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ENVIRONMENTAL
GROUP, INC.

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Installation of VEW's + monitoring report 5/2/94 Re 530

November 5, 1993
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 report presents the results of additional site assessment, installation of groundwater sparge and soil vapor extraction wells, and the third quarter 1993 monitoring event, prepared by Pacific Environmental Group, Inc. (PACIFIC) at the request of Shell Oil Company (Shell) for the site referenced above (Figures 1 and 2). The purpose of the current investigation was to further define the extent of petroleum hydrocarbons in the groundwater.

Included in this report is a brief discussion of the site location and setting, background, scope of work, and findings.

BACKGROUND

Site Location

The site is located at 285 Hegenberger Road at Leet Drive in Oakland, California (Figures 1 and 2). Figure 2 presents the service station layout, including storage tank locations and the location of the station building. Land use in the vicinity of the site is primarily commercial.

Regional Setting

The site is located within the East Bay Plain area of Alameda County, approximately 3 miles west of the Hayward Fault. The East Bay Plain area of Alameda County is characterized by Quaternary age Bay Mud composed of unconsolidated plastic clay, and silty clay, rich in organic material with some lenses of silt and sand. Beneath the Bay Mud deposits lie unconsolidated younger and older alluvial deposits (Hickenbottom and Muir, 1988). The Older Alluvium is the dominant aquifer in the East Bay Plain area west of the Hayward Fault. Regional groundwater flow is to the west-southwest toward San Francisco Bay.

Site Setting

The site is located near the Oakland International Airport. The nearest natural drainage is San Leandro Creek, located approximately 200 feet south of the site. A channel is located across Leet Drive, southwest of the site. The soils immediately underlying the site consist primarily of clayey silts to silty clays and local surficial fill. Site elevation is approximately 10 feet above mean sea level. Based on previous investigations, groundwater occurs at a depth of approximately 4 to 8 feet below ground surface (bgs).

Site History

The site is currently an active Shell service station with three underground fuel storage tanks (USTs) which were installed in 1984 replacing four USTs located in an adjacent excavation (Figure 2).

PACIFIC researched site history through public documents at the Oakland City Library and Alameda County Tax Assessors Office. PACIFIC also reviewed aerial photo coverage of the site. The service station was built between 1966 and 1967. Prior to 1966, no buildings existed on site. Aerial photos prior to 1960 indicate that the area was reclaimed from a wetlands area starting around 1947. In 1966 a building existed north of the site. The property was purchased prior to 1960 (exact date not listed).

Previous Investigations

Environmental investigations have previously been performed by Converse Environmental West (CEW) at the site. A summary of findings from these investigations is included below.

- CEW has installed 10 groundwater monitoring wells (MW-1 through MW-10) and drilled 13 soil borings (SB-1 through SB-13) at the site since 1989. The maximum gasoline concentrations were detected in Boring SB-5 at a depth of 2 feet bgs, at a concentration of 31,000 parts per million (ppm). The boring was located east of the USTs. The maximum benzene concentration was also detected in this boring, at a concentration of 4.7 ppm.
- During August and September 1990, CEW conducted an off-site soil investigation of the adjacent property currently occupied by Rollins Trucking at 295 Hegenberger Road. A maximum concentration of 4,000 ppm total petroleum hydrocarbons calculated as gasoline (TPH-g) was found in soil from Boring SG-2, at an approximate depth of 5-1/2 feet bgs.
- CEW conducted a soil gas survey off site in July 1991 along Hegenberger Road to investigate the presence of hydrocarbons detected in a City of Oakland utility trench. Concentrations in soil gas ranged between 32 and 62 ppm TPH-g.
- On February 12, 1992, Gettler Ryan sampled the excavations of the three former hydraulic lifts and one former oil/water separator. Additional excavation was performed in April and May 1992. Closure samples collected by PACIFIC contained concentrations of TPH-g and oil and grease of up to 1,800 and 6,800 ppm, respectively.
- Groundwater flow at the site is generally to the south (toward Oyster Bay), though a groundwater mound is present in the area of the storage tank complex, which results in a northward component of groundwater flow in the northern portion of the site. Depth to water at the site is between 3-1/2 and 5 feet bgs. A sheen of separate-phase hydrocarbon has been present in Wells MW-6 and MW-8 in the past.

SCOPE OF WORK

The objective of this investigation was to further delineate the extent of the dissolved hydrocarbons in the groundwater. The scope of work included installation of three groundwater monitoring wells (MW-11, MW-12, and MW-13) to depths of 14, 15, and 16 feet bgs, installation of four dual completion groundwater

sparge/vapor extraction wells (VEW-2 through VEW-5), sampling and laboratory analysis of soil and groundwater, and preparation of this report.

Work was performed on June 8, 9, and 10, 1993. Wells MW-11 through MW-13 were installed in the median in Hegenberger Road, east and northeast of the site (Figure 2). Field and laboratory procedures (including well development data) are presented as Attachment A.

FINDINGS

Subsurface Conditions

The borings for Wells MW-11 through MW-13 were advanced to a depth of 15-1/2 feet bgs, and the borings for Wells VEW-2 through VEW-5 were advanced to depths ranging from 8-1/2 to 10 feet bgs. The soils encountered during drilling consisted of clays, clayey silts, and clayey sands. Generalized geologic cross-sections are shown on Figures 3 and 4.

Groundwater was encountered at an approximate depth of 8-1/2 feet bgs during drilling. All site wells were gauged and sampled on July 20 and 21, 1993, by Blaine Tech Services, Inc. (Blaine) at the direction of PACIFIC. Depth to water ranged between 3.48 and 8.32 feet in all wells. Groundwater flow was to the southeast at an approximate gradient of 0.04. Figure 5 presents a groundwater contour map for the groundwater monitoring event. Groundwater elevation data are presented in Table 1.

Soil Analytical Results

Organic vapors were detected in the borings for Wells MW-11 through MW-13, and VEW-2 through VEW-5, at concentrations ranging from non-detectable to 150 ppm by volume (at a depth of approximately 5 feet bgs in Well VEW-5). Organic vapor analytical procedures and concentrations (which are noted on the boring logs) are presented as Attachment A.

Soil samples from the approximate depth of 5 feet bgs were analyzed from the borings for Wells MW-11 through MW-13 and VEW-2 through VEW-5. The soil samples were analyzed for TPH-g, BTEX compounds, and TPH-d. Soil samples collected from the borings for the groundwater monitoring wells contained no petroleum hydrocarbons except 0.008 ppm toluene detected in the 5- to 5-1/2-foot sample from Well MW-11. The maximum concentration of TPH-g was detected in the 4-1/2- to 5-foot sample collected from vapor extraction Well VEW-3, at a concentration of 1,900 ppm. The maximum concentration of benzene was

detected in the 4-1/2- to 5-foot sample collected from vapor extraction Well VEW-2, at a concentration of 6.4 ppm. The maximum concentration of TPH-d was detected in vapor extraction Well VEW-3, at a concentration of 560 ppm. The laboratory reports that the concentrations reported as TPH-d for the soil samples from Wells VEW-2 through VEW-5 are due to a non-diesel mix. Soil analytical data is presented in Table 2. Field and laboratory procedures are presented as Attachment A. The certified analytical reports, and chain-of-custody documentation are presented as Attachment B.

Groundwater Analytical Results

Wells MW-1 through MW-13 were sampled by Blaine on July 20 and 21, 1993, as part of a quarterly sampling program. Groundwater samples were analyzed for TPH-g, benzene, toluene, ethylbenzene, xylenes (BTEX compounds), TPH calculated as diesel (TPH-d), and TPH calculated as motor oil (TPH-mo).

Low to non-detectable concentrations of TPH-g, BTEX compounds, and TPH-d were detected in the newly installed wells (MW-11 through MW-13). TPH-g was detected in Well MW-11, at a concentration of 0.050 ppm. TPH-g was not detected in groundwater from Wells MW-12 or MW-13. The maximum concentration of benzene was detected in Wells MW-11 and MW-12, at a concentration of 0.0025 and 0.0028 ppm, respectively. The maximum TPH-d concentration was detected in Well MW-12, at a concentration of 0.088 ppm. The maximum concentration of TPH-mo detected in the newly installed wells was found in Well MW-12, at a concentration of 0.230 ppm.

The highest concentrations of TPH-g, BTEX compounds, and TPH-d in the previously installed on-site Wells MW-1 through MW-10 were 47 ppm TPH-g, 23 ppm benzene, and 13 ppm TPH-d. The maximum concentration of TPH-mo was detected in Well MW-1, at a concentration of 0.79 ppm. TPH-g, benzene, and TPH-d concentrations are shown on Figure 6. Blaine's sampling report, which includes certified analytical reports, analytical methods and detection limits, and chain-of-custody documentation, is presented as Attachment C. Groundwater analytical data are presented in Tables 3 and 4.

SUMMARY OF FINDINGS

The following summarizes the findings of this investigation.

- The soils encountered during drilling consisted of clays, clayey silts, and clayey sands.

- Groundwater exists beneath the site at an approximate depth of 8-1/2 feet bgs, and flow was to the south at an approximate gradient of 0.04.

- Soil samples collected from the borings for the newly installed groundwater monitoring wells contained no petroleum hydrocarbons with the exception of 0.008 ppm toluene detected in the 5- to 5-1/2-foot sample from Well MW-11. Maximum concentrations of petroleum hydrocarbons in soil samples collected from the borings for the vapor extraction wells were found in Wells VEW-2 and VEW-3, at concentrations of 1,900 ppm TPH-g in Well VEW-3, 6.4 ppm benzene in Well VEW-2, and 560 ppm TPH-d in Well VEW-3.

- Low to non-detectable concentrations of TPH-g, BTEX compounds, and TPH-d were detected in the groundwater from newly installed Wells MW-11 through MW-13. The maximum concentration of TPH-mo detected in the newly installed wells was found in Well MW-12, at a concentration of 0.230 ppm. The maximum concentration of TPH-g was detected in Well MW-12, at a concentration of 0.0028 ppm. The maximum concentration of benzene was detected in Wells MW-11 and MW-12, at a concentration of 0.0019 ppm. The maximum TPH-d concentration was detected in Well MW-12, at a concentration of 0.088 ppm. The maximum concentration of TPH-mo was detected in Well MW-1, at a concentration of 0.79 ppm.

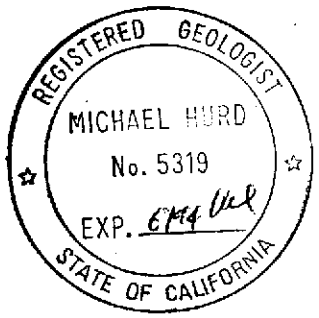
A remedial system was installed at the site and operation was initiated on August 30, 1993. Remedial system operational data will be presented in the upcoming fourth quarter monitoring report.

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

Sincerely,

Pacific Environmental Group, Inc.

Michael Hurd
Senior Geologist
RG 5319



Attachments: Table 1 - Groundwater Elevation Data
Table 2 - Groundwater Analytical Data - (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)
Table 3 - Groundwater Analytical Data - Total Petroleum Hydrocarbons (Oil and Grease and TPH as Motor Oil)
Table 4 - Soil Analytical Data - Total Petroleum Hydrocarbons (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)
Figure 1- Site Location Map
Figure 2- Site Map
Figure 3- Geologic Cross-Section A-A'
Figure 4- Geologic Cross-Section B-B'
Figure 5- Groundwater Elevation Contour Map
Figure 6- TPH-g/Benzene Concentration Map
Attachment A - Field and Laboratory Procedures and Boring Logs
Attachment B - Certified Analytical Reports, and Chain-of-Custody Documentation
Attachment C - Sampling Report

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

Table 1
Groundwater Elevation Data

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

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-1	02/16/89	6.64	3.83	2.81
	05/23/89		3.59	3.05
	08/03/89		4.04	2.60
	12/15/89		4.22	2.42
	02/07/90		4.60	2.04
	04/18/90		4.02	2.62
	07/23/90		4.17	2.47
	09/27/90		4.60	2.04
	01/03/91		4.88	1.76
	04/10/91		3.55	3.09
	07/12/91		3.97	2.67
	10/08/91		4.26	2.38
	02/06/92		4.94	1.70
	05/04/92		3.58	3.06
	07/28/92		3.91	2.73
	10/27/92		4.79	1.85
	01/14/93		3.39	3.25
	04/23/93		2.67	3.97
	07/20/93	9.50	3.48	6.02
MW-2	02/16/89	7.68	5.33	2.35
	05/23/89		5.23	2.45
	08/03/89		6.03	1.65
	12/15/89		6.43	1.25
	02/07/90		5.82	1.86
	04/18/90		5.88	1.80
	07/23/90		6.05	1.63
	01/03/91		6.82	0.86
	04/10/91		4.80	2.88
	07/12/91		5.70	1.98
	10/08/91		6.40	1.28
	02/06/92		6.40	1.28
	05/04/92		4.68	3.00
	07/28/92		5.86	1.82
	10/27/92		6.96	0.72
	01/14/93		4.12	3.56
	04/23/93		3.84	3.84
	07/20/93	10.55	5.17	5.38
MW-3	02/16/89	7.81	5.17	2.64
	05/23/89		5.09	2.72
	08/03/89		5.34	2.47
	12/15/89		6.02	1.79
	02/07/90		4.95	2.86
	04/18/90		5.55	2.26
	07/23/90		5.81	2.00
	09/27/90		6.86	0.95
	01/03/91		6.84	0.97

