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LETTER REPORT
QUARTERLY GROUNDWATER MONITORING
Fourth Quarter 1992
at
Former Texaco Station
2225 Telegraph Avenue
Oakland, California

62073.01

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April 20, 1993

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April 20, 1993
0210RROB
62073.01

Mr. Robert Robles
Texaco Environmental Services
10 Universal City Plaza, 7th Floor
Universal City, California 91608

Subject: Quarterly Status Report for the Fourth Quarter 1992 at the Texaco Service Station located at 2225 Telegraph Avenue in Oakland, California.

Mr. Robles:

At the request of Texaco Environmental Services (TES), RESNA Industries Inc. (RESNA) has prepared this letter which summarizes the results of quarterly groundwater monitoring at the former Texaco Service Station located at 2225 Telegraph Avenue in Oakland, California (Plate 1, Site Vicinity Map) for the fourth quarter 1992 (October through December 1992). On November 5, 1992, 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 the five monitoring wells (MW-6B, MW-6F, MW-6G, MW-6H, and MW-6I) sampled at this site. As requested by TES, wells RW-1 and RW-2 were not monitored or sampled this quarter. In addition to the quarterly groundwater sampling, on December 14, 1992, monthly depth-to-water (DTW) measurements were taken. Monitoring well MW-6E was obstructed by a parked car during the November 5 and December 14, 1992 site visits and thus was not sampled or monitored for this quarter. RESNA's groundwater sampling protocol and well purge data sheets are included in Appendix A. Laboratory analyses with chain of custody documentation are included in Appendix B.

why?

WORK PERFORMED

GROUNDWATER MONITORING

Groundwater elevations taken on November 5, 1992, at the site have increased an average of about 1.0 foot from the elevations reported the previous quarter. The groundwater

gradient map shows the groundwater beneath the site to be flowing toward the south-southwest with a hydraulic gradient of approximately 0.006 (Plate 2, Groundwater Gradient Map). Historical and recent monitoring data are summarized in Table 1, Cumulative Groundwater Monitoring Data.

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 (BTEX), and total petroleum hydrocarbons as gasoline (TPHg) using modified Environmental Protection Agency (EPA) Methods 5030/602. The Chain of Custody Record and Laboratory Analysis reports are included in Appendix B.

GROUNDWATER ANALYTICAL RESULTS

Concentrations of TPHg in groundwater samples ranged from less than 50 parts per billion (ppb) to 3,400 ppb (MW-6H). Dissolved benzene concentrations ranged from less than 0.5 ppb to 500 ppb (MW-6H). TPHg and benzene concentrations are shown on Plate 3, TPHg/Benzene Concentrations in Groundwater. Neither floating product nor hydrocarbon sheen was observed in the wells. Historical and recent analytical data are summarized in Table 2, Cumulative Results of Laboratory Analyses of Groundwater Samples. Copies of the laboratory analyses reports and the chain of custody manifest for the groundwater samples are included in Appendix B.

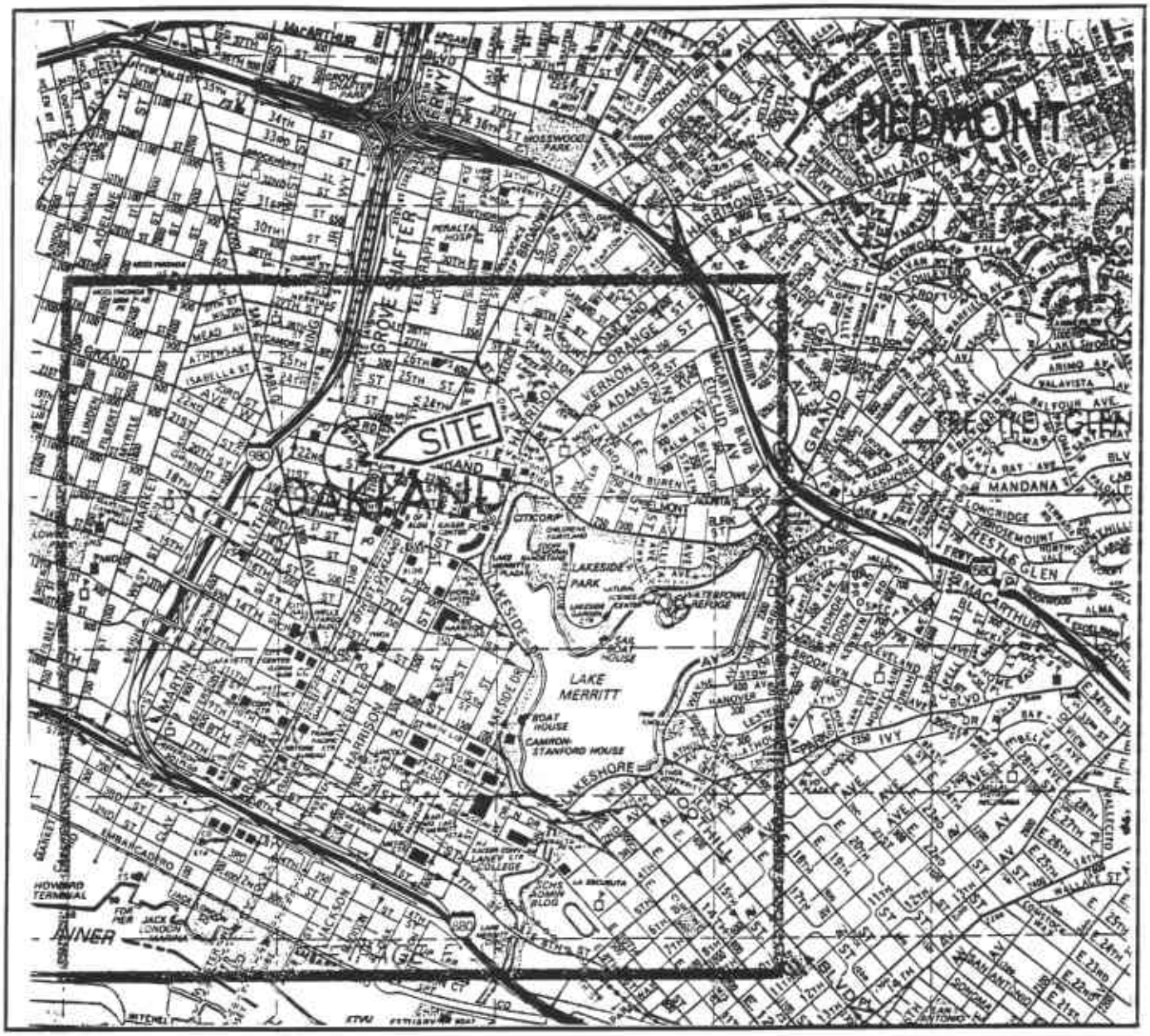
PURGE WATER RECYCLING

On November 16, 1992, approximately 80 gallons of purge water generated during purging and sampling of the monitoring wells was transported to Gibson Environmental in Redwood City, California for recycling.

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

Enclosures:

Plate 1:	Site Vicinity Map
Plate 2:	Groundwater Gradient Map
Plate 3:	TPHg/Benzene Concentrations 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.
1991

N

LEGEND

⊙ = Site Location

Approximate Scale

2200 1100 0 2200 4400

feet

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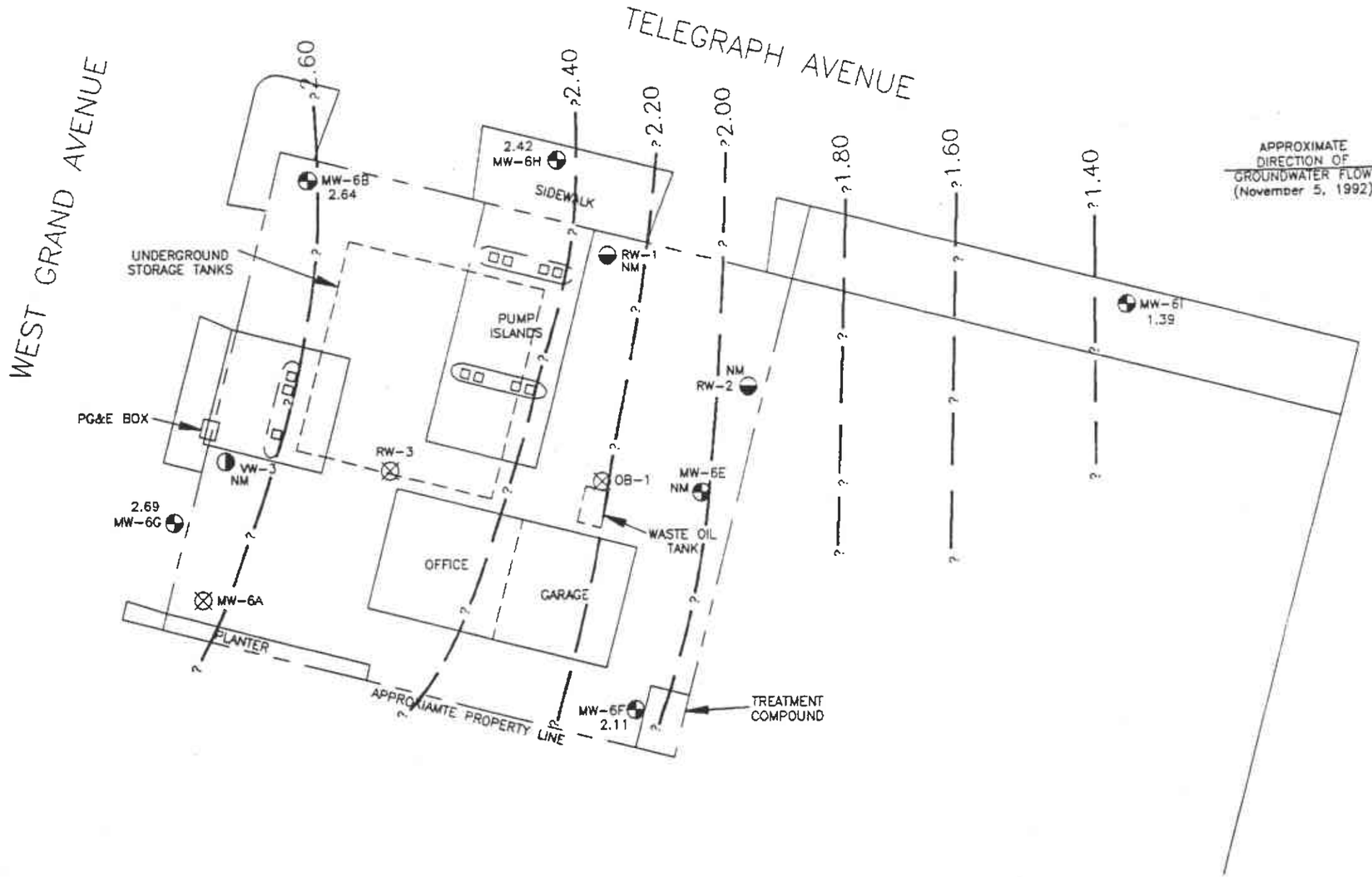
SITE VICINITY MAP
Former Texaco Station
2225 Telegraph Avenue
Oakland, California

PLATE
1



EXPLANATION

- MW-6I = Groundwater monitoring well (Harding Lawson, 1988)
- RW-2 = Groundwater recovery/vapor extraction well (Harding Lawson, 1988 and 1990)
- VW-3 = Vapor extraction well (Harding Lawson, 1988)
- RW-3 = Abandoned well
- 2.60 = Line of equal elevation of groundwater in feet above mean sea level (MSL)
- 2.69 = Elevation of groundwater in feet above MSL, (November 5, 1992)
- NM = Not Monitored

Approximate Scale

30 15 0 30 60

feet

Note:
RW-1 was formerly B-3
RW-2 was formerly MW-6D
RW-3 was formerly MW-6C

Source: Modified from site plan provided by Harding Lawson Associates, dated July 29, 1992.

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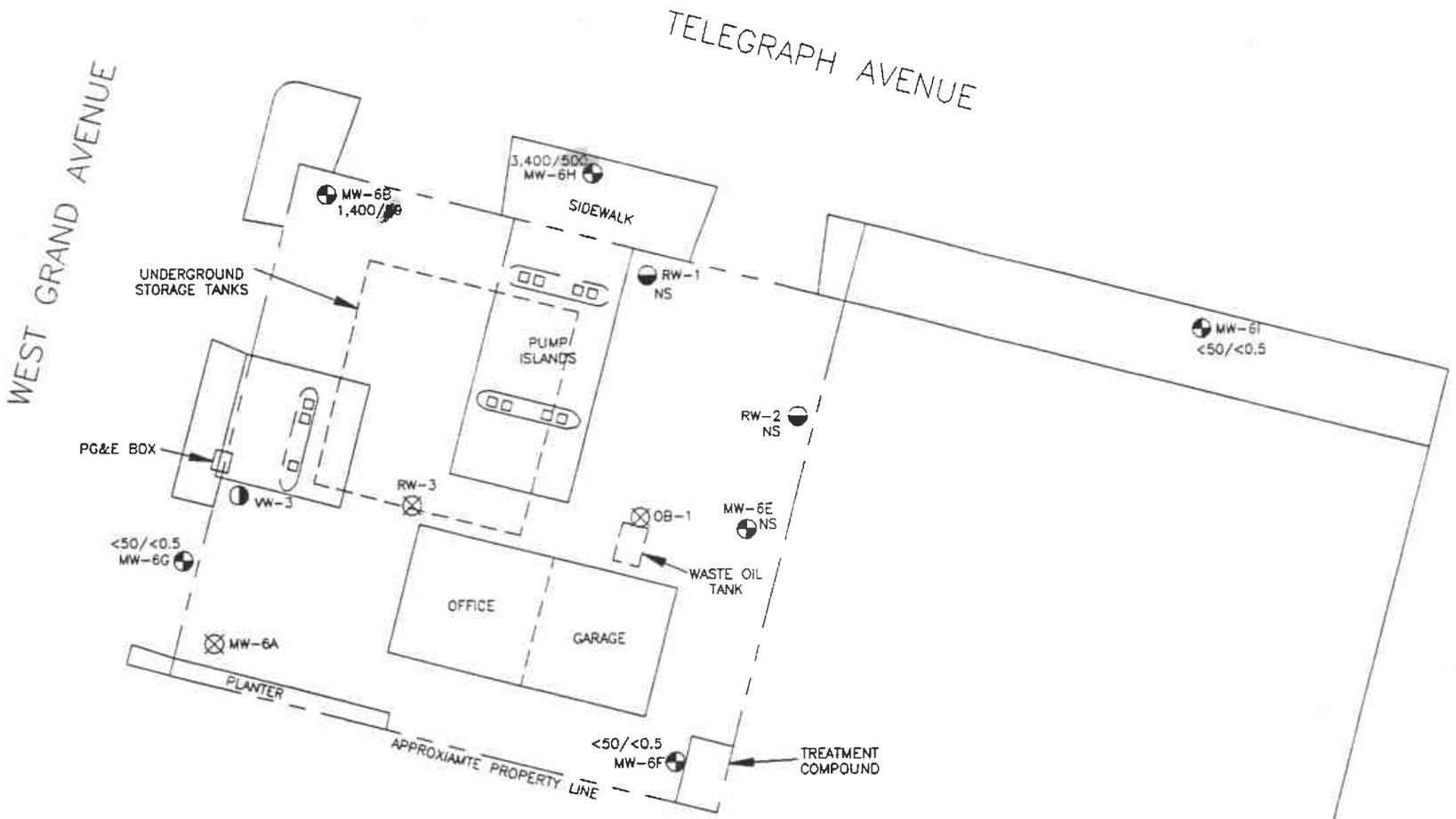
GROUNDWATER GRADIENT MAP
Former Texaco Station
2225 Telegraph Avenue
Oakland, California

PLATE
2



EXPLANATION

MW-6I = Groundwater monitoring well (Harding Lawson, 1988)

RW-2 = Groundwater recovery/vapor extraction well (Harding Lawson, 1986 and 1990)

VW-3 = Vapor extraction well (Harding Lawson, 1988)

3,400/500 = Concentration of TPHg/Benzene in groundwater in parts per billion, November 5, 1992

NS = Not sampled

RW-3 = Abandoned well

Approximate Scale

30 15 0 30 60

feet

Note:
RW-1 was formerly B-3
RW-2 was formerly MW-6D
RW-3 was formerly MW-6C

Source: Modified from site plan provided by Harding Lawson Associates, dated July 29, 1992.

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TPHg/BENZENE CONCENTRATIONS IN GROUNDWATER
Former Texaco Station
2225 Telegraph Avenue
Oakland, California

PLATE 3

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Texaco Service Station
2225 Telegraph Avenue
Oakland, California
(Page 1 of 6)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Floating Product
MW-6A					
HLA	12/15/88	98.99*	13.77	85.22	NA
	10/03/89		13.40	85.59	NA
	05/11/90		12.87	86.12	NA
	10/16/90		13.27	85.72	NA
	12/06/90		13.28	85.71	NA
	01/14/91		Not Monitored		
	02/08/91		12.49	86.50	NA
	04/02/91		Not Monitored		
	05/07/91		11.94	87.05	NA
	05/31/91		Not Accessible		
	06/26/91		12.87	86.12	NA
	08/05/91		13.44	85.55	NA
	08/14/91		13.47	85.52	NA
	09/11/91		13.48	85.51	NA
	10/16/91		13.64	85.35	NA
	12/30/91		Well Abandoned		
MW-6B					
HLA	12/15/88	98.81*	13.01	85.80	NA
	10/03/89		12.94	85.87	NA
	04/30/90		12.53	86.28	NA
	10/16/90		12.73	86.08	NA
	12/06/90		12.74	86.07	NA
	01/14/91		12.57	86.24	NA
	02/08/91		12.16	86.65	NA
	04/02/91		11.50	87.31	NA
	05/07/91		12.02	86.79	NA
	05/31/91		12.40	86.41	NA
	06/26/91		12.69	86.12	NA
	08/05/91		12.95	85.86	NA
	08/14/91		12.93	85.88	NA
	09/11/91		13.01	85.80	NA
	10/16/91		13.09	85.72	NA
	12/30/91		12.62	86.19	NA
	02/25/92		11.81	87.00	NA
	03/25/92		11.58	87.23	NA
	06/16/92	15.34**	12.54	2.80	NA
RESNA	09/08/92		12.87	2.47	None
	11/05/92		12.70	2.64	None
	12/14/92		12.19	3.15	None

See note on page 6 of 6.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Texaco Service Station
2225 Telegraph Avenue
Oakland, California
(Page 2 of 6)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Floating Product
RW-3 (formerly MW-6C)					
HLA	12/15/88	99.89*	14.41	85.48	NA
	10/03/89		14.10	85.79	NA
	04/30/90		13.81	86.68	NA
	10/16/90	98.97*	13.29	85.68	NA
	01/14/91		14.50	84.47	NA
	02/08/91		12.54	86.43	NA
	04/02/91		11.39	87.58	NA
	05/07/91		12.47	86.50	NA
	05/31/91		16.31	82.66	NA
	06/26/91		15.50	83.47	NA
	08/05/91		13.69	85.28	NA
	08/13/91		13.67	85.30	NA
	09/11/91		13.77	85.20	NA
	10/16/91		16.66	82.31	NA
	11/05/91		Well Abandoned		
RW-2 (formerly MW-6D)					
HLA	12/15/88	98.78*	13.53	85.25	NA
	10/03/89		13.44	85.34	NA
	04/30/90		13.19	85.59	NA
	10/16/90	98.11*	12.77	85.34	NA
	01/14/91		Not Monitored		
	02/08/91		13.11	85.00	NA
	04/02/91		11.70	86.41	NA
	05/07/91		14.09	84.02	NA
	05/31/91		16.01	82.10	NA
	06/26/91		14.60	83.51	NA
	08/05/91		14.00	84.11	NA
	08/13/91		21.30	76.81	NA
	09/11/91		19.97	78.14	NA
	10/16/91		15.19	82.92	NA
	12/30/91		13.19	84.92	NA
	02/25/92		16.27	81.84	NA
	03/25/92		Not Monitored		
	06/16/92	14.61**	12.86	1.75	NA
RESNA	09/08/92		Not Monitored		
	11/05/92		Not Monitored		
	12/14/92		Not Monitored		

See note on page 6 of 6.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Texaco Service Station
2225 Telegraph Avenue
Oakland, California
(Page 3 of 6)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Floating Product
MW-6E					
HLA	12/15/88	98.99*	13.84	85.15	NA
	10/03/89		13.70	85.29	NA
	04/30/90		13.43	85.56	NA
	10/16/90		13.77	85.22	NA
	12/06/90		13.95	85.04	NA
	01/14/91		13.95	85.04	NA
	02/08/91		13.20	85.79	NA
	04/02/91		12.28	86.71	NA
	05/07/91		13.48	85.51	NA
	05/31/91		14.09	84.90	NA
	06/26/91		12.54	86.45	NA
	08/05/91		14.39	84.60	NA
	08/14/91		14.18	84.81	NA
	09/11/91		14.73	84.26	NA
	10/16/91		14.40	84.59	NA
	12/30/91		13.39	85.60	NA
	02/25/92		13.16	85.83	NA
	03/25/92		12.15	86.84	NA
	06/16/92	15.23**	13.54	1.69	NA
RESNA	09/08/92		14.78	0.45	None
	11/05/92			Not Monitored	
	12/14/92			Not Monitored	
MW-6F					
HLA	12/15/88	99.91*	14.73	85.18	NA
	10/03/89		14.48	85.43	NA
	04/30/90		14.14	85.77	NA
	10/16/90		14.77	85.14	NA
	12/06/90		14.81	85.10	NA
	01/14/91		14.73	85.18	NA
	02/08/91		13.73	86.18	NA
	04/02/91		12.38	87.53	NA
	05/07/91		13.67	86.24	NA
	05/31/91		14.43	85.48	NA
	06/26/91		14.81	85.10	NA
	08/05/91		14.96	84.95	NA
	08/14/91		14.87	85.04	NA
	09/11/91		15.11	84.80	NA
	10/16/91		15.16	84.75	NA
	12/30/91		13.78	86.13	NA
	02/25/92		12.68	87.23	NA
	03/25/92		11.93	87.98	NA

See note on page 6 of 6.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Texaco Service Station
2225 Telegraph Avenue
Oakland, California
(Page 4 of 6)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Floating Product
MW-6F (cont'd)					
	06/16/92	16.46**	14.34	2.12	NA
RESNA	09/08/92		14.75	1.71	None
	11/05/92		14.35	2.11	None
	12/14/92		12.90	3.56	None
MW-6G					
HLA	12/15/88	99.16*	12.39	86.77	NA
	10/03/89		12.22	86.94	NA
	04/30/90		11.73	87.43	NA
	10/16/90		12.28	86.88	NA
	12/06/90		12.27	86.89	NA
	01/14/91		12.14	87.02	NA
	02/08/91		11.44	87.72	NA
	04/02/91		10.03	89.13	NA
	05/07/91		11.00	88.16	NA
	05/31/91		11.75	87.41	NA
	06/26/91		12.91	86.25	NA
	08/05/91		12.43	86.73	NA
	08/14/91		12.43	86.73	NA
	09/11/91		12.48	86.68	NA
	10/16/91		12.64	86.52	NA
	12/30/91		11.80	87.36	NA
	02/25/92		10.32	88.84	NA
	03/25/92		9.93	89.23	NA
	06/16/92	14.71**	11.88	2.83	NA
RESNA	09/08/92		12.20	2.51	None
	11/05/92		12.02	2.69	None
	12/14/92		10.95	3.76	None
MW-6H					
HLA	12/15/88	97.93*	12.39	85.54	NA
	10/03/89		12.36	85.57	NA
	04/30/90		12.10	85.83	NA
	10/16/90		12.18	85.75	NA
	12/06/90		12.29	85.64	NA
	01/14/91		12.22	85.71	NA
	02/08/91		11.93	86.00	NA
	04/02/91		11.59	86.34	NA
	05/07/91		12.24	85.69	NA
	05/31/91		12.22	85.71	NA
	06/26/91		14.34	83.59	NA

See note on page 6 of 6.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Texaco Service Station
2225 Telegraph Avenue
Oakland, California
(Page 5 of 6)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Floating Product
MW-6H (cont'd)					
	08/05/91		12.62	85.31	NA
	08/14/91		12.43	85.50	NA
	09/11/91		12.83	85.10	NA
	10/16/91		12.71	85.22	NA
	12/30/91		12.16	85.77	NA
	02/25/92		12.17	85.76	NA
	03/25/92		11.65	86.28	NA
	06/16/92	14.47**	12.12	2.35	NA
RESNA	09/08/92		12.30	2.17	None
	11/05/92		12.05	2.42	None
	12/14/92		11.65	2.82	None
MW-6I					
HLA	12/15/88	97.60*	12.82	84.78	NA
	10/03/89		12.83	84.77	NA
	04/30/90		12.66	84.94	NA
	10/16/90		12.71	84.89	NA
	12/06/90		12.75	84.85	NA
	01/14/91		12.55	85.05	NA
	02/08/91		12.32	85.28	NA
	04/02/91		12.22	85.38	NA
	05/07/91		12.61	84.99	NA
	05/31/91		12.82	84.78	NA
	06/26/91		12.93	84.67	NA
	08/05/91		13.01	84.59	NA
	08/14/91		12.98	84.62	NA
	09/11/91		13.11	84.49	NA
	10/16/91		13.04	84.56	NA
	12/30/91		12.72	84.88	NA
	02/25/92		12.45	85.15	NA
	03/25/92		12.12	85.48	NA
	06/16/92	14.14**	12.75	1.39	NA
RESNA	09/08/92		12.84	1.30	None
	11/05/92		12.75	1.39	None
	12/14/92		12.40	1.74	None

See note on page 6 of 6.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Texaco Service Station
2225 Telegraph Avenue
Oakland, California
(Page 6 of 6)

Well	Date	Wellhead Elevation	Depth to Water	Groundwater Elevation*	Floating Product
RW-1					
HLA	10/16/90	97.89*	12.24	85.65	NA
	01/14/91		12.80	85.09	NA
	02/08/91		12.53	85.36	NA
	04/02/91		NA	NA	NA
	05/07/91		NA	NA	NA
	05/31/91		12.86	85.03	NA
	08/05/91		13.19	84.70	NA
	08/13/91		14.05	83.84	NA
	09/11/91		15.96	81.93	NA
	10/16/91		16.00	81.89	NA
	12/30/91		12.65	85.24	NA
	02/25/92		14.40	83.49	NA
	03/25/92		NA	NA	NA
	06/16/92	14.42**	12.37	2.05	NA
RESNA	09/08/92	Not Monitored			
	11/05/92	Not Monitored			
	12/14/92	Not Monitored			

Measurements in feet.

* : Based on assigned benchmark with elevation arbitrarily set at 100 feet.
** : Elevation relative to mean sea level (MSL).
NA : Not Available
HLA : Measurements by Harding Lawson Associates
RESNA : Measurements by RESNA Industries Inc.
RESNA presumes all wells are in the same hydrostratigraphic unit.

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Texaco Service Station
2225 Telegraph Avenue
Oakland, California
(Page 1 of 3)

Well	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Oil and Grease
MW-6A							
HLA	06/24/88	NA	ND	ND	ND	ND	NA
	10/20/88	NA	1.0	ND	ND	ND	NA
	09/07/89	ND	2.0	ND	ND	ND	NA
	05/11/90	<500	150	6.2	<0.25	13	NA
	05/07/91	2,700	700	64	67	74	NA
	08/14/91	ND	3.6	<0.5	<0.5	<0.5	NA
	12/31/91			Well Damaged			
	03/25/92			Well Damaged			
	05/02/92			Well Abandoned			
MW-6B							
HLA	06/24/88	NA	ND	ND	ND	5.0	NA
	10/20/88	NA	4.0	ND	ND	ND	NA
	09/07/89	2,700	70	3.0	ND	160	NA
	04/30/90	168	45	8.0	60	22	NA
	05/07/91	3,300	240	6.0	20	660	NA
	08/14/91	980	9.1	42	310	150	NA
	12/31/91	1,200	46	<5.0	85	220	ND
	03/25/92	190	31	8.6	84	8.6	NA
	06/16/92	1,700	44	1.7	7.2	230	NA
RESNA	09/08/92	2,900	35	8.3	110	330	NA
	11/05/92	1,400	29	<0.5	75	190	NA
RW-3 (formerly MW-6C)							
HLA	06/24/88	NA	7,400	7.0	170	2,300	NA
	10/20/88	NA	9,500	65	170	850	NA
	09/07/89	18,000	7,900	430	350	1,100	NA
	04/30/90	30,000	6,100	1,500	1,000	2,700	NA
	05/07/91	5,800	4,200	640	220	670	NA
	08/14/91	3,800	2,300	300	49	360	NA
	11/05/91			Well Abandoned			
RW-2 (formerly MW-6D)							
HLA	07/11/88	NA	220	27	<20	<10	NA
	10/20/88	NA	710	74	22	110	NA
	09/07/89	2,200	600	26	58	31	NA
	04/30/90	3,600	800	150	310	280	NA
	05/07/91	11,000	3,200	480	150	780	NA
	08/14/91	NA	NA	NA	NA	NA	NA

See notes on page 3 of 3.

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Texaco Service Station
2225 Telegraph Avenue
Oakland, California
(Page 2 of 3)

Well	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Oil and Grease
RW-2 (formerly MW-6D) cont.							
	12/31/91	NA	NA	NA	NA	NA	NA
	03/25/92	NA	NA	NA	NA	NA	NA
	06/16/92	28,000	2,900	1,000	120	2,700	NA
RESNA	09/08/92			Not Sampled			
	11/05/92			Not Sampled			
MW-6E							
HLA	10/20/88	NA	1.0	ND	ND	3.0	NA
	09/07/89	220	3.0	ND	ND	ND	NA
	04/30/90	250	57	<5.0	<5.0	53	NA
	05/07/91	160	32	1.0	2.2	1.4	NA
	08/14/91	ND	0.9	<0.5	<0.5	<0.5	NA
	12/31/91	90	3.1	<0.5	<0.5	<0.5	ND
	03/25/92	830	41	1.0	3.8	16	NA
	06/16/92	3,400	300	23	68	510	NA
RESNA	09/08/92	480	27	<0.5	3.6	21	NA
	11/05/92			Not Sampled			
MW-6F							
HLA	10/25/88	ND	ND	ND	2.0	NA	NA
	09/07/89	ND	ND	ND	ND	ND	NA
	04/30/90	ND	ND	ND	ND	ND	NA
	05/07/91	ND	ND	<0.5	<0.5	<0.5	NA
	08/14/91	ND	ND	<0.5	<0.5	<0.5	NA
	12/31/91	ND	ND	<0.5	<0.5	<0.5	ND
	03/25/92	ND	ND	<0.5	<0.5	<0.5	NA
	06/16/92	ND	ND	<0.5	<0.5	<0.5	NA
RESNA	09/08/92	<50	<0.5	<0.5	<0.5	<0.5	NA
	11/05/92	<50	<0.5	<0.5	<0.5	<0.5	NA
MW-6G							
HLA	12/07/88	ND	ND	ND	ND	NA	NA
	09/07/89	ND	ND	ND	ND	ND	NA
	04/30/90	ND	ND	ND	ND	ND	NA
	05/07/91	ND	ND	<0.5	<0.5	<0.5	NA
	08/14/91	ND	ND	<0.5	<0.5	<0.5	NA
	12/31/91	ND	ND	<0.5	<0.5	<0.5	ND
	03/25/92	ND	ND	<0.5	<0.5	<0.5	NA
	06/16/92	ND	ND	<0.5	<0.5	<0.5	NA
RESNA	09/08/92	<50	<0.5	<0.5	<0.5	<0.5	NA
	11/05/92	<50	<0.5	<0.5	<0.5	<0.5	NA

See notes on page 3 of 3.

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Texaco Service Station
2225 Telegraph Avenue
Oakland, California
(Page 3 of 3)

Well	Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Oil and Grease
MW-6H							
HLA	12/07/88	NA	1,200	320	110	220	NA
	09/07/89	660	480	<10	16	<15	NA
	04/30/90	630	700	39	31	50	NA
	05/07/91	570	95	14	15	21	NA
	08/14/91	540	52	9.9	11	18	NA
	12/31/91	790	52	28	22	42	ND
	03/25/92	920	170	52	25	54	NA
	06/16/92	460	31	11	6.8	16	NA
RESNA	09/08/92	780	69	23	17	18	NA
	11/05/92	3,400	500	260	85	160	NA
MW-6I							
HLA	12/07/88	ND	ND	ND	ND	NA	NA
	09/07/89	ND	ND	ND	ND	ND	NA
	04/30/90	ND	ND	ND	ND	ND	NA
	05/07/91	ND	ND	<0.5	<0.5	<0.5	NA
	08/14/91	ND	ND	<0.5	<0.5	<0.5	NA
	12/31/91	ND	ND	<0.5	<0.5	<0.5	ND
	03/25/92	ND	ND	<0.5	<0.5	<0.5	NA
	06/16/92	ND	ND	<0.5	<0.5	<0.5	NA
RESNA	09/08/92	<50	<0.5	<0.5	<0.5	<0.5	NA
	11/05/92	<50	<0.5	<0.5	<0.5	<0.5	NA
RW-1							
HLA	06/16/92	6,200	620	1,400	240	1,400	NA
RESNA	09/08/92			Not Sampled			
	11/05/92			Not Sampled			
MCLs		—	1.0	—	680	1,750	—
DWAL		—	—	100	—	—	—

Results in parts per billion (ppb).

TPHg : Total petroleum hydrocarbons analyzed as gasoline.
< : Less than the detection limit for the specified method of analysis.
MCLs : Adopted Maximum Contaminant Levels in Drinking Water, DHS (October 1990)
DWAL : Recommended Drinking Water Action Levels, DHS (October 1990)
NA : Not Analyzed
ND : Not detectable at or above method detection limit.
— : Not Applicable
HLA : Sampled by Harding Lawson Associates
RESNA : Sampled by RESNA Industries Inc.

APPENDIX A

GROUNDWATER SAMPLING PROTOCOL
WELL PURGE DATA SHEETS

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 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 rinsed 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 was obtained. Approximately 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 transported in iced storage in a thermally insulated ice chest, accompanied by a Chain of Custody form, to a California-certified laboratory.

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco - Oakland Job No. 62073.01

Date: November 5, 1992 Page 1 of 1

Well No. MW-6B Time Started 11:50

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
11:50	Start purging MW-6B			
11:50	0	69.7	7.62	1160
11:52	1	69.9	7.56	1170
11:54	2	69.6	7.52	1200
11:56	3	69.5	7.51	1200
11:58	4	69.6	7.51	1200
11:59	Stop purging MW-6B			

Notes:

Well Diameter (inches) :	2"
Depth to Bottom (feet) :	18.00
Depth to Water - initial (feet) :	12.70
Depth to Water - final (feet) :	12.70
% recovery :	100.0%
Time Sampled :	1:45
Gallons per Well Casing Volume :	0.90
Gallons Purged :	4
Well Casing Volume Purged :	4.44
Approximate Pumping Rate (gpm) :	0.44

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco - Oakland Job No. 62073.01

Date: November 5, 1992 Page 1 of 1

Well No. MW-6F Time Started 10:00

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
10:00	Start purging MW-6F			
10:00	0	64.0	7.83	570
10:06	3.5	63.7	7.82	560
10:12	7.0	63.5	7.81	550
10:18	10.5	63.7	7.81	550
10:26	14.0	63.6	7.82	550
10:27	Stop purging MW-6F			

Notes:

Well Diameter (inches) :	4"
Depth to Bottom (feet) :	19.58
Depth to Water - initial (feet) :	14.35
Depth to Water - final (feet) :	14.35
% recovery :	100.0%
Time Sampled :	11:30
Gallons per Well Casing Volume :	3.50
Gallons Purged :	14.0
Well Casing Volume Purged :	4.0
Approximate Pumping Rate (gpm) :	2.0

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco - Oakland Job No. 62073.01

Date: November 5, 1992 Page 1 of 1

Well No. MW-6G Time Started 10:40

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
10:40	Start purging MW-6G			
10:40	0	67.9	7.66	1070
10:50	5.0	67.8	7.63	1050
11:00	10.0	67.9	7.60	1080
11:10	15.0	67.9	7.59	1100
11:20	20.0	67.8	7.59	1100
11:20	Stop purging MW-6G			

Notes:

Well Diameter (inches) :	4"
Depth to Bottom (feet) :	19.60
Depth to Water - initial (feet) :	12.02
Depth to Water - final (feet) :	12.02
% recovery :	100%
Time Sampled :	12:20
Gallons per Well Casing Volume :	5.0
Gallons Purged :	18.2
Well Casing Volume Purged :	4.0
Approximate Pumping Rate (gpm) :	0.5

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco - Oakland Job No. 62073.01

Date: November 5, 1992 Page 1 of 1

Well No. MW-6H Time Started 2:00

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
2:00	Start purging MW-6H			
2:00	0	71.0	7.65	820
2:10	5	70.2	7.62	820
2:20	10	69.9	7.60	810
2:30	15	69.6	7.59	800
3:00	20	70.1	7.62	810
3:10	Stop purging MW-6H			

Notes:

Well Diameter (inches) :	4"
Depth to Bottom (feet) :	19.65
Depth to Water - initial (feet) :	12.05
Depth to Water - final (feet) :	12.05
% recovery :	100.0%
Time Sampled :	3:45
Gallons per Well Casing Volume :	5.0
Gallons Purged :	20
Well Casing Volume Purged :	4.0
Approximate Pumping Rate (gpm) :	0.2

RESNA
Working To Restore Nature

WELL PURGE DATA SHEET

Project Name: Texaco - Oakland Job No. 62073.01

Date: November 5, 1992 Page 1 of 1

Well No. MW-6I Time Started 1:00

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
1:00	Start purging MW-6I			
1:00	0	69.4	7.82	680
1:08	4.4	68.2	7.80	640
1:16	8.8	67.8	7.76	670
1:28	13.2	67.6	7.75	680
1:36	17.6	67.6	7.76	670
1:36	Stop purging MW-6I			

Notes:

Well Diameter (inches) :	4"
Depth to Bottom (feet) :	19.40
Depth to Water - initial (feet) :	12.75
Depth to Water - final (feet) :	12.75
% recovery :	100.0%
Time Sampled :	3:10
Gallons per Well Casing Volume :	4.4
Gallons Purged :	16.8
Well Casing Volume Purged :	3.82
Approximate Pumping Rate (gpm) :	0.49

APPENDIX B

LABORATORY ANALYSIS REPORTS AND CHAIN OF CUSTODY DOCUMENTATION

MOBILE CHEM LABS INC.

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

62073.01\1342\012259

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

Date Sampled: 11-05-92
Date Received: 11-12-92
Date Analyzed: 11-16-92

Sample Number	Sample Description
112210	Project # 62073.01 Texaco - Oakland 2225 Telegraph BB1 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

QA/QC: Sample blank is none detected
Spike Recovery is 89%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.
(ppb) = (µg/L)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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

Date Sampled: 11-05-92
Date Received: 11-12-92
Date Analyzed: 11-16-92

Sample Number	Sample Description
112211	Project # 62073.01 Texaco - Oakland 2225 Telegraph MW6F 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

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.
(ppb) = (µg/L)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

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

Date Sampled: 11-05-92
Date Received: 11-12-92
Date Analyzed: 11-16-92

Sample Number	Sample Description
112212	Project # 62073.01 Texaco - Oakland 2225 Telegraph MW6G 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

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.
(ppb) = (µg/L)

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

Date Sampled: 11-05-92
Date Received: 11-12-92
Date Analyzed: 11-16-92

Sample Number	Sample Description
112213	Project # 62073.01 Texaco - Oakland 2225 Telegraph MW6I 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

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.
(ppb) = (µg/L)

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Ronald G. Evans
Lab Director

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62073.01\1342\012259

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

Date Sampled: 11-05-92
Date Received: 11-12-92
Date Analyzed: 11-16-92

Sample Number	Sample Description
112214	Project # 62073.01 Texaco - Oakland 2225 Telegraph MW6B WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	1,400
Benzene	0.5	29
Toluene	0.5	<0.5
Xylenes	0.5	190
Ethylbenzene	0.5	75

QA/QC: Sample blank is none detected
Duplicate Deviation is 7.1%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.
(ppb) = (µg/L)

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

Date Sampled: 11-05-92
Date Received: 11-12-92
Date Analyzed: 11-16-92

Sample Number	Sample Description
112215	Project # 62073.01 Texaco - Oakland 2225 Telegraph MW6H WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	3,400
Benzene	0.5	500
Toluene	0.5	260
Xylenes	0.5	160
Ethylbenzene	0.5	85

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 602 used for BTX distinction.
(ppb) = (µg/L)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

RESNA

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PROJECT NO.	PROJECT NAME/SITE
6207301	Texaco 2225 Telegraph. Oakland.

SAMPLERS (SIGN) Robin A Adair (PRINT) Robin A. Adair

SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	PRES. USED	ICED	NO. CONTAINERS	SAMPLE TYPE	BTEX (602/8020)	TPHg (8015)	TPHd (8015)	TOG 418.1/5520	601/8010	624/8240	625/8270	REMARKS
BB1	11-05-92	11:25			HCL	Y	2	H2O	X	X						
MW-6F		11:30					2		X	X						
MW-6G		12:20					2		X	X						
MW-6I		3:10					2		X	X						
MW-6J		1:45					2		X	X						
MW-6H		3:45					2		X	X						

RELINQUISHED BY	DATE	TIME	RECEIVED BY	LABORATORY	PLEASE SEND RESULTS TO:
Robin A Adair	11/06/92	7:30	Cyndi Viroatho	Mobile Chem Labs.	Phil Mayberry Resna, San Jose
RELINQUISHED BY: Cyndi Viroatho	DATE 11/12/92	TIME 10:40 AM	RECEIVED BY: Dave P. Levine		
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REQUESTED TURNAROUND TIME: NORMAL	
RELINQUISHED BY	DATE 11-12-92	TIME 10:40AM	RECEIVED BY LABORATORY: Dave P. Levine	RECEIPT CONDITION	PROJECT MANAGER