Pam-FYI

Weiss Associates Environmental and Geologic Services

5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: **510-450-6000**

ST10 3673
ST

August 7, 1996

Gil Wistar
Alameda County
Environmental Health Department
1131 Harbor Bay Parkway
Alameda, California 94502

Re: **Second Quarter 1996**
Shell Service Station
WIC #204-5508-0703
230 West MacArthur Boulevard
Oakland, California 94611
WA Job #81-1161-206

Dear Mr. Wistar:

This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Division 3, Chapter 16, Article 5, Section 2652.d.

Activities this Quarter

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured ground water depths and collected ground water samples from the site wells (Figures 1 and 2). The BTS report describing these activities and the analytic report for the ground water samples are included as Attachment A.

- Weiss Associates (WA) calculated ground water elevations (Table 1), compiled the analytic data (Table 2), and prepared a ground water elevation contour map (Figure 2).

WA will submit a report presenting a summary of activities for the upcoming quarter. Please call if you have any questions.

Sincerely,
Weiss Associates

James W. Carmody, C.H.G.
Senior Project Hydrogeologist

Attachments: A - Blaine Tech Services' Ground Water Monitoring Report

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

JWC:sjh
J:\SHELL\1161\QM96Q2R.DOC

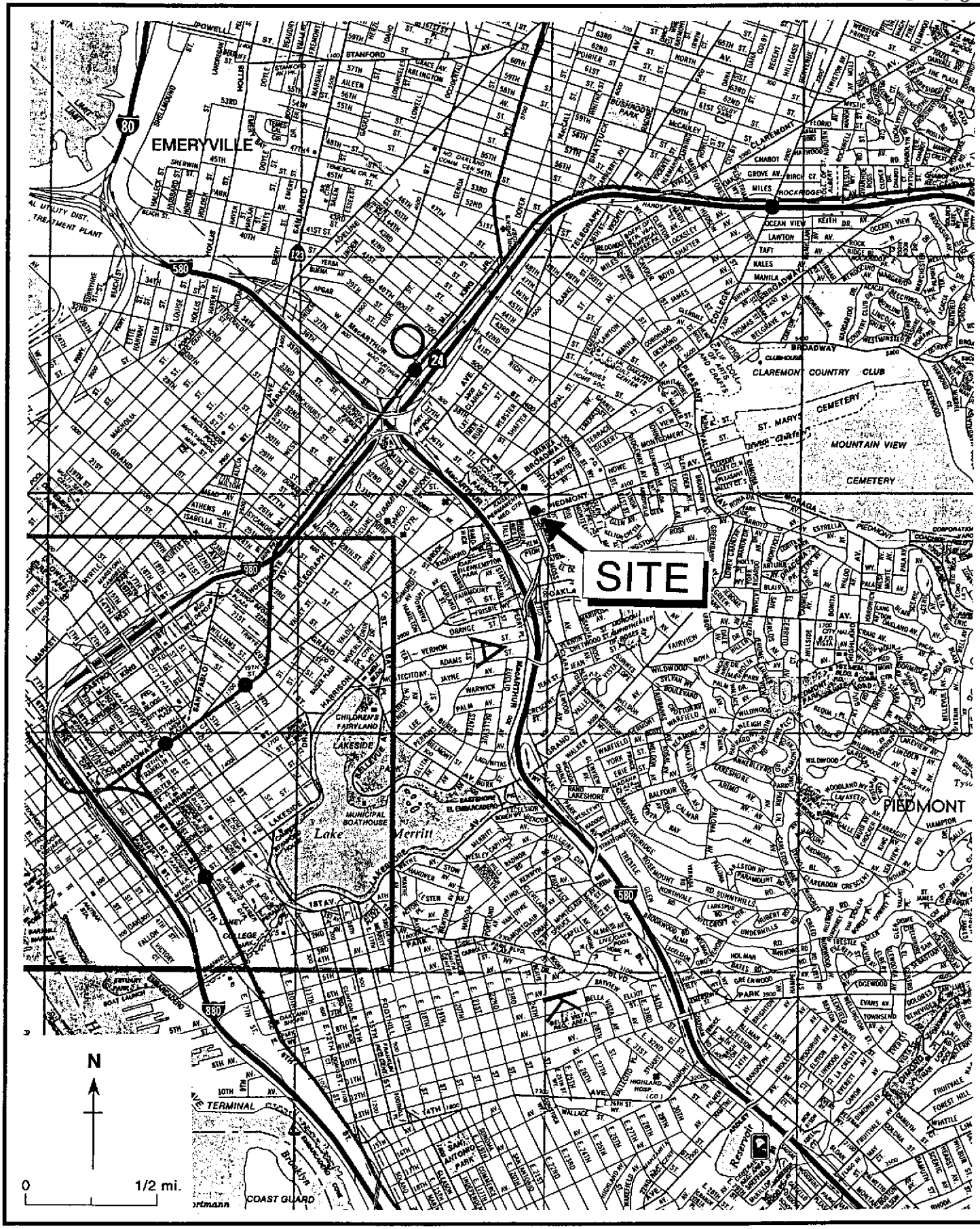

Figure 1. Site Location Map - Shell Service Station WIC# 204-5508-0703, 230 West MacArthur Boulevard, Oakland, California

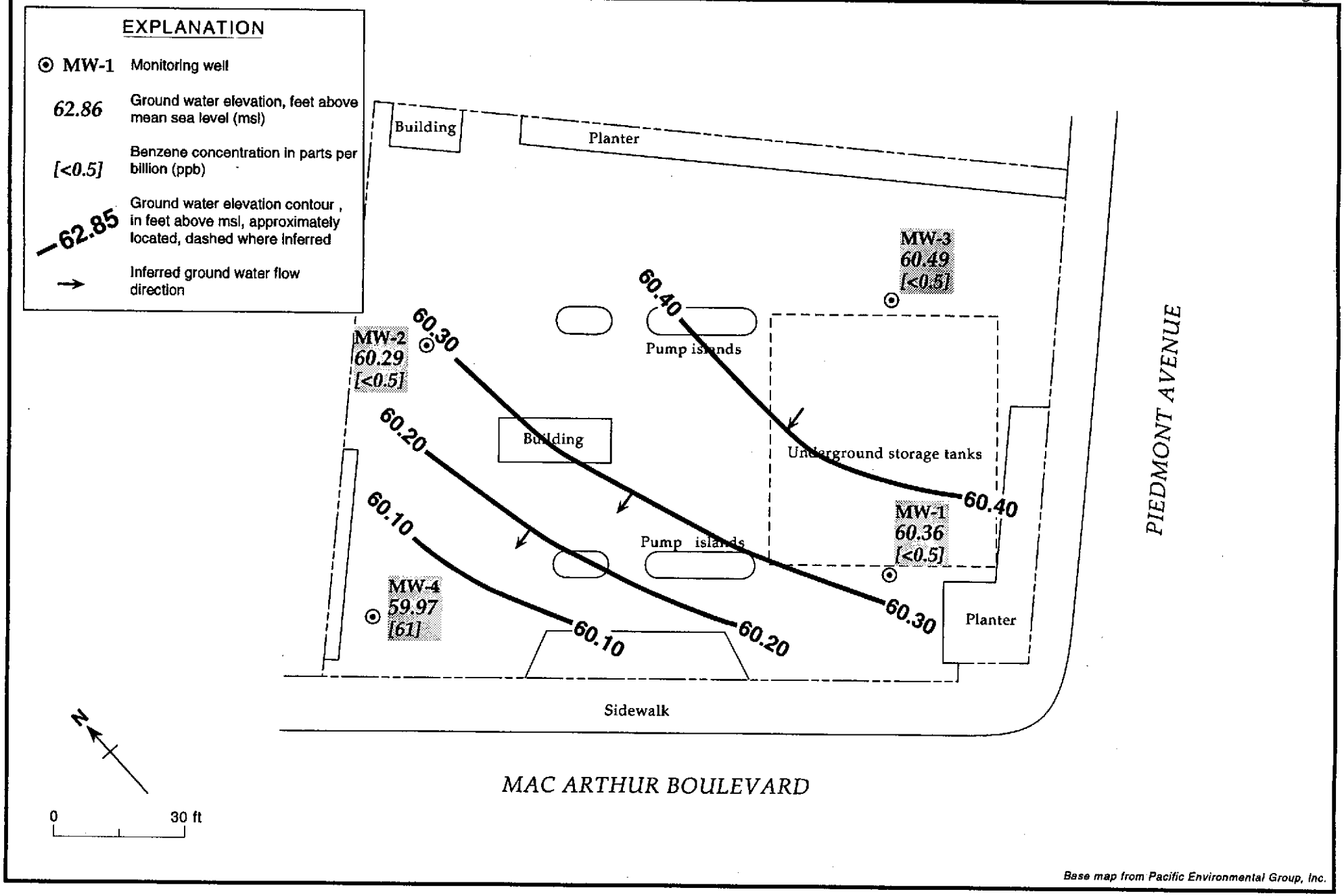

Figure 2. Monitoring Well Locations, Ground Water Elevation Contours, and Benzene Concentrations in Ground Water - June 28, 1996 - Shell Service Station WIC# 204-5508-0703, 230 West MacArthur Boulevard, Oakland, California - June 22, 1996

Table 1. Ground Water Elevation Data - Shell Service Station WIC # 204-5508-0703, 2300 West MacArthur Boulevard, Oakland, California

Well Number	Date Sampled	Well Elevation (ft, MSL)	Depth to Water (ft, TOC)	Ground Water Elevation (ft, 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
	03/21/96		11.03	62.86
	06/28/96		**13.53**	**60.36**
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

Table 1. Ground Water Elevation Data - Shell Service Station WIC # 204-5508-0703, 2300 West MacArthur Boulevard, Oakland, California (continued)

Well Number	Date Sampled	Well Elevation (ft, MSL)	Depth to Water (ft, TOC)	Ground Water Elevation (ft, MSL)
	03/08/90		15.92	59.32
	06/07/90		16.10	59.14
	09/05/90		16.61	58.63
	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
	03/21/96		12.72	62.52
	06/28/96		**14.95**	**60.29**
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

Table 1. Ground Water Elevation Data - Shell Service Station WIC # 204-5508-0703, 2300 West MacArthur Boulevard, Oakland, California (continued)

Well Number	Date Sampled	Well Elevation (ft, MSL)	Depth to Water (ft, TOC)	Ground Water Elevation (ft, MSL)
	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
	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
	03/21/96		11.80	62.88
	06/28/96		**14.19**	**60.49**
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
	03/21/96		11.55	62.28
	06/28/96		**13.86**	**59.97**

Abbreviations:

TOC = Top of casing
MSL = Mean sea level

Table 2. Ground Water Analytical Data - Shell Service Station WIC # 204-5508-0703, 2300 West MacArthur Boulevard, Oakland, California

Well Number	Date Sampled	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		← parts per billion (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	---
	03/21/96	<50	<0.5	<0.5	<0.5	<0.5	ND
	06/28/96	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
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	---

Table 2. Ground Water Analytical Data - Shell Service Station WIC # 204-8026-0700, 31889 Alvarado Boulevard, Union City, California (continued)

Well Number	Date Sampled	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		← parts per billion (ppb) →					
	06/06/89	ND	ND	0.5	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	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[dup]	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	---
	03/21/96	<50	<0.5	<0.5	<0.5	<0.5	ND
	06/28/96	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**160**
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	---

Table 2. Ground Water Analytical Data - Shell Service Station WIC # 204-8026-0700, 31889 Alvarado Boulevard, Union City, California (continued)

Well Number	Date Sampled	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		← parts per billion (ppb) →					
	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	---
	06/03/92	ND	ND	ND	ND	ND	---
	08/19/92	92	ND	ND	ND	ND	---
	08/19/92[dup]	76	ND	ND	ND	ND	---
	11/16/92	200[a]	ND	ND	ND	ND	---
	11/16/92[dup]	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[dup]	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[dup]	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	---
	03/21/96	<50	<0.5	<0.5	<0.5	<0.5	17
	06/28/96	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
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[dup]	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	---

Table 2. Ground Water Analytical Data - Shell Service Station WIC # 204-8026-0700, 31889 Alvarado Boulevard, Union City, California (continued)

Well Number	Date Sampled	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		← parts per billion (ppb) →					
	03/03/94[dup]	3,200	130	73	74	76	---
	06/06/94	590	25	ND	ND	ND	---
	06/06/94[dup]	400	16	ND	ND	ND	---
	09/12/94	1,800	42	ND	3.7	4.7	---
	09/12/94[dup]	2,000	40	ND	5.7	8.0	---
	12/15/94	2,900	78	14	94	17	---
	12/15/94[dup]	2,900	90	7	96	18	---
	03/13/95[c]	2,700	240	24	99	34	---
	03/13/95[dup,c]	2,500	300	24	140	28	---
	06/26/95	2,100	87	10	67	25	---
	06/26/95[dup]	2,300	92	12	74	26	---
	09/12/95[d]	1,300	33	13	9.3	15	---
	09/12/95[dup,d]	1,500	2.1	16	11	17	---
	03/21/96	2,100	50	3.2	40	5.4	ND
	03/21/96[dup]	1,700	24	<0.5	39	7.2	740
	06/28/96	**1,300**	**61**	**6.2**	**53**	**11**	**1,000**
	06/28/96[dup]	**1,200**	**29**	**6.2**	**50**	**8.3**	**1,000**

Abbreviations:

TPH-G = Total purgeable petroleum hydrocarbons as gasoline
MTBE = Methyl-tertiary-butyl-ether
NA = Not analyzed
ND = Not detected
dup = Duplicate sample

Notes:

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
Prior to June 1995, TPPH was reported as TPH calculated as gasoline

BLAINE
TECH SERVICES INC.

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

July 17, 1996

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

Attn: R. Jeff Granberry

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

2nd Quarter 1996

Quarterly Groundwater Monitoring Report 960628-W-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	6/28/96	TOC	--	NONE	--	--	13.53	29.36
MW-2	6/28/96	TOC	--	NONE	--	--	14.95	27.64
MW-3	6/28/96	TOC	--	NONE	--	--	14.19	28.08
MW-4 *	6/28/96	TOC	--	NONE	--	--	13.86	23.95

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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 960628-WZ

Date:
Page 1 of 1

Site Address: 230 West MacArthur Blvd., Oakland

WIC#: 204-5508-0703

Shell Engineer: ~~Dan Kirk~~ 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:

Printed Name: WR Jones

LAB: STL

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	MTBE		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
MW1	6/28/96			X		3						X	X							
MW2																				
MW3																				
MW4																				
EB																				
DUP																				

CHECK ONE (1) BOX ONLY — CT/DT — TURN AROUND TIME

	CT/DT	
Quarterly Monitoring	X 6441	24 hours ☐
Site Investigation	☐ 6441	48 hours ☐
Soil Classify/Disposal	☐ 6442	16 days ☒ (Normal)
Water Classify/Disposal	☐ 6443	Other ☐
Soil/Air Rem. or Sys. O & M	☐ 6462	
Water Rem. or Sys. O & M	☐ 6463	
Other	☐	

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

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
	WR Jones	7-1-96	0940		JOHN HOWE	7-1-96	0940
	JOHN HOWE	7-1-96	1057				
					LKrause	7/1/96	1057

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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

ne Technical Services
Timothy Drive
Jose, CA 95133
ntion: Jim Keller

ject: Shell Oakland 960628-W2

Enclosed are the results from samples received at Sequoia Analytical on July 1, 1996. requested analyses are listed below:

MPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
7046 -01	LIQUID, MW-1	06/28/96	TPGBMW Purgeable TPH/BTEX
7046 -02	LIQUID, MW-2	06/28/96	TPGBMW Purgeable TPH/BTEX
7046 -03	LIQUID, MW-3	06/28/96	TPGBMW Purgeable TPH/BTEX
7046 -04	LIQUID, MW-4	06/28/96	TPGBMW Purgeable TPH/BTEX
7046 -05	LIQUID, EB	06/28/96	TPGBMW Purgeable TPH/BTEX
7046 -06	LIQUID, DUP	06/28/96	TPGBMW Purgeable TPH/BTEX

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

truly yours,

QUOIA ANALYTICAL

y Penner
ct Manager

Sequoia Analytical

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Blaine Technical Services	Client Proj. ID: Shell Oakland 960628-W2	Sampled: 06/28/96
985 Timothy Drive	Sample Descript: MW-1	Received: 07/01/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/08/96
Attention: Jim Keller	Lab Number: 9607046-01	Reported: 07/13/96

QC Batch Number: GC070896BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	91

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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aine Technical Services
35 Timothy Drive
an Jose, CA 95133

tention: Jim Keller

Client Proj. ID: Shell Oakland 960628-W2
Sample Descript: MW-2
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9607046-02

Sampled: 06/28/96
Received: 07/01/96

Analyzed: 07/08/96
Reported: 07/13/96

Batch Number: GC070896BTEX21A
trument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

nalyte	Detection Limit ug/L	Sample Results ug/L
PH as Gas	50	N.D.
ethyl t-Butyl Ether	**2.5**	**160**
enzene	0.50	N.D.
oluene	0.50	N.D.
hyl Benzene	0.50	N.D.
lenes (Total)	0.50	N.D.
romatogram Pattern:		

urrogates	Control Limits %		% Recovery
ifluorotoluene	70	130	102

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

QUOIA ANALYTICAL - ELAP #1210

gy Penner
ject Manager

Sequoia Analytical

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Blaine Technical Services	Client Proj. ID: Shell Oakland 960628-W2	Sampled: 06/28/96
985 Timothy Drive	Sample Descript: MW-3	Received: 07/01/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/08/96
Attention: Jim Keller	Lab Number: 9607046-03	Reported: 07/13/96

QC Batch Number: GC070896BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	96

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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laine Technical Services
85 Timothy Drive
an Jose, CA 95133

ttention: Jim Keller

Client Proj. ID: Shell Oakland 960628-W2
Sample Descript: MW-4
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9607046-04

Sampled: 06/28/96
Received: 07/01/96

Analyzed: 07/08/96
Reported: 07/13/96

Batch Number: GC070896BTEX17A
trument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

nalyte	Detection Limit ug/L	Sample Results ug/L
PPH as Gas	250	1300
lethyl t-Butyl Ether	12	1000
enzene	2.5	61
oluene	2.5	6.2
thyl Benzene	2.5	53
ylenes (Total)	2.5	11
hromatogram Pattern:		C6-C12

urrogates	Control Limits %		% Recovery
rifluorotoluene	70	130	117

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

QUOIA ANALYTICAL - ELAP #1210

gy Penner
ject Manager

Sequoia Analytical

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Blaine Technical Services	Client Proj. ID: Shell Oakland 960628-W2	Sampled: 06/28/96
985 Timothy Drive	Sample Descript: EB	Received: 07/01/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/08/96
Attention: Jim Keller	Lab Number: 9607046-05	Reported: 07/13/96

QC Batch Number: GC070896BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	96

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Benner
Project Manager

Sequoia Analytical

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aine Technical Services
35 Timothy Drive
an Jose, CA 95133

tention: Jim Keller

Client Proj. ID: Shell Oakland 960628-W2
Sample Descript: DUP
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9607046-06

Sampled: 06/28/96
Received: 07/01/96

Analyzed: 07/08/96
Reported: 07/13/96

Batch Number: GC070896BTEX17A
rument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

nalyte	Detection Limit ug/L	Sample Results ug/L
PH as Gas	250	1200
ethyl t-Butyl Ether	12	1000
enzene	2.5	29
oluene	2.5	6.2
hyl Benzene	2.5	50
/lenes (Total)	2.5	8.3
romatogram Pattern:		C6-C12

urrogates	Control Limits %		% Recovery
ifluorotoluene	70	130	117

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

QUOIA ANALYTICAL - ELAP #1210

gy Penner
ect Manager

Sequoia Analytical

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Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: Shell, Oakland / 960628-W2
Matrix: Liquid
Work Order #: 9607046 -01-03, 05

Reported: Jul 15, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC070896BTEX21A	GC070896BTEX21A	GC070896BTEX21A	GC070896BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Woo	J. Woo	J. Woo	J. Woo
MS/MSD #:	9606H4705	9606H4705	9606H4705	9606H4705
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/8/96	7/8/96	7/8/96	7/8/96
Analyzed Date:	7/8/96	7/8/96	7/8/96	7/8/96
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.1	9.5	9.9	30
MS % Recovery:	91	95	99	100
Dup. Result:	9.2	9.6	10	30
MSD % Recov.:	92	96	100	100
RPD:	1.0	1.0	1.0	0.0
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK070896	BLK070896	BLK070896	BLK070896
Prepared Date:	7/8/96	7/8/96	7/8/96	7/8/96
Analyzed Date:	7/8/96	7/8/96	7/8/96	7/8/96
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	8.7	9.2	9.6	29
LCS % Recov.:	87	92	96	97

MS/MSD	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130
Control Limits				

SEQUOIA ANALYTICAL

Peggy Penner
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 matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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Blaine Tech Services, Inc.	Client Project ID:	Shell, Oakland / 960628-W2	
985 Timothy Drive	Matrix:	Liquid	
San Jose, CA 95133			
Attention: Jim Keller	Work Order #:	9607046-04, 06	Reported: Jul 15, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC070896BTEX17A	GC070896BTEX17A	GC070896BTEX17A	GC070896BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Woo	J. Woo	J. Woo	J. Woo
MS/MSD #:	9606H4705	9606H4705	9606H4705	9606H4705
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/8/96	7/8/96	7/8/96	7/8/96
Analyzed Date:	7/8/96	7/8/96	7/8/96	7/8/96
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	11	31
MS % Recovery:	100	100	110	103
Dup. Result:	10	11	11	32
MSD % Recov.:	100	110	110	107
RPD:	0.0	9.5	0.0	3.2
RPD Limit:	0-25	0-25	0-25	0-25
LCS #:	BLK070896	BLK070896	BLK070896	BLK070896
Prepared Date:	7/8/96	7/8/96	7/8/96	7/8/96
Analyzed Date:	7/8/96	7/8/96	7/8/96	7/8/96
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	10	11	11	32
LCS % Recov.:	100	110	110	107
MS/MSD Control Limits	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Peggy Penner
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 matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference