PACIFIC
ENVIRONMENTAL
GROUP INC.

92 [illegible] 21

October 8, 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 third 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 July 28, 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) for the July 1992 sampling event are shown on Figure 3. All wells were analyzed for TPH calculated as motor oil (TPH-mo) during the third quarter monitoring event. TPH-mo was detected in Wells MW-2, MW-3, MW-5, and MW-8 at concentrations ranging between 0.12 and 1.2 parts per million (ppm) (Table 3). These wells are located along the northern property boundary. Emcon's groundwater sampling report is presented in Attachment A.

2025 Gateway Place, Suite 440, San Jose, California 95110 (408) 441-7500 FAX (408) 441-7539
620 Contra Costa Blvd., Suite 209, Pleasant Hill, California 94523 (510) 825-0855 FAX (510) 825-0882

The laboratory noted that the concentration reported as TPH-d for Samples MW-1 through MW-3, MW-5 through MW-7, MW-9, and MW-10 are primarily due to the presence of a lighter petroleum product, possibly TPH-g. Further, the concentration reported as motor oil for Samples MW-8 and MW-3 is primarily due to the presence of discrete hydrocarbon peaks, not indicative of motor oil.

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

Sincerely,

Pacific Environmental Group, Inc.

Michael Hurd
Project Geologist
RG 5319

Attachments:
Table 1 - Groundwater Elevation Data
Table 2 - Groundwater Analytical Data - Total Petroleum Hydrocarbons (TPH-g, BTEX Compounds, and TPH-d)
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: [redacted]
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	Sample Date	Well Elevation (feet, MSL)	Depth to Water (feet)	Groundwater Elevation (feet)
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
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
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
	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

Table 1 (continued)
Groundwater Elevation Data

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

Well Number	Sample Date	Well Elevation (feet, MSL)	Depth to Water (feet)	Groundwater Elevation (feet)
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
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
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

Table 1 (continued)
Groundwater Elevation Data

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

Well Number	Sample Date	Well Elevation (feet, MSL)	Depth to Water (feet)	Groundwater Elevation (feet)
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
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
	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
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

Table 1 (continued)
Groundwater Elevation Data

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

Well Number	Sample Date	Well Elevation (feet, MSL)	Depth to Water (feet)	Groundwater Elevation (feet)
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

MSL = Mean sea level
Measurements taken from top of casing

Table 2
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH-g, BTEX Compounds, and TPH-d)

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

Well Number	Sample Date	TPH-g (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH-d (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*
	07/28/92D	70	17	5.0	2.7	13	19*
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*
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
	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

Table 2 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH-g, BTEX Compounds, and TPH-d)

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

Well Number	Sample Date	TPH-g (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH-d (ppm)
MW-3	07/11/91	0.43	0.012	ND	ND	0.0077	ND
(cont.)	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*
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
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
	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*
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

Table 2 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH-g, BTEX Compounds, and TPH-d)

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

Well Number	Sample Date	TPH-g (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH-d (ppm)
MW-6 (cont.)	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*
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*
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

Table 2 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH-g, BTEX Compounds, and TPH-d)

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

Well Number	Sample Date	TPH-g (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH-d (ppm)
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
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
	07/11/91	ND	ND	ND	ND	ND	
	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*

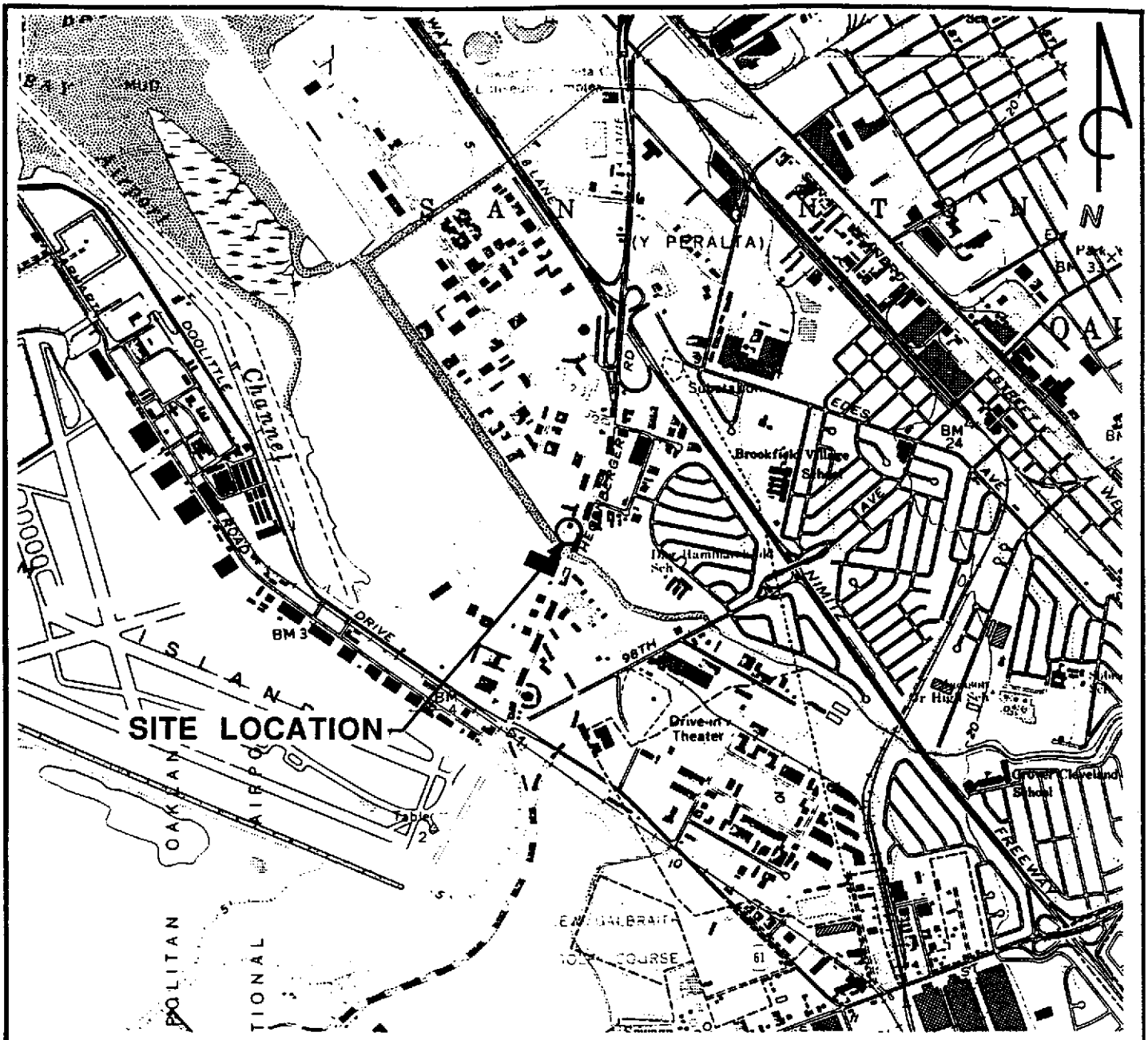
TPH-g = Total petroleum hydrocarbons calculated as gasoline
TPH-d = Total petroleum hydrocarbons calculated as diesel
ppm = Parts per million
NR = Not reported
ND = Not detected
NA = Not analyzed
* = Compounds detected and calculated as TPH-d primarily appear to be due to a lighter petroleum product, possibly gasoline.
** = Compound detected and calculated as TPH-d appears to be a heavier hydrocarbon compound, possibly motor oil.
D = Duplicate sample
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	Sample Date	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-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

(D) = Duplicate sample
NA = Not analyzed
ND = Not detected



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

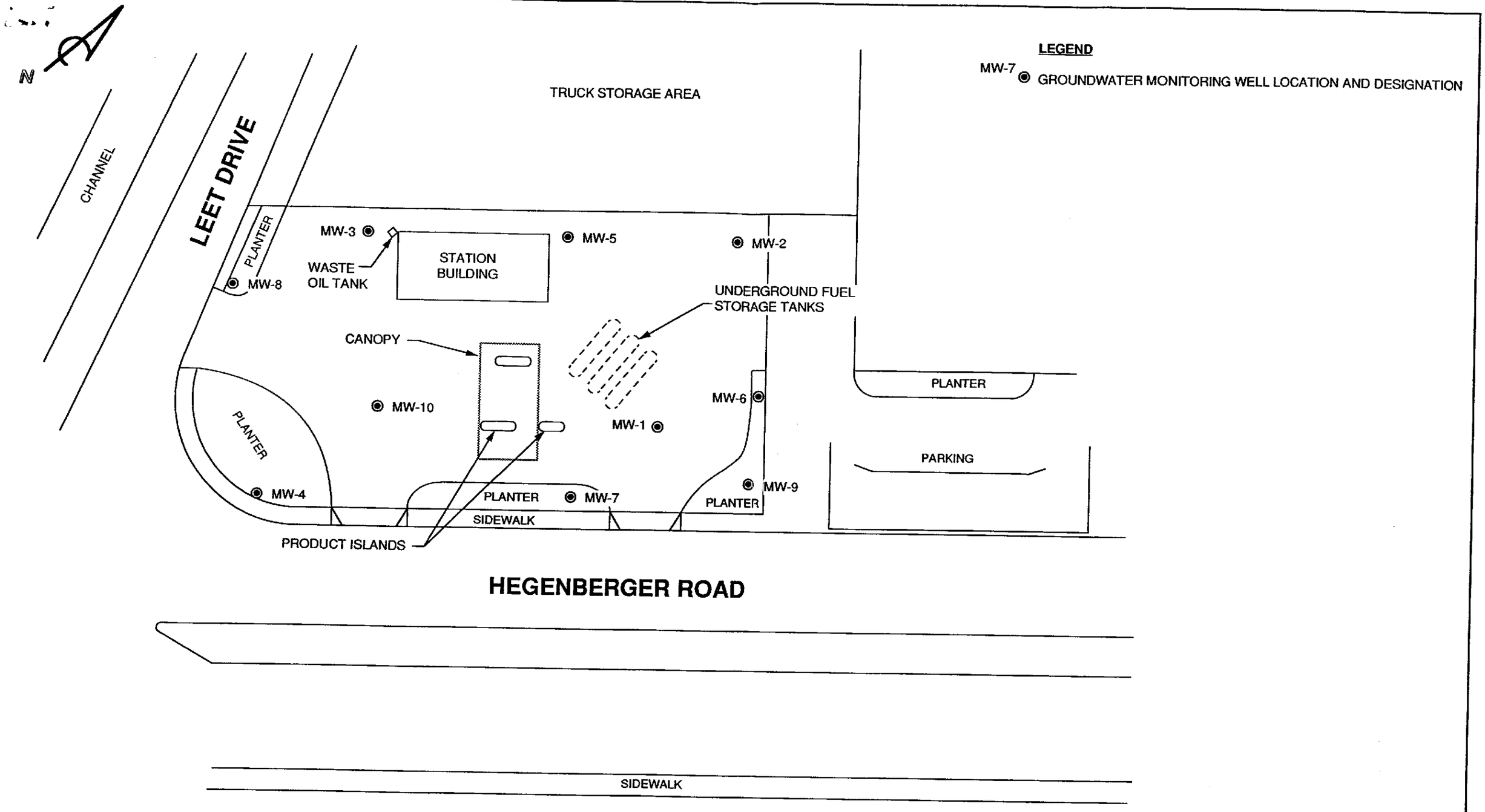
PACIFIC ENVIRONMENTAL GROUP, INC.

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

SITE LOCATION MAP

FIGURE: 1
PROJECT: 305-79.01

REORDER NO. A54081



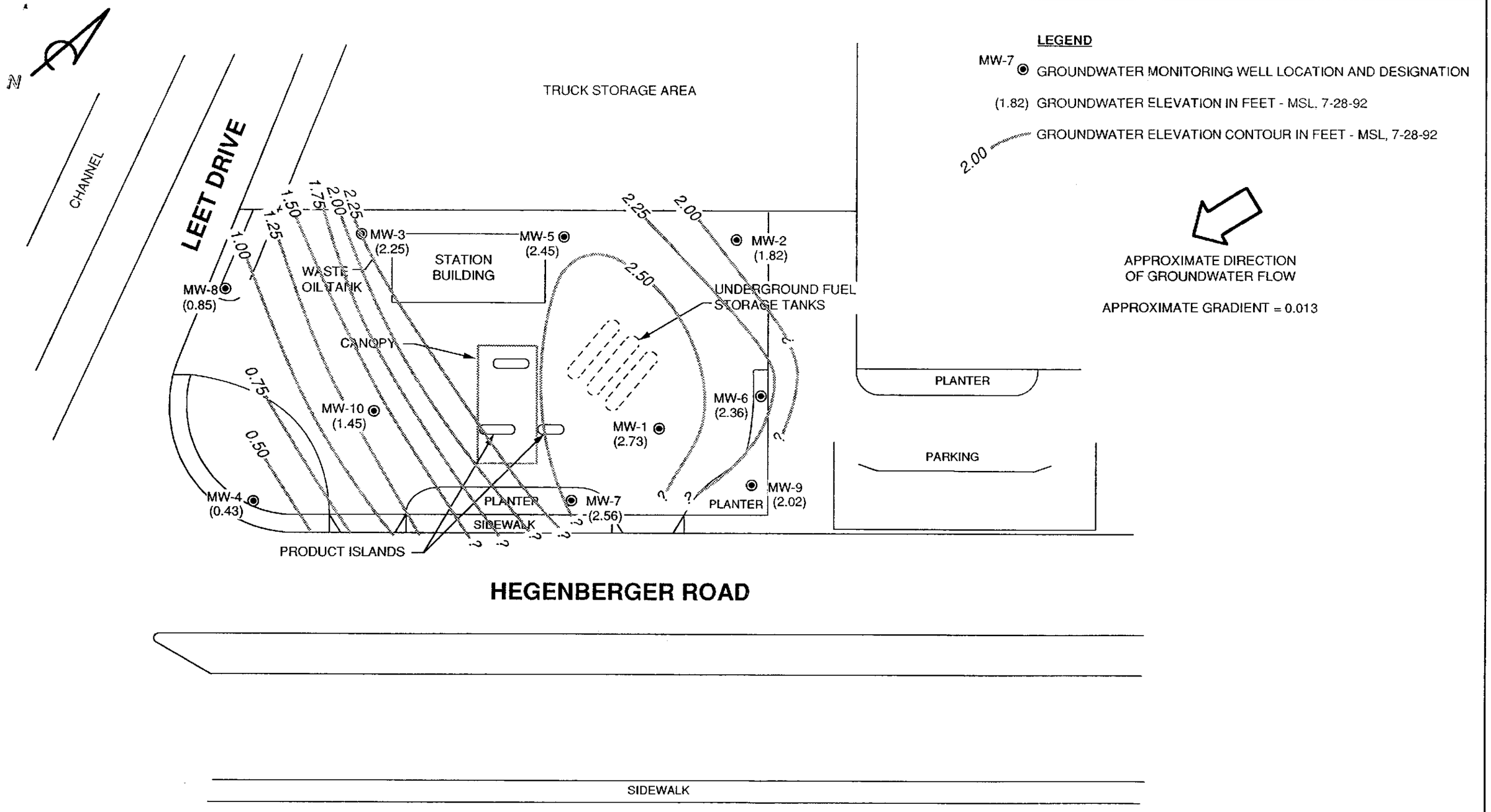
PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 40 80 FEET

