



Texaco Refining
and Marketing Inc

108 Cutting Boulevard
Richmond CA 94804

April 30, 1993

ENV-STUDIES, SURVEYS & REPORTS
3940 Castro Valley Blvd., Castro Valley, CA

Mr. Scott Seery
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Dear Mr. Seery:

Enclosed is the Quarterly Groundwater Monitoring Letter Report, covering the first quarter 1993, for the former Texaco Service Station located at the above referenced site.

If you have any questions, I may be reached at (510) 236-3611.

Sincerely,
Texaco Environmental Services

Karel Detterman, R.G.
Project Coordinator

KLD:kld

C:\KLD\COVER1.WKB
A:\COVER\COVER1.WKB
C:\KLD\CC

Attachment

cc: HRPearson-RRZielinski

Mr. Richard Hiett
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, CA 94612

Mr. Dave Daffern
Lakeshore Financial
21060 Redwood Road
Castro Valley, CA 94596

pr: Q3

3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Phone: (408) 264-7723
FAX: (408) 264-2435

LETTER REPORT
QUARTERLY GROUNDWATER MONITORING
First Quarter 1993
at
Former Texaco Station
3940 Castro Valley Boulevard
Castro Valley, California

62091.01

3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Phone: (408) 264-7723
FAX: (408) 264-2435

April 27, 1993
0423KDET
62091.01

Ms. Karel Detterman
Texaco Environmental Services
108 Cutting Boulevard
Richmond, California 94804

Subject: Results of Groundwater Monitoring and Sampling, First Quarter 1993,
Former Texaco Station located at 3940 Castro Valley Boulevard, Castro
Valley, California.

Ms. Detterman:

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 3940 Castro Valley Boulevard in Castro Valley, California (Plate 1, Site Vicinity Map) for the first quarter 1993 (January through March 1993). On March 31, 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 the 7 monitoring wells (MW-1 and MW-3 through MW-8) at this site. RESNA's groundwater sampling protocol and well purge data sheets are included in Appendix A.

WORK PERFORMED

GROUNDWATER MONITORING

Groundwater elevations at the site have increased an average of about 2¼ feet from the elevations reported the previous quarter. The groundwater beneath the site appears to be flowing toward the southwest with a gradient of less than 0.001 (Plate 2, Groundwater Gradient Map). Floating product or hydrocarbon sheen was not observed in the wells this

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quarter. 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 and total petroleum hydrocarbons as gasoline (TPHg) using modified Environmental Protection Agency Methods 5030/602. Copies of the laboratory analyses reports and the Chain of Custody Documentation for the groundwater samples are included in Appendix B.

GROUNDWATER ANALYTICAL RESULTS

Concentrations of TPHg in groundwater samples ranged from less than 50 parts per billion (ppb) to 64 ppb (MW-3). Dissolved benzene concentrations ranged from less than 0.5 ppb to 5.6 ppb (MW-3). TPHg and benzene concentrations are shown on Plate 3, TPHg/Benzene Concentrations in Groundwater. Historical and recent analytical data are summarized in Table 2, Cumulative Results of Laboratory Analyses of Groundwater Samples.

PURGE WATER RECYCLING

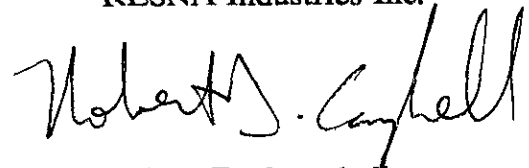
On April 6, 1993, approximately 350 gallons of purge water generated during purging and sampling of the monitoring wells was transported to Gibson Environmental in Redwood City, California for recycling.

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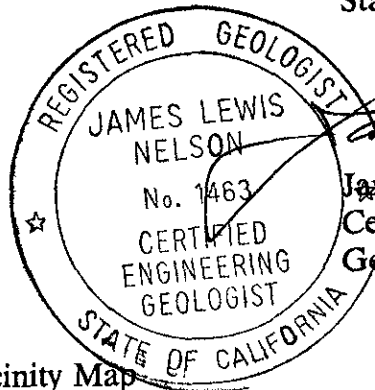
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If you have any questions or comments regarding this report, please call (408) 264-7723.

Sincerely,
RESNA Industries Inc.

