PACIFIC
ENVIRONMENTAL
GROUP, INC.

December 21, 1992
Project 305-79.01

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

Re: 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 fourth quarter 1992 monitoring program for Shell Oil Company (Shell) prepared by Pacific Environmental Group, Inc. (PACIFIC) for the above referenced site (Figures 1 and 2).

FINDINGS

Groundwater monitoring wells were gauged and sampled by Emcon Associates (Emcon) at the direction of PACIFIC on October 27, 1992. Groundwater elevation contours for the sampling date are shown on Figure 2. Table 1 presents groundwater elevation data.

Groundwater analytical data are presented in Table 2. Total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene concentrations, and total petroleum hydrocarbons calculated as diesel (TPH-d) concentrations for the October 1992 sampling event are shown on Figure 3. Well MW-3 was analyzed for TPH calculated as motor oil (TPH-mo) during the fourth quarter monitoring event which was detected at 0.1 parts per million (ppm) (Table 3). Emcon's groundwater sampling report is presented in Attachment A.

The laboratory noted that the concentration reported as TPH-d for Samples MW-1, MW-3, MW-5 through MW-7, and MW-9 are primarily due to the presence of a lighter petroleum product, possibly TPH-g.

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

Sincerely,

Pacific Environmental Group, Inc.

Michael Hurd
Project 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 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
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
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

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.)	09/27/90		6.86	0.95
	01/03/91		6.84	0.97
	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
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
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

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
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
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
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
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----------		

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*
	05/05/92	71	16	6.0	3.1	14	10*
	07/28/92	68	21	5.5	3.4	15	18*
	07/28/92(D)	70	17	5.0	2.7	13	19*
	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*
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*
	05/05/92	21**	ND	ND	0.30	0.96	1.0
	07/28/92	2.1	0.0077	0.0033	0.13	0.31	0.83*
	10/27/92	1.1	0.016	0.0031	0.0045	0.025	0.53
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	12/15/89	5.2	0.38	0.047	0.017	0.410	1.7
(cont.)	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*
	05/04/92	0.31	0.047	ND	0.017	0.016	0.29*
	07/28/92	0.78	0.13	ND	0.013	0.0042	0.10*
	10/27/92	0.74	0.092	0.0028	0.0078	0.0096	0.069*
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*
	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
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

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 (cont.)	07/11/91	24.0	2.2	0.280	0.430	5.7	1.7
	10/08/91	2.8	0.860	0.013	ND	0.580	1.4
	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*
	07/28/92	12	2.2	0.063	1.4	3.5	3.8*
	10/27/92	7.5	1.1	0.059	0.23	0.90	0.48*
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*
	05/05/92	7.9	0.61	ND	1.5	0.24	2.9*
	07/28/92	17	1.2	ND	3.0	0.61	3.2*
	10/27/92	15	1.3	0.13	1.7	0.49	1.3*
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*
	02/06/92	63.0	16.0	8.7	1.6	7.4	9.6*
	05/05/92	67	22	13	1.8	9.4	9.8*
	07/28/92	85	26	17	2.9	15	13.0*
	10/27/92	63	21	11	3.0	11	1.9*

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*
	05/04/92	ND	ND	ND	ND	ND	0.21**
	07/28/92	0.051	ND	ND	0.001	0.0006	ND
	10/27/92	ND	ND	0.0066	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*
	02/06/92	36.0	11.0	0.49	1.1	6.7	6.6*
	05/05/92	31	11	1.7	1.2	8.7	5.8*
	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*
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*
	02/06/92	22.0	12.0	ND	0.60	0.17	1.6*
	05/05/92	39	14	5.0	1.8	5.0	8.0*
	07/28/92	38	17	2.8	1.5	4.0	8.7*
	10/27/92	NS	NS	NS	NS	NS	NS

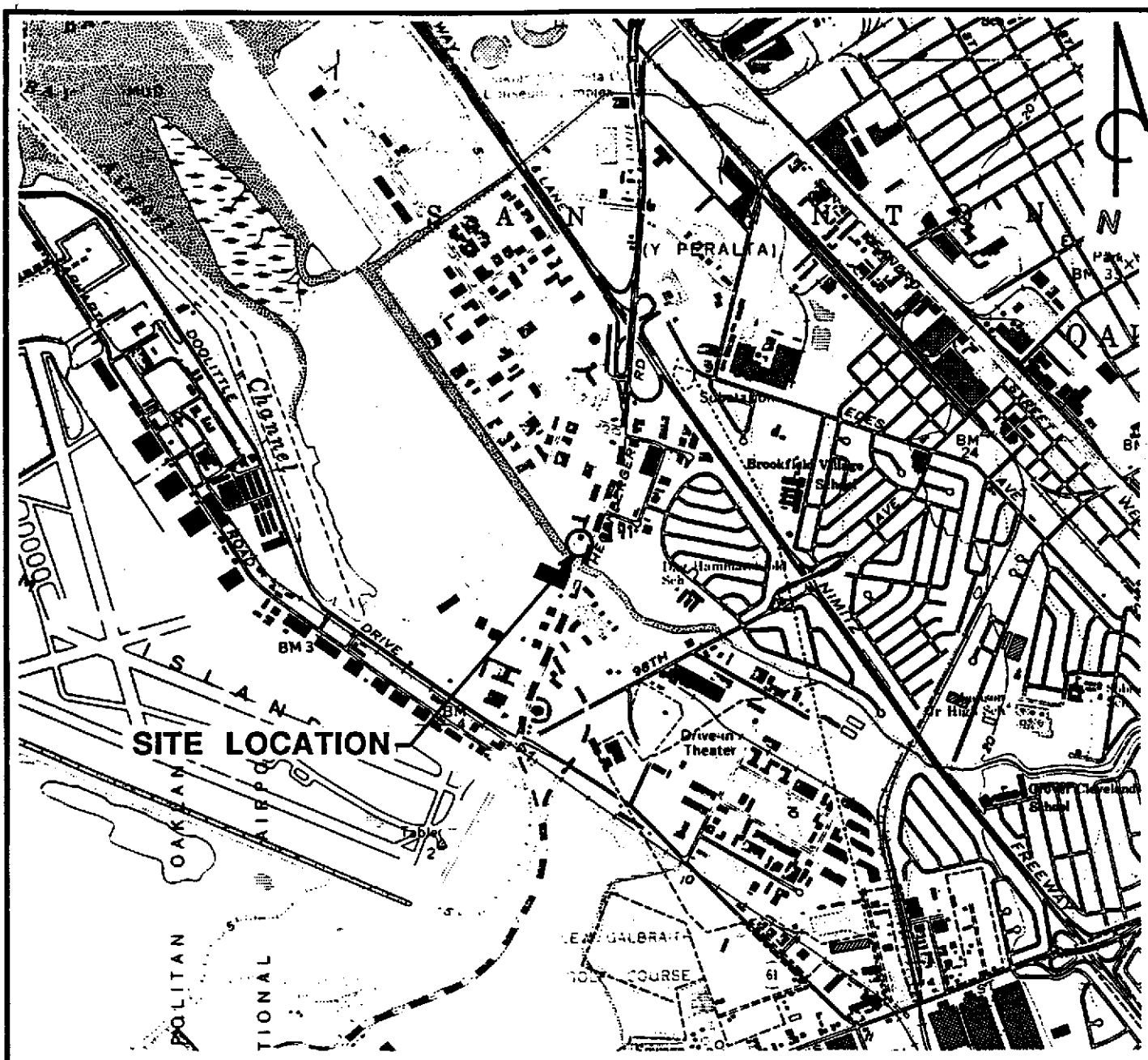
ppm = Parts per million
NR = Not reported
ND = Not detected
NA = Not analyzed
NS = Not sampled
(D) = Duplicate sample
* = Laboratory noted that compound detected and calculated as TPH-d primarily appear to be due to a lighter petroleum product, possibly gasoline.
** = Laboratory noted that compound detected and calculated as TPH-d appears to be a heavier hydrocarbon compound, possibly motor oil.
For detection limits, see certified analytical results

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

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

Well Number	Date Sampled	Oil and Grease (ppm)	Motor Oil (ppm)
MW-1	07/28/92	NA	ND
MW-1(D)	07/28/92	NA	ND
MW-2	07/28/92	NA	0.32
MW-3	07/28/92	ND	0.12
MW-3	10/27/92	ND	0.1
MW-4	07/28/92	NA	ND
MW-5	07/28/92	NA	1.2
MW-6	07/28/92	NA	ND
MW-7	07/28/92	NA	ND
MW-8	07/28/92	NA	0.15
MW-9	07/28/92	NA	ND
MW-10	07/28/92	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

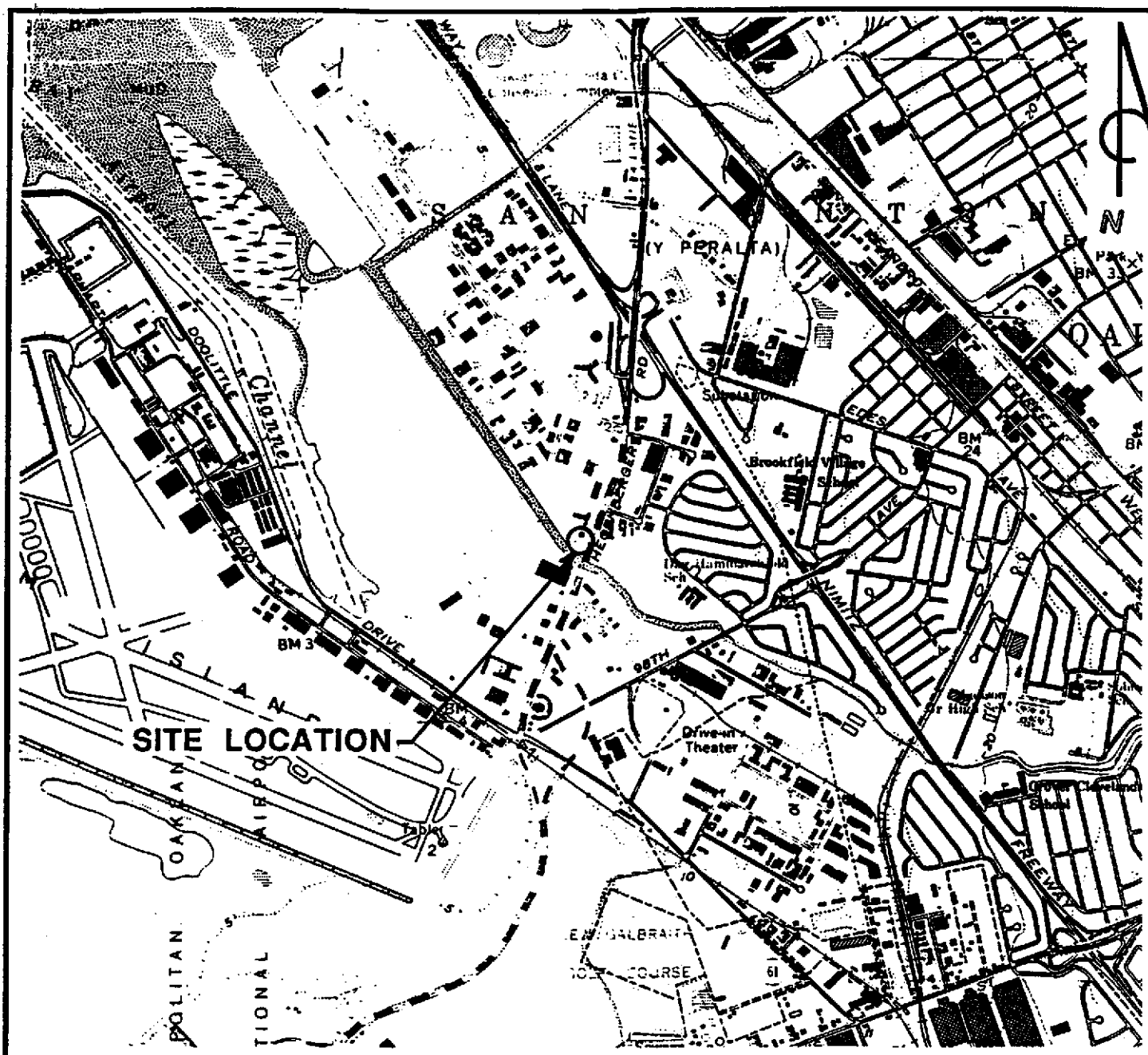
SCALE
2000 0 2000 FEET

PACIFIC ENVIRONMENTAL GROUP, INC.

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

SITE LOCATION MAP

FIGURE: 1
PROJECT: 305-79.01



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

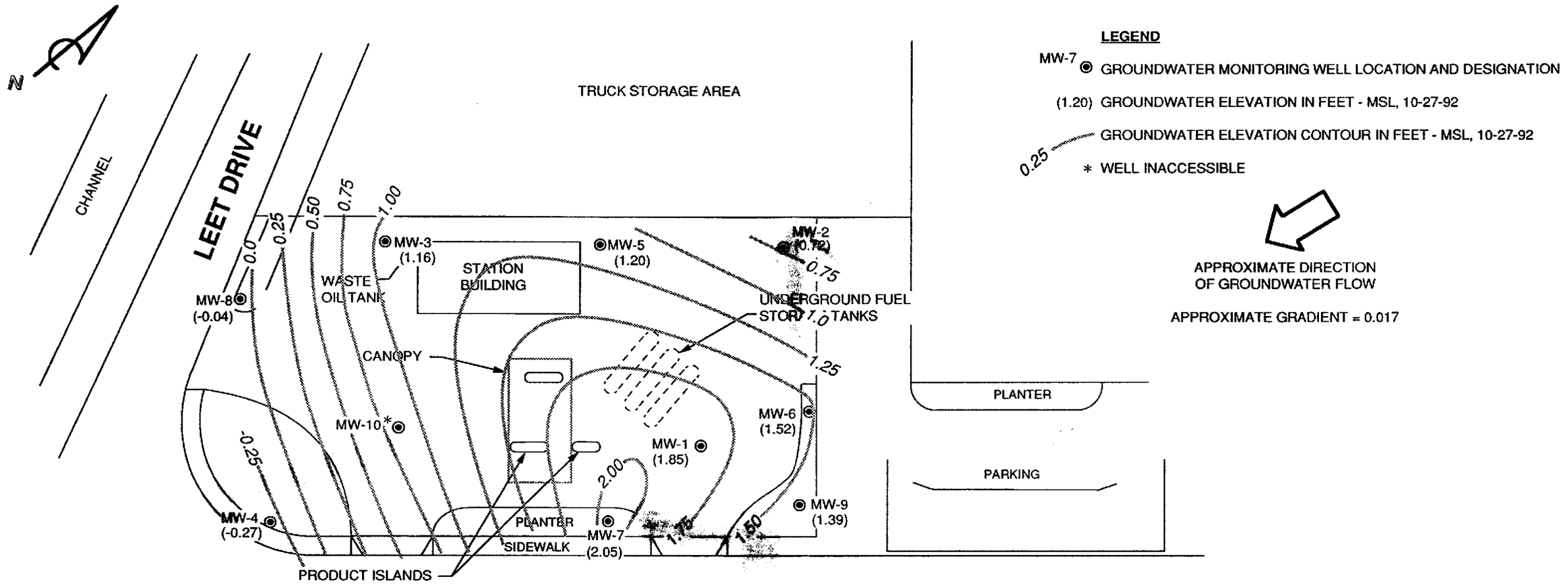
SCALE
2000 0 2000 FEET

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.

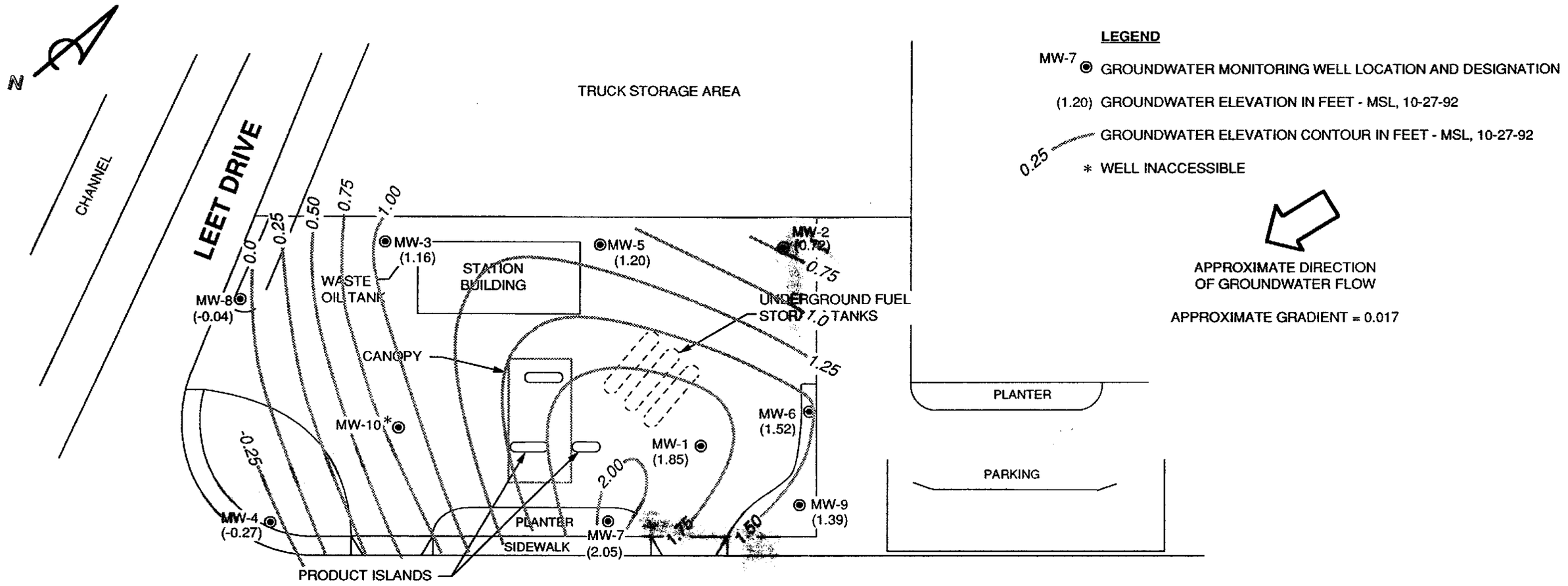
SCALE
0 40 80 FEET

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

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE:
2
PROJECT:
305-79.01

12/17/92



PACIFIC
ENVIRONMENTAL
GROUP, INC.

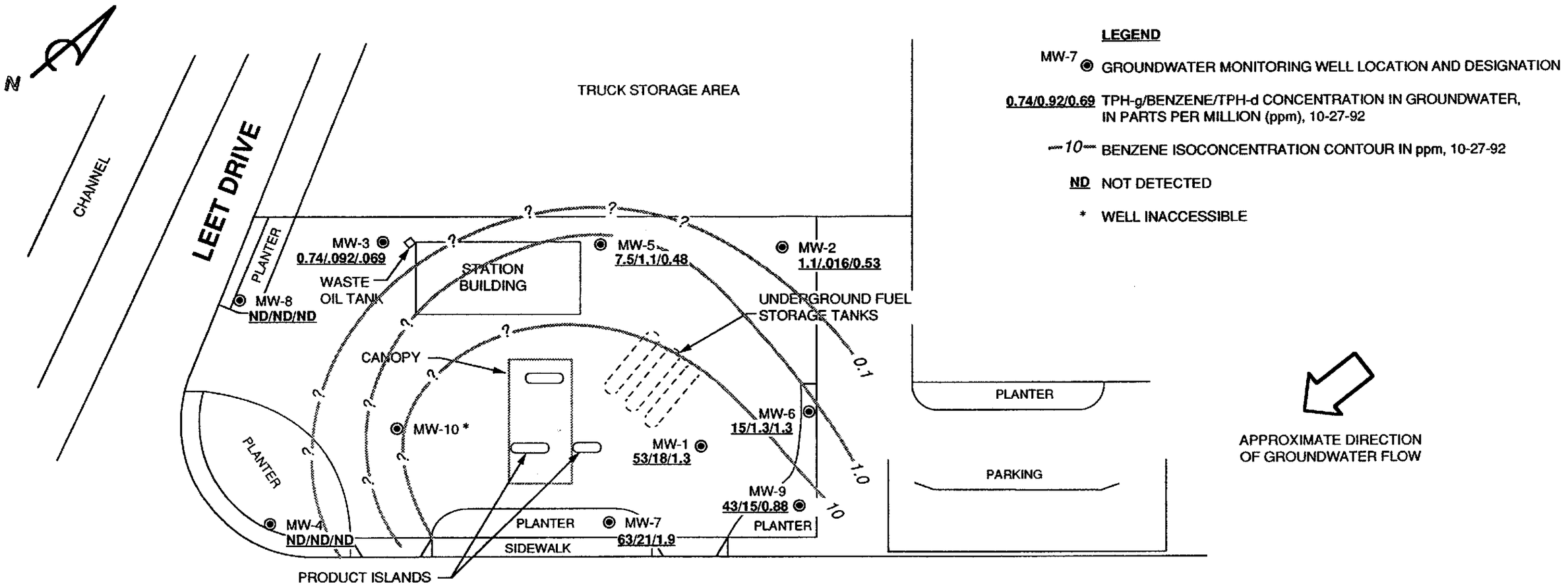
SCALE
0 40 80 FEET

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

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE:
2
PROJECT:
305-79.01

12/17/92



HEGENBERGER ROAD

SIDEWALK

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

12/17/92

ATTACHMENT A

GROUNDWATER SAMPLING REPORT

EMCON
ASSOCIATES
Consultants in Wastes
Management and
Environmental Control

November 20, 1992
Project: 0G67-050.01
WIC#: 204-5508-5504

Ms. Rhonda Barrick
Pacific Environmental Group, Inc.
2025 Gateway Place, Suite 440
San Jose, California 95110

Re: Fourth quarter 1992 ground-water monitoring report, Shell Oil Company, 285 Hegenberger Road, Oakland, California

Dear Ms. Barrick:

This letter presents the results of the fourth quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) site located at 285 Hegenberger Road, Oakland, California (figure 1). Fourth quarter monitoring was conducted on October 27, 1992. The site is monitored quarterly.

GROUND-WATER LEVEL SURVEY

A water-level survey preceded the purging and sampling of the monitoring wells. The wells included in the survey are identified in figure 2 (supplied by Pacific Environmental Group, Inc.). During the survey, wells MW-1 through MW-9 were measured for depth to water, floating product thickness, and total depth. Depth to water and floating product thickness were measured to the nearest 0.01 foot with an oil/water interface probe. No floating product was observed in any wells. Total depth was measured to the nearest 0.1 foot. Well MW-10 appears to have been paved over and was not surveyed during fourth quarter monitoring. Results of the fourth quarter water-level survey, and available data from four previous surveys, are summarized in table 1.

SAMPLING AND ANALYSIS

Ground-water samples were collected from wells MW-1 through MW-9 on October 27, 1992. Well MW-10 was inaccessible and could not be sampled during fourth quarter monitoring. Prior to sample collection, the wells were purged with polyvinyl chloride bailers. During the purging operation, ground water was monitored for pH, electrical conductivity, and temperature as a function of volume of water removed. Purging continued until these parameters were stable and a minimum of three casing volumes of ground water were removed. Wells MW-1 through MW-5, MW-7, MW-8, and MW-9 were evacuated to dryness before the removal of three casing volumes. These wells were allowed to recharge for up to

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24 hours. Samples were collected after the wells had recharged to a sufficient level. Field measurements from fourth quarter monitoring, and available measurements from four previous monitoring events, are summarized in table 1. Purge water from the monitoring wells was contained in a 55-gallon drum. The drum was identified with a Shell-approved label and secured for on-site storage.

Ground-water samples were collected with a Teflon® bailer, labeled, placed on ice, and transported to Anametrix Inc. for analysis. Shell chain-of-custody documents accompanied all samples to the laboratory.

All equipment that was placed down a well or that came in contact with ground water was steam cleaned with deionized water prior to use at each well.

Quality control samples for fourth quarter monitoring included a trip blank (TB), a field blank (FB), and a duplicate well sample (MW-1D) collected from well MW-1. All water samples collected during fourth quarter monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPH-g); benzene, toluene, ethylbenzene, and total xylenes (BTEX); and total petroleum hydrocarbons as diesel (TPH-d). Additional ground-water samples collected from well MW-3 were analyzed for total petroleum hydrocarbons as motor oil (TPH-mo) and total oil and grease (TOG) by standard method 5520 B/F.

ANALYTICAL RESULTS

Analytical results for the fourth quarter 1992 monitoring event, and available results from four previous monitoring events, are summarized in table 2. The original certified analytical report and final chain-of-custody document are attached.

If you have any questions, please call.

Very truly yours,

EMCON Associates

David Larsen
Environmental Sampling Coordinator

Orrin Childs
Environmental Sampling Supervisor

DL/OC:dl

0G6705001D.DOC

Attachments: Table 1 - Monitoring well field measurement data
Table 2 - Summary of analytical results
Figure 1 - Site location
Figure 2 - Monitoring well locations
Certified analytical report
Chain-of-custody document

Table 1
Monitoring Well Field Measurement Data
Fourth Quarter 1992

Shell Station: 285 Hegenberger Road
Oakland, California
WIC #: 204-5508-5504

Date: 11/19/92
Project Number: G67-50.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
MW-1	10/08/91	6.64	4.26	2.38	NR	ND	10/08/91	NR	NR	NR	NR
MW-1	02/06/92	6.64	4.94	1.70	9.9	ND	02/06/92	6.91	3700	60.1	>200
MW-1	05/04/92	6.64	3.58	3.06	9.3	ND	05/05/92	6.42	3770	66.9	48.6
MW-1	07/28/92	6.64	3.91	2.73	9.4	ND	07/28/92	6.38	4300	72.3	>200
MW-1	10/27/92	6.64	4.79	1.85	9.5	ND	10/27/92	7.37	3490	70.2	152
MW-2	10/08/91	7.68	6.40	1.28	NR	ND	10/08/91	NR	NR	NR	NR
MW-2	02/06/92	7.68	6.40	1.28	10.1	ND	02/06/92	7.13	2340	58.8	>200
MW-2	05/04/92	7.68	4.68	3.00	9.6	ND	05/05/92	6.64	2620	65.8	130.2
MW-2	07/28/92	7.68	5.86	1.82	9.7	ND	07/28/92	6.55	3610	72.2	>200
MW-2	10/27/92	7.68	6.96	0.72	9.6	ND	10/27/92	6.76	2380	69.8	>1000
MW-3	10/08/91	7.81	6.62	1.19	NR	ND	10/08/91	NR	NR	NR	NR
MW-3	02/06/92	7.81	6.28	1.53	9.9	ND	02/06/92	6.99	3520	59.4	>200
MW-3	05/04/92	7.81	4.65	3.16	9.5	ND	05/04/92	6.15	3940	66.8	>200
MW-3	07/28/92	7.81	5.56	2.25	9.5	ND	07/28/92	6.82	3560	70.1	118
MW-3	10/27/92	7.81	6.65	1.16	9.5	ND	10/27/92	6.85	2950	67.4	225
MW-4	10/08/91	7.38	7.44	-0.06	NR	ND	10/08/91	NR	NR	NR	NR
MW-4	02/06/92	7.38	7.29	0.09	10.4	ND	02/06/92	7.59	4050	58.2	>200
MW-4	05/04/92	7.38	5.33	2.05	10.1	ND	05/05/92	7.01	2810	68.5	50.7
MW-4	07/28/92	7.38	6.95	0.43	10.2	ND	07/28/92	6.69	4360	71.2	121
MW-4	10/27/92	7.38	7.65	-0.27	10.1	ND	10/27/92	7.35	3810	66.5	245

TOC = top of casing
ft-MSL = elevation in feet, relative to mean sea level
std. units = standard pH units
micromhos/cm = micromhos per centimeter
degrees F = degrees Fahrenheit
NTU = nephelometric turbidity units
NR = Not reported; data not available
ND = None detected

Table 1
Monitoring Well Field Measurement Data
Fourth Quarter 1992

Shell Station: 285 Hegenberger Road
Oakland, California
WIC #: 204-5508-5504

Date: 11/19/92
Project Number: G67-50.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
MW-5	10/08/91	8.18	6.50	1.68	NR	ND	10/08/91	NR	NR	NR	NR
MW-5	02/06/92	8.18	6.35	1.83	10.1	ND	02/06/92	7.30	4340	57.2	>200
MW-5	05/04/92	8.18	4.87	3.31	9.8	ND	05/05/92	7.01	4870	61.4	55.5
MW-5	07/28/92	8.18	5.73	2.45	9.8	ND	07/28/92	6.69	5220	72.8	95
MW-5	10/27/92	8.18	6.98	1.20	9.7	ND	10/27/92	6.90	4000	67.3	202
MW-6	10/08/91	8.21	6.36	1.85	NR	ND	10/08/91	NR	NR	NR	NR
MW-6	02/06/92	8.21	6.15	2.06	11.1	ND	02/06/92	6.91	2030	59.8	>200
MW-6	05/04/92	8.21	5.07	3.14	11.0	ND	05/05/92	6.51	2100	64.1	41.0
MW-6	07/28/92	8.21	5.85	2.36	11.1	ND	07/28/92	4.98	3480	72.4	87
MW-6	10/27/92	8.21	6.69	1.52	11.0	ND	10/27/92	6.72	2120	68.7	195
MW-7	10/08/91	7.44	5.48	1.96	NR	ND	10/08/91	NR	NR	NR	NR
MW-7	02/06/92	7.44	5.05	2.39	10.3	ND	02/06/92	7.30	6430	58.4	>200
MW-7	05/04/92	7.44	4.43	3.01	10.0	ND	05/05/92	7.08	5850	67.5	88.4
MW-7	07/28/92	7.44	4.88	2.56	10.0	ND	07/28/92	6.43	6730	68.3	>200
MW-7	10/27/92	7.44	5.39	2.05	10.0	ND	10/27/92	8.80	6570	69.4	251
MW-8	10/08/91	7.79	7.56	0.23	NR	ND	10/08/91	NR	NR	NR	NR
MW-8	02/06/92	7.79	6.94	0.85	10.4	ND	02/06/92	8.01	5510	61.5	>200
MW-8	05/04/92	7.79	5.86	1.93	10.0	ND	05/04/92	6.26	3860	66.9	44.4
MW-8	07/28/92	7.79	6.94	0.85	10.0	ND	07/28/92	7.19	8280	75.1	>200
MW-8	10/27/92	7.79	7.83	-0.04	10.0	ND	10/27/92	7.28	9980	70.0	142

TOC = top of casing
ft-MSL = elevation in feet, relative to mean sea level
std. units = standard pH units
micromhos/cm = micromhos per centimeter
degrees F = degrees Fahrenheit
NTU = nephelometric turbidity units
NR = Not reported; data not available
ND = None detected

Table 1
Monitoring Well Field Measurement Data
Fourth Quarter 1992

Shell Station: 285 Hegenberger Road
Oakland, California
WIC #: 204-5508-5504

Date: 11/19/92
Project Number: G67-50.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
MW-9	10/08/91	7.63	6.08	1.55	NR	ND	10/08/91	NR	NR	NR	NR
MW-9	02/06/92	7.63	5.92	1.71	11.1	ND	02/06/92	7.15	5480	58.8	>200
MW-9	05/04/92	7.63	4.80	2.83	10.8	ND	05/05/92	7.03	6200	60.1	49.8
MW-9	07/28/92	7.63	5.61	2.02	10.8	ND	07/28/92	6.95	6100	70.2	>200
MW-9	10/27/92	7.63	6.24	1.39	10.7	ND	10/27/92	7.44	5760	67.7	44.6
MW-10	10/08/91	7.45	6.68	0.77	NR	ND	10/08/91	NR	NR	NR	NR
MW-10	02/06/92	7.45	7.04	0.41	10.6	ND	02/06/92	7.15	3740	61.5	>200
MW-10	05/04/92	7.45	4.69	2.76	10.0	ND	05/05/92	6.68	3220	68.5	85.1
MW-10	07/28/92	7.45	6.00	1.45	10.0	ND	07/28/92	6.72	4740	70.8	>200
MW-10	10/27/92	7.45	IW	IW	IW	IW	10/27/92	IW	IW	IW	IW

TOC = top of casing
ft-MSL = elevation in feet, relative to mean sea level
std. units = standard pH units
micromhos/cm = micromhos per centimeter
degrees F = degrees Fahrenheit
NTU = nephelometric turbidity units
NR = Not reported; data not available
ND = None detected
IW = Inaccessible well; well MW-10 appears to have been paved over

Table 2
Summary of Analytical Results
Fourth Quarter 1992
milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 285 Hegenberger Road
Oakland, California
WIC #: 204-5508-5504

Date: 11/19/92
Project Number: G67-50.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)	TPH-d (mg/l)	TPH-mo (mg/l)	TOG (mg/l)
MW-1	10/08/91	55	18	3.5	2.3	8.6	7.4^	NA	NA
MW-1	02/06/92	48.	12.	2.8	1.9	7.4	15.^	NA	NA
MW-1	05/05/92	71.	16.	6.0	3.1	14.	10.^	NA	NA
MW-1	07/28/92	68.	21.	5.5	3.4	15.	18.^	<1.0	NA
MW-1	10/27/92	53.	18.	3.7	3.4	11.	1.3^	NA	NA
MW-1D	07/28/92	70.	17.	5.0	2.7	13.	19.^	<1.0	NA
MW-1D	10/27/92	48.	17.	3.6	3.1	9.9	2.5^	NA	NA
MW-2	10/08/91	1.4	0.0051	0.0015	0.038	0.270	2.6	NA	NA
MW-2	02/06/92	2.0	0.0078	0.0025	0.13	0.21	5.4^	NA	NA
MW-2	05/05/92	21.*	<0.0125	<0.0125	0.30	0.96	1.0^	NA	NA
MW-2	07/28/92	2.1	0.0077	0.0033	0.13	0.31	0.83^	0.32	NA
MW-2	10/27/92	1.1	0.016	0.0031	0.0045	0.025	0.53	NA	NA
MW-3	10/08/91	0.77	0.140	0.0007	<0.0005	0.053	0.56	NA	NA
MW-3	02/06/92	0.50	0.074	0.0009	0.0052	0.0053	0.34@	NA	<5.0
MW-3	05/04/92	0.31	0.047	<0.0005	0.017	0.016	0.29^	NA	<5.0
MW-3	07/28/92	0.78	0.13	<0.0025	0.013	0.0042	0.10^	0.12#	<5
MW-3	10/27/92	0.74	0.092	0.0028	0.0078	0.0096	0.069^	0.10	<5