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

SITE MAP

FIGURE: 2
PROJECT: 305-79.01



PACIFIC ENVIRONMENTAL GROUP, INC.

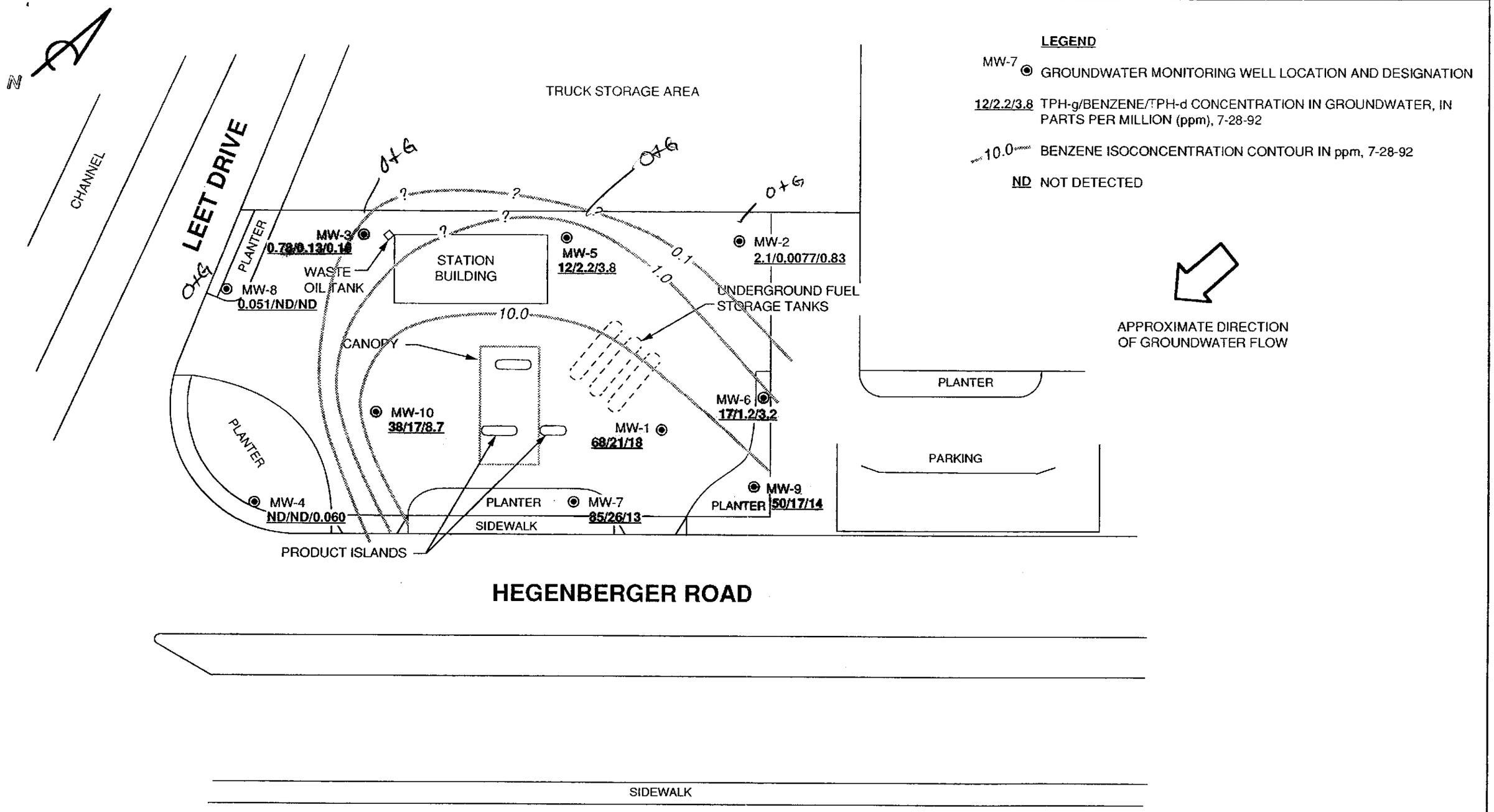
SCALE
0 40 80 FEET

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

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: **2**
PROJECT: 305-79.01

10/07/92



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

10/07/92

ATTACHMENT A

GROUNDWATER SAMPLING REPORT

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

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

Workorder # : 9207364
Date Received : 07/29/92
Project ID : 204-5508-5504
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9207364- 1	MW-4
9207364- 2	MW-8
9207364- 3	MW-3
9207364- 4	MW-2
9207364- 5	MW-5
9207364- 6	MW-6
9207364- 7	MW-10
9207364- 8	MW-9
9207364- 9	MW-1
9207364-10	MW-7
9207364-11	MW-1D
9207364-12	TB-1
9207364-13	FB-1

