and Marketing Inc.

10 Universal City Plaza Universal City CA 91608

93 AUG 18 PM 3: 24

August 13, 1993

Ms. Susan Hugo Alameda County Environmental Health Department 80 Swan Way, Room 200 Oakland, CA 94621

Dear Ms. Hugo:

Enclosed is a copy of the well documentation letter report dated July 30, 1993, for the former Texaco and then Exxon service station facility that was located at 500 Grand Avenue in Oakland, California. This report documents the installation of monitoring wells MW-8K and MW-8L.

Please call me at (818) 505-2476 if you have any questions or wish to discuss the report further.

Very truly yours, Texaco Refining and Marketing Inc.

Nobles Robles

Environmental Coordinator

RR:rr

Enclosure

Mr. Rich Hiett California Regional Water Quality Control Board San Francisco Bay Area Region 2101 Webster Street, Ste. 500 Oakland, CA 94612

RRZielinski-Richmond

pr:__



July 30, 1993 Project 340-34.20

Mr. Robert Robles
Texaco Refining and Marketing, Inc.
10 Universal City Plaza, Suite 724
Universal City, California 91608

Re: Former Texaco Service Station

500 Grand Avenue Oakland, California

Dear Mr. Robles:

The following letter presented by Pacific Environmental Group, Inc. (PACIFIC) documents the installation of two groundwater monitoring wells at the site referenced above. Work was performed by PACIFIC at the request of Texaco Refining and Marketing (Texaco) in accordance with the requirements set by the Alameda County Environmental Health Department at a meeting held on April 30, 1993. The wells were installed to provide data that can be used to evaluate any health and cafety concerns for the planned commercial use of the property, and to verify the effectiveness of removing over 2,400 cubic yards of hydrocarbon-impacted soils from the site.

Included in this letter is a brief discussion of the scope of work performed and findings of the groundwater analytical results. A discussion of the site description and history, previous investigations, and the regional hydrogeologic setting is contained in a letter prepared by PACIFIC on April 29, 1993.

Field and analytical procedures are described in Attachment A. Boring logs and well completion data are included as Attachment B. Certified analytical data and chain-of-custody documentation are included as Attachment C.

SCOPE OF WORK

As requested by Texaco, PACIFIC performed the following work in order to assess groundwater conditions following soil excavation activities, and prior to building construction.

- o Monitoring Well Installation. Installed on-site groundwater
 Monitoring Wells MW-8K and MW-8L (Figure 2) May 18,
 1993. Well MW-8K was installed adjacent to former
 Well MW-8E which contained the highest hydrocarbon concentrations in groundwater of all previously sampled wells.
 Well MW-8L was installed in an area lateral to Well MW-8K and within the zone of influence define by historical total petroleum hydrocarbon contour data.
- o Well Development and Surveying. Developed groundwater Monitoring Wells MW-8K and MW-8L on May 20 and 21, 1993. The wells are scheduled to be surveyed during the third quarter of 1993.
- o Groundwater Sampling and Analysis. Sampled and analyzed groundwater from Wells MW-8K and MW-8L for total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), total petroleum hydrocarbons calculated as diesel (XPH-d), and waste oil on May 20 and 21, 1993.

FINDINGS

Subsurface Conditions

Soils encountered during drilling were similar to the previous subsurface data with the exception of the fill material deposited on the site during April and May of 1992. Gravely clay fill material was encountered from the surface to a depth of approximately 6 to 10 feet bgs. The fill material was underlain by sandy and gravely clay in boring MW-8K, and by sandy clay and silty sand in boring MW-8K.

During drilling, groundwater was encountered and stabilized at depths of approximately 3 to 3-1/2 feet in Wells MW-8K and MW-8L. The groundwater elevation data collected on May 20, 1993 during well development and sampling activities indicated depth to groundwater for Well MW-8K was approximately 2 feet; and for Well MW-8L was approximately 5-1/2 feet. Boring logs and well completion data are included as Attachment B.

Organic Vapor Analysis

Organic vapor concentrations were measured in the field with an HNU photo-ionization detector. Organic vapor concentrations of greater than 100 parts per million were not noted in any soil samples collected during drilling. Soil vapor concentrations are noted on the boring logs in Attachment B.

Groundwater Analytical Results

Groundwater samples were collected from Wells MW-8K and MW-8L by PACIFIC on May 20 and 21, 1993. The samples were analyzed for TPH-g, TPH-d, waste oil, and BTEX compounds. TPH-g was detected at concentrations of parts per billion (ppb) in Well MW-8K and 76 ppb in Well MW-8L. Benzene was detected at concentrations of 12 ppb in Well MW-8K and 1.1 ppb in Well MW-8L. TPH-d and waste oil were not detected. Certified analytical reports and chain-of-custody documentation are included in Attachment C.

If you have any questions regarding the contents of this letter, please call.

Sincerely,

Pacific Environmental Group, Inc.

Lainie Demian Staff Scientist

Steven E. Krcik Senior Geologist

Attachments: Figure 1 - Site Map

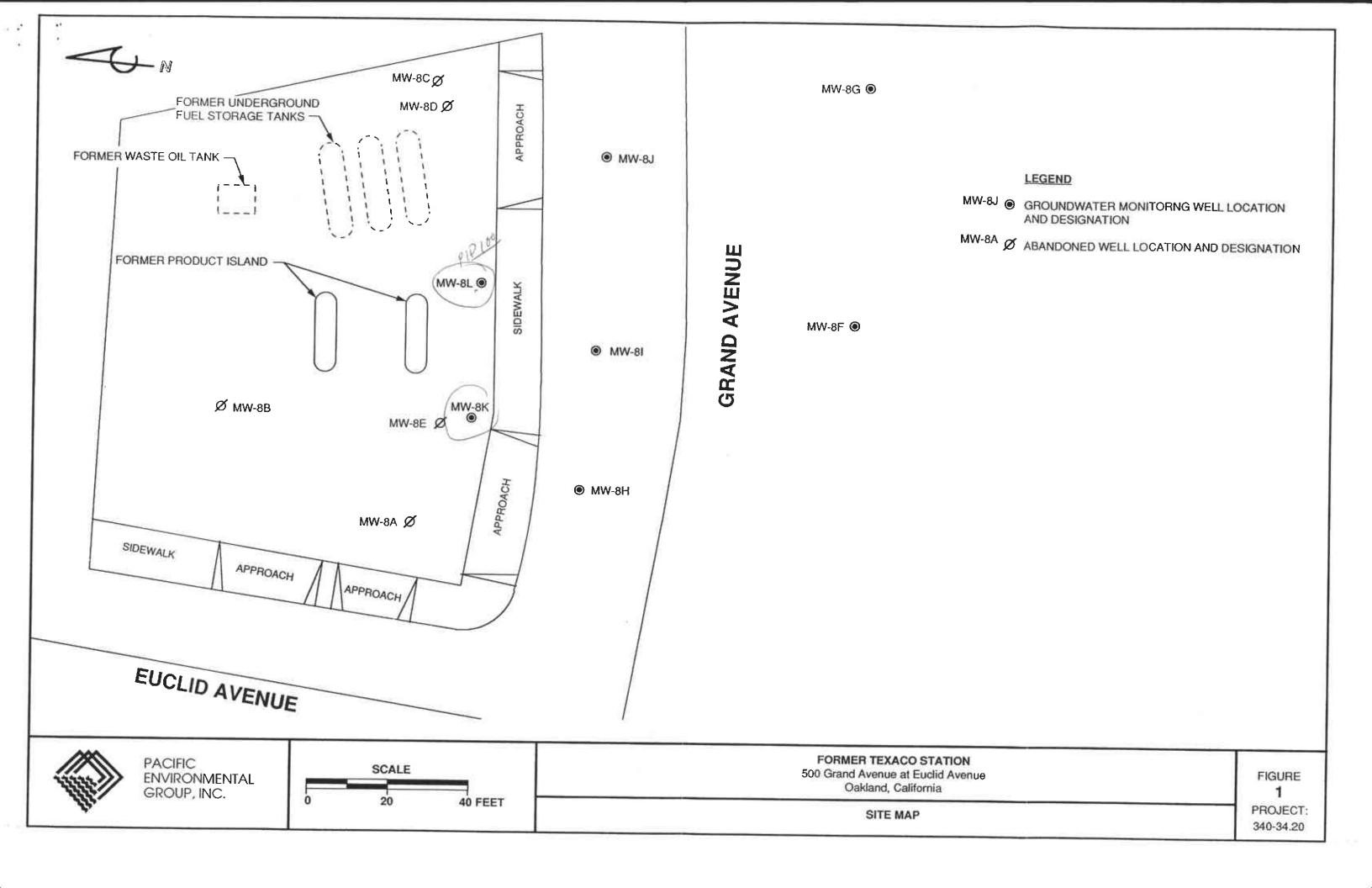
Attachment A - Field and Analytical Procedures