TPH-g = total petroleum hydrocarbons as gasoline
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TOG = total oil and grease by SM 5520 B&F
^ = Concentration reported as diesel is primarily due to the presence of a lighter petroleum product, possibly gasoline
NA = Not applicable
* = Concentration reported as gasoline is primarily due to the presence of a heavier petroleum product, possibly diesel or kerosene
@ = Compounds detected within the diesel range are not characteristic of the standard diesel chromatographic pattern.
# = Concentration reported as motor oil is primarily due to the presence of discrete hydrocarbon peaks not indicative of motor oil

Table 2
Summary of Analytical Results
Fourth Quarter 1992
milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 285 Hegenberger Road
Oakland, California
WIC #: 204-5508-5504

Date: 11/19/92
Project Number: G67-50.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)	TPH-d (mg/l)	TPH-mo (mg/l)	TOG (mg/l)
MW-4	10/08/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA	NA
MW-4	02/06/92	0.12	<0.0005	<0.0005	<0.0005	<0.0005	2.5@	NA	NA
MW-4	05/05/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.053	NA	NA
MW-4	07/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.060	<0.05	NA
MW-4	10/27/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA	NA
MW-5	10/08/91	2.8	0.860	0.013	<0.005	0.580	1.4	NA	NA
MW-5	02/06/92	1.0	0.30	<0.0025	0.014	0.062	1.2^	NA	NA
MW-5	05/05/92	10.	1.5	0.35	0.71	2.3	4.1^	NA	NA
MW-5	07/28/92	12.	2.2	0.063	1.4	3.5	3.8^	1.2	NA
MW-5	10/27/92	7.5	1.1	0.059	0.23	0.90	0.48^	NA	NA
MW-6	10/08/91	11.	1.00	0.043	<0.005	<0.005	5.1^	NA	NA
MW-6	02/06/92	7.2	0.56	0.008	0.72	0.16	15.^	NA	NA
MW-6	05/05/92	7.9	0.61	<0.05	1.5	0.24	2.9^	NA	NA
MW-6	07/28/92	17.	1.2	<0.05	3.0	0.61	3.2^	<0.25	NA
MW-6	10/27/92	15.	1.3	0.13	1.7	0.49	1.3^	NA	NA
MW-7	10/08/91	55.	29.0	7.5	1.8	9.3	0.39^	NA	NA
MW-7	02/06/92	63.	16.	8.7	1.6	7.4	9.6^	NA	NA
MW-7	05/05/92	67.	22.	13.	1.8	9.4	9.8^	NA	NA
MW-7	07/28/92	85.	26.	17.	2.9	15.	13.^	<1.0	NA
MW-7	10/27/92	63.	21.	11.	3.0	11.	1.9^	NA	NA

TPH-g = total petroleum hydrocarbons as gasoline
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TOG = total oil and grease by SM 5520 B&F
NA = Not applicable
@ = Compounds detected within the diesel range are not characteristic of the standard diesel chromatographic pattern.
^ = Concentration reported as diesel is primarily due to the presence of a lighter petroleum product, possibly gasoline

Table 2
Summary of Analytical Results
Fourth Quarter 1992
milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 285 Hegenberger Road
Oakland, California
WIC #: 204-5508-5504

Date: 11/19/92
Project Number: G67-50.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)	TPH-d (mg/l)	TPH-mo (mg/l)	TOG (mg/l)
MW-8	10/08/91	<0.05	0.0014	<0.0005	<0.0005	<0.0005	<0.05	NA	NA
MW-8	02/06/92	<0.05	<0.0005	0.0007	<0.0005	<0.0005	0.06@	NA	NA
MW-8	05/04/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.21^	NA	NA
MW-8	07/28/92	0.051	<0.0005	<0.0005	0.0010	0.0006	<0.05	0.15#	NA
MW-8	10/27/92	<0.05	<0.0005	0.0066	<0.0005	<0.0005	<0.05	NA	NA
MW-9	10/08/91	20.	11.0	0.640	0.240	6.0	4.7^	NA	NA
MW-9	02/06/92	36.	11.	0.49	1.1	6.7	6.6^	NA	NA
MW-9	05/05/92	31.	11.	1.7	1.2	8.7	5.8^	NA	NA
MW-9	07/28/92	50.	17.	1.2	1.5	12.	14.^	<1.0	NA
MW-9	10/27/92	43.	15.	0.68	1.7	8.1	0.88^	NA	NA
MW-10	10/08/91	3.8	13.0	0.082	0.0091	0.500	1.5^	NA	NA
MW-10	02/06/92	22.	12.	<0.005	0.60	0.17	1.6^	NA	NA
MW-10	05/05/92	39.	14.	5.0	1.8	5.0	8.0^	NA	NA
MW-10	07/28/92	38.	17.	2.8	1.5	4.0	8.7^	<1.0	NA
MW-10	10/27/92	IW	IW	IW	IW	IW	IW	IW	IW
FB	07/28/92	<0.05+	<0.0005+	<0.0005+	<0.0005+	<0.0005+	<0.05+	<0.05+	NA
FB	10/27/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA	NA

TPH-g = total petroleum hydrocarbons as gasoline
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TOG = total oil and grease by SM 5520 B&F
NA = Not applicable
@ = Compounds detected within the diesel range are not characteristic of the standard diesel chromatographic pattern.
^ = Concentration reported as diesel is primarily due to the presence of a lighter petroleum product, possibly gasoline
# = Concentration reported as motor oil is primarily due to the presence of discrete hydrocarbon peaks not indicative of motor oil
IW = Inaccessible well; well MW-10 appears to have been paved over
+ = Samples TB and FB from 07/28/92 are called TB-1 and FB-1 on the chain-of-custody form and certified analytical report

Table 2
Summary of Analytical Results
Fourth Quarter 1992
milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 285 Hegenberger Road
Oakland, California
WIC #: 204-5508-5504

Date: 11/19/92
Project Number: G67-50.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)	TPH-d (mg/l)	TPH-mo (mg/l)	TOG (mg/l)
TB	02/06/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA	NA
TB	05/05/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA	NA
TB	07/28/92	<0.05+	<0.0005+	<0.0005+	<0.0005+	<0.0005+	<0.05+	<0.05+	NA
TB	10/27/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA	NA

TPH-g = total petroleum hydrocarbons as gasoline
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TOG = total oil and grease by SM 5520 B&F
NA = Not applicable
+ = Samples TB and FB from 07/28/92 are called TB-1 and FB-1 on the chain-of-custody form and certified analytical report

ANAMETRIX INC
Environmental & Analytical Chemistry

Part of INCHCAPE ENVIRONMENTAL

REPORT

MR. DAVID LARSEN
EMCON ASSOCIATES
1938 JUNCTION AVE.
SAN JOSE, CA 95131

Workorder # : 9210441
Date Received : 10/28/92
Project ID : 204-5508-5504
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9210441- 1	MW-4
9210441- 2	MW-8
9210441- 3	MW-3
9210441- 4	MW-2
9210441- 5	MW-5
9210441- 6	MW-6
9210441- 7	MW-9
9210441- 8	MW-1
9210441- 9	MW-7
9210441-10	MW-1D
9210441-11	TB
9210441-12	FB

This report consists of 16 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

11-11-92
Date

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

MR. DAVID LARSEN
EMCON ASSOCIATES
1938 JUNCTION AVE.
SAN JOSE, CA 95131

Workorder # : 9210441
Date Received : 10/28/92
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
9210441- 1	MW-4	WATER	10/27/92	TPHd
9210441- 2	MW-8	WATER	10/27/92	TPHd
9210441- 3	MW-3	WATER	10/27/92	TPHd
9210441- 4	MW-2	WATER	10/27/92	TPHd
9210441- 5	MW-5	WATER	10/27/92	TPHd
9210441- 6	MW-6	WATER	10/27/92	TPHd
9210441- 7	MW-9	WATER	10/27/92	TPHd
9210441- 8	MW-1	WATER	10/27/92	TPHd
9210441- 9	MW-7	WATER	10/27/92	TPHd
9210441-10	MW-1D	WATER	10/27/92	TPHd
9210441-11	TB	WATER	10/27/92	TPHd
9210441-12	FB	WATER	10/27/92	TPHd
9210441- 1	MW-4	WATER	10/27/92	TPHg/BTEX
9210441- 2	MW-8	WATER	10/27/92	TPHg/BTEX
9210441- 3	MW-3	WATER	10/27/92	TPHg/BTEX
9210441- 4	MW-2	WATER	10/27/92	TPHg/BTEX
9210441- 5	MW-5	WATER	10/27/92	TPHg/BTEX
9210441- 6	MW-6	WATER	10/27/92	TPHg/BTEX
9210441- 7	MW-9	WATER	10/27/92	TPHg/BTEX
9210441- 8	MW-1	WATER	10/27/92	TPHg/BTEX
9210441- 9	MW-7	WATER	10/27/92	TPHg/BTEX
9210441-10	MW-1D	WATER	10/27/92	TPHg/BTEX

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

MR. DAVID LARSEN
EMCON ASSOCIATES
1938 JUNCTION AVE.
SAN JOSE, CA 95131

Workorder # : 9210441
Date Received : 10/28/92
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
9210441-11	TB	WATER	10/27/92	TPHg/BTEX
9210441-12	FB	WATER	10/27/92	TPHg/BTEX

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

MR. DAVID LARSEN
EMCON ASSOCIATES
1938 JUNCTION AVE.
SAN JOSE, CA 95131

Workorder # : 9210441
Date Received : 10/28/92
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-3, MW-5, MW-6, MW-9, MW-1, MW-7 and MW-1D are primarily due to the presence of a lighter petroleum product, possibly gasoline.

Cheryl Balmer 11/11/92
Department Supervisor Date

Chemist 11/11/92
Chemist Date

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

Anametrix W.O.: 9210441
Matrix : WATER
Date Sampled : 10/27/92

Project Number : 204-5508-5504
Date Released : 11/11/92

	Reporting Limit	Sample I.D.# MW-4	Sample I.D.# MW-8	Sample I.D.# MW-3	Sample I.D.# MW-2	Sample I.D.# MW-5
COMPOUNDS	(mg/L)	-01	-02	-03	-04	-05
Benzene	0.0005	ND	ND	0.092	0.016	1.1
Toluene	0.0005	ND	0.0066	0.0028	0.0031	0.059
Ethylbenzene	0.0005	ND	ND	0.0078	0.0045	0.23
Total Xylenes	0.0005	ND	ND	0.0096	0.025	0.90
TPH as Gasoline	0.050	ND	ND	0.74	1.1	7.5
% Surrogate Recovery		91%	89%	100%	90%	86%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		11/02/92	11/02/92	11/03/92	11/03/92	11/03/92
RLMF		1	1	5	5	100

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 53-147%.

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

Reggie Dawson 11-11-92
Analyst Date

Cheryl Brenner 11/11/92
Supervisor Date

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

Anametrix W.O.: 9210441
Matrix : WATER
Date Sampled : 10/27/92

Project Number : 204-5508-5504
Date Released : 11/11/92

	Reporting Limit	Sample I.D.# MW-6	Sample I.D.# MW-9	Sample I.D.# MW-1	Sample I.D.# MW-7	Sample I.D.# MW-1D
COMPOUNDS	(mg/L)	-06	-07	-08	-09	-10
Benzene	0.0005	1.3	15	18	21	17
Toluene	0.0005	0.13	0.68	3.7	11	3.6
Ethylbenzene	0.0005	1.7	1.7	3.4	3.0	3.1
Total Xylenes	0.0005	0.49	8.1	11	11	9.9
TPH as Gasoline	0.050	15	43	53	63	48
% Surrogate Recovery		92%	92%	80%	92%	77%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		11/03/92	11/03/92	11/03/92	11/03/92	11/03/92
RLMF		100	250	250	250	250

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 53-147%.

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

Analyst 11/11/92 Date

Supervisor 11/11/92 Date

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

Anametrix W.O.: 9210441
Matrix : WATER
Date Sampled : 10/27/92

Project Number : 204-5508-5504
Date Released : 11/11/92

	Reporting Limit	Sample I.D.# TB	Sample I.D.# FB	Sample I.D.# BN0201E3	Sample I.D.# BN0301E3
COMPOUNDS	(mg/L)	-11	-12	BLANK	BLANK
Benzene	0.0005	ND	ND	ND	ND
Toluene	0.0005	ND	ND	ND	ND
Ethylbenzene	0.0005	ND	ND	ND	ND
Total Xylenes	0.0005	ND	ND	ND	ND
TPH as Gasoline	0.050	ND	ND	ND	ND
% Surrogate Recovery		96%	91%	99%	100%
Instrument I.D.		HP12	HP12	HP12	HP12
Date Analyzed		11/02/92	11/02/92	11/02/92	11/03/92
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 53-147%.

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

Analyst 11/11/92 Date

Supervisor 11/11/92 Date

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

Anametrix W.O.: 9210441
Matrix : WATER
Date Sampled : 10/27/92
Date Extracted: 11/02/92

Project Number : 204-5508-5504
Date Released : 11/11/92
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/L)	Amount Found (mg/L)
9210441-01	MW-4	10/02/92	0.050	ND
9210441-02	MW-8	10/02/92	0.050	ND
9210441-04	MW-2	11/04/92	0.050	0.53
9210441-05	MW-5	11/04/92	0.050	0.48
9210441-06	MW-6	11/04/92	0.1	1.3
9210441-07	MW-9	11/04/92	0.1	0.88
9210441-08	MW-1	11/09/92	0.25	1.3
9210441-09	MW-7	11/06/92	0.25	1.9
9210441-10	MW-1D	11/09/92	0.25	2.5
9210441-11	TB	11/02/92	0.050	ND
9210441-12	FB	11/02/92	0.050	ND
DWBL110292	METHOD BLANK	11/02/92	0.050	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 0.050 mg/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.

Analyst 11/11/92 Date

Supervisor 11/11/92 Date

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

Anametrix W.O.: 9210441
Matrix : WATER
Date Sampled : 10/27/92
Date Extracted: 11/02/92

Project Number : 204-5508-5504
Date Released : 11/11/92
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/L)	Amount Found (mg/L)
9210441-03	MW-3	11/03/92	0.050	0.069
DWBL110292	METHOD BLANK	11/03/92	0.050	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 0.050 mg/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.

Analyst 11/11/92 Date

Supervisor 11/11/92 Date

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

Anametrix W.O.: 9210441
Matrix : WATER
Date Sampled : 10/27/92
Date Extracted: 11/02/92

Project Number : 204-5508-5504
Date Released : 11/11/92
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/L)	Amount Found (mg/L)
9210441-03	MW-3	11/03/92	0.050	0.10
DWBL110292	METHOD BLANK	11/03/92	0.050	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 0.050 mg/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.

Lucia Shor 11/11/92
Analyst Date

Cheryl Brenner 11/11/92
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-4
Matrix : WATER
Date Sampled : 10/27/92
Date Analyzed : 11/03/92

Anametrix I.D. : 9210441-01
Analyst : IS
Supervisor : CA
Date Released : 11/11/92
Instrument I.D.: HP12

COMPOUND	SPIKE AMT (mg/L)	SAMPLE CONC (mg/L)	REC MS	%REC MS	REC MD (mg/L)	%REC MD	RPD	%REC LIMITS
BENZENE	0.020	0.000	0.019	95%	0.019	95%	0%	49-159
TOLUENE	0.020	0.000	0.021	105%	0.020	100%	-5%	53-156
ETHYLBENZENE	0.020	0.000	0.022	110%	0.021	105%	-5%	54-151
TOTAL XYLENES	0.020	0.000	0.021	105%	0.021	105%	0%	56-157
p-BFB				85%		80%		53-147

* Quality control 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.	: LCSW1103
Matrix	: WATER	Analyst	: IS
Date Sampled	: N/A	Supervisor	: cb
Date Analyzed	: 11/03/92	Date Released	: 11/03/92
		Instrument ID	: HP12

COMPOUND	SPIKE AMT. (mg/L)	LCS (mg/L)	REC LCS	%REC LIMITS
Benzene	0.020	0.018	90%	49-159
Toluene	0.020	0.020	100%	53-156
Ethylbenzene	0.020	0.021	105%	54-151
TOTAL-Xylenes	0.020	0.021	105%	56-157
P-BFB			83%	53-147

* 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: 11/02/92
Date Analyzed : 11/02/92

Anametrix I.D. : LCSW1102
Analyst : IS
Supervisor : CA
Date Released : 11/11/92
Instrument I.D.: HP23

COMPOUND	SPIKE AMT (mg/L)	LCS REC (mg/L)	% REC LCS	LCSD REC (mg/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1.25	1.26	101%	1.25	100%	-1%	63-130

*Quality control established by Anametrix, Inc.

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

MR. DAVID LARSEN
EMCON ASSOCIATES
1938 JUNCTION AVE.
SAN JOSE, CA 95131

Workorder # : 9210441
Date Received : 10/28/92
Project ID : 204-5508-5504
Purchase Order: MOH-B813
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9210441- 3	MW-3	WATER	10/27/92	5520BF

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

MR. DAVID LARSEN
EMCON ASSOCIATES
1938 JUNCTION AVE.
SAN JOSE, CA 95131

Workorder # : 9210441
Date Received : 10/28/92
Project ID : 204-5508-5504
Purchase Order: MOH-B813
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for sample.

Department Supervisor 11/9/92 Date

Chemist 11-09-92 Date

ANALYSIS DATA SHEET - TOTAL OIL AND GREASE
ANAMETRIX, INC. (408) 432-8192

Project I.D.	: 204-5508-5504	Anametrix I.D.	: 9210441
Matrix	: WATER	Analyst	: APP. CHN
Date sampled	: 10/27/92	Supervisor	:
Date ext. TOG	: 11/02/92	Date released	: 11/09/92
Date anl. TOG	: 11/02/92		

Workorder #	Sample I.D.	Reporting Limit (mg/L)	Amount Found (mg/L)
9210441-03	MW-3	5	ND
GWBL110292	METHOD BLANK	5	ND

ND - Not detected at or above the practical quantitation limit for the method.
TOG - Total Oil & Grease is determined by Standard Method 5520BF.

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

TOTAL OIL AND GREASE LAB CONTROL SAMPLE REPORT
STANDARD METHOD 5520BF
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: LCSW1102
Matrix	: WATER	Analyst	: BPR
Date sampled	: N/A	Supervisor	: CM
Date extracted	: 11/02/92	Date Released	: 11/09/92
Date analyzed	: 11/02/92		

COMPOUND	SPIKE AMT. (mg/L)	LCS (mg/L)	%REC LCS	LCSD (mg/L)	%REC LCSD	%RPD	%REC LIMITS
Motor Oil	50	29	58%	28	56%	4%	54-106%

* Quality control limits established by Anametrix, Inc.

Reference 1289-C 10.45 9210441 (10) 14155

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 1289-S

Date:
Page 1 of 2

Site Address: 285 Hegenberger Road Oakland, CA

WIC#: 204-5508-5504

Shell Engineer: Dan Kirk

Phone No.: (510) 675-6168

Consultant Name & Address: 1938 Junction Ave. San Jose, CA 95131
EMCON Associates

Consultant Contact: David Larsen

Phone No.: (408) 453-7269

Comments: 3-VOA (HCl) for gas, BTEX
2-Liter Glass (SK) for TPH-D, TPH-MO
2-Liter Glass (H_2SO_4) for TOG

Sampled by: Lisle Ruth

Printed Name: Lisle RATH

LAB: Anametrix

CHECK ONE (1) BOX ONLY | CT/DT
- Quarterly Monitoring [X] 6441
- Site Investigation [ ] 6441
- Soil Classify/Disposal [ ] 6442
- Water Classify/Disposal [ ] 6443
- Soil/Air Rem. or Sys. O & M [ ] 6452
- Water Rem. or Sys. O & M [ ] 6453
- Other [ ]

TURN AROUND TIME
- 24 hours [ ]
- 48 hours [ ]
- 15 days [X] (Normal)
- Other [ ] ____

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

Analysis Required

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 as Motor Oil	TOG by SM 5520 B/F	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1) MW-4	10-27-92			X		5		X				X				40 ml	HCl	No		Bubbles 2XVOA
(2) MW-8						5		X				X								Bubbles 3X VO
(3) MW-3						7		X				X	X	X						Bubbles 2X VO
(4) MW-2						5		X				X								Bubbles 3XVO
(5) MW-5						5		X				X								Bubbles 3XVOA
(6) MW-6						5		X				X								Bubb 1XVOA
MW-10						5		X				X							NO Sample taken	
(7) MW-9	10-27-92					5		X				X								Bubbles 3XVOA

Relinquished By (signature)	Printed Name	Date / Time	Received (signature)	Printed Name	Date / Time
Lisle Ruth	Lisle Ruth	Date: 10-28-92 Time: 0920	Benny S. Carrizosa	BENNY S. CARRIZOSA	Date: 10-28 Time: 0920
Benny S. Carrizosa	BENNY S. CARRIZOSA	Date: 10-28 Time: 0935	Kathy Pfaffle	KATHY PFAFFLE	Date: 10-28 Time: 0935
		Date: Time:			Date: Time:

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

Rev 8/91

Shell Oil Chain of Custody