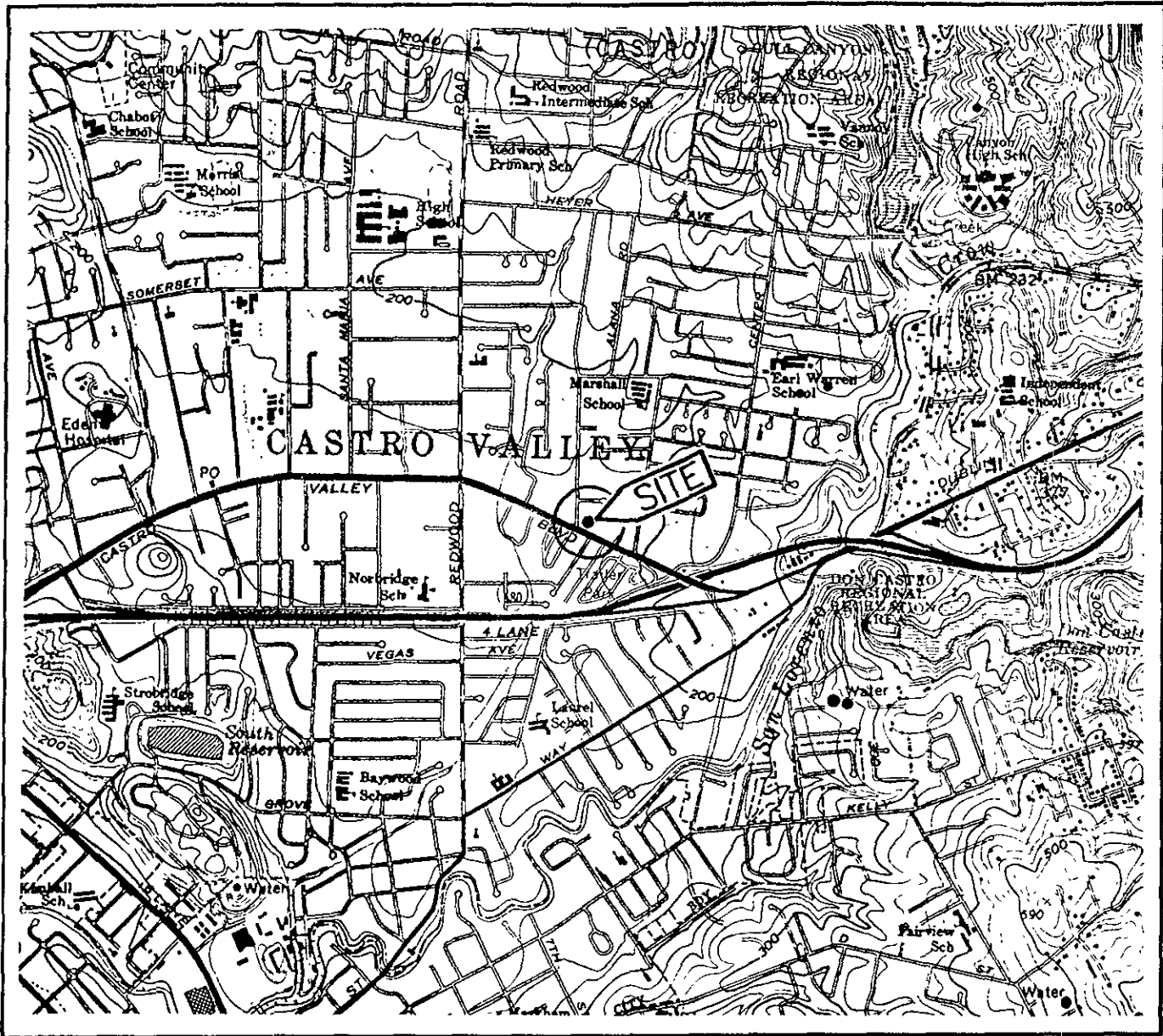


Robert D. Campbell
Staff Geologist



James L. Nelson
Certified Engineering
Geologist No. 1463

- 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: U.S. Geological Survey
 7.5-Minute Quadrangles
 Hayward, California.
 Photorevised 1980

LEGEND

● = Site Location

Approximate Scale



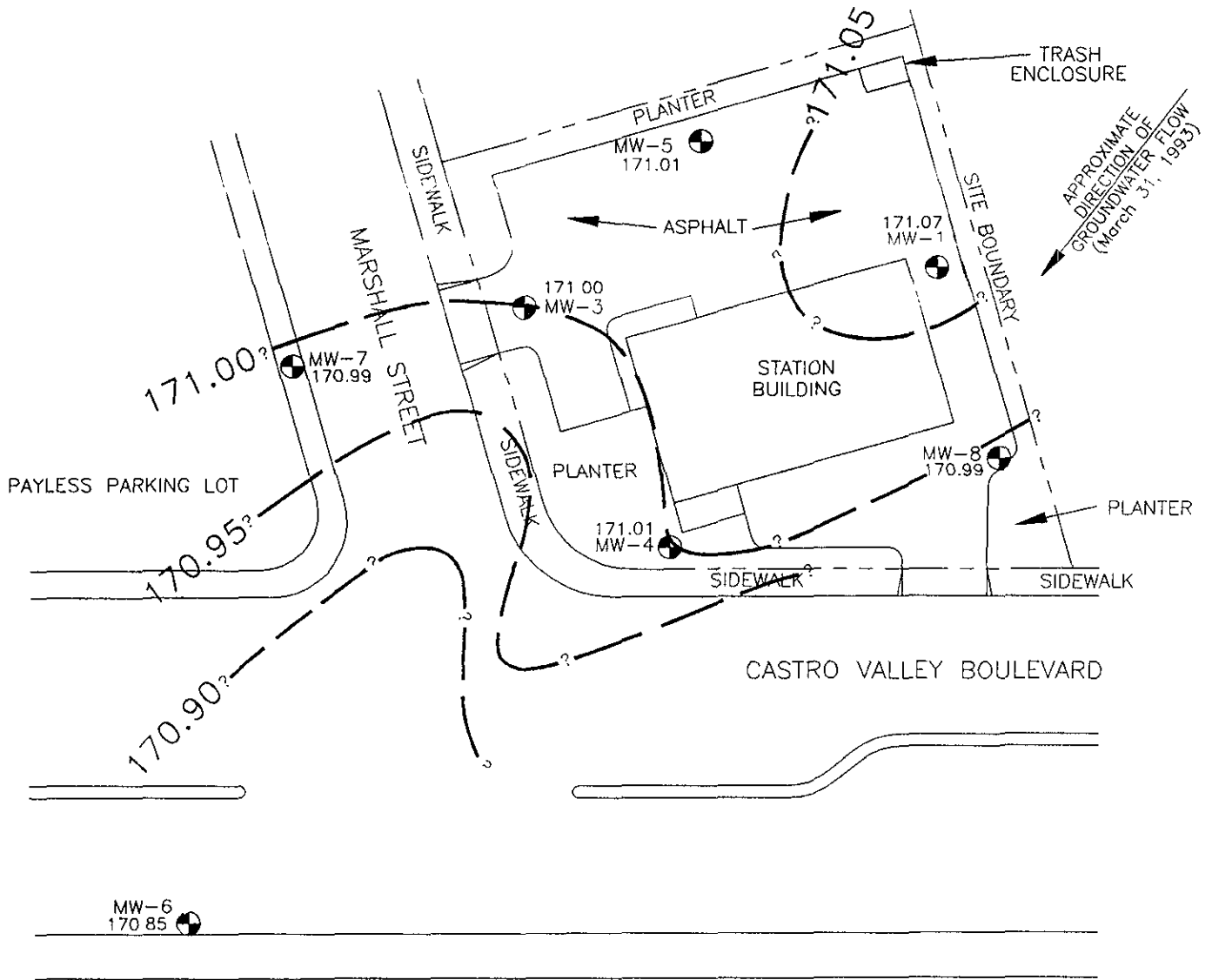
RESNA
 Working to Restore Nature

SITE VICINITY MAP
Former Texaco Station
3940 Castro Valley Boulevard
Castro Valley, California