Attachment B - Boring Logs and Well Completion Data Attachment C - Certified Analytical Reports and Chain-of-Custody Documentation

Mr. Richard Hiett, Regional Water Quality Control Board - S.F. Bay Region

Ms. Susan Hugo, Alameda County Environmental Health Department

Mr. Ron Zielinski, Texaco Refining and Marketing, Inc.



ATTACHMENT A FIELD AND ANALYTICAL PROCEDURES

ATTACHMENT A FIELD AND ANALYTICAL PROCEDURES

Drilling and Well Construction Procedures

The soil borings for the groundwater monitoring wells were drilled using 8-inch diameter hollow-stem auger drilling equipment and were logged by a PACIFIC geologist using the Unified Soil Classification System and standard geologic techniques. Soil samples for logging and chemical analysis were collected at 5-foot minimum depth intervals by advancing a California-modified split-spoon sampler with brass liners into undisturbed soil beyond the tip of the auger. The sampler was driven a maximum of 18 inches using a 140-pound hammer with a 30-inch drop. Soil samples for chemical analysis were retained in brass liners, capped with Teflon sheets and plastic end caps, sealed with Teflon tape, and stored in clean zip lock bags. The samples were then placed on ice for transport to the laboratory, accompanied by chain-of-custody documentation. All down-hole drilling and sampling equipment was steam-cleaned following the completion of each soil boring. Down-hole sampling equipment was washed in a TSP solution between samples.

The soil borings were converted to groundwater monitoring wells by the installation of 2-inch diameter, Schedule 40 PVC casing with 0.020-inch factory slotted screen. Screen was placed from 18 feet to approximately 3 feet below ground surface. The annular space was packed with #3 sand across the entire screened interval, extending approximately 0.5 foot above the top of the screen. The well was then sealed with approximately 1 foot of bentonite above the sand pack, and neat cement to the ground surface. A locking, watertight cap and protective vault box were installed at the top of each well.

Organic Vapor Analysis Procedures

Soil samples collected in the field were analyzed using the HNU Model PI 101 photoionization detector with a 10.2 eV lamp. The test procedure involved measuring approximately 30 grams from an undisturbed soil sample, placing this sub-sample in a clean glass jar, and sealing the jar with aluminum foil secured under a ring-type threaded lid. The jar was warmed for a minimum of 20 minutes, then the foil was pierced and the head-space within the jar tested for total organic vapor, measured in parts per million as benzene (ppm; volume/volume). The instrument was previously calibrated using a 100 ppm isobutylene standard (in air) and a sensitivity factor of 0.55 which relates the photo-ionization sensitivity of benzene to the sensitivity of isobutylene. The results of these tests were recorded on the boring logs.

Groundwater Well Development Procedures

A minimum of 10 casing volumes of groundwater was purged from each well during development. Initially a well was purged of sediment and debris. After the initial removal of debris, the well screen was surged at 2-foot intervals along the full screen length with a vented surge block. The sequence of surging and purging was repeated at least three times during the 10 casing evacuation. If the well dried out during the purging, deionized water was added to the well to complete purging and surging the well screen. During purging, the well was monitored for temperature, pH, EC, and turbidity. The well was considered "developed" when the temperature, pH, and EC parameters had stabilized.

Groundwater Sampling Procedures

The sampling procedure consisted of first measuring the water level in each well with an electronic water-level indicator, and checking each well for the presence of separate-phase hydrocarbons using a clear Teflon bailer or an oil-water interface probe. The wells were then purged of approximately four casing volumes of water (or until dry) using a bailer or centrifugal pump, during which time temperature, pH, and electrical conductivity were monitored to indicate that a representative sample was obtained. After purging, the water levels in the wells were allowed to restabilize. Groundwater samples were then collected using a Teflon bailer, placed into appropriate EPA-approved containers, labeled, logged onto chain-of-custody documents, and transported on ice to the laboratory.

Purgewater Disposal Procedures

Water removed from the wells during the sampling event was placed in a 500-gallon water transportation trailer. Upon completion of the work on site, the purge water contained within the trailer was transported to Gibson Oil and Refining Company, Inc., Redwood City facility and injected into the treatment system.

Laboratory Analysis Procedures

Groundwater samples collected from site monitoring wells were analyzed for the presence of total petroleum hydrocarbons calculated as gasoline (TPH-g) as modified EPA Methods 8015 and 5030, for benzene, toluene, ethylbenzene and xylenes (BTEX) compounds by EPA Methods 8020, TPH diesel (TPH-d) by EPA Method 8015 and 3510, and for waste oil standard by Method 5520. The TPH-g and BTEX compound samples were examined using the purge and trap technique, with final detection by gas chromatography. The TPH-d samples were examined using the extraction technique with final detection determined by gas chromatography. The waste oil samples were examined using extraction Method 3550 with gravimetric determination. All analyses were performed by a state-certified laboratory.

ATTACHMENT B BORING LOGS AND WELL COMPLETION DATA

*			Gr.	0110	
Primary I	Divisions	Syı		oup /Graj	ohic Typical Names
COARSE GRAINED SOILS	GRAVELS half of	CLEAN GRAVELS	GW	000	Well graded gravels, gravel-sand mixtures; little or no fines
more than	coarse fraction larger than	(less than 5% fines)	GP	000	Poorly graded gravels or gravel-sand mixtures; little or no fines
than #200 sieve	#4 sieve	GRAVEL WITH	GM	000	Silty gravels, gravel-sand-silt mixtures
		FINES	GC		Clayey gravels, gravel-sand-clay mixtures
	SANDS half of	CLEAN SANDS	sw		Well graded sands, gravelly sands, little or no fines
	coarse fraction smaller than #4 sieve	(less than 5% fines)	SP		Poorly graded sands or gravelly sands; little or no fines
		SANDS WITH	SM		Silty sands, sand-silt mixtures
		FINES	sc		Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED	SILTS AN	ID CLAYS	ML		Inorganic silts and very fine sand, rock flour, silty or clayey fine sands or clayey silts, with slight plasticity
SOILS more than		l limit an 50%	CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
half is smaller than			OL		Organic silts and organic silty clays of low plasticity
#200 sieve	SILTS AN	ID CLAYS	мн		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		d limit nan 50%	СН		Inorganic clays of high plasticity, fat clays
			ОН		Organic clays of medium to high plasticity, organic silts
HIGHL	Y ORGANIC	SOILS	Pt	\otimes	Peat and other highly organic soils



Unified Soil Classification System

WELL LOG KEY TO ABBREVIATIONS

Drilling Method

Gravel Pack

HSA - Hollow stem auger

CA - Coarse aquarium sand

CFA - Continous flight auger Air - Reverse air circulation

Sampling Method

Cal. Mod. - California modified split-spoon sampler (2" inner diameter) driven 18" by a

140-pound hammer having a 30" drop. Where penetration resistance is

designated "P", sampler was instead pushed by drill rig.

Disturbed - Sample taken from drill-return materials as they surfaced.

Shelby - Shelby Tube thin-walled sampler (3" diameter), where sampler is pushed by drill-rig.

Moisture Content	Sorting	<u>Plasticity</u>	<u>H</u>	I-NU (ppm)
Dry - Dry	PS - Poorly sorted	L - Low		ND - No detection
Dp - Damp	MS - Moderately sorted	M - Moder	ate	
Mst - Moist	WS - Well sorted	H - High		
Wt - Wet Sat - Saturated		·	Γ	Sample Preserved for Laboratory Testing
Symbols	· -	sample		
	sampled	recovery		©.
 Static ground water 				
Density (Blows/Foot -	<u>Cal Mod Sampler)</u>			
Sands and gravels		Silts and Clays		
0-5 - Very Lo	ose	0-2 -	Very Soft	
5-13 - Loose		2-4 -	Soft	
13 - 38 - Medium	dense	4-9 -	Firm	
38 - 63 - Dense		9-17 -	Stiff	
over 63 - Very de	nse	17 - 37 -	Very Stiff	
5.5. 50		37 - 72 -	Hard	
		over 72 - 1	Very Hard	
	CD ADI OFFI CO	A T T		

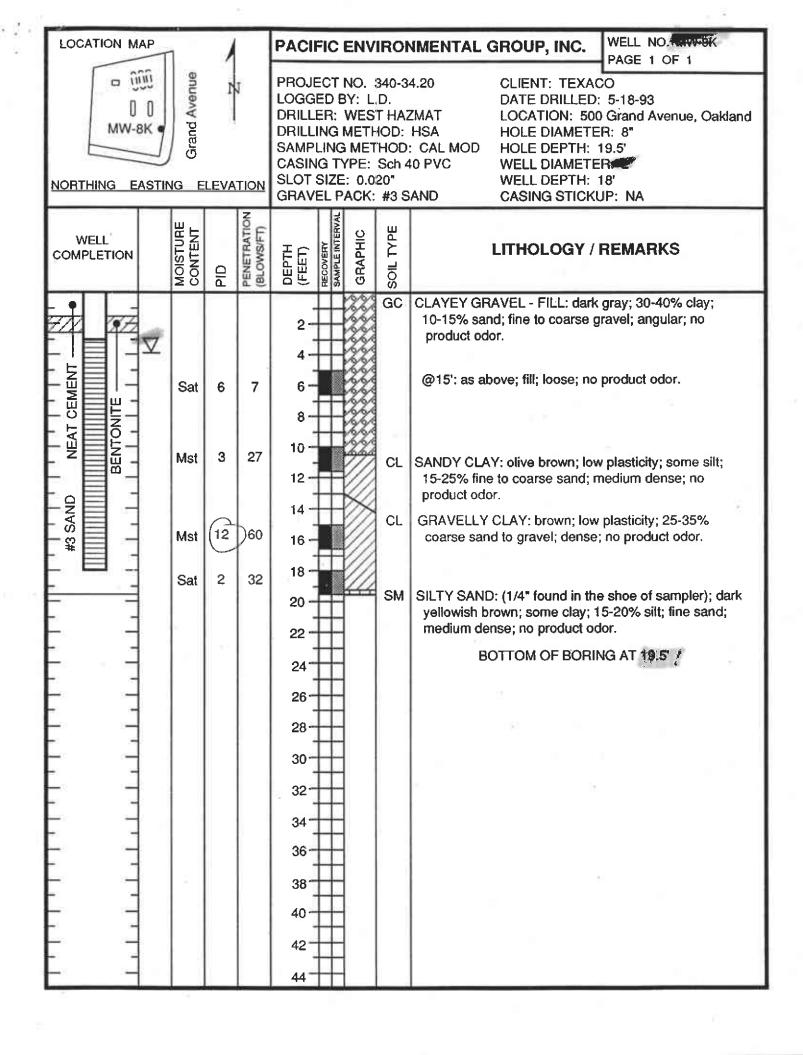
GRAIN - SIZE SCALE

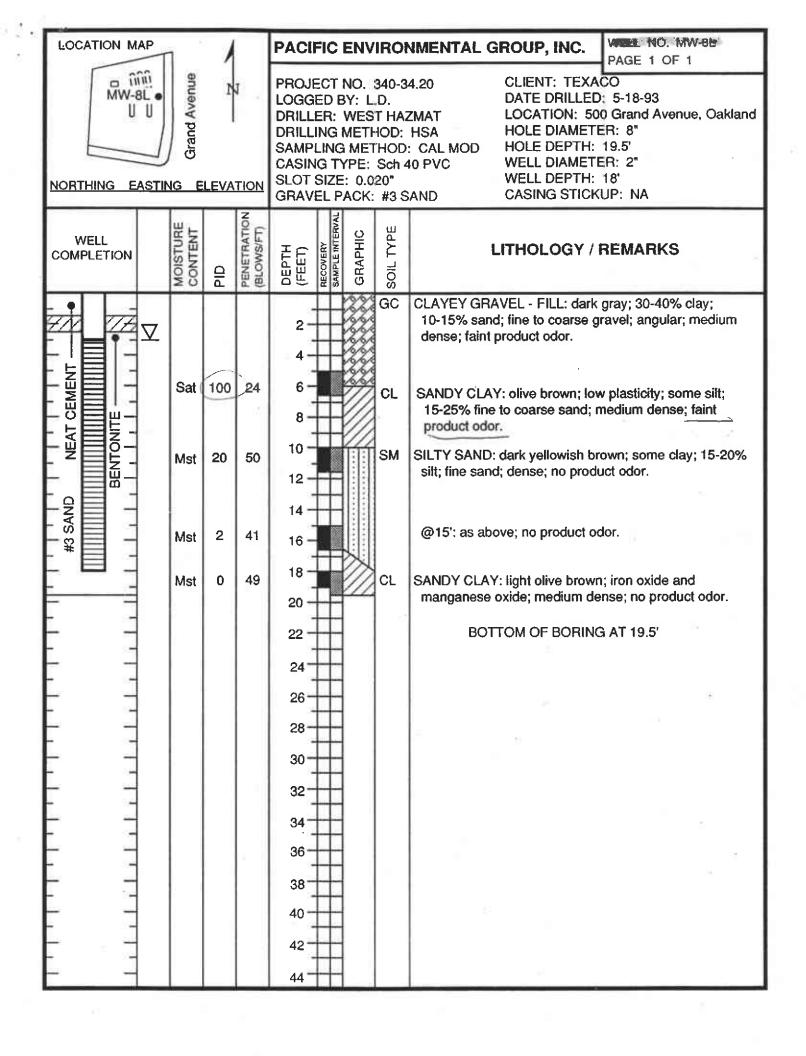
GRADE LIMITS

U.S. Standard

GRADE NAME

inch	sieve size			
40.0			Boulders	
<u> </u>			Cobbles	
3.0 -	3.0 in.		Graveis	
0.19	No. 4	440700		
<u> </u>	No. 10	coarse		
	No. 40	medium	Sand	
	No. 200	fine		
	No. 200		Silt	
			Clay Size	





ATTACHMENT C

CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION



5011 Blum Road, Suite 1 · Martinez, CA 94553 Phone (510 372-3700 · Fax (510) 372-6955



340-34.20\1342\012710

Pacific Environmental Group, Inc. 2025 Gateway Place, Suite 440 San Jose, CA 95110

Attn: Maree Doden

Pacific Contact

Date Sampled: 05-21-93 Date Received: 05-24-93

Date Analyzed: 06-01-93

Sample Number

053245

Sample Description

Project # 340-34.20 Texaco - Oakland 500 Grand Ave.

MM-8L

WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	5.0	
Benzene	0.5	
Toluene	0.5	<0.5
Xylenes	0.5	6.0
Ethylbenzene	0.5	<0.5

QA/QC: Duplicate Deviation is 6.6%

Note:

Analysis was performed using EPA methods 5030 and TPH

LUFT with method 602 used for BTX distinction.

 $(ppb) = (\mu g/L)$

MOBILE CHEM LABS



5011 Blum Road, Suite 1 • Martinez, CA 94553 Phone (510 372-3700 • Fax (510) 372-6955

340-34.20\1342\012710

Pacific Environmental Group, Inc. 2025 Gateway Place, Suite 440

San Jose, CA 95110 Attn: Maree Doden

Pacific Contact

Date Sampled: 05-20-93 Date Received: 05-24-93

Date Analyzed: 06-01-93

Sample Number

053246

Sample Description

Project # 340-34.20 Texaco - Oakland 500 Grand Ave.

MW-8K

WATER

ANALYSIS

	Detection Limit	Sample Results	
	ppb	ppb	
Total Petroleum Hydrocarbons as Gasoline	50	- 544	
Benzene	0.5	12	
Toluene	0.5	<0.5	
Xylenes	0.5	<0.5	
Ethylbenzene	0.5	<0.5	

Note:

Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.

 $(ppb) = (\mu q/L)$

MOBILE CHEM LABS



5011 Blum Road, Suite 1 • Martinez, CA 94553 Phone (510 372-3700 • Fax (510) 372-6955

340-34.20\1342\012710

Pacific Environmental Group, Inc. 2025 Gateway Place, Suite 440

San Jose, CA 95110 Attn: Maree Doden

Pacific Contact

Date Sampled: 05-20-93 Date Received: 05-24-93

Date Analyzed: 06-01-93

Sample Number

053247

Sample Description

Project # 340-34.20 Texaco - Oakland 500 Grand Ave.

TB WATER

ANALYSIS

	Detection Limit	Sample Results		
	ppb	ppb ·		
Total Petroleum Hydrocarbons as Gasoline	50	<50		
Benzene	0.5	<0.5		
Toluene	0.5	. <0.5		
Xylenes	0.5	<0.5		
Ethylbenzene	0.5	<0.5		

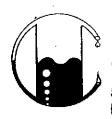
Note:

Analysis was performed using EPA methods 5030 and TPH

LUFT with method 602 used for BTX distinction.

 $(ppb) = (\mu q/L)$

MOBILE CHEM LABS



5011 Blum Road, Suite 1 · Martinez, CA 94553 Phone (510 372-3700 · Fax (510) 372-6955

340-34.20\1342\012710

Pacific Environmental Group, Inc.

2025 Gateway Place, Suite 440 San Jose, CA 95110

Attn: Maree Doden

Pacific Contact

Date Sampled: 05-21-93 Date Received: 05-24-93

Date Analyzed: 06-01-93

Sample Number

053245B

Sample Description

Project # 340-34.20 Texaco - Oakland

500 Grand Ave.

DI-1

WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	. <0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

Note:

Analysis was performed using EPA methods 5030 and TPH

LUFT with method 602 used for BTX distinction.

 $(ppb) = (\mu g/L)$

MOBILE CHEM LABS



5011 Blum Road, Suite 1 - Martinez, CA 94553 Phone (510 372-3700 • Fax (510) 372-6955

340-34.20\1428\012710

Pacific Environmental Group, Inc. 2025 Gateway Place, Suite 440 San Jose, CA 95110

Attn: Maree Doden

Pacific Contact

Date Sampled: 05-21-93 Date Received: 05-24-93 Date Analyzed: 05-25-93

Sample Number	Sample Description	Detection Limit	WATER Total Petroleum Hydrocarbons as Diesel
	•	ppb	ppb
	500	aco - Oakland Grand Avenue ject No.: 340	0-34.20
053245	MW-8L	50	<50
053246	MW-8K	50	<50

Spike Recovery on 053245 is 91% QA/QC:

Duplicate Deviation on 053245 is 4.8%

Analysis was performed using EPA method 3510 and TPH LUFT. Note:

 $(ppb) = (\mu g/L)$

MOBILE CHEM LABS



5011 Blum Road, Suite 1 · Martinez, CA 94553 Phone (510 372-3700 · Fax (510) 372-6955

340-34.20\1223\012710

Pacific Environmental Group 2025 Gateway Place, #440

San Jose, CA 95110

Attn: Maree Doden

Pacific Contact

Date Sampled: 05-21-93

Date Received: 05-24-93

Date Analyzed: 06-02-93

WATER

Sample Number

Detection Sample Description

Limit

Gravimetric Waste Oil as Petroleum Oil

ppm

ppm

Project # 340-34.20 Texaco - Oakland 500 Grand Ave.

053245

MW-8L

50

< 50

053246

MW-8K

50

< 50

Note:

Analysis was performed using EPA extraction method 3550 with Trichlorotrifluoroethane as solvent, and gravimetric determination by standard methods 5520

(ppm) = (mq/L)