This report consists of 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

8-14-92
Date

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

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

Workorder # : 9207364
Date Received : 07/29/92
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
9207364- 1	MW-4	WATER	07/28/92	TPHd
9207364- 2	MW-8	WATER	07/28/92	TPHd
9207364- 3	MW-3	WATER	07/28/92	TPHd
9207364- 4	MW-2	WATER	07/28/92	TPHd
9207364- 5	MW-5	WATER	07/28/92	TPHd
9207364- 6	MW-6	WATER	07/28/92	TPHd
9207364- 7	MW-10	WATER	07/28/92	TPHd
9207364- 8	MW-9	WATER	07/28/92	TPHd
9207364- 9	MW-1	WATER	07/28/92	TPHd
9207364-10	MW-7	WATER	07/28/92	TPHd
9207364-11	MW-1D	WATER	07/28/92	TPHd
9207364-12	TB-1	WATER	07/28/92	TPHd
9207364-13	FB-1	WATER	07/28/92	TPHd
9207364- 1	MW-4	WATER	07/28/92	TPHg/BTEX
9207364- 2	MW-8	WATER	07/28/92	TPHg/BTEX
9207364- 3	MW-3	WATER	07/28/92	TPHg/BTEX
9207364- 4	MW-2	WATER	07/28/92	TPHg/BTEX
9207364- 5	MW-5	WATER	07/28/92	TPHg/BTEX
9207364- 6	MW-6	WATER	07/28/92	TPHg/BTEX
9207364- 7	MW-10	WATER	07/28/92	TPHg/BTEX
9207364- 8	MW-9	WATER	07/28/92	TPHg/BTEX
9207364- 9	MW-1	WATER	07/28/92	TPHg/BTEX
9207364-10	MW-7	WATER	07/28/92	TPHg/BTEX

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

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

Workorder # : 9207364
Date Received : 07/29/92
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
9207364-11	MW-1D	WATER	07/28/92	TPHg/BTEX
9207364-12	TB-1	WATER	07/28/92	TPHg/BTEX
9207364-13	FB-1	WATER	07/28/92	TPHg/BTEX

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

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

Workorder # : 9207364
Date Received : 07/29/92
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-2, MW-5, MW-6, MW-10, MW-9, MW-1, MW-7 and MW-1D are primarily due to the presence of a lighter petroleum product, possibly gasoline.
- The concentrations reported as motor oil for samples MW-8 and MW-3 are primarily due to the presence of discrete hydrocarbon peaks not indicative of motor oil.

M. Hossenian 8/14/92
Department Supervisor Date

Reggie Davison 8-14-92
Chemist Date

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

Anametrix W.O.: 9207364
Matrix : WATER
Date Sampled : 07/28/92

Project Number : 204-5508-5504
Date Released : 08/12/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-4 -01	Sample I.D.# MW-8 -02	Sample I.D.# MW-3 -03	Sample I.D.# MW-2 -04	Sample I.D.# MW-5 -05
Benzene	0.0005	ND	ND	0.13	0.0077	2.2
Toluene	0.0005	ND	ND	ND	0.0033	0.063
Ethylbenzene	0.0005	ND	0.0010	0.013	0.13	1.4
Total Xylenes	0.0005	ND	0.0006	0.0042	0.31	3.5
TPH as Gasoline	0.050	ND	0.051	0.78	2.1	12
% Surrogate Recovery		114%	108%	53%	103%	91%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		08/07/92	08/07/92	08/08/92	08/07/92	08/07/92
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.

M. Hoffman 8/14/92
Analyst Date

Cheryl Bachman 8/17/92
Supervisor Date

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

Anametrix W.O.: 9207364
Matrix : WATER
Date Sampled : 07/28/92

Project Number : 204-5508-5504
Date Released : 08/12/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-6 -06	Sample I.D.# MW-10 -07	Sample I.D.# MW-9 -08	Sample I.D.# MW-1 -09	Sample I.D.# MW-7 -10
Benzene	0.0005	1.2	17	17	21	26
Toluene	0.0005	ND	2.8	1.2	5.5	17
Ethylbenzene	0.0005	3.0	1.5	1.5	3.4	2.9
Total Xylenes	0.0005	0.61	4.0	12	15	15
TPH as Gasoline	0.050	17	38	50	68	85
% Surrogate Recovery		99%	92%	106%	98%	103%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		08/07/92	08/07/92	08/07/92	08/08/92	08/08/92
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 Date 8/12/92

Supervisor Date 8/13/92

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

Anametrix W.O.: 9207364
Matrix : WATER
Date Sampled : 07/28/92

Project Number : 204-5508-5504
Date Released : 08/12/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-1D -11	Sample I.D.# TB-1 -12	Sample I.D.# FB-1 -13	Sample I.D.# BG0701E3 BLANK	Sample I.D.# BG0801E3 BLANK
Benzene	0.0005	17	ND	ND	ND	ND
Toluene	0.0005	5.0	ND	ND	ND	ND
Ethylbenzene	0.0005	2.7	ND	ND	ND	ND
Total Xylenes	0.0005	13	ND	ND	ND	ND
TPH as Gasoline	0.050	70	ND	ND	ND	ND
% Surrogate Recovery		128%	115%	102%	113%	92%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		08/08/92	08/07/92	08/07/92	08/07/92	08/08/92
RLMF		250	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.

M. Harrison 8-12/92
Analyst Date

Cheryl Balmer 8/13/92
Supervisor Date

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

Anametrix W.O.: 9207364
Matrix : WATER
Date Sampled : 07/28/92
Date Extracted: 07/31/92

Project Number : 204-5508-5504
Date Released : 08/13/92
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/L)	Amount Found (mg/L)
9207364-01	MW-4	08/05/92	0.050	0.060
9207364-02	MW-8	08/05/92	0.050	ND
9207364-03	MW-3	08/05/92	0.050	0.10
9207364-04	MW-2	08/05/92	0.050	0.83
9207364-05	MW-5	08/08/92	0.25	3.8
9207364-06	MW-6	08/08/92	0.25	3.2
9207364-07	MW-10	08/12/92	1.0	8.7
9207364-08	MW-9	08/12/92	1.0	14
9207364-09	MW-1	08/12/92	1.0	18
9207364-10	MW-7	08/12/92	1.0	13
9207364-11	MW-1D	08/12/92	1.0	19
9207364-12	TB-1	08/08/92	0.050	ND
9207364-13	FB-1	08/08/92	0.050	ND
DWBL073192	METHOD BLANK	08/05/92	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.

M. Hoffman 8/13/92
Analyst Date

Supervisor 8/13/92
Supervisor Date

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

Anametrix W.O.: 9207364
Matrix : WATER
Date Sampled : 07/28/92
Date Extracted: 07/31/92

Project Number : 204-5508-5504
Date Released : 08/13/92
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/L)	Amount Found (mg/L)
9207364-01	MW-4	08/05/92	0.050	ND
9207364-02	MW-8	08/05/92	0.050	0.15
9207364-03	MW-3	08/05/92	0.050	0.12
9207364-04	MW-2	08/05/92	0.050	0.32
9207364-05	MW-5	08/08/92	0.25	1.2
9207364-06	MW-6	08/08/92	0.25	ND
9207364-07	MW-10	08/12/92	1.0	ND
9207364-08	MW-9	08/12/92	1.0	ND
9207364-09	MW-1	08/12/92	1.0	ND
9207364-10	MW-7	08/12/92	1.0	ND
9207364-11	MW-1D	08/12/92	1.0	ND
9207364-12	TB-1	08/08/92	0.050	ND
9207364-13	FB-1	08/08/92	0.050	ND
DWBL073192	METHOD BLANK	08/05/92	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.

M. Hasselman 8/13/92
Analyst Date

Cheryl Bowmer 8/13/92
Supervisor Date

BTEX MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 204-7416-0304 MW-8
Matrix : WATER
Date Sampled : 07/28/92
Date Analyzed : 08/07/92

Anametrix I.D.: 9207364-02
Analyst : [illegible]
Supervisor : CB
Date Released : 08/12/92
Instrument ID : HP4

COMPOUND	SPIKE AMT. (mg/L)	MS (mg/L)	REC MS	MSD (mg/L)	REC MSD	RPD	%REC LIMITS
Benzene	0.020	0.022	110%	0.019	95%	-15%	49-159
Toluene	0.020	0.019	95%	0.016	80%	-17%	53-156
Etylbenzene	0.020	0.019	95%	0.016	80%	-17%	54-151
M+P-Xylenes	0.0133	0.0130	98%	0.0110	83%	-17%	56-157
O-Xylene	0.0067	0.0050	75%	0.0046	69%	-8%	58-154
P-BFB			113%		114%		53-147

* Limits established by Anametrix, Inc.

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

Sample I.D. : METHOD SPIKE
Matrix : REAGENT WATER
Date Sampled : N/A
Date Extracted: 07/31/92
Date Analyzed : 08/06/92

Anametrix I.D. : LCS0731
Analyst : [illegible]
Supervisor : [illegible]
Date Released : 08/13/92
Instrument I.D.: HP 23

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	%REC	LCSD (ug/L)	%REC	RPD	%REC LIMITS
Diesel	1250	1200	96%	1200	96%	0%	36-150

* Limits established by Anametrix, Inc.

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

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

Workorder # : 9207364
Date Received : 07/29/92
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
9207364- 3	MW-3	WATER	07/28/92	5520BF

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

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

Workorder # : 9207364
Date Received : 07/29/92
Project ID : 204-5508-5504
Purchase Order: MOH-B813
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for sample.

Carl Brault 8.11.92
Department Supervisor Date

P Patel 08-11-92
Chemist Date

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

Project #	: 204-5508-5504	Anametrix I.D.	: 9207364
Matrix	: WATER	Analyst	: APP
Date sampled	: 07/28/92	Supervisor	: CCB
Date ext. TOG	: 08/04/92	Date released	: 08/11/92
Date anl. TOG	: 08/04/92		

Workorder #	Sample I.D.	Reporting Limit (mg/L)	Amount Found (mg/L)
9207364-03	MW-3	5	ND
GWBL080492	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.	: LCSW0804
Matrix	: WATER	Analyst	: APK
Date sampled	: N/A	Supervisor	: CEB
Date extracted	: 08/04/92	Date Released	: 08/11/92
Date analyzed	: 08/04/92		

COMPOUND	SPIKE AMT. (mg/L)	LCS (mg/L)	%REC LCS	LCSD (mg/L)	%REC LCSD	%RPD	%REC LIMITS
Motor Oil	50	39	78%	38	76%	3%	47-99%

* Quality control limits established by Anametrix, Inc.

(10/34) 9207864 (AG) CN 1120

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: 669

Date: 7-29-92
Page 1 of 2

Site Address: 285 Hegenberger Road Oakland, CA

WIC#: 204-5508-5504

Shell Engineer: Dan Kirk — Phone No. (510) Fax #: 675-6168

Consultant Name & Address: 1938 Junction Ave. EMCON Assoc. San Jose 95131

Consultant Contact: David Larsen — Phone No. (408) Fax #: 453-2269

Comments: 3-VOAs (HCl) for GJBTEX
2-Liter Glass (SR) for d, NO
2-Liter Glass (H_2SO_4) for TOG

Sampled By:

Printed Name:

Analysis Required

LAB: Anametrix

CHECK ONE (1) BOX ONLY		CT/DT
Quarterly Monitoring	X	5461
Site Investigation		5441
Soil for disposal		5442
Water for disposal		5443
Air Sample- Sys O&M		5452
Water Sample - Sys O&M		5453
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.

Sample ID	Date	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	TPH as Motor Oil & Grease by SM 5520B/F	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
1 MW-4	7-28-92		X		5	X	X	X			X	40 ml	HCl	NO		3 VOAs WITH BUBBLES.
2 MW-8					5	X	X	X			X					OK
3 MW-3				(88)	~~5~~ 7	X	X	X			X	X				OK
4 MW-2					5	X	X	X			X					OK
5 MW-5					5	X	X	X			X					3 VOAs WITH BUBBLES
6 MW-6					5	X	X	X			X					3 VOAs WITH BUBBLES
7 MW-10					5	X	X	X			X					3 VOAs WITH BUBBLES
8 MW-9	"				5	X	X	X			X					3 VOAs WITH BUBBLES

ALL OTHER SAMPLES COLD PROPER CONTAINER

Relinquished By (signature): Lisa Rankin	Printed name: Lisle Rankin	Date: 7-29-92 Time: 12:00	Received (signature): Benny S. Carrizosa	Printed name: BENNY S. CARRIZOSA — Date: 7-29 Time: 1200
Relinquished By (signature): Benny S. Carrizosa	Printed name: BENNY S. CARRIZOSA	Date: 7-29 Time: 1215	Received (signature): Calvin Robinson	Printed name: CALVIN ROBINSON — Date: 7-29-92 Time: 1215
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

Last Revision Date: 10/15/91

9207344 (18) (10/34) on 1:20

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: 669

Date: 7-29-92
Page 2 of 2

Site Address: 285 Hegenberger Road Oakland, CA

WIC#: 204-5508-5504

Shell Engineer: Dan Kirk — Phone No. (510) Fax #: 675-6168

Consultant Name & Address: EMCON Assoc. 1938 Junction Ave San Jose 95131

Consultant Contact: David Lowsen — Phone No. (408) Fax #: 453-2269

Comments: 3-VOAs (HCl) for g, BTEX
2-Liter Glass(SE) for diesel/M.O.
2-Liter Glass (H2SO4) for TOG

Sampled By:

Printed Name:

LAB: Anametrix

CHECK ONE (1) BOX ONLY

		CT/DT
Quarterly Monitoring	X	5461
Site Investigation	☐	5441
Soil for disposal	☐	5442
Water for disposal	☐	5443
Air Sample- Sys O&M	☐	5452
Water Sample - Sys O&M	☐	5453
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	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	TPH as Motor Oil	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
MW-1	7-28-92		X		5	X	X	X			X	40 ml	HCl	No		3 VOAs with bubbles
MW-7					5	X	X	X			X					3 VOAs with bubbles
MW-1D					5	X	X	X			X					3 VOAs with bubbles
[redacted]					5	X	X	X			X					2 VOAs with bubbles
FB-1					5	X	X	X			X					

Relinquished By (signature): Lisa Reddy	Printed name: Lisa Reddy	Date: 7-29 Time: 12:00	Received (signature): Benny S. Carrizosa	Printed name: Benny S. Carrizosa	Date: 7-29 Time: 1200
Relinquished By (signature): Benny S. Carrizosa	Printed name: Benny S. Carrizosa	Date: 7-29 Time: 1215	Received (signature): Calvin Nobinson	Printed name: Calvin Nobinson	Date: 7-29-92 Time: 1245
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

