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**TRANSMITTAL LETTER**

**FROM:** J. Michael Asport

**DATE:** August 27, 1992

*ROUTED*

**TO:** Richard Hiatt  
Water Quality Control Board  
San Francisco Bay Region  
2101 Webster Street, Suite 500  
Oakland, CA 94612

**VIA:**  X  First Class Mail  
\_\_\_\_\_ Fax \_\_\_\_\_ pages  
\_\_\_\_\_ UPS (Surface)  
\_\_\_\_\_ Federal Express  
\_\_\_\_\_ Courier

**SUBJECT:** Shell Service Station  
WIC #204-5508-5801  
630 High Street  
Oakland, California

**JOB:** 81-602-201

**AS:** \_\_\_\_\_ We discussed on the telephone on \_\_\_\_\_  
\_\_\_\_\_ You requested \_\_\_\_\_  
\_\_\_\_\_ We believe you may be interested  
 X  \_\_\_\_\_ Is required

**WE ARE SENDING:**  X  Enclosed  
\_\_\_\_\_ Under Separate Cover Via \_\_\_\_\_

Quarterly Status Report

**FOR:** \_\_\_\_\_ Your information  
 X  \_\_\_\_\_ Your use  
\_\_\_\_\_ Your review & comments  
\_\_\_\_\_ Return to you

**PLEASE:**  X  Keep this material  
\_\_\_\_\_ Return within 2 weeks  
\_\_\_\_\_ Acknowledge receipt

**MESSAGE:** Please call if you have any questions.

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998  
Rafat Shahid, Alameda County Department of Environmental Health, 80 Swan Way,  
Oakland, CA 94621-1426



August 26, 1992

Mr. Richard Hiatt  
Water Quality Control Board  
San Francisco Bay Region  
2101 Webster Street, Suite 500  
Oakland, CA 94612

Re: Shell Service Station  
WIC #204-5508-5801  
630 High Street  
Oakland, California  
WA Job #81-602-201

Dear Mr. Hiatt

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 1992 Activities:

- EMCON Associates (EMCON) of San Jose, California measured depths to ground water and collected ground water samples from the ten site wells. EMCON's report describing these activities and presenting analytic results for ground water is included as Attachment A.
- Since EMCON's ground water elevation data for the wells proved difficult to contour meaningfully, Weiss Associates (WA) remeasured ground water depths in the ten wells on July 7, 1992. The July 7 ground water depth measurements and elevation calculations are presented in Table 1.
- WA used the July 7 ground water elevation calculations to prepare a ground water elevation contour map (Figure 2).

Richard Hiett  
August 26, 1992

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Weiss Associates 

Anticipated Third Quarter 1992 Activities:

WA will submit a report presenting the results of the 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.

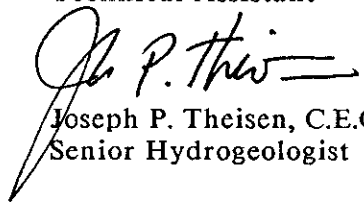
Please call if you have any questions.



Sincerely,  
Weiss Associates



J. Michael Asport  
Technical Assistant



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

JMA/JPT:jma

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Attachments: Figures  
Tables  
A - EMCON's Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, CA 94520  
Rafat Shahid, Alameda County Department of Environmental Health, 80 Swan  
Way, Room 200, Oakland, CA 94621

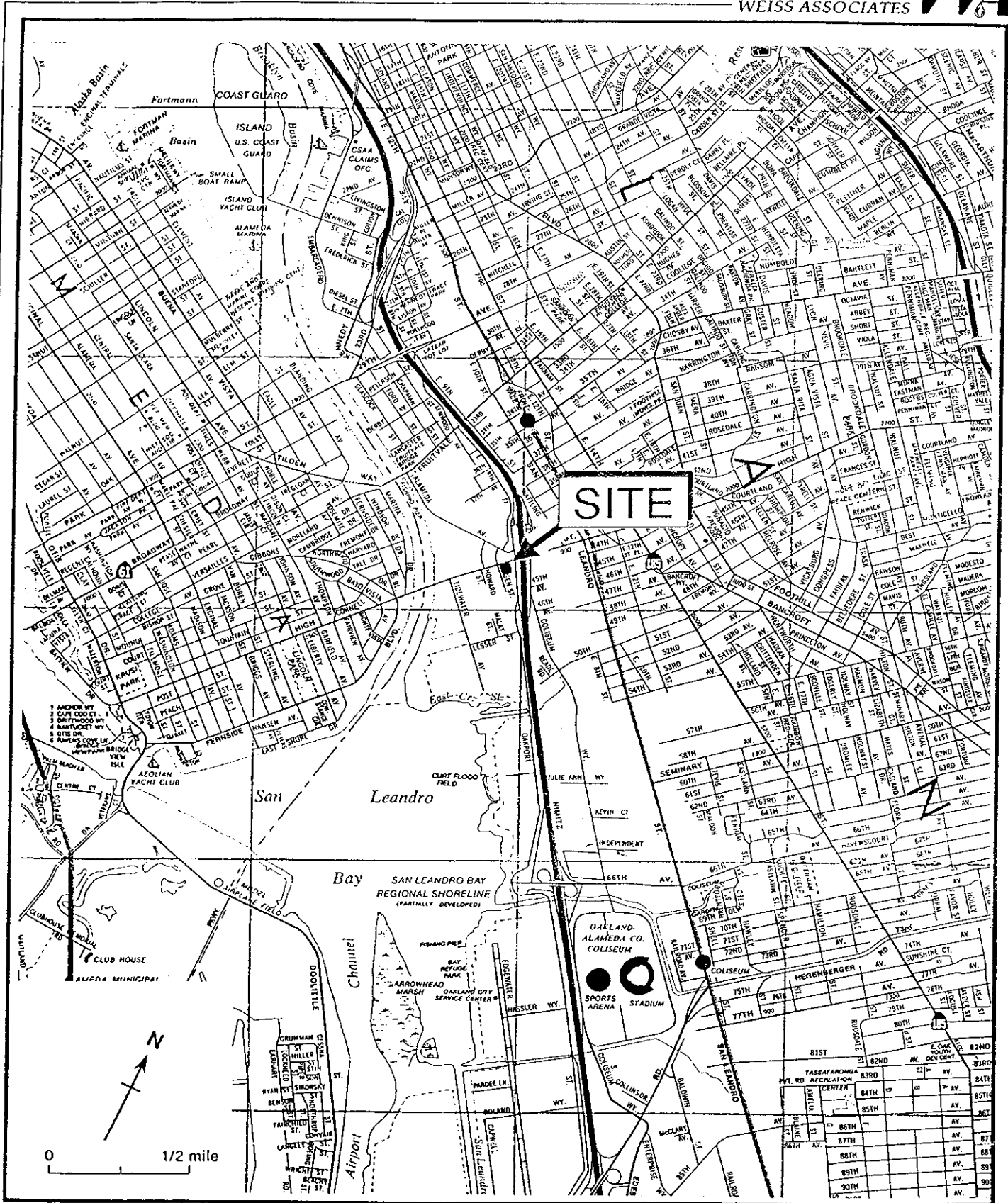


Figure 1. Site Location Map - Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California

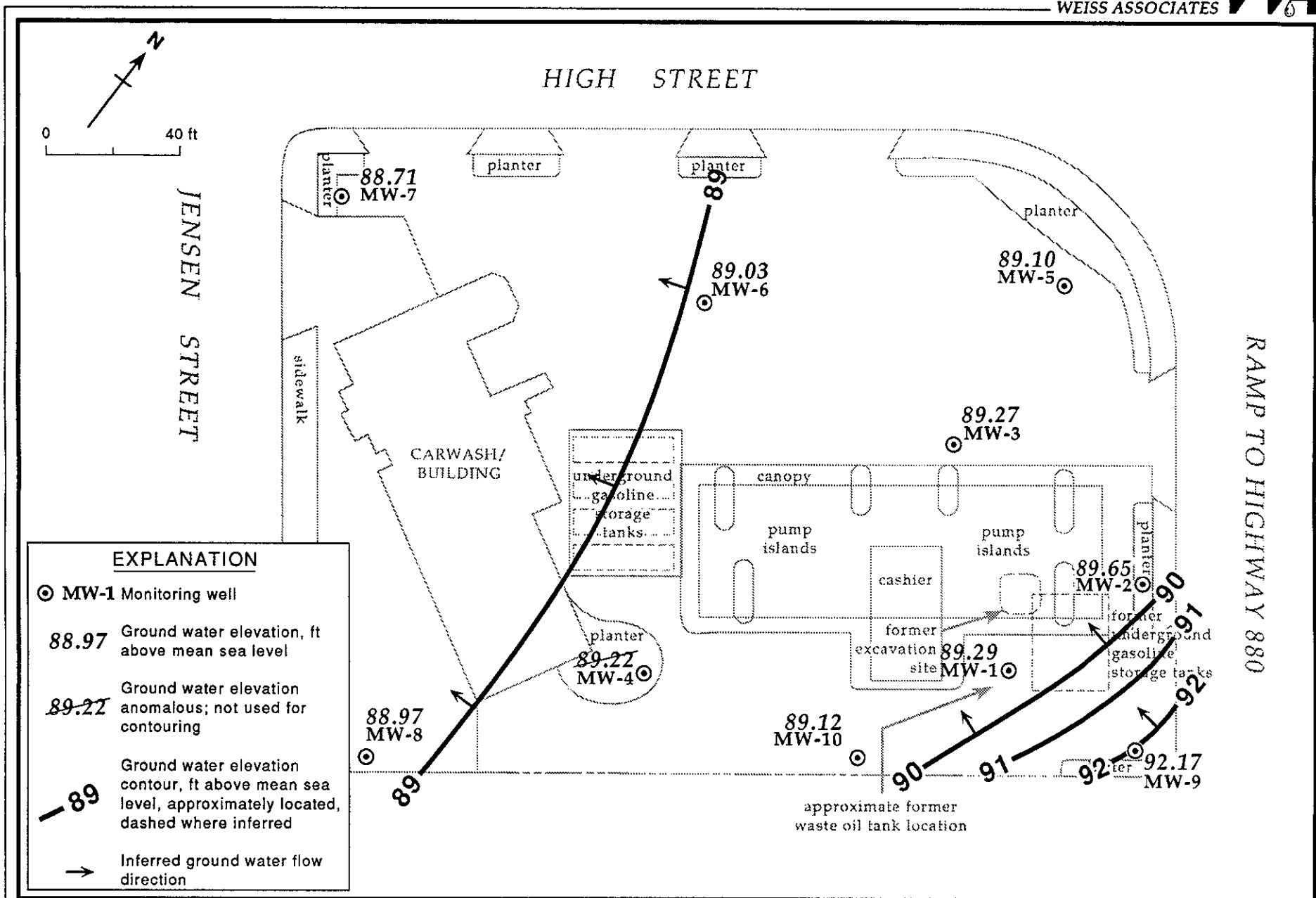


Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - July 7, 1992 - Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California

Table 1. Ground Water Elevations - Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	07/07/92	99.35	10.06	89.29
MW-2	07/07/92	101.15	11.50	89.65
MW-3	07/07/92	99.49	10.22	89.27
MW-4	07/07/92	99.24	10.02	89.22
MW-5	07/07/92	100.08	10.98	89.10
MW-6	07/07/92	98.56	9.53	89.03
MW-7	07/07/92	97.53	8.82	88.71
MW-8	07/07/92	97.13	8.16	88.97
MW-9	07/07/92	99.72	7.55	92.17
MW-10	07/07/92	98.99	9.87	89.12

**ATTACHMENT A**  
**GROUND WATER MONITORING REPORT AND ANALYTIC REPORT**



**EMCON**  
ASSOCIATES  
Consultants in Wastes  
Management and  
Environmental Control

June 29, 1992  
Project: G67-51.01  
WIC#: 204-5508-5801

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

Re: Second quarter 1992 ground-water monitoring report, Shell Oil  
Company, 630 High Street, 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 630 High Street, Oakland, California (figure 1). Second quarter monitoring was conducted on May 22, 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-10 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. No floating product was observed in the 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-10 on May 22, 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-1, MW-3, MW-9, and MW-10 were evacuated to dryness before three casings were removed. The wells were allowed to recharge for up to 24 hours. Samples were 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



Mr. David Elias  
June 29, 1992  
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Project G67-51.01  
WIC# 204-5508-5801

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 (called MW-22). 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). Additional ground-water samples collected from wells MW-1, MW-3, MW-4, MW-5, MW-6, and MW-10 were analyzed for total petroleum hydrocarbons as diesel (TPH-d).

#### **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 chain-of-custody document are attached.

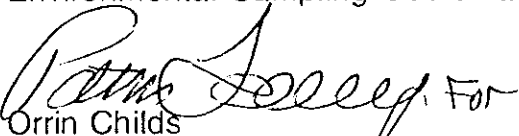
If you have any questions, please call.

Very truly yours,

EMCON Associates



David Larsen  
Environmental Sampling Coordinator



Orrin Childs  
Environmental Sampling Supervisor

DL/OC:dl

Mr. David Elias  
June 29, 1992  
Page 3

Project G67-51.01  
WIC# 204-5508-5801

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: 630 High Street  
Oakland, California  
WIC #: 204-5508-5801

Date: 06/25/92  
Project Number: G67-51.01

Well Desig- nation	Water Level Field Date	TOC Elevation (ft-PSD)	Depth to Water (feet)	Ground- water Elevation (ft-PSD)	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	01/29/91	99.35	10.79	88.56	NR	ND	01/29/91	NR	NR	NR	NR
MW-1	04/30/91	99.35	9.48	89.87	NR	ND	04/30/91	NR	NR	NR	NR
MW-1	07/22/91	99.35	10.53	88.82	NR	ND	07/23/91	NR	NR	NR	NR
MW-1	02/21/92	99.35	8.31	91.04	13.8	ND	02/24/92	6.90	2170	68.4	>200
MW-1	05/22/92	99.35	10.02	89.33	13.5	ND	05/22/92	6.87	1988	70.5	>200
MW-2	01/29/91	101.15	13.25	87.90	NR	ND	01/29/91	NR	NR	NR	NR
MW-2	04/30/91	101.15	10.94	90.21	NR	ND	04/30/91	NR	NR	NR	NR
MW-2	07/22/91	101.15	12.14	89.01	NR	ND	07/23/91	NR	NR	NR	NR
MW-2	02/21/92	101.15	10.08	91.07	19.2	ND	02/23/92	7.52	1306	61.8	>200
MW-2	05/22/92	101.15	11.52	89.63	18.9	ND	05/22/92	6.98	1144	66.2	>200
MW-3	01/29/91	99.49	11.09	88.40	NR	ND	01/29/91	NR	NR	NR	NR
MW-3	04/30/91	99.49	9.57	89.92	NR	ND	05/01/91	NR	NR	NR	NR
MW-3	07/22/91	99.49	10.66	88.83	NR	ND	07/23/91	NR	NR	NR	NR
MW-3	02/21/92	99.49	8.97	90.52	17.3	ND	02/24/92	6.89	1587	65.5	>200
MW-3	05/22/92	99.49	9.32	90.17	16.9	ND	05/22/92	7.23	1508	67.3	>200
MW-4	01/29/91	99.24	10.76	88.48	NR	ND	01/29/91	NR	NR	NR	NR
MW-4	04/30/91	99.24	9.45	89.79	NR	ND	05/01/91	NR	NR	NR	NR
MW-4	07/22/91	99.24	10.34	88.90	NR	ND	07/23/91	NR	NR	NR	NR
MW-4	02/21/92	99.24	7.60	91.64	18.3	ND	02/24/92	6.90	1311	65.2	>200
MW-4	05/22/92	99.24	9.90	89.34	18.0	ND	05/22/92	7.11	1683	67.0	>200

TOC = top of casing

ft-PSD = elevation in feet, relative to project site datum

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: 630 High Street  
Oakland, California  
WIC #: 204-5508-5801

Date: 06/25/92  
Project Number: G67-51.01

Well Designation	Water Level Field Date	TOC Elevation (ft-PSD)	Depth to Water (feet)	Ground-water Elevation (ft-PSD)	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	01/29/91	100.08	11.72	88.36	NR	ND	01/28/91	NR	NR	NR	NR
MW-5	04/30/91	100.08	10.45	89.63	NR	ND	04/30/91	NR	NR	NR	NR
MW-5	07/22/91	100.08	11.43	88.65	NR	ND	07/23/91	NR	NR	NR	NR
MW-5	02/21/92	100.08	9.24	90.84	17.8	ND	02/23/92	6.71	1066	68.8	>200
MW-5	05/22/92	100.08	10.97	89.11	17.4	ND	05/22/92	6.94	1107	66.9	>200
MW-6	01/28/91	98.56	10.23	88.33	NR	ND	01/28/91	NR	NR	NR	NR
MW-6	04/30/91	98.56	9.15	89.41	NR	ND	05/01/91	NR	NR	NR	NR
MW-6	07/22/91	98.56	10.10	88.46	NR	ND	07/23/91	NR	NR	NR	NR
MW-6	02/21/92	98.56	7.15	91.41	19.4	ND	02/23/92	6.97	1356	67.2	>200
MW-6	05/22/92	98.56	9.55	89.01	19.4	ND	05/22/92	6.94	1257	67.2	>200
MW-7	01/28/91	97.53	8.91	88.62	NR	ND	01/28/91	NR	NR	NR	NR
MW-7	04/30/91	97.53	8.38	89.15	NR	ND	05/01/91	NR	NR	NR	NR
MW-7	07/22/91	97.53	9.13	88.40	NR	ND	07/23/91	NR	NR	NR	NR
MW-7	02/21/92	97.53	6.87	90.66	19.3	ND	02/23/92	7.69	1170	66.0	>200
MW-7	05/22/92	97.53	8.08	89.45	19.3	ND	05/22/92	7.60	1287	66.7	>200
MW-8	01/28/91	97.13	8.47	88.66	NR	ND	01/28/91	NR	NR	NR	NR
MW-8	04/30/91	97.13	7.64	89.49	NR	ND	05/01/91	NR	NR	NR	NR
MW-8	07/22/91	97.13	8.36	88.77	NR	ND	07/23/91	NR	NR	NR	NR
MW-8	02/21/92	97.13	6.54	90.59	20.6	ND	02/23/92	7.06	1309	60.5	>200
MW-8	05/22/92	97.13	7.68	89.45	20.6	ND	05/22/92	7.65	1525	67.0	>200

TOC = top of casing  
ft-PSD = elevation in feet, relative to project site datum  
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: 630 High Street  
Oakland, California  
WIC #: 204-5508-5801

Date: 06/25/92  
Project Number: G67-51.01

Well Designation	Water Level Field Date	TOC Elevation (ft-PSD)	Depth to Water (feet)	Ground-water Elevation (ft-PSD)	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	01/29/91	99.72	8.27	91.45	NR	ND	01/29/91	NR	NR	NR	NR
MW-9	04/30/91	99.72	7.62	92.10	NR	ND	05/01/91	NR	NR	NR	NR
MW-9	07/22/91	99.72	8.48	91.24	NR	ND	07/23/91	NR	NR	NR	NR
MW-9	02/21/92	99.72	6.91	92.81	11.5	ND	02/23/92	8.09	606	61.1	>200
MW-9	05/22/92	99.72	8.64	91.08	11.5	ND	05/22/92	7.75	618	69.4	128
MW-10	01/29/91	98.99	10.81	88.18	NR	ND	01/30/91	NR	NR	NR	NR
MW-10	04/30/91	98.99	8.79	90.20	NR	ND	05/01/91	NR	NR	NR	NR
MW-10	07/22/91	98.99	9.94	89.05	NR	ND	07/23/91	NR	NR	NR	NR
MW-10	02/21/92	98.99	9.11	89.88	12.5	ND	02/23/92	7.89	2040	63.0	>200
MW-10	05/22/92	98.99	9.14	89.85	12.6	ND	05/22/92	7.68	1946	68.1	>200

TOC = top of casing  
ft-PSD = elevation in feet, relative to project site datum  
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: 630 High Street  
Oakland, California  
WIC #: 204-5508-5801

Date: 06/25/92  
Project Number: G67-51.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethylbenzene (mg/l)	Total Xylenes (mg/l)	TPH-d (mg/l)	TPH-mo (mg/l)
MW-1	01/29/91	11.0	0.31	0.041	0.5	0.4	21.0&	<0.5
MW-1	04/30/91	8.3	0.25	0.032	0.310	0.3	2.1	<0.5
MW-1	07/23/91	11.0	0.31	0.036	0.29	0.28	3.8	<0.5
MW-1	02/24/92	7.3	0.20	0.036	0.34	0.27	8.9+	0.8
MW-1	05/22/92	7.6	0.14	<0.05	0.30	0.14	18.*^	NA
MW-2	01/29/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-2	04/30/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-2	07/23/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-2	02/23/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
MW-2	05/22/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
MW-3	01/29/91	2.3	0.017	0.0041	0.01	0.023	0.41&	<0.5
MW-3	05/01/91	<0.05	0.022	0.004	0.007	0.017	0.26	<0.5
MW-3	07/23/91	2.0	0.051	<0.0005	<0.0005	<0.0005	0.31	<0.5
MW-3	02/24/92	2.8	0.015	0.0028	<0.0025	0.012	0.64@	NA
MW-3	05/22/92	3.7	0.027	0.011	0.020	0.11	0.22*^	NA

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

TPH-mo = total petroleum hydrocarbons as motor oil

& = Compounds detected and calculated as diesel do not match the diesel standard; pattern is characteristic of weathered diesel

+ = Results include compounds apparently due to gasoline as well as those due to diesel

\* = Concentration reported as diesel is primarily due to the presence of a lighter petroleum product, possibly gasoline or kerosene

NA = Not analyzed

@ = Compounds detected within the diesel range are not characteristic of the standard diesel chromatographic pattern

^ = Concentration reported as diesel is primarily due to a heavier petroleum product, possibly motor oil or aged diesel fuel

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

Shell Station: 630 High Street  
 Oakland, California  
 WIC #: 204-5508-5801

Date: 06/25/92  
 Project Number: G67-51.01

Sample Designation	Water Sample Field Date	TPH-g (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	TPH-d (mg/L)	TPH-mo (mg/L)
MW-4	01/29/91	2.6	0.083	<0.0005	<0.0005	0.011	1.3&	<0.5
MW-4	05/01/91	2.6	0.022	0.004	0.007	0.017	0.75	<0.5
MW-4	07/23/91	4.3	0.12	<0.0005	<0.0005	0.001	1.2	<0.5
MW-4	02/24/92	2.0	0.031	0.0063	0.0035	0.0066	8.3*	NA
MW-4	05/22/92	3.6	0.055	0.005	0.003	0.010	3.4*^	NA
MW-5	01/28/91	3.1	0.086	<0.0005	0.024	0.028	0.72	<0.5
MW-5	04/30/91	<0.05	0.046	<0.0005	0.009	0.009	0.09	<0.5
MW-5	07/23/91	1.7	0.023	<0.0005	6.7	10.	0.30	<0.5
MW-5	02/23/92	0.24	0.0010	<0.0005	<0.0005	0.0010	0.18#	<0.5
MW-5	05/22/92	6.2	0.006	0.095	0.056	0.099	7.1*^	NA
MW-6	01/28/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.86	<0.5
MW-6	05/01/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	1.1	<0.5
MW-6	07/23/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	1.2	<0.5
MW-6	02/23/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.06&	NA
MW-6	05/22/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.65^	NA

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

TPH-mo = total petroleum hydrocarbons as motor oil

& = Compounds detected and calculated as diesel do not match the diesel standard; pattern is characteristic of weathered diesel

\* = Concentration reported as diesel is primarily due to the presence of a lighter petroleum product, possibly gasoline or kerosene

NA = Not analyzed

^ = Concentration reported as diesel is primarily due to a heavier petroleum product, possibly motor oil or aged diesel fuel

# = Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline

∩ = Compounds detected within the diesel range are not characteristic of the standard diesel chromatographic pattern

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

Shell Station: 630 High Street  
 Oakland, California  
 WIC #: 204-5508-5801

Date: 06/25/92  
 Project Number: G67-51.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)	TPH-d (mg/l)	TPH-mo (mg/l)
MW-7	01/28/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-7	05/01/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-7	07/23/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-7	02/23/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
MW-7	05/22/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
MW-8	01/28/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-8	05/01/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-8	07/23/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	0.6
MW-8	02/23/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
MW-8	05/22/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
MW-9	01/29/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	<0.5
MW-9	05/01/91	<0.05	0.0006	0.0005	<0.0005	0.0011	<0.05	<0.5
MW-9	07/23/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	0.8
MW-9	02/23/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
MW-9	05/22/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
MW-10	01/30/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
MW-10	05/01/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.46	<0.5
MW-10	07/23/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05	0.9
MW-10	02/23/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.12@	NA
MW-10	05/22/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	0.31^	NA

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

TPH-mo = total petroleum hydrocarbons as motor oil

NA = Not analyzed

@ = Compounds detected within the diesel range are not characteristic of the standard diesel chromatographic pattern

^ = Concentration reported as diesel is primarily due to a heavier petroleum product, possibly motor oil or aged diesel fuel



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

Shell Station: 630 High Street  
 Oakland, California  
 WIC #: 204-5508-5801

Date: 06/25/92  
 Project Number: G67-51.01

Sample Designation	Water Sample Field Date	TPH-g	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-d	TPH-mo
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
MW-22	02/24/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
MW-22	05/22/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA

TPH-g = total petroleum hydrocarbons as gasoline  
 TPH-d = total petroleum hydrocarbons as diesel  
 TPH-mo = total petroleum hydrocarbons as motor oil  
 NA = Not analyzed

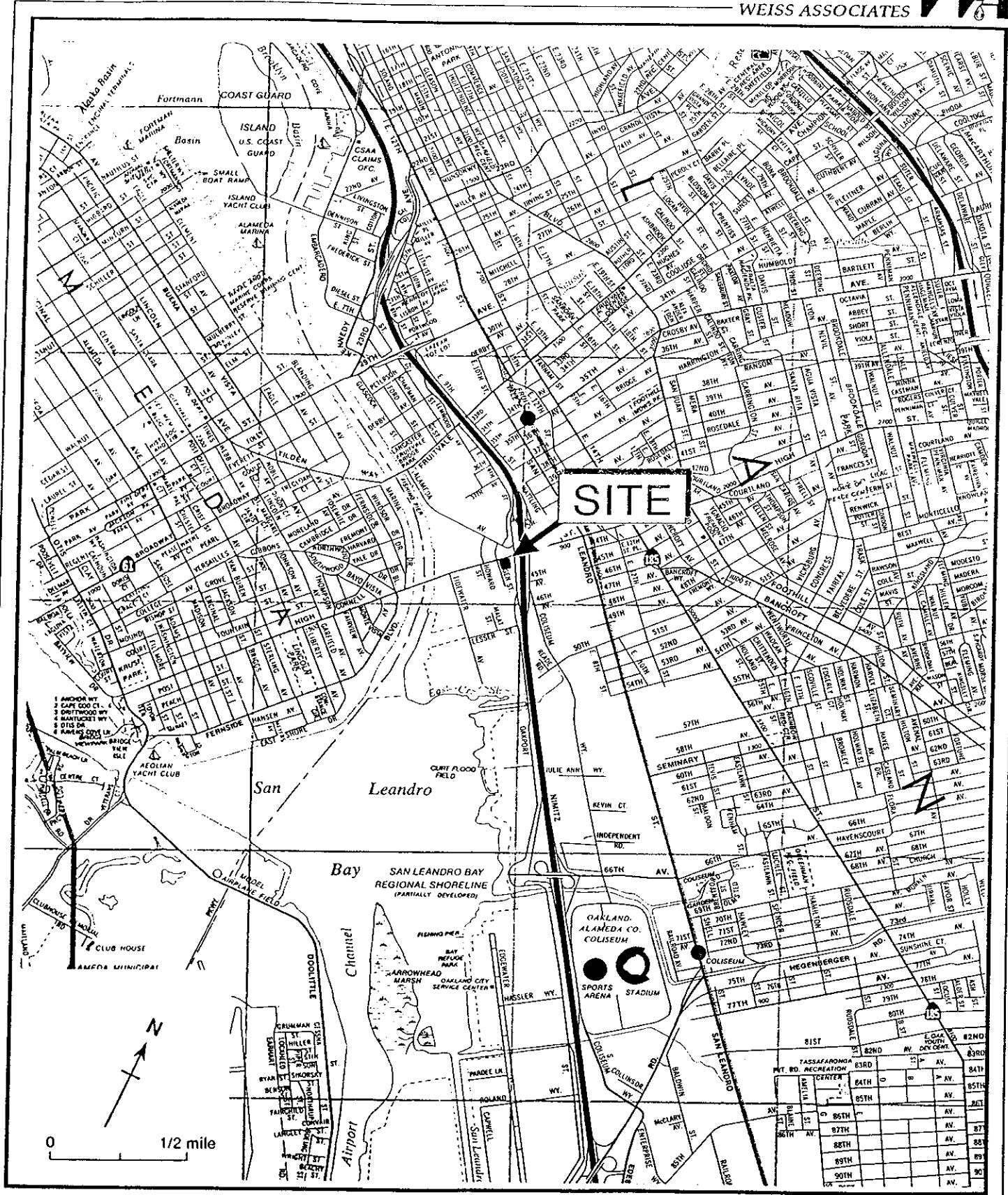
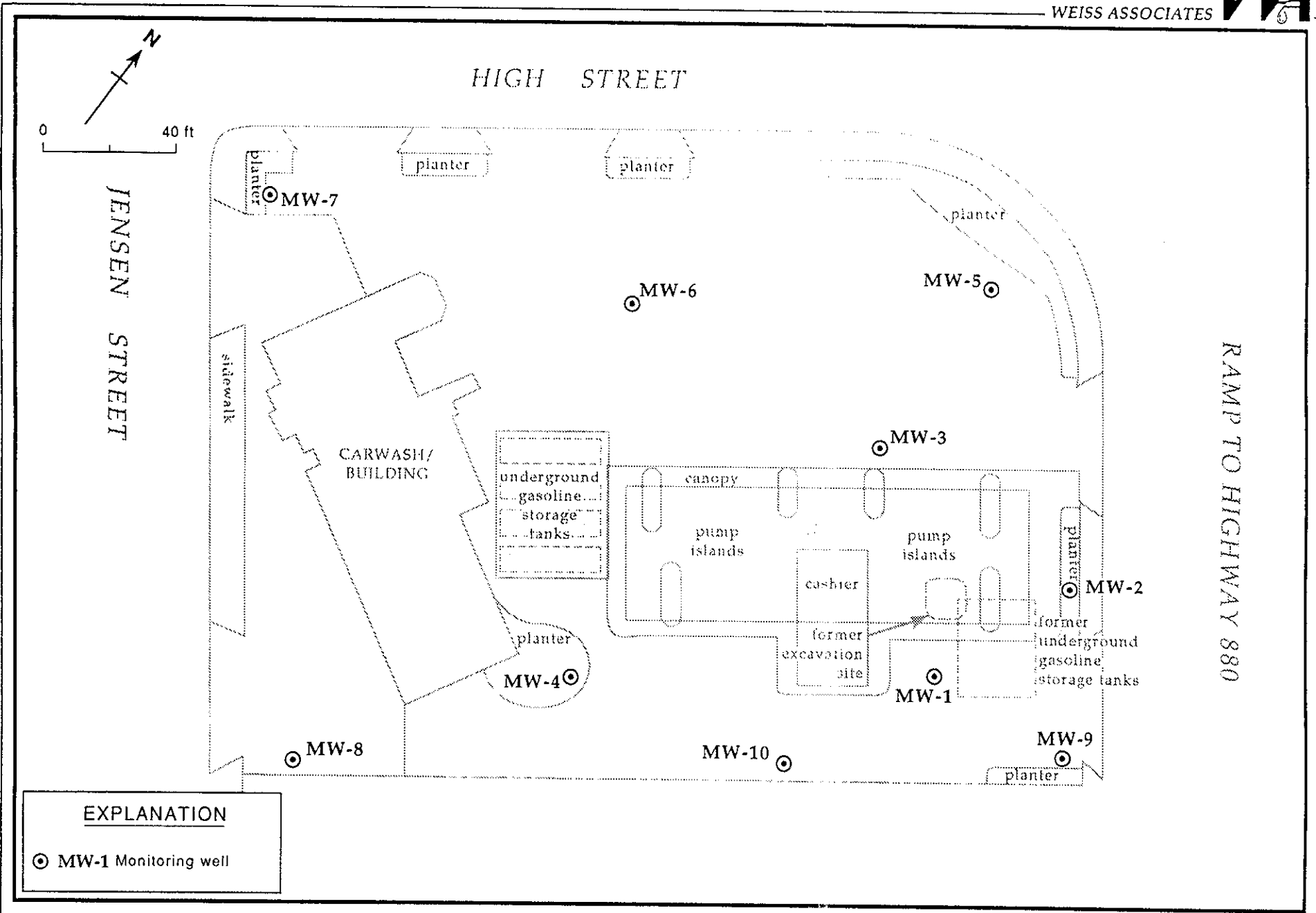


Figure 1. Site Location Map - Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California



**EXPLANATION**  
 ● MW-1 Monitoring well

Figure 2. Monitoring Well Locations - Shell Service Station WIC #204-5508-5801, 630 High Street, Oakland, California

**ANAMETRIX INC**

Environmental & Analytical Chemistry  
1764 Concourse Drive, Suite 1, 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 # : 9205340  
Date Received : 05/22/92  
Project ID : G67-51.01  
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9205340- 1	MW-2
9205340- 2	MW-7
9205340- 3	MW-8
9205340- 4	MW-9
9205340- 5	MW-22
9205340- 6	MW-10
9205340- 7	MW-6
9205340- 8	MW-3
9205340- 9	MW-4
9205340-10	MW-1
9205340-11	MW-5

This report consists of 8 pages not including the cover letter, and is organized in sections according to the specific Anamatrix 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 Anamatrix 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.

Anamatrix 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 Anamatrix.

Sarah Schoen, Ph.D.  
Laboratory Director

6-08-92

Date

EMCON ASSOCIATES

JUN 09 1992

RECEIVED

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

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

Workorder # : 9205340  
Date Received : 05/22/92  
Project ID : G67-51.01  
Purchase Order: MOH-B813  
Department : GC  
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9205340- 6	MW-10	WATER	05/22/92	TPHd
9205340- 7	MW-6	WATER	05/22/92	TPHd
9205340- 8	MW-3	WATER	05/22/92	TPHd
9205340- 9	MW-4	WATER	05/22/92	TPHd
9205340-10	MW-1	WATER	05/22/92	TPHd
9205340-11	MW-5	WATER	05/22/92	TPHd
9205340- 1	MW-2	WATER	05/22/92	TPHg/BTEX
9205340- 2	MW-7	WATER	05/22/92	TPHg/BTEX
9205340- 3	MW-8	WATER	05/22/92	TPHg/BTEX
9205340- 4	MW-9	WATER	05/22/92	TPHg/BTEX
9205340- 5	MW-22	WATER	05/22/92	TPHg/BTEX
9205340- 6	MW-10	WATER	05/22/92	TPHg/BTEX
9205340- 7	MW-6	WATER	05/22/92	TPHg/BTEX
9205340- 8	MW-3	WATER	05/22/92	TPHg/BTEX
9205340- 9	MW-4	WATER	05/22/92	TPHg/BTEX
9205340-10	MW-1	WATER	05/22/92	TPHg/BTEX
9205340-11	MW-5	WATER	05/22/92	TPHg/BTEX

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

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

Workorder # : 9205340  
Date Received : 05/22/92  
Project ID : G67-51.01  
Purchase Order: MOH-B813  
Department : GC  
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as diesel for samples MW-10 and MW-6 are primarily due to the presence of a heavier petroleum product, possibly motor oil or aged diesel fuel.
- The concentrations reported as diesel for samples MW-3, MW-4, MW-5, and MW-1 are primarily due to the presence of a combination of a heavier petroleum product (possibly motor oil or aged diesel fuel) and a lighter petroleum product, possibly gasoline or kerosene.

Cheryl Bulmer 6/8/92  
Department Supervisor Date

Lucia Sher 6/8/92  
Chemist Date

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

Anamatrix W.O.: 9205340  
Matrix : WATER  
Date Sampled : 05/22/92

Project Number : G67-51.01  
Date Released : 06/08/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-2	Sample I.D.# MW-7	Sample I.D.# MW-8	Sample I.D.# MW-9	Sample I.D.# MW-22
Benzene	0.0005	ND	ND	ND	ND	ND
Toluene	0.0005	ND	ND	ND	ND	ND
Ethylbenzene	0.0005	ND	ND	ND	ND	ND
Total Xylenes	0.0005	ND	ND	ND	ND	ND
TPH as Gasoline	0.050	ND	ND	ND	ND	ND
% Surrogate Recovery		98%	103%	100%	111%	144%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		06/03/92	06/03/92	06/03/92	06/03/92	06/03/92
RLMF		1	1	1	1	1

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

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

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

Anna Shier 6/8/92  
Analyst Date

Cheryl Balmer 6/8/92  
Supervisor Date

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

Anamatrix W.O.: 9205340  
Matrix : WATER  
Date Sampled : 05/22/92

Project Number : G67-51.01  
Date Released : 06/08/92

Reporting Limit	Sample I.D.# MW-10	Sample I.D.# MW-6	Sample I.D.# MW-3	Sample I.D.# MW-4	Sample I.D.# MW-1	
COMPOUNDS (mg/L)	-06	-07	-08	-09	-10	
Benzene	0.0005	ND	ND	0.027	0.055	0.14
Toluene	0.0005	ND	ND	0.011	0.005	ND
Ethylbenzene	0.0005	ND	ND	0.020	0.003	0.30
Total Xylenes	0.0005	ND	ND	0.11	0.010	0.14
TPH as Gasoline	0.050	ND	ND	3.7	3.6	7.6
% Surrogate Recovery	109%	111%	134%	96%	115%	
Instrument I.D.	HP4	HP4	HP4	HP4	HP4	
Date Analyzed	06/03/92	06/03/92	06/03/92	06/03/92	06/03/92	
RLMF	1	1	2	2	100	

- 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.

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

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

Laura Shor 6/8/92  
Analyst Date

Cheryl Bulmer 6/8/92  
Supervisor Date



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

Anamatrix W.O.: 9205340  
 Matrix : WATER  
 Date Sampled : 05/22/92

Project Number : G67-51.01  
 Date Released : 06/08/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-5	Sample I.D.# BU0301E2
Benzene	0.0005	0.006	ND
Toluene	0.0005	0.095	ND
Ethylbenzene	0.0005	0.056	ND
Total Xylenes	0.0005	0.099	ND
TPH as Gasoline	0.050	6.2	ND
% Surrogate Recovery		85%	130%
Instrument I.D.		HP4	HP4
Date Analyzed		06/03/92	06/03/92
RLMF		10	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.

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

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

Julia Sher 6/8/92  
 Analyst Date

Cheryl Balmer 6/8/92  
 Supervisor Date

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

Anamatrix W.O.: 9205340  
Matrix : WATER  
Date Sampled : 05/22/92  
Date Extracted: 05/29/92

Project Number : G67-51.01  
Date Released : 06/08/92  
Instrument I.D.: HP23

Anamatrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/L)	Amount Found (mg/L)
9205340-06	MW-10	05/30/92	0.050	0.31
9205340-07	MW-6	05/30/92	0.050	0.65
9205340-08	MW-3	05/30/92	0.050	0.22
9205340-09	MW-4	05/30/92	0.050	3.4
9205340-10	MW-1	05/30/92	1.0	18
9205340-11	MW-5	05/30/92	0.050	7.1
DWBL052992	METHOD BLANK	05/30/92	0.050	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 10 mg/Kg.

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

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

Juana Shar 6/8/92  
Analyst Date

Cheryl Baerman 6/8/92  
Supervisor Date

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

Sample I.D. : G67-51.01 MW-7  
 Matrix : WATER  
 Date Sampled : 05/22/92  
 Date Analyzed : 06/08/92

Anamatrix I.D.: 9205340-02  
 Analyst : IS  
 Supervisor : CS  
 Date Released : 06/08/92  
 Instrument ID : HP4

COMPOUND	SPIKE AMT. (mg/L)	MS (mg/L)	REC MS	MSD (mg/L)	REC MSD	RPD	%REC LIMITS
Benzene	0.020	0.020	100%	0.019	95%	-5%	49-159
Toluene	0.020	0.018	90%	0.017	85%	-6%	53-156
Etylbenzene	0.020	0.018	90%	0.017	85%	-6%	54-151
M+P-Xylenes	0.013	0.012	92%	0.011	85%	-9%	56-157
O-Xylene	0.0067	0.0058	87%	0.0053	79%	-9%	58-154
P-BFB			93%		107%		53-147%

\* Limits established by Anamatrix, Inc.

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

Sample I.D. : METHOD SPIKE	Anamatrix I.D. : SPK0529B
Matrix : REAGENT WATER	Analyst : IS
Date Sampled : N/A	Supervisor : CB
Date Extracted: 05/29/92	Date Released : 06/08/92
Date Analyzed : 05/30/92	Instrument I.D.: HP23

COMPOUND	SPIKE AMT. (ug/L)	MS (ug/L)	%REC MS	MSD (ug/L)	%REC MSD	RPD	%REC LIMITS
Diesel	1250	540	43%	810	65%	40%	36-150

\* Limits established by Anamatrix, Inc.

Address: 630 High Street  
Oakland, CA

Client: 204-5508-5801

Client Engineer: Kurt Miller  
Phone No. (510) 685-3853  
Client Name & Address: 1938 Junction Ave. San Jose, CA 95131  
Client Contact: David Larsen  
Phone No. (408) 453-2269

Comments: 3-VOAs (HCl) for g, BTEX  
2-Liter Glass (SR) for diesel

Prepared By: John A. Wataha  
Client Name: JOHN WATAHA

Analysis Required

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal						
-------------------------	----------------------------	---------------------	------------------------------	-------------------	--	--	--	--	--	--

LAB: Anametrix

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/> 5461		24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/> 5441		48 hours <input type="checkbox"/>
Soil for disposal <input type="checkbox"/> 5442		15 days <input checked="" type="checkbox"/> (Norm)
Water for disposal <input type="checkbox"/> 5443		Other <input type="checkbox"/>
Air Sample- Sys O&M <input type="checkbox"/> 5452		NOTE: Notify Lab soon as possible of 24/48 hrs. TAT.
Water Sample - Sys O&M <input type="checkbox"/> 5453		
Other <input type="checkbox"/>		

Sample ID	Date	Soil	Water	Air	No. of conds.	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
MW-2	5-22-92		X		3	X		X			40 ml	HCl	No		
MW-7					3	X		X							
MW-8					3	X		X							Bubbles
MW-9					3	X		X							
MW-22					3	X		X							
MW-10					5	X	X	X							Bubbles
MW-6					5	X	X	X							Bubbles
MW-3					5	X	X	X							

Relinquished By (signature): <i>John A. Wataha</i>	Printed name: JOHN WATAHA	Date: 5-22-92	Received (signature): <i>Clayton Cole</i>	Printed name: Clayton Cole	Date: 5-22-92
Relinquished By (signature):	Printed name:	Time: 16:35	Received (signature):	Printed name:	Time: 16:35
Relinquished By (signature):	Printed name:	Date:	Received (signature):	Printed name:	Date:
Relinquished By (signature):	Printed name:	Time:	Received (signature):	Printed name:	Time:
Relinquished By (signature):	Printed name:	Date:	Received (signature):	Printed name:	Date:
Relinquished By (signature):	Printed name:	Time:	Received (signature):	Printed name:	Time:

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

Address: 630 High Street  
Oakland, CA

CN: 204-5508-5801

Analysis Required

LAB: Anametrix

Engineer: Art Miller  
Phone No. (510) 685-3853  
Fax #: 685-3853  
Consultant Name & Address: 1938 Junction Ave. San Jose, CA 95131  
Phone No. (408) 453-2269  
Fax #: 453-2269  
Consultant Contact: David Larsen

CHECK ONE (1) BOX ONLY		CT/DT	TURN AROUND TIME
Quarterly Monitoring	<input checked="" type="checkbox"/> 5461		24 hours <input type="checkbox"/>
Site Investigation	<input type="checkbox"/> 5441		48 hours <input type="checkbox"/>
Soil for disposal	<input type="checkbox"/> 5442		15 days <input checked="" type="checkbox"/> (Norm)
Water for disposal	<input type="checkbox"/> 5443		Other <input type="checkbox"/>
Air Sample- Sys O&M	<input type="checkbox"/> 5452		
Water Sample - Sys O&M	<input type="checkbox"/> 5453		
Other	<input type="checkbox"/>		

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

Comments: See page 1.

Requested By: ~~John Westlake~~ John Westlake  
Requested Name: JOHN WESTLAKE

Sample ID	Date	Soil	Water	Air	No. of conds.	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
MW-4	5-22-92		X		5	X	X	X			40 ml	HCl	No		
MW-1	↓		↓		5	X	X	X			↓	↓	↓		Beables
MW-5	↓		↓		5	X	X	X			↓	↓	↓		Beables

Requested By (signature): <i>John Westlake</i>	Printed name: JOHN WESTLAKE	Date: 5-22-92	Received (signature): <i>[Signature]</i>	Printed name: <i>[Name]</i>	Date: 5-22-92
Requested By (signature):	Printed name:	Time: 1635	Received (signature):	Printed name:	Time: 1635
Requested By (signature):	Printed name:	Date:	Received (signature):	Printed name:	Date:
Requested By (signature):	Printed name:	Time:	Received (signature):	Printed name:	Time:
Requested By (signature):	Printed name:	Date:	Received (signature):	Printed name:	Date:
Requested By (signature):	Printed name:	Time:	Received (signature):	Printed name:	Time:

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