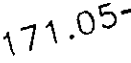
PLATE

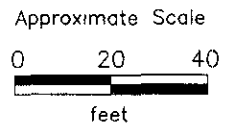
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EXPLANATION

- MW-8  = Monitoring Well
- 171.05  = Line of equal elevation of groundwater in feet above mean sea level (MSL)
- 171.07 = Elevation of groundwater in feet above MSL, March 31, 1993



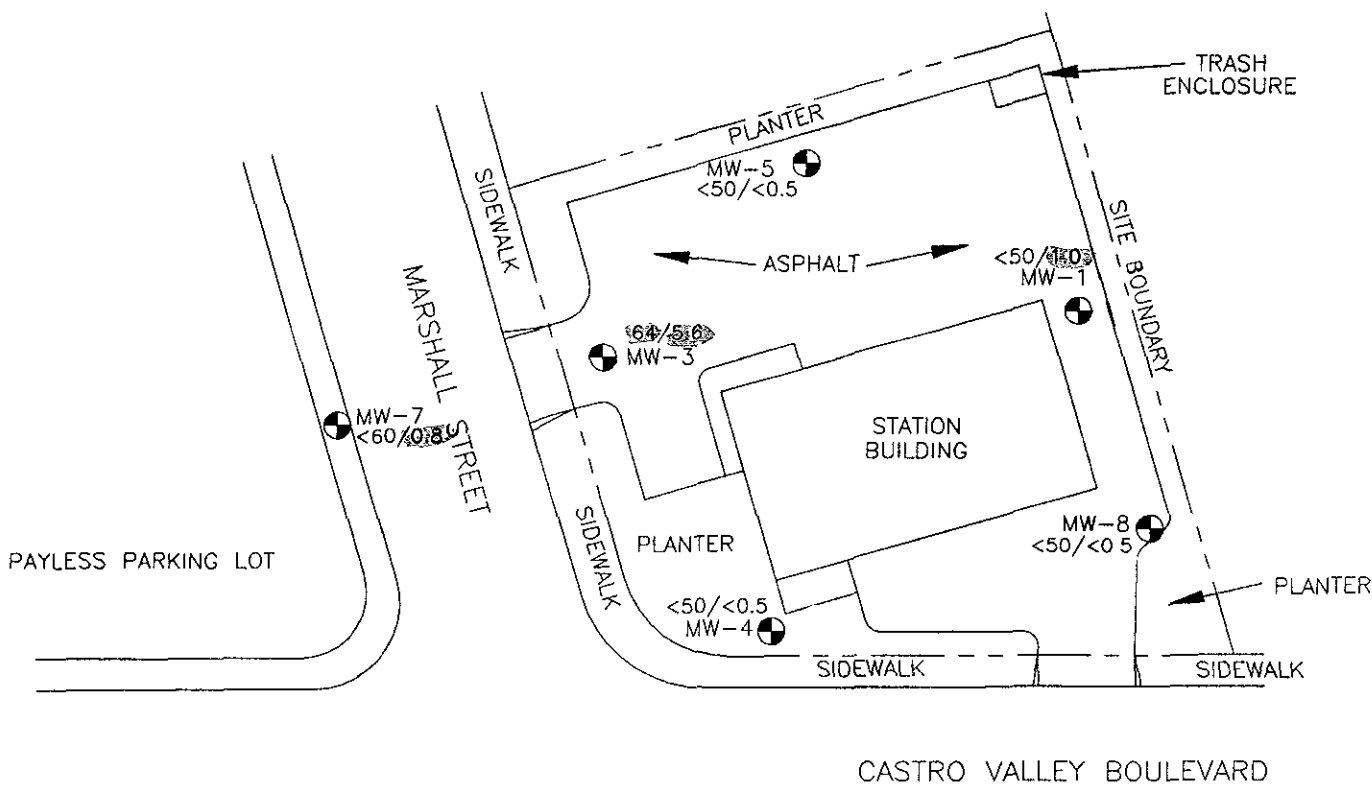
BASE MAP: SURVEYED BY RON ARCHER
CIVIL ENGINEER, INC.

RESNA
Working to Restore Nature

GROUNDWATER GRADIENT MAP
Former Texaco Station
3940 Castro Valley Boulevard
Castro Valley, California


PLATE
2

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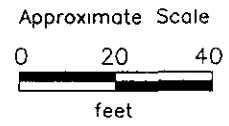
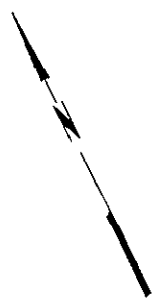


MW-6
<50/<0.5

EXPLANATION

MW-8  = Monitoring Well

64/5.6 = Concentrations of TPHg\Benzene in groundwater in parts per billion, March 31, 1993



BASE MAP: SURVEYED BY RON ARCHER
CIVIL ENGINEER, INC.