Last Revision Date: 10/15/91

EMCON ASSOCIATES
Consultants in Wastes Management and Environmental Control

August 26, 1992
Project: G67-50.01
WIC#: 204-5508-5504

Ms. Rhonda Barrick
Pacific Environmental Group, Inc.
1601 Civic Center Drive, Suite 202
Santa Clara, California 95050

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

Dear Ms. Barrick:

This letter presents the results of the third quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) site located at 285 Hegenberger Road, Oakland, California (figure 1). Third quarter monitoring was conducted on July 28, 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). During the survey, wells MW-1 through MW-10 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. Results of the third 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-10 on July 28, 1992. 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-3 through MW-10 were evacuated to dryness before the removal of three casing volumes. These wells were allowed to recharge for up to 24 hours. Samples were collected after the wells had recharged to a level sufficient for sample collection. Field measurements from third quarter monitoring, and available measurements from four previous monitoring events, are summarized in table 1. Purge water

1938 Junction Avenue, San Jose, California 95131-2102, (408) 453-0719. Fax (408) 453-0452

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 third quarter monitoring included a trip blank (called TB), a field blank (called FB), and a duplicate well sample (called MW-1D) collected from well MW-1. Please note that because of a clerical error, samples TB and FB from July 28, 1992 are called TB-1 and FB-1 on the chain-of-custody form and certified analytical report. All water samples collected during third quarter monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPH-g); benzene, toluene, ethylbenzene, and total xylenes (BTEX); total petroleum hydrocarbons as diesel (TPH-d); and total petroleum hydrocarbons as motor oil (TPH-mo). Additional ground-water samples collected from well MW-3 were analyzed for total oil and grease by standard method 5520 B/F.

ANALYTICAL RESULTS

Analytical results for the third 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

G675001C.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
Third Quarter 1992

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

Date: 08/26/92
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	07/11/91	6.64	3.97	2.67	NR	ND	07/12/91	NR	NR	NR	NR
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-2	07/11/91	7.68	5.70	1.98	NR	ND	07/12/91	NR	NR	NR	NR
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-3	07/11/91	7.81	5.56	2.25	NR	ND	07/12/91	NR	NR	NR	NR
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-4	07/11/91	7.38	6.86	0.52	NR	ND	07/12/91	NR	NR	NR	NR
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

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
Third Quarter 1992

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

Date: 08/26/92
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	07/11/91	8.18	5.70	2.48	NR	ND	07/12/91	NR	NR	NR	NR
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-6	07/11/91	8.21	5.78	2.43	NR	ND	07/12/91	NR	NR	NR	NR
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-7	07/11/91	7.44	4.98	2.46	NR	ND	07/12/91	NR	NR	NR	NR
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-8	07/11/91	7.79	6.80	0.99	NR	ND	07/12/91	NR	NR	NR	NR
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

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
Third Quarter 1992

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

Date: 08/26/92
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	07/11/91	7.63	5.65	1.98	NR	ND	07/12/91	NR	NR	NR	NR
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-10	07/11/91	7.45	5.90	1.55	NR	ND	07/12/91	NR	NR	NR	NR
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

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

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

Date: 08/26/92
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	07/12/91	NR	NR	NR	NR	NR	NR	NA	NA
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-1D	07/28/92	70.	17.	5.0	2.7	13.	19.^	<1.0	NA
MW-2	07/12/91	8.1	0.089	0.066	0.350	0.930	1.1	NA	NA
MW-2	10/08/91	1.4	0.0051	0.0015	0.036	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-3	07/12/91	0.43	0.012	<0.0005	<0.0005	0.0077	<0.05	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

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
NR = Not reported; data not available
NA = Not applicable
^ = Concentration reported as diesel is primarily due to the presence of a lighter petroleum product, possibly gasoline
* = 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
Third Quarter 1992
milligrams per liter (mg/l) or parts per million (ppm)

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

Date: 08/26/92
Project Number: G67-50.01

Sample Desig-nation	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	07/12/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA	NA
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-5	07/12/91	24.	2.2	0.280	0.430	5.7	1.7	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-6	07/12/91	9.5	0.670	0.051	1.1	0.920	1.9	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-7	07/12/91	79.	7.7	7.2	2.3	10.0	1.1	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

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
Third Quarter 1992
milligrams per liter (mg/l) or parts per million (ppm)

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

Date: 08/26/92
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	07/12/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	NA	NA
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-9	07/12/91	40.	7.7	3.2	1.1	9.4	2.0	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-10	07/12/91	NR	NR	NR	NR	NR	NA	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
FB	07/28/92	<0.05+	<0.0005+	<0.0005+	<0.0005+	<0.0005+	<0.05+	<0.05+	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
NR = Not reported; data not available
+ = 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
Third Quarter 1992
milligrams per liter (mg/l) or parts per million (ppm)

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

Date: 08/26/92
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

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