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January 14, 1994

ENV - STUDIES, SURVEYS, & REPORTS
EXXON Service Station/Former Texaco Service Station
2200 E. 12th St., Oakland, CA

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

Dear Mr. Hiett:

Enclosed please find the Quarterly Groundwater Monitoring Report, dated January 4, 1994, for the subject site.

If you have any questions, I can be contacted at (510) 236-9139.

Best Regards,

Karen E. Petryna

Environmental Project Coordinator Texaco Environmental Services

KEP:eq

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Enclosure

cc: Mr. Thomas Peacock - Alameda County Environmental Health
Department

Mr. E. E. Villasenor - Exxon Company U.S.A.

RACoughlin-RRZielinski (w/o enclosure)

PR: 20



3315 Almaden Expressway, Suite 34 San Jose, CA 95118

Phone: (408) 264-7723 FAX: (408) 264-2435

## LETTER REPORT GROUNDWATER MONITORING AND SAMPLING

Fourth Quarter 1993

at

Former Texaco Station 2200 East 12th Street Oakland, California

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3315 Almaden Expressway, Suite 34 San Jose, CA 95118 Phone: (408) 264-7723

FAX: (408) 264-2435

January 4, 1994 62079.01

Ms. Karen Petryna Texaco Environmental Services 108 Cutting Boulevard Richmond, California 94804

Subject:

Groundwater Monitoring and Sampling, Fourth Quarter 1993, Former Texaco

Station, 2200 East 12th Street, Oakland, California.

## Ms. Petryna:

At the request of Texaco Environmental Services (TES), RESNA Industries Inc. (RESNA) has prepared this letter report which summarizes the results of quarterly groundwater monitoring at the former Texaco Service Station located at 2200 East 12th Street in Oakland, California (Plate 1, Site Vicinity Map) for the fourth quarter 1993 (October through December 1993). On November 4 and 5, 1993, quarterly groundwater monitoring and sampling was conducted to evaluate groundwater elevations, gradient and flow direction, the presence and thickness of any petroleum hydrocarbon sheen or floating product, and the distribution of dissolved hydrocarbons in 8 monitoring wells (MW-9A, MW-9B, MW-9C, MW-9D, MW-9F, MW-9G, MW-9H, and MW-9I) associated with this site. RESNA's groundwater sampling protocol and well purge data sheets are in Appendix A.

## **GROUNDWATER MONITORING**

Relative to groundwater elevations reported last quarter (August 26, 1993), elevations at the site decreased an average of 0.07 foot in wells MW-9A, MW-9C, MW-9D, MW-9F, MW-9G, MW-9H, and MW-9I, and increased 0.05 foot in well MW-9B. The Groundwater Gradient Map (Plate 2) shows the groundwater beneath the site to be flowing towards the northwest with a hydraulic gradient of approximately 0.02. Neither floating product nor hydrocarbon sheen was observed in the wells. Historical and recent monitoring data are summarized in Table 1, Cumulative Groundwater Monitoring Data.



January 4, 1994 62079.01

### GROUNDWATER SAMPLING

Groundwater samples were submitted to Mobile Chem Laboratories (California Hazardous Materials Testing Laboratory Certification No. 1223) in Martinez, California under chain of custody protocol. The samples were analyzed for the gasoline constituents benzene, toluene, ethylbenzene, and total xylenes, and total petroleum hydrocarbons as gasoline (TPHg) using modified Environmental Protection Agency Methods 5030 and TPH LUFT with Method 602. The Laboratory Analysis Reports and Chain of Custody Documentation are included in Appendix B.

### GROUNDWATER ANALYTICAL RESULTS

Concentrations of TPHg in groundwater samples collected were less than the method detection limit [MDL]) of 50 parts per billion (ppb) in all wells sampled except in MW-9B (98 ppb). Dissolved benzene concentrations in groundwater samples collected were less than 0.5 ppb (below the MDL) in all wells sampled except in MW (13 ppb). Historical and recent analytical data are summarized in Table 2, Cumulative Results of Laboratory Analyses of Groundwater Samples.

#### PURGE WATER RECYCLING

On November 12, 1993, approximately 135 gallons of purge water generated during purging and sampling of the eight monitoring wells were transported to state and transported in Redwood City, California for recycling.

If you have any questions or comments regarding this report, please call (408) 264-7723.

Sincerely, RESNA Industries Inc.

Koben a adar Robin A. Adair

Geologic Technician

GEOLOGIS JAMES LEWIS

NELSON

No. 1463

公

CFRTIFIED ENGINEERING OF CALIFORNIA GEOLOGIST

James L. Nelson ☆ Certified Engineering

Geologist No. 1463



January 4, 1994 62079.01

Enclosures:

Plate 1:

Site Vicinity Map

Plate 2:

Groundwater Gradient Map

Plate 3:

TPHg/Benzene Concentration in Groundwater

Table 1:

Cumulative Groundwater Monitoring Data

Table 2:

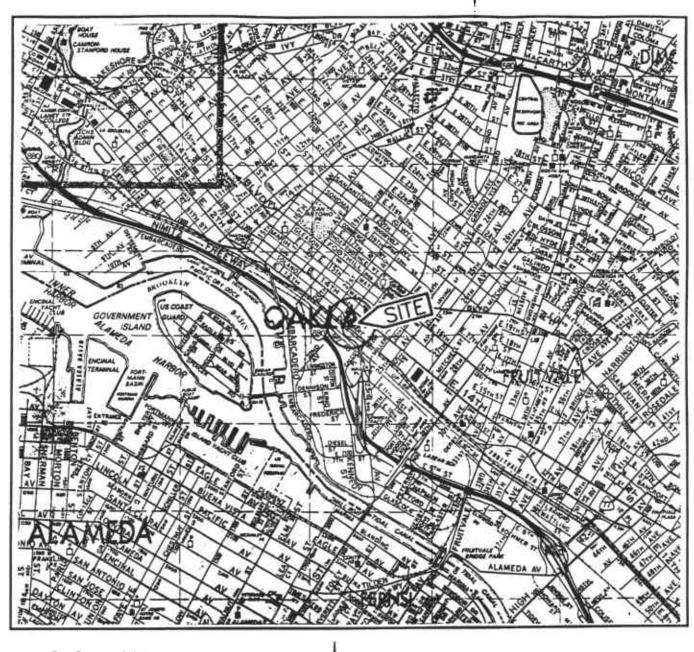
Cumulative Results of Laboratory Analyses of Groundwater

Samples

Appendix A, Groundwater Sampling Protocol and Well Purge Data Sheets

Appendix B, Laboratory Analysis Reports and Chain of Custody

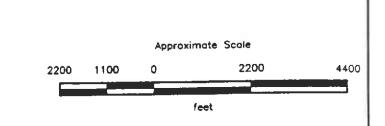
Documentation



Base: The Thomas Guide Alameda County Oakland, California.

LEGEND

Site Location



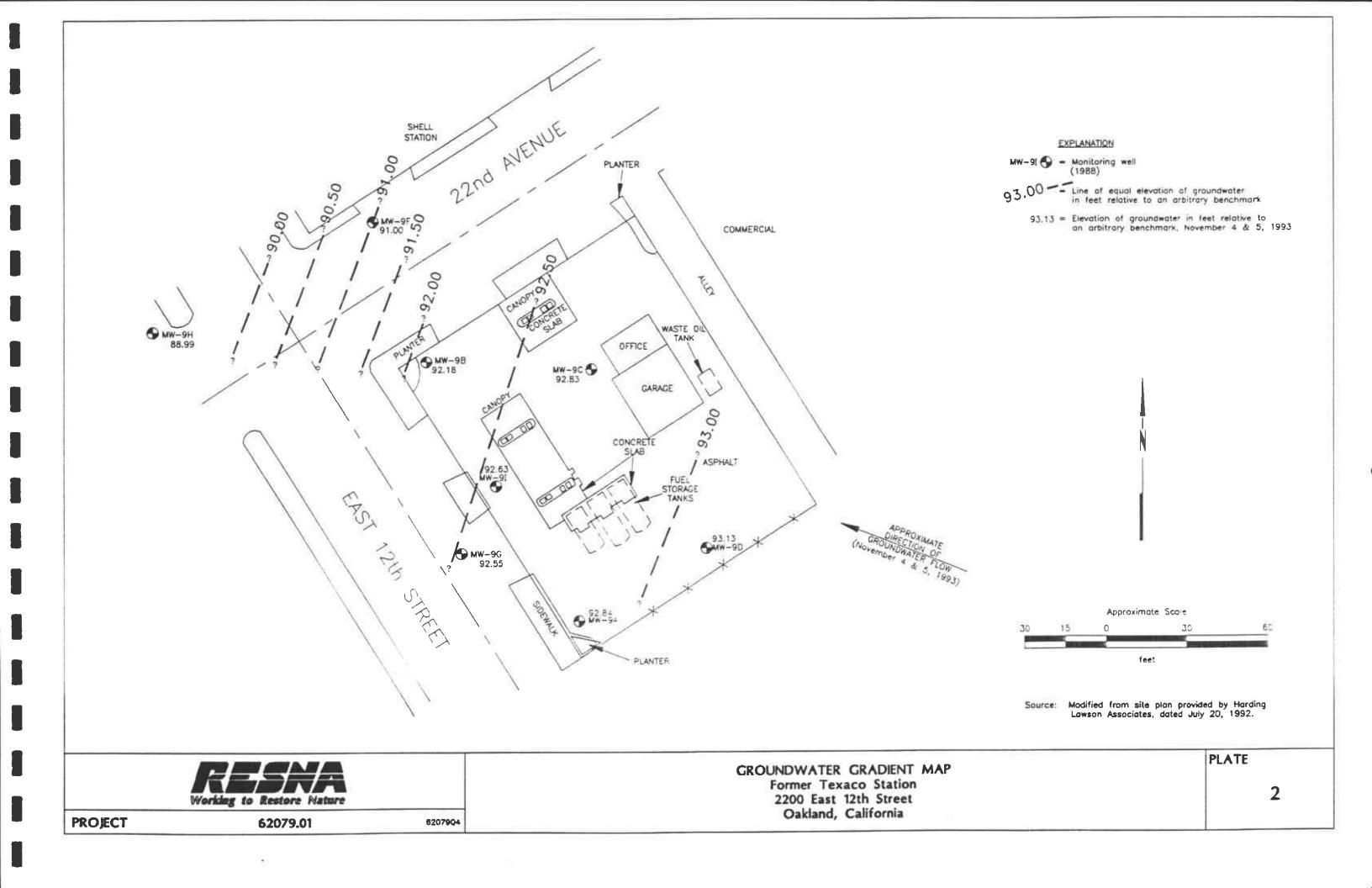
Working to Restore Nature

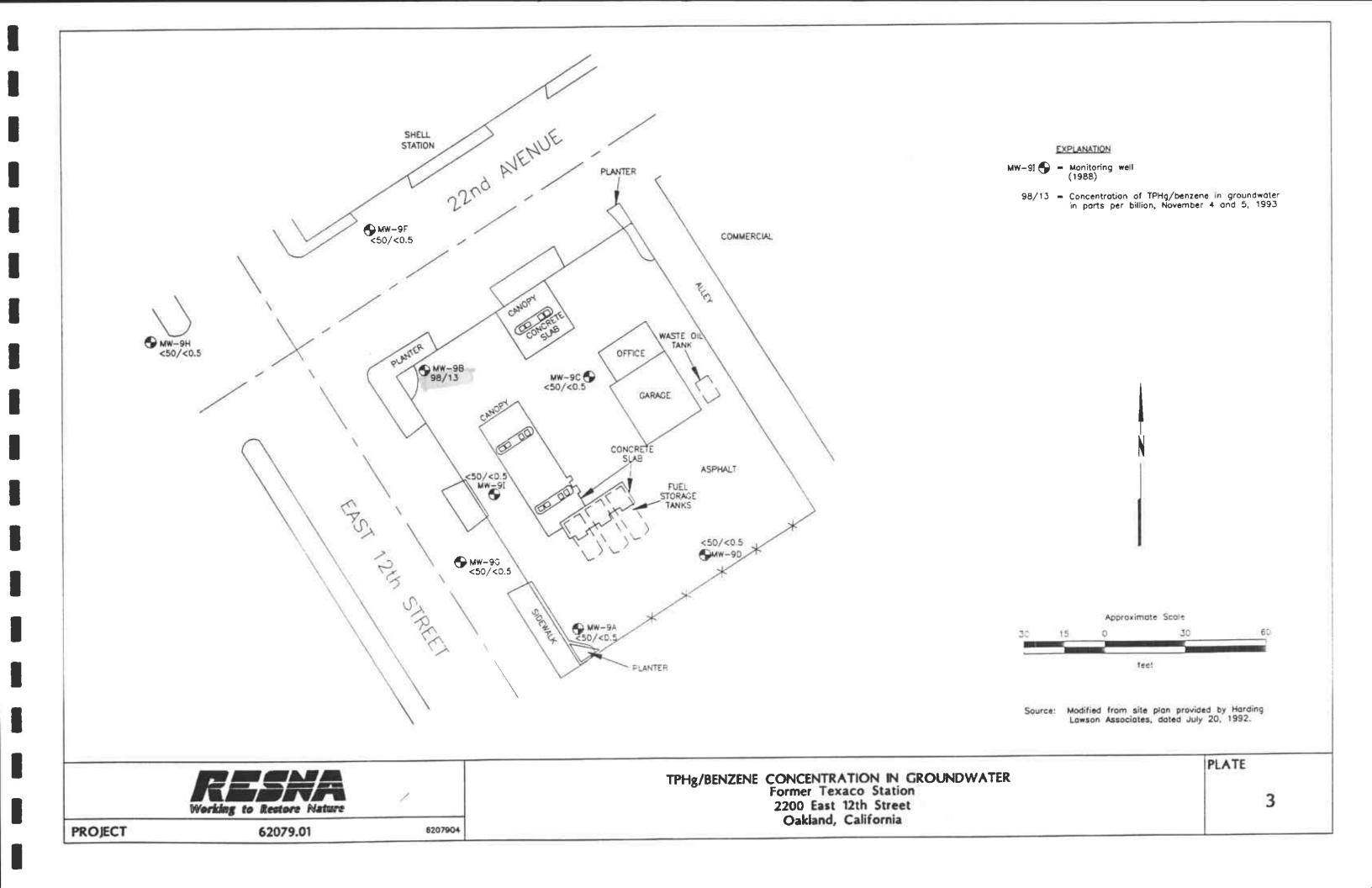
PROJECT

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SITE VICINITY MAP Former Texaco Station 2200 East 12th Street Oakland, California PLATE

1







January 4, 1994 62079.01

## TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA

Former Texaco Station 2200 East 12th Street Oakland, California (Page 1 of 4)

<u>Well</u>	Date	Wellhead Elevation*	Depth to Water	Groundwater Elevation*	
MW-9A					
HLA	10/12/89	100.07	7.25	92.82	
	09/20/90		NA	NA	
	10/19/90		7.23	92.84	
	01/11/91		6.96	93.11	
	04/30/91		6.74	93.33	
	07/29/91		7.22	92.85	
	10/25/91		7.49	92.58	
	02/05/92		6.93	93.14	
	05/05/92		6.95	93.12	
RESNA	09/14/92		7.65	92.42	
	11/16/92		7.35	92.72	
	02/03/93		7.85	92.22	
	05/18/93		6.95	93.12	
	08/26/93		7.14	92.93	
	11/04/93		7.23	92.84	
MW-9B					
HLA	10/12/89	98.41	6.14	92.27	
	09/20/90		6.28	92.13	
	10/19/90		6.21	92.20	
	01/11/91		6.21	92.20	
	04/30/91		5.74	92.67	
	07/29/91		6.23	92.18	
	10/25/91		6.42	91.99	
	02/05/92		5.95	92.46	
	05/05/92		5.92	92.49	
RESNA	09/14/92		6.60	91.81	
	11/16/92		6.35	92.06	
	02/03/93		6.50	91. <b>91</b>	
	05/18/93		6.42	91. <del>9</del> 9	
	08/26/93		6.28	92.13	
	11/04/93		6.23	92.18	
<u>MW-9C</u>	22,01,70				
HLA	10/12/89	99.73	6.99	92.74	
	09/20/90	77 <u>-</u>	NA	NA	
	10/19/90		6.96	92.77	
	01/11/91		6.60	93.13	
	04/30/91		6.32	93.41	
	07/29/91		6.92	92.81	
	10/25/91		7.13	92.60	
	02/05/92		6.44	93.29	
	05/05/92		6.50	93.23	
RESNA	09/14/92		7.00	92.73	



January 4, 1994 62079.01

## TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA

Former Texaco Station 2200 East 12th Street Oakland, California (Page 2 of 4)

<u>Well</u>	Date	Wellhead Elevation*	Depth to Water	Groundwater Elevation*	
MW-9C Cont.					
	11/16/92		6.72	93.01	
	02/03/93		5.75	93.98	
	05/18/93		6.72	93.01	
	08/26/93		6.84	92.89	
	11/04/93		6.90	92.83	
MW-9D	, ,				
HLA	10/12/89	101.46	8.40	93.06	
	09/20/90		8.47	92.99	
	10/19/90		8.43	93.03	
	01/11/91		7.97	93.49	•***
	04/30/91			Well Inaccessible	
	07/29/91		8.35	93.11	
	10/25/91		8.54	92.92	
	02/05/92		7.78	93.68	
	05/05/92		7.90	93.56	
RESNA	09/14/92		8.45	93.01	
	11/16/92		8.10	93.36	
	02/03/93		7.07	94.39	
	05/18/93		7.85	93.61	
	08/26/93		8.30	93.16	
	11/04/93		8.33	93.13	
MW-9E	11,01,10				
HLA	10/12/89	98.41	5.70	92.71	
11141	09/20/90	70172	5.84	92.57	
	10/19/90		5.78	92.63	
	11/02/90			Well Abandoned	
MW-9F	11/02/70				
<u>MW-9F</u> HLA	10/12/89	96.96	6.07	90.89	
IIL	09/20/90	70.70	5.97	90.99	
	10/19/90		5.94	91.02	
	01/11/91		5.72	91.24	
	04/30/91		5.74	91.22	
	07/29/91		6.02	90.94	
	10/25/91		6.11	90.85	
	02/05/92		5.81	91.15	
	05/05/92		5.86	91.10	
RESNA	09/14/92		5.00	Not Measured	
KESIVA	11/16/92		5.82	91.14	
	02/03/93		5.55	91.41	
	05/18/93		5.86	91.10	
	08/26/93		5.86	91.10	
	11/05/93		5.96	91.00	
	11/05/93		3.70	71.00	



January 4, 1994 62079.01

## TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA

Former Texaco Station 2200 East 12th Street Oakland, California (Page 3 of 4)

<u>Well</u>	Date	Wellhead Elevation*	Depth to Water	Groundwater Elevation*	
MW-9G					
HLA	10/12/89	98.51	6.01	92.50	
	09/20/90		6.03	92.48	
	10/19/90		5.92	92.59	
	01/11/91		5.72	9 <b>2.79</b>	
	04/30/91		5.74	93.04	
	07/29/91		5.97	92.54	
	10/25/91		6.16	92.35	
	02/05/92		5.59	92.92	
	05/05/92		5.60	92.91	
RESNA	09/14/92		5.00	Not Measured	
4×4×31.1/4	11/16/92		5.78	92.73	
	02/03/93		5.05	93.46	
			5.62	92.89	
	05/18/93		5.86	92.65	
	08/26/93		5.96	92.55	
LOW OUT	11/05/93		3.90	92.33	
MW-9H	40 /40 /00	07.11	0.25	88.79	
HLA	10/12/89	97.14	8.35	88.89	
	09/20/90		8.25		
	10/19/90		8.17	88.97	
	01/11/91		7.55	89.59	
	04/30/91		8.02	89.12	
	07/29/91		8.22	88.92	
	10/25/91		8.25	88.89	
	02/05/92		7.70	89.44	
	05/05/92		8.12	89.02	
RESNA	09/14/92			Not Measured	
	11/16/92			Not Measured	
	02/03/93		7.72	89.42	
	05/18/93		8.12	89.02	
	08/26/93		8.14	89.00	
	11/05/93		8.15	88.99	
MW-9 <u>I</u>	, ,				
HLA	11/15/90	98.66	6.01	92.65	
	01/11/91		5.80	92.86	
	04/30/91		5.45	93.21	
	07/29/91		6.07	92.59	
	10/25/91		6.23	92.43	
	02/05/92		5.56	93.10	
	05/05/92		5.60	93.06	
RESNA	09/14/92		6.12	92.54	
ICLANIA T	11/16/92		5.82	92.84	



January 4, 1994 62079.01

## TABLE 1 CUMULATIVE GROUNDWATER MONITORING DATA

Former Texaco Station 2200 East 12th Street Oakland, California (Page 4 of 4)

<u>Well</u>	Date	Wellhead Elevation*	Depth to Water	Groundwater Elevation*
MW-9I Cont.				
	02/03/93		4.92	93.74
	05/18/93		5.60	93.06
	08/26/93		5.91	92.75
	11/04/93		6.03	92.63

Measurements in feet.

Elevation relative to temporary benchmark with an arbitrary elevation of 100.0 feet.

HLA: Monitoring by Harding Lawson Associates
RESNA: RESNA Industries Inc. began monitoring

RESNA assumes all wells are screened in the same hydrostratigraphic unit as identified by previous consultant.



January 4, 1994 62079.01

#### TABLE 2 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES

Former Texaco Station 2200 East 12th Street Oakland, California (Page 1 of 4)

<u>Well</u>	Date	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPHg
√W-9A						
HLA	06/13/88	< 0.5	< 1.0	< 2.0	<1.0	NA
	10/24/88	< 0.5	<1.0	< 2.0	<1.0	NA
	10/13/89	< 0.5	< 0.5	< 0.5	<3.0	NA
	10/19/90	< 0.5	< 0.5	< 0.5	< 0.5	<50
	01/11/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
	04/30/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
	07/29/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
	10/25/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
	02/05/92	1.1	1.8	0.6	1.3	< 50
	05/05/92	< 0.5	< 0.5	< 0.5	< 0.5	< 50
ESNA	09/14/92	< 0.5	< 0.5	< 0.5	< 0.5	<50
	11/16/92	1.1	< 0.5	< 0.5	< 0.5	< 50
	02/03/93	17	19	1.6	20	140
	05/18/93	0.8	< 0.5	1.3	7.0	<50
	08/26/93	< 0.5	< 0.5	< 0.5	< 0.5	<50
	11/04/93	< 0.5	< 0.5	< 0.5	< 0.5	< 50
∕(W-9B						
ILA	06/13/88	350	7.8	66	160	NA
	10/24/88	84	< 1.0	3.1	3.2	NA
	10/13/89	4.1	< 0.5	< 0.5	<3.0	NA
	10/19/90	27	< 0.5	2.3	< 0.5	62
	01/11/91	4.3	< 0.5	1.1	1.0	100
	04/30/91	68	1.0	3.9	< 0.5	170
	07/29/91	1.6	< 0.5	< 0.5	< 0.5	100
	10/25/91	1.2	< 0.5	< 0.5	< 0.5	<50
	02/05/92	14	< 0.5	2.9	2.5	60
	05/05/92	180	2.4	8.4	2.2	620
RESNA	09/14/92	9.6	< 0.5	< 0.5	< 0.5	110
	11/16/92	33	< 0.5	4.2	1.4	200
	02/03/93	320	13	35	110	12000
	05/18/93	1.1	< 0.5	2.6	5.9	180
	08/26/93	36	< 0.5	3.0	1.7	180
	11/04/93	13	< 0.5	1.4	< 0.5	98
4W-9C	11,01,22					
HLA	06/13/88	< 0.5	< 1.0	< 2.0	< 1.0	NA
ı	10/28/88	< 0.5	<1.0	< 2.0	<1.0	NA
	10/13/89	< 0.5	< 0.5	< 0.5	<3.0	NA
	10/19/90	<0.5	< 0.5	< 0.5	< 0.5	<50
	01/11/91	< 0.5	< 0.5	< 0.5	< 0.5	< 50
	04/30/91	100	1.6	< 0.5	< 0.5	240



January 4, 1994 62079.01

#### TABLE 2 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES

Former Texaco Station 2200 East 12th Street Oakland, California (Page 2 of 4)

Well	<b>.</b>	_	<b></b>	Ethyl-	Total	TDII -
	Date	Benzene	Toluene	benzene 	Xylenes	трнд
<u>MW-9C</u> (co	ont.)					
	07/29/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
	10/25/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
	02/05/92	< 0.5	< 0.5	< 0.5	< 0.5	< 50
	05/05/92	< 0.5	< 0.5	< 0.5	< 0.5	<50
RESNA	09/14/92	< 0.5	< 0.5	< 0.5	< 0.5	< 50
	11/16/92	< 0.5	< 0.5	< 0.5	< 0.5	< 50
	02/03/93	< 0.5	< 0.5	< 0.5	< 0.5	< 50
	05/18/93	< 0.5	< 0.5	< 0.5	< 0.5	< 50
	08/26/93	< 0.5	< 0.5	< 0.5	< 0.5	< 50
	11/04/93	< 0.5	< 0.5	< 0.5	< 0.5	<50
MW-9D						
HLA	10/24/88	< 0.5	<1.0	< 2.0	<1.0	NA
	10/13/89	< 0.5	< 0.5	< 0.5	<3.0	NA
	10/19/90	< 0.5	< 0.5	< 0.5	< 0.5	<50
	01/11/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
	04/30/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
	07/29/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
	10/25/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
	02/05/92	< 0.5	< 0.5	< 0.5	< 0.5	< 50
	05/05/92	< 0.5	< 0.5	< 0.5	< 0.5	< 50
RESNA	09/14/92	< 0.5	< 0.5	< 0.5	< 0.5	< 50
	11/16/92	< 0.5	< 0.5	< 0.5	< 0.5	<50
	02/03/93	< 0.5	< 0.5	< 0.5	< 0.5	<50
	05/18/93	< 0.5	< 0.5	< 0.5	< 0.5	<50
	08/26/93	< 0.5	< 0.5	< 0.5	< 0.5	< 50
	11/04/93	< 0.5	< 0.5	< 0.5	< 0.5	<50
MW-9E						
HLA	10/24/88	1.3	< 1.0	< 2.0	<1.0	NA
	10/13/89	15	< 0.5	2.1	<3.0	NA
	10/19/90	4.0	< 0.5	0.9	< 0.5	< 50
	11/02/90	110		Abandoned		
MW-9F	11/02/30			10411401144		
HLA	12/06/88	< 0.5	<1.0	<2.0	< 1.0	NA
HEA	10/13/89	<0.5	<0.5	< 0.5	<3.0	NA
	10/19/90	<0.5	< 0.5	< 0.5	< 0.5	<50
	01/11/91	<0.5	< 0.5	< 0.5	< 0.5	<50
	04/30/91	< 0.5	<0.5	< 0.5	< 0.5	<50
	04/30/91	< 0.5	< 0.5	< 0.5	<0.5	<50
	10/25/91	1.1	< 0.5	< 0.5	<0.5	<50
				< 0.5	< 0.5	<50
	02/05/92	< 0.5	< 0.5	< 0.5	< 0.3	₹30



January 4, 1994 62079.01

#### TABLE 2 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES

Former Texaco Station 2200 East 12th Street Oakland, California (Page 3 of 4)

Date	Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPHg
		***		<u> </u>	
	Z0.6	<0.5	×0.5	~0.4	<50
	<0.3			<b>C0.3</b>	< 30
	< 0.5		-	<0.5	<50
	_				<50
					<50
					<50
11/05/93	< 0.5	< 0.5	< 0.5	< 0.5	<50
12/06/88	0.8	< 1.0	< 2.0	<1.0	NA
10/13/89	< 0.5	< 0.5	< 0.5	<3.0	NA
10/19/90	< 0.5	< 0.5	< 0.5	< 0.5	<50
01/11/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
04/30/91	< 0.5	< 0.5	< 0.5	< 0.5	< 50
07/29/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
10/25/91	< 0.5	< 0.5	< 0.5	< 0.5	< 50
02/05/92	< 0.5	< 0.5	< 0.5	< 0.5	< 50
05/05/92	1.5	3.8	1.0	4.7	<50
09/14/92		Not Sa	ampled		
11/16/92	< 0.5	< 0.5	< 0.5		<50
02/03/93		< 0.5	< 0.5		64
05/19/93		< 0.5			< 50
08/26/93		< 0.5			< 50
11/05/93	< 0.5	< 0.5	< 0.5	< 0.5	<50
12/06/88		<1.0			NA
					NA
10/19/90					<50
					<50
					<50
					<50
					<50
					<50 <50
	< 0.5			< 0.3	< 30
			•		
	~ A &		•	Z0.5	280
					<50
					<50 <50
					<50
	nt.)  05/05/92  09/14/92  11/16/92  02/03/93  05/19/93  08/26/93  11/05/93  12/06/88  10/13/89  10/19/90  01/11/91  04/30/91  07/29/91  10/25/91  02/05/92  05/05/92  09/14/92  11/16/92  02/03/93  05/19/93  08/26/93  11/05/93	05/05/92	nt.)  05/05/92	05/05/92	05/05/92



January 4, 1994 62079.01

### TABLE 2 CUMULATIVE RESULTS OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES

Former Texaco Station 2200 East 12th Street Oakland, California (Page 4 of 4)

<u>Well</u>	Date	Benzene	Toluene	Ethyl- benzene	Total Xylenes	ТРНg
<u></u> MW-9I						
HLA	11/15/90	4.0	1.2	1.1	2.2	55
	01/11/91	6.1	< 0.5	< 0.5	< 0.5	<50
	04/30/91	100	3.5	4.2	4.4	460
	07/29/91	< 0.5	< 0.5	< 0.5	< 0.5	150
	10/25/91	< 0.5	< 0.5	< 0.5	< 0.5	<50
	02/05/92	< 0.5	<0.5	< 0.5	< 0.5	<50
	05/05/92	0.9	< 0.5	< 0.5	0.7	<50
RESNA	09/14/92	< 0.5	< 0.5	< 0.5	< 0.5	<50
	11/16/92	< 0_5	< 0.5	< 0.5	< 0.5	<50
	02/02/93	46	1.1	2.3	2.1	240
	05/18/93	< 0.5	< 0.5	< 0.5	<0.5	79
	08/26/93	< 0.5	< 0.5	< 0.5	< 0.5	< 50
	11/04/93	<0.5	< 0.5	< 0.5	< 0.5	<50
MCLs		1.0		680	1,750	
DWAL			100			_
Results in	parts per billion (j	opb).				
	TPHg	• :	Total petrole	um hydrocarbons ar	alyzed as gasoline.	
	NA	:	Not Analyzed			
	<	:	This symbol i	neans "less than"		
	MCLs	:	Adopted Max	dmum Contaminant	Levels in Drinking	Water, DHS (October 1990)
	DWAL.	:			Action Levels, DHS	
	HLA	:		Harding Lawson As		•
	RESNA	•		stries Inc. began sac		

## APPENDIX A

## GROUNDWATER SAMPLING PROTOCOL AND WELL PURGE DATA SHEETS



January 4, 1994 62079.01

## GROUNDWATER SAMPLING PROTOCOL

The static water level and floating product level, if present, in each well that contained water was measured with an ORS Interphase Probe Model No. 1068018, or Solonist Water Level Indicator; these instruments are accurate to the nearest 0.01 foot. These groundwater depths were subtracted from wellhead elevations, including corrections for product thickness, when necessary, for gradient evaluation by multiplying product thickness (PT) by a correction factor 0.8 and subtracting from the depth to water (DTW) (Adjusted DTW = DTW - [PT x 0.8]).

Water samples collected for subjective evaluation were collected by gently lowering approximately half the length of a new disposable or Teflon® bailer past the air-water interface (if possible) and collecting a sample from near the surface of the water in the well. The samples were checked for measurable floating hydrocarbon product. All Teflon® bailers are triple washed with Alconox® and triple rinsed with distilled water prior to use.

Before water samples were collected from the groundwater monitoring wells, the wells were purged until stabilization of the temperature, pH, and conductivity were obtained. Approximately three to four well casing volumes were purged before those characteristics stabilized. The quantity of water purged from each well was calculated as follows:

1 well casing volume =  $\pi r^2 h(7.48)$  where:

r = radius of the well casing in feet.
h = column of water in the well in feet
(depth to bottom - depth to water).
7.48 = conversion constant from cubic feet to
gallons

Gallons of water purged/gallons in 1 well casing volume = well casing volumes removed.

After purging, each well was allowed to recharge to at least 80% of the initial water level. Water samples were collected with a new disposable or Teflon® bailer, and carefully poured into 40-milliliter (ml) glass vials, which were filled so as to produce a positive meniscus. Each vial was preserved with hydrochloric acid, sealed with a cap containing a Teflon® septum, and subsequently examined for air bubbles to avoid headspace which would allow volatilization to occur. The samples were promptly transported in iced storage in a thermally-insulated ice chest, accompanied by a Chain of Custody Record, to a California-certified laboratory.



Project Name: <u>Texaco - 12th Street</u>

Job No. 62079.01

Date: November 04, 1993

Page <u>1</u> of <u>1</u>

Well No. MW-9A

Time Started 11:20am

TIME (hr)	GALLONS (CUm.)	TEMP.	рĦ	CONDUCT.
11:20	Start purg	ing MW-9A		
11:20	0	75.2	6.92	1440
11:25	2.0	74.6	6.90	1300
11:30	3.5	74.4	6.89	1300
11:35	5.5	71.3	6.90	1290
11:40	7.5	71.8	6.87	1300
11:41	Stop purg	ing MW-9A		
otes:	Daniel 1		eter (inches)	: 18.65
		to water - In to Water - fi		

% recovery : 95.0%

Time Sampled: 11:55

Gallons per Well Casing Volume : 1.86

Gallons Purged: 7.5

Well Casing Volume Purged : 4.03

Approximate Pumping Rate (gpm) : 0.5



Project Name: <u>Texaco - 12th Street</u>

Job No. 62079.01

Date: November 04, 1993

Page  $\underline{1}$  of  $\underline{1}$ 

Well No. MW-9B

Time Started 1:35pm

TIME (hr)	GALLONS (cum.)	TEMP. (°F)	рН	CONDUCT. (micromho)
1:35	Start purg	ing MW-9B		
1:35	0	68.9	6.86	1440
1:40	2.0	70.7	6.88	1470
1:45	3.75	71.8	6.84	1510
1:50	5.5	69.3	6.94	1470
1:55	7.5	70.5	6.91	1490
1:56	Stop purg	ing MW-9B		
Notes:	Depth Gallo	Depth to E to Water - in to Water - fi ns per Well C	inal (feet) % recovery Time Sampled Casing Volume illons Purged	: 17.65 : 6.23 : 6.40 : 98.5% : 2:45 : 1.86 : 7.5
		ximate Pumpin		



Project Name: <u>Texaco - 12th Street</u>

Job No. 62079.01

Date: November 04, 1993

Page <u>1</u> of <u>1</u>

Well No. MW-9C

Time Started 12:30pm

GALLONS (cum.)	TEMP.	Нд	CONDUCT.
Start purg	ing MW-9C		.,
0	70.8	6.98	1480
1.5	72.4	6.96	1480
3.0	72.8	6.90	1470
4.5	72.9	7.04	1490
6.0	73.8	6.93	1460
Stop purg	ing MW-9C		
	(cum.)  Start purg  0  1.5  3.0  4.5  6.0	(cum.) (°F)  Start purging MW-9C  0 70.8  1.5 72.4  3.0 72.8  4.5 72.9  6.0 73.8  Stop purging MW-9C  Well Diam	(cum.)     (°F)       Start purging MW-9C       0     70.8       1.5     72.4       3.0     72.8       6.90       4.5     72.9       73.8     6.93

Depth to Water - final (feet):

99%

% recovery :
Time Sampled : 2:15

Gallons per Well Casing Volume : 1.51

Gallons Purged: 6.0

Well Casing Volume Purged : 3.97

Approximate Pumping Rate (gpm) :



Project Name: <u>Texaco - 12th Street</u>

Job No. 62079.01

3.97 1

Date: November 04, 1993

Page <u>1</u> of <u>1</u>

Well No. MW-9D

Time Started 1:20pm

TIME (hr)	GALLONS (cum.)	TEMP.	рĦ	CONDUCT.
1:20	Start purg	ing MW-9D		
1:20	0	68.6	6.71	1210
1:25	4.5	69.5	6.79	1290
1:30	8.5	69.8	6.95	1450
1:35	13.0	71.3	6.99	1430
1:40	17.0	71.1	6.87	1470
1:41	Stop purg	ing MW-9D		
otes:			nal (feet)	14.89 : 8.33 : 8.79
	Gallo	ns per Well (	Time Sample	

Well Casing Volume Purged : Approximate Pumping Rate (gpm) :



Project Name: <u>Texaco - 12th Street</u>

Job No. 62079.01

Date: November 05, 1993

Page <u>1</u> of <u>1</u>

Well No. MW-9F

Time Started 11:05am

TIME (hr)	GALLONS (cum.)	TEMP.	рн	CONDUCT. (micrombo
11:05	Start purg	ing MW-9F		
11:05	0	74.2	7.04	1600
11:10	5.0	74.2	7.05	1590
11:15	10.0	74.3	7.03	1590
11:20	15.0	73.0	7.01	1570
11:25	20.0	73.5	7.00	1590
11.26	Stop purg	ing MW-9F		
otes:		Depth to E	eter (inches Bottom (feet	) : 13.77
		to Water - in to Water - fi		

epth to Water - final (feet): 6.82

% recovery: 89% Time Sampled: 11:30

Gallons per Well Casing Volume: 5.1

Gallons Purged: 20.8

Well Casing Volume Purged: 3.92

Approximate Pumping Rate (gpm) : :



Project Name: Texaco - 12th Street

Job No. <u>62079.01</u>

Date: November 05, 1993

Page <u>1</u> of <u>1</u>

Well No. MW-9G

Time Started 10:15am

TIME (hr)	GALLONS (cum.)	TEMP. (°F)	рĦ	CONDUCT. (micromho)
10:15	Start purg	ing MW-9G		
10:15	o	72.2	6.97	1450
10:20	5.0	72.3	6.87	1450
10:25	10.0	72.0	6.85	1440
10:30	15.0	72.7	6.90	1450
10:35	20.0	72.4	6.88	1450
10:35	Stop purg	ing MW-9G		
Notes:	Depth Gallo	Depth to E to Water - in to Water - fi ns per Well O	nal (feet % recovery Time Sample Casing Volume Allons Purge Volume Purge	): 13.91 ): 5.96 ): 6.07 y: 98.6% d: 10:40 e: 5.19 d: 20.5 d: 3.94



Project Name: <u>Texaco - 12th Street</u>

Job No. 62079.01

2.13

Date: November 05, 1993

Page 1 of 1

Well No. MW-9H

Time Started 11:45am

TIME (hr)	GALLONS (cum.)	TEMP.	рн	CONDUCT. (micromho)
11:45	Start purg	ing MW-9I		
11:45	o	70.2	7.15	1360
11:50	4	70.9	7.00	1490
11:55	6	71.2	7.04	1480
12:05	8.5	71.0	7.03	1550
	Stop purg	ing MW-9H		
iotes:	Depth		eter (inches) ottom (feet) uitial (feet)	: 14.26

Well Casing Volume Purged : Approximate Pumping Rate (gpm) :



Project Name: <u>Texaco - 12th Street</u> Job No. 62079.01

Date: November 04, 1993 Page <u>1</u> of <u>1</u>

Time Started 12:15pm Well No. MW-9I

TIME (hr)	GALLONS (cum.)	TEMP.	рĦ	CONDUCT. (micromho
12:15	Start purg	ing MW-9I		
12:15	0	71.4	69.8	1660
12:20	5.0	73.1	7.01	1690
12:25	10.5	73.3	7.06	1670
1:10	15.5	72.3	7.06	1610
1:15	18.0	72.3	7.11	1560
	Stop purg	ing MW-9I		
tes:	Depth		eter (inches) Sottom (feet)	: 13.95

Depth to Water - final (feet):

% recovery :
Time Sampled : 95%

3:05

Gallons per Well Casing Volume : 5.17

Gallons Purged: 18.0

Well Casing Volume Purged : 3.48

Approximate Pumping Rate (gpm) :

## APPENDIX B

# LABORATORY ANALYSIS REPORTS AND CHAIN OF CUSTODY DOCUMENTATION



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62079.01\1718\012123

RESNA Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry

Project Manager

Date Sampled: 11-04-93 Date Received: 11-08-93

Date Analyzed: 11-12-93

Sample Number

113108

Sample Description

Project # 62079.01 Texaco - Oakland 2200 E. 12th St.

MW-9A

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

Ronald G. Evans Lab Director

SAND Evens



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RESNA Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry Project Manager Date Sampled: 11-04-93 Date Received: 11-08-93

Date Analyzed: 11-12-93

Sample Number

113111

Sample Description

Project # 62079.01 Texaco - Oakland 2200 E. 12th St. MW-9B WATER

## ANALYSIS

Detection Sample Limit Results ppb ppb 98 Total Petroleum Hydrocarbons 50 as Gasoline 0.5 13 Benzene 0.5 <0.5 Toluene 0.5 <0.5 Xylenes 0.5 1.4 Ethylbenzene

QA/QC: Duplicate Deviation is 2.7%

Note:

Analysis was performed using EPA methods 5030 and TPH

LUFT with method 602 used for BTX distinction.

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

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RESNA Industries
3315 Alamden Expressway, #34
San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 11-04-93 Date Received: 11-08-93 Date Analyzed: 11-12-93

Sample Number
----113109

Sample Description
----Project # 62079.01
Texaco - Oakland
2200 E. 12th St.
MW-9C 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.

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

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Ronald G. Evans Lab Director

Jald Dwin &



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RESNA Industries
3315 Alamden Expressway, #34
San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 11-04-93 Date Received: 11-08-93 Date Analyzed: 11-12-93

Sample Number
----113110

Sample Description
-----Project # 62079.01
Texaco - Oakland
2200 E. 12th St.
MW-9C Rinsate WATER

#### ANALYSIS

	Detection Limit	Sample Results	
	<del>-</del> ppb	ppb	
Total Petroleum Hydrocarbons as Gasoline	50	<50	
Benzene	0.5	<0.5	
Toluene	0.5	<0.5	
Xylenes	0.5	1.0	
Ethylbenzene	0.5	<0.5	

Note:

Analysis was performed using EPA methods 5030 and TPH

LUFT with method 602 used for BTX distinction.

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

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RESNA Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry

Project Manager

Date Sampled: 11-04-93 Date Received: 11-08-93

Date Analyzed: 11-12-93

Sample Number

113113

Sample Description

Project # 62079.01 Texaco - Oakland 2200 E. 12th St.

MW-9D

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.

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

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RESNA Industries
3315 Alamden Expressway, #34
San Jose, CA 95118
Attn: Phillip Mayberry
Project Manager

Date Sampled: 11-05-93 Date Received: 11-08-93 Date Analyzed: 11-12-93

Sample Number
----113116

Sample Description
----Project # 62079.01
Texaco - Oakland
2200 E. 12th St.
MW-9F 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.

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

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RESNA Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry

Project Manager

Date Sampled: 11-05-93 Date Received: 11-08-93

Date Analyzed: 11-12-93

Sample Number

113115

Sample Description

Project # 62079.01 Texaco - Oakland 2200 E. 12th St.

WATER MW-9G

### 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.

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

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RESNA Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry

Project Manager

Date Sampled: 11-05-93

Date Received: 11-08-93

Date Analyzed: 11-12-93

Sample Number

113117

Sample Description

Project # 62079.01

Texaco - Oakland 2200 E. 12th St.

MW-9H 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.

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

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RESNA Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry Project Manager Date Sampled: 11-04-93 Date Received: 11-08-93 Date Analyzed: 11-12-93

Sample Number

113112

Sample Description

Project # 62079.01 Texaco - Oakland 2200 E. 12th St. MW-91 WATER

## ANALYSIS

	Detection Limit  ppb	Sample Results	
		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	

QA/QC: Spike Recovery is 106%

Note:

Analysis was performed using EPA methods 5030 and TPH

LUFT with method 602 used for BTX distinction.

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

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RESNA Industries

3315 Alamden Expressway, #34

San Jose, CA 95118 Attn: Phillip Mayberry Project Manager

Date Sampled: 11-04-93 Date Received: 11-08-93

Date Analyzed: 11-12-93

Sample Number

113114

Sample Description

Project # 62079.01 Texaco - Oakland 2200 E. 12th St. Site Blank 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

RESNA

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PROJECT NO. PROJECT NA	ME/SITE	E ANALYSIS REQUE							ESTE	FED P.O. #:										
PROJECT NO.  PROJECT NAME/SITE  3200 E 12th St. Clark land  TUXCECO  SAMPLERS  (SIGN)  (PRINT) MARY RYSDALE					AINERS	TYPE	17 17 18 18 18 18 18 18 18 18 18 18 18 18 18				7/	T/	7/	<i>[]</i>			/			
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	PRES. USED	iCED	NO. CONTAINERS	SAMPLE TYPE	1			3/8								REMARKS
MW-9A	11/4	1155	,		Hel	Y	ケメ	H21	ìχ	$\times$										
MW-9C	11/4	14:19				1	1	1	X								$\rightarrow$	_	_	<u> </u>
MW- 90 Rinsat	e 11/4	14:15							X	X_	$oldsymbol{ol}}}}}}}}}}}}}}}}}}$	<u> </u>							_	
MW-9B	11/4	14:49	_				Ш		X	X	$\perp$							_		
1P WM	11/4	15.05				$\coprod$			X	X	ļ	<b> </b>	Ш			_		_	_	
#INW-9D	1, 4	15/20							ĻX	X	<u> </u>						_	_	_	
Biteblank	1.14	11:50				┨-		1	X	XL	╀	<b> -</b>							-	
MW- 9G	115	·	1			igwdap	$\coprod$		X	XI.	$oldsymbol{\perp}$	<u> </u>						$\dashv$		
MW-9F	11 9								X		↓_	↓		_				_	_	
MW-9H	11 0	2 12:15			d	4	1	2	ĮΧ		$\downarrow$	_			_			_		
			ļ	L		ļ		<u> </u>	┡		1	ļ							$\dashv$	
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RELINQUISHED BY: D	ATE T	IME 135pm	RECEIVED BY:		1		,	ATORY:	1- /e	e Chem					PLEASE SEND RESULTS TO:  RESNIA  Sound Joseph					
			RECE	IVED	BY:				<i>,</i> ,					~ <i>/ (</i>				1	. C . Sel	in Scient
RELINQUISHED BY:	ATE 1	rime .	RECE	IVED	BY:	REQUESTED TURNAROUND TIME:														
RELINQUISHED BY:	ATE AS	6:55	RECE	VED	BY LABO	ORATO	ORY:	P	ECEI	T COND	ICITIO	E C	U W	N N	))  }	>				ANAGER: Macyberry