



PACIFIC
ENVIRONMENTAL
GROUP INC.

ST 117 3673 SH

January 25, 1996
Project 305-085.2C

Mr. R. Jeff Granberry
Shell Oil Products Company
P.O. Box 4023
Concord, California 94524

Re: Quarterly Report - Fourth Quarter 1995
Shell Service Station
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California
WIC No 204-5508-0703

Dear Mr. Granberry:

The following presents the results of fourth quarter 1995 monitoring for the site referenced above. This letter has been prepared for Shell Oil Products Company by Pacific Environmental Group, Inc. (PACIFIC).

FINDINGS

Groundwater monitoring wells were gauged and sampled by Blaine Tech Services, Inc. (Blaine) at the direction of PACIFIC on December 19, 1995. Groundwater elevation contours for the sampling date are shown on Figure 1. Table 1 presents groundwater elevation data.

All wells were analyzed for total purgeable petroleum hydrocarbons (TPPH), benzene, toluene, ethylbenzene, and xylenes. Groundwater analytical data are presented in Table 2. TPPH and benzene concentrations for the December 1995 sampling event are shown on Figure 2. Blaine's groundwater sampling report, which includes field data and the certified analytical report, is presented as Attachment A.

RECEIVED
JAN 29 1996
PACIFIC ENVIRONMENTAL GROUP

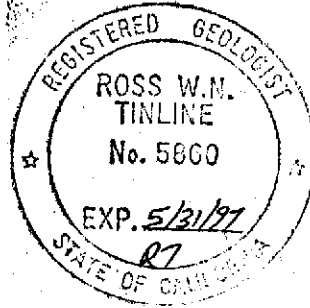
If you have any questions regarding the contents of this letter, please call.

Sincerely,

Pacific Environmental Group, Inc.



Ross W.N. Tinline
Project Geologist
RG 5860



Attachments: Table 1 - Groundwater Elevation Data
Table 2 - Groundwater Analytical Data -
Total Petroleum Hydrocarbons
(TPPH and BTEX Compounds)
Figure 1 - Groundwater Elevation Contour Map
Figure 2 - TPPH/Benzene Concentration Map
Attachment A - Groundwater Sampling Report

cc: Ms. Lisa McCann, Regional Water Quality Control Board - San Francisco
Bay Region
Mr. Craig Mayfield, Alameda County Flood Control and Water
Conservation District
Mr. Gil Wistar, Alameda County Health Department
Mr. Tom Fojut, Weiss Associates

Table 1
Groundwater Elevation Data

Shell Service Station
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-1	07/14/88	73.89	13.30	60.59
	10/04/88		13.65	60.24
	11/10/88		13.55	60.34
	12/09/88		13.22	60.67
	01/10/89		12.86	61.03
	01/20/89		12.91	60.98
	02/06/89		12.94	60.95
	03/10/89		12.59	61.30
	06/06/89		14.05	59.84
	09/07/89		14.92	58.97
	12/18/89		14.88	59.01
	03/08/90		14.08	59.81
	06/07/90		13.89	60.00
	09/05/90		14.83	59.06
	12/03/90		15.05	58.84
	03/01/91		14.34	59.55
	06/03/91		14.16	59.73
	09/04/91		14.60	59.29
	03/13/92		13.40	60.49
	06/03/92		13.76	60.13
	08/19/92		14.57	59.32
	11/16/92		14.78	59.11
	02/18/93		12.14	61.75
	06/01/93		13.30	60.59
	08/30/93		14.32	59.57
	12/13/93		14.06	59.83
	03/03/94		13.12	60.77
06/06/94	14.20	59.69		
09/12/94	15.72	58.17		
12/15/94	12.98	60.91		
03/13/95	11.74	62.15		
06/26/95	13.00	60.89		
09/12/95	14.14	59.75		
12/19/95	13.52	60.37		
MW-2	07/14/88	75.24	15.18	60.06
	10/04/88		15.30	59.94
	11/10/88		15.17	60.07
	12/09/88		14.82	60.42
	01/20/89		14.54	60.70
	02/06/89		14.59	60.65
	03/10/89		14.88	60.36
	06/06/89		15.30	59.94
	09/07/89		16.76	58.48
	12/18/89		16.65	58.59
	03/08/90		15.92	59.32
	06/07/90		16.10	59.14
09/05/90	16.61	58.63		

Table 1 (continued)
Groundwater Elevation Data

Shell Service Station
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth To Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-2 (cont.)	12/03/90		17.06	58.18
	03/01/91		16.62	58.62
	06/03/91		16.65	58.59
	09/04/91		16.57	58.67
	03/13/92		14.66	60.58
	06/03/92		15.90	59.34
	08/19/92		16.72	58.52
	11/16/92		16.66	58.58
	02/18/93		13.88	61.36
	06/01/93		14.74	60.50
	08/30/93		15.85	59.39
	12/13/93		15.83	59.41
	03/03/94		14.80	60.44
	06/06/94		16.65	58.59
	09/12/94		16.72	58.52
	12/15/94		15.25	59.99
	03/13/95		15.32	59.92
	06/26/95		14.65	60.59
	09/12/95		15.78	59.46
	12/19/95		15.10	60.14
MW-3	07/14/88	74.68	14.05	60.63
	10/04/88		14.60	60.08
	11/10/88		14.35	60.33
	12/09/88		14.04	60.64
	01/10/89		13.70	60.98
	01/20/89		13.72	60.96
	02/06/89		13.75	60.93
	03/10/89		13.42	61.26
	06/06/89		14.52	60.16
	09/07/89		15.52	59.16
	12/18/89		19.59	55.09
	03/08/90		14.72	59.96
	06/07/90		14.65	60.03
	09/05/90		15.51	59.17
	12/03/90		14.85	59.83
	03/01/91		14.92	59.76
	06/03/91		14.75	59.93
	09/04/91		15.14	59.54
	03/13/92		13.50	61.18
	06/03/92		14.39	60.29
	08/19/92		15.08	59.60
	11/16/92		15.43	59.25
	02/18/93		12.96	61.72
06/01/93		13.98	60.70	
08/30/93		14.82	59.86	
12/13/93		14.70	59.98	

Table 1 (continued)
Groundwater Elevation Data

Shell Service Station
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth To Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-3 (cont.)	03/03/94		13.92	60.76
	06/06/94		14.73	59.95
	09/12/94		15.42	59.26
	12/15/94		13.80	60.88
	03/13/95		12.41	62.27
	06/26/95		13.79	60.89
	09/12/95		14.77	59.91
	12/19/95		14.20	60.48
MW-4	01/23/90	73.83	14.68	59.15
	03/08/90		14.38	59.45
	06/07/90		14.27	59.56
	09/05/90		15.40	58.43
	12/03/90		15.90	57.93
	06/03/91		14.60	59.23
	09/04/91		15.25	58.58
	03/13/92		12.72	61.11
	06/03/92		14.33	59.50
	08/19/92		15.18	58.65
	11/16/92		15.39	58.44
	02/18/93		12.62	61.21
	06/01/93		13.68	60.15
	08/30/93		14.83	59.00
	12/13/93		14.50	59.33
	03/03/94		13.48	60.35
	06/06/94		14.26	59.57
09/12/94		15.42	58.41	
12/15/94		13.43	60.40	
03/13/95		12.13	61.70	
06/25/95		13.26	60.57	
09/12/95		14.64	59.19	
12/19/95		13.85	59.98	
MSL = Mean sea level				
TOC = Top of casing				

Table 2
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPPH and BTEX Compounds)

Shell Service Station
 230 West MacArthur Boulevard at Piedmont Avenue
 Oakland, California

Well Number	Date Sampled	TPPH (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-1	07/14/88	ND	ND	ND	ND	ND
	10/04/88	ND	8	4.3	ND	9
	11/10/88	ND	ND	ND	ND	ND
	12/09/88	ND	ND	ND	ND	ND
	01/10/89	ND	ND	ND	ND	NA
	01/20/89	ND	ND	NA	NA	ND
	02/06/89	ND	ND	ND	ND	ND
	03/10/89	ND	ND	ND	ND	ND
	06/06/89	ND	ND	ND	ND	ND
	09/07/89	ND	ND	ND	ND	ND
	12/18/89	ND	ND	ND	ND	ND
	03/08/90	ND	ND	ND	ND	ND
	06/07/90	ND	ND	ND	ND	ND
	09/05/90	ND	ND	ND	ND	ND
	12/03/90	ND	ND	ND	ND	ND
	03/01/91	ND	ND	ND	ND	ND
	06/03/91	ND	ND	ND	ND	ND
	09/04/91	ND	ND	ND	ND	ND
	03/13/92	ND	ND	ND	ND	ND
	06/03/92	ND	ND	ND	ND	ND
	08/19/92	87	ND	ND	ND	ND
	11/16/92	ND	ND	ND	ND	ND
	02/18/93	59 ^a	ND	ND	ND	ND
	06/01/93	ND	ND	ND	ND	ND
	08/30/93	ND	ND	ND	ND	ND
	12/13/93	ND	ND	ND	ND	ND
	03/03/94	100	ND	ND	ND	ND
	06/06/94	ND	ND	ND	ND	ND
	09/12/94	ND	ND	ND	ND	ND
	12/15/94	ND	ND	ND	ND	ND
03/13/95 ^d	60	4.7	9.8	ND	2.9	
04/21/95	ND	ND	ND	ND	ND	
06/26/95	ND	ND	ND	ND	ND	
09/12/95	ND	ND	ND	ND	ND	
12/19/95	60	1.1	2.0	1.0	12	
MW-2	07/14/88	ND	7.9	2.6	1.1	4
	10/04/88	90	ND	1.3	2.3	12
	11/10/88	ND	ND	ND	ND	2
	12/09/88	ND	ND	0.6	ND	3
	01/20/89	ND	ND	ND	ND	ND
	02/06/89	NA	ND	ND	ND	ND
	03/10/89	ND	ND	ND	ND	ND
	06/06/89	ND	ND	0.5	ND	ND
	09/07/89	ND	ND	ND	ND	ND

Table 2 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPPH and BTEX Compounds)

Shell Service Station
 230 West MacArthur Boulevard at Piedmont Avenue
 Oakland, California

Well Number	Date Sampled	TPPH (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-2	12/18/89	ND	ND	ND	ND	ND
(cont.)	03/08/90	ND	ND	ND	ND	ND
	06/07/90	ND	ND	ND	ND	ND
	09/05/90	ND	ND	ND	ND	ND
	12/03/90	ND	ND	ND	ND	ND
	03/01/91	ND	ND	ND	ND	ND
	06/03/91	ND	ND	ND	ND	ND
	09/04/91	ND	ND	ND	ND	ND
	03/13/92	ND	ND	ND	ND	ND
	06/03/92	ND	ND	ND	ND	ND
	08/19/92	67	ND	ND	ND	ND
	11/16/92	50	ND	ND	ND	1.2
	02/18/93	52 ^a	ND	ND	ND	ND
	02/18/93(D)	52 ^a	ND	ND	ND	ND
	06/01/93	ND	ND	ND	ND	ND
	08/30/93	70 ^a	ND	ND	ND	ND
	12/13/93	68 ^a	ND	ND	ND	ND
	03/03/94	280 ^a	ND	ND	ND	ND
	06/06/94	ND	ND	ND	ND	ND
	09/12/94	ND	ND	ND	ND	ND
	12/15/94	230 ^a	ND	ND	ND	ND
	03/13/95	ND	2.9	6.3	ND	2.7
	04/21/95	ND	ND	ND	ND	ND
	06/26/95	ND	ND	ND	ND	ND
	09/12/95	ND	ND	ND	ND	ND
	12/19/95	140	4.1	5.2	1.8	25
MW-3	07/14/88	ND	ND	ND	ND	ND
	10/04/88	ND	ND	ND	ND	5
	11/10/88	ND	ND	ND	ND	ND
	12/09/88	ND	ND	ND	ND	ND
	01/10/89	ND	ND	ND	ND	NA
	01/20/89	NA	NA	ND	ND	ND
	02/06/89	70	ND	ND	ND	ND
	03/10/89	150	ND	ND	ND	ND
	06/06/89	ND	ND	ND	ND	ND
	09/07/89	ND	0.65	ND	ND	ND
	12/06/89	46	1.3	ND	0.44	0.66
	03/08/90	ND	ND	ND	ND	ND
	06/07/90	ND	ND	ND	ND	ND
	09/05/91	ND	ND	ND	ND	ND
	12/03/90	ND	ND	ND	ND	ND
	03/01/91	1.9	59	ND	22	ND
	06/03/91	ND	ND	ND	ND	ND
	09/04/91	ND	ND	ND	ND	ND
	03/13/92	ND	ND	ND	ND	ND

Table 2 (continued)
Groundwater Analytical Data
 (TPPH and BTEX Compounds)

Shell Service Station
 230 West MacArthur Boulevard at Piedmont Avenue
 Oakland, California

Well Number	Date Sampled	TPPH (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	
MW-3 (cont.)	06/03/92	ND	ND	ND	ND	ND	
	08/19/92	92	ND	ND	ND	ND	
	08/19/92(D)	76	ND	ND	ND	ND	
	11/16/92	200 ^a	ND	ND	ND	ND	
	11/16/92(D)	140 ^a	ND	ND	ND	ND	
	02/18/93	680 ^a	ND	ND	ND	ND	
	06/01/93	160 ^a	ND	ND	ND	ND	
	06/01/93(D)	150 ^a	ND	ND	ND	ND	
	08/30/93	110 ^a	ND	ND	ND	ND	
	12/13/93	140 ^a	ND	ND	ND	ND	
	12/13/93(D)	110 ^a	ND	ND	ND	ND	
	03/03/94	61 ^a	ND	ND	ND	ND	
	06/06/94	ND	ND	ND	ND	ND	
	09/12/94	ND	ND	ND	ND	ND	
	12/15/94	ND	ND	0.9	ND	0.6	
	03/13/95	100 ^b	7.9	17	0.7	6.1	
	04/21/95	60	0.9	1.1	ND	1.0	
	06/26/95	ND	ND	ND	ND	ND	
	09/12/95 ^d	ND	ND	ND	ND	ND	
	12/19/95	100	1.5	2.3	0.8	17	
MW-4	01/23/90	1,600	100	10	30	20	
	03/08/90	4,200	260	18	88	39	
	06/07/90	2,000	150	6.9	14	17	
	09/05/90	1,700	130	10	7.2	19	
	12/03/90	2,600	108	41	17	59	
	06/03/91	2,800	160	15	8.8	32	
	09/04/91	----- Separate-Phase Hydrocarbon Sheen -----					
	03/13/92	2,700	180	70	5.9	29	
	06/03/92	1,700	190	ND	30	23	
	08/19/92	170	4.2	ND	0.6	1.0	
	11/16/92	2,600	92	49	50	81	
	02/18/93	7,400	120	38	51	87	
	06/01/93	7,000	1,800	1,700	1,600	1,700	
	08/30/93	2,100	80	11	ND	11	
	08/30/93(D)	2,100	77	5.6	ND	5.5	
	12/13/93	2,000 ^a	20	ND	21	52	
	03/03/94	3,500	150	86	85	90	
	03/03/94(D)	3,200	130	73	74	76	

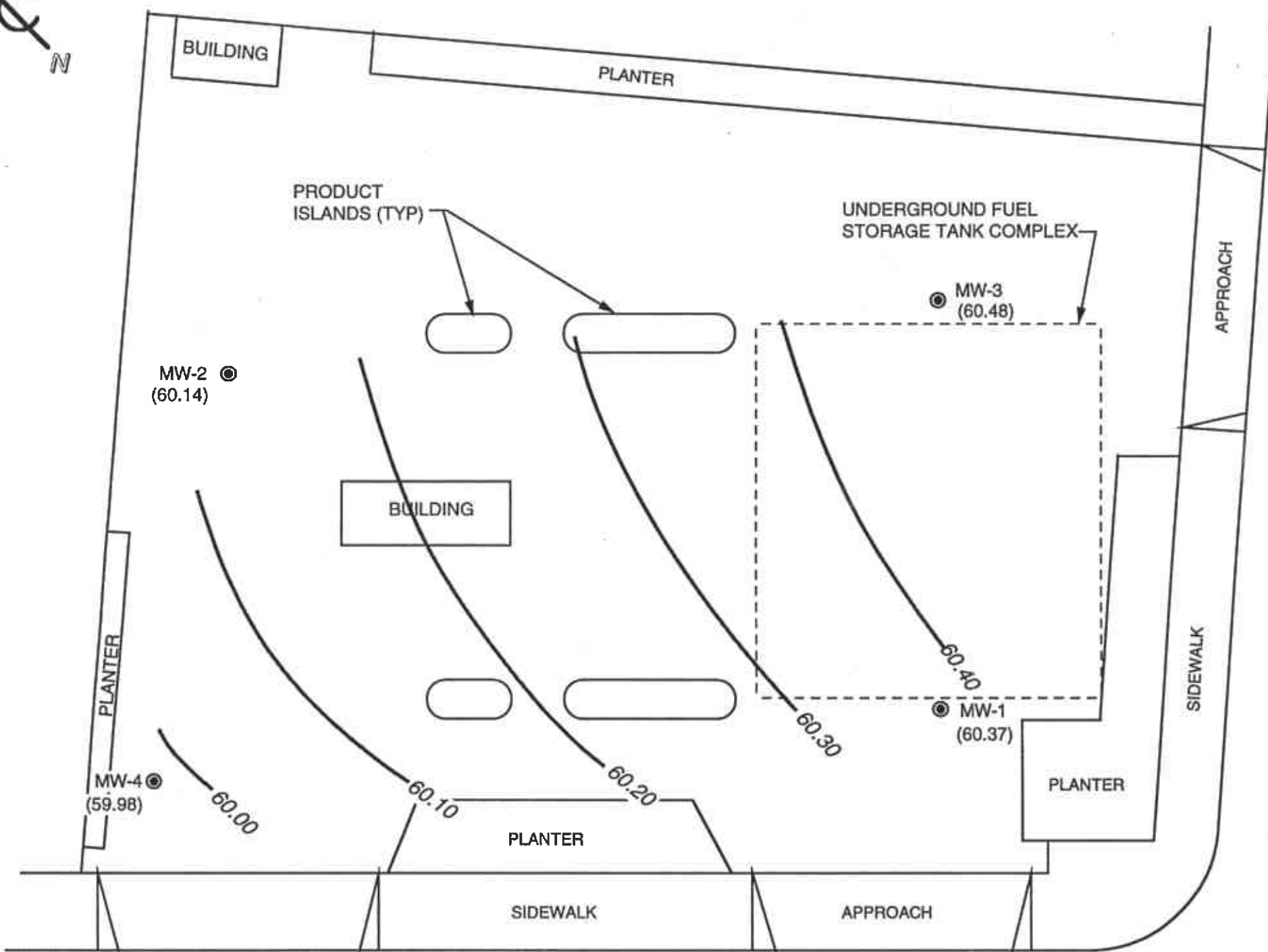
Table 2 (continued)
Groundwater Analytical Data
 (TPPH and BTEX Compounds)

Shell Service Station
 230 West MacArthur Boulevard at Piedmont Avenue
 Oakland, California

Well Number	Date Sampled	TPPH (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-4	06/06/94	590	25	ND	ND	ND
(cont.)	06/06/94(D)	400	16	ND	ND	ND
	09/12/94	1,800	42	ND	3.7	4.7
	09/12/94(D)	2,000	40	ND	5.7	8.0
	12/15/94	2,900	78	14	94	17
	12/15/94(D)	2,900	90	7	96	18
	03/13/95 ^a	2,700	240	24	99	34
	03/13/95(D) ^c	2,500	300	24	140	28
	06/26/95	2,100	87	10	67	25
	06/26/95(D)	2,300	92	12	74	26
	09/12/95 ^d	1,300	33	13	9.3	15
	09/12/95(D) ^d	1,500	2.1	16	11	17
	12/19/95	940	14	0.8	3.6	4.5
	12/19/95(D)	1,400	23	1.3	5.0	6.6

TPPH = Total purgeable petroleum hydrocarbons
 ppb = Parts per billion
 ND = Not detected
 NA = Not analyzed
 (D) = Duplicate sample

a. The concentration reported as gasoline is primarily due to the presence of a discrete hydrocarbon peak not indicative of gasoline.
 b. The laboratory noted result to have an atypical gasoline pattern.
 c. The laboratory noted sample was analyzed within hold time but further dilution was required and done out of hold time. The laboratory suggests these to be minimum concentrations.
 d. The laboratory noted the sampled was analyzed after the method specified holding time.
 See certified analytical reports for detection limits.



- LEGEND**
- MW-1 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
 - (60.48) GROUNDWATER ELEVATION IN FEET - MSL, 12-19-95
 - 60.40 — GROUNDWATER ELEVATION CONTOUR IN FEET - MSL, 12-19-95

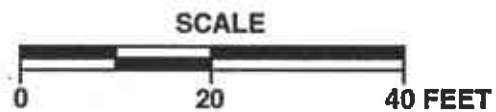


APPROXIMATE DIRECTION OF GROUNDWATER FLOW
 APPROXIMATE GRADIENT = 0.004

MAC ARTHUR BOULEVARD



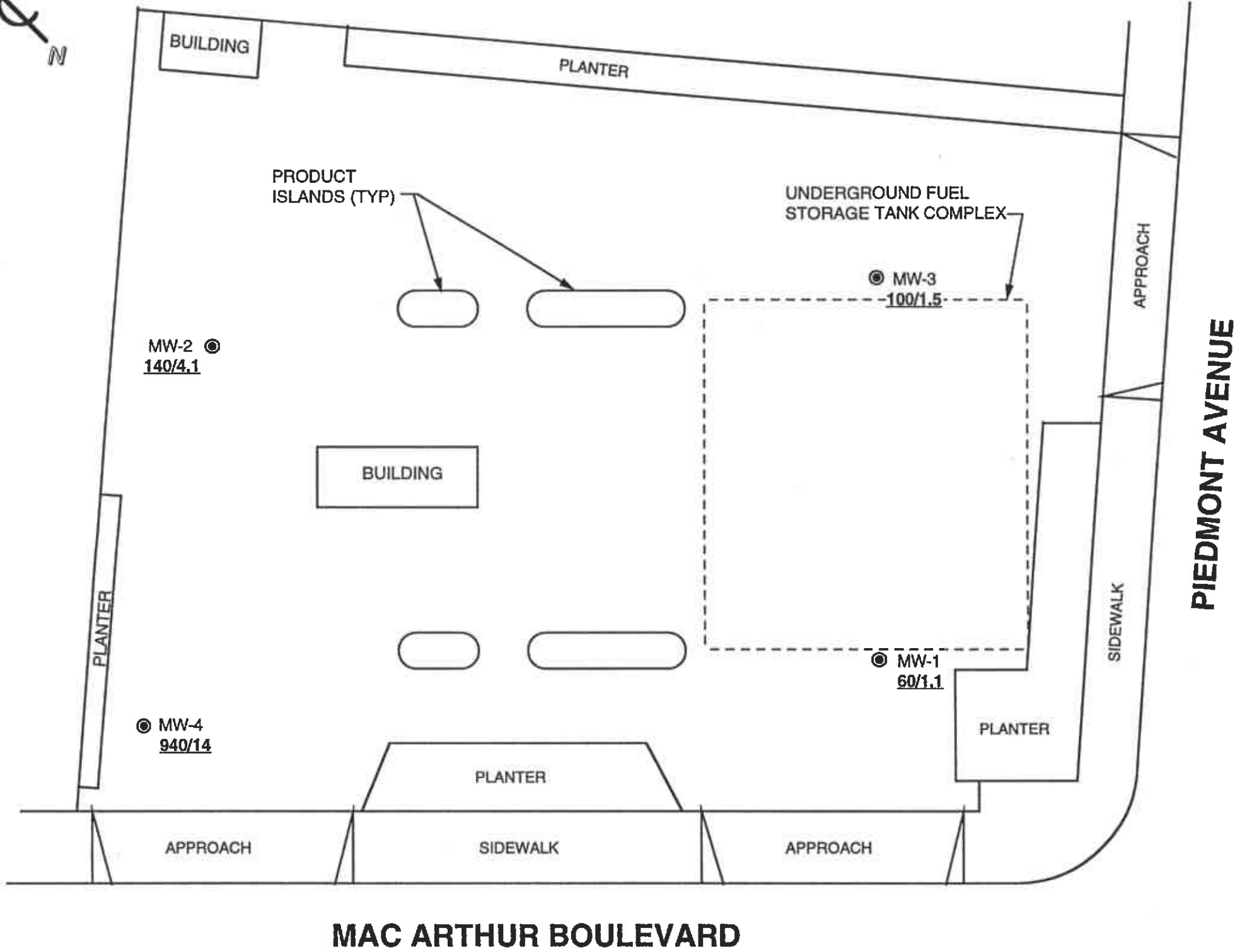
PACIFIC ENVIRONMENTAL GROUP, INC.



SHELL SERVICE STATION
 230 West MacArthur Boulevard at Piedmont Avenue
 Oakland, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: **1**
 PROJECT: 305-085.2C



LEGEND

MW-1 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

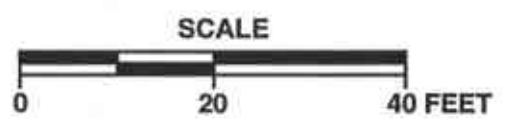
100/1.5 TPPH/BENZENE CONCENTRATION IN GROUNDWATER, IN PARTS PER BILLION, 12-19-95

ND NOT DETECTED

APPROXIMATE DIRECTION OF GROUNDWATER FLOW



PACIFIC ENVIRONMENTAL GROUP, INC.



SHELL SERVICE STATION
230 West MacArthur Boulevard at Piedmont Avenue
Oakland, California

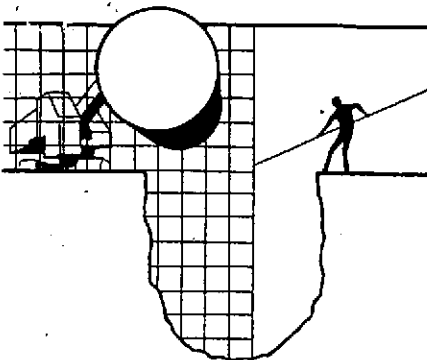
TPPH/BENZENE CONCENTRATION MAP

FIGURE: **2**
PROJECT: 305-085.2C

ATTACHMENT A
GROUNDWATER SAMPLING REPORT

BLAINE TECH SERVICES INC.

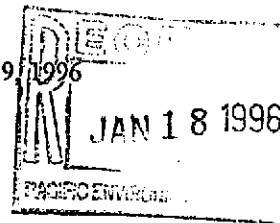
985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773



Shell Oil Company
P.O. Box 4023
Concord, CA 94524

Attn: R. Jeff Granberry

January 9, 1996



Shell WIC #204-5508-0703
230 West MacArthur Blvd.
Oakland, California

4th Quarter 1995

Quarterly Groundwater Monitoring Report 951219-T-2

Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. Copies of our Sampling Report along with the laboratory's Certified Analytical Report are forwarded to the consultant overseeing work at this site. Submission of the assembled documents to interested regulatory agencies will be made by the designated consultant.

Groundwater monitoring at this site was performed in accordance with Standard Operating Procedures provided to the interested regulatory agencies. If you have any questions about the work performed at this site please call me at (408) 995-5535 ext. 201.

Yours truly,

Francis Thie

attachments: Table of Well Gauging Data
Chain of Custody
Field Data Sheets
Certified Analytical Report

cc: Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411
Attn: Grady Glasser

(Any professional evaluations or recommendations will be made by the consultant under separate cover.)

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	12/19/95	TOC	--	NONE	--	--	13.52	29.40
MW-2	12/19/95	TOC	--	NONE	--	--	15.10	27.74
MW-3	12/19/95	TOC	--	NONE	--	--	14.20	28.22
MW-4 *	12/19/95	TOC	--	NONE	--	--	13.85	24.00

* Sample DUP was a duplicate sample taken from well MW-4.



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: 951219-72

Date: 12/19/95

Page 1 of 1

Silo Address: 230 West MacArthur Blvd., Oakland

WICK: 204-5508-0703

Shell Engineer: R. Jeff Granberry
 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: mfell

Printed Name: Mike Toll

Analysis Required

LAB:

CHECK ONE (1) BOX ONLY	CI/DI	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/>	6441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	6441	48 hours <input type="checkbox"/>
Soil Classfy/Disposal <input type="checkbox"/>	6442	16 days <input checked="" type="checkbox"/> (Hemo)
Water Classfy/Disposal <input type="checkbox"/>	6443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	6462	
Water Rem. or Sys. O & M <input type="checkbox"/>	6463	
Other <input type="checkbox"/>		

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

Sample ID	Date	Sludge	Soil	Water	Air	No. of conis.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/802)	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
MW2	12/19			X		3						X						
MW3	12/19			X		3						X						
MW4	12/19			X		3						X						
EB	12/19			X		3						X						
DUP	12/19			X		3						X						
TB	12/19			X		2						X						

Relinquished By (signature): <u>mfell</u>	Printed Name: <u>Mike Toll</u>	Date: <u>12/20/95</u> Time: <u>11:00</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>P. Smart</u>	Date: <u>12/20/95</u> Time: <u>11:02</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>P. Smart</u>	Date: <u>12/20/95</u> Time: <u>14:02</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>PAM GREENE</u>	Date: <u>12/20/95</u> Time: <u>16:30</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>PAM GREENE</u>	Date: <u>12/20/95</u> Time: <u>16:30</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>PAM KROSSER</u>	Date: <u>12/20/95</u> Time: <u>16:30</u>

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



NATIONAL
ENVIRONMENTAL
TESTING, INC.

Santa Rosa Division
3636 North Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226
Tel: (707) 526-7200
Fax: (707) 541-2333

Jim Keller
Blaine Tech Services
985 Timothy Dr.
San Jose, CA 95133

Date: 12/29/1995
NET Client Acct. No: 1821
NET Job No: 95.04812
Received: 12/20/1995

Client Reference Information

Shell 230 West MacArthur Blvd., Oakland, CA/951219-T2

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. The results for the sample submitted as "Dup" do not directly relate to any other sample submitted on this Chain of Custody; this may be due to matrix interference confirmed by repeat analysis. Results apply only to the samples analyzed. All positive results have been confirmed as required. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel free to call me at (707) 541-2305.

Submitted by:

A handwritten signature in cursive script that reads "Ginger Brunlee". The signature is written in black ink and is positioned above a horizontal line.

Ginger Brunlee
Project Coordinator

Enclosure (s)

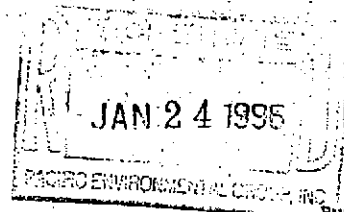




Client Name: Blaine Tech Services
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Date: 12/29/1995
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Ref: Shell 230 West MacArthur Blvd., Oakland, CA/951219-T2



SAMPLE DESCRIPTION: MW1
 Date Taken: 12/19/1995
 Time Taken:
 NET Sample No: 257564

Parameter	Results	Flags	Reporting		Units	Method	Date	Date	Run
			Limit				Extracted	Analyzed	Batch No.
METHOD 5030/8015-M (Shell)									
DILUTION FACTOR*	1						12/28/1995		3434
Purgeable TPH	60		50		ug/L	5030/M8015	12/28/1995		3434
Carbon Range: C6 to C12	--						12/28/1995		3434
METHOD 8020 (GC, Liquid)	--						12/28/1995		3434
Benzene	1.1		0.5		ug/L	8020	12/28/1995		3434
Toluene	2.0		0.5		ug/L	8020	12/28/1995		3434
Ethylbenzene	1.0		0.5		ug/L	8020	12/28/1995		3434
Xylenes (Total)	12		0.5		ug/L	8020	12/28/1995		3434
SURROGATE RESULTS	--						12/28/1995		3434
Bromofluorobenzene (SURR)	97				* Rec.	8020	12/28/1995		3434

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services
Client Acct: 1821
NET Job No: 95.04812

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Ref: Shell 230 West MacArthur Blvd., Oakland, CA/951219-T2

SAMPLE DESCRIPTION: MW2

Date Taken: 12/19/1995

Time Taken:

NET Sample No: 257565

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
METHOD 5030/8015-M (Shell)								
DILUTION FACTOR*	1						12/28/1995	3434
Purgeable TPH	140		50	ug/L	5030/M8015		12/28/1995	3434
Carbon Range: C6 to C12	--						12/28/1995	3434
METHOD 8020 (GC, Liquid)	--						12/28/1995	3434
Benzene	4.1		0.5	ug/L	8020		12/28/1995	3434
Toluene	5.2		0.5	ug/L	8020		12/28/1995	3434
Ethylbenzene	1.8		0.5	ug/L	8020		12/28/1995	3434
Xylenes (Total)	25		0.5	ug/L	8020		12/28/1995	3434
SURROGATE RESULTS	--						12/28/1995	3434
Bromofluorobenzene (SURR)	98			% Rec.	8020		12/28/1995	3434

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services
Client Acct: 1821
NET Job No: 95.04812

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ELAP Cert: 1386
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Ref: Shell 230 West MacArthur Blvd., Oakland, CA/951219-T2

SAMPLE DESCRIPTION: MW3
Date Taken: 12/19/1995
Time Taken:
NET Sample No: 257566

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
METHOD 5030/8015-M (Shell)								
DILUTION FACTOR*	1						12/28/1995	3434
Purgeable TPH	100		50	ug/L	5030/M8015		12/28/1995	3434
Carbon Range: C6 to C12	--						12/28/1995	3434
METHOD 8020 (GC, Liquid)	--						12/28/1995	3434
Benzene	1.5		0.5	ug/L	8020		12/28/1995	3434
Toluene	2.3		0.5	ug/L	8020		12/28/1995	3434
Ethylbenzene	0.8		0.5	ug/L	8020		12/28/1995	3434
Xylenes (Total)	17		0.5	ug/L	8020		12/28/1995	3434
SURROGATE RESULTS	--						12/28/1995	3434
Bromofluorobenzene (SURR)	99			% Rec.	8020		12/28/1995	3434

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



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Ref: Shell 230 West MacArthur Blvd., Oakland, CA/951219-T2

SAMPLE DESCRIPTION: MW4

Date Taken: 12/19/1995

Time Taken:

NET Sample No: 257567

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
METHOD 5030/8015-M (Shell)								
DILUTION FACTOR*	1						12/28/1995	3434
Purgeable TPH	940		50	ug/L	5030/M8015		12/28/1995	3434
Carbon Range: C6 to C12	--						12/28/1995	3434
METHOD 8020 (GC, Liquid)	--						12/28/1995	3434
Benzene	14		0.5	ug/L	8020		12/28/1995	3434
Toluene	0.8		0.5	ug/L	8020		12/28/1995	3434
Ethylbenzene	3.6		0.5	ug/L	8020		12/28/1995	3434
Xylenes (Total)	4.5		0.5	ug/L	8020		12/28/1995	3434
SURROGATE RESULTS	--						12/28/1995	3434
Bromofluorobenzene (SURR)	99			% Rec.	8020		12/28/1995	3434

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services
 Client Acct: 1821
 NET Job No: 95.04812

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Ref: Shell 230 West MacArthur Blvd., Oakland, CA/951219-T2

SAMPLE DESCRIPTION: EB
 Date Taken: 12/19/1995
 Time Taken:
 NET Sample No: 257568

Parameter	Results	Flags	Reporting		Units	Method	Date Extracted	Date Analyzed	Run Batch No.
			Limit						
METHOD 5030/8015-M (Shell)									
DILUTION FACTOR*	1								
Purgeable TPH	ND								
Carbon Range: C6 to C12	--		50		ug/L	5030/M8015	12/28/1995	12/28/1995	3434
METHOD 8020 (GC, Liquid)	--								
Benzene	ND						12/28/1995	12/28/1995	3434
Toluene	ND		0.5		ug/L	8020	12/28/1995	12/28/1995	3434
Ethylbenzene	ND		0.5		ug/L	8020	12/28/1995	12/28/1995	3434
Xylenes (Total)	ND		0.5		ug/L	8020	12/28/1995	12/28/1995	3434
PROXIMATE RESULTS	--		0.5		ug/L	8020	12/28/1995	12/28/1995	3434
monofluorobenzene (SURR)	90						12/28/1995	12/28/1995	3434
					† Rec.	8020	12/28/1995	12/28/1995	3434
							12/28/1995	12/28/1995	3434

Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services
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SAMPLE DESCRIPTION: DUP

Date Taken: 12/19/1995

Time Taken:

NET Sample No: 257569

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
METHOD 5030/8015-M (Shell)								
DILUTION FACTOR*	1						12/28/1995	3434
Purgeable TPH	1,400		50	ug/L	5030/M8015		12/28/1995	3434
Carbon Range: C6 to C12	--						12/28/1995	3434
METHOD 8020 (GC, Liquid)	--						12/28/1995	3434
Benzene	23		0.5	ug/L	8020		12/28/1995	3434
Toluene	1.3		0.5	ug/L	8020		12/28/1995	3434
Ethylbenzene	5.0		0.5	ug/L	8020		12/28/1995	3434
Xylenes (Total)	6.6		0.5	ug/L	8020		12/28/1995	3434
SURROGATE RESULTS	--						12/28/1995	3434
Bromofluorobenzene (SURR)	139	MI		µ Rec.	8020		12/28/1995	3434

MI : Matrix Interference Suspected.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



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SAMPLE DESCRIPTION: TB

Date Taken: 12/19/1995

Time Taken:

NET Sample No: 257570

Parameter	Results	Flags	Reporting		Method	Date	Date	Run Batch No.
			Limit	Units		Extracted	Analyzed	
METHOD 5030/8015-M (Shell)								
DILUTION FACTOR*	1						12/28/1995	3434
Purgeable TPH	ND		50	ug/L	5030/M8015		12/28/1995	3434
Carbon Range: C6 to C12	--						12/28/1995	3434
METHOD 8020 (GC, Liquid)								
Benzene	ND		0.5	ug/L	8020		12/28/1995	3434
Toluene	ND		0.5	ug/L	8020		12/28/1995	3434
Ethylbenzene	ND		0.5	ug/L	8020		12/28/1995	3434
Xylenes (Total)	ND		0.5	ug/L	8020		12/28/1995	3434
SURROGATE RESULTS								
Bromofluorobenzene (SURR)	96			µ Rec.	8020		12/28/1995	3434

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



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CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV	CCV	CCV	Units	Date Analyzed	Analyst Initials	Run Batch Number
	Standard & Recovery	Standard Amount Found	Standard Amount Expected				
METHOD 5030/8015-M (Shell)							
Purgeable TPH	114.0	0.57	0.50	mg/L	12/27/1995	aal	3434
Benzene	102.4	5.12	5.00	ug/L	12/27/1995	aal	3434
Toluene	99.2	4.96	5.00	ug/L	12/27/1995	aal	3434
Ethylbenzene	99.8	4.99	5.00	ug/L	12/27/1995	aal	3434
Xylenes (Total)	101.3	15.2	15.0	ug/L	12/27/1995	aal	3434
Bromofluorobenzene (SURR)	98.0	98	100	% Rec.	12/27/1995	aal	3434

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services
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METHOD BLANK REPORT

Parameter	Method	Reporting	Units	Date	Analyst	Run
	Blank	Amount		Limit	Analyzed	Initials
	Found					Number
METHOD 5030/8015-M (Shell)						
Purgeable TPH	ND	0.05	mg/L	12/27/1995	aal	3434
Benzene	ND	0.5	ug/L	12/27/1995	aal	3434
Toluene	ND	0.5	ug/L	12/27/1995	aal	3434
Ethylbenzene	ND	0.5	ug/L	12/27/1995	aal	3434
Xylenes (Total)	ND	0.5	ug/L	12/27/1995	aal	3434
Bromofluorobenzene (SURR)	100		% Rec.	12/27/1995	aal	3434

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services
Client Acct: 1821
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Ref: Shell 230 West MacArthur Blvd., Oakland, CA/951219-T2

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike				Sample Conc.	Matrix Spike			Date Analyzed	Run Batch	Sample Spiked
	Spike % Rec.	Dup % Rec.	RPD	Spike Amount		Spike Conc.	Dup. Conc.	Units			
METHOD 5030/8015-M (Shell)											
Purgeable TPH	106.0	92.0	14.0	0.5	0.06	0.59	0.52	mg/L	12/28/1995	3434	257564
Benzene	87.7	82.6	6.0	7.98	1.1	8.10	7.69	ug/L	12/28/1995	3434	257564
Toluene	90.7	86.2	5.1	26.8	2.0	26.3	25.1	ug/L	12/28/1995	3434	257564

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

KEY TO ABBREVIATIONS and METHOD REFERENCES

- < : Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
- * : Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
- ICVS : Initial Calibration Verification Standard (External Standard).
- mean : Average; sum of measurements divided by number of measurements.
- mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
- mg/L : Concentration in units of milligrams of analyte per liter of sample.
- mL/L/hr : Milliliters per liter per hour.
- MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.
- N/A : Not applicable.
- NA : Not analyzed.
- ND : Not detected; the analyte concentration is less than applicable listed reporting limit.
- NTU : Nephelometric turbidity units.
- RPD : Relative percent difference, $100 \text{ (Value 1 - Value 2) / mean value}$.
- SNA : Standard not available.
- ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- umhos/cm : Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

SHELL WELL MONITORING DATA SHEET

Project #: 951219-T2	Wic #: 204-3508-0703
Sampler: <u>WT</u>	Start Date: 12/19
Well I.D.: <u>MW1</u>	Well Diameter: (circle one) 2 3 <u>4</u> 6
Total Well Depth: Before <u>29.40</u> After	Depth to Water: Before <u>13.52</u> After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: <u>PVC</u> Grade Other:	

Well Diameter	VCF	Well Diameter	VCF
1"	0.04	6"	1.47
2"	0.16	8"	2.61
3"	0.37	10"	4.08
4"	0.65	12"	5.87
5"	1.02	16"	10.43

<u>10.3</u>	x	<u>3</u>	=	<u>30.9</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer
 Disposable Bailer
 Middleburg
 Electric Submersible X
 Extraction Pump
 Other _____

Sampling: Bailer X
 Disposable Bailer
 Extraction Port
 Other _____

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
14:46	70.1	6.2	400	27.6	10-5	
14:48	69.6	6.0	400	60.1	21	
14:50	69.4	6.1	400	93.3	31	

Did Well Dewater? NO If yes, gals. Gallons Actually Evacuated: 31

Sampling Time: 14:55

Sampling Date: 12/19

Sample I.D.: MW1

Laboratory: NET

Analyzed for: TPH-G BTEX TPH-D OTHER:

Duplicate I.D.:

Cleaning Blank I.D.:

Analyzed for: TPH-G BTEX TPH-D OTHER:

SHELL WELL MONITORING DATA SHEET

Project #: 981219-FU	Wic #: 304-5508-0703
Sampler: MT	Start Date: 12/18
Well I.D.: MW 2	Well Diameter: (circle one) 2 3 4 6
Total Well Depth: Before 71.74 After	Depth to Water: Before 15.10 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to:	<u>PVC</u> Grade Other:

Well Diameter	VCF	Well Diameter	VCF
1"	0.04	6"	1.47
2"	0.16	8"	2.61
3"	0.37	10"	4.08
4"	0.65	12"	5.87
5"	1.02	16"	10.43

$$\begin{array}{rcl}
 \underline{8.3} & \times & \underline{3} \\
 \text{1 Case Volume} & & \text{Specified Volumes} \\
 & & = \underline{24.9} \text{ gallons}
 \end{array}$$

Purging: Bailer
 Disposable Bailer
 Middleburg
 Electric Submersible
 Extraction Pump
 Other _____

Sampling: Bailer
 Disposable Bailer
 Extraction Port
 Other _____

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
14:15	64.1	6.7	700	171.8	9	
14:17	63.7	6.4	600	73.5	18	
14:19	62.9	6.2	600	71.4	25	

Did Well Dewater? NO If yes, gals. Gallons Actually Evacuated: 25

Sampling Time: 14:25 Sampling Date: 12/19

Sample I.D.: MW 2 Laboratory: NET

Analyzed for: TPH-G BTEX ~~TPH-D~~ OTHER:

Duplicate I.D.: Cleaning Blank I.D.: EB@ 14:30

Analyzed for: TPH-G BTEX ~~TPH-D~~ OTHER:

SHELL WELL MONITORING DATA SHEET

Project #: 951219-T ₂		Wic #: 204-5508-0703	
Sampler: MT		Start Date: 12/18	
Well I.D.: MW3		Well Diameter: (circle one) 2 3 <u>6</u>	
Total Well Depth:		Depth to Water:	
Before 28.22	After	Before 14.20	After
Depth to Free Product:		Thickness of Free Product (feet):	
Measurements referenced to: <u>PVC</u>		Grade	Other:

Well Diameter	VCF	Well Diameter	VCF
1"	0.04	6"	1.47
2"	0.16	8"	2.61
3"	0.37	10"	4.08
4"	0.65	12"	5.87
5"	1.02	16"	10.43

<u>9.2</u>	<u>x</u>	<u>3</u>	<u>=</u>	<u>27.6</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer
 Disposable Bailer
 Middleburg
 Electric Submersible K
 Extraction Pump
 Other _____

Sampling: Bailery
 Disposable Bailer
 Extraction Port
 Other _____

TIME	TEMP. (F)	PH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
14:30	63.8	6.4	600	55.8	9.5	
14:32	62.7	6.2	200	103.9	19	
14:34	62.7	6.3	300	111.4	28	

Did Well Dewater? NO If yes, gals. Gallons Actually Evacuated: 28

Sampling Time: 14:40 Sampling Date: 12/19

Sample I.D.: MW3 Laboratory: NET

Analyzed for: TPH-G BTEX TPH-D OTHER:

Duplicate I.D.: Cleaning Blank I.D.:

Analyzed for: TPH-G BTEX TPH-D OTHER:

SHELL WELL MONITORING DATA SHEET

Project #: 951219-T2		Wic #: 204-5508-0703	
Sampler: MT		Start Date: 12/18	
Well I.D.: MW 4		Well Diameter: (circle one) 2 3 <u>4</u> 6	
Total Well Depth:		Depth to Water:	
Before 21.00	After	Before 13.85	After
Depth to Free Product:		Thickness of Free Product (feet):	
Measurements referenced to: <u>PVC</u> Grade Other:			

Well Diameter	VCF	Well Diameter	VCF
1"	0.04	6"	1.47
2"	0.16	8"	2.61
3"	0.37	10"	4.08
4"	0.65	12"	5.87
5"	1.02	16"	10.43

6.6	x	3	=	19.8
1 Case Volume		Specified Volumes		gallons

Purging: Bailer
 Disposable Bailer
 Middleburg
 Electric Submersible
 Extraction Pump
 Other _____

Sampling: Bailer
 Disposable Bailer
 Extraction Port
 Other _____

TIME	TEMP. (F)	PH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
15:05	69.8	6.4	600	120.8	7	
15:06	69.9	6.4	800	114.6	14	
15:07	69.6	6.2	800	68.2	20	

Did Well Dewater? NO If yes, gals.

Gallons Actually Evacuated: 20

Sampling Time: 15:15

Sampling Date: 12/18

Sample I.D.: MW4

Laboratory: NET

Analyzed for: TPH-G BTEX TPH-D OTHER:

Duplicate I.D.: Dup @ 1515

Cleaning Blank I.D.:

Analyzed for: TPH-G BTEX TPH-D OTHER: