



905-11-11-88

February 11, 1993

Jennifer Eberle *Susan*
Alameda County Department of
Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621-1426

3618

Re: Shell Service Station
WIC #204-5510-0303
5755 Broadway
Oakland, California 94606
WA Job #81-619-203

Dear Ms. Eberle:

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 fourth quarter 1992 and proposed work for the first quarter 1993.

FOURTH QUARTER 1992 ACTIVITIES:

- EMCON Associates of San Jose, California measured ground water depths and collected ground water samples from the three site wells. EMCON's report describing these activities and presenting the 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).

A summary of recent remedial action taken in response to a recent hydrocarbon release is presented below.

HYDROCARBON RELEASE SUMMARY

Release Location and Repair: On December 20, 1992, Shell Oil company responded to a report of gasoline vapors in the storm and sanitary sewer piping south of the Shell site. On December 21, 1992, Shell retained Gettler-Ryan (G-R) of Hayward, California to test the underground fuel storage tanks and product piping to assess whether a release could have originated from the site. Although all tanks passed the test, the regular unleaded piping failed. G-R replaced a pipe fitting and the piping passed a subsequent test. Based on tank inventory records, about 200 gallons of gasoline may have been released. Since the tanks and piping had passed a test on September 8, 1992, the release appears to have happened between September 8th and December 20th.

Tank Backfill Purging: On December 24, 1992, up to one inch of floating hydrocarbons were observed in the tank backfill observation wells. Shell immediately arranged for a vacuum truck to purge the floating hydrocarbons from the tank backfill. Purging continued on a daily basis until January 7, 1993 when the floating hydrocarbon thickness was reduced to a sheen. According to Shell records, a total of about 40,000 gallons of mixed water and gasoline were purged from the tank backfill.

Trench Excavation: Concurrent with purging the floating hydrocarbons from the tank backfill, G-R excavated several trenches at the southeast corner of the site to identify how the hydrocarbons entered the sewer piping (Figure 2). G-R encountered floating hydrocarbons on ground water in the excavations at about 4 ft depth that presumably were entering the sewer piping. However, the exact location where the floating hydrocarbons entered the sewers was not located.

Hydrocarbon Removal from Excavations: G-R either purged the floating hydrocarbons from the excavations or absorbed them using hydrocarbon absorbent pads. G-R has continuously replaced the hydrocarbon absorbent pads in the excavations to remove any floating hydrocarbons that accumulate in the trench. Since the floating hydrocarbons were removed either by purging them along with ground water or by absorbing them onto pads, it is impossible to estimate the total volume of hydrocarbons removed.

Hydrocarbon Vapor Monitoring: