Weiss Associates Environmental and Geologic Services

5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: 510-547-5420

July 15, 1992

Mr. Dennis Byrne
Alameda County Department of
Environmental Health
80 Swan Way, Room 200
Oakland, California 94621-1426

Re: Shell Service Station
WIC #204-5508-5306
3420 San Pablo Avenue
Oakland, California
WA Job #81-612-201

Dear Mr. Byrne:

This letter describes recently completed and anticipated activities at the Shell service station referenced above (Figure 1.) This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 265.d. Included below are descriptions and results of activities performed in the second quarter 1992 and proposed work for the third quarter 1992.

Second Quarter 1991 Activities:

- Emcon Associates of San Jose, California measured ground water depths and collected water samples from the eleven site wells. Emcon's report describing these activities and analytic results for ground water is included as Attachment A.
- Weiss Associates (WA) used EMCON's ground water elevation calculations to prepare a ground water elevation contour map (Figure 2).

Anticipated Third Quarter 1992 Activities:

WA will submit a report presenting the results of third quarter 1992 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results and a ground water elevation contour map. WA will also renew the insurance for wells installed in the city right of way.

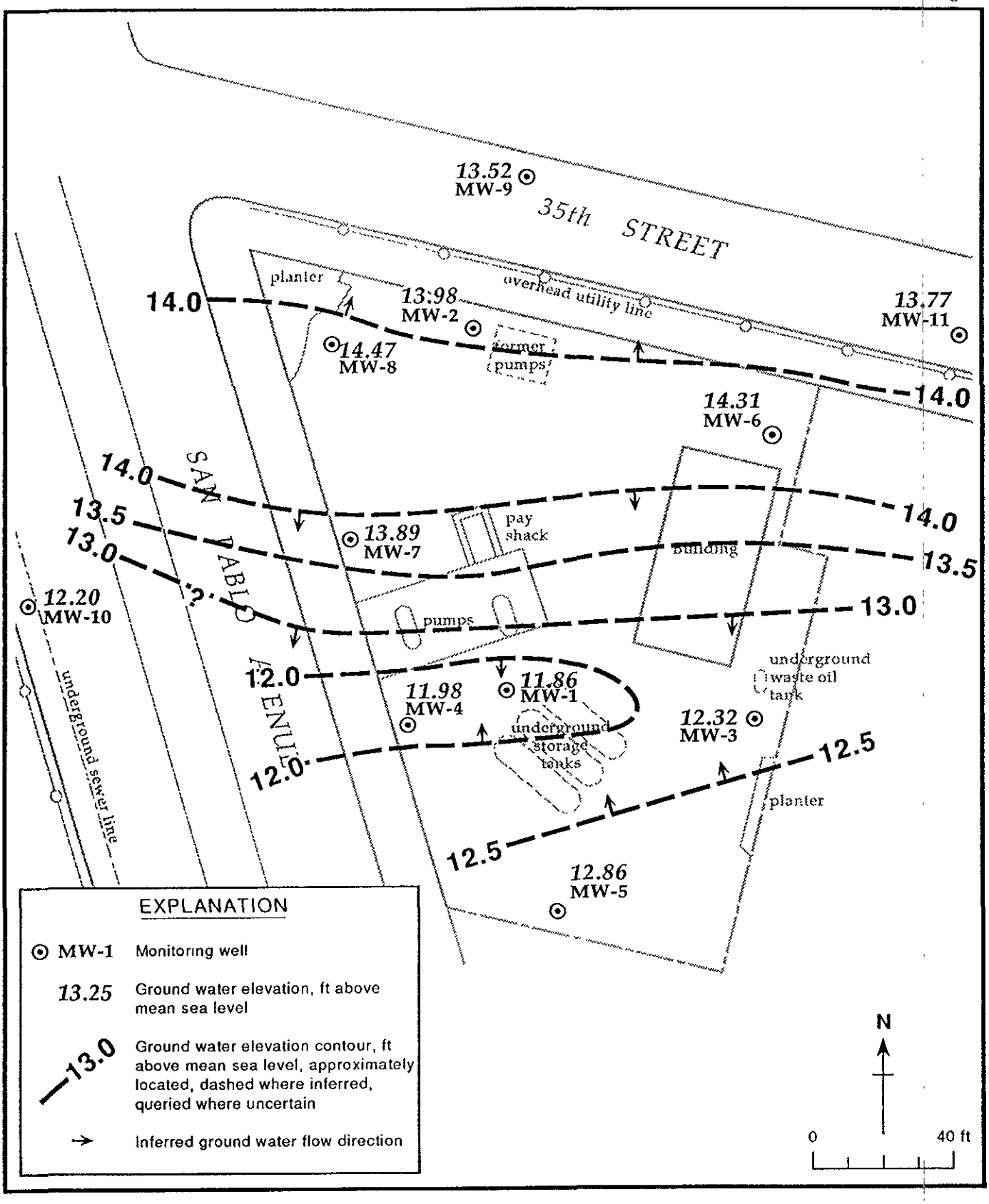

Figure 2. Ground Water Elevation Contours - May 4, 1992 - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

7/6/92

Please call if you have any questions.

Sincerely,
Weiss Associates

J. Michael Asport
Technical Assistant

Joseph P. Theisen, C.E.G.
Senior Hydrogeologist

JMA/JPT:jma

E:\ALL\SHELL\600\612QMJU2.WP

Attachments: Figures
A - Emcon Associates Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998
Lisa McCann, California Regional Water Quality Control Board, San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, California 94612

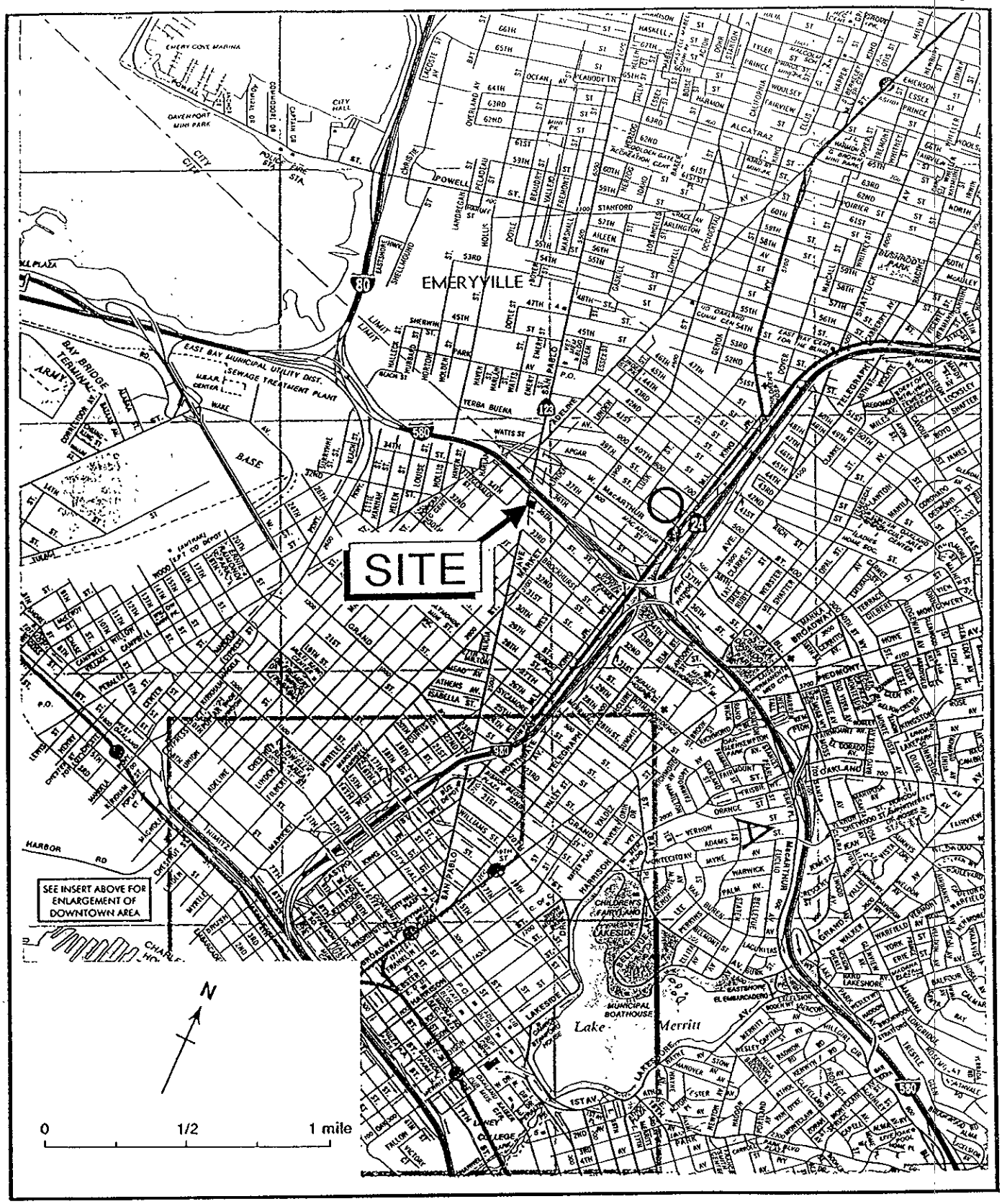

Figure 1. Site Location Map - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

ENGINEERING - WEST | 7205c++ Serial No.: 1601 CR 1(2) | Page 2 of 2

Site Address: 3420 San Pablo Avenue Oakland CA

WIC#: 204-5508-5306

Shell Engineer: Kurt Miller — **Phone No.** (510) — **Fax #:** 685-3853

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

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

Comments: 3 VOAs for g, BTEX Could not find TB. Lisle says it was collected, but could not find. DL

Sampled By: Lisle Rath

Printed Name: D Larsen for L Rath.

Analysis Required

LAB: Argon Metrix Sequoia, Redwood C.T.

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

TURN AROUND TI
24 hours [ ]
48 hours [ ]
15 days X (Norm
Other [ ]
NOTE: Notify Lab soon as possible of 24/48 hrs. TAT.

Sample ID	Date	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION COMMENTS
MW-8	5-5-92		X		3	X		X			40 ml	HCl	No	VOAs No bubbles preserved	
MW-2	5-5-92				3	X		X							
MW-6	5-5-92				3	X		X							
TB					2	X		X						No Trip Blanks CB 5/6/92	
TB	5-4-92		W		2	X		X			X	X	X	Came in 5/6/92 14:30 CCB.	

Relinquished By (signature): Lisle Rath	**Printed name:** Lisle Rath	Date: 5-5-92 Time: 1701	**Received (signature):** D Larsen	**Printed name:** D Larsen	Date: 5-5-92 Time: 1701
Relinquished By (signature): D Larsen	**Printed name:** D Larsen	Date: 5-6-92 Time: 11:20	**Received (signature):** Carl C Bates	**Printed name:** Carl C Bates	Date: 5/6/92 Time: 11:20
Relinquished By (signature):	**Printed name:**	Date: Time:	**Received (signature):**	**Printed name:**	Date: Time:

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

Last Revision Date: 10/15/91

ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT

EMCON
ASSOCIATES
Consultants in Wastes
Management and
Environmental Control

May 29, 1992
Project: G67-45.01
WIC#: 204-5508-5306

Mr. David Elias
Weiss Associates
5500 Shellmound Street
Emeryville, California 94608-2411

Re: Second quarter 1992 ground-water monitoring report, Shell Oil Company, 3420 San Pablo Avenue, Oakland, California

Dear Mr. Elias:

This letter presents the results of the second quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) site located at 3420 San Pablo Avenue, Oakland, California (figure 1). Second quarter monitoring was conducted on May 4 and 5, 1992. The site is monitored quarterly.

GROUND-WATER LEVEL SURVEY

A water-level survey preceded the purging and sampling of the monitoring wells. The wells included in the survey are identified in figure 2 (supplied by Weiss Associates). During the survey, wells MW-1 through MW-11 were measured for depth to water, floating product thickness, and total depth. Depth to water and floating product thickness were measured to the nearest 0.01 foot with an oil/water interface probe. Small drops of floating product were observed in well MW-1 with a clear Teflon® bailer, but an actual layer of floating product was not observed in the well. No floating product was observed in any other wells. Total depth was measured to the nearest 0.1 foot. Results of the second quarter water-level survey, and available data from four previous surveys, are summarized in table 1.

SAMPLING AND ANALYSIS

Ground-water samples were collected from wells MW-1 through MW-11 on May 4 and 5, 1992. Prior to sample collection, the wells were purged with polyvinyl chloride bailers. During the purging operation, ground water was monitored for pH, electrical conductivity, and temperature as a function of volume of water removed. Purging continued until these parameters were stable and a minimum of three casing volumes of ground water were removed. Wells MW-5, MW-9, and MW-10 were evacuated to dryness before three casing volumes were removed. These wells were allowed to recharge for up to 24 hours. Samples were

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

collected after the wells had recharged to a level sufficient for sample collection. Field measurements from second quarter monitoring, and available measurements from four previous monitoring events, are summarized in table 1. Purge water from the monitoring wells was contained in 55-gallon drums. The drums were identified with Shell-approved labels and secured for on-site storage.

Ground-water samples were collected with a Teflon bailer, labeled, placed on ice, and transported to a Shell-approved and state-certified analytical laboratory for analysis. Shell chain-of-custody documents accompanied all samples to the laboratory.

All equipment that was placed down a well or that came in contact with ground water was steam cleaned with deionized water prior to use at each well.

Quality control samples for second quarter monitoring included a trip blank. All water samples collected during second quarter monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPH-g), and benzene, toluene, ethylbenzene, and total xylenes (BTEX).

ANALYTICAL RESULTS

Analytical results for the second quarter 1992 monitoring event, and available results from four previous monitoring events, are summarized in table 2. The original certified analytical report and a copy of the final chain-of-custody document are attached.

If you have any questions, please call.

Very truly yours,

EMCON Associates

David Larsen
Environmental Sampling Coordinator

Orrin Childs
Environmental Sampling Supervisor

DL/OC:dl

Attachments: Table 1 - Monitoring well field measurement data
Table 2 - Summary of analytical results
Figure 1 - Site location map
Figure 2 - Monitoring well locations
Certified analytical report
Chain-of-custody document

Table 1
Monitoring Well Field Measurement Data
Second Quarter 1992

Shell Station: 3420 San Pablo Avenue
Oakland, California
WIC #: 204-5508-5306

Date: 05/29/92
Project Number: G87-45.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
MW-1	04/30/91	21.28	8.10	13.19**	NR	0.01	04/30/91	NR	NR	NR	NR
MW-1	08/06/91	21.28	10.86	10.43**	NR	0.01	08/06/91	FP	FP	FP	FP
MW-1	10/23/91	21.28	11.05	10.24**	NR	0.01	10/23/91	NR	NR	NR	NR
MW-1	01/28/92	21.28	10.84	10.44	25.1	ND	01/28/92	6.78	1300	64.3	>200
MW-1	05/04/92	21.28	9.42	11.86	25.2	<0.01^	05/05/92	5.96	989	64.2	>200
MW-2	04/30/91	21.56	6.76	14.81**	NR	0.01	04/30/91	FP	FP	FP	FP
MW-2	08/06/91	21.56	9.72	11.84	NR	ND	08/06/91	NR	NR	NR	NR
MW-2	10/23/91	21.56	10.03	11.53	NR	SHEEN	10/23/91	NR	NR	NR	NR
MW-2	01/28/92	21.56	8.78	12.78	19.3	ND	01/28/92	6.63	1422	62.5	>200
MW-2	05/04/92	21.56	7.58	13.98	19.4	ND	05/05/92	4.48	1352	65.9	198
MW-3	04/30/91	21.78	8.74	13.04	NR	ND	04/30/91	NR	NR	NR	NR
MW-3	08/06/91	21.78	11.18	10.60	NR	ND	08/06/91	NR	NR	NR	NR
MW-3	10/23/91	21.78	11.69	10.09	NR	ND	10/23/91	NR	NR	NR	NR
MW-3	01/28/92	21.78	9.99	11.79	27.5	ND	01/28/92	6.80	950	61.1	>200
MW-3	05/04/92	21.78	9.46	12.32	27.5	ND	05/04/92	6.38	777	69.3	>200
MW-4	04/30/91	20.31	8.17	12.14	NR	ND	04/30/91	NR	NR	NR	NR
MW-4	08/06/91	20.31	10.57	9.74	NR	ND	08/06/91	NR	NR	NR	NR
MW-4	10/23/91	20.31	10.46	9.85	NR	ND	10/23/91	NR	NR	NR	NR
MW-4	01/28/92	20.31	9.54	10.77	25.2	ND	01/28/92	7.20	1088	70.4	>200
MW-4	05/04/92	20.31	8.33	11.98	25.3	ND	05/04/92	6.56	1100	70.8	>200

TOC = top of casing
ft-MSL = elevation in feet, relative to mean sea level
std. units = standard pH units
micromhos/cm = micromhos per centimeter
degrees F = degrees Fahrenheit
NTU = nephelometric turbidity units
** = groundwater elevation corrected to include 80 percent of the floating product thickness measured in the well
NR = Not reported; data not available
FP = Floating product; well contained floating product and was not sampled
ND = None detected
^ = Small drops of floating product were observed in the well with a clear Teflon bailer

Table 1
Monitoring Well Field Measurement Data
Second Quarter 1992

Shell Station: 3420 San Pablo Avenue
Oakland, California
WIC #: 204-5508-5306

Date: 05/29/92
Project Number: G67-45.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
MW-5	04/30/91	20.91	7.56	13.35	NR	ND	04/30/91	NR	NR	NR	NR
MW-5	08/06/91	20.91	10.23	10.68	NR	ND	08/06/91	NR	NR	NR	NR
MW-5	10/23/91	20.91	10.89	10.02	NR	ND	10/23/91	NR	NR	NR	NR
MW-5	01/28/92	20.91	8.45	12.46	25.0	ND	01/28/92	6.78	891	68.7	>200
MW-5	05/04/92	20.91	8.05	12.86	25.0	ND	05/04/92	6.48	866	69.2	>200
MW-6	04/30/91	22.32	7.03	15.29	NR	ND	04/30/91	NR	NR	NR	NR
MW-6	08/06/91	22.32	10.61	11.71	NR	ND	08/06/91	NR	NR	NR	NR
MW-6	10/23/91	22.32	11.68	10.64	NR	SHEEN	10/23/91	NR	NR	NR	NR
MW-6	01/28/92	22.32	8.90	13.42	19.9	ND	01/28/92	6.70	1050	61.5	>200
MW-6	05/04/92	22.32	8.01	14.31	20.0	ND	05/05/92	7.89	861	63.3	>200
MW-7	04/30/91	20.36	5.40	14.96	NR	ND	04/30/91	NR	NR	NR	NR
MW-7	08/06/91	20.36	8.00	12.36	NR	ND	08/06/91	NR	NR	NR	NR
MW-7	10/23/91	20.36	8.16	12.20	NR	ND	10/23/91	NR	NR	NR	NR
MW-7	01/28/92	20.36	7.11	13.25	19.5	ND	01/28/92	6.90	1320	63.5	>200
MW-7	05/04/92	20.36	6.47	13.89	19.7	ND	05/05/92	5.91	1024	63.8	>200
MW-8	04/30/91	20.95	6.35	14.60	NR	ND	04/30/91	NR	NR	NR	NR
MW-8	08/06/91	20.95	9.60	11.35	NR	ND	08/06/91	NR	NR	NR	NR
MW-8	10/23/91	20.95	9.73	11.22	NR	ND	10/23/91	NR	NR	NR	NR
MW-8	01/28/92	20.95	7.72	13.23	20.0	ND	01/28/92	6.74	1254	62.8	>200
MW-8	05/04/92	20.95	6.48	14.47	20.0	ND	05/05/92	6.10	1086	62.8	>200

TOC = top of casing
ft-MSL = elevation in feet, relative to mean sea level
std. units = standard pH units
micromhos/cm = micromhos per centimeter
degrees F = degrees Fahrenheit
NTU = nephelometric turbidity units
NR = Not reported; data not available
ND = None detected

Table 1
Monitoring Well Field Measurement Data
Second Quarter 1992

Shell Station: 3420 San Pablo Avenue
Oakland, California
WIC #: 204-5508-5306

Date: 05/29/92
Project Number: G67-45.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
MW-9	04/30/91	21.19	7.20	13.99	NR	ND	04/30/91	NR	NR	NR	NR
MW-9	08/06/91	21.19	10.33	10.86	NR	ND	08/06/91	NR	NR	NR	NR
MW-9	10/23/91	21.19	11.13	10.06	NR	ND	10/23/91	NR	NR	NR	NR
MW-9	01/28/92	21.19	9.02	12.17	19.7	ND	01/28/92	7.01	1381	65.3	>200
MW-9	05/04/92	21.19	7.67	13.52	19.7	ND	05/04/92	6.49	1151	71.3	>200
MW-10	10/23/91	19.74	8.57	11.17	NR	ND	10/23/91	NR	NR	NR	NR
MW-10	01/28/92	19.74	7.60	12.14	18.8	ND	01/28/92	7.02	1640	61.3	>200
MW-10	05/04/92	19.74	7.54	12.20	19.0	ND	05/04/92	6.72	1042	65.0	>200
MW-11	10/23/91	22.06	14.0	8.06	NR	ND	10/23/91	NR	NR	NR	NR
MW-11	01/28/92	22.06	8.74	13.32	19.0	ND	01/28/92	7.28	1040	65.3	>200
MW-11	05/04/92	22.06	8.29	13.77	19.0	ND	05/04/92	6.58	721	66.9	>200

TOC = top of casing
ft-MSL = elevation in feet, relative to mean sea level
std. units = standard pH units
micromhos/cm = micromhos per centimeter
degrees F = degrees Fahrenheit
NTU = nephelometric turbidity units
NR = Not reported; data not available
ND = None detected

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

Shell Station: 3420 San Pablo Avenue
Oakland, California
WIC #: 204-5508-5306

Date: 06/15/92
Project Number: G67-45.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)
MW-1	04/30/91	39.	2.4	2.1	1.9	10.
MW-1	08/06/91	FP	FP	FP	FP	FP
MW-1	10/23/91	32.	2.7	0.36	0.55	3.7
MW-1	01/28/92	14.	1.0	0.16	0.45	1.6
MW-1	05/05/92	98.	11.	1.2	3.5	18.
MW-2	04/30/91	64.	14.	1.5	2.5	11.
MW-2	08/06/91	50.	15.	1.4	2.7	13.0
MW-2	10/23/91	120.	11.	1.4	3.5	19.0
MW-2	01/28/92	49.	7.4	0.8	1.8	8.3
MW-2	05/05/92	52.	12.	1.1	2.2	12.
MW-3	04/30/91	0.46	<0.0003	<0.0003	<0.0003	0.00037
MW-3	08/06/91	0.43	0.008	0.001	0.004	0.015
MW-3	10/23/91	0.39	0.0021	<0.0003	0.00048	0.002
MW-3	01/28/92	0.19	<0.0005	<0.0005	<0.0005	<0.0005
MW-3	05/04/92	0.19	<0.001	<0.001	<0.001	0.00071
MW-4	04/30/91	1.3	0.35	0.013	0.029	0.042
MW-4	08/06/91	1.3	0.028	0.018	0.068	0.15
MW-4	10/23/91	1.9	0.097	0.0061	0.038	0.077
MW-4	01/28/92	0.20	0.0076	<0.0005	0.0030	0.0033
MW-4	05/04/92	0.69	0.098	0.003	0.013	<0.001

TPH-g = total petroleum hydrocarbons as gasoline
FP = Floating product; well contained floating product and was not sampled

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

Shell Station: 3420 San Pablo Avenue
Oakland, California
WIC #: 204-5508-5306

Date: 06/15/92
Project Number: G67-45.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)
MW-5	04/30/91	3.7	0.16	0.0077	0.012	0.57
MW-5	08/06/91	9.1	0.21	0.027	0.24	0.66
MW-5	10/23/91	12.0	0.092	0.018	0.23	0.45
MW-5	01/28/92	3.3	0.13	0.01	0.18	0.22
MW-5	05/04/92	3.9	0.095	<0.0125	0.26	0.12
MW-6	04/30/91	42.	1.9	0.28	1.7	6.0
MW-6	08/06/91	28.0	1.4	0.20	1.3	4.2
MW-6	10/23/91	53.0	1.4	0.23	1.8	6.7
MW-6	01/28/92	87.	1.2	0.47	2.0	6.6
MW-6	05/05/92	230.	<0.5	<0.5	3.2	11.
MW-7	04/30/91	9.2	3.0	<0.0003	0.57	0.59
MW-7	08/06/91	13.0	4.3	0.076	0.77	0.73
MW-7	10/23/91	18.0	3.2	0.031	0.66	0.77
MW-7	01/28/92	5.0	1.2	<0.01	0.22	0.054
MW-7	05/05/92	9.5	3.1	0.072	0.62	0.88
MW-8	04/30/91	31.	3.1	1.1	1.3	5.7
MW-8	08/06/91	32.0	3.7	1.1	1.4	6.1
MW-8	10/23/91	63.0	4.8	1.3	1.3	6.9
MW-8	01/28/92	32.	1.9	0.75	1.4	6.3
MW-8	05/05/92	180.	2.2	2.0	2.7	13.
MW-9	04/30/91	1.9	0.27	0.015	0.10	0.12
MW-9	08/06/91	11.0	1.7	0.095	0.52	1.4
MW-9	10/23/91	20.0	1.0	0.047	<0.0003	0.94
MW-9	01/28/92	3.5	0.12	<0.01	0.028	0.036
MW-9	05/04/92	7.7	1.2	<0.05	0.38	0.63

TPH-g = total petroleum hydrocarbons as gasoline

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

Shell Station: 3420 San Pablo Avenue
Oakland, California
WIC #: 204-5508-5306

Date: 06/15/92
Project Number: G67-45.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)
MW-10	10/23/91	27.	1.6	0.11	1.8	0.51
MW-10	01/28/92	3.8	0.36	0.014	0.17	0.039
MW-10	05/04/92	3.0	0.36	<0.0125	0.14	0.026
MW-11	10/23/91	0.14	0.0012	<0.0003	0.00037	0.00056
MW-11	01/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
MW-11	05/04/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	01/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	05/05/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TPH-g = total petroleum hydrocarbons as gasoline

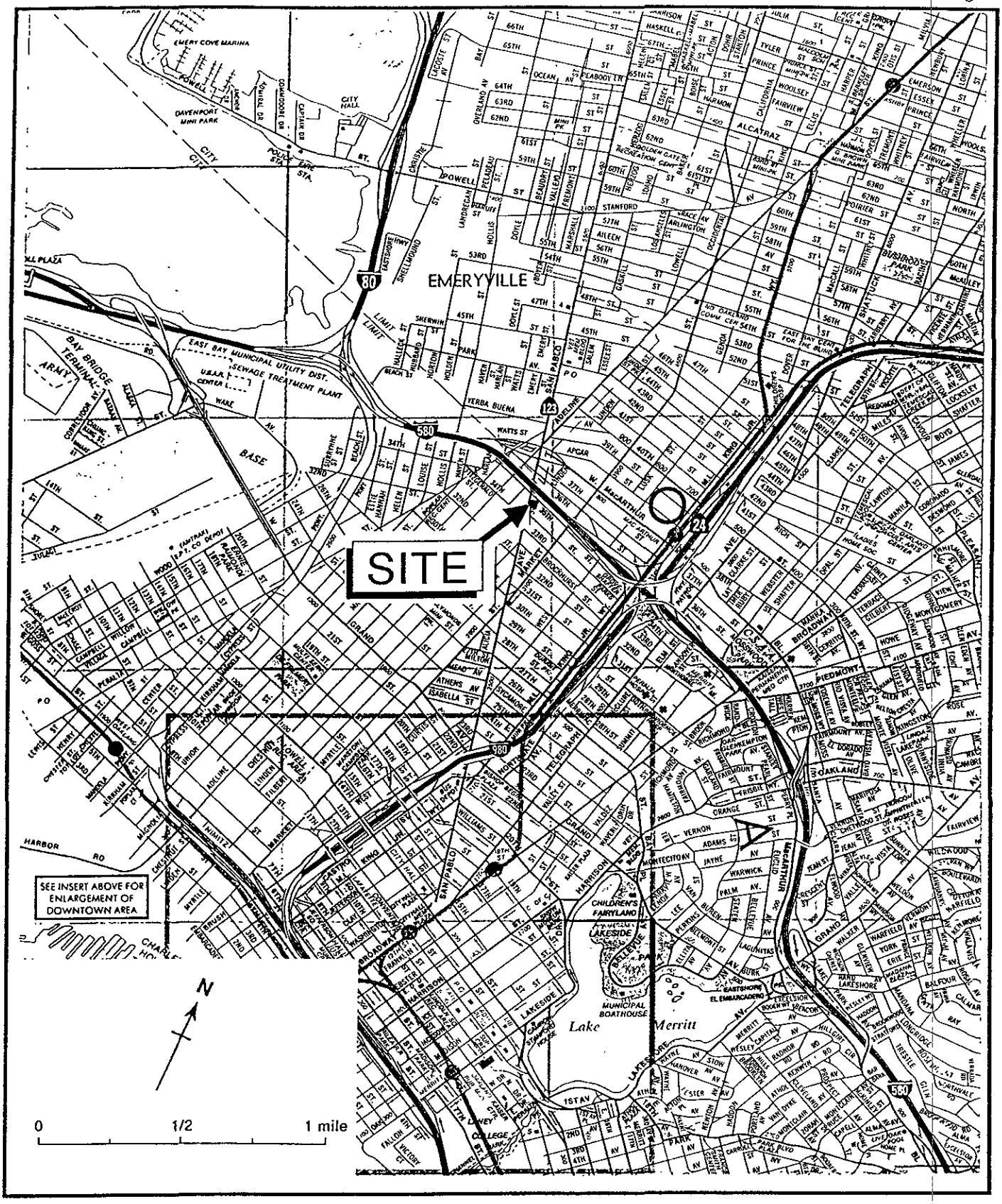

Figure 1. Site Location Map - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

2/13/92

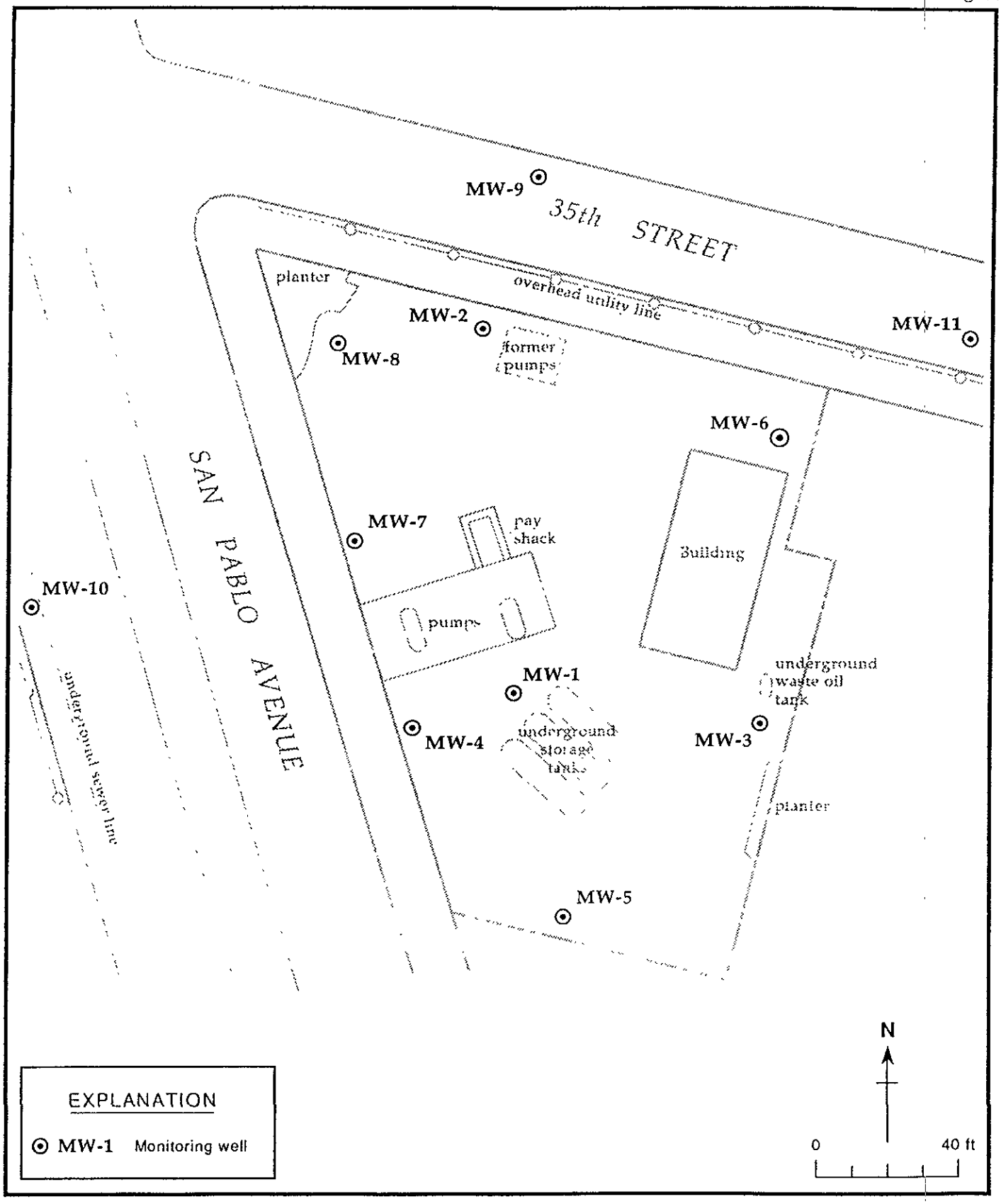

Figure 2. Monitoring Well Locations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

5/14/92

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

REPORT

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

Workorder # : 9205077
Date Received : 05/06/92
Project ID : G67-45.01
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9205077- 1	MW-11
9205077- 2	MW-3
9205077- 3	MW-4
9205077- 4	MW-9
9205077- 5	MW-5
9205077- 6	MW-10
9205077- 7	MW-7
9205077- 8	MW-1
9205077- 9	MW-8
9205077-10	MW-2
9205077-11	MW-6
9205077-12	TB

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

5-21-92
Date

EMCON ASSOCIATES
MAY 22 1992
RECEIVED

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

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

Workorder # : 9205077
Date Received : 05/06/92
Project ID : G67-45.01
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9205077- 1	MW-11	WATER	05/04/92	TPHg/BTEX
9205077- 2	MW-3	WATER	05/04/92	TPHg/BTEX
9205077- 3	MW-4	WATER	05/04/92	TPHg/BTEX
9205077- 4	MW-9	WATER	05/04/92	TPHg/BTEX
9205077- 5	MW-5	WATER	05/04/92	TPHg/BTEX
9205077- 6	MW-10	WATER	05/04/92	TPHg/BTEX
9205077- 7	MW-7	WATER	05/05/92	TPHg/BTEX
9205077- 8	MW-1	WATER	05/05/92	TPHg/BTEX
9205077- 9	MW-8	WATER	05/05/92	TPHg/BTEX
9205077-10	MW-2	WATER	05/05/92	TPHg/BTEX
9205077-11	MW-6	WATER	05/05/92	TPHg/BTEX
9205077-12	TB	WATER	05/04/92	TPHg/BTEX

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

MR. DAVID LARSEN
EMCON ASSOCIATES
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SAN JOSE, CA 95131

Workorder # : 9205077
Date Received : 05/06/92
Project ID : G67-45.01
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as gasoline for sample MW-3 is primarily due to the presence of a discrete hydrocarbon peak not indicative of gasoline.
- Sample MW-3 was analyzed twice for the gasoline /BTEX results. The sample was originally analyzed at 1:1, and this result was used for the BTEX results. Due to a single offscale peak on the FID, the sample was re-analyzed at a 1:2 dilution to give the gasoline results.

Cheryl Palmer 6/16/92
Department Supervisor Date

Luisa Shor 6/16/92
Chemist Date

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

Anametrix W.O.: 9205077
Matrix : WATER
Date Sampled : 05/04/92

Project Number : G67-45.01
Date Released : 05/20/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-11 -01	Sample I.D.# MW-3 -02	Sample I.D.# MW-4 -03	Sample I.D.# MW-9 -04	Sample I.D.# MW-5 -05
Benzene	0.0005	ND	ND	0.098	1.2	0.095
Toluene	0.0005	ND	ND	0.003	ND	ND
Ethylbenzene	0.0005	ND	ND	0.013	0.38	0.26
Total Xylenes	0.0005	ND	0.00071	ND	0.63	0.12
TPH as Gasoline	0.050	ND	0.19	0.69	7.7	3.9
% Surrogate Recovery		101%	106%	138%	138%	106%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		05/13/92	05/15/92	05/14/92	05/14/92	05/15/92
RLMF		1	2	2	100	25

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

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

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

Reggie Davison 6/11/92
Analyst Date

Cheryl Balmer 6/11/92
Supervisor Date

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

Anametrix W.O.: 9205077
Matrix : WATER
Date Sampled : 05/04 & 05/92

Project Number : G67-45.01
Date Released : 05/20/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-10 -06	Sample I.D.# MW-7 -07	Sample I.D.# MW-1 -08	Sample I.D.# MW-8 -09	Sample I.D.# MW-2 -10
Benzene	0.0005	0.36	3.1	11	2.2	12
Toluene	0.0005	ND	0.072	1.2	2.0	1.1
Ethylbenzene	0.0005	0.14	0.62	3.5	2.7	2.2
Total Xylenes	0.0005	0.026	0.88	18	13	12
TPH as Gasoline	0.050	3.0	9.5	98	180	52
% Surrogate Recovery		110%	98%	101%	118%	110%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		05/15/92	05/16/92	05/16/92	05/17/92	05/16/92
RLMF		25	100	500	250	1000

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

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

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

Analyst 5/21/92 Date

Supervisor 5/20/92 Date

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

Anametrix W.O.: 9205077
Matrix : WATER
Date Sampled : 05/04 & 05/92

Project Number : G67-45.01
Date Released : 05/20/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-6 -11	Sample I.D.# TB -12	Sample I.D.# 04B0513A BLANK	Sample I.D.# 04B0514A BLANK	Sample I.D.# 04B0515A BLANK
Benzene	0.0005	ND	ND	ND	ND	ND
Toluene	0.0005	ND	ND	ND	ND	ND
Ethylbenzene	0.0005	3.2	ND	ND	ND	ND
Total Xylenes	0.0005	11	ND	ND	ND	ND
TPH as Gasoline	0.050	230	ND	ND	ND	ND
% Surrogate Recovery		111%	108%	102%	117%	105%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		05/16/92	05/15/92	05/13/92	05/14/92	05/15/92
RLMF		1000	1	1	1	1

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

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

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

Analyst 5/20/91 Date

Supervisor 5/20/92 Date

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

Anametrix W.O.: 9205077
Matrix : WATER
Date Sampled : N/A

Project Number : G67-45.01
Date Released : 05/20/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# 04B0516A BLANK	Sample I.D.# 04B0517A BLANK
Benzene	0.0005	ND	ND
Toluene	0.0005	ND	ND
Ethylbenzene	0.0005	ND	ND
Total Xylenes	0.0005	ND	ND
TPH as Gasoline	0.050	ND	ND
% Surrogate Recovery		100%	100%
Instrument I.D.		HP4	HP4
Date Analyzed		05/16/92	05/17/92
RLMF		1	1

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

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

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

Analyst — Date 5/21/92

Supervisor — Date 5/20/92

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

SAMPLE I.D. : G67-45.01 MW-3
Matrix : WATER
Date Sampled : 05/04/92
Date Analyzed : 05/13/92

Anametrix I.D.: 9205077-2
Analyst : [signature]
Supervisor : [signature]
Date Released : 05/20/92
Instrument ID : HP4

COMPOUND	SPIKE AMT. (mg/L)	MS (mg/L)	REC MS	MSD (mg/L)	REC MSD	RPD	%REC LIMITS
Benzene	0.020	0.018	90%	0.019	95%	5%	49-159
Toluene	0.020	0.017	85%	0.018	90%	6%	53-156
Etylbenzene	0.020	0.018	90%	0.018	90%	0%	54-151
M+P-Xylenes	0.013	0.013	100%	0.013	100%	0%	56-157
O-Xylene	0.0066	0.0063	95%	0.0063	95%	0%	58-154
P-BFB			101%		91%		53-147

* Limits established by Anametrix, Inc.

Site Address: 3420 San Pablo Avenue Oakland CA

WIC#: 204-5508-5306

Shell Engineer: Kurt Miller | Phone No. (510) | Fax #: 685-3853

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

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

Comments: 3-VOAs for g, BTEX
2-VOAs for TB

Sampled By: D Larsen for L Rath

Printed Name: Lisle Rath

Serial No.: 1601 | Page 1 of 2

LAB: Anametrix / Sequoia - Reduced

CHECK ONE (1) BOX ONLY | CT/DT

- Quarterly Monitoring XX 5461
- Site Investigation [ ] 5441
- Soil for disposal [ ] 5442
- Water for disposal [ ] 5443
- Air Sample- Sys O&M [ ] 5452
- Water Sample - Sys O&M [ ] 5453
- Other [ ]

TURN AROUND TI

- 24 hours [ ]
- 48 hours [ ]
- 15 days XX (Norm
- Other [ ] ____

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

Analysis Required

	Sample ID	Date	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION COMMENT
1	MW-11	5-4-92		X		3	X		X			40 ml	HCl	No	VOAs w bubbles preserved	
2	MW-3	5-4-92				3	X		X							
3	MW-4	5-4-92				3	X		X							
4	MW-9	5-4-92				3	X		X							
5	MW-5	5-4-92				3	X		X							
6	MW-10	5-4-92				3	X		X							
7	MW-7	5-5-92				3	X		X							
8	MW-1	5-5-92				3	X		X							

Relinquished By (signature): Lisa Rath | Printed name: Lisle RATH | Date: 5-5-92 | Time: 1701

Relinquished By (signature): D Larsen | Printed name: D Larsen | Date: 5-6-92 | Time: 11:20

Relinquished By (signature): | Printed name: | Date: | Time:

Received (signature): | Printed name: | Date: 5-5-92 | Time: 17:01

Received (signature): Carl C Burks | Printed name: Carl C Burks | Date: 5/6/92 | Time: 11:20

Received (signature): | Printed name: | Date: | Time:

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

Last Revision Date: 10/15/91

SHELL OIL CORPORATION
QUARTERLY REPORT TO THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
County of **ALAMEDA** Date of report: **7/14/89**

Site ID: **20455085306 / 3420 SAN PABLO AVENUE** City of **OAKLAND**

Actions in past three months: **DRILLED AND INSTALLED MONITORING WELLS. DEVELOPED AND SAMPLED WELLS. SUBMITTED WELL DETAILS, BORING LOGS TO ALAMEDA COUNTY. PREPARE INTERIM PROBLEM ASSESSMENT REPORT WITH PROPOSAL FOR ADDITIONAL WORK.**

Actions planned for next three months: **FINALIZE AND SUBMIT INTERIM PROBLEM ASSESSMENT REPORT TO SHELL AND REGULATORY AGENCIES FOR REVIEW, COMMENT, AND APPROVAL. PROCEED WITH WORK PROPOSED IN REPORT.**

Soil contamination defined? **NO**
Free product plume defined? **N/A**
Dis'ld const'nt plume defined? **NO**
Soil clean-up in progress? **NO**
Free product clean-up in progress? **N/A**
Dis'ld const'nt clean-up in progress? **NO**
Contractor: **DELTA ENVIRONMENTAL CONSULTANTS, INC.**

SHELL OIL CORPORATION
QUARTERLY REPORT TO THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
County of ALAMEDA Date of Report: 01/10/90

Site ID: 204550853 3420 SAN PABLO AVE City of OAKLAND

Actions in past three months: APPLIED FOR AND RECEIVED ENCROACHMENT PERMITS FROM THE CITY OF OAKLAND FOR OFF-SITE WELL INSTALLATION. QUARTERLY STATUS REPORT PREPARED AND SUBMITTED.

Actions planned for next three months: ADDITIONAL OFF-SITE MONITORING WELLS TO BE INSTALLED IN MID-JANUARY 1990. RESULTS REPORT (PAR IF DELINEATION ACCOMPLISHED, LETTER REPORT IF ADDITIONAL WORK NECESSARY) WILL BE PREPARED.

Soil contamination defined?	No	Soil clean-up in progress?	No
Free product plume defined?	No	Free product clean-up in progress?	No
Dis'ld const'nt plume defined?	No	Dis'ld const'nt clean-up in progress?	No

Contractor: DELTA

~~LHM~~ LF

Delta
Environmental
Consultants, Inc.

3330 Data Drive
Rancho Cordova, CA 95670
916/638-2085
FAX:916/638-8385

March 29, 1990

Mr. Dennis Byrne
Environmental Health Services
Hazardous Materials Department
County of Alameda
470 27th Street
Oakland, California 94607

Subject: Project Status - Shell Service Station
3420 San Pablo Avenue, Oakland, California
Delta Project No. 40-88-666

Dear Mr. Byrne:

This letter is an update on work currently being performed for the subject site. On January 18 and 19, 1990, five monitoring wells were drilled and installed. All monitoring wells were later sampled. A report with findings is forthcoming. Quarterly sampling will be performed in April 1990.

If you have any questions regarding this site, please call me at (916) 638-2085.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Hal Hansen

Hal Hansen
Hydrogeologist/Project Manager

HH:ecd

cc: Ms. Lisa McCann, California Regional Water Quality Control Board,
San Francisco Bay Region
Ms. Diane Lundquist, Shell Oil Company

SCC

Delta
Environmental
Consultants, Inc.

3330 Data Drive, Suite 100
Rancho Cordova, CA 95670
916/638-2085
FAX: 916/638-8385

June 26, 1990

01

Mr. Dennis Byrne
Hazardous Materials Division
Alameda County Environmental Health Services
80 Swan Way, Room 200
Oakland, California 94621

Subject: *Phase II Hydrogeologic Assessment Report*
Shell Oil Company
3420 San Pablo Avenue, Oakland, California
Delta Project No. 40-88-666
WIC No. 204-5508-5306

Dear Mr. Byrne:

Enclosed is a copy of Delta Environmental Consultants, Inc. (Delta's), *Phase II Hydrogeologic Assessment Report* for your review. Based on the results of our findings, we propose two additional monitoring wells to define the extent of petroleum hydrocarbons in ground water. One well upgradient from MW-6 and the other to the southeast of MW-8. Delta is currently seeking encroachment permits to implement this work.

If you have any questions regarding this matter, please contact me at (916) 638-2085.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.

Hal Hansen

Hal Hansen
Hydrogeologist/Project Manager

HH:law
Enclosure

cc/enc: [redacted], California Regional Water Quality Control Board,
San Francisco Bay Region
Ms. Diane Lundquist, Shell Oil Company