	Description	Detection Limit	SOIL
			Gravimetric Waste Oil as Petroleum Oil
			ppm
Texaco - Alameda			
2375 Shoreline Drive			
Project No.: 88706-002			
V120001	3-4-A #1	50	<50
V120003	0-5-A #3	50	100
V120008	C1-1	50	100

QA/QC: Freon Blank is none detected.
Spike Recovery on V120001 is 110%
Duplicate Deviation on V120001 is 3%

Note: Analysis was performed using EPA extraction method 3550 with Trichlorotrifluoroethane as solvent, and gravimetric determination by standard methods 503e

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Phone (415) 372-3700 • Fax (415) 372-6955

McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501
Attn: Julie Menack
Project Manager

Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 01-07-91

Sample Number	Description	Detection	SOIL
		Limit	Gravimetric Waste Oil as Petroleum Oil
		ppm	ppm
	Texaco - Alameda 2375 Shoreline Drive Project No.: 88706-002		
V120005	4-6'-E #5	50	400

QA/QC: Freon Blank is none detected.
Spike Recovery on V120005 is 105%
Duplicate Deviation on V120005 is 4.3%

Note: Analysis was performed using EPA extraction method 3550 with Trichlorotrifluoroethane as solvent, and gravimetric determination by standard methods 503e

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Ronald G. Evans
Lab Director



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5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

88706-002/011604

McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501
Attn: Julie Menack
Project Manager

Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-12-90

Sample Number
V120005

Sample Description
Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
4-6'-E #5 SOIL

PRIORITY POLLUTANTS
VOLATILE ORGANIC COMPOUNDS
results in ppb

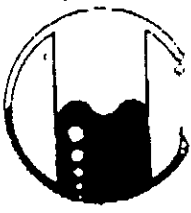
Chloromethane.....	<10	1,1,2,2,-Tetrachloroethane..	<5
Bromomethane.....	<10	1,2-Dichloropropene.....	<5
Vinyl Chloride.....	<10	trans-1,3-Dichloropropene...	<5
Chloroethane.....	<10	Trichloroethene.....	<5
Methylene Chloride.....	<5	Dibromochloromethane.....	<5
Acetone.....	<100	1,1,2-Trichloroethane.....	<5
Carbon Disulfide.....	<5	Benzene.....	85,000
1,1-Dichloroethene.....	<5	cis-1,3-Dichloropropene.....	<5
1,1-Dichloroethane.....	<5	2-Chloroethyl Vinyl Ether..	<10
trans-1,2-Dichloroethene...	<5	Bromoform.....	<5
Chloroform.....	<5	2-Hexanone.....	<50
1,2-Dichloroethane.....	<5	4-Methyl-2-pentanone.....	<50
2-Butanone.....	<100	Tetrachloroethene.....	25,000
1,1,1-Trichloroethane.....	<5	Toluene.....	680,000
Carbon Tetrachloride.....	<5	Chlorobenzene.....	<5
Vinyl Acetate.....	<50	Ethyl Benzene.....	260,000
Bromodichloromethane.....	<5	Styrene.....	<5
		Total Xylenes.....	850,000

QA/QC: Spike Recovery is 97.8%
Duplicate Deviation is 3.4%

Note: Analysis was performed using EPA method 8240

MOBILE CHEM LABS, INC.

Ronald G. Evans
Lab Director



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88706-002/011604

McLaren Hart
1135 Atlantic Avenue
Alameda, CA 94501
Attn: Julie Menack
Project Manager

Date Sampled: 12-05-90
Date Received: 12-05-90
Date Reported: 12-12-90

Sample Number
V120005

Sample Description
Project # 88706-002
Texaco - SSAL
2375 Shoreline Drive
4-6'-E #5 SOIL

8240 & OPEN SCAN

VOLATILE ORGANICS BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Results ug/kg
2-Methyl-1-Pentanol.....	290,000
2-Ethyl-3-Methyl-Oxetane.....	190,000
Methyl Cyclohexane.....	200,000
3,3-Dimethyl-2-Butanamine.....	180,000
2,3,5-Trimethyl Hexane.....	470,000
Propyl Benzene.....	390,000
Total 1-Ethyl-2-Methyl Benzene.....	3,500,000
Total 1,2,3-Trimethyl Benzene.....	3,900,000

Note: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

MOBILE CHEM LABS, INC.

Ronald G. Evans
Lab Director



0235

CHAIN OF CUSTODY RECORD

Sampler: Patrick Howe Date Shipped: 12-5-90 Carrier: _____

Telephone: _____ Airbill Number: _____ Cooler: _____

SHIP TO:
McLaren Analytical Laboratory
11101 White Rock Road
Rancho Cordova, CA 95670
(916) 638-3696

SEND RESULTS TO:

Client Name: Sulis Menac²
Company: McLaren/Hunt
Address: _____
Phone: _____

PROJECT NAME: Texasco PROJECT #: 89706-002

LABORATORY PROJECT (LP) #: _____ P.O. #: _____

Relinquished by: (Signature) Patrick Howe Received by: (Signature) _____ Date: 12-5-90 Time: 9:00-5:00

Relinquished by: (Signature) _____ Received by: (Signature) _____ Date: _____ Time: _____

Relinquished by: (Signature) _____ Received at lab by: (Signature) Josephie Wood Date: 12-5-90 Time: 16:30

ANALYSIS REQUEST

Sample ID Number	Sample Description	Date/Time	Analysis Requested	T.A.T.	Type of Container	Number of Containers	Lab ID
1200 01 56551	3-4-A#1	12-5-90	TPH-6, TPH-6 , Oil + Grease	1	B	1	
02 56552	0-B-2#2	11:30	TPH-6	1	P	1	
03 56553	0-5-A#3	11:30	TPH-6, TPH Diesel - GG	1	B	1	
04 56554	0-6-E#4	1:00	TPH-6	1	B	1	
05 56556	1-6-E#5	1:00	TPH-6 8240	1	B	1	
06 56557	5-6-A#6	2:30	TPH-6	1	B	1	
07 56558	4-2-E#7	2:40	TPH-6	1	B	1	
08 56559	C1-1	12/5/90	TPH-6, TPH-A, TPH-0.5	1	B	1	
09 56560	C1-2	12/5	HOLD AT LAB		B	1	
10 56561	C1-3	12/5	HOLD AT LAB		B	1	
11 56562	C1-4	12/5	HOLD AT LAB		B	1	

Special Instructions/Comments

Sample Condition Upon Receipt

Expected Analytical Turn-Around Times:

I = Immediate Attention 24 hours
2 = Rush 48 hours
3 = Standard 1 week
4 = Standard 2 weeks

Laboratory Disposition: Secured:
Storage Refrigerator ID _____ Yes _____
Storage Freezer ID _____ No _____



102391

CHAIN OF CUSTODY RECORD

Sampler: Derrick Linn Date Shipped: _____ Carrier: _____
 Telephone: _____ Airbill Number: _____ Cooler: _____

SHIP TO:
 McLaren Analytical Laboratory
 11101 White Rock Road
 Rancho Cordova, CA 95670
 (916) 638-3696

SEND RESULTS TO:
 Client Name: Julia Menarik
 Company: McLaren/Hunt
 Address: _____
 Phone: _____

PROJECT NAME: _____ PROJECT #: _____

LABORATORY PROJECT (LP) #: _____ P.O. #: _____

Relinquished by: (Signature) Patrice Clark Received by: (Signature) _____ Date: 12-5-90 Time: 3:00

Relinquished by: (Signature) _____ Received by: (Signature) _____ Date: _____ Time: _____

Relinquished by: (Signature) _____ Received at Lab by: (Signature) Joe Houde Mobil Chem Date: 12/5/90 Time: 16:30

ANALYSIS REQUEST

Sample ID Number	Sample Description	Date/Time	Analysis Requested	T.A.T.	Type of Container	Number of Containers	Lab ID
56563	6-6-A#8	1:54 3:20	TPH-C	1	B	1	
56564	6-6-C#9	4:10	TPH-G	1	B	1	
56565	6-7-E#10	4:30	TPH-D	1	B	1	
56566	Center 7#11	4:30	TPH-G	1	P	1	

Special Instructions/Comments:

Sample Condition Upon Receipt

Expected Analytical Turn-Around Times:

- 1 = Immediate Attention 24 hours
- 2 = Rush 48 hours
- 3 = Standard 1 week
- 4 = Standard 2 weeks

Laboratory Disposition:
 Storage Refrigerator ID _____ Secured: Yes _____
 Storage Freezer ID _____ No _____



Date: December 13, 1990
LP #: 3885

Julie Menack
McLaren/Hart
1135 Atlantic Avenue
Alameda, CA 94501

Dear Ms. Menack:

Enclosed are the laboratory results for the six samples submitted by you to the McLaren Analytical Laboratory on December 7, 1990, for the project *Texaco - Shoreline AL*.

The analyses you requested are:

TPH/G and BTEX (1 - Soil)^a


The report consists of the following sections:

1. A copy of the chain of custody
2. Quality Control Report
3. Comments
4. Analytical results
5. Copy of final billing submitted to accounting.

Unless otherwise instructed by you, samples will be disposed of two weeks from the date of this letter.

Thank you for choosing McLaren Analytical Laboratory. We are looking forward to serving you in the future. Should you have any questions concerning this analytical report or the analytical methods employed, please do not hesitate to call.

Sincerely,


Anthony S. Wong, Ph.D.
Laboratory Director

^a One sample was run, continue to hold remaining 5 samples, per Julie Menack.



CHAIN OF CUSTODY RECORD

FOR LABORATORY USE ONLY

Laboratory Project No. 3885
Storage Refrigerator ID 4-12
Storage Freezer ID _____

Secured
Yes
No _____

Project Name TEXACO - Shoreline AL Project #: 88706-002 Sampler: HERB HIRSCHFELD Herb Hirschfeld
 Relinquished by (Signature and Printed Name) _____ Received by (Signature and Printed Name) FED EX Date: 12/6/90 Time: 5:00 PM
 Relinquished by (Signature and Printed Name) Herb Hirschfeld Received by (Signature and Printed Name) _____ Date: 12/7/90 Time: 0900
 Relinquished by (Signature and Printed Name) _____ Received by (Signature and Printed Name) Michael Lee Date: 12/10/90 Time: 0930
 Relinquished by (Signature and Printed Name) _____ Received by (Signature and Printed Name) Logged By Michael Lee Date: _____ Time: _____

SHIP TO:
McLaren Analytical Laboratory
11101 White Rock Road
Rancho Cordova, CA 95670
(916) 638-3696
FAX (916) 638-2847

Method of Shipment: FED EX
Shipment ID: _____

Circle or Add Analysis(es) Requested

- 601/8010 (Halogenated Volatiles-GC)
- 602/8020 (Aromatic Volatiles-GC)
- 604/8040 (Phenols-GC)
- 608/8080 (Pesticides/PCB-GC)
- 610/8100 (PNA-GC)
- 624/8240 (Volatiles-GC/MS)
- 625/8250 (BNA-GC/MS)
- TPH/G (Gasoline-GC)
- TPH/D (Diesel-GC)
- 418-1 (IR)
- 8015 Mobilized (GC)
- Metals: Total a
- Metals: Soluble a
- Fluoride/Perchlorate
- Chloride/pH
- TDS/Percent Solid
- Specific Conductivity (EC)

a) Identify specific metals requested under Special Instructions

Sample ID Number	Sample Description		TAT	Container(s)		FOR LABORATORY USE ONLY	
	Date	Time		#	Type	Lab ID	
1	56568	12/6/90			1	B	3885-001
2	56569						002
3	56570						003
4	56571						004
5	56572						005
6	56573						006
7							
8							
9							
10							

HOLD FOR ANALYSIS
CONTACT JULE MENACK

Special Instructions/Comments

Sample Archive/Disposal:
 Laboratory Standard
 Other _____

TAT (Analytical Turn-Around Times) 1 = 24 hours 2 = 48 hours 3 = 1 week 4 = 2 weeks
Container Types: B=Brass Tube, V=VOA Vial, A=1-Liter Amber, G=Glass Jar, C=Cassette, O = Other _____

SEND DOCUMENTATION AND RESULTS TO (Check one):
 Project Manager/Office: JULE MENACK (ALAMEDA)
 Client Name: _____

FOR LABORATORY USE ONLY

Sample Condition Upon Receipt: Good Condition (208)

Company: _____
Address: _____
Phone: () _____ Fax: _____



This is a facsimile from McLaren/Hart, 1135 Atlantic Avenue, Alameda, California 94501. Our dedicated FAX number is (415) 521-1547. Our telephone number is (415) 521-5200.

I am sending 2 pages, including this cover letter.

Today's Date: 12-7-90 Time Out: 4:00 PM

Job/Task Number or Client Name: Texaco 88706-002

FAX Number Called: Rancho

ATTENTION: ~~XXXXXXXXXX~~

Sincerely,
McLaren/Hart

Please run one of the soil samples submitted under Chain-of-Custody #220142 (attached) for TPH/G + BTEX with a *24-hour Turn-Around Time. (It doesn't

Gary Feste
Person Transmitting Copy

matter which sample is used}. Continue to hold remaining samples.

Thank you!

QUALITY CONTROL REPORT

METHOD BLANK RESULTS: A method blank (MB) is a laboratory generated sample free of any contamination. The method blank assesses the degree to which the laboratory operations and procedures cause false-positive analytical results for your samples. The method blank results associated with your samples are attached.

LABORATORY CONTROL SPIKES

The LCS Program:

The laboratory control spike is a well characterized matrix (organic pure type II water for water samples and contamination free sand for soil samples) which is spiked with certain target parameters and analyzed in duplicate at approximately 10% of the sample load in order to assure the accuracy and precision of the analytical method. The results of the laboratory control spike associated with your samples are attached.

Accuracy is measured using percent recovery, i.e.:

$$\text{Percent Recovery} = \frac{(\text{measured concentration})}{(\text{actual concentration})} \times 100$$

Precision is measured using the relative percent difference (RPD) from duplicate tests, i.e.:

$$\text{RPD} = \frac{\% \text{ Recovery of Spike}_{(1)} - \% \text{ Recovery of Spike}_{(2)}}{(\% \text{ Recovery of Spike}_{(1)} + \% \text{ Recovery of Spike}_{(2)})/2} \times 100$$

Control limits for accuracy and precision are different for different methods. They may also vary with the different sample matrices. They are based on laboratory average historical data and EPA limits which are approved by the Quality Assurance Department. McLaren Analytical Laboratory reanalyzes samples if the precision or accuracy is out of acceptance control limits.



QUALITY CONTROL REPORT

Method: Mod. EPA 8020 (BTEX) & TPH/G
 Units: ug/g (ppm)

Date Analyzed: 12/10/90
 Date Extracted: 12/09/90
 Batch Number: 901209-1701

METHOD BLANK

<u>Compounds</u>	<u>Reporting Limits</u>	<u>Results of the MB</u>
Benzene	0.01	BRL
Toluene	0.01	BRL
Ethyl Benzene	0.01	BRL
1,2-Xylene	0.01	BRL
1,3-Xylene	0.01	BRL
1,4-Xylene	0.01	BRL
Total Petroleum Hydrocarbons Gasoline	1.	BRL

LABORATORY CONTROL SPIKE

<u>Compounds</u>	<u>Concentration</u>		Accuracy <u>% Recovery</u>	Precision <u>RPD</u>	<u>Acceptance Limits^a</u>	
	<u>Spiked</u>	<u>Measured</u>			<u>% Recovery</u>	<u>RPD</u>
Chlorobenzene	0.10	0.11	110	0	75 - 125	<25
Benzene	0.10	0.10	100	0	75 - 125	<25
Ethyl Benzene	0.10	0.11	110	0	75 - 125	<25
Total Petroleum Hydrocarbons Gasoline	5.0	4.8	96	6	75 - 125	<25

^a Acceptance limits are generic EPA limits.

