PACIFIC
ENVIRONMENTAL
GROUP INC.

Reviewed 7/6/93
- MW's sampled on 4/23/93
- next sampling on ~7/23/93 (median strip) then
- will resume wells MW-11-13
- installed extraction wells VEW 2-5
- will they be performing add VET. ?
- sent out pkg for bid for VES remedi
- perimeter wells impacted

June 24, 1993
Project 305-79.01

Mr. Dan Kirk
Shell Oil Company
P.O. Box 5278
Concord, California 94520

Re: Quarterly Report - Second Quarter 1993
Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California
WIC No 204-5508-5504

Dear Mr. Kirk:

This letter presents the results of the second quarter 1993 monitoring program for Shell Oil Company (Shell) prepared by Pacific Environmental Group, Inc. (PACIFIC) for the site referenced above (Figures 1 and 2).

FINDINGS

Groundwater monitoring wells were gauged and sampled by Blaine Tech Services, Inc. (Blaine) at the direction of PACIFIC on April 23, 1993. Groundwater elevation contours for the sampling date are shown on Figure 2. Table 1 presents groundwater elevation data.

Groundwater analytical data are presented in Tables 2 and 3. All wells were analyzed for total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), TPH calculated as motor oil (TPH-mo), and TPH calculated as diesel (TPH-d). TPH-g, benzene, and TPH-d concentrations for the April 1993 sampling event are shown on Figure 3. Blaine's groundwater sampling report is presented as Attachment A.

The laboratory noted that the concentrations reported as TPH-d for Wells MW-1, MW-2, MW-5, MW-6, MW-7, MW-9, MW-10, and the sample duplicate are primarily due to the presence of a lighter petroleum product, possibly gasoline.

2025 Gateway Place, Suite 440, San Jose, California 95110 (408) 441-7500 FAX (408) 441-7539

REMEDIAL SYSTEM PROGRESS

Four dual completion groundwater sparge and vapor extraction wells (VEW-2 through VEW-5), and three groundwater monitoring wells (MW-11, MW-12, and MW-13) were installed on June 8 through 10, 1993. **The plans for installation of the remediation system were sent out for bid on June 15, 1993.**

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

Sincerely,

Pacific Environmental Group, Inc.

Michael Hurd
Senior Geologist
RG 5319

REGISTERED GEOLOGIST
MICHAEL HURD
No. 5319
EXP. 6/94
STATE OF CALIFORNIA

Attachments:
Table 1 - Groundwater Elevation Data
Table 2 - Groundwater Analytical Data - Total Petroleum Hydrocarbons (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)
Table 3 - Groundwater Analytical Data - Total Petroleum Hydrocarbons (Oil and Grease and TPH as Motor Oil)
Figure 1 - Site Location Map
Figure 2 - Groundwater Elevation Contour Map
Figure 3 - TPH-g/Benzene/TPH-d Concentration Map
Attachment A - Groundwater Sampling Report

cc: Mr. Barney Chan, Alameda County Health Care Services
Mr. Richard Hiett, Regional Water Quality Control Board

Table 1
Groundwater Elevation Data

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-1	02/16/89	6.64	3.83	2.81
	05/23/89		3.59	3.05
	08/03/89		4.04	2.60
	12/15/89		4.22	2.42
	02/07/90		4.60	2.04
	04/18/90		4.02	2.62
	07/23/90		4.17	2.47
	09/27/90		4.60	2.04
	01/03/91		4.88	1.76
	04/10/91		3.55	3.09
	07/12/91		3.97	2.67
	10/08/91		4.26	2.38
	02/06/92		4.94	1.70
	05/04/92		3.58	3.06
	07/28/92		3.91	2.73
	10/27/92		4.79	1.85
	01/14/93		3.39	3.25
	04/23/93		2.67	3.97
MW-2	02/16/89	7.68	5.33	2.35
	05/23/89		5.23	2.45
	08/03/89		6.03	1.65
	12/15/89		6.43	1.25
	02/07/90		5.82	1.86
	04/18/90		5.88	1.80
	07/23/90		6.05	1.63
	01/03/91		6.82	0.86
	04/10/91		4.80	2.88
	07/12/91		5.70	1.98
	10/08/91		6.40	1.28
	02/06/92		6.40	1.28
	05/04/92		4.68	3.00
	07/28/92		5.86	1.82
	10/27/92		6.96	0.72
	01/14/93		4.12	3.56
	04/23/93		3.84	3.84
MW-3	02/16/89	7.81	5.17	2.64
	05/23/89		5.09	2.72
	08/03/89		5.34	2.47
	12/15/89		6.02	1.79
	02/07/90		4.95	2.86
	04/18/90		5.55	2.26
	07/23/90		5.81	2.00
	09/27/90		6.86	0.95
	01/03/91		6.84	0.97

Table 1 (continued)
Groundwater Elevation Data

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-3 (cont.)	04/10/91		4.93	2.88
	07/12/91		5.56	2.25
	10/08/91		6.62	1.19
	02/06/92		6.28	1.53
	05/04/92		4.65	3.16
	07/28/92		5.56	2.25
	10/27/92		6.65	1.16
	01/14/93		3.88	3.93
	04/23/93		--------- Well Inaccessible ----------	
MW-4	05/23/89	7.38	5.60	1.78
	08/03/89		6.37	1.01
	12/15/89		6.91	0.47
	03/08/90		6.06	1.32
	04/18/90		5.84	1.54
	07/23/90		6.92	0.46
	07/23/90		6.92	0.46
	09/27/91		8.03	0.65
	01/03/91		7.54	-0.16
	04/10/91		5.06	2.32
	07/12/91		6.86	0.52
	10/08/91		7.44	-0.06
	02/06/92		7.29	0.09
	05/04/92		5.33	2.05
	07/28/92		6.95	0.43
	10/27/92		7.65	-0.27
	01/14/93		4.84	2.54
	04/23/93		4.84	2.54
MW-5	05/23/89	8.18	5.47	2.71
	08/03/89		5.94	2.24
	12/15/89		6.75	1.43
	02/07/90		6.03	2.15
	04/18/90		5.80	2.38
	07/23/90		6.00	2.18
	09/23/90		7.18	1.00
	01/03/91		7.17	1.01
	04/10/91		5.25	2.93
	07/12/91		5.70	2.48
	10/08/91		6.50	1.68
	02/06/92		6.35	1.83
	05/04/92		4.87	3.31
	07/28/92		5.73	2.45
	10/27/92		6.98	1.20
	01/14/93		4.70	3.48
	04/23/93		4.19	3.99

Table 1 (continued)
Groundwater Elevation Data

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-6	05/23/89	8.21	5.47	2.74
	08/03/89		5.91	2.30
	12/15/89		5.98	2.23
	02/07/90		5.47	2.74
	04/18/90		5.80	2.41
	07/23/90		5.85	2.36
	09/27/90		6.42	1.79
	01/03/91		6.73	1.48
	04/10/91		5.24	2.97
	07/12/91		5.78	2.43
	10/08/91		6.36	1.85
	02/06/92		6.15	2.06
	05/04/92		5.07	3.14
	07/28/92		5.85	2.36
	10/27/92		6.69	1.52
	01/14/93		4.52	3.69
	04/23/93		4.32	3.89
MW-7	05/23/89	7.44	5.48	1.96
	08/03/89		4.22	3.22
	12/15/89		4.58	2.86
	02/07/90		5.34	2.10
	04/18/90		4.92	2.52
	07/23/90		4.99	2.45
	09/27/90		6.16	1.28
	01/03/91		4.96	2.48
	04/10/91		4.13	3.31
	07/12/91		4.98	2.46
	10/08/91		5.48	1.96
	02/06/92		5.05	2.39
	05/04/92		4.43	3.01
	07/28/92		4.88	2.56
	10/27/92		5.39	2.05
	01/14/93		4.26	3.18
	04/23/93		4.04	3.40
MW-8	05/23/89	7.79	6.62	1.17
	08/03/89		6.62	1.17
	12/15/89		6.71	1.08
	03/08/90		4.95	2.84
	04/18/90		6.40	1.89
	07/23/90		6.62	1.17
	09/27/90		6.98	0.81
	01/03/91		7.03	0.76
	04/10/91		4.40	3.39

Table 1 (continued)
Groundwater Elevation Data

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-8 (cont.)	07/12/91		6.80	0.99
	10/08/91		7.56	0.23
	02/06/92		6.94	0.85
	05/04/92		5.86	1.93
	07/28/92		6.94	0.85
	10/27/92		7.83	-0.04
	01/14/93		3.60	4.19
	04/23/93		4.12	3.67
MW-9	08/03/89	7.63	5.78	1.85
	12/15/89		5.24	2.39
	02/07/90		5.23	2.40
	04/18/90		5.34	2.29
	07/23/90		5.65	1.98
	09/27/90		5.96	1.67
	01/03/91		6.23	1.40
	04/10/91		4.65	2.98
	07/12/91		5.65	1.98
	10/08/91		6.08	1.55
	02/06/92		5.92	1.71
	05/04/92		4.80	2.83
	07/28/92		5.61	2.02
	10/27/92		6.24	1.39
	01/14/93		4.95	2.68
	04/23/93		4.54	3.09
MW-10	12/15/89	7.45	6.33	0.82
	03/08/90		5.41	2.00
	04/18/90		5.60	1.85
	07/23/90		5.81	1.64
	09/27/90		6.64	0.81
	01/03/91		6.96	0.49
	04/10/91		4.70	2.75
	07/12/91		5.90	1.55
	10/08/91		6.68	0.77
	02/06/92		7.04	0.41
	05/04/92		4.69	2.76
	07/28/92		6.00	1.45
	10/27/92		---------- Well Inaccessible ----------	
	01/14/93		6.07	1.38
	04/23/93		4.14	3.31

MSL = Mean sea level
TOC = Top of casing

Table 2
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-1	02/16/92	99.0	20	23	5.7	23	NA
	05/23/92	48.0	4.2	5.2	1.2	7.7	11.0
	08/04/89	63.0	5.5	5.5	3.2	9.5	11.0
	12/15/89	30.0	ND	ND	ND	ND	11.0
	02/07/90	93.0	13.0	9.6	2.4	14.0	10.0
	04/18/90	55.0	14.0	8.4	3.2	13.0	8.7
	07/24/90	73.0	16.0	7.40	2.80	15.0	3.6
	10/01/90	45.0	8.0	4.3	2.0	11.0	1.7
	01/02/91	43.0	10.0	3.40	1.90	11.0	3.10
	04/09/91	67.0	20.0	9.60	3.50	16.0	1.8
	07/11/91	NR	NR	NR	NR	NR	NR
	10/08/91	55	18	3.5	2.3	8.6	7.4
	02/06/92	48.0	12.0	2.8	1.9	7.4	15.0[a]
	05/05/92	71	16	6.0	3.1	14	10[a]
	07/28/92	68	21	5.5	3.4	15	18[a]
	07/28/92(D)	70	17	5.0	2.7	13	19[a]
	10/27/92	53	18	3.7	3.4	11	1.3
	10/27/92(D)	48	17	3.6	3.1	9.9	2.5[a]
	01/15/93	84	17	5.4	3.0	13	22[a]
	04/23/93	100	18	7.8	4.7	20	23[b]
MW-2	02/16/89	20.0	0.2	0.9	2.7	9.6	NA
	05/23/89	1.5	0.0043	0.0029	0.011	0.15	1.6
	08/04/89	15.0	0.075	0.12	0.85	2.2	7.4
	12/15/89	5.0	0.052	0.013	0.0041	0.29	2.6
	02/07/90	13.0	0.032	0.034	0.23	0.640	4.8
	04/18/90	9.8	0.033	0.019	0.46	1.7	3.2
	07/24/90	9.6	0.041	0.027	0.540	0.940	2.7
	10/01/90	0.39	0.0034	0.015	0.0085	0.025	1.6
	01/02/91	1.8	0.056	0.0044	0.0048	0.092	0.83
	04/09/91	1.9	ND	0.028	0.140	0.490	0.28
	07/11/91	8.1	0.089	0.066	0.350	0.930	1.1
	10/08/91	1.4	0.0051	0.0015	0.036	0.270	2.6
	02/06/92	2.0	0.0078	0.0025	0.13	0.210	5.4[a]
	05/05/92	21[c]	ND	ND	0.30	0.96	1.0
	07/28/92	2.1	0.0077	0.0033	0.13	0.31	0.83[a]
	10/27/92	1.1	0.016	0.0031	0.0045	0.025	0.53
	01/15/93+	0.29	0.0052	0.0031	0.0084	0.021	0.17[c]
	04/23/93	2.4	ND	ND	0.21	0.61	1.2[b]
MW-3	02/16/89	60.0	5.5	0.2	3.2	5.2	NA
	05/23/89	ND	ND	ND	ND	ND	1.5
	08/04/89	2.0	0.12	0.012	ND	0.086	1.2

Table 2 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-3 (cont.)	12/15/89	5.2	0.38	0.047	0.017	0.410	1.7
	03/08/90	0.26	0.017	ND	0.0054	0.0025	0.23
	04/19/90	0.26	ND	ND	ND	0.0094	ND
	07/24/90	0.51	0.046	0.0012	ND	0.0093	0.21
	09/28/90	0.46	0.0063	0.0017	ND	0.015	0.35
	01/02/91	4.8	0.920	0.0088	ND	0.190	0.63
	04/09/91	0.12	0.0012	0.0008	0.0035	0.021	0.06
	07/11/91	0.43	0.012	ND	ND	0.0077	ND
	10/08/91	0.77	0.140	0.0007	ND	0.053	0.56
	02/06/91	0.50	0.074	0.0009	0.0052	0.0053	0.34[a]
	05/04/92	0.31	0.047	ND	0.017	0.016	0.29[a]
	07/28/92	0.78	0.13	ND	0.013	0.0042	0.10[a]
	10/27/92	0.74	0.092	0.0028	0.0078	0.0096	0.069[a]
	01/15/93	ND	0.0024	ND	ND	ND	ND
	04/23/93	---------- Well Inaccessible ----------					
MW-4	05/23/89	ND	ND	ND	ND	ND	ND
	08/04/89	ND	ND	ND	ND	ND	ND
	12/15/89	ND	ND	ND	ND	ND	ND
	03/08/90	ND	ND	ND	ND	ND	ND
	07/25/90	ND	ND	ND	ND	ND	ND
	09/28/90	ND	ND	ND	ND	ND	ND
	01/02/91	ND	ND	ND	ND	ND	ND
	04/09/91	ND	ND	ND	ND	ND	ND
	07/11/91	ND	ND	ND	ND	ND	ND
	10/08/91	ND	ND	ND	ND	ND	ND
	02/06/92	0.12	ND	ND	ND	ND	2.5[a]
	05/04/92	ND	ND	ND	ND	ND	0.053
	07/28/92	ND	ND	ND	ND	ND	0.060
	10/27/92	ND	ND	ND	ND	ND	ND
	01/14/93	ND	ND	ND	ND	ND	ND
	04/23/93	ND	ND	ND	ND	ND	ND
MW-5	05/23/89	26.0	1.5	0.28	ND	8.1	7.0
	08/05/89	12.0	0.86	0.094	ND	2.6	8.7
	12/15/89	1.00	0.022	0.035	0.018	0.044	0.71
	02/08/90	ND	0.0008	ND	ND	ND	0.62
	04/19/90	19.0	4.5	0.85	0.097	8.0	5.0
	07/24/90	23.0	3.6	0.400	0.160	6.50	2.7
	09/28/90	5.4	1.40	0.026	0.013	1.30	0.55
	01/02/91	0.86	0.280	0.0028	0.0008	0.045	0.56
	04/09/91	12.0	0.710	0.130	0.500	2.4	1.8
	07/11/91	24.0	2.2	0.280	0.430	5.7	1.7

Table 2 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-5	10/08/91	2.8	0.860	0.013	ND	0.580	1.4
(cont.)	02/06/92	1.0	0.30	ND	0.014	0.062	1.2
	05/05/92	10	1.5	0.35	0.71	2.3	4.1[a]
	07/28/92	12	2.2	0.063	1.4	3.5	3.8[a]
	10/27/92	7.5	1.1	0.059	0.23	0.90	0.48[a]
	01/15/93	7.7	0.42	0.049	0.57	0.84	1.1[d]
	04/23/93	110	2.9	2.5	3.4	12.0	16[b]
MW-6	05/23/89	22.0	0.016	0.0065	0.0066	3.4	7.0
	08/04/89	28.0	1.2	0.13	2.1	2.8	8.8
	12/15/89	16.0	0.37	0.092	0.20	0.18	5.5
	02/07/90	22.0	0.52	0.085	0.63	0.77	2.6
	04/18/90	21.0	0.9	0.077	2.7	2.7	5.7
	07/24/90	24.0	1.00	0.094	3.40	2.70	3.0
	10/01/90	22.0	0.70	0.093	2.50	2.40	ND
	01/02/91	25.0	1.00	0.088	2.60	3.70	0.96
	04/09/91	18.0	0.560	0.190	0.480	0.830	0.92
	07/11/91	9.5	0.670	0.051	1.1	0.920	1.9
	10/08/91	11.0	1.00	0.043	ND	ND	5.1
	02/06/92	7.2	0.56	0.008	0.72	0.16	15.0[a]
	05/05/92	7.9	0.61	ND	1.5	0.24	2.9[a]
	07/28/92	17	1.2	ND	3.0	0.61	3.2[a]
	10/27/92	15	1.3	0.13	1.7	0.49	1.3[a]
	01/14/93	4.9	0.08	0.031	0.33	0.037	1.6[a]
	04/23/93	4.8	0.12	ND	0.78	0.073	1.8[b]
MW-7	05/23/89	47.0	3.5	5.0	1.5	7.8	11
	08/04/89	68.0	6.2	6.6	3.6	8.8	22
	12/15/89	100.0	4.5	5.3	1.3	5.3	12
	02/08/90	96.0	15.0	15.0	2.5	14.0	8.1
	04/19/90	94.0	25.0	13.0	3.3	13.0	10.0
	07/24/90	84.0	3.8	26.0	13.0	3.0	12.0
	09/28/90	43.0	25.0	6.10	2.40	9.0	ND
	01/02/91	78.0	26.0	16.0	3.0	14.0	3.10
	04/09/91	140.0	26.0	16.0	2.20	14.0	1.8
	07/11/91	79.0	7.7	7.2	2.3	10.0	1.1
	10/08/91	55.0	29.0	7.5	1.8	9.3	0.39[a]
	02/06/92	63.0	16.0	8.7	1.6	7.4	9.6[a]
	05/05/92	67	22	13	1.8	9.4	9.8[a]
	07/28/92	85	26	17	2.9	15	13.0[a]
	10/27/92	63	21	11	3.0	11	1.9[a]
	01/14/93	120	28	21	1.6	15	2.3[a]
	04/23/93	60	17	3.7	2.2	11	12[b]
	04/23/93(D)	50	17	4.2	2.2	11	14[b]

Table 2 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-8	05/23/89	ND	ND	ND	ND	ND	0.10
	08/04/89	ND	ND	ND	ND	ND	0.075
	12/15/89	ND	ND	ND	ND	ND	ND
	03/08/90	ND	ND	ND	ND	ND	ND
	07/25/90	ND	ND	ND	ND	ND	ND
	09/28/90	ND	ND	ND	ND	ND	1.1
	01/02/91	ND	0.0013	ND	ND	ND	ND
	04/09/91	0.05	0.0007	0.0011	0.0008	0.0010	ND
	07/11/91	ND	ND	ND	ND	ND	ND
	10/08/91	ND	0.0014	ND	ND	ND	ND
	02/06/92	ND	ND	0.0007	ND	ND	0.06[a]
	05/04/92	ND	ND	ND	ND	ND	0.21[c]
	07/28/92	0.051	ND	ND	0.001	0.0006	ND
	10/27/92	ND	ND	0.0066	ND	ND	ND
	01/14/93	ND	ND	ND	ND	ND	0.064[c]
	01/14/93(D)	ND	ND	ND	ND	ND	NA
	04/23/93	ND	ND	ND	ND	ND	ND
MW-9	08/04/89	47.0	5.6	6.6	1.5	8.5	12.0
	12/15/89	88.0	4.3	5.4	0.14	5.6	9.2
	02/08/90	50.0	1.8	1.4	3.2	1.8	7.4
	04/19/90	50.0	14.0	11.0	0.73	10.0	7.5
	07/24/90	62.0	19.0	16.0	0.950	15.0	3.20
	09/28/90	30.0	16.0	6.50	0.980	11.0	2.70
	01/02/91	34.0	9.20	3.20	0.770	7.00	2.50
	04/09/91	66.0	17.0	13.0	1.40	14.0	2.2
	07/11/91	40.0	7.7	3.2	1.1	9.4	2.0
	10/08/91	20.0	11.0	0.640	0.240	6.0	4.7[a]
	02/06/92	36.0	11.0	0.49	1.1	6.7	6.6[a]
	05/05/92	31	11	1.7	1.2	8.7	5.8[a]
	07/28/92	50	17	1.2	1.5	12	14.0
	10/27/92	43	15	0.68	1.7	8.1	0.88[a]
	01/15/93	52	9.6	1.1	1.1	7.0	0.73[a]
	04/23/93	45	11	1.4	1.5	10	8.0[b]
MW-10	12/15/89	ND	1.5	ND	ND	ND	3.1
	03/08/90	25.0	17	0.330	2.1	1.4	1.8
	04/19/90	23.0	15.0	1.2	0.19	3.3	3.6
	07/25/90	18.0	12.0	0.38	ND	1.40	1.9
	09/28/90	9.5	13.0	0.100	1.80	0.23	0.43
	01/02/91	4.3	3.70	0.0097	ND	0.110	0.63
	04/09/91	45	16.0	4.60	3.0	6.90	1.4

Table 2 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-10	07/11/91	ND	ND	ND	ND	ND	
(cont.)	10/08/91	3.8	13.0	0.082	0.0091	0.500	1.5[a]
	02/06/92	22.0	12.0	ND	0.60	0.17	1.6[a]
	05/05/92	39	14	5.0	1.8	5.0	8.0[a]
	07/28/92	38	17	2.8	1.5	4.0	8.7[a]
	10/27/92	---------- Well Inaccessible ----------					
	01/14/93	26	10	ND	ND	0.16	0.95[d]
	04/23/93	80	21	13	3.4	12	19[b]

ppm = Parts per million
NA = Not analyzed
ND = Not detected
NR = Not reported
(D) = Duplicate sample
\+ = TPH-d analysis from April 8, 1993.

a. The laboratory noted that compound detected and calculated as TPH-d primarily appears to be due to a lighter petroleum product.
b. The laboratory noted that compound detected and calculated as TPH-d primarily appears to be due to a lighter petroleum product, possibly gasoline.
c. Laboratory noted that compound detected and calculated as TPH-d appears to be a heavier hydrocarbon compound.
d. Laboratory noted that compound detected as TPH-d are due to the presence of a combination of a heavier petroleum product and a lighter petroleum product.

See individual certified analytical reports for detection limits.

Table 3
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(Oil and Grease and TPH as Motor Oil)

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

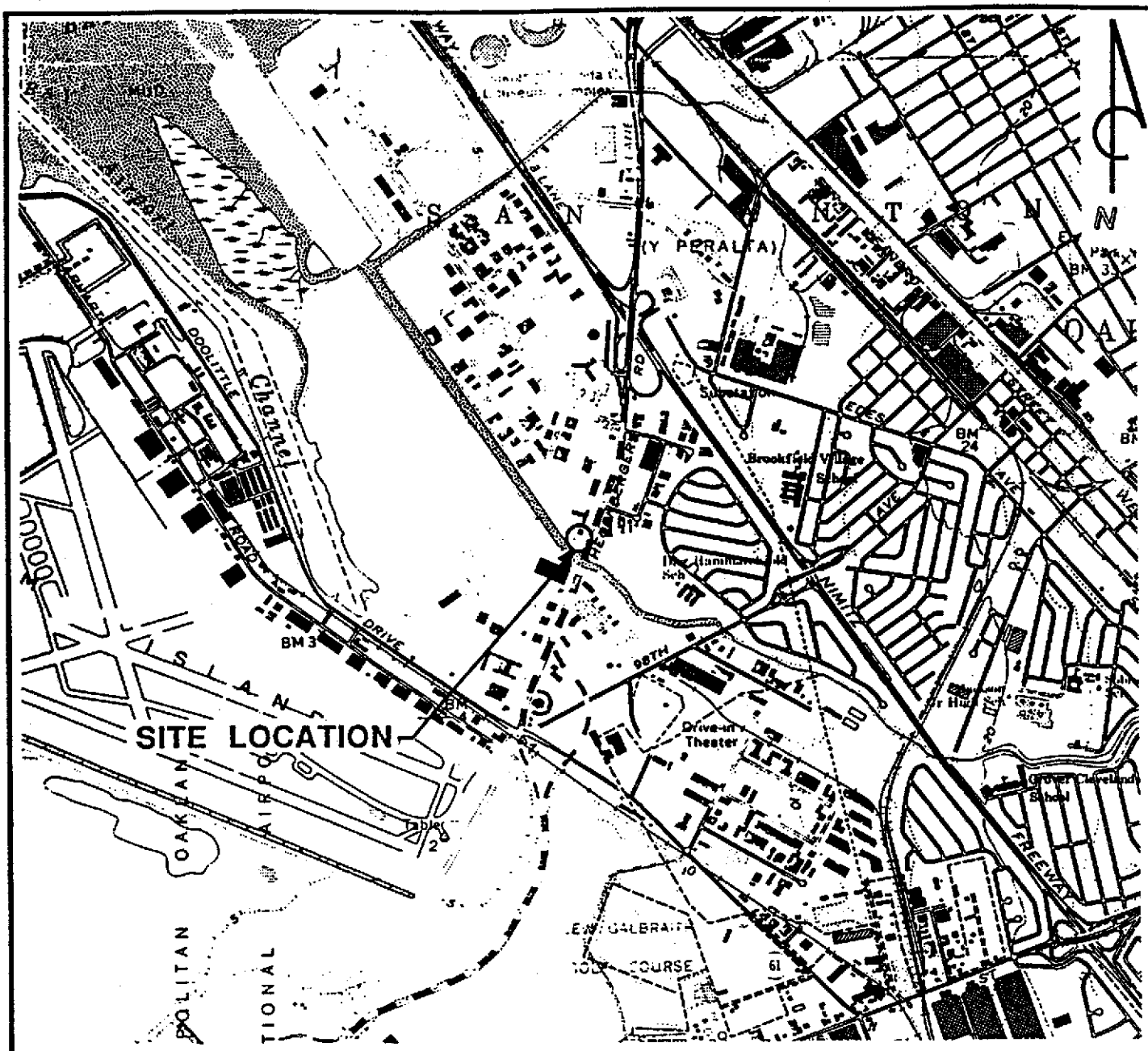
Well Number	Date Sampled	Oil and Grease (ppm)	TPH as Motor Oil (ppm)
MW-1	07/28/92	NA	ND
	07/28/92(D)	NA	ND
	01/15/93	NA	ND
	04/23/93	NA	ND
MW-2	07/28/92	NA	0.32
	01/14/93	NA	NA
	04/23/93	NA	ND
MW-3	07/28/92	ND	0.12
	10/27/92	ND	0.1
	01/15/93	ND	0.12
	04/23/93	NA	ND
MW-4	07/28/92	NA	ND
	01/14/93	NA	0.12
	04/23/93	NA	0.17
MW-5	07/28/92	NA	1.2
	01/15/93	NA	0.43
	04/23/93	NA	ND
MW-6	07/28/92	NA	ND
	01/14/93	NA	ND
	04/23/93	NA	ND
MW-7	07/28/92	NA	ND
	01/14/93	NA	NA
	04/23/93	NA	ND
	04/23/93(D)	NA	ND
MW-8	07/28/92	NA	0.15
	01/14/93	NA	NA
	04/23/93	NA	0.15
MW-9	07/28/92	NA	ND
	01/13/93	NA	NA
	04/23/93	NA	ND

Table 3 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(Oil and Grease and TPH as Motor Oil)

Shell Service Station
285 Hegenberger Road at Leet Drive
Oakland, California

Well Number	Date Sampled	Oil and Grease (ppm)	TPH as Motor Oil (ppm)
MW-10	07/28/92	NA	ND
	01/14/93	NA	0.20
	04/23/93	NA	ND

ppm = Parts per million
NA = Not analyzed
ND = Not detected
(D) = Duplicate sample



QUADRANGLE LOCATION

REFERENCES:
USGS 7.5 MIN. TOPOGRAPHIC MAP
TITLED: SAN LEANDRO, CALIFORNIA
DATED: 1959 REVISED: 1980
TITLED: OAKLAND EAST, CALIFORNIA
DATED: 1959 REVISED: 1980

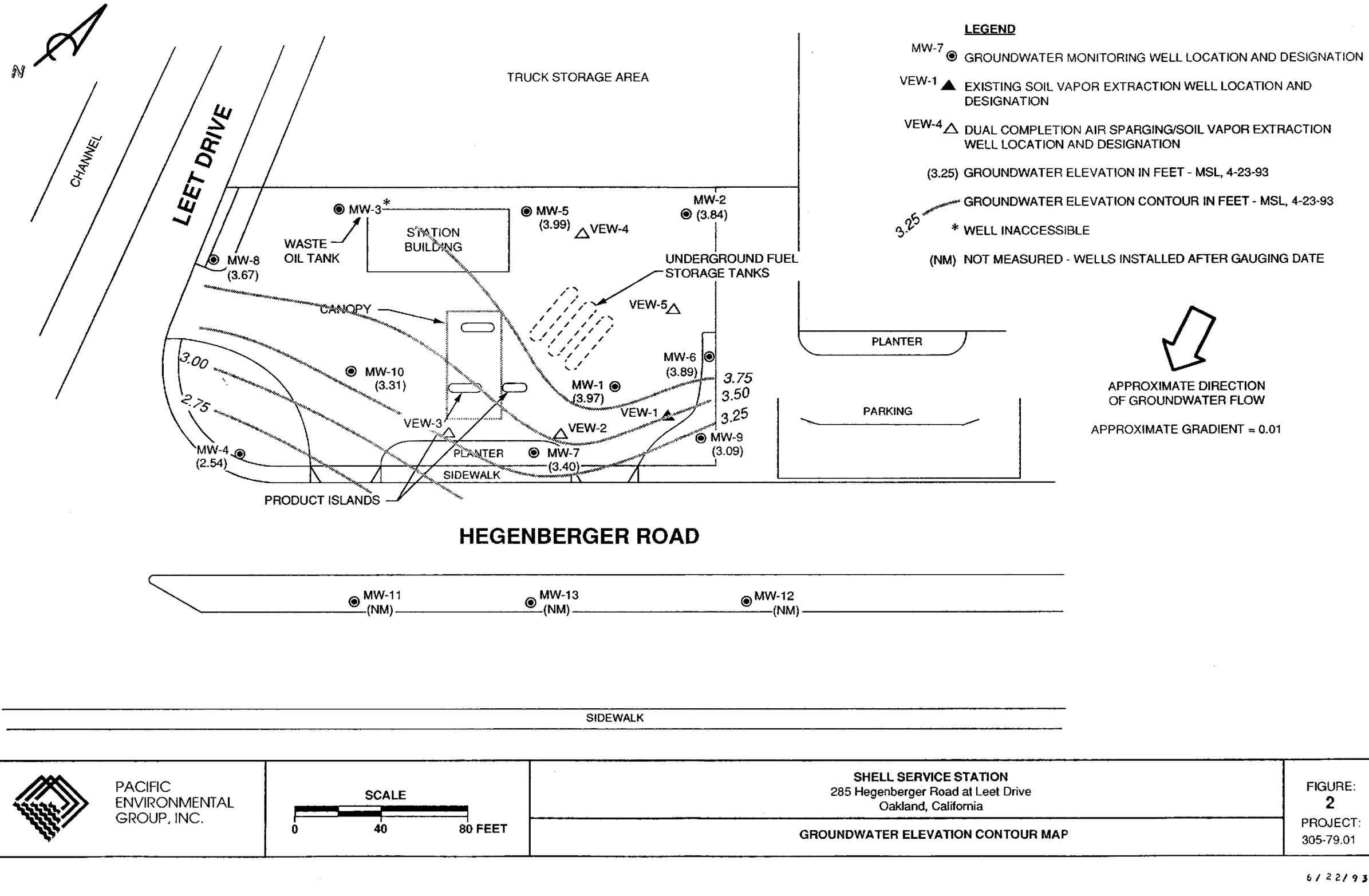
SCALE
2000 0 2000 FEET

PACIFIC ENVIRONMENTAL GROUP, INC.

SHELL SERVICE STATION
285 Hegenberger Road at Leet Drive
Oakland, California

SITE LOCATION MAP

FIGURE: 1
PROJECT: 305-79.01



PACIFIC ENVIRONMENTAL GROUP, INC.

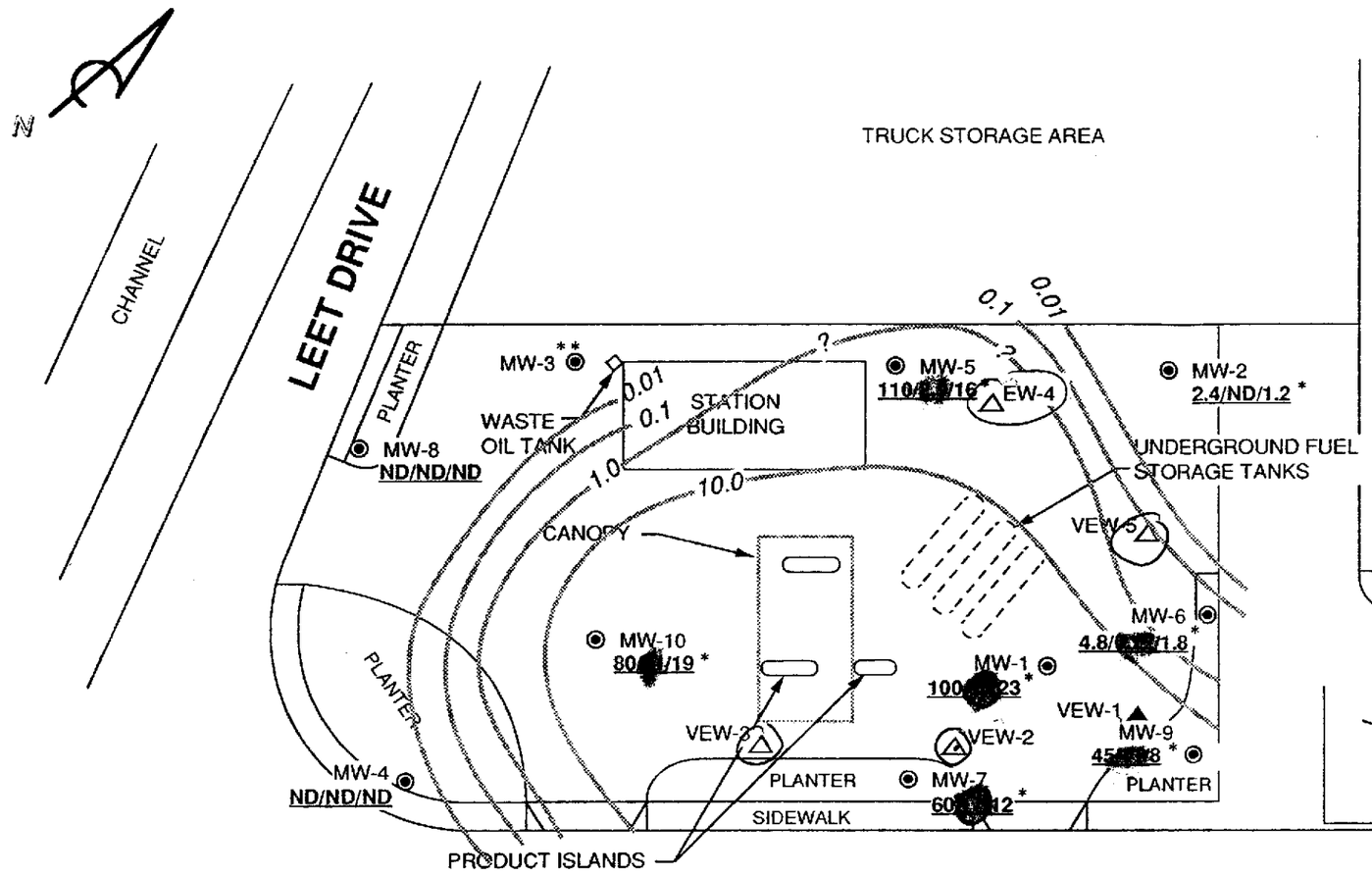
SCALE
0 40 80 FEET

SHELL SERVICE STATION
285 Hegenberger Road at Leet Drive
Oakland, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: 2
PROJECT: 305-79.01

6/22/93



HEGENBERGER ROAD

MW-11 NS
MW-13 NS
MW-12 NS

SIDEWALK

LEGEND

- MW-7 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- VEW-1 ▲ EXISTING SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
- VEW-4 △ DUAL COMPLETION AIR SPARGING/SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
- 110/2.9/16 TPH-g/BENZENE/TPH-d CONCENTRATION IN GROUNDWATER, IN PARTS PER MILLION (ppm), 4-23-93
- —1.0— BENZENE ISOCONCENTRATION CONTOUR IN ppm, 4-23-93
- ND NOT DETECTED
- NS NOT SAMPLED - WELLS INSTALLED AFTER SAMPLING EVENT
- ** WELL INACCESSIBLE
- * LAB NOTES CONCENTRATION AS DUE TO LIGHTER HYDROCARBON, POSSIBLY GASOLINE

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 40 80 FEET

SHELL SERVICE STATION
285 Hegenberger Road at Leet Drive
Oakland, California

TPH-g/BENZENE/TPH-d CONCENTRATION MAP

FIGURE: 3
PROJECT: 305-79.01

6/22/93

ATTACHMENT A

GROUNDWATER SAMPLING REPORT

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

May 26, 1993

Shell Oil Company
P.O. Box 5278
Concord, CA 94520-9998

Attn: Daniel T. Kirk

SITE:
Shell WIC # 204-5508-5504
285 Hegenberger Rd.
Oakland, California

QUARTER:
2nd quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930423-W-1

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a TABLE OF WELL GAUGING DATA. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of the water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

TABLE OF WELL GAUGING DATA

WELL I.D.	WELL DIAMETER (inches)	DATA COLLECTION DATE	MEASUREMENTS REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	4	04-23-93	TOP OF PIPE	ODOR	NONE	--	--	2.67	9.52
MW-2	4	04-23-93	TOP OF PIPE	ODOR	NONE	--	--	3.84	9.70
MW-3	4	04-23-93	UNABLE TO REMOVE WELL COVER.						
MW-4	4	04-23-93	TOP OF PIPE	--	NONE	--	--	4.84	10.15
MW-5	4	04-23-93	TOP OF PIPE	ODOR	NONE	--	--	4.19	9.80
MW-6	4	04-23-93	TOP OF PIPE	ODOR	NONE	--	--	4.32	11.05
MW-7 *	4	04-23-93	TOP OF PIPE	ODOR	NONE	--	--	4.04	10.0
MW-8	4	04-23-93	TOP OF PIPE	--	NONE	--	--	4.12	9.96
MW-9	4	04-23-93	TOP OF PIPE	ODOR	NONE	--	--	4.54	10.75
MW-10	4	04-23-93	TOP OF PIPE	ODOR	NONE	--	--	4.14	9.95

* Sample DUP was a duplicate sample taken from well MW-7.

STANDARD PROCEDURES

Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water may be removed in cases where more evacuation is needed to achieve stabilization of water parameters. Less than three case volumes of water may be obtained in cases where the well dewaters and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty four hours and collect sample material from the water which has recharged into the well case.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site.

Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such site is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

Sample Containers

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

Sampling

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label. Either the requested analyses or the specific analytes are written on the sample label (e.g. TPH-G, BTEX).

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to Anametrix, Inc. in San Jose, California. Anametrix, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1234.

Objective Information Collection

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc.

performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.

James Allen for:
Richard C. Blaine

RCB/lpn

attachments: chain of custody
certified analytical report

cc: Pacific Environmental Group
2025 Gateway Place, Suite #440
San Jose, CA 95110
Attention: Rhonda Barrick

9304 297 (18) (10/17)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: ______

Date: 4/23/93
Page 1 of 2

Site Address: 285 Hegenberger Oakland
WIC#: 204-5508-5504
Shell Engineer: Dan Kirk — Phone No.: — Fax #:
Consultant Name & Address: Blaine Tech Serv. 985 Timothy S.J.
Consultant Contact: Glen Bennett — Phone No.: 408 995-5535 — Fax #:
Comments:
Sampled by: Don Weltz
Printed Name: DON WELTZ

Analysis Required

LAB: Anametrix

CHECK ONE (1) BOX ONLY — CT/DT: Quarterly Monitoring [X] 5461; Site Investigation [ ] 5441; Soil Classify/Disposal [ ] 5442; Water Classify/Disposal [ ] 5443; Soil/Air Rem. or Sys. O & M [ ] 5462; Water Rem. or Sys. O & M [ ] 5463; Other [ ]

TURN AROUND TIME: 24 hours [ ]; 48 hours [ ]; 16 days [X] (Normal); Other [ ]

NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.

	Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	TPH - Motor Oil		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1)	mw-4	4/23			X		5		X				X	X			40ml L	HCl Ø	N	Groundwater	
(2)	mw-8	↓			X		5		X				X	X			↓	↓	↓	↓	
(3)	mw-2	↓			X		5		X				X	X			↓	↓	↓	↓	
(4)	mw-5	↓			X		5		X				X	X			↓	↓	↓	↓	
(5)	mw-6	↓			X		5		X				X	X			↓	↓	↓	↓	
(6)	mw-10	↓			X		5		X				X	X			↓	↓	↓	↓	
(7)	mw-9	↓			X		5		X				X	X			↓	↓	↓	↓	
(8)	mw-1	↓			X		5		X				X	X			↓	↓	↓	↓	

Relinquished By (signature)	Printed Name	Date / Time	Received (signature)	Printed Name	Date / Time
Don Weltz	DON WELTZ	Date: 4/26/93 Time: 1515	Simon Hoeppe	Simon Hoeppe	Date: 4-26-93 Time: 16:15
Simon Hoeppe	Simon Hoeppe	Date: 16:45 Time: 4-26-93	Maria Bardjas	Maria Bardjas	Date: 4/26/93 Time: 16:45
		Date: Time:			Date: Time:

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

9304297 (18) 10/17

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:

Date: 4/23/93
Page 2 of 2

Site Address: 285 Hegenberger Oakland

WIC#: 204-5508-5504

Shell Engineer: Dan Kirk — Phone No.: — Fax #:

Consultant Name & Address: Blaine Tech Serv. 985 Timothy Dr.

Consultant Contact: Glen Bennett — Phone No.: 98 — Fax #: 995-5535

Comments:

Sampled by: DM Weltz

Printed Name: DON WERTZ

LAB: Anametrix

Analysis Required

Sample ID	Date	Sludge	Soil	Water	Air	No. of cont.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	TPH - motor oil		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(9) MW-7				X		5		X				X	X			40ml L	HCl	N	Groundwater	
(10) DUP				X		5		X				X	X			40ml L	HCl		"	
(11) TB				X		2						X				40 ml	HCl	↓	trip blank	

CHECK ONE (1) BOX ONLY — CT/DT

	CT/DT
Quarterly Monitoring	☑ 8421
Site Investigation	☐ 8421
Soil Closure/Disposal	☐ 8422
Water Closure/Disposal	☐ 8423
Soil/Air Rem. or Sys. O & M	☐ 8462
Water Rem. or Sys. O & M	☐ 8463
Other	☐

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 72 hours ☐ (estimate)
- 10 days ☐
- Other ☐ ____

NOTE: Notify Lab as soon as possible of 24/48 hr. TAT.

	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
Relinquished By (signature): DM Weltz	DON WERTZ	4/23/93	1615	Simon Hooper	Simon Hooper	4/26/93	16:15
Relinquished By (signature): Simon Hooper	Simon Hooper	4-26-93	16:15	Maria Barajas	Maria Barajas	4/26/93	16:15
Relinquished By (signature):	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

ANAMETRIX INC
Environmental & Analytical Chemistry

Part of INCHCAPE ENVIRONMENTAL

REPORT

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9304297
Date Received : 04/26/93
Project ID : 204-5508-5504
Purchase Order: MOH-B813

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9304297- 1	MW-4
9304297- 2	MW-8
9304297- 3	MW-2
9304297- 4	MW-5
9304297- 5	MW-6
9304297- 6	MW-10
9304297- 7	MW-9
9304297- 8	MW-1
9304297- 9	MW-7
9304297-10	DUP
9304297-11	TB

This report consists of 10 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Sarah Schoen, Ph.D.
Laboratory Director

05-11-93
Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9304297
Date Received : 04/26/93
Project ID : 204-5508-5504
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9304297- 1	MW-4	WATER	04/23/93	TPHd
9304297- 2	MW-8	WATER	04/23/93	TPHd
9304297- 3	MW-2	WATER	04/23/93	TPHd
9304297- 4	MW-5	WATER	04/23/93	TPHd
9304297- 5	MW-6	WATER	04/23/93	TPHd
9304297- 6	MW-10	WATER	04/23/93	TPHd
9304297- 7	MW-9	WATER	04/23/93	TPHd
9304297- 8	MW-1	WATER	04/23/93	TPHd
9304297- 9	MW-7	WATER	04/23/93	TPHd
9304297-10	DUP	WATER	04/23/93	TPHd
9304297- 1	MW-4	WATER	04/23/93	TPHg/BTEX
9304297- 2	MW-8	WATER	04/23/93	TPHg/BTEX
9304297- 3	MW-2	WATER	04/23/93	TPHg/BTEX
9304297- 4	MW-5	WATER	04/23/93	TPHg/BTEX
9304297- 5	MW-6	WATER	04/23/93	TPHg/BTEX
9304297- 6	MW-10	WATER	04/23/93	TPHg/BTEX
9304297- 7	MW-9	WATER	04/23/93	TPHg/BTEX
9304297- 8	MW-1	WATER	04/23/93	TPHg/BTEX
9304297- 9	MW-7	WATER	04/23/93	TPHg/BTEX
9304297-10	DUP	WATER	04/23/93	TPHg/BTEX
9304297-11	TB	WATER	04/21/93	TPHg/BTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9304297
Date Received : 04/26/93
Project ID : 204-5508-5504
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as diesel for samples MW-2, MW-5, MW-6, MW-10, MW-9, MW-1, MW-7 and DUP are primarily due to the presence of a lighter petroleum product, possibly gasoline.

Cheryl Brenner 5/11/93
Department Supervisor Date

Peggie Davison 5/11/93
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9304297
Matrix : WATER
Date Sampled : 04/23/93

Project Number : 204-5508-5504
Date Released : 05/11/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-4 -01	Sample I.D.# MW-8 -02	Sample I.D.# MW-2 -03	Sample I.D.# MW-5 -04	Sample I.D.# MW-6 -05
Benzene	0.5	ND	ND	ND	2900	120
Toluene	0.5	ND	ND	ND	2500	ND
Ethylbenzene	0.5	ND	ND	210	3400	780
Total Xylenes	0.5	ND	ND	610	12000	73
TPH as Gasoline	50	ND	ND	2400	110000	4800
% Surrogate Recovery		115%	109%	108%	122%	105%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		04/28/93	04/28/93	04/30/93	04/29/93	04/29/93
RLMF		1	1	10	250	25

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Dawson 5/11/93
Analyst Date

Cheryl Balmer 5/11/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9304297
Matrix : WATER
Date Sampled : 04/23/93

Project Number : 204-5508-5504
Date Released : 05/11/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-10 -06	Sample I.D.# MW-9 -07	Sample I.D.# MW-1 -08	Sample I.D.# MW-7 -09	Sample I.D.# DUP -10
Benzene	0.5	21000	11000	18000	17000	17000
Toluene	0.5	13000	1400	7800	3700	4200
Ethylbenzene	0.5	3400	1500	4700	2200	2200
Total Xylenes	0.5	12000	10000	20000	11000	11000
TPH as Gasoline	50	80000	45000	100000	60000	50000
% Surrogate Recovery		113%	109%	114%	110%	113%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		04/29/93	04/28/93	04/29/93	04/28/93	04/28/93
RLMF		500	500	500	500	500

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Davison 5/11/93
Analyst Date

Cheryl Bateman 5/11/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9304297
Matrix : WATER
Date Sampled : 04/21/93

Project Number : 204-5508-5504
Date Released : 05/11/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# TB -11	Sample I.D.# BA2801E3 BLANK	Sample I.D.# BA2901E3 BLANK	Sample I.D.# BA3001E3 BLANK
Benzene	0.5	ND	ND	ND	ND
Toluene	0.5	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND	ND
% Surrogate Recovery		107%	120%	119%	116%
Instrument I.D.		HP4	HP4	HP4	HP4
Date Analyzed		04/28/93	04/28/93	04/29/93	04/30/93
RLMF		1	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Dawson 5/11/93
Analyst Date

Cheryl Bowman 5/11/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9304297
Matrix : WATER
Date Sampled : 04/23/93
Date Extracted: 05/04/93

Project Number : 204-5508-5504
Date Released : 05/11/93
Instrument I.D.: HP9 & HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9304297-01	MW-4	05/08/93	50	ND
9304297-02	MW-8	05/08/93	50	ND
9304297-03	MW-2	05/08/93	500	1200
9304297-04	MW-5	05/08/93	1000	16000
9304297-05	MW-6	05/08/93	500	1800
9304297-06	MW-10	05/10/93	2500	19000
9304297-07	MW-9	05/08/93	1000	8000
9304297-08	MW-1	05/10/93	2500	23000
9304297-09	MW-7	05/08/93	1000	12000
9304297-10	DUP	05/08/93	1000	14000
BY0412F1	METHOD BLANK	05/06/93	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Dawson 5/11/93
Analyst Date

Cheryl Balman 5/11/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9304297
Matrix : WATER
Date Sampled : 04/23/93
Date Extracted: 05/04/93

Project Number : 204-5508-5504
Date Released : 05/11/93
Instrument I.D.: HP9 & HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9304297-01	MW-4	05/08/93	50	170
9304297-02	MW-8	05/08/93	50	150
9304297-03	MW-2	05/08/93	500	ND
9304297-04	MW-5	05/08/93	1000	ND
9304297-05	MW-6	05/08/93	500	ND
9304297-06	MW-10	05/10/93	2500	ND
9304297-07	MW-9	05/08/93	1000	ND
9304297-08	MW-1	05/10/93	2500	ND
9304297-09	MW-7	05/08/93	1000	ND
9304297-10	DUP	05/08/93	1000	ND
BY0412F1	METHOD BLANK	05/06/93	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as motor oil is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Peggie Dawson 5/11/93
Analyst Date

Cheryl Balman 5/11/93
Supervisor Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 204-5508-5504 MW-8	Anametrix I.D.	: 04297-02
Matrix	: WATER	Analyst	: RD
Date Sampled	: 04/23/93	Supervisor	: CB
Date Analyzed	: 04/28/93	Date Released	: 05/11/93

COMPOUND	SPIKE AMT (ug/L)	SAMPLE CONC (ug/L)	MS AMT (ug/L)	% REC MS	MD AMT (ug/L)	% REC MD	RPD	% REC LIMITS
BENZENE	20.0	0.0	16.9	85%	17.2	86%	2%	45-139
TOLUENE	20.0	0.0	21.5	108%	21.8	109%	1%	51-138
ETHYLBENZENE	20.0	0.0	22.6	113%	23.4	117%	3%	48-146
TOTAL-XYLENES	20.0	0.0	23.4	117%	24.7	123%	5%	50-139
p-BFB				108%			112%	61-139

* Quality control limit established by Anametrix, Inc.

BTEX LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: LCSW0428
Matrix	: WATER	Analyst	: RD
Date Sampled	: N/A	Supervisor	:
Date Analyzed	: 04/28/93	Date Released	: 05/11/93
		Instrument ID	: HP4

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	17.3	87%	52-133
Toluene	20.0	22.0	110%	57-136
Ethylbenzene	20.0	23.1	116%	56-139
TOTAL Xylenes	20.0	24.3	122%	56-141
P-BFB			105%	61-139

* Limits established by Anametrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3510 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Extracted: 05/04/93
Date Analyzed : 05/06/93

Anametrix I.D. : LCSW0504
Analyst : RD
Supervisor : GS
Date Released : 05/11/93
Instrument I.D.: HP23

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	860	69%	830	66%	-4%	47-130

*Quality control established by Anametrix, Inc.