Table 1 (continued)
Groundwater Elevation Data

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

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-3 (cont.)	04/10/91		4.93	2.88
	07/12/91		5.56	2.25
	10/08/91		6.62	1.19
	02/06/92		6.28	1.53
	05/04/92		4.65	3.16
	07/28/92		5.56	2.25
	10/27/92		6.65	1.16
	01/14/93		3.88	3.93
	04/23/93		--------- Well Inaccessible ----------	
	07/20/93		--------- Well Inaccessible ---------	
MW-4	05/23/89	7.38	5.60	1.78
	08/03/89		6.37	1.01
	12/15/89		6.91	0.47
	03/08/90		6.06	1.32
	04/18/90		5.84	1.54
	07/23/90		6.92	0.46
	07/23/90		6.92	0.46
	09/27/91		8.03	0.65
	01/03/91		7.54	-0.16
	04/10/91		5.06	2.32
	07/12/91		6.86	0.52
	10/08/91		7.44	-0.06
	02/06/92		7.29	0.09
	05/04/92		5.33	2.05
	07/28/92		6.95	0.43
	10/27/92		7.65	-0.27
	01/14/93		4.84	2.54
	04/23/93		4.84	2.54
	07/20/93	10.28	6.47	3.81
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

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-5 (cont.)	07/28/92		5.73	2.45
	10/27/92		6.98	1.20
	01/14/93		4.70	3.48
	04/23/93		4.19	3.99
	07/20/93	10.87	5.10	5.77
MW-6	05/23/89	8.21	5.47	2.74
	08/03/89		5.91	2.30
	12/15/89		5.98	2.23
	02/07/90		5.47	2.74
	04/18/90		5.80	2.41
	07/23/90		5.85	2.36
	09/27/90		6.42	1.79
	01/03/91		6.73	1.48
	04/10/91		5.24	2.97
	07/12/91		5.78	2.43
	10/08/91		6.36	1.85
	02/06/92		6.15	2.06
	05/04/92		5.07	3.14
	07/28/92		5.85	2.36
	10/27/92		6.69	1.52
	01/14/93		4.52	3.69
	04/23/93		4.32	3.89
	07/20/93	11.04	5.39	5.65
MW-7	05/23/89	7.44	5.48	1.96
	08/03/89		4.22	3.22
	12/15/89		4.58	2.86
	02/07/90		5.34	2.10
	04/18/90		4.92	2.52
	07/23/90		4.99	2.45
	09/27/90		6.16	1.28
	01/03/91		4.96	2.48
	04/10/91		4.13	3.31
	07/12/91		4.98	2.46
	10/08/91		5.48	1.96
	02/06/92		5.05	2.39
	05/04/92		4.43	3.01
	07/28/92		4.88	2.56
	10/27/92		5.39	2.05
	01/14/93		4.26	3.18
	04/23/93		4.04	3.40
	07/20/93	10.28	4.36	5.92
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

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.)	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
	10/27/92		7.83	-0.04
	01/14/93		3.60	4.19
	04/23/93		4.12	3.67
	07/20/93	10.61	6.38	4.23
MW-9	08/03/89	7.63	5.78	1.85
	12/15/89		5.24	2.39
	02/07/90		5.23	2.40
	04/18/90		5.34	2.29
	07/23/90		5.65	1.98
	09/27/90		5.96	1.67
	01/03/91		6.23	1.40
	04/10/91		4.65	2.98
	07/12/91		5.65	1.98
	10/08/91		6.08	1.55
	02/06/92		5.92	1.71
	05/04/92		4.80	2.83
	07/28/92		5.61	2.02
	10/27/92		6.24	1.39
	01/14/93		4.95	2.68
	04/23/93		4.54	3.09
	07/20/93	10.48	5.25	5.23
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

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-10	10/27/92		---------- Well Inaccessible ----------	
(cont.)	01/14/93		6.07	1.38
	04/23/93		4.14	3.31
	07/20/93	10.24	5.62	4.62
MW-11	07/20/93	10.56	8.08	2.48
MW-12	07/20/93	9.56	6.76	2.80
MW-13	07/20/93	10.10	8.32	1.78

MSL = Mean sea level
TOC = Top of casing

Table 2
Soil 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	Sample Depth (Feet)	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-11	5-5.5	ND	ND	0.008	ND	ND	ND
MW-12	5-5.5	ND	ND	ND	ND	ND	ND
MW-13	6-6.5	ND	ND	ND	ND	ND	ND
VEW-2	4.5-5	550	6.4	15	13	52	31[a]
VEW-3	4.5-5	1,900	ND	16	40	94	560[a]
VEW-4	4.5-5	ND	ND	ND	ND	ND	10[a]
VEW-5	4.5-5	1,000	1.2	0.9	21	14	320[a]

ppm = Parts per million
ND = Not detected
a. The laboratory noted that compound detected and calculated as TPH-d is due to a non-diesel mix.
See individual certified analytical reports for detection limits.

Table 3
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

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

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-1	02/16/92	99.0	20	23	5.7	23	NA
	05/23/92	48.0	4.2	5.2	1.2	7.7	11.0
	08/04/89	63.0	5.5	5.5	3.2	9.5	11.0
	12/15/89	30.0	ND	ND	ND	ND	11.0
	02/07/90	93.0	13.0	9.6	2.4	14.0	10.0
	04/18/90	55.0	14.0	8.4	3.2	13.0	8.7
	07/24/90	73.0	16.0	7.40	2.80	15.0	3.6
	10/01/90	45.0	8.0	4.3	2.0	11.0	1.7
	01/02/91	43.0	10.0	3.40	1.90	11.0	3.10
	04/09/91	67.0	20.0	9.60	3.50	16.0	1.8
	07/11/91	NR	NR	NR	NR	NR	NR
	10/08/91	55	18	3.5	2.3	8.6	7.4
	02/06/92	48.0	12.0	2.8	1.9	7.4	15.0[a]
	05/05/92	71	16	6.0	3.1	14	10[a]
	07/28/92	68	21	5.5	3.4	15	18[a]
	07/28/92(D)	70	17	5.0	2.7	13	19[a]
	10/27/92	53	18	3.7	3.4	11	1.3
	10/27/92(D)	48	17	3.6	3.1	9.9	2.5[a]
	01/15/93	84	17	5.4	3.0	13	22[a]
	04/23/93	100	18	7.8	4.7	20	23[b]
	07/20/93	41[e]	12	0.87	1.5	4.4	3.1[b]
MW-2	02/16/89	20.0	0.2	0.9	2.7	9.6	NA
	05/23/89	1.5	0.0043	0.0029	0.011	0.15	1.6
	08/04/89	15.0	0.075	0.12	0.85	2.2	7.4
	12/15/89	5.0	0.052	0.013	0.0041	0.29	2.6
	02/07/90	13.0	0.032	0.034	0.23	0.640	4.8
	04/18/90	9.8	0.033	0.019	0.46	1.7	3.2
	07/24/90	9.6	0.041	0.027	0.540	0.940	2.7
	10/01/90	0.39	0.0034	0.015	0.0085	0.025	1.6
	01/02/91	1.8	0.056	0.0044	0.0048	0.092	0.83
	04/09/91	1.9	ND	0.028	0.140	0.490	0.28
	07/11/91	8.1	0.089	0.066	0.350	0.930	1.1
	10/08/91	1.4	0.0051	0.0015	0.036	0.270	2.6
	02/06/92	2.0	0.0078	0.0025	0.13	0.210	5.4[a]
	05/05/92	21[c]	ND	ND	0.30	0.96	1.0
	07/28/92	2.1	0.0077	0.0033	0.13	0.31	0.83[a]
	10/27/92	1.1	0.016	0.0031	0.0045	0.025	0.53
	01/15/93+	0.29	0.0052	0.0031	0.0084	0.021	0.17[c]
	04/23/93	2.4	ND	ND	0.21	0.61	1.2[b]
	07/21/93	0.440	0.0017	0.0017	0.015	0.038	0.13
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 3 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

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

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-3 (cont.)	12/15/89	5.2	0.38	0.047	0.017	0.410	1.7
	03/08/90	0.26	0.017	ND	0.0054	0.0025	0.23
	04/19/90	0.26	ND	ND	ND	0.0094	ND
	07/24/90	0.51	0.046	0.0012	ND	0.0093	0.21
	09/28/90	0.46	0.0063	0.0017	ND	0.015	0.35
	01/02/91	4.8	0.920	0.0088	ND	0.190	0.63
	04/09/91	0.12	0.0012	0.0008	0.0035	0.021	0.06
	07/11/91	0.43	0.012	ND	ND	0.0077	ND
	10/08/91	0.77	0.140	0.0007	ND	0.053	0.56
	02/06/91	0.50	0.074	0.0009	0.0052	0.0053	0.34[a]
	05/04/92	0.31	0.047	ND	0.017	0.016	0.29[a]
	07/28/92	0.78	0.13	ND	0.013	0.0042	0.10[a]
	10/27/92	0.74	0.092	0.0028	0.0078	0.0096	0.069[a]
	01/15/93	ND	0.0024	ND	ND	ND	ND
	04/23/93	---------- Well Inaccessible ----------					
	07/20/93	---------- Well Inaccessible ----------					
MW-4	05/23/89	ND	ND	ND	ND	ND	ND
	08/04/89	ND	ND	ND	ND	ND	ND
	12/15/89	ND	ND	ND	ND	ND	ND
	03/08/90	ND	ND	ND	ND	ND	ND
	07/25/90	ND	ND	ND	ND	ND	ND
	09/28/90	ND	ND	ND	ND	ND	ND
	01/02/91	ND	ND	ND	ND	ND	ND
	04/09/91	ND	ND	ND	ND	ND	ND
	07/11/91	ND	ND	ND	ND	ND	ND
	10/08/91	ND	ND	ND	ND	ND	ND
	02/06/92	0.12	ND	ND	ND	ND	2.5[a]
	05/04/92	ND	ND	ND	ND	ND	0.053
	07/28/92	ND	ND	ND	ND	ND	0.060
	10/27/92	ND	ND	ND	ND	ND	ND
	01/14/93	ND	ND	ND	ND	ND	ND
	04/23/93	ND	ND	ND	ND	ND	ND
	07/21/93	ND	0.0022	0.0012	0.0011	0.0077	ND
MW-5	05/23/89	26.0	1.5	0.28	ND	8.1	7.0
	08/05/89	12.0	0.86	0.094	ND	2.6	8.7
	12/15/89	1.00	0.022	0.035	0.018	0.044	0.71
	02/08/90	ND	0.0008	ND	ND	ND	0.62
	04/19/90	19.0	4.5	0.85	0.097	8.0	5.0
	07/24/90	23.0	3.6	0.400	0.160	6.50	2.7
	09/28/90	5.4	1.40	0.026	0.013	1.30	0.55
	01/02/91	0.86	0.280	0.0028	0.0008	0.045	0.56
	04/09/91	12.0	0.710	0.130	0.500	2.4	1.8
	07/11/91	24.0	2.2	0.280	0.430	5.7	1.7

Table 3 (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.)	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[a]
	07/28/92	12	2.2	0.063	1.4	3.5	3.8[a]
	10/27/92	7.5	1.1	0.059	0.23	0.90	0.48[a]
	01/15/93	7.7	0.42	0.049	0.57	0.84	1.1[d]
	04/23/93	110	2.9	2.5	3.4	12.0	16[b]
	07/21/93	**18[e]**	**1.4**	**0.084**	**1.5**	**3.2**	1.2[b]
MW-6	05/23/89	22.0	0.016	0.0065	0.0066	3.4	7.0
	08/04/89	28.0	1.2	0.13	2.1	2.8	8.8
	12/15/89	16.0	0.37	0.092	0.20	0.18	5.5
	02/07/90	22.0	0.52	0.085	0.63	0.77	2.6
	04/18/90	21.0	0.9	0.077	2.7	2.7	5.7
	07/24/90	24.0	1.00	0.094	3.40	2.70	3.0
	10/01/90	22.0	0.70	0.093	2.50	2.40	ND
	01/02/91	25.0	1.00	0.088	2.60	3.70	0.96
	04/09/91	18.0	0.560	0.190	0.480	0.830	0.92
	07/11/91	9.5	0.670	0.051	1.1	0.920	1.9
	10/08/91	11.0	1.00	0.043	ND	ND	5.1
	02/06/92	7.2	0.56	0.008	0.72	0.16	15.0[a]
	05/05/92	7.9	0.61	ND	1.5	0.24	2.9[a]
	07/28/92	17	1.2	ND	3.0	0.61	3.2[a]
	10/27/92	15	1.3	0.13	1.7	0.49	1.3[a]
	01/14/93	4.9	0.08	0.031	0.33	0.037	1.6[a]
	04/23/93	4.8	0.12	ND	0.78	0.073	1.8[b]
	07/20/93	**19[e]**	**0.57**	**0.018**	1.1	**0.13**	**0.91[b]**
MW-7	05/23/89	47.0	3.5	5.0	1.5	7.8	11
	08/04/89	68.0	6.2	6.6	3.6	8.8	22
	12/15/89	100.0	4.5	5.3	1.3	5.3	12
	02/08/90	96.0	15.0	15.0	2.5	14.0	8.1
	04/19/90	94.0	25.0	13.0	3.3	13.0	10.0
	07/24/90	84.0	3.8	26.0	13.0	3.0	12.0
	09/28/90	43.0	25.0	6.10	2.40	9.0	ND
	01/02/91	78.0	26.0	16.0	3.0	14.0	3.10
	04/09/91	140.0	26.0	16.0	2.20	14.0	1.8
	07/11/91	79.0	7.7	7.2	2.3	10.0	1.1
	10/08/91	55.0	29.0	7.5	1.8	9.3	0.39[a]
	02/06/92	63.0	16.0	8.7	1.6	7.4	9.6[a]
	05/05/92	67	22	13	1.8	9.4	9.8[a]
	07/28/92	85	26	17	2.9	15	13.0[a]
	10/27/92	63	21	11	3.0	11	1.9[a]

Table 3 (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-7 (cont.)	01/14/93	120	28	21	1.6	15	2.3[a]
	04/23/93	60	17	3.7	2.2	11	12[b]
	04/23/93(D)	50	17	4.2	2.2	11	14[b]
	07/21/93	**47**	**23**	**9.9**	**2.2**	**12**	13
MW-8	05/23/89	ND	ND	ND	ND	ND	0.10
	08/04/89	ND	ND	ND	ND	ND	0.075
	12/15/89	ND	ND	ND	ND	ND	ND
	03/08/90	ND	ND	ND	ND	ND	ND
	07/25/90	ND	ND	ND	ND	ND	ND
	09/28/90	ND	ND	ND	ND	ND	1.1
	01/02/91	ND	0.0013	ND	ND	ND	ND
	04/09/91	0.05	0.0007	0.0011	0.0008	0.0010	ND
	07/11/91	ND	ND	ND	ND	ND	ND
	10/08/91	ND	0.0014	ND	ND	ND	ND
	02/06/92	ND	ND	0.0007	ND	ND	0.06[a]
	05/04/92	ND	ND	ND	ND	ND	0.21[c]
	07/28/92	0.051	ND	ND	0.001	0.0006	ND
	10/27/92	ND	ND	0.0066	ND	ND	ND
	01/14/93	ND	ND	ND	ND	ND	0.064[c]
	01/14/93(D)	ND	ND	ND	ND	ND	NA
	04/23/93	ND	ND	ND	ND	ND	ND
	07/21/93	ND	0.0007	0.0007	0.0008	0.0041	ND
MW-9	08/04/89	47.0	5.6	6.6	1.5	8.5	12.0
	12/15/89	88.0	4.3	5.4	0.14	5.6	9.2
	02/08/90	50.0	1.8	1.4	3.2	1.8	7.4
	04/19/90	50.0	14.0	11.0	0.73	10.0	7.5
	07/24/90	62.0	19.0	16.0	0.950	15.0	3.20
	09/28/90	30.0	16.0	6.50	0.980	11.0	2.70
	01/02/91	34.0	9.20	3.20	0.770	7.00	2.50
	04/09/91	66.0	17.0	13.0	1.40	14.0	2.2
	07/11/91	40.0	7.7	3.2	1.1	9.4	2.0
	10/08/91	20.0	11.0	0.640	0.240	6.0	4.7[a]
	02/06/92	36.0	11.0	0.49	1.1	6.7	6.6[a]
	05/05/92	31	11	1.7	1.2	8.7	5.8[a]
	07/28/92	50	17	1.2	1.5	12	14.0
	10/27/92	43	15	0.68	1.7	8.1	0.88[a]
	01/15/93	52	9.6	1.1	1.1	7.0	0.73[a]
	04/23/93	45	11	1.4	1.5	10	8.0[b]
	07/21/93	**25**	**10**	**0.32**	1.1	**7.1**	**5.1**
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

Table 3 (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	09/28/90	9.5	13.0	0.100	1.80	0.23	0.43
(cont.)	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[a]
	02/06/92	22.0	12.0	ND	0.60	0.17	1.6[a]
	05/05/92	39	14	5.0	1.8	5.0	8.0[a]
	07/28/92	38	17	2.8	1.5	4.0	8.7[a]
	10/27/92	---------- Well Inaccessible ----------					
	01/14/93	26	10	ND	ND	0.16	0.95[d]
	04/23/93	80	21	13	3.4	12	19[b]
	07/21/93	**31**	**14**	**4.2**	**1.7**	**5.5**	**4.8**
MW-11	07/20/93	0.05	0.0025	0.0019	0.0039	0.018	ND
MW-12	07/20/93	ND	0.0028	0.0019	0.0032	0.015	0.088
MW-13	07/21/93	ND	ND	ND	ND	0.0015	ND
	07/21/93(D)	ND	ND	ND	ND	0.001	ND

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

a. The laboratory noted that compound detected and calculated as TPH-d primarily appears to be due to a lighter petroleum product.
b. The laboratory noted that compound detected and calculated as TPH-d primarily appears to be due to a lighter petroleum product, possibly gasoline.
c. Laboratory noted that compound detected and calculated as TPH-d appears to be a heavier hydrocarbon compound.
d. Laboratory noted that compound detected as TPH-d are due to the presence of a combination of a heavier petroleum product and a lighter petroleum product.
e. The laboratory noted that the compound detected and calculated as TPH-g is due to the presence of a combination of gasoline and a discrete hydrocarbon peak not indicative of gasoline.

See individual certified analytical reports for detection limits.

Table 4
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(Oil and Grease and TPH as Motor Oil)

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

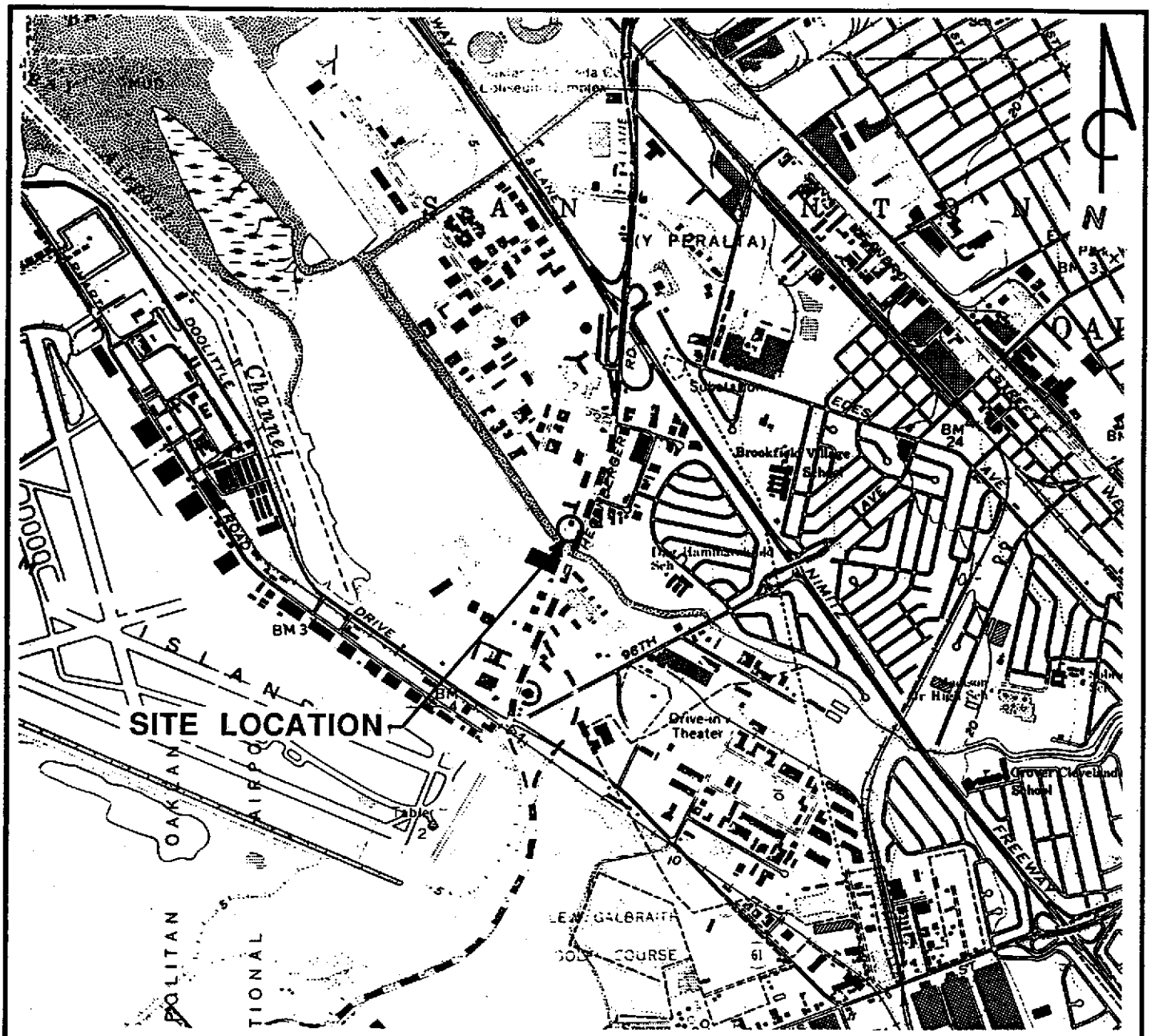
Well Number	Date Sampled	Oil and Grease (ppm)	TPH as Motor Oil (ppm)
MW-1	07/28/92	NA	ND
	07/28/92(D)	NA	ND
	01/15/93	NA	ND
	04/23/93	NA	ND
	07/20/93	NA	0.79
MW-2	07/28/92	NA	0.32
	01/14/93	NA	NA
	04/23/93	NA	ND
	07/21/93	NA	0.16
MW-3	07/28/92	ND	0.12
	10/27/92	ND	0.1
	01/15/93	ND	0.12
	04/23/93	NA	NA
	07/20/93	NA	NA
MW-4	07/28/92	NA	ND
	01/14/93	NA	0.12
	04/23/93	NA	0.17
	07/21/93	NA	0.12
MW-5	07/28/92	NA	1.2
	01/15/93	NA	0.43
	04/23/93	NA	ND
	07/21/93	NA	ND
MW-6	07/28/92	NA	ND
	01/14/93	NA	ND
	04/23/93	NA	ND
	07/20/93	NA	0.14
MW-7	07/28/92	NA	ND
	01/14/93	NA	NA
	04/23/93	NA	ND
	04/23/93(D)	NA	ND
	07/21/93	NA	ND

Table 4 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(Oil and Grease and TPH as Motor Oil)

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

Well Number	Date Sampled	Oil and Grease (ppm)	TPH as Motor Oil (ppm)
MW-8	07/28/92	NA	0.15
	01/14/93	NA	NA
	04/23/93	NA	0.15
	07/21/93	NA	0.079
MW-9	07/28/92	NA	ND
	01/13/93	NA	NA
	04/23/93	NA	ND
	07/21/93	NA	ND
MW-10	07/28/92	NA	ND
	01/14/93	NA	0.20
	04/23/93	NA	ND
	07/21/93	NA	ND
MW-11	07/20/93	NA	0.12
MW-12	07/20/93	NA	0.23
MW-13	07/21/93	NA	ND
	07/21/93(D)	NA	0.073

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



QUADRANGLE LOCATION

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

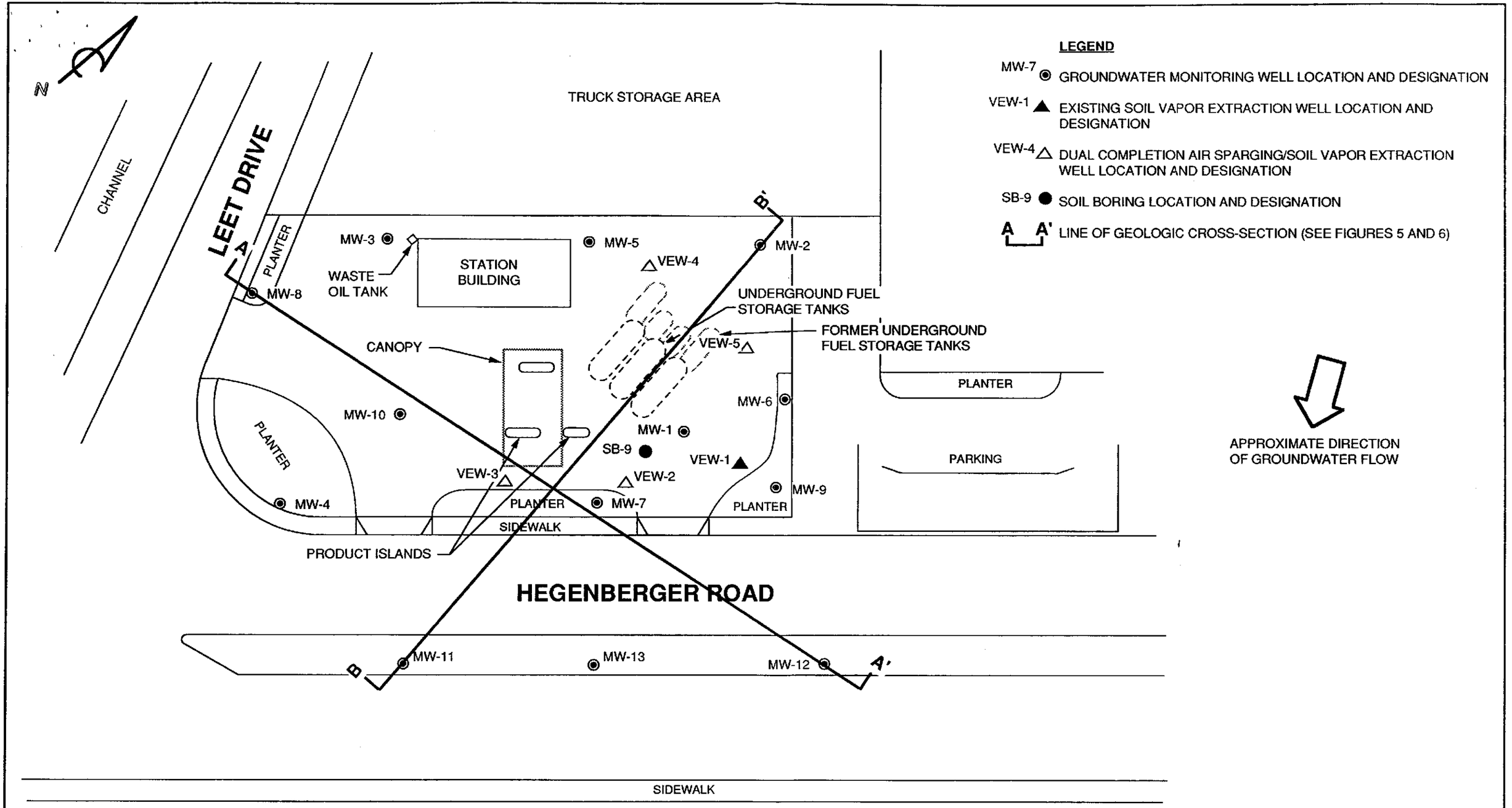
SCALE
2000 0 2000 FEET

PACIFIC ENVIRONMENTAL GROUP, INC.

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

SITE LOCATION MAP

FIGURE: 1
PROJECT: 305-79.01



PACIFIC ENVIRONMENTAL GROUP, INC.

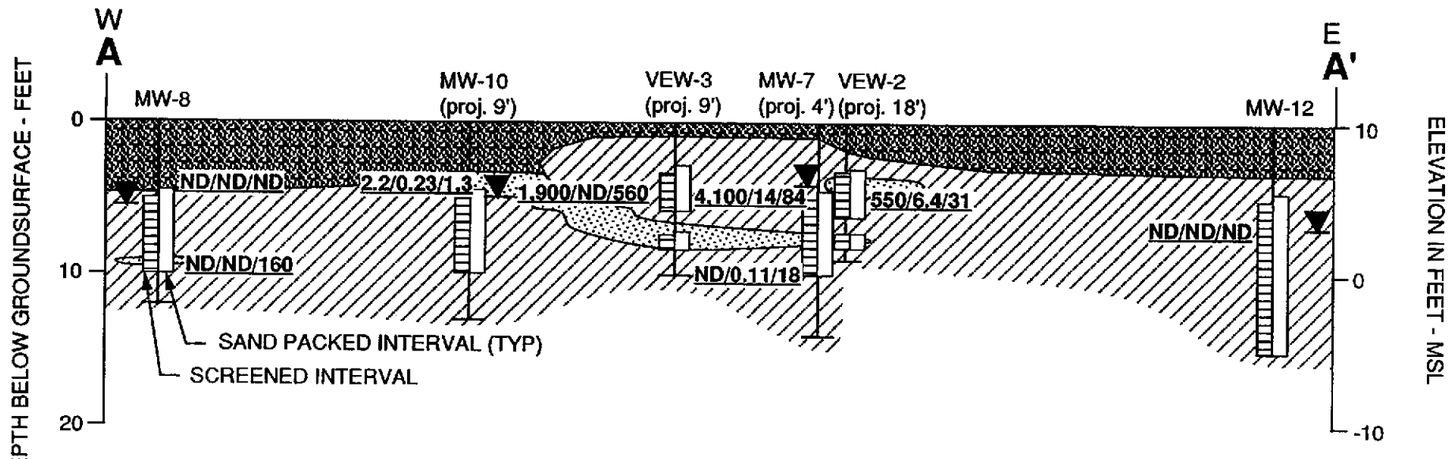
SCALE
0 40 80 FEET

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

SITE MAP

FIGURE:
2
PROJECT:
305-79.01

11/03/93



LEGEND

- ARTIFICIAL FILL
- PRIMARILY FINE GRAINED DEPOSITS - SILTS AND CLAYS
- PRIMARILY COARSE GRAINED DEPOSITS - SANDS AND GRAVELS
- MW-8 GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- VEW-2 DUAL COMPLETION AIR SPARGING/SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
- proj PROJECTED ONTO LINE OF SECTION IN FEET
- STATIC WATER LEVEL, 7-20-93
- 550/6.4/31 TPH-g/BENZENE/TPH-d CONCENTRATION IN SOIL, IN PARTS PER MILLION, 7-13-89 to 6-10-93
- ND NOT DETECTED
- NA NOT ANALYZED

PACIFIC ENVIRONMENTAL GROUP, INC.

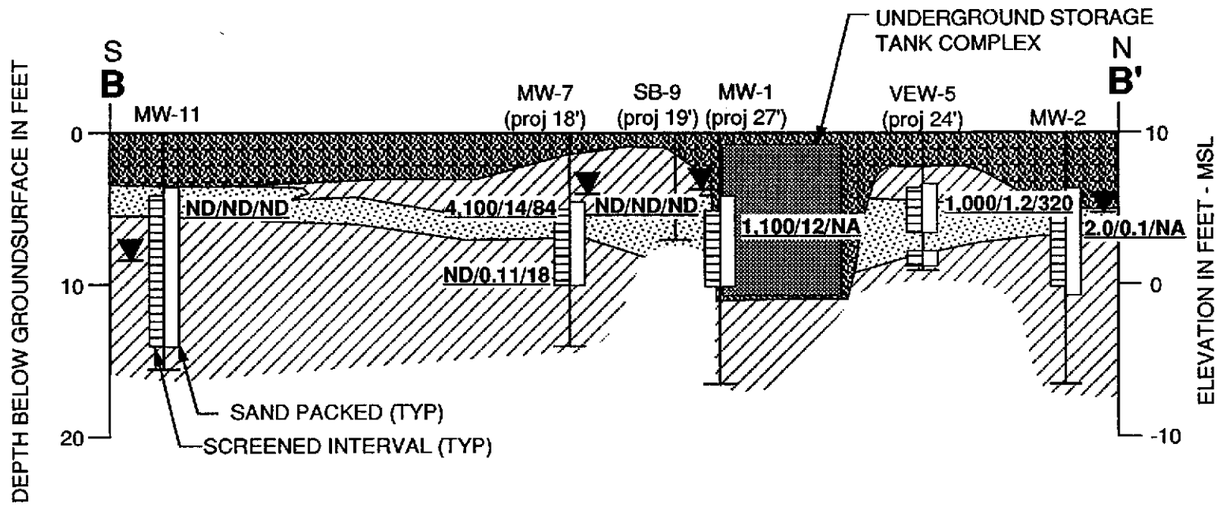
SCALE
HORIZONTAL : 1" = 40'
VERTICAL : 1" = 10'

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

GEOLOGIC CROSS-SECTION A-A"

FIGURE: 3
PROJECT: 305-79.01

11/03/93



LEGEND

- ARTIFICIAL FILL
- PRIMARILY FINE GRAINED DEPOSITS - SILTS AND CLAYS
- PRIMARILY COARSE GRAINED DEPOSITS - SANDS AND GRAVELS
- MW-2 GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- SB-9 SOIL BORING LOCATION AND DESIGNATION
- VEW-5 DUAL COMPLETION AIR SPARGING/SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
- proj PROJECTED ONTO LINE OF SECTION IN FEET
- ▼ STATIC WATER LEVEL, 7-20-93
- 2.0/0.1/NA TPH-g/BENZENE/TPH-d CONCENTRATION IN SOIL, IN PARTS PER MILLION, 7-13-89 to 6-10-93
- ND NOT DETECTED
- NA NOT ANALYZED

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
HORIZONTAL : 1" = 40'
VERTICAL : 1" = 10'

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

GEOLOGIC CROSS-SECTION B-B'

FIGURE: 4
PROJECT: 305-79.01

11/03/93

N

CHANNEL

LEET DRIVE

TRUCK STORAGE AREA

* MW-3

WASTE OIL TANK

STATION BUILDING

MW-5 (5.77)

VEW-4

MW-2 (5.38)

MW-8 (4.23)

UNDERGROUND FUEL STORAGE TANKS

FORMER UNDERGROUND FUEL STORAGE TANKS

CANOPY

VEW-5

6.00

PLANTER

MW-6 (5.65)

MW-10 (4.62)

MW-1 (6.02)

VEW-1

5.00

PARKING

VEW-3

VEW-2

MW-4 (3.81)

PLANTER

MW-7 (5.92)

MW-9 (5.23)

SIDEWALK

PRODUCT ISLANDS

4.00

HEGENBERGER ROAD

MW-11 (2.48)

MW-13 (1.78)

2.00

MW-12 (2.80)

3.00

SIDEWALK

LEGEND

MW-7 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

VEW-1 ▲ EXISTING SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION

VEW-4 △ DUAL COMPLETION AIR SPARGING/SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION

(5.38) GROUNDWATER ELEVATION IN FEET - MSL, 7-20-93

5.00 GROUNDWATER ELEVATION CONTOUR IN FEET - MSL, 7-20-93

* WELL INACCESSIBLE

APPROXIMATE DIRECTION OF GROUNDWATER FLOW

APPROXIMATE GRADIENT = 0.04

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE

0 40 80 FEET

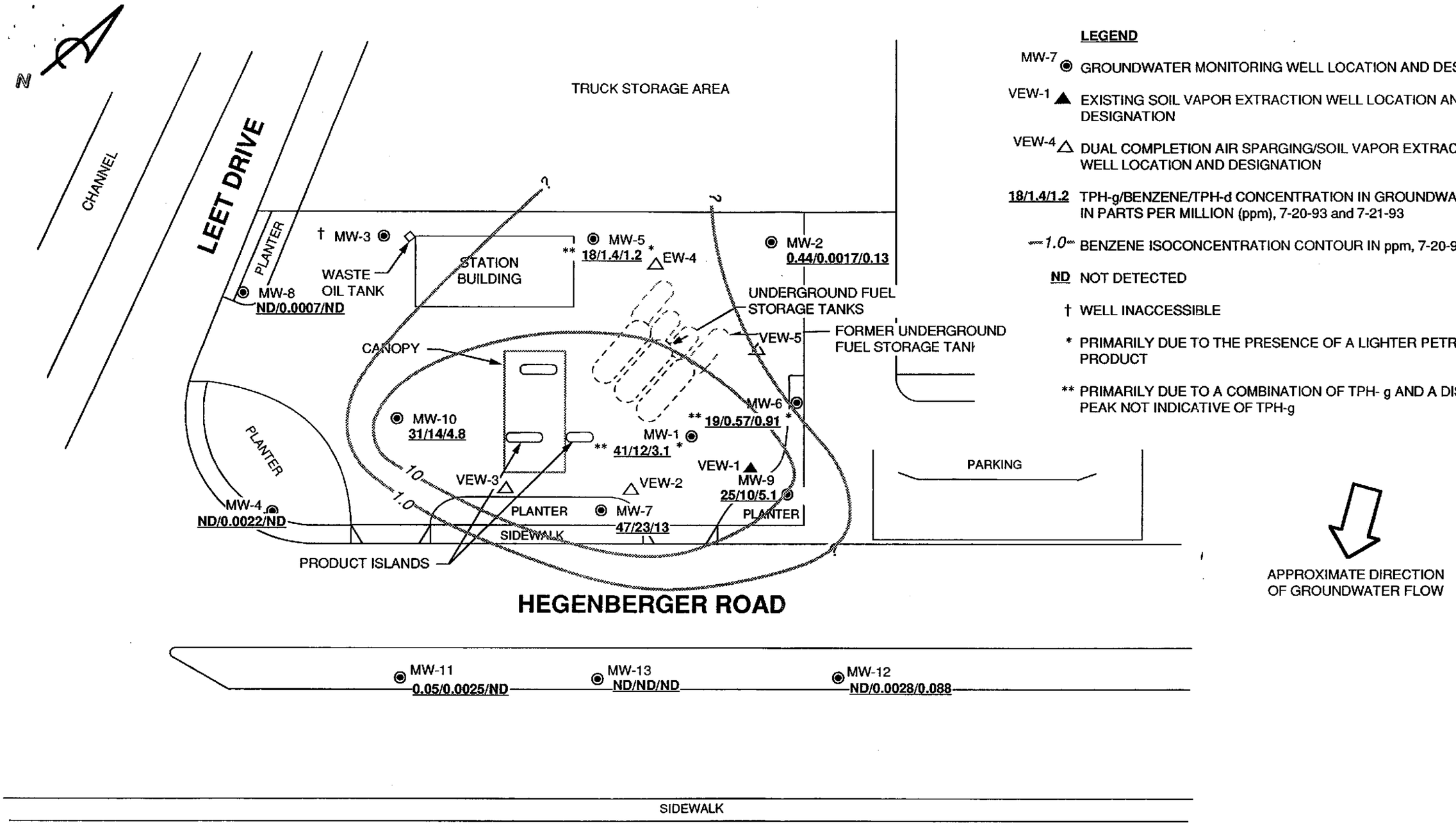
SHELL SERVICE STATION
285 Hegenberger Road at Leet Drive
Oakland, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: **5**

PROJECT: 305-79.01

11/03/93



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: 6
PROJECT: 305-79.01

11/03/93

ATTACHMENT A

FIELD AND LABORATORY PROCEDURES AND BORING LOGS

ATTACHMENT A
FIELD AND LABORATORY PROCEDURES

Monitoring Well Installation

The borings for the monitoring wells were drilled using 10-inch diameter hollow-stem auger drilling equipment and were logged by a Pacific Environmental Group, Inc. (PACIFIC) geologist using the Unified Soil Classification System and standard geologic techniques. Boring logs are presented in this attachment. Soil samples for logging and chemical analysis were collected at 5-foot depth intervals by advancing a California-modified split-spoon sampler with brass liners into undisturbed soil beyond the tip of the auger. The sampler was driven a maximum of 18 inches using a 140-pound hammer with a 30-inch drop. Soil samples for chemical analysis were retained in brass liners, capped with Teflon and plastic end caps, and sealed in clean plastic bags. These samples were placed on ice for transport to the laboratory accompanied by chain-of-custody documentation (Attachment B). All downhole drilling equipment was steam-cleaned between boring locations.

The borings for Wells MW-11 through MW-13 were advanced to an approximate depth of 15-1/2 feet, and were converted to monitoring wells by the installation of 4-inch diameter Schedule 40 PVC casing and 0.020-inch factory-slotted screen. The borings for the dual completion vapor extraction wells and groundwater sparge Wells VEW-2 through VEW-5 were completed to a maximum depth of 10 feet. The sparge portions of the dual completion wells were constructed with 1 foot of screen set at an average depth interval of 8 to 9 feet, with a minimum of 1 foot of bentonite seal. The vapor extraction portions of the dual completion wells were constructed with 2-1/2 to 3 feet of screen set at an average depth interval of 4 to 6-1/2 feet and sealed with a minimum of 3 feet of bentonite and cement. A watertight locking cap and protective vault box were installed on top of each well. The attached boring logs show well construction details.

Following well completion, the elevations of the vault boxes and casings of the new monitoring wells were surveyed to the nearest 0.01 foot, relative to mean sea level, by a licensed surveyor.

Organic Vapor Procedures

Soil samples collected during drilling were analyzed in the field for ionizable organic compounds using the HNU Model PI 101 photo-ionization detector with a 10.2 eV lamp. The test procedure involved measuring approximately 30 grams from an undisturbed soil sample, placing this subsample in a clean glass jar, and sealing the jar with aluminum foil secured under a ring-type threaded lid. The jar was warmed for approximately 20 minutes, then the foil was pierced and the head-space within the jar was tested for total organic vapor, measured in parts per million as benzene (ppm; volume/volume). The instrument had been previously calibrated using a 100 ppm isobutylene standard (in air) and a sensitivity factor of 0.7, which relates the photo-ionization sensitivity of benzene (7.0 ppm) to that of isobutylene. The results of the field testing are noted on the exploratory boring logs.

Well Development Procedure

The wells were developed prior to sampling. The well development procedure consisted of evacuating the well repeatedly with a bailer and/or a pump until the groundwater was clear and relatively free of sediment.

Laboratory Procedures

The analytical methods for determining the presence of total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), TPH calculated as diesel (TPH-d), and TPH calculated as motor oil (TPH-mo) are taken from EPA Methods 8015, 8020, 5030, and 3510. The above analytical methods utilize the purge and trap technique, with final detection by gas chromatography using flame-ionization and photo-ionization detectors.

WELL LOG
KEY TO ABBREVIATIONS

Drilling Method

HSA - Hollow stem auger
CFA - Continous flight auger
Air - Reverse air circulation

Gravel Pack

CA - Coarse aquarium sand

Sampling Method

Cal. Mod. - California modified split-spoon sampler (2" inner diameter) driven 18" by a 140-pound hammer having a 30" drop. Where penetration resistance is designated "P", sampler was instead pushed by drill rig.
Disturbed - Sample taken from drill-return materials as they surfaced.
Shelby - Shelby Tube thin-walled sampler (3" diameter), where sampler is pushed by drill-rig.

Moisture Content

Dry - Dry
Dp - Damp
Mst - Moist
Wt - Wet
Sat - Saturated

Sorting

PS - Poorly sorted
MS - Moderately sorted
WS - Well sorted

Plasticity

L - Low
M - Moderate
H - High

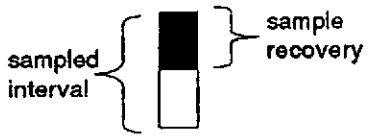
H-NU (ppm)

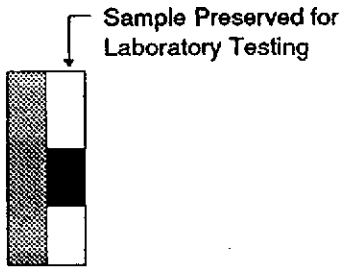
ND - No detection

Symbols

▽ - First encountered ground water

▼ - Static ground water level





Density (Blows/Foot - Cal Mod Sampler)

Sands and gravels

0 - 5	- Very Loose
5 - 13	- Loose
13 - 38	- Medium dense
38 - 63	- Dense
over 63	- Very dense

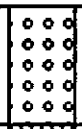
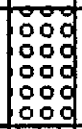
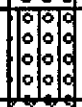
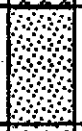
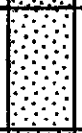
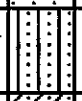
Silts and Clays

0 - 2	- Very Soft
2 - 4	- Soft
4 - 9	- Firm
9-17	- Stiff
17 - 37	- Very Stiff
37 - 72	- Hard
over 72	- Very Hard

GRAIN - SIZE SCALE

GRADE LIMITS U.S. Standard			GRADE NAME
inch	sieve size		
12.0			Boulders
3.0	3.0 in.		Cobbles
0.19	No. 4		Gravels
0.08	No. 10	coarse	
	No. 40	medium	Sand
	No. 200	fine	
			Silt
			Clay Size

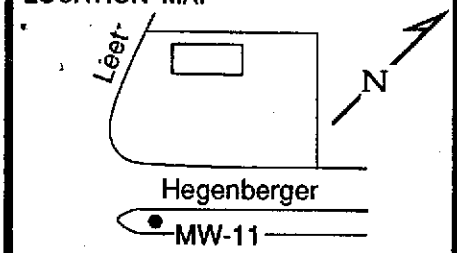
PACIFIC ENVIRONMENTAL GROUP, INC.

Primary Divisions			Group Symbol/Graphic		Typical Names
COARSE GRAINED SOILS more than half is larger than #200 sieve	GRAVELS half of coarse fraction larger than #4 sieve	CLEAN GRAVELS (less than 5% fines)	GW		Well graded gravels, gravel-sand mixtures; little or no fines
			GP		Poorly graded gravels or gravel-sand mixtures; little or no fines
		GRAVEL WITH FINES	GM		Silty gravels, gravel-sand-silt mixtures
			GC		Clayey gravels, gravel-sand-clay mixtures
	SANDS half of coarse fraction smaller than #4 sieve	CLEAN SANDS (less than 5% fines)	SW		Well graded sands, gravelly sands, little or no fines
			SP		Poorly graded sands or gravelly sands; little or no fines
		SANDS WITH FINES	SM		Silty sands, sand-silt mixtures
			SC		Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS more than half is smaller than #200 sieve	SILTS AND CLAYS liquid limit less than 50%		ML		Inorganic silts and very fine sand, rock flour, silty or clayey fine sands or clayey silts, with slight plasticity
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS liquid limit more than 50%		MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH		Inorganic clays of high plasticity, fat clays
			OH		Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			Pt		Peat and other highly organic soils

PACIFIC ENVIRONMENTAL GROUP, INC.

Unified Soil Classification System

LOCATION MAP



NORTHING	EASTING	ELEVATION
847.72	998.93	10.56TOC

PACIFIC ENVIRONMENTAL GROUP, INC.

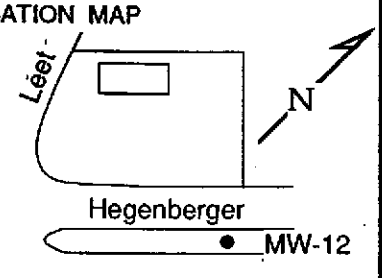
WELL NO. MW-11
PAGE 1 OF 1

PROJECT NO. 305-79.01
LOGGED BY: CM
DRILLER: GREGG
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2X12

CLIENT: SHELL
DATE DRILLED: 6-8-93
LOCATION: 285 Hegenberger Rd.
HOLE DIAMETER: 10"
HOLE DEPTH: 15.5'
WELL DIAMETER: 4"
WELL DEPTH: 14'
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	SOIL TYPE	LITHOLOGY / REMARKS
GROUT				1–3	SM	SILTY SAND
					GM	SANDY GRAVEL - FILL: strong brown; angular large chunks of brick and rock; some rusted metal.
	Mst	2	13	4	SM	SILTY SAND: dark brown; 25-30% silt; fine to medium sand; no product odor.
			25	5	SC	CLAYEY SAND: dark brown; 20-25% clay; fine sand.
BENTONITE				6	CH	CLAY: black; high plasticity; mottled with grey patches; very stiff; no product odor.
SAND				7–9		
	Sat	2	2	10		@10': grey to black; high plasticity; large 3-5 mm open rootholes and cracks filled with water; iron oxide stain along fractures; reeds and roots; firm; no product odor.
			5	11–13		
	Sat	0	3	14		@14': dark grey; high plasticity; water filled rootholes; roots; stiff; no product odor.
			11	15		
				16–22		BOTTOM OF BORING AT 15.5'

LOCATION MAP



NORTHING	EASTING	ELEVATION
995.66	1088.10	9.56TOC

PACIFIC ENVIRONMENTAL GROUP, INC.

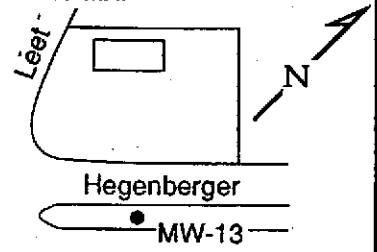
WELL NO. MW-12
PAGE 1 OF 1

PROJECT NO. 305-79.01
LOGGED BY: CM
DRILLER: GREGG
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2X12

CLIENT: SHELL
DATE DRILLED: 6-8-93
LOCATION: 285 Hegenberger Rd.
HOLE DIAMETER: 10"
HOLE DEPTH: 15.5'
WELL DIAMETER: 4"
WELL DEPTH: 15'
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	SOIL TYPE	LITHOLOGY / REMARKS
GROUT					SM	SILTY SAND
	Dp			1–3	GM	SANDY GRAVEL - FILL: large angular chuncks of iron oxide stained chert.
	Mst	3	P	4–5	ML	CLAYEY SILT: sandy; dark greyish brown; 20-25% clay; 15-20% very fine sand; iron oxide staining along tiny roots; no product odor.
BENTONITE				6–8	CH	CLAY: black; high plasticity; roots; rootholes; rootholes filled with water; soft; no product odor.
SAND	Sat	4	3 2	9–10		
	Sat	0	9 10	12–15		@12.5': greenish grey; high plasticity; 0-5% silt; calcite nodules; roots and water filled rootholes; stiff; no product odor.
						BOTTOM OF BORING AT 15.5'

LOCATION MAP



NORTHING 914.88 EASTING 1039.19 ELEVATION 10.10TOC

PACIFIC ENVIRONMENTAL GROUP, INC.

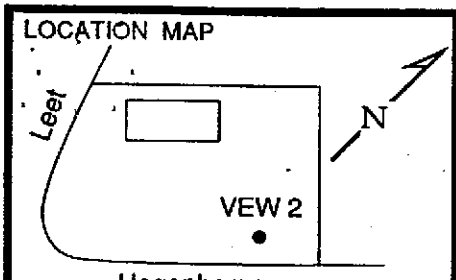
WELL NO. MW-13
PAGE 1 OF 1

PROJECT NO. 305-79.01
LOGGED BY: CM
DRILLER: GREGG
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2X12

CLIENT: SHELL
DATE DRILLED: 6-10-93
LOCATION: 285 Hegenberger Rd.
HOLE DIAMETER: 10"
HOLE DEPTH: 15.5'
WELL DIAMETER: 4"
WELL DEPTH: 15'
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
GROUT				1			SM	SILTY SAND
				2			GW	SANDY GRAVEL - FILL: large angular chuncks of iron oxide stained chert; no product odor.
				3				
				4			SC	CLAYEY SAND: silty; olive brown; 30-35% clay; 20-25% silt; very fine sand; roots; loose; no product odor.
				5				
BENTONITE	Mst	0	8 4	6				
				7				
				8				
				9			CL	CLAY: dark greyish brown; moderate plasticity; 10-15% silt; iron oxide stain along roots; no product odor.
SAND	Mst	0	3 3	10			CH	CLAY: black; high plasticity; roots; odor of decaying organics; firm; no product odor.
				11				
				12				
				13				
				14				
	Mst	0	8 6	15				CLAY: dark greenish grey; high plasticity; calcite nodules and caliche; roots; stiff; no product odor.
				16				BOTTOM OF BORING AT 15.5'
				17				
				18				
				19				
				20				
				21				
				22				

LOCATION MAP



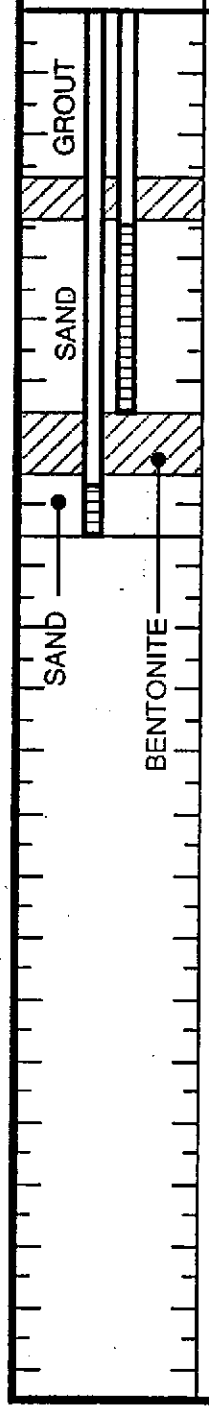
NORTHING EASTING ELEVATION

PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. VEW 2
PAGE 1 OF 1

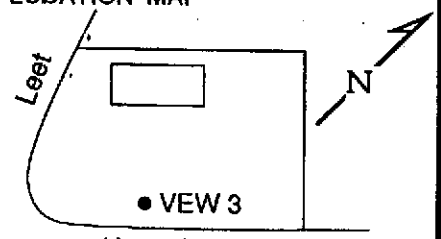
PROJECT NO. 305-79.01
LOGGED BY: CM
DRILLER: GREGG
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2X12

CLIENT: SHELL
DATE DRILLED: 6-9-93
LOCATION: 285 Hegenberger Rd
HOLE DIAMETER: 10"
HOLE DEPTH: 8.5'
WELL DIAMETER: 2"
WELL DEPTH: 8.5' and 6.5'
CASING STICKUP: NA



MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	SOIL TYPE	LITHOLOGY / REMARKS
Dp			1	SC	ASPHALT 2" CLAYEY SAND - FILL: gravelly; strong brown; 20-25% clay; fine to coarse sand; 15-20% angular gravel.
Mst			2	CL	CLAY: dark greenish grey to black; moderate plasticity; moderate product odor becoming strong product odor at 3 feet; roots.
Wet	100	5 4	3 4	SM	SILTY SAND: dark grey; 30-35% silt; very fine sand; roots; loose; strong product odor.
Mst			5 6	CH	CLAY: black; high plasticity; roots; strong product odor.
Sat	80	1 4	7 8	ML	CLAYEY SILT: with sand lenses; dark grey to black; moderate plasticity; horizontal laminae; roots; sand lenses of fine to medium sand up to 2 inches thick; soft; strong product odor.
			9	CL	CLAY: dark grey; moderate plasticity; moderate product odor.
			10		BOTTOM OF BORING AT 8.5'
			11		
			12		
			13		
			14		
			15		
			16		
			17		
			18		
			19		
			20		
			21		
			22		

LOCATION MAP



NORTHING EASTING ELEVATION

PACIFIC ENVIRONMENTAL GROUP, INC.

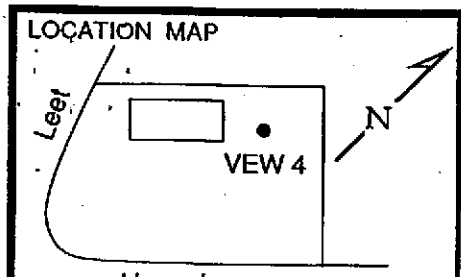
WELL NO. VEW 3
PAGE 1 OF 1

PROJECT NO. 305-79.01
LOGGED BY: CM
DRILLER: GREGG
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2X12

CLIENT: SHELL
DATE DRILLED: 6-10-93
LOCATION: 285 Hegenberger Road
HOLE DIAMETER: 10"
HOLE DEPTH: 10'
WELL DIAMETER: 2"
WELL DEPTH: 8.5' and 6'
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	SOIL TYPE	LITHOLOGY / REMARKS
GROUT				1	GW	ASPHALT 2" SANDY GRAVEL - FILL: strong brown.
	Mst			2	CL	SILTY CLAY: black; moderate plasticity; 20-25% silt; roots; no product odor.
				3		
SAND				4	CH	CLAY: black; high plasticity; roots; stiff; strong product odor.
	Mst	120	8 6	5		
				6		
				7	SM	SILTY SAND: dark blue grey; 5-10% clay; 15-20% silt; very fine sand; roots; separate phase hydrocarbon sheen along roots; soft; strong product odor.
	Sat	80	2 2	8		
				9	CH	CLAY: dark greenish grey to black; high plasticity; abundant roots; at 9.5'; 3-4" thick peat horizon; soft; moderate product odor.
	Mst	15	3 2	10		
SAND				11		
BENTONITE				12		BOTTOM OF BORING AT 10'
				13		
				14		
				15		
				16		
				17		
				18		
				19		
				20		
				21		
				22		

LOCATION MAP



NORTHING EASTING ELEVATION

PACIFIC ENVIRONMENTAL GROUP, INC.

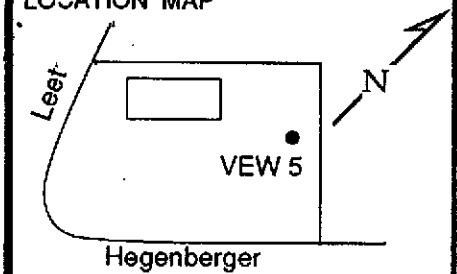
WELL NO. VEW 4
PAGE 1 OF 1

PROJECT NO. 305-79.01
LOGGED BY: CM
DRILLER: GREGG
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2X12

CLIENT: SHELL
DATE DRILLED: 6-9-93
LOCATION: 285 Hegenberger Rd.
HOLE DIAMETER: 10"
HOLE DEPTH: 9.5'
WELL DIAMETER: 2"
WELL DEPTH: 9' and 6.5'
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
GROUT				1			SC	ASPHALT 2" CLAYEY SAND - FILL: gravelly; strong brown; 25-30% clay; fine to medium sand; 15-20% gravel; no product odor.
				2				
				3			CL	CLAY: dark grey to black; moderate plasticity; faint product odor.
				4				
SAND	Wet	14	12	5			CL/ SW	SILTY SAND with CLAY: (interbedded); silty sand: dark grey; 15-20% silt; fine to medium sand; faint product odor; clay: dark grey; moderate plasticity; some rootlets; very stiff; faint product odor.
			12	6				
	Sat	7	7	7				@7.5': firm; faint product odor.
			4	8				
SAND	Sat	0	8	9			SM	SILTY SAND: dark grey; 15-20% silt; very fine sand; faint to no product odor.
BENTONITE			4				ML	CLAYEY SILT: dark grey; 25-30% clay; 10-15% very fine sand; firm; faint to no product odor.
				10				
				11				BOTTOM OF BORING AT 9.5'
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				
				22				

LOCATION MAP



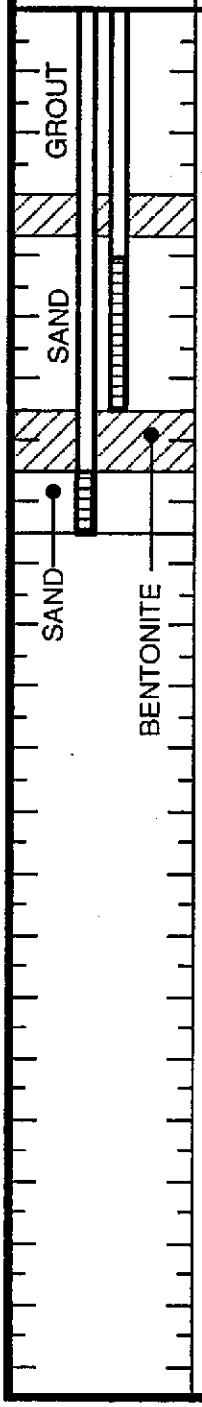
NORTHING EASTING ELEVATION

PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. VEW 5
PAGE 1 OF 1

PROJECT NO. 305-79.01
LOGGED BY: CM
DRILLER: GREGG
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2X12

CLIENT: SHELL
DATE DRILLED: 6-9-93
LOCATION: 285 Hegenberger Rd.
HOLE DIAMETER: 10"
HOLE DEPTH: 9'
WELL DIAMETER: 2"
WELL DEPTH: 8.5' and 6.5'
CASING STICKUP: NA



MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
			1			SW	ASPHALT 2" GRAVELLY SAND - FILL: clayey; strong brown; 20-25% clay; 25-30% large angular rocks; no product odor.
			2			CL	CLAY: mottled grey and brown; moderate plasticity; 5-10% fine to medium sand; staining (grey) and moderate to strong product odor begins at 3.5'.
			3				
Sat	150	9 8	4			CH/ SW	CLAY and SAND: (interbedded); clay: dark greenish grey; high plasticity; strong product odor; sand: dark greenish grey; 5-10% silt; fine to medium sand; stiff; strong product odor.
			5				
			6				
			7				
Sat	30	2 2	8				
			9			CH	CLAY: soft; moderate to faint product odor.
			10				BOTTOM OF BORING AT 9'
			11				
			12				
			13				
			14				
			15				
			16				
			17				
			18				
			19				
			20				
			21				
			22				

Note: 1st hole had 2 1" pipes and 1.5'. Broke one line but it appears abandoned.

ATTACHMENT B

CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Mike Hurd

Project: 305-79.01/Shell, Oakland

Enclosed are the results from 8 soil samples received at Sequoia Analytical on June 11,1993. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
3F52101	Soil, MW-11, 5-5.6	6/8/93	EPA 3550/8015 EPA 5030/8015/8020
3F52102	Soil, MW-12, 5-5.5	6/8/93	EPA 3550/8015 EPA 5030/8015/8020
3F52103	Soil, VEW-2, 4.5-5	6/9/93	EPA 3550/8015 EPA 5030/8015/8020
3F52104	Soil, VEW-3, 4.5-5	6/10/93	EPA 3550/8015 EPA 5030/8015/8020
3F52105	Soil, VEW-4, 4.5-5	6/9/93	EPA 3550/8015 EPA 5030/8015/8020
3F52106	Soil, VEW-5, 4.5-5	6/9/93	EPA 3550/8015 EPA 5030/8015/8020
3F52107	Soil, MW-13, 6-6.5	6/10/93	EPA 3550/8015 EPA 5030/8015/8020
3F52108	Soil, SP-1-4 comp	6/10/93	STLC Lead Corrosivity Ignitability Reactivity EPA 3550/8015 EPA 5030/8015/8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	305-79.01/Shell, Oakland	Sampled:	Jun 8-10, 1993
2025 Gateway Place, Suite 440	Sample Matrix:	Soil	Received:	Jun 11, 1993
San Jose, CA 95110	Analysis Method:	EPA 5030/8015/8020	Reported:	Jun 22, 1993
Attention: Mike Hurd	First Sample #:	3F52101		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 3F52101 MW-11, 5-5.6	Sample I.D. 3F52102 MW-12, 5-5.5	Sample I.D. 3F52103 VEW-2, 4.5-5	Sample I.D. 3F52104 VEW-3, 4.5-5	Sample I.D. 3F52105 VEW-4, 4.5-5	Sample I.D. 3F52106 VEW-5, 4.5-5
Purgeable Hydrocarbons	1.0	N.D.	N.D.	550	1,900	N.D.	1,000
Benzene	0.0050	N.D.	N.D.	6.4	N.D.	N.D.	1.2
Toluene	0.0050	0.0080	N.D.	15	16	N.D.	0.90
Ethyl Benzene	0.0050	N.D.	N.D.	13	40	N.D.	21
Total Xylenes	0.0050	N.D.	N.D.	52	94	N.D.	14
Chromatogram Pattern:		--	--	Gas	Gas	--	Gas

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	100	1000	1.0	100
Date Analyzed:	6/15/93	6/15/93	6/16/93	6/17/93	6/15/93	6/15/93
Instrument Identification:	GCHP-1	GCHP-18	GCHP-17	GCHP-1	GCHP-18	GCHP-18
Surrogate Recovery, %: (QC Limits = 70-130%)	114	105	125	123	111	130

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	305-79.01/Shell, Oakland	Sampled:	Jun 10, 1993
2025 Gateway Place, Suite 440	Sample Matrix:	Soil	Received:	Jun 11, 1993
San Jose, CA 95110	Analysis Method:	EPA 5030/8015/8020	Reported:	Jun 22, 1993
Attention: Mike Hurd	First Sample #:	3F52107		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 3F52107 MW-13, 6-6.5	Sample I.D. 3F52108 SP-1-4 comp
Purgeable Hydrocarbons	1.0	N.D.	41
Benzene	0.0050	N.D.	0.54
Toluene	0.0050	N.D.	2.4
Ethyl Benzene	0.0050	N.D.	1.2
Total Xylenes	0.0050	N.D.	5.1
Chromatogram Pattern:		--	Gas

Quality Control Data

Report Limit Multiplication Factor:	1.0	20
Date Analyzed:	6/16/93	6/16/93
Instrument Identification:	GCHP-18	GCHP-17
Surrogate Recovery, %: (QC Limits = 70-130%)	114	98

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	305-79.01/Shell, Oakland	Sampled:	Jun 8-10, 1993
2025 Gateway Place, Suite 440	Sample Matrix:	Soil	Received:	Jun 11, 1993
San Jose, CA 95110	Analysis Method:	EPA 3550/8015	Reported:	Jun 22, 1993
Attention: Mike Hurd	First Sample #:	3F52101		

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit mg/kg	Sample I.D. 3F52101 MW-11, 5-5.6	Sample I.D. 3F52102 MW-12, 5-5.5	Sample I.D. 3F52103 VEW-2,4.5-5	Sample I.D. 3F52104 VEW-3, 4.5-5	Sample I.D. 3F52105 VEW-4, 4.5-5	Sample I.D. 3F52106 VEW-5, 4.5-5
Extractable Hydrocarbons	1.0	N.D.	N.D.	31	560	10	320
Chromatogram Pattern:		--	--	Non-diesel mix < C12	Non-diesel mix < C13	Non-diesel mix C9 - C22	Non-diesel mix < C14

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	5.0	50	1.0	1.0
Date Extracted:	6/15/93	6/15/93	6/15/93	6/15/93	6/15/93	6/15/93
Date Analyzed:	6/16/93	6/16/93	6/18/93	6/18/93	6/16/93	6/18/93
Instrument Identification:	GCHP-5 INJ. B	GCHP-5 INJ. B	GCHP-5 INJ. B	GCHP-5 INJ. B	GCHP-5 INJ. B	GCHP-5 INJ.B

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	305-79.01/Shell, Oakland	Sampled:	Jun 10, 1993
2025 Gateway Place, Suite 440	Sample Matrix:	Soil	Received:	Jun 11, 1993
San Jose, CA 95110	Analysis Method:	EPA 3550/8015	Reported:	Jun 22, 1993
Attention: Mike Hurd	First Sample #:	3F52107		

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit mg/kg	Sample I.D. 3F52107 MW-13, 6-6.5	Sample I.D. 3F52108 SP-1-4 comp
Extractable Hydrocarbons	1.0	N.D.	37
Chromatogram Pattern:		--	Non-diesel mix < C13 + > C17

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Extracted:	6/15/93	6/15/93
Date Analyzed:	6/16/93	6/18/93
Instrument Identification:	GCHP-5 INJ. B	GCHP-5 INJ. B

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	305-79.01/Shell, Oakland	Sampled:	Jun 10, 1993
2025 Gateway Place, Suite 440	Sample Descript:	Soil, SP-1-4 comp	Received:	Jun 11, 1993
San Jose, CA 95110			Analyzed:	see below
Attention: Mike Hurd	Lab Number:	3F52108	Reported:	Jun 22, 1993

LABORATORY ANALYSIS

Analyte	Date Analyzed	Detection Limit mg/kg	Sample Result mg/kg
STLC Lead	6/17/93	0.10	0.80

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	305-79.01/Shell, Oakland	Sampled:	Jun 10, 1993
2025 Gateway Place, Suite 440	Sample Descript:	Soil, SP-1-4 comp	Received:	Jun 11, 1993
San Jose, CA 95110			Analyzed:	Jun 11, 15, 1993
Attention: Mike Hurd	Lab Number:	3F52108	Reported:	Jun 22, 1993

CORROSIVITY, IGNITABILITY, AND REACTIVITY

Analyte	Detection Limit	Sample Results
Corrosivity:		
pH	N.A.	7.5
Ignitability:		
Flashpoint (Pensky-Martens), °C	N.A.	> 100 °C
Reactivity:		
Sulfide, mg/kg	13	N.D.
Cyanide, mg/kg	0.50	N.D.
Reaction with water	N.A.	Negative

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	305-79.01/Shell, Oakland
2025 Gateway Place, Suite 440	Matrix:	Soil
San Jose, CA 95110		
Attention: Mike Hurd	QC Sample Group: 3F52108	Reported: Jun 22, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Sulfide	Cyanide
Method:	EPA 9030	EPA 9010
Analyst:	K. Newberry	A. Savva
Conc. Spiked:	1300	3.0
Units:	mg/kg	mg/kg
LCS Batch#:	LCS061593	LCS061593
Date Prepared:	6/15/93	6/15/93
Date Analyzed:	6/15/93	6/15/93
Instrument I.D.#:	N.A.	N.A.
LCS % Recovery:	87	100
Control Limits:	80-120	80-120
MS/MSD Batch #:	9306316-1	9306180 1A
Date Prepared:	6/15/93	6/9/93
Date Analyzed:	6/15/93	6/9/93
Instrument I.D.#:	N.A.	N.A.
Matrix Spike % Recovery:	81	100
Matrix Spike Duplicate % Recovery:	81	100
Relative % Difference:	0.0	0.0

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	305-79.01/Shell, Oakland
2025 Gateway Place, Suite 440	Matrix:	Soil
San Jose, CA 95110		
Attention: Mike Hurd	QC Sample Group: 3F52101-08	Reported: Jun 22, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Diesel
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Analyst:	E. Cunanan	E. Cunanan	E. Cunanan	E. Cunanan	C. Lee
Conc. Spiked:	0.20	0.20	0.20	0.60	15
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LCS Batch#:	GBLK061593	GBLK061593	GBLK061593	GBLK061593	DBLK061593
Date Prepared:	6/15/93	6/15/93	6/15/93	6/15/93	6/15/93
Date Analyzed:	6/15/93	6/15/93	6/15/93	6/15/93	6/16/93
Instrument I.D.#:	GCHP-18	GCHP-18	GCHP-18	GCHP-18	HP5B
LCS % Recovery:	95	95	95	93	80
Control Limits:	60-140	60-140	60-140	60-140	50-150
MS/MSD Batch #:	G9306434-04	G9306434-04	G9306434-04	G9306434-04	D930649405
Date Prepared:	6/15/93	6/15/93	6/15/93	6/15/93	6/15/93
Date Analyzed:	6/15/93	6/15/93	6/15/93	6/15/93	6/16/93
Instrument I.D.#:	GCHP-18	GCHP-18	GCHP-18	GCHP-18	HP5B
Matrix Spike % Recovery:	85	85	90	87	80
Matrix Spike Duplicate % Recovery:	85	90	90	90	87
Relative % Difference:	0.0	5.7	0.0	3.4	8.4

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	305-79.01/Shell, Oakland
2025 Gateway Place, Suite 440	Matrix:	Water
San Jose, CA 95110		
Attention: Mike Hurd	QC Sample Group: 3F52101-08	Reported: Jun 22, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Lead
Method:	EPA 200.7
Analyst:	C. Medefesser
Conc. Spiked:	1.0
Units:	mg/L
LCS Batch#:	BLK061693
Date Prepared:	6/16/93
Date Analyzed:	6/17/93
Instrument I.D.#:	MTJA-2
LCS % Recovery:	97
Control Limits:	90-110

MS/MSD Batch #:	9306658-1B
Date Prepared:	6/16/93
Date Analyzed:	6/17/93
Instrument I.D.#:	MTJA-2
Matrix Spike % Recovery:	96
Matrix Spike Duplicate % Recovery:	95
Relative % Difference:	1.0

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	305-79.01/Shell, Oakland
2025 Gateway Place, Suite 440	Matrix:	Water
San Jose, CA 95110		
Attention: Mike Hurd	QC Sample Group: 3F52108	Reported: Jun 22, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	pH	Flashpoint
Method:	EPA 9045	EPA 1010
Analyst:	Y. Arteaga	K. Newberry
Units:	pH units	°C
Date:	6/11/93	6/15/93
Sample #:	9306447-01	9306593-2
Sample Concentration:	7.9	>100
Sample Duplicate Concentration:	7.9	>100
% RPD:	0.0	0.0
Control Limits:	0-30	±5.0

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL

CLIENT NAME: Shell O.I
REC. BY (PRINT): S.G

MASTER LOG NO. / PAGE: 9306521
DATE OF LOG-IN: 6-11-93

CIRCLE THE APPROPRIATE RESPONSE

1. Custody Seal(s): Present / (Absent) Intact / Broken*
2. Custody Seal Nos.:
3. Chain-of-Custody Records: (Present) / Absent*
4. Traffic Reports or Packing List: Present / (Absent)
5. Airbill: Airbill / Sticker (Present) / Absent
6. Airbill No.:
7. Sample Tags: (Present) / Absent* Sample Tag Nos.: (Listed) / Not Listed on Chain-of-Custody
8. Sample Condition: (Intact)/Broken*/Leaking*
9. Does information on custody reports, traffic reports and sample tags agree? (Yes) / No*
10. Proper Preservatives Used: (Yes) / No*
11. Date Rec. at Lab: 6/11/93
12. Time Rec. at Lab: 11:10

LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION (ETC)
01	A	MW-11	Soil core	Soil	6/8	
02		MW-12			6/9	
03		VEW-2			6/9	
04		VEW-3			6/10	
05		VEW-4			6/9	
06		VEW-5			6/9	
07	↓	MW-13			6/10	
08	A	SP-1	Soil core	Soil	6/10	Composite
	B	SP-2				
	C	SP-3				
	D	SP-4				

* If Circled, contact Project Manager and attach record of resolution

Form SC001.

SHELL OIL COMPANY 305-79.01
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 6-10-93
Page 1 of 2

Site Address: 285 Hegenberger Rd. Oakland
WIC#: 204-5508-5504

Shell Engineer: Dan Kirk — Phone No.: 510 675-6168 Fax #: 675-6172

Consultant Name & Address: PACIFIC ENVIRONMENTAL GROUP, INC. 2025 GATEWAY PLACE, Ste. 440 SAN JOSE, CALIFORNIA 95110

Consultant Contact: Mike Hurd — Phone No.: 408 441-7500 Fax #: 441-7539

Comments:

Sampled by: Charles Melancon
Printed Name: Charles Melancon

LAB: Sequoia

CHECK ONE (1) BOX ONLY		CT/DT
G.W. Monitoring	☐	4461
Site Investigation	☒	4441
Soil Classify/Disposal	☐	4442
Water Classify/Disposal	☐	4443
Soil/Air Rem. or Sys. O & M	☐	4452
Water Rem. or Sys. O & M	☐	4453
Other	☐	

TURN AROUND TIME: 24 hours ☐ ; 48 hours ☐ ; 15 days ☒ (Normal) ; Other ☐ _____

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

UST AGENCY: _____

Analysis Required: 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 GAS; Asbestos; Container Size; Preparation Used; Composite Y/N

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
MW-11, 5.5-6	6/9/93		X			1	Soil	9306521 01
MW-12, 5-5.5	6/8/93		X			1		02
VEW-2, 4.5-5	6/9/93		X			1		03
VEW-3, 4.5-5	6/10/93		X			1		04
VEW-4, 4.5-5	6/9/93		X			1		05
VEW-5, 4.5-5	6/9/93		X			1		06
MW-13, 6-6.5	6/10/93		X			1		07

	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:
Relinquished By (signature): Charles Melancon	Charles Melancon	6-11-93	10:10	David Alderman	David Alderman	6/11/93	10:10
Relinquished By (signature): David Alderman	David Alderman	6/11/93	10:50				
Relinquished By (signature):				Steve Gee		6/11/93	11:15

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

Rev. 1/11/93

Shell Oil Co. Ir Custody

SHELL OIL COMPANY 305-79.01
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 6-10-93
Page 2 of 2

Site Address: 285 Hegenberger Rd. Oakland
WIC#: 204-5508-5504
Shell Engineer: Dan Kirk — Phone No.: 510 675-6168 Fax #: 675-6172
Consultant Name & Address: PACIFIC ENVIRONMENTAL GROUP, INC. 2025 GATEWAY PLACE, Ste. 440 SAN JOSE, CALIFORNIA 95110
Consultant Contact: Mike Hurd — Phone No.: 408 441-7500 Fax #: 441-7539
Comments:
Sampled by: Charles Melancon
Printed Name: Charles Melancon

LAB: Sequoia

CHECK ONE (1) BOX ONLY | CT/DT
- G.W. Monitoring ☐ 4461
- Site Investigation ☐ 4441
- Soil Classify/Disposal ☒ 4442
- Water Classify/Disposal ☐ 4443
- Soil/Air Rem. or Sys. O & M ☐ 4452
- Water Rem. or Sys. O & M ☐ 4453
- Other ☐

TURN AROUND TIME
- 24 hours ☐
- 48 hours ☐
- 15 days ☒ (Normal)
- Other ☐ ____

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

UST AGENCY: _____

Analysis Required: 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 GAS; STLC/TCLP; ACT; Asbestos; Container Size; Preparation Used; Composite Y/N

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SP-1 (Composite)	6/10/93		X			1	Y	Soil/Spoils	9306521 07
SP-2 (Composite)						1	Y		Composite
SP-3 (Composite)						1	Y		
SP-4 (Composite)						1	Y		

Relinquished By (signature)	Printed Name	Date/Time	Received (signature)	Printed Name	Date/Time
Chuck Melancon	Charles Melancon	Date: 6-11-93 Time: 0:16	David Alderman	David Alderman	Date: 6/11/93 Time: 10:10
David Alderman	David Alderman	Date: 6/11/93 Time: 10:50			Date: Time:
		Date: Time:			Date: Time:

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

Rev.1/12/93 — Shell Oil Co. Chain of Custody

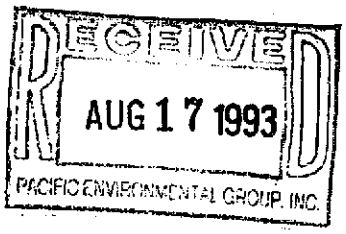
ATTACHMENT C

GROUNDWATER SAMPLING REPORT

BLAINE
TECH SERVICES INC.

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

July 29, 1993



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

Attn: Daniel T. Kirk

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

QUARTER:
3rd quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930720-T-1

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

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

STANDARD PROCEDURES

Evacuation

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

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

Decontamination

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

Free Product Skimmer

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

Sample Containers

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

Sampling

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

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

Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label.

Chain of Custody

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

Hazardous Materials Testing Laboratory

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

Objective Information Collection

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

Reportage

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

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/lpn

attachments: table of well gauging data
chain of custody
certified analytical report

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

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	7/20/93	TOC	ODOR	NONE	--	--	3.48	9.36
MW-2	7/20/93	TOC	--	NONE	--	--	5.17	9.60
MW-3	7/20/93	*						
MW-4	7/20/93	TOC	--	NONE	--	--	6.47	10.12
MW-5	7/20/93	TOC	--	NONE	--	--	5.10	9.71
MW-6	7/20/93	TOC	ODOR	NONE	--	--	5.39	11.01
MW-7	7/20/93	TOC	ODOR	NONE	--	--	4.36	9.96
MW-8	7/20/93	TOC	--	NONE	--	--	6.38	9.94
MW-9	7/20/93	TOC	ODOR	NONE	--	--	5.25	10.74
MW-10	7/20/93	TOC	ODOR	NONE	--	--	5.62	9.94
MW-11	7/20/93	TOC	--	NONE	--	--	8.08	13.86
MW-12	7/20/93	TOC	--	NONE	--	--	6.76	14.61
MW-13 **	7/20/93	TOC	--	NONE	--	--	8.32	14.32

* Threaded steel well box cover was frozen.

** Sample DUP was a duplicate sample taken from well MW-13.

10/38 9:9 11:25 9307211 (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 930720-T1

Date: 7.21.93
Page 1 of 2

Site Address: 285 Hegenberger Rd., Oakland

WIC#: 204-5506-5504

Shell Engineer: Dan Kirk — Phone No.: (510) 675-6168 Fax #: 675-6160

Consultant Name & Address: Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133

Consultant Contact: Jim Keller — Phone No.: (408) 995-5535 Fax #: 293-8773

Comments:

Sampled by: Francis Thie

Printed Name: FRANCIS THIE

LAB: Anametrix

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 MOTOR OIL	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1) mw-1	7.20			✓		5		✓				✓	✓						
(2) mw-2	7.21			✓		5		✓				✓	✓						
(3) mw-4	7.21			✓		5		✓				✓	✓						
(4) mw-5	7.21			✓		5		✓				✓	✓						
(5) mw-6	7.20			✓		5		✓				✓	✓						
(6) mw-7	7.21			✓		5		✓				✓	✓						
(7) mw-8	7.21			✓		5		✓				✓	✓						
(8) mw-9	7.21			✓		5		✓				✓	✓						

CHECK ONE (1) BOX ONLY — C1/D1

- Quarterly Monitoring ☒ 6441
- Site Investigation ☐ 6443
- 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 ☐
- 10 days (☒ Normal)
- Other ☐ ____

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

Relinquished By (signature)	Printed Name	Date / Time	Received (signature)	Printed Name	Date / Time
Francis Thie	FRANCIS THIE	7.22 0:50	Simon Hooper	Simon Hooper	7.22.93 0:50
Simon Hooper	Simon Hooper	7.22 10:20	Josephine DeCarli	Josephine DeCarli	7/22/93 10:20
		Date: Time:			Date: Time:

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

10/38 9.2.11.26

9307211 (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 930720-T1

Date: 7.21.93
Page 2 of 2

Site Address: 285 Hegenberger Rd, Oakland

WIC#: 204-5508-5504

Shell Engineer: Dan Kirk — Phone No.: (510) 675-6168 Fax #: 675-6160

Consultant Name & Address: Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133

Consultant Contact: Jim Keller — Phone No.: (408) 995-5535 Fax #: 293-8773

Comments:

Sampled by: Francis Thie

Printed Name: FRANCIS THIE

LAB: Anametrix

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	TPH MOTOR OIL	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(9) MW-10	7.21			✓		5		✓				✓	✓						
(10) MW-11	7.20			✓		5		✓				✓	✓						
(11) MW-12	7.20			✓		5		✓				✓	✓						
(12) MW-13	7.21			✓		5		✓				✓	✓						
(13) EB	7.21			✓		5		✓				✓	✓						
(14) DUP	7.21			✓		5		✓				✓	✓						
(15) TB	—			✓		2						✓							

CHECK ONE (1) BOX ONLY — CI/DI

		CI/DI
Quarterly Monitoring	☒	6441
Site Investigation	☐	6441
Soil Classify/Disposal	☐	6442
Water Classify/Disposal	☐	6443
Soil/Air Rem. or Sys. O & M	☐	6463
Water Rem. or Sys. O & M	☐	6463
Other	☐	

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 10 days ☒ (Normal)
- Other ☐ ____

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

	Printed Name	Date/Time		Printed Name	Date/Time
Relinquished By (Signature): Francis Thie	FRANCIS THIE	7-22-93 9:50	Received (Signature): Simon Hooper	Simon Hooper	7-22-93 9:50
Relinquished By (Signature): Simon Hooper	Simon Hooper	7-22-93 10:20	Received (Signature): Josephine DeCarli	Josephine DeCarli	7/22/93 10:20
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

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9307211
Date Received : 07/22/93
Project ID : 204-5508-5504
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9307211- 1	MW-1
9307211- 2	MW-2
9307211- 3	MW-4
9307211- 4	MW-5
9307211- 5	MW-6
9307211- 6	MW-7
9307211- 7	MW-8
9307211- 8	MW-9
9307211- 9	MW-10
9307211-10	MW-11
9307211-11	MW-12
9307211-12	MW-13
9307211-13	EB
9307211-14	DUP
9307211-15	TB

This report consists of 13 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

08-09-93
Date

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

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9307211
Date Received : 07/22/93
Project ID : 204-5508-5504
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307211- 1	MW-1	WATER	07/20/93	TPHd
9307211- 2	MW-2	WATER	07/21/93	TPHd
9307211- 3	MW-4	WATER	07/21/93	TPHd
9307211- 4	MW-5	WATER	07/21/93	TPHd
9307211- 5	MW-6	WATER	07/20/93	TPHd
9307211- 6	MW-7	WATER	07/21/93	TPHd
9307211- 7	MW-8	WATER	07/21/93	TPHd
9307211- 8	MW-9	WATER	07/21/93	TPHd
9307211- 9	MW-10	WATER	07/21/93	TPHd
9307211-10	MW-11	WATER	07/20/93	TPHd
9307211-11	MW-12	WATER	07/20/93	TPHd
9307211-12	MW-13	WATER	07/21/93	TPHd
9307211-13	EB	WATER	07/21/93	TPHd
9307211-14	DUP	WATER	07/21/93	TPHd
9307211- 1	MW-1	WATER	07/20/93	TPHgBTEX
9307211- 2	MW-2	WATER	07/21/93	TPHgBTEX
9307211- 3	MW-4	WATER	07/21/93	TPHgBTEX
9307211- 4	MW-5	WATER	07/21/93	TPHgBTEX
9307211- 5	MW-6	WATER	07/20/93	TPHgBTEX
9307211- 6	MW-7	WATER	07/21/93	TPHgBTEX

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

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9307211
Date Received : 07/22/93
Project ID : 204-5508-5504
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307211- 7	MW-8	WATER	07/21/93	TPHgBTEX
9307211- 8	MW-9	WATER	07/21/93	TPHgBTEX
9307211- 9	MW-10	WATER	07/21/93	TPHgBTEX
9307211-10	MW-11	WATER	07/20/93	TPHgBTEX
9307211-11	MW-12	WATER	07/20/93	TPHgBTEX
9307211-12	MW-13	WATER	07/21/93	TPHgBTEX
9307211-13	EB	WATER	07/21/93	TPHgBTEX
9307211-14	DUP	WATER	07/21/93	TPHgBTEX
9307211-15	TB	WATER	07/19/93	TPHgBTEX

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

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9307211
Date Received : 07/22/93
Project ID : 204-5508-5504
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as gasoline for samples MW-5, MW-1 and MW-6 are due to the presence of a combination of gasoline and a discrete peak not indicative of gasoline.
- The concentrations reported as diesel for samples MW-1, MW-5 and MW-6 are primarily due to the presence of a lighter petroleum product of hydrocarbon range C6-C12, possibly gasoline.

Cheryl Bedmar 8/6/93
Department Supervisor Date

Lucia Shor 8/6/93
Chemist Date

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

Anametrix W.O.: 9307211
Matrix : WATER
Date Sampled : 07/20-21/93

Project Number : 204-5508-5504
Date Released : 08/06/93

	Reporting Limit	Sample I.D.# MW-1	Sample I.D.# MW-2	Sample I.D.# MW-4	Sample I.D.# MW-5	Sample I.D.# MW-6
COMPOUNDS	(ug/L)	-01	-02	-03	-04	-05
Benzene	0.5	12000	1.7	2.2	1400	570
Toluene	0.5	870	1.7	1.2	84	18
Ethylbenzene	0.5	1500	15	1.1	1500	1100
Total Xylenes	0.5	4400	38	7.7	3200	130
TPH as Gasoline	50	41000	440	ND	18000	19000
% Surrogate Recovery		105%	85%	89%	104%	100%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		07/26/93	07/27/93	07/26/93	07/27/93	07/26/93
RLMF		500	2	1	100	25

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

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

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

Irma Shor 8/6/93
Analyst Date

Cheryl Berlman 8/6/93
Supervisor Date

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

Anametrix W.O.: 9307211
Matrix : WATER
Date Sampled : 07/20-21/93

Project Number : 204-5508-5504
Date Released : 08/06/93

	Reporting Limit	Sample I.D.# MW-7	Sample I.D.# MW-8	Sample I.D.# MW-9	Sample I.D.# MW-10	Sample I.D.# MW-11
COMPOUNDS	(ug/L)	-06	-07	-08	-09	-10
Benzene	0.5	23000	0.7	10000	14000	2.5
Toluene	0.5	9900	0.7	320	4200	1.9
Ethylbenzene	0.5	2200	0.8	1100	1700	3.9
Total Xylenes	0.5	12000	4.1	7100	5500	18
TPH as Gasoline	50	47000	ND	25000	31000	50
% Surrogate Recovery		105%	90%	101%	104%	92%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		07/26/93	07/26/93	07/27/93	07/26/93	07/26/93
RLMF		500	1	250	500	1

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

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

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

Analyst 8/6/93 Date

Supervisor 8/6/93 Date

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

Anametrix W.O.: 9307211
Matrix : WATER
Date Sampled : 07/19-21/93

Project Number : 204-5508-5504
Date Released : 08/06/93

	Reporting Limit	Sample I.D.# MW-12	Sample I.D.# MW-13	Sample I.D.# EB	Sample I.D.# DUP	Sample I.D.# TB
COMPOUNDS	(ug/L)	-11	-12	-13	-14	-15
Benzene	0.5	2.8	ND	ND	ND	ND
Toluene	0.5	1.9	ND	ND	ND	ND
Ethylbenzene	0.5	3.2	ND	ND	ND	ND
Total Xylenes	0.5	15	1.5	ND	1.0	ND
TPH as Gasoline	50	ND	ND	ND	ND	ND
% Surrogate Recovery		92%	97%	89%	97%	86%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		07/26/93	07/26/93	07/26/93	07/26/93	07/26/93
RLMF		1	1	1	1	1

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

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

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

Analyst 8/6/93 Date

Supervisor 8/6/93 Date

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

Anametrix W.O.: 9307211
Matrix : WATER
Date Sampled : N/A

Project Number : 204-5508-5504
Date Released : 08/06/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# BL2601E2 BLANK	Sample I.D.# BL2701E2 BLANK
Benzene	0.5	ND	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Total Xylenes	0.5	ND	ND
TPH as Gasoline	50	ND	ND
% Surrogate Recovery		93%	86%
Instrument I.D.		HP4	HP4
Date Analyzed		07/26/93	07/27/93
RLMF		1	1

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

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

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

Luna Shor 8/6/93
Analyst Date

Cheryl Balmer 8/6/93
Supervisor Date

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

Anametrix W.O.: 9307211
Matrix : WATER
Date Sampled : 07/20-21/93
Date Extracted: 07/23/93

Project Number : 204-5508-5504
Date Released : 08/06/93
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9307211-01	MW-1	07/30/93	290	3100
9307211-02	MW-2	07/30/93	52	130
9307211-03	MW-4	07/30/93	50	ND
9307211-04	MW-5	07/30/93	51	1200
9307211-05	MW-6	07/30/93	51	910
9307211-06	MW-7	08/05/93	280	13000
9307211-07	MW-8	07/30/93	52	ND
9307211-08	MW-9	08/05/93	100	5100
9307211-09	MW-10	08/05/93	100	4800
9307211-10	MW-11	07/30/93	51	ND
9307211-11	MW-12	08/30/93	52	88
9307211-12	MW-13	08/02/93	56	ND
9307211-13	EB	08/02/93	57	ND
9307211-14	DUP	08/02/93	54	ND
BL2311F1	METHOD BLANK	07/29/93	50	ND

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

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

Irma Shor 8/6/93
Analyst Date

Cheryl Balmer 8/6/93
Supervisor Date

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

Anametrix W.O.: 9307211
Matrix : WATER
Date Sampled : 07/20-21/93
Date Extracted: 07/23/93

Project Number : 204-5508-5504
Date Released : 08/06/93
Instrument I.D.: HP9

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9307211-01	MW-1	07/30/93	290	790
9307211-02	MW-2	07/30/93	52	160
9307211-03	MW-4	07/30/93	50	120
9307211-04	MW-5	07/30/93	51	ND
9307211-05	MW-6	07/30/93	51	140
9307211-06	MW-7	08/05/93	280	ND
9307211-07	MW-8	07/30/93	52	79
9307211-08	MW-9	08/05/93	100	ND
9307211-09	MW-10	08/05/93	100	ND
9307211-10	MW-11	07/30/93	51	120
9307211-11	MW-12	08/30/93	52	230
9307211-12	MW-13	08/02/93	56	ND
9307211-13	EB	08/02/93	57	ND
9307211-14	DUP	08/02/93	54	73
BL2311F1	METHOD BLANK	07/29/93	50	ND

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

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

Luna Shor 8/6/93
Analyst Date

Cheryl Bedman 8/6/93
Supervisor Date

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

Sample I.D.	: 204-5508-5504 MW-8	Anametrix I.D.	: 07211-07
Matrix	: WATER	Analyst	: IS
Date Sampled	: 07/20/93	Supervisor	: CB
Date Analyzed	: 07/26/93	Date Released	: 08/06/93
		Instrument I.D.	: HP4

COMPOUND	SPIKE AMT (ug/L)	SAMPLE CONC (ug/L)	REC MS (ug/L)	%REC MS	REC MD (ug/L)	%REC MD	RPD	%REC LIMITS
BENZENE	20.0	0.7	17.8	86%	18.0	87%	1%	45-139
TOLUENE	20.0	0.7	18.7	90%	18.8	91%	1%	51-138
ETHYLBENZENE	20.0	0.8	19.4	93%	19.9	96%	3%	48-146
TOTAL XYLENES	20.0	4.1	22.2	91%	22.6	93%	2%	50-139
p-BFB				96%		98%		61-139

* Quality control established by Anametrix, Inc.

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

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: ML2601E3
Matrix	: WATER	Analyst	: TS
Date Sampled	: N/A	Supervisor	: CP
Date Analyzed	: 07/26/93	Date Released	: 08/06/93
		Instrument I.D.	: HP4

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	15.7	78%	52-133
Toluene	20.0	16.2	81%	57-136
Ethylbenzene	20.0	16.9	85%	56-139
TOTAL Xylenes	20.0	16.9	85%	61-139
P-BFB			96%	61-139

* Limits established by Anametrix, Inc.

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

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: ML2901E1
Matrix	: WATER	Analyst	: IS
Date Sampled	: N/A	Supervisor	: CS
Date Analyzed	: 07/29/93	Date Released	: 08/06/93
		Instrument I.D.	: HP4

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	17.0	85%	52-133
Toluene	20.0	18.5	93%	57-136
Ethylbenzene	20.0	19.7	99%	56-139
TOTAL Xylenes	20.0	18.9	95%	61-139
P-BFB			101%	61-139

* Limits established by Anametrix, Inc.

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

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Extracted: 07/23/93
Date Analyzed : 07/30/93

Anametrix I.D. : ML2311F1
Analyst : IS
Supervisor : CM
Date Released : 08/06/93
Instrument I.D.: HP9

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	700	56%	640	51%	-9%	47-130

*Quality control established by Anametrix, Inc.