MOBILE CHEM LABS

PROJECT No. 340 -34.20 Chain of Custody												Pacific Environmental Group, Inc. 2025 Gateway Place #440, San Jose CA 95110							
Facility No. TEXALO																		441 77	
CLIENT engineer: Ywel Detail				<u> </u>		Facility Address: 500 GAND AVC OAKIAND										Billi	ng Refe	ence No	ımber:
CLIENT engineer:				T	PACIF	PACIFIC Point of Contact: M. Doden Sampler: C. GRAVES								·	Laboratory Name: Mobile Coom				
								1					١,	1					Comments:
		Containe	r	W-water S-soil	G=grab D=disc. C=comp.			BTEX/ VPHgas	ТРН	Oil and	Total		SVOC	HVOC					ANALYZE DI-1 FOR GIBTEX ONLY IF MWBL HAS
Sample I.D.	Cont No.	. Size (ml)	Sample Preserv.	Matrix	Туре	Sampling Date	Sampling Time	(8015/	Diesel	Grease		624/	627/	601/					HITS IN GIBTEX
MWBL	2	4oul-		w	6	5/21/93		8020)	(8015)	(5520)	Metals	8240)	8270)	8010)	<u> </u>	-		-	-
MW 8L	2	1.0_	NP	3	সূ ড	5/21/93	 		- V							 	-	<u> </u>	-
mw8L "	2	1.2	H2504	w	67	5/21/93					-	<u> </u>					 	-	
DI-1 HOLD	3	40l	Hel	w	6	5/2.193			Lie	10			<u> </u>			 	<u> </u>		-
MW8K (14')	2	40mc	HCI	w	C	5.7093		1/	170	, 10						-		 	-
. 1	2	14	Hasou	w	6	5-10-93										 -	-		
V	5	40ml	HCI	ω	G	5-70-93										<u> </u> 	-		
-1B	2	40ml		W		5.2093										 		 	
						3 ~ ~			• • •									<u> </u>	
										·							├		
Condition of Sample:		_ }	·	<u>-</u>		Temperate	ure Receiv	ed:						SMS1 S	datask		al Repo		
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							'	Date Time 620 Contra (nția Co nt Hill,	osta Blvd, #209 Expedited (5 days)			Expedited (5 days)				
				· ·	Time	e Received by					Date Time 25725 Jeronim Mission Viejo,				no Rd. #576C			_	
Relinquished by			Date		lime	Received b	y laborato	ory			Date		اد	4020 14	8th Ave	NE#B			Standard (10 days)
				•	DAVE LEVIN					52493 17,45 Redmond				nd, WA	WA 98052 As Contracted				

PROJECT No. 340-34.20

Chain of Custody

Pacific Environmental Group, mc.

2025 Gateway Place #440, San Jose CA 95110

Phone 408 441 7790 Fax 408 441 7539

Fax 408 441 7539 Facility No. TEXALO OAKIAND Facility Address: 500 GAND AVE Billing Refence Number: CLIENT engineer: Kerel Derrocker PACIFIC Point of Contact: M. DoDen Sampler: C. GRAVES Laboratory Name: Mobile CHEM Comments: W-water ANALYZE DI-1 FOR GIBTEX G-grab 8=40 D=disc. ONLY IF MWBL HAS **Total** A-air C=comp. BTEX VOC Isvoc Invoc Container HITS IN G/Brex VPHgas TPH Oil and Distyd. (EPA (EPA (EPA Sample Cont. Size Sample Sampling Sampling (8015/ Diesel Grease 624/ 627/ 601/ I.D. No. (ml)Preserv. Matrix Date Type Time 8020) (8015) (5520) Metals 8240) 8270) 8010) Hil 5/21/93 MWBL 4ml 15:30 W 6 10 2 NP 5/21/93 MW 8L W 6 1530 MW 8L H2504 5/21/93 1l 6 W 1530 DI-1 HOLD 4al Hel 5/21/93 1400 H910 w 6 MWSK 40mc HC W 5.7093 10:20 w 6 H2SO4 5-2093 1020 40m HCI 5-70-93 1100 ω Hc1 NA Condition of Sample: Temperature Received: DITCE NO FOOD Space Mail original Analytical Report to: Turnaround Time: Pacific Environmental Group Priority Rush (1 day) Relinguished by Time Received by Date 2026 Gateway Place #440 San Jose, CA 95110 Rush (2 days) Relinquished by Received by Date 620 Contra Costa Blvd. #209 Pleasant Hill, CA 94523 Expedited (5 days) Relinquished by Date Time Received by Date Time 25725 Jeronimo Rd. #576C Mission Viejo, CA 92622 Standard (10 days) Relinquished by Date Received by laboratory Date 4020 148th Ave NE #B Time VAUR Levier 52493 12:45 Redmond, WA 98052 As Contracted