**TPHg\BENZENE CONCENTRATIONS
IN GROUNDWATER
Former Texaco Station
3940 Castro Valley Boulevard
Castro Valley, California**

**PLATE
3**

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
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Castro Valley, California
(Page 1 of 4)

Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
<u>IX</u>	11/19/87	-	Dry	--	--
	12/20/87		Dry	--	--
	12/30/87		Dry	--	--
	06/07/88		Dry	--	--
	12/13/88		Dry	--	--
	08/29/92		Well Destroyed		
<u>MW-1</u>	12/30/87	192.46	21.92	170.54	NR
	06/07/88		23.35	169.11	NR
	12/13/88		23.17	169.29	NR
	08/29/89		23.70	168.76	NR
	02/27/90		23.25	169.21	NR
	04/21/90		23.65	168.81	NR
	06/11/90		23.74	168.72	NR
	07/18/90		23.90	168.56	NR
	08/22/90		24.07	168.39	NR
	09/27/90		24.21	168.25	NR
	10/10/90		24.25	168.21	NR
	11/15/90		24.45	168.01	NR
	12/11/90		23.54	168.92	NR
	01/09/91		24.68	167.78	NR
	01/23/91		24.61	167.85	NR
	02/22/91		24.58	167.88	NR
	03/20/91		23.95	168.51	NR
	04/11/91		23.41	169.05	NR
	05/14/91		23.52	168.94	NR
	06/10/91		23.61	168.85	NR
	07/16/91		23.89	168.57	NR
	08/09/91		23.96	168.50	NR
	09/11/91		24.16	168.30	NR
	12/11/91		24.68	167.78	NR
	02/28/92	192.45	23.72	168.73	NR
	03/30/92		23.25	169.20	NR
	06/30/92		23.44	169.01	NR
RESNA	10/05/92		23.96	168.49	ND
	12/29/92		Flooded - Not Accessible		
	03/31/93		21.38	171.07	ND

See notes on page 4 of 4.

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
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Castro Valley, California
(Page 2 of 4)

Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
<u>MW-2</u>	12/20/87	--	22.30	--	--
	06/07/88		23.83	--	--
	12/13/88		23.69	--	--
	08/29/89		Well Destroyed		
<u>MW-3</u>	12/30/87	190.48	22.60	167.88	NR
	06/07/88		20.90	169.58	NR
	12/13/88		20.92	169.56	NR
	08/29/89		21.48	169.00	NR
	02/27/90		21.58	168.90	NR
	04/12/90		21.70	168.78	NR
	06/11/90		21.79	168.69	NR
	07/18/90		21.96	168.52	NR
	08/22/90		22.10	168.38	NR
	09/27/90		22.24	168.24	NR
	10/10/90		22.28	168.20	NR
	11/15/90		22.50	167.98	NR
	12/11/90		24.54	165.94	NR
	01/09/91		22.71	167.77	NR
	01/23/91		22.65	167.83	NR
	02/22/91		22.68	167.80	NR
	03/20/91		24.96	168.52	NR
	04/11/91		21.14	169.34	NR
	05/14/91		21.54	168.94	NR
	06/10/91		21.64	168.84	NR
	07/16/91		21.93	168.55	NR
	08/09/91		21.99	168.49	NR
	09/11/91		22.22	168.26	NR
	12/11/91		22.67	167.81	NR
	02/28/92	190.50	21.76	168.74	NR
	03/30/92		21.49	169.18	NR
	06/30/92		21.49	169.01	NR
RESNA	10/05/92		22.15	168.35	ND
	12/29/92		21.90	168.60	ND
	03/31/93		19.50	171.00	ND
<u>MW-4</u>	04/12/90	191.63	22.84	168.79	NR
	06/11/90		21.82	169.81	NR
	07/18/90		23.09	168.54	NR
	08/22/90		23.24	168.39	NR

See notes on page 4 of 4.

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
3940 Castro Valley Boulevard
Castro Valley, California
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Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
<u>MW-4 (cont.)</u>					
	09/27/90		23.38	168.25	NR
	10/10/90		24.43	167.20	NR
	11/15/90		21.64	167.99	NR
	12/11/90		23.69	167.94	NR
	01/09/91		23.84	167.79	NR
	01/23/91		23.79	167.84	NR
	02/22/91		23.77	167.86	NR
	03/20/91		23.11	168.52	NR
	04/11/91		22.60	169.03	NR
	05/14/91		22.68	168.95	NR
	06/10/91		22.79	168.84	NR
	07/16/91		23.06	168.57	NR
	08/09/91		23.14	168.49	NR
	09/11/91		23.36	168.27	NR
	10/11/91		23.75	167.88	NR
	11/12/91		23.87	167.76	NR
	12/11/91		23.80	167.83	NR
	01/28/92	191.64	23.79	167.85	NR
	02/28/92		22.90	168.74	NR
	03/30/92		22.46	169.18	NR
	06/30/92		22.64	169.00	NR
RESNA	10/05/92		23.90	167.74	ND
	12/29/92		Flooded - Not Accessible		
	03/31/93		20.63	171.01	ND
<u>MW-5</u>					
	04/12/90	191.55	22.74	168.81	NR
	06/11/90		22.83	168.72	NR
	07/18/90		23.01	168.54	NR
	08/22/90		23.15	168.40	NR
	09/27/90		23.29	168.26	NR
	10/10/90		22.33	169.22	NR
	11/15/90		23.54	168.01	NR
	12/11/90		23.59	167.96	NR
	01/09/91		23.75	167.80	NR
	01/23/91		23.69	167.86	NR
	02/22/91		23.66	167.89	NR
	03/20/91		23.01	168.54	NR
	04/11/91		22.50	169.05	NR
	05/14/91		22.57	168.98	NR
	06/10/91		22.68	168.87	NR
	07/16/91		22.95	168.60	NR

See notes on page 4 of 4.

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TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
Former Texaco Service Station
3940 Castro Valley Boulevard
Castro Valley, California
(Page 4 of 4)

Well	Date	Elevation of Wellhead	Depth to Water	Elevation of Groundwater	Floating Product
<u>MW-5 Cont'd</u>					
	08/09/91		23.01	168.54	NR
	09/11/91		23.26	168.29	NR
	12/11/91		23.70	167.85	NR
	02/28/92	191.56	22.80	168.76	NR
	03/30/92		22.35	168.21	NR
	06/30/92		22.54	169.02	NR
RESNA	10/05/92		23.05	168.51	ND
	12/29/92		22.53	169.03	ND
	03/31/93		20.55	171.01	ND
<u>MW-6</u>					
	01/28/92	187.30	19.55	167.75	NR
	02/28/92		18.62	168.68	NR
	03/30/92		18.20	168.10	NR
	06/30/92		18.38	168.92	NR
RESNA	10/05/92		19.02	168.28	ND
	12/29/92		18.73	168.57	ND
	03/31/93		16.45	170.85	ND
<u>MW-7</u>					
	01/28/92	189.34	21.53	167.81	NR
	02/28/92		20.61	168.73	NR
	03/30/92		20.17	169.17	NR
	06/30/92		20.37	168.97	NR
RESNA	10/05/92		21.00	168.34	ND
	12/29/92		20.65	168.69	ND
	03/31/93		18.35	170.99	ND
<u>MW-8</u>					
	01/28/92	193.62	25.77	167.85	NR
	02/28/92		24.89	168.73	NR
	03/30/92		24.42	169.20	NR
	06/30/92		24.61	169.01	NR
RESNA	10/05/92		25.20	168.42	ND
	12/29/92		25.00	168.62	ND
	03/31/93		22.63	170.99	ND

Measurements in feet and Datum Mean Sea Level (MSL)

Depth to water measured in feet below top of casing.

NR : No Record
 ND : None Detected
 — : Not Applicable
 RESNA : RESNA began monitoring.

RESNA assumes all wells are screened in the same hydrostratigraphic unit.

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TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
3940 Castro Valley Boulevard
Castro Valley, California
(Page 1 of 4)

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes
<u>TX</u>	12/30/87	--	--	--	--	--
	06/07/88	--	--	--	--	--
	12/13/88	--	--	--	--	--
	08/29/89			Well Abandoned		
<u>MW-1</u>	12/30/87	2,100	15	12	3	190
	06/07/88	290	12	<PQL	<PQL	17
	12/13/88	370	3	<PQL	<PQL	<PQL
	08/29/89	160	6	<PQL	<PQL	<PQL
	03/07/90	<PQL	<PQL	<PQL	<PQL	<PQL
	04/16/90	NA	NA	NA	NA	NA
	06/11/90	39	14	1	1	2
	08/22/90	130	0.3	<MDL	<MDL	<MDL
	09/12/90	92	7	<MDL	2	3
	10/10/90	40	2	<MDL	0.6	1
	11/15/90	18	0.8	<MDL	<MDL	<MDL
	12/11/90	<MDL	<MDL	<MDL	<MDL	<MDL
	01/09/91	33	0.7	<MDL	<MDL	<MDL
	02/22/91	<MDL	<MDL	<MDL	<MDL	<MDL
	05/14/91	17	1	<0.3	0.4	0.8
	09/11/91	<10	<0.3	<0.3	<0.3	<0.6
	10/11/91	NA	NA	NA	NA	NA
	11/12/91	NA	NA	NA	NA	NA
	12/11/91	<50	<0.5	<0.5	<0.5	<0.5
	01/28/92	NA	NA	NA	NA	NA
	02/28/92	NA	NA	NA	NA	NA
	03/31/92	280	<0.5	<0.5	<0.5	1.3
	06/30/92	67	1.3	<0.5	<0.5	<0.5
RESNA	10/05/92	<50	<0.5	<0.5	<0.5	<0.5
	12/29/92	NA	NA	NA	NA	NA
	03/31/93	<50	1.0	<0.5	<0.5	<0.5
<u>MW-2</u>	12/30/87	2,400	220	16	3	150
	06/07/88	1,200	220	<PQL	32	46
	12/13/88	4,000	640	23	120	110
	08/29/89			Well Abandoned		

See notes on page 4 of 4.

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TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
3940 Castro Valley Boulevard
Castro Valley, California
(Page 2 of 4)

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes
<u>MW-3</u>	12/30/87	<MDL	<MDL	<MDL	<MDL	<MDL
	06/07/88	<PQL	<PQL	<PQL	<PQL	<PQL
	12/13/88	<PQL	<PQL	<PQL	<PQL	<PQL
	08/29/89	<PQL	<PQL	<PQL	<PQL	<PQL
	03/07/90	<PQL	<PQL	<PQL	<PQL	<PQL
	04/16/90	NA	NA	NA	NA	NA
	06/11/90	<MDL	<MDL	<MDL	<MDL	<MDL
	08/22/90	<MDL	<MDL	<MDL	<MDL	<MDL
	09/12/90	<MDL	<MDL	<MDL	<MDL	<MDL
	10/10/90	<MDL	<MDL	<MDL	<MDL	<MDL
	11/15/90	<MDL	<MDL	<MDL	<MDL	<MDL
	12/11/90	<MDL	<MDL	<MDL	<MDL	<MDL
	01/09/91	<MDL	<MDL	<MDL	<MDL	<MDL
	02/22/91	<MDL	<MDL	<MDL	<MDL	<MDL
	05/14/91	<10	<0.3	<0.3	<0.3	<0.6
	09/11/91	<10	<0.3	<0.3	<0.3	<0.6
	10/11/91	NA	NA	NA	NA	NA
	11/12/90	NA	NA	NA	NA	NA
	12/11/90	<50	<0.5	<0.5	<0.5	<0.5
	01/28/92	NA	NA	NA	NA	NA
	02/02/92	NA	NA	NA	NA	NA
	03/31/92	<50	<0.5	<0.5	<0.5	1.0
	06/30/92	<50	<0.5	<0.5	<0.5	<0.5
RESNA	10/05/92	<50	<0.5	<0.5	<0.5	<0.5
	12/29/92	260	6.2	<0.5	<0.5	<0.5
	03/31/93	64	5.6	<0.5	<0.5	<0.5
<u>MW-4</u>	04/16/90	1,500	97	1	11	120
	06/11/90	110	18	<MDL	<MDL	0.7
	08/22/90	50	4	<MDL	<MDL	1
	09/12/90	49	6	<MDL	<MDL	1
	10/10/90	77	4	<MDL	<MDL	<MDL
	11/15/90	49	2	<MDL	0.4	<MDL
	12/11/90	79	6	<MDL	1	<MDL
	01/19/91	120	6	<MDL	3	<MDL
	02/22/91	120	1	<MDL	<MDL	<MDL
	05/14/91	370	29	<0.3	9	1
	09/11/91	22	0.8	<0.3	1	<0.6
	10/11/91	<50	1.0	<0.5	1.5	<0.5

See notes on page 4 of 4.

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TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
3940 Castro Valley Boulevard
Castro Valley, California
(Page 3 of 4)

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes
<u>MW-4 (cont.)</u>						
	11/12/91	<50	1.6	<0.5	1.3	<0.5
	12/11/91	<50	0.8	<0.5	0.9	<0.5
	01/28/92	1,200	26	0.8	28	2.0
	02/28/92	9,400	68	5.3	68	240
	03/31/92	360	<0.5	<0.5	3.2	1.1
	06/30/92	76	2.4	<0.5	3.3	<0.5
RESNA	10/05/92	<50	1.5	<0.5	<0.5	<0.5
	12/29/92	NA	NA	NA	NA	NA
	03/31/93	<50	<0.5	<0.5	<0.5	<0.5
<u>MW-5</u>						
	04/16/90	<MDL	<MDL	<MDL	<MDL	<MDL
	06/11/90	<MDL	<MDL	<MDL	<MDL	<MDL
	08/22/90	<MDL	<MDL	<MDL	<MDL	<MDL
	09/12/90	<MDL	<MDL	<MDL	<MDL	<MDL
	10/10/90	<MDL	<MDL	<MDL	<MDL	<MDL
	11/15/90	<MDL	<MDL	<MDL	<MDL	<MDL
	12/11/90	<MDL	<MDL	<MDL	<MDL	<MDL
	01/09/91	<MDL	<MDL	<MDL	<MDL	<MDL
	02/22/91	<MDL	<MDL	<MDL	<MDL	<MDL
	05/14/91	<10	<0.3	<0.3	<0.3	<0.6
	09/11/91	<10	<0.3	<0.3	<0.3	<0.6
	10/11/91	NA	NA	NA	NA	NA
	11/12/91	NA	NA	NA	NA	NA
	12/11/91	<50	<0.5	<0.5	<0.5	<0.5
	01/28/92	NA	NA	NA	NA	NA
	02/28/92	NA	NA	NA	NA	NA
	03/31/92	<50	<0.5	<0.5	<0.5	1.2
	06/30/90	<50	<0.5	<0.5	<0.5	<0.5
RESNA	10/05/92	<50	<0.5	<0.5	<0.5	<0.5
	12/29/92	<50	<0.5	<0.5	<0.5	<0.5
	03/31/93	<50	<0.5	<0.5	<0.5	<0.5
<u>MW-6</u>						
	01/28/92	<50	<0.5	<0.5	<0.5	<0.5
	02/28/92	280	<0.5	0.3	<0.5	5.1
	03/31/92	<50	<0.5	<0.5	<0.5	<0.5
	06/30/92	<50	<0.5	<0.5	<0.5	<0.5
RESNA	10/05/92	<50	<0.5	<0.5	<0.5	<0.5
	12/29/92	<50	0.7	0.5	0.7	3.3
	03/31/93	<50	<0.5	<0.5	<0.5	<0.5

See notes on page 4 of 4.

First Quarter 1993 Quarterly Report
Castro Valley Boulevard, Castro Valley, California

April 27, 1993
62091.01

TABLE 2
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF GROUNDWATER SAMPLES
Former Texaco Service Station
3940 Castro Valley Boulevard
Castro Valley, California
(Page 4 of 4)

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes
<u>MW-7</u>	01/28/92	<50	<0.5	<0.5	<0.5	<0.5
	02/28/92	<50	<0.5	0.6	<0.5	1.8
	03/31/92	<50	<0.5	<0.5	<0.5	<0.5
	06/30/92	<50	<0.5	<0.5	<0.5	<0.5
RESNA	10/05/92	<50	<0.5	<0.5	<0.5	<0.5
	12/29/92	<50	0.5	<0.5	0.6	3.0
	03/31/93	60	0.8	<0.5	<0.5	<0.5
<u>MW-8</u>	01/28/92	<50	<0.5	<0.5	<0.5	<0.5
	02/28/92	69	<0.5	<0.5	<0.5	0.9
	03/31/92	62	<0.5	<0.5	<0.5	4.3
	06/30/92	<50	<0.5	<0.5	<0.5	<0.5
RESNA	10/05/92	<50	<0.5	<0.5	<0.5	<0.5
	12/29/92	<50	<0.5	<0.5	<0.5	<0.5
	03/31/93	<50	<0.5	<0.5	<0.5	<0.5
	MCLs:	-	1.0	-	680	1,750
	DWAL:	-	-	100	-	--

Results in parts per billion (ppb).

- NA : Not Analyzed
- PQL : Practical quantitative level
- MDL : Method detection limit
- TPHg : Total petroleum hydrocarbons as gasoline analyzed by EPA method 5030/602.
- BTEX : Analyzed by EPA method 5030/602.
- RESNA : RESNA began quarterly sampling.
- < : 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 Level, DHS (October 1990)

APPENDIX A

**GROUNDWATER SAMPLING PROTOCOL
AND 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 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 bailer or a 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 each 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 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 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.

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: March 31, 1993

Page 1 of 1

Well No. MW-1

Time Started 4:50

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
4:50	Start purging MW-3			
4:50	0	62.7	7.51	2070
4:58	11.75	63.2	7.49	2070
5:06	23.50	63.4	7.47	2060
5:14	35.25	63.3	7.46	2070
5:22	47.00	63.1	7.47	2060
5:23	Stop purging MW-3			
Notes:				
<p style="text-align: center;">NM = Not Measured</p> <p style="text-align: right;">Well Diameter (inches) : 4</p> <p style="text-align: right;">Depth to Bottom (feet) : 39.02</p> <p style="text-align: right;">Depth to Water - initial (feet) : 21.38</p> <p style="text-align: right;">Depth to Water - final (feet) : 21.38</p> <p style="text-align: right;">% recovery : 100%</p> <p style="text-align: right;">Time Sampled : 6:00</p> <p style="text-align: right;">Gallons per Well Casing Volume : 11.64</p> <p style="text-align: right;">Gallons Purged : 47</p> <p style="text-align: right;">Well Casing Volume Purged : 4</p> <p style="text-align: right;">Approximate Pumping Rate (gpm) : 1½</p>				

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: March 31, 1993

Page 1 of 1

Well No. MW-3

Time Started 2:30

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
2:30	Start purging MW-3			
2:30	0	64.5	7.65	1960
2:37	10	64.8	7.60	1990
2:44	20	64.8	7.57	1970
2:51	30	64.7	7.55	1950
2:58	40	64.8	7.53	1960
2:59	Stop purging MW-3			

Notes:

NM = Not Measured
 Well Diameter (inches) : 4
 Depth to Bottom (feet) : 34.24
 Depth to Water - initial (feet) : 19.50
 Depth to Water - final (feet) : 19.50
 % recovery : 100%
 Time Sampled : 4:05
 Gallons per Well Casing Volume : 9.73
 Gallons Purged : 40
 Well Casing Volume Purged : 4
 Approximate Pumping Rate (gpm) : 1½

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: March 31, 1993

Page 1 of 1

Well No. MW-4

Time Started 4:00

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
4:00	start purging MW-5			
4:00	0	64.2	7.58	2130
4:09	13	64.0	7.52	2090
4:18	26	63.8	7.55	2060
4:27	39	63.8	7.54	2070
4:36	52	63.9	7.55	2060
4:37	Stop purging MW-5			
Notes:				
	Well Diameter (inches) :	4		
	Depth to Bottom (feet) :	40.00		
	Depth to Water - initial (feet) :	20.63		
	Depth to Water - final (feet) :	20.63		
	% recovery :	100%		
	Time Sampled :	5:45		
	Gallons per Well Casing Volume :	12.78		
	Gallons Purged :	52.00		
	Well Casing Volume Purged :	4		
	Approximate Pumping Rate (gpm) :	1½		

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: March 31, 1993

Page 1 of 1

Well No. MW-5

Time Started 1:20

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
1:20	Start purging MW-5			
1:20	0	63.9	7.70	1920
1:30	14.5	63.8	7.69	1900
1:40	29	64.1	7.68	1940
1:50	43.5	64.3	7.66	1950
2:00	58	64.2	7.65	1940
2:01	Stop purging MW-5			
Notes:				
	Well Diameter (inches) :	4		
	Depth to Bottom (feet) :	42.20		
	Depth to Water - initial (feet) :	20.55		
	Depth to Water - final (feet) :	20.55		
	% recovery :	100%		
	Time Sampled :	3:05		
	Gallons per Well Casing Volume :	14.30		
	Gallons Purged :	58.00		
	Well Casing Volume Purged :	4		
	Approximate Pumping Rate (gpm) :	1½		

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: March 31, 1993

Page 1 of 1

Well No. MW-6

Time Started 10:00

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
10:00	Start purging MW-6			
10:00	0	67.0	7.58	1850
10:05	13.7	67.2	7.53	2330
10:10	27.4	67.4	7.53	2480
10:15	41.1	67.3	7.52	2490
10:20	55.0	67.4	7.52	2480
10:21	Stop purging MW-6			

Notes:

NM = Not Measured
 Well Diameter (inches) : 4
 Depth to Bottom (feet) : 37.20
 Depth to Water - initial (feet) : 16.45
 Depth to Water - final (feet) : 16.45
 % recovery : 100%
 Time Sampled : 4:15
 Gallons per Well Casing Volume : 13.70
 Gallons Purged : 55.0
 Well Casing Volume Purged : 4
 Approximate Pumping Rate (gpm) : 3

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: March 31, 1993

Page 1 of 1

Well No. MW-7

Time Started 12:30

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
12:30	Start purging MW-7			
12:30	0	66.1	7.72	1930
12:38	12.5	66.3	7.69	2010
12:46	25.0	65.6	7.67	1940
12:58	37.5	65.6	7.65	1950
1:06	50.0	65.7	7.65	1950
1:07	Stop purging MW-7			

Notes:

Well Diameter (inches) : 4
 Depth to Bottom (feet) : 37.26
 Depth to Water - initial (feet) : 18.35
 Depth to Water - final (feet) : 18.35
 % recovery : 100%
 Time Sampled : 2:10
 Gallons per Well Casing Volume : 12.50
 Gallons Purged : 50.0
 Well Casing Volume Purged : 4
 Approximate Pumping Rate (gpm) : 1½

WELL PURGE DATA SHEET

Project Name: Texaco--Castro Valley

Job No. 62091.01

Date: March 31, 1993

Page 1 of 1

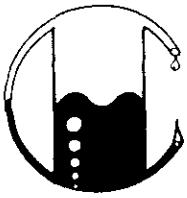
Well No. MW-8

Time Started 3:15

TIME (hr)	GALLONS (cum.)	TEMP. (F)	pH	CONDUCT. (micromho)
3:15	Start purging MW-8			
3:15	0	63.3	7.78	780
3:22	10.5	63.9	7.56	2160
3:29	21.0	64.1	7.53	2360
3:36	31.5	64.0	7.54	2350
3:43	42.0	64.2	7.55	2360
3:44	Stop purging MW-8			
Notes:				
	Well Diameter (inches) :	4		
	Depth to Bottom (feet) :	38.25		
	Depth to Water - initial (feet) :	22.63		
	Depth to Water - final (feet) :	23.63		
	% recovery :	100%		
	Time Sampled :	4:45		
	Gallons per Well Casing Volume :	10.31		
	Gallons Purged :	42.0		
	Well Casing Volume Purged :	4		
	Approximate Pumping Rate (gpm) :	1½		

APPENDIX B

**LABORATORY ANALYSIS REPORTS AND
CHAIN OF CUSTODY DOCUMENTATION**



MOBILE CHEM LABS INC.

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

APL

62091.01\1718\012590

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

Date Sampled: 03-31-93
Date Received: 04-02-93
Date Analyzed: 04-08-93

Sample Number

043067

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
BB1 WATER

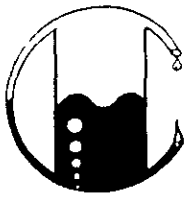
ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	2.9
Toluene	0.5	6.0
Xylenes	0.5	7.9
Ethylbenzene	0.5	1.0

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.

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

62091.01\1718\012590

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

Date Sampled: 03-31-93
Date Received: 04-02-93
Date Analyzed: 04-08-93

Sample Number

043068

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-6 WATER

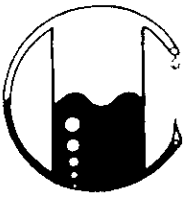
ANALYSIS

	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) = (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: 03-31-93
Date Received: 04-02-93
Date Analyzed: 04-08-93

Sample Number

043069

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-7 WATER

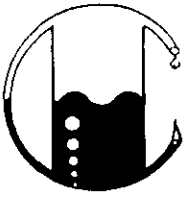
ANALYSIS

	Detection Limit	Sample Results
	----- ppb	----- ppb
Total Petroleum Hydrocarbons as Gasoline	50	60
Benzene	0.5	0.8
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) = (µg/L)

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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: 03-31-93
Date Received: 04-02-93
Date Analyzed: 04-08-93

Sample Number

043070

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-5 WATER

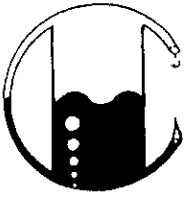
ANALYSIS

	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) = (µg/L)

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Ronald G. Evans
Lab Director



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

Date Sampled: 03-31-93
Date Received: 04-02-93
Date Analyzed: 04-08-93

Sample Number

043071

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-3 WATER

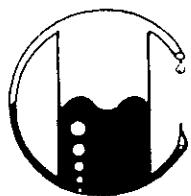
ANALYSIS

	Detection Limit ----- ppb	Sample Results ----- ppb
Total Petroleum Hydrocarbons as Gasoline	50	64
Benzene	0.5	5.6
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) = (µg/L)

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Ronald G. Evans
Lab Director



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Phone (510) 372-3700 • Fax (510) 372-6955

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

Date Sampled: 03-31-93
Date Received: 04-02-93
Date Analyzed: 04-08-93

Sample Number

043072

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-8 WATER

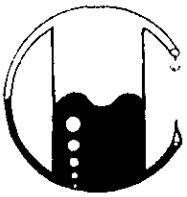
ANALYSIS

	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) = (µg/L)

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Ronald G. Evans
Lab Director



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Phone (510) 372-3700 • Fax (510) 372-6955

62091.01\1718\012590

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

Date Sampled: 03-31-93
Date Received: 04-02-93
Date Analyzed: 04-08-93

Sample Number

043073

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-4 WATER

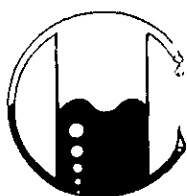
ANALYSIS

	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

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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62091.01\1718\012590

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

Date Sampled: 03-31-93
Date Received: 04-02-93
Date Analyzed: 04-08-93

Sample Number

043074

Sample Description

Project # 62091.01
Texaco - Castro Valley
3940 Castro Valley Blvd.
MW-1 WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	1.0
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) = ($\mu\text{g/L}$)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PROJECT NO. 62091.01		PROJECT NAME/SITE TEXACO 3940 Castro Vly Blvd. Castro Vly.					ANALYSIS REQUESTED										PO #						
SAMPLERS (SIGN) Robin A. Adair		(PRINT) Robin A. Adair					NO. CONTAINERS	SAMPLE TYPE	/										REMARKS				
SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	PRES. USED	ICED			BTEX (602/8020)	TPHg (8015)	TPHg (8015)	TOC 4/18 1/5520	601/8010	624/8240	625/8270								
BBI ✓	3-31-93	11:10			HCL	Y	2	X	X														
MW-6 ✓		11:15					2	X	X														
MW-7 ✓		2:10					2	X	X														
MW-5 ✓		3:05					2	X	X														
MW-3 ✓		11:05					2	X	X														
MW-8 ✓		4:45					2	X	X														
MW-4 ✓		5:45					2	X	X														
MW-1 ✓		6:00					2	X	X														

RELINQUISHED BY Robin A. Adair	DATE 3-31-93	TIME 7:00 pm	RECEIVED BY:	LABORATORY Mobile Chem Labs	PLEASE SEND RESULTS TO Phil Mayberry Resna, San Jose
RELINQUISHED BY	DATE	TIME	RECEIVED BY.		
RELINQUISHED BY <i>[Signature]</i>	DATE 4.2.93	TIME 10:30	RECEIVED BY	REQUESTED TURNAROUND TIME NORMAL	
RELINQUISHED BY	DATE 4-2-93	TIME 10:30	RECEIVED BY LABORATORY Dave Kenner	RECEIPT CONDITION on ICE no head space	PROJECT MANAGER