Rec
3/31/93

PACIFIC
ENVIRONMENTAL
GROUP, INC.

March 24, 1993
Project 305-87.01

Mr. Randy Orlowski
Shell Oil Company
P.O. Box 5278
Concord, California 94520

Re: Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California
WIC No 204-2217-0105

Dear Mr. Orlowski:

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

FINDINGS

Groundwater monitoring wells were sampled and gauged by Blaine Tech Services, Inc. (Blaine) at the direction of PACIFIC on February 10 and 11, 1993. Groundwater elevation contours for the sampling date are shown on Figure 2, and include groundwater elevation data supplied by Alisto Engineering for the BP service station and data supplied by Kaprealian Engineering for the Unocal service station. Table 1 presents groundwater elevation data.

Groundwater analytical data are presented in Table 2. Total petroleum hydrocarbons calculated as gasoline (TPH-g) and benzene concentrations for the February 1993 sampling event are shown on Figure 3. Blaine's groundwater sampling report is presented in Attachment A. The laboratory noted that the concentration reported as gasoline for the sample from Well MW-11 is primarily due to the presence of a discrete hydrocarbon peak not indicative of gasoline. Field purging and sampling data is presented in Table 3.

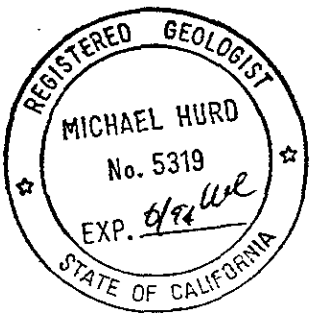
2025 Gateway Place, Suite 440, San Jose, California 95110 (408) 441-7500 FAX (408) 441-7539
620 Contra Costa Blvd., Suite 209, Pleasant Hill, California 94523 (510) 825-0855 FAX (510) 825-0882

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

Sincerely,

Pacific Environmental Group, Inc.

Michael Hurd
Project Geologist
RG 5319



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

cc: Mr. Craig Mayfield, Alameda County Flood Control and Water Conservation District
Mr. Eddy So, Regional Water Quality Control Board
Mr. Gil Wistar, Alameda County Health Care Services
Mr. Rick Schroder, Shell Oil Company

Table 1
Groundwater Elevation Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-1	05/09/88	334.83	8.72	326.11
	08/26/88		9.15	325.68
	10/05/88		8.54	326.29
	11/22/88		9.31	325.52
	12/09/88		9.33	325.50
	01/13/89		NM	NM
	02/10/89		8.51	326.32
	03/02/89		8.71	326.12
	04/04/89		7.93	326.90
	05/01/89		8.43	326.40
	06/01/89		8.56	326.27
	06/29/89		8.60	326.23
	08/09/89		8.43	326.40
	09/11/89		8.65	326.18
	10/10/89		8.52	326.31
	10/25/89		8.56	326.27
	12/20/89		8.80	326.03
	01/17/90		8.47	326.36
	02/23/90		8.25	326.58
	06/04/90		8.62	326.21
	11/20/90		9.50	325.33
	02/12/91		9.51	325.32
	05/06/91		8.34	326.49
	08/28/91		9.28	325.55
	11/13/91		9.59	325.24
	02/25/92		7.49	327.34
	05/12/92		8.64	326.19
	08/12/92		9.15	325.68
	11/10/92		10.04	324.79
	02/10/93		7.24	327.59
MW-2	05/09/88	336.96	10.85	326.11
	08/26/88		11.29	325.67
	10/05/88		10.83	326.13
	11/22/88		11 42	325 54
	12/09/88		11 45	325 51
	01/13/89		NM	NM
	02/10/89		10.74	326 22
	03/02/89		10 91	326.05
	04/04/89		10 06	326 90

Table 1 (continued)
Groundwater Elevation Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-2 (cont.)	05/01/89		10.58	326.38
	05/31/89		10.73	326.23
	06/28/89		10.90	326.06
	08/08/89		10.78	326.18
	09/08/89		10.97	325.99
	10/09/89		10.88	326.08
	10/24/89		11.00	325.96
	12/21/89		11.06	325.90
	01/17/90		10.78	326.18
	02/23/90		10.35	326.61
	06/04/90		10.72	326.24
	11/20/90		11.35	325.61
	02/12/91		11.64	325.32
	05/06/91		10.05	326.91
	08/28/91		11.16	325.80
	11/13/91		11.57	325.39
	02/25/92		9.66	327.30
	05/12/92		10.97	325.99
	08/12/92		11.58	325.38
	11/10/92		12.05	324.91
	02/10/93		9.28	327.68
MW-3	05/09/88	336.96	10.59	326.37
	08/26/88		11.10	325.86
	10/05/88		10.43	326.53
	11/22/88		11.16	325.80
	12/09/88		11.24	325.72
	01/13/89		NM	NM
	02/10/89		10.43	326.53
	03/02/89		10.59	326.37
	04/04/89		9.45	327.51
	05/01/89		10.20	326.76
	06/01/89		10.40	326.56
	06/28/89		10.60	326.36
	08/09/89		10 64	326 32
	09/11/89		10 83	326 13
	10/10/89		10 95	326 01
	10/26/89		10.86	326.10
	12/21/89		11 09	325 87
	01/17/90		10 90	326 06

Table 1 (continued)
Groundwater Elevation Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-3 (cont.)	02/23/90		10.52	326.44
	06/04/90		10.52	326.44
	11/20/90		12.65	324.31
	02/12/91		11.16	325.80
	05/06/91	336.93	9.85	327.08
	08/28/91		10.90	326.03
	11/13/91		11.28	325.65
	02/25/92		9.04	327.89
	05/12/92		10.50	326.43
	08/12/92		10.94	325.99
	11/10/92		11.84	325.09
	02/10/93		8.82	328.11
MW-4	05/09/88	337.14	10.88	326.26
	08/26/88		11.34	325.80
	10/05/88		10.87	326.27
	11/22/88		11.41	325.73
	12/09/88		11.46	325.68
	01/13/89		NM	NM
	02/10/89		10.78	326.36
	03/02/89		10.92	326.22
	04/04/89		10.04	327.10
	05/01/89		10.52	326.62
	05/31/89		10.62	326.52
	06/28/89		11.00	326.14
	08/09/89		10.92	326.22
	09/08/89		11.05	326.09
	10/10/89		10.97	326.17
	10/26/89		11.35	325.79
	12/21/89		11.07	326.07
	01/17/90		11.08	326.06
	02/23/90		10.90	325.24
	06/04/90		10.74	326.40
	11/20/90		11.45	325.69
	02/12/91		11 50	325 64
	05/06/91		10 04	327 10
	08/28/91		11 18	325 96
	11/13/91		11 60	325.54
	02/25/92		9 45	327.69
	05/12/92		10 84	326 30
	08/12/92		11 36	325 78
	11/10/92		12 12	325 02
	02/10/93		9 40	327 74

Table 1 (continued)
Groundwater Elevation Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-5	08/26/88	334.96	9.10	325.86
	10/05/88		9.95	325.01
	11/22/88		8.93	326.03
	12/09/88		10.48	324.48
	01/13/89		NM	NM
	02/10/89		10.35	324.61
	03/02/89		8.50	326.46
	04/05/89		7.72	327.24
	05/01/89		8.21	326.75
	06/01/89		8.40	326.56
	06/29/89		8.65	326.31
	08/09/89		8.76	326.20
	09/11/89		8.80	326.16
	10/10/89		11.92	323.04
	10/25/89		9.03	325.93
	12/20/89		11.26	323.70
	01/18/90		9.95	325.01
	02/23/90		8.30	326.66
	06/04/90		8.57	326.39
	11/20/90		9.45	325.51
	02/11/91		9.27	325.69
	05/06/91		7.90	327.06
	08/28/91		9.28	325.68
	11/13/91		9.36	325.60
	02/25/92		9.02	325.94
	05/12/92		8.65	326.31
	08/12/92		9.40	325.56
	11/10/92		9.68	325.28
	02/10/93		7.97	326.99
MW-6	08/26/88	335.42	9.69	325.73
	10/05/88		9.27	326.15
	11/22/88		9.77	325.65
	12/09/88		9.85	325 27
	01/13/89		NM	NM
	02/10/89		9 10	326 32
	03/02/89		9 29	326 13
	04/04/89		8.48	326 94
	05/01/89		8 90	326 52
	06/01/89		9 16	326 26

Table 1 (continued)
Groundwater Elevation Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-6 (cont.)	06/29/89		9.30	326.12
	08/09/89		9.30	326.12
	09/11/89		9.31	326.11
	10/10/89		9.32	326.10
	10/24/89		9.30	326.12
	12/20/89		9.58	325.84
	01/18/90		9.46	325.96
	02/23/90		8.94	326.48
	06/04/90		9.22	326.20
	11/20/90		9.65	325.77
	02/12/91		9.85	325.57
	05/06/91		9.12	326.30
	08/28/91		9.68	325.74
	11/13/91		10.00	325.42
	02/25/92		8.44	326.98
	05/12/92		9.11	326.31
	08/12/92		9.72	325.70
	11/10/92		10.56	324.86
	02/10/93		7.65	327.77
MW-7	08/26/88	333.23	7.94	325.29
	10/05/88		7.54	325.69
	11/22/88		NM	NM
	12/09/88		7.53	325.70
	01/13/89		NM	NM
	02/10/89		6.62	326.61
	03/02/89		7.03	326.20
	04/05/89		6.80	326.43
	05/01/89		6.53	326.70
	05/31/89		6.93	326.30
	06/28/89		6.85	326.38
	08/09/89		6.67	326.56
	09/07/89		6.90	326.33
	10/10/89		6 90	326 33
	10/24/89		7.29	325 94
	12/20/89		7 47	325 76
	01/18/90		7 49	325.74
	02/23/90		6 92	326 31
	06/04/90		6 95	326 28
	11/20/90		8 10	325 13

Table 1 (continued)
Groundwater Elevation Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-7 (cont.)	02/11/91		8.04	325.19
	05/06/91		6.37	325.86
	08/28/91		7.94	325.29
	11/13/91		8.41	324.82
	02/25/92		6.99	326.24
	05/12/92		7.42	325.81
	08/12/92		8.65	324.58
	11/10/92		8.82	324.41
	02/10/93		6.06	327.17
MW-8	03/01/89	335.80	8.28	327.52
	04/04/89		7.31	328.49
	05/01/89		8.97	326.83
	05/31/89		9.17	326.63
	06/28/89		9.40	326.40
	08/08/89		9.42	326.28
	09/07/89		8.50	327.30
	10/10/89		9.46	326.34
	10/26/89		9.56	326.24
	12/21/89		9.57	326.23
	01/18/90		9.29	326.51
	02/26/90		8.50	327.30
	06/04/90		9.04	326.76
	02/11/91		9.40	326.40
	05/06/91		8.70	327.10
	08/28/91		9.68	326.12
	11/13/91		9.87	326.93
	02/25/92		7.45	328.35
	05/12/92		9.19	326.61
	08/12/92		9.82	325.98
	11/10/92		10.41	325.39
	02/10/93		7.35	328.45
MW-9	03/01/89	334.57	8.48	326.09
	04/04/89		7.69	326.88
	05/01/89		8.20	326.37
	05/31/89		8.72	325.85
	06/28/89		9.00	325.57
	08/08/89		8.53	326.04

Table 1 (continued)
Groundwater Elevation Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-9 (cont.)	09/07/89		8.99	325.58
	10/09/89		8.89	325.68
	10/23/89		9.02	325.55
	12/21/89		9.48	325.09
	01/18/90		8.73	325.84
	02/26/90		9.06	325.51
	06/04/90		8.64	325.93
	11/20/90		9.95	324.62
	02/11/91		9.85	324.72
	05/06/91		10.05	324.52
	08/28/91		10.34	324.23
	11/13/91		9.39	325.18
	02/25/92		7.18	327.39
	05/12/92		8.54	326.03
	08/12/92		8.97	325.60
	10/92		9.61	324.96
	02/10/93		7.20	327.37
MW-10	03/02/89	335.37	8.95	326.42
	04/04/89		7.89	327.48
	05/01/89		9.07	326.30
	06/01/89		8.86	326.51
	06/29/89		9.05	326.32
	08/09/89		9.70	326.67
	09/07/89		8.14	327.23
	10/10/89		9.21	326.16
	10/26/89		9.60	325.77
	12/20/89		9.42	325.95
	06/90	----------Well Destroyed----------		
MW-11	03/02/89	334.20	8.30	325.90
	04/04/89		7.52	325.68
	05/01/89		7.97	326.23
	11/20/90		NM	NM
	05/31/90		8 13	326.07
	06/28/89		8 30	325 90
	08/08/89		8.22	325.98
	09/07/89		8 32	325 88
	10/09/89		8 28	325 92
	10/24/89		8 38	325 82

Table 1 (continued)
Groundwater Elevation Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-11 (cont.)	12/20/89		8.48	325.72
	01/18/90		8.20	326.00
	02/26/90		7.86	326.34
	06/04/90		8.13	326.07
	11/20/90		8.83	325.37
	02/11/90		8.95	325.25
	05/06/91		7.71	326.49
	08/28/91		8.62	325.58
	11/15/91		8.99	325.21
	02/25/92		7.21	326.99
	05/12/92		8.26	325.94
	08/12/92		8.75	325.45
	11/10/92		9.47	324.73
	02/10/93		6.79	327.41
MW-12	03/02/89	332.53	6.94	325.59
	04/04/89		6.33	326.20
	05/01/89		6.62	325.91
	06/01/89		6.82	325.71
	06/29/89		7.00	325.53
	08/09/89		6.76	325.77
	09/07/89		6.81	325.72
	10/09/89		7.11	325.42
	10/24/89		7.60	324.93
	12/20/89		8.25	324.28
	01/18/90		8.23	324.30
	02/26/90		7.54	324.99
	06/04/90		7.96	324.57
	11/20/90		8.80	323.73
	02/12/90		7.85	324.68
	05/06/91		7.35	325.18
	08/28/91		7.79	324.74
	11/13/91		7.89	324.64
	02/25/92		6.14	326.39
	05/12/92		7.54	324.99
	08/12/92		9.83	322.70
	11/10/92		8.32	324.21
	02/10/93		6.75	325.78

Table 1 (continued)
Groundwater Elevation Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-13	05/06/91	335.64	8.37	327.27
	08/28/91		9.82	325.82
	11/13/91		10.19	325.45
	02/25/92		7.66	327.98
	05/12/92		9.16	326.48
	08/12/92		10.91	324.73
	11/10/92		10.69	324.95
	02/10/93		7.49	328.15
RW-1	12/09/89	336.19	10.73	325.46
	01/13/89		NM	NM
	02/10/89		10.91	325.28
	03/02/89		10.15	325.04
	04/05/89		9.34	326.85
	05/01/89		9.85	326.34
	06/01/89		9.96	326.23
	06/30/89		9.90	326.29
	08/09/89		9.80	326.39
	09/11/89		10.02	326.17
	10/10/89		9.88	326.31
	10/25/89		9.80	326.39
	12/21/89		10.25	325.94
	01/17/89		9.80	326.39
	02/23/90		9.60	326.59
	06/04/90		9.97	326.22
	11/20/90		10.50	325.69
	02/11/91		10.87	325.32
	02/25/92		----- Well Not Gauged -----	
	05/12/92		NM	NM

MSL = Mean sea level
TOC = Top of casing
NM = Not measured

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

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-1	05/09/88	440	120	50	NR	120
	08/26/88	200,000	4,400	260	300	450
	10/05/88	17,000	6,700	360	210	730
	11/22/88	8,000	3,900	830	250	340
	12/09/88	11,000	790	36	7.3	68
	01/13/89	8,800	3,800	110	330	90
	02/10/89	18,000	4,700	400	660	190
	03/02/89	14,000	6,100	770	320	440
	04/04/89	11,000	4,800	770	270	780
	05/01/89	11,000	2,800	880	410	780
	06/01/89	ND	ND	ND	ND	ND
	06/29/89	4,700	310	160	75	260
	08/09/89	12,000	1,300	620	830	680
	09/11/89	ND	ND	ND	ND	2.2
	10/10/89	8,700	1,100	310	180	590
	10/25/89	7,500	660	250	460	480
	12/20/89	6,200	270	110	260	220
	01/17/90	7,400	200	170	160	260
	02/23/90	1,500	130	13	30	24
	06/04/90	830	88	10	2.6	28
	11/20/90	NA	NA	NA	NA	NA
	02/12/91	1,500	180	39	82	110
	05/06/91	510	41	11	25	35
	08/28/91	450	41	16	24	34
	11/13/91	320	41	14	23	33
	02/25/92	240	24	9.2	14	20
	05/12/92	320	60	25	29	41
	08/12/92	230	26	16	20	25
	08/12/92(D)	220	25	16	19	24
	11/10/92	120	13	8.8	9	13
	02/10/93	80	3 3	2.9	2 4	5 1
MW-2	05/09/88	ND	ND	ND	NR	ND
	08/26/88	1,700	230	16	87	120
	10/05/88	200	20	2 3	8.3	12
	11/22/88	800	93	1 6	4 3	60
	12/09/88	270	45	3 6	7 2	14
	01/13/89	180	26	2 3	17	7

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

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-2 (cont.)	02/10/89	320	43	1.7	34	15
	03/02/89	230	24	0.9	9.2	18
	04/04/89	230	53	2.3	7.1	20
	05/01/89	ND	2.7	ND	ND	ND
	05/31/89	120	14	ND	3.9	7.6
	06/28/89	ND	4.1	ND	ND	ND
	08/08/89	88	3.9	ND	ND	ND
	09/08/89	ND	3.2	ND	ND	ND
	10/09/89	110	6.7	ND	ND	ND
	10/24/89	ND	2.5	ND	ND	1.9
	12/21/89	ND	7.1	ND	5	9.8
	01/17/90	ND	4.4	ND	1.6	1.4
	02/23/90	70	6.3	ND	2.7	2.5
	06/04/90	60	2.4	ND	0.8	ND
	11/20/90	60	5.6	ND	ND	ND
	02/12/91	130	14	ND	0.9	0.5
	05/06/91	60	1.5	ND	5	ND
	08/28/91	100	6.3	ND	1	1.1
	11/13/91	ND	11	ND	1.3	ND
	02/25/92	ND	3.8	ND	ND	ND
	05/12/92	ND	6.0	ND	ND	ND
	08/12/92	110	6.8	ND	1.0	ND
	11/10/92	56	4.5	ND	ND	ND
	02/10/93	81	4.8	0.6	1.4	1.9
MW-3	05/09/88	76	10	4.4	NR	15
	08/26/88	5,200	170	6	32	54
	10/05/88	260	100	2.7	5.8	7
	11/22/88	180	75	1.4	8.1	4
	12/09/88	160	5	5.9	ND	ND
	01/13/89	160	36	1.2	3	2
	02/10/89	300	83	ND	8.6	8
	03/02/89	570	160	1	17	9
	04/04/89	150	64	0 8	2.7	6
	05/01/89	130	48	1 2	3 4	2
	06/01/89	ND	ND	ND	ND	ND
	06/28/89	90	68	0 7	ND	5.1
	08/09/89	150	23	5 3	2 6	ND

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

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-3 (cont.)	09/11/89	ND	ND	ND	ND	ND
	10/10/89	80	6.4	0.72	ND	ND
	10/26/89	150	11	ND	1.6	ND
	12/21/89	ND	6.8	ND	ND	ND
	01/17/90	ND	4	ND	6.8	ND
	02/23/90	50	10	ND	1.2	0.9
	06/04/90	80	10	ND	1.4	ND
	11/20/90	100	26	0.7	1.2	1.9
	02/12/91	130	27	ND	ND	ND
	05/06/91	120	31	0.8	2.1	0.8
	08/28/91	340	87	1.1	6.5	3.8
	11/13/91	240	140	ND	3.1	0.9
	02/25/92	80	17	ND	ND	ND
	05/12/92	74	31	ND	2.6	ND
	08/12/92	160	24	0.5	2.9	ND
	11/10/92	130	27	ND	1.1	0.9
	11/10/92(D)	110	2.6	ND	1.1	0.7
	02/10/93	92	5.7	ND	ND	ND
	02/10/93(D)	80	5.2	ND	ND	ND
MW-4	05/09/88	290	76	33	NA	150
	08/26/88	210	640	41	110	160
	10/05/88	450	110	6.3	16	20
	11/22/88	500	110	4	20	27
	12/09/88	260	920	7.5	5.9	11
	01/13/89	990	200	6.5	46	14
	02/10/89	290	90	3.6	8.8	9
	03/02/89	630	210	6.2	34	7
	04/04/89	640	340	13	25	40
	05/01/89	100	65	2	3	4
	05/31/89	60	ND	ND	ND	ND
	06/28/89	110	62	1.3	ND	4.8
	08/09/89	160	110	2	6.4	ND
	09/08/89	94	45	0.5	3.8	ND
	10/10/89	90	30	1	1.9	ND
	10/26/89	ND	3.4	ND	ND	ND
	12/21/89	ND	35	1.1	3.6	1.6
	01/17/90	ND	4	ND	6.8	ND

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

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-4 (cont.)	02/23/90	ND	8	ND	1.1	0.7
	06/04/90	160	85	1.1	1.9	ND
	11/20/90	140	52	1	0.8	0.9
	02/12/91	130	48	ND	1.5	ND
	05/06/91	140	49	1.3	4.1	1.7
	08/28/91	90	13	ND	1	1.1
	11/13/91	ND	10	ND	ND	ND
	02/25/92	120	47	ND	0.5	0.5
	05/12/92	---------- Well Sampled Semi-Annually ----------				
	08/12/92	ND	3.5	ND	ND	ND
	11/10/92	---------- Well Sampled Semi-Annually ----------				
	02/11/93	190	59	3.2	3.6	3.1
MW-5	08/26/88	210	6	44	9	19
	10/05/88	7,500	2,700	ND	110	590
	11/22/88	150	21	26	3	2
	12/09/88	240	37	2.2	6.7	7.7
	01/13/89	80	1.6	ND	7.7	2
	02/10/89	60	ND	ND	ND	ND
	03/02/89	ND	ND	ND	ND	ND
	04/05/89	ND	ND	ND	ND	ND
	05/01/89	ND	1.3	ND	ND	ND
	06/01/89	ND	ND	ND	ND	ND
	06/29/89	ND	ND	ND	ND	ND
	08/09/89	89	8.5	1.8	1.5	2.2
	09/11/89	1,100	7.8	1.4	ND	6.3
	10/10/89	ND	ND	ND	ND	ND
	10/25/89	ND	1.4	ND	ND	1.6
	12/20/89	ND	ND	ND	ND	ND
	01/18/90	ND	ND	ND	ND	ND
	02/23/90	ND	ND	ND	0 6	ND
	06/04/90	ND	ND	ND	ND	ND
	11/20/90	ND	ND	ND	ND	1
	02/11/91	ND	ND	ND	ND	ND
	05/06/91	ND	ND	ND	ND	ND
	08/28/91	ND	ND	ND	ND	1
	11/13/91	ND	ND	ND	ND	ND
	02/25/92	ND	ND	ND	ND	ND

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

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-5 (cont.)	05/12/92	ND	ND	ND	ND	ND
	08/12/92	56	0.5	ND	ND	ND
	11/10/92	ND	ND	ND	ND	ND
	02/11/93	ND	ND	ND	ND	ND
MW-6	08/26/88	15,000	390	390	670	1,700
	10/05/88	2,700	130	38	960	220
	11/22/88	NA	NA	NA	NA	NA
	12/09/88	540	62	3	26	5
	01/13/89	980	160	22	120	29
	02/10/89	1,900	290	24	93	48
	03/02/89	1,400	160	20	130	33
	04/04/89	1,200	220	27	74	69
	05/01/89	790	120	11	25	17
	06/01/89	1,200	49	49	69	30
	06/29/89	940	130	15	69	35
	08/09/89	1,400	280	39	170	64
	09/11/89	ND	ND	ND	ND	ND
	10/10/89	1,000	85	11	12	16
	10/24/89	1,500	67	20	50	39
	12/20/89	ND	4.9	5.1	ND	ND
	01/18/90	ND	67	12	48	18
	02/23/90	1	150	16	47	30
	06/04/90	190	ND	ND	ND	0.6
	11/20/90	730	120	12	39	21
	02/12/91	550	65	10	33	16
	05/06/91	550	72	11	38	23
	08/28/91	580	82	7.6	28	20
	11/13/91	430	60	7.6	20	12
	02/25/92	400	52	6.6	18	11
	05/12/92	950	260	36	12	49
	08/12/92	660	90	15	55	18
	11/10/92	350	23	3 7	15	6 8
	02/11/93	660	42	11	29	17
MW-7	08/26/88	ND	0 8	ND	ND	ND
	10/05/88	ND	ND	ND	ND	ND
	11/22/88	700	41	9	1	20

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

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-7	12/09/88	ND	ND	ND	ND	0.6
(cont.)	01/13/89	ND	ND	ND	ND	ND
	02/10/89	ND	ND	ND	ND	ND
	03/02/89	ND	ND	ND	ND	ND
	04/05/89	ND	ND	ND	ND	ND
	05/01/89	ND	ND	ND	ND	ND
	05/31/89	ND	ND	ND	ND	ND
	06/28/89	ND	ND	ND	ND	ND
	08/09/89	ND	ND	ND	ND	ND
	09/07/89	ND	ND	ND	ND	ND
	10/10/89	ND	ND	ND	ND	ND
	10/24/89	ND	ND	ND	ND	ND
	12/20/89	ND	ND	ND	ND	ND
	01/18/90	ND	ND	ND	ND	ND
	02/23/90	ND	ND	ND	ND	ND
	06/04/90	ND	ND	ND	ND	ND
	11/20/90	ND	ND	ND	ND	ND
	02/11/91	ND	ND	ND	ND	ND
	05/06/91	ND	ND	ND	ND	ND
	08/28/91	ND	ND	ND	ND	ND
	11/13/91	ND	ND	ND	ND	ND
	02/25/92	ND	ND	ND	ND	ND
	05/12/92	---------- Well Sampled Semi-Annually ----------				
	08/12/92	52	0.8	0.9	ND	ND
	11/10/92	---------- Well Sampled Semi-Annually ----------				
	02/11/93	ND	ND	ND	ND	ND
MW-8	03/01/89	ND	ND	ND	ND	ND
	04/04/89	ND	ND	ND	ND	ND
	05/01/89	ND	ND	ND	ND	ND
	05/31/89	ND	ND	ND	ND	ND
	06/28/89	ND	ND	ND	ND	ND
	08/08/89	ND	ND	ND	ND	ND
	09/07/89	ND	ND	ND	ND	ND
	10/10/89	ND	ND	ND	ND	ND
	10/26/89	ND	ND	ND	ND	ND
	12/21/89	ND	ND	ND	ND	ND
	01/18/90	ND	ND	ND	ND	ND

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

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-8 (cont.)	02/26/90	ND	ND	ND	ND	ND
	06/04/90	ND	ND	ND	ND	ND
	11/20/90	ND	ND	ND	ND	ND
	02/11/91	ND	ND	ND	ND	ND
	05/06/91	ND	ND	ND	ND	ND
	08/28/91	ND	ND	ND	ND	ND
	11/13/91	ND	ND	ND	ND	ND
	02/25/92	ND	ND	ND	ND	ND
	05/12/92	---------- Well Sampled Semi-Annually ----------				
	08/12/92	ND	ND	ND	ND	ND
	11/10/92	---------- Well Sampled Semi-Annually ----------				
	02/10/93	ND	ND	ND	ND	ND
MW-9	03/1/89	ND	ND	ND	ND	ND
	04/04/89	ND	ND	ND	ND	ND
	05/01/89	ND	ND	ND	ND	ND
	05/31/89	ND	ND	ND	ND	ND
	06/28/89	ND	ND	ND	ND	ND
	08/08/89	ND	ND	ND	ND	ND
	09/07/89	ND	ND	ND	ND	ND
	10/09/89	ND	ND	ND	ND	ND
	10/23/89	ND	ND	ND	ND	ND
	12/21/89	ND	ND	ND	ND	ND
	01/18/90	ND	ND	ND	ND	ND
	02/26/90	ND	ND	ND	ND	ND
	06/04/90	ND	ND	ND	ND	ND
	11/20/90	ND	ND	ND	ND	ND
	02/11/91	ND	ND	ND	ND	ND
	05/06/91	ND	ND	ND	ND	ND
	08/28/91	ND	ND	ND	ND	ND
	11/13/91	ND	ND	ND	ND	ND
	02/25/92	ND	ND	ND	ND	ND
	05/12/92	---------- Well Sampled Semi-Annually ----------				
	08/12/92	ND	ND	ND	ND	ND
	11/10/92	---------- Well Sampled Semi-Annually ----------				
	02/10/93	ND	ND	ND	ND	ND

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

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-10	03/02/89	1,000	140	36	ND	77
	04/04/89	3,300	760	240	46	630
	05/01/89	680	99	24	8.1	32
	06/01/89	1,400	120	39	ND	45
	06/29/89	1,300	51	1.4	6.1	91
	08/09/89	860	310	26	45	82
	09/07/89	390	55	2.9	4.0	18
	10/10/89	460	85	7.6	10	45
	10/26/89	270	20	1.4	3.5	9.3
	12/20/89	ND	5.7	ND	ND	ND
	01/18/90	NA	NA	NA	NA	NA
	06/90	----------	----------	Well Destroyed	----------	----------
MW-11	03/02/89	ND	ND	ND	ND	ND
	04/04/89	ND	ND	ND	ND	ND
	05/01/89	ND	ND	ND	ND	ND
	11/20/90	ND	ND	ND	ND	ND
	05/31/89	ND	ND	ND	ND	ND
	06/28/89	ND	ND	ND	ND	ND
	08/08/89	ND	ND	ND	ND	ND
	09/07/89	ND	ND	ND	ND	ND
	10/09/89	ND	ND	ND	ND	ND
	10/24/89	ND	ND	ND	ND	ND
	12/20/89	ND	ND	ND	ND	ND
	01/18/90	ND	ND	ND	ND	ND
	02/26/90	ND	ND	ND	ND	ND
	06/04/90	ND	ND	ND	ND	ND
	11/20/90	ND	ND	ND	ND	ND
	02/11/91	ND	ND	ND	ND	ND
	05/06/91	ND	ND	ND	ND	ND
	08/28/91	ND	ND	ND	ND	1
	11/15/91	ND	ND	ND	ND	ND
	02/25/92	ND	ND	ND	ND	ND
	05/12/92	----------	----------	Well Sampled Semi-Annually	----------	----------
	08/12/92	ND	ND	ND	ND	ND
	11/10/92	----------	----------	Well Sampled Semi-Annually	----------	----------
	02/11/93	61*	ND	ND	ND	ND

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

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-12	03/02/89	ND	ND	ND	ND	ND
	04/04/89	ND	ND	ND	ND	ND
	05/01/89	ND	ND	ND	ND	ND
	06/01/89	ND	ND	ND	ND	ND
	06/29/89	ND	ND	ND	ND	ND
	08/09/89	ND	ND	ND	ND	ND
	09/07/89	ND	ND	ND	ND	ND
	10/09/89	ND	ND	ND	ND	ND
	10/24/89	ND	ND	ND	ND	ND
	12/20/89	ND	ND	ND	ND	ND
	01/18/90	ND	ND	ND	ND	ND
	02/26/90	ND	ND	ND	ND	ND
	06/04/90	ND	ND	ND	ND	ND
	11/20/90	ND	ND	ND	ND	ND
	02/12/91	ND	ND	ND	ND	ND
	05/06/91	ND	ND	ND	ND	ND
	08/28/91	ND	ND	ND	ND	1
	11/13/91	ND	ND	ND	ND	ND
	02/25/92	ND	ND	ND	ND	ND
	05/12/92	---------- Well Removed from Sampling Program ----------				
MW-13	05/06/91	1,100	430	30	41	130
	08/28/91	1,000	350	6.4	44	43
	11/13/91	680	320	5.6	38	17
	02/25/92	780	260	3.5	26	15
	05/12/92	660	210	3.5	26	5.8
	08/12/92	400	140	9.6	21	23
	11/10/92	60	220	2.9	23	11
	02/11/93	970	340	11	29	32
RW-1	12/09/89	6,800	740	5	11	37
	01/13/89	10,000	3,200	27	60	ND
	02/10/89	6,000	2,800	ND	ND	ND
	03/02/89	3 900	2,400	ND	ND	ND
	04/05/89	1,700	1,000	ND	9	ND
	05/01/89	900	390	5	10	ND
	06/01/89	1,100	1 4	3 3	ND	13
	6/30/89	1,400	ND	ND	ND	ND

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

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
RW-1 (cont.)	08/09/89	7,500	1,700	210	280	300
	09/11/89	97	1.7	2.1	2.3	14
	10/10/89	1,400	48	4.5	ND	3
	10/25/89	820	51	1.2	25	3
	12/21/89	490	16	1	8.5	19
	01/17/90	ND	27	1.7	14	1.6
	02/23/90	420	42	1.8	13	2.7
	06/04/90	180	23	0.7	5.3	1.2
	11/20/90	1,900	170	52	29	38
	02/11/91	---------- Well Not Sampled ----------				

ppb = Parts per billion
ND = Not detected
NA = Not analyzed
NR = Not requested
NS = Not sampled
(D) = Duplicate sample
* Laboratory noted concentration is not indicative of gasoline.
See certified analytical results for detection limits.

Table 3
Field Purging and Sampling Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Sample Date: February 10 and 11, 1993

Depth of Well	Depth to Water (feet)	Depth to Liquid (feet)	pH	Temperature (°F)	Conductivity	Turbidity (NTU)	Purge Volumes (gallons)	Time of Purging	Time of Sampling
Well MW-1									
25.3	7.24	-	8.7 8.1 8.0	64.2 64.8 64.8	1400 1700 1800	16.3 8.1 6.3	12 23.5 35.5	14:01 14:13 14:25	14:30
Purge Method: Middleburg					Sample Method: Bailer				
Well MW-2									
24.6	9.28	-	7.3 7.5 7.6	67.4 67.6 67.6	8100 8200 8300	NA NA NA	10 20 30	14:52 15:02 15:12	15:20
Purge Method: Middleburg					Sample Method: Bailer				
Well MW-3									
24.4	8.82	-	8.5 8.3 8.1	66.6 66.8 67	2500 2400 2400	23 16.2 8.9	10.5 20.5 30.5	15:57 16:08 16:18	16:25
Purge Method: Middleburg					Sample Method: Bailer				
Well MW-4									
24.9	9.4	-	7.7 7.6 7.5	66.2 66.2 66.4	5300 5300 5300	10.1 8.6 4.3	10.5 20.5 30.5	12:20 12:29 12:37	12:45
Purge Method: Middleburg					Sample Method: Bailer				
Well MW-5									
45	7 97	-	8.3 7.9	65 65	4300 4300	23 17 6	25 30	13 15 15:05	15 15 (02/11/93)
Purge Method. Middleburg Well dry at 30 gallons					Sample Method Bailer				

Table 3 (continued)
Field Purging and Sampling Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Sample Date: February 10 and 11, 1993

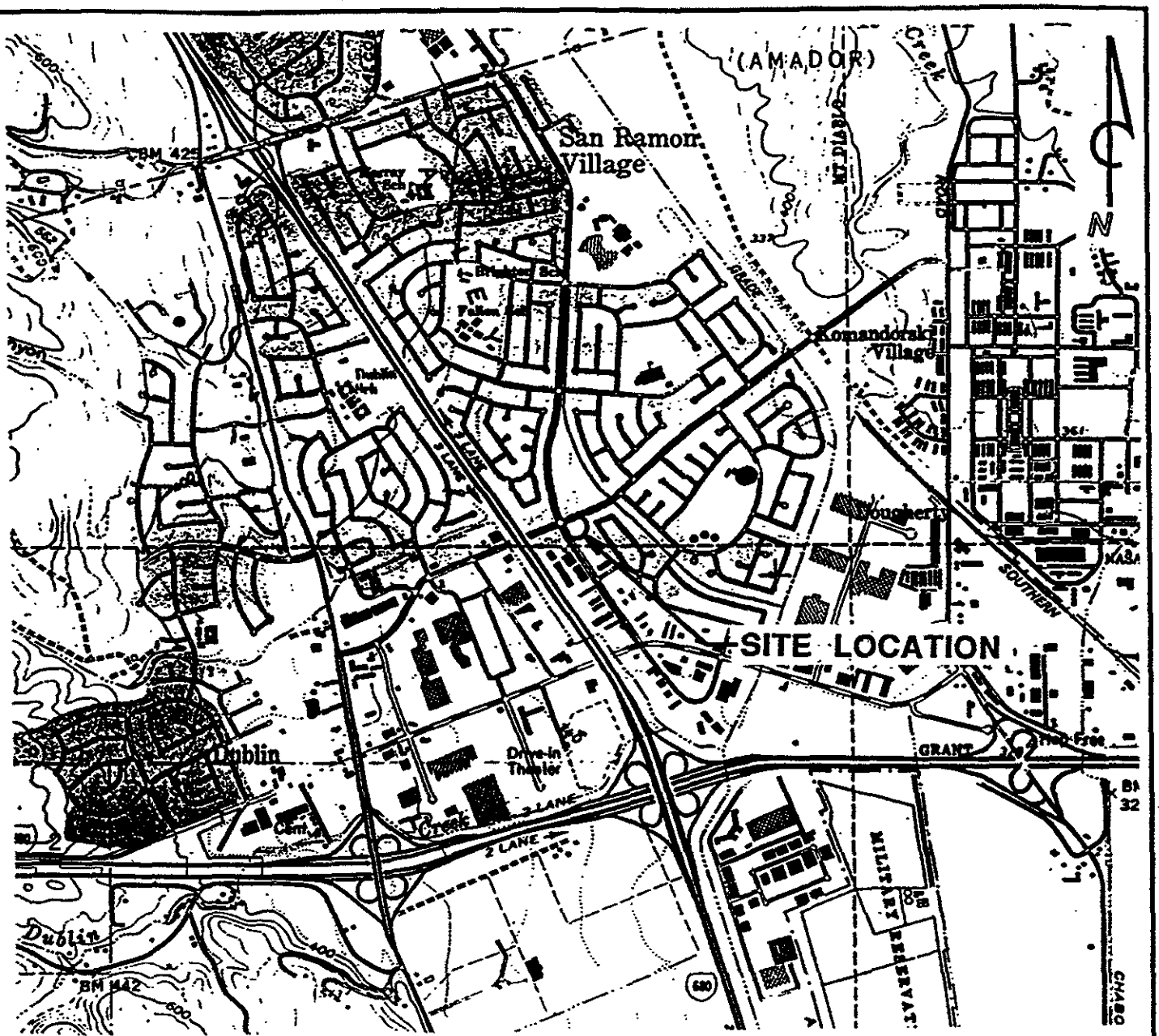
Depth of Well	Depth to Water (feet)	Depth to Liquid (feet)	pH	Temperature (°F)	Conductivity	Turbidity (NTU)	Purge Volumes (gallons)	Time of Purging	Time of Sampling
Well MW-6									
23.06	7.65	-	8.1 7.9 7.8	69 68.6 68.2	3200 3300 3300	12.1 8.4 4.3	10.5 20.5 30.5	14:28 14:38 14:48	14:55
Purge Method: Middleburg					Sample Method: Bailer				
Well MW-7									
16.72	6.06	-	8.0 7.7 7.7	63 64.8 64.2	2800 3400 3800	29 68 123	7 14 21	11:13 11:25 11:39	11:45
Purge Method: Middleburg					Sample Method: Bailer				
Well MW-8									
16.36	7.35	-	7.4 7.1 7.2	67.6 68.6 69	6700 6300 6100	16.2 12.1 10.3	6 12 18	11:25 11:32 11:39	11:45
Purge Method: Middleburg					Sample Method: Bailer				
Well MW-9									
18.04	7.20	-	7.4 7.3 7.3	68.2 68.4 68.6	6700 6700 6700	21 16.8 11.3	7.5 14.5 21.5	12:05 12:12 12:19	12:25
Purge Method: Middleburg					Sample Method: Bailer				
Well MW-11									
16.61	-	6 79	7.1 6.8 6.8	67.2 66 8 67.0	>200 >100 >200	23 14 2 8 3	6 5 13 19 5	10.24 10:30 10.36	10:45
Purge Method: Middleburg					Sample Method Bailer				

Table 3 (continued)
Field Purging and Sampling Data

Former Shell Service Station
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

Sample Date: February 10 and 11, 1993

Depth of Well	Depth to Water (feet)	Depth to Liquid (feet)	pH	Temperature (°F)	Conductivity	Turbidity (NTU)	Purge Volumes (gallons)	Time of Purging	Time of Sampling
Well MW-13									
17.22	7.49	-	8.1 7.9 7.9	63.8 64.6 64.8	3000 2900 2600	17.2 6.3 4.2	6.5 13 19	13:31 13:39 13:47	 13:55
Purge Method: Middleburg					Sample Method: Bailer				
NTU = Nephelometric turbidity unit									



QUADRANGLE LOCATION

REFERENCES:
USGS 7.5 MIN. TOPOGRAPHIC MAP
TITLED: DUBLIN, CALIFORNIA
DATED: 1961 REVISED: 1980

SCALE

2000 0 2000 FEET

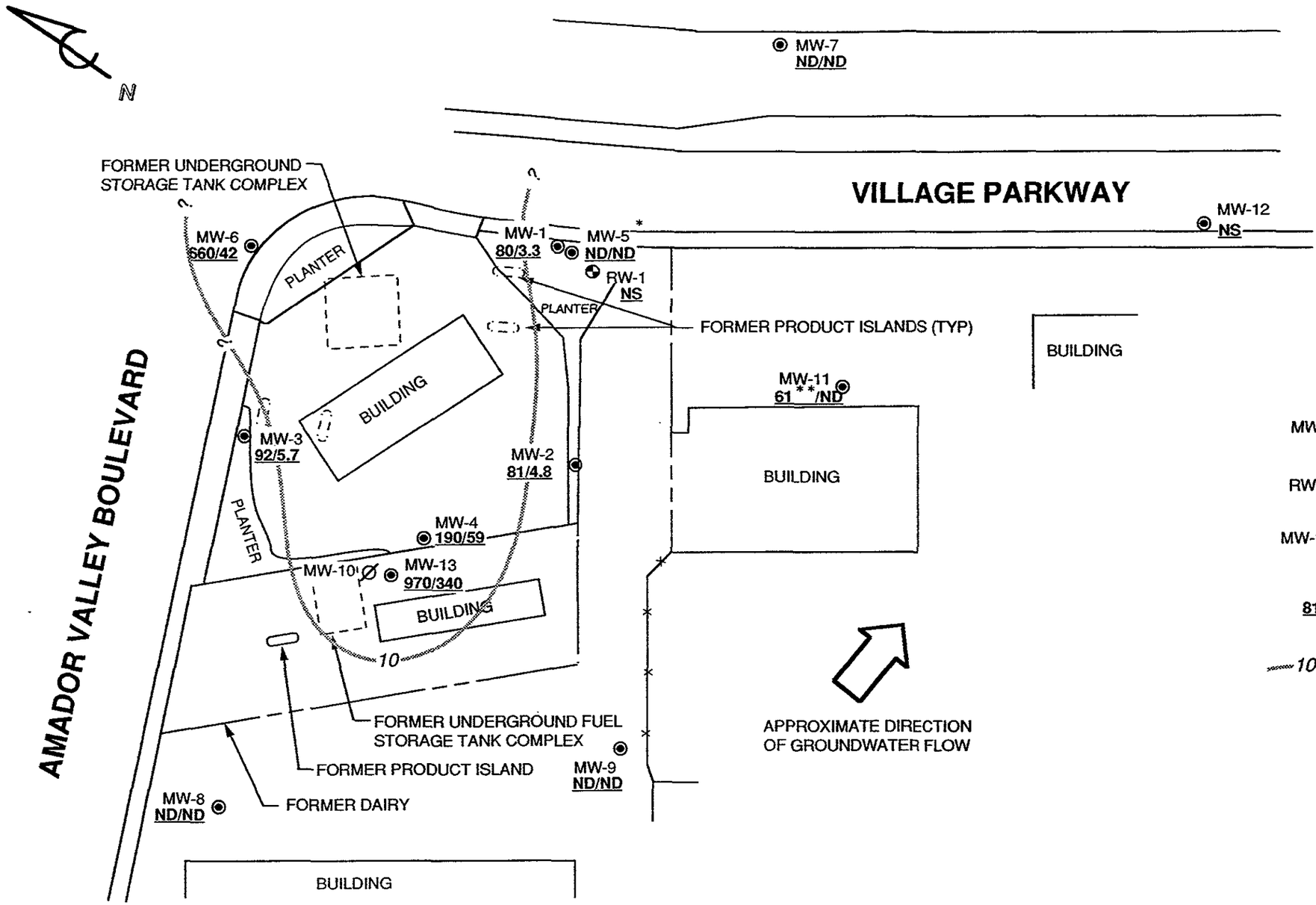
PACIFIC ENVIRONMENTAL GROUP, INC.

FORMER SHELL SERVICE STATION
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

SITE LOCATION MAP

FIGURE: 1

PROJECT: 305-87.01



LEGEND

MW-1 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

RW-1 ◓ GROUNDWATER EXTRACTION WELL LOCATION AND DESIGNATION

MW-10 Ø DESTROYED GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

81/4.8 TPH-g/BENZENE CONCENTRATION IN GROUNDWATER, IN PARTS PER BILLION (ppb), 2-11-93 and 2-12-93

10 BENZENE ISOCONCENTRATION CONTOUR IN ppb, 2-11-93 and 2-12-93

ND NOT DETECTED

NS NOT SAMPLED

* NOT USED IN CONTOURING

** NOT INDICATIVE OF GASOLINE

PACIFIC ENVIRONMENTAL GROUP, INC

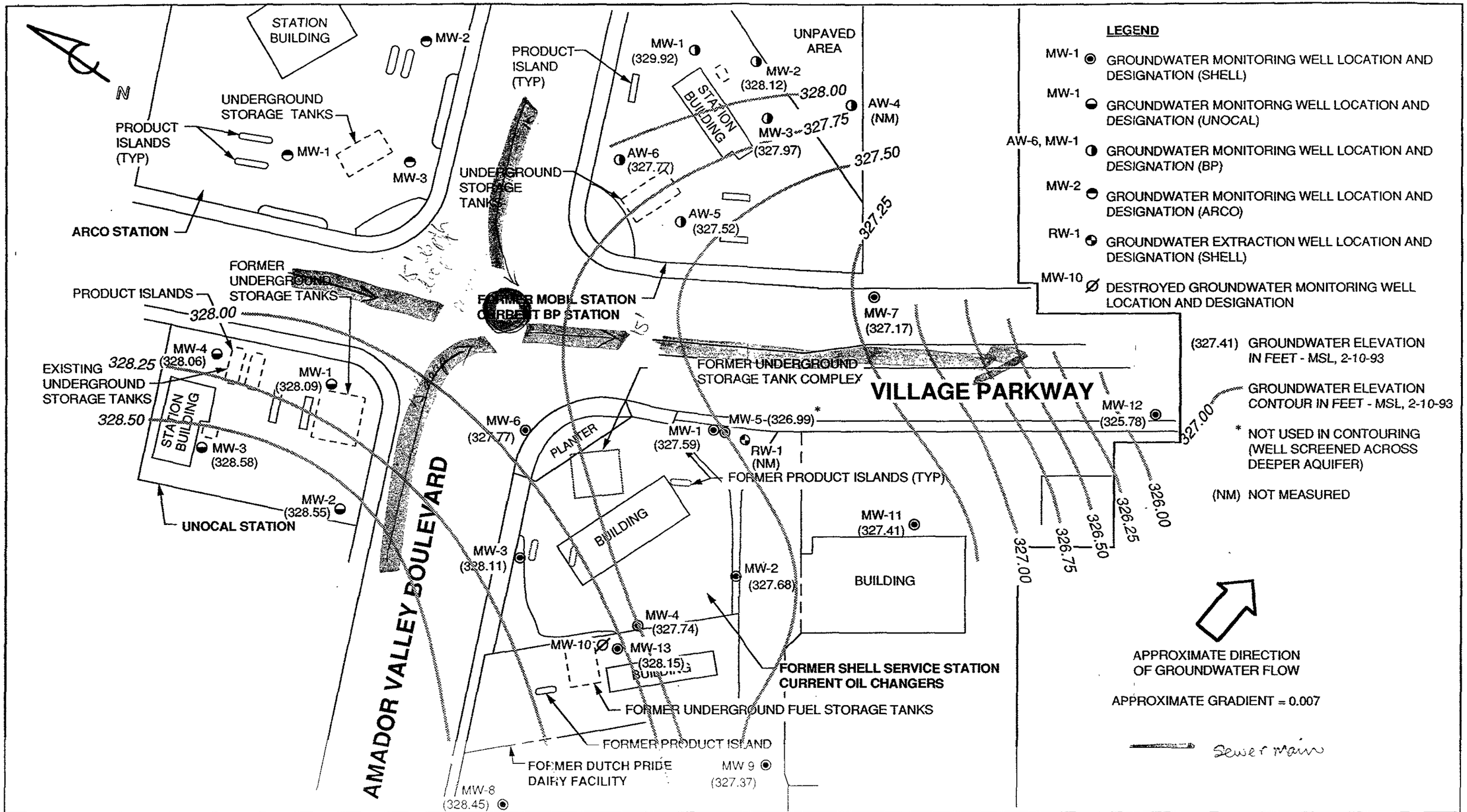
SCALE
0 50 100 FEET

FORMER SHELL SERVICE STATION
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

TPH-g/BENZENE CONCENTRATION MAP

FIGURE.
3
PROJECT
305-87 01

3/23/93



PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 60 120 FEET

FORMER SHELL SERVICE STATION
7194 Amador Valley Boulevard at Village Parkway
Dublin, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE 2
PROJECT 305-87 01

3/23/93

ATTACHMENT A

GROUNDWATER SAMPLING REPORT

BLAINE
TECH SERVICES INC.

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

February 24, 1993

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

Attn: Daniel T. Kirk

SITE:
Shell WIC # 204-2217-0105
7194 Amador Valley Blvd.
Dublin, California

QUARTER:
1st quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930210-W-1

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

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

TABLE OF WELL GAUGING DATA

WELL I.D.	WELL DIAMETER (inches)	DATA COLLECTION DATE	MEASUREMENTS REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	4	02-10-93	TOP OF PIPE	--	NONE	--	--	7.24	25.30
MW-2	4	02-10-93	TOP OF PIPE	--	NONE	--	--	9.28	24.60
MW-3 *	4	02-10-93	TOP OF PIPE	ODOR	NONE	--	--	8.82	24.40
MW-4	4	02-10-93	TOP OF PIPE	--	NONE	--	--	9.40	24.90
MW-5	4	02-10-93	TOP OF PIPE	--	NONE	--	--	7.97	45.0
MW-6	4	02-10-93	TOP OF PIPE	ODOR	NONE	--	--	7.65	23.06
MW-7	4	02-10-93	TOP OF PIPE	--	NONE	--	--	6.06	16.72
MW-8	4	02-10-93	TOP OF PIPE	--	NONE	--	--	7.35	16.36
MW-9	4	02-10-93	TOP OF PIPE	--	NONE	--	--	7.20	18.04

* Sample DUP was a duplicate sample taken from MW-3.

TABLE OF WELL GAUGING DATA

WELL I.D.	WELL DIAMETER (inches)	DATA COLLECTION DATE	MEASUREMENTS REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-11	4	02-10-93	TOP OF PIPE	--	NONE	--	--	6.79	16.61
MW-12	4	02-10-93	TOP OF PIPE	--	NONE	--	--	6.75	17.33
MW-13	4	02-10-93	TOP OF PIPE	ODOR	NONE	--	--	7.49	17.22

STANDARD PROCEDURES

Evacuation

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

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

Decontamination

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

Free Product Skimmer

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

Sample Containers

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

Sampling

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

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

Sample Designations

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

Chain of Custody

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

Hazardous Materials Testing Laboratory

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

Objective Information Collection

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

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

Reportage

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

Please call if we can be of any further assistance.

James Allen for:
Richard C. Blaine

RCB/kkl

attachments: chain of custody
certified analytical report

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

10:15

9302179 (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: ____________

Date: 2/10/93
Page 1 of 2

Site Address: 7194 Amador Vly Blvd Dublin

WIC#: 204-2217-0105

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

Consultant Name & Address: Blaine Tech Serv. 985 Timothy San Jose CA

Consultant Contact: Glen Bennett | Phone No.: 408 995-5535 | Fax #:

Comments:

Sampled by: [signature]

Printed Name: DON WERTZ

LAB: Anametrix

CHECK ONE (1) BOX ONLY	CT/DT
Quarterly Monitoring	☒ 5461
Site Investigation	☐ 5441
Soil Classify/Disposal	☐ 5442
Water Classify/Disposal	☐ 5443
Soil/Air Rem. or Sys. O & M	☐ 5452
Water Rem. or Sys. O & M	☐ 5453
Other	☐

TURN AROUND TIME	
24 hours	☐
48 hours	☐
16 days	☒ (Normal)
Other	☐ ______

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

Analysis Required

	Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
①	MW-8	2/10			X		3						X				40 ml	HCl	N	Groundwater	
②	MW-9	↓			X		3						X				↓	↓	↓	↓	
③	MW-1				X		3						X								
④	MW-2				X		3						X								
⑤	MW-3				X		3						X								
⑥	DUP				X		3						X								
⑦	Trip Blank				X		2						X							Trip Blank	
⑧	MW-11	2/11			X		3						X							Groundwater	

This is to added to Receiving 2-12-93 per Bailey SW

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
[signature]		Date: 2-12-93 Time: 1605	Simon Hecpo [signature]	Simon Hecpo	Date: 2-12-93 Time: 1605
Simon Hecpo [signature]	Simon Hecpo	Date: 2-12-93 Time: 18:25	[signature]	Maria Barajas	Date: 2/12/93 Time: 18:25
		Date: Time:			Date: Time:

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

9302 179

SHELL OIL COMPANY (18)
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: ____________

Date: 2/11/93
Page 2 of 2

Site Address: 7194 Amador Vly Blvd Dublin
WIC#: 204-2217-0105
Shell Engineer: Dan Kirk
Phone No.:
Fax #:
Consultant Name & Address: Blaine Tech Serv. 985 Timothy San Jose
Consultant Contact: Glen Bennett
Phone No.: 408 995-5535
Fax #:
Comments:
Sampled by: Don Weltz (signature)
Printed Name: DON WELTZ

LAB: Anametrix

Analysis Required

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring ☒	5461	24 hours ☐
Site Investigation ☐	5441	48 hours ☐
Soil Classify/Disposal ☐	5442	16 days ☒ (Normal)
Water Classify/Disposal ☐	5443	Other ☐
Soil/Air Rem. or Sys. O & M ☐	5452	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M ☐	5453	
Other ☐		

	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			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(9)	MW-7	2/11			X		3						X				40 ml	HCl	N	Groundwater	
(10)	MW-4	↓			X		3						X				↓	↓	↓	↓	
(11)	MW-13	↓			X		3						X				↓	↓	↓	↓	
(12)	MW-6	↓			X		3						X				↓	↓	↓	↓	
(13)	MW-5	↓			X		3						X				↓	↓	↓	↓	

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
Don Weltz (signature)		Date: 2-12-93 Time: 1605	Simon Hoeque (signature)	Simon Hoeque	Date: 2-12-93 Time: 1605
Simon Hoeque (signature)	Simon Hoeque	Date: 2-12-93 Time: 16:25	Maria B. (signature)	Maria Barajas	Date: 2/12/93 Time: 16:25
		Date: Time:			Date: Time:

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

ANAMETRIX INC
Environmental & Analytical Chemistry

Part of INCHCAPE ENVIRONMENTAL

REPORT

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

Workorder # : 9302179
Date Received : 02/12/93
Project ID : 204-2217-0105
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9302179- 1	MW-8
9302179- 2	MW-9
9302179- 3	MW-1
9302179- 4	MW-2
9302179- 5	MW-3
9302179- 6	DUP
9302179- 7	T. BLANK
9302179- 8	MW-11
9302179- 9	MW-7
9302179-10	MW-4
9302179-11	MW-13
9302179-12	MW-6
9302179-13	MW-5

This report consists of 7 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

03-01-93
Date

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

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

Workorder # : 9302179
Date Received : 02/12/93
Project ID : 204-2217-0105
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9302179- 1	MW-8	WATER	02/10/93	TPHg/BTEX
9302179- 2	MW-9	WATER	02/10/93	TPHg/BTEX
9302179- 3	MW-1	WATER	02/10/93	TPHg/BTEX
9302179- 4	MW-2	WATER	02/10/93	TPHg/BTEX
9302179- 5	MW-3	WATER	02/10/93	TPHg/BTEX
9302179- 6	DUP	WATER	02/10/93	TPHg/BTEX
9302179- 7	T. BLANK	WATER	02/10/93	TPHg/BTEX
9302179- 8	MW-11	WATER	02/11/93	TPHg/BTEX
9302179- 9	MW-7	WATER	02/11/93	TPHg/BTEX
9302179-10	MW-4	WATER	02/11/93	TPHg/BTEX
9302179-11	MW-13	WATER	02/11/93	TPHg/BTEX
9302179-12	MW-6	WATER	02/11/93	TPHg/BTEX
9302179-13	MW-5	WATER	02/11/93	TPHg/BTEX

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

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

Workorder # : 9302179
Date Received : 02/12/93
Project ID : 204-2217-0105
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as gasoline for sample MW-11 is primarily due to the presence of a discrete hydrocarbon peak not indicative of gasoline.

Cheryl Bateman 3/1/93
Department Supervisor Date

Charlotte Bunch 3-1-93
Chemist Date

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

Anametrix W.O.: 9302179
Matrix : WATER
Date Sampled : 02/10/93

Project Number : 204-2217-0105
Date Released : 03/01/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-8 -01	Sample I.D.# MW-9 -02	Sample I.D.# MW-1 -03	Sample I.D.# MW-2 -04	Sample I.D.# MW-3 -05
Benzene	0.5	ND	ND	3.3	4.8	5.7
Toluene	0.5	ND	ND	2.9	0.6	ND
Ethylbenzene	0.5	ND	ND	2.4	1.4	ND
Total Xylenes	0.5	ND	ND	5.1	1.9	ND
TPH as Gasoline	50	ND	ND	80	81	92
% Surrogate Recovery		106%	96%	110%	93%	124%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		02/17/93	02/18/93	02/18/93	02/17/93	02/18/93
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.

Charleston Burch 3.1.93
Analyst Date

Cheryl Balmer 3/1/93
Supervisor Date

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

Anametrix W.O.: 9302179
Matrix : WATER
Date Sampled : 02/10 & 11/93

Project Number : 204-2217-0105
Date Released : 03/01/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# DUP -06	Sample I.D.# T. BLANK -07	Sample I.D.# MW-11 -08	Sample I.D.# MW-7 -09	Sample I.D.# MW-4 -10
Benzene	0.5	5.2	ND	ND	ND	59
Toluene	0.5	ND	ND	ND	ND	3.2
Ethylbenzene	0.5	ND	ND	ND	ND	3.6
Total Xylenes	0.5	ND	ND	ND	ND	3.1
TPH as Gasoline	50	80	ND	61	ND	190
% Surrogate Recovery		123%	100%	116%	68%	97%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		02/18/93	02/17/93	02/17/93	02/18/93	02/18/93
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.

Charleston Brock 2.1 93
Analyst Date

Supervisor 3/1/93
Supervisor Date

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

Anametrix W.O.: 9302179
Matrix : WATER
Date Sampled : 02/11/93

Project Number : 204-2217-0105
Date Released : 03/01/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-13 -11	Sample I.D.# MW-6 -12	Sample I.D.# MW-5 -13	Sample I.D.# BF1701E2 BLANK	Sample I.D.# BF1801E2 BLANK
Benzene	0.5	340	42	ND	ND	ND
Toluene	0.5	11	11	ND	ND	ND
Ethylbenzene	0.5	29	29	ND	ND	ND
Total Xylenes	0.5	32	17	ND	ND	ND
TPH as Gasoline	50	970	660	ND	ND	ND
% Surrogate Recovery		87%	118%	84%	114%	102%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		02/18/93	02/18/93	02/18/93	02/17/93	02/18/93
RLMF		5	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.

Charlotte Smith 3-1-93
Analyst Date

Cheryl Balmer 3/1/93
Supervisor Date

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

Sample I.D.	: 204-2217-0105 MW-1	Anametrix I.D.	: 9302179-03
Matrix	: WATER	Analyst	: @mb
Date Sampled	: 02/010/93	Supervisor	: cb
Date Analyzed	: 02/17/93	Date Released	: 03/01/93

COMPOUND	SPIKE AMT (ug/L)	SAMPLE CONC (ug/L)	MS AMT (ug/L)	% REC MS	MD AMT (ug/L)	% REC MD	RPD	% REC LIMITS
BENZENE	20.0	3.3	22.6	97%	22.8	98%	1%	45-139
TOLUENE	20.0	2.9	22.0	96%	22.3	97%	1%	51-138
ETHYLBENZENE	20.0	2.4	21.4	95%	21.8	97%	2%	48-146
TOTAL-XYLENES	20.0	5.1	23.2	91%	22.7	88%	-2%	50-139
p-BFB				61%		83%		61-139

* Quality control limit established by Anametrix, Inc.

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

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: LCSW0217
Matrix	: WATER	Analyst	: CMB
Date Sampled	: N/A	Supervisor	: CB
Date Analyzed	: 02/17/93	Date Released	: 03/01/93
		Instrument ID	: HP4

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	20.5	102%	52-133
Toluene	20.0	21.0	105%	57-136
Ethylbenzene	20.0	20.9	104%	56-139
TOTAL Xylenes	20.0	20.2	101%	56-141
P-BFB			69%	61-139

* Limits established by Anametrix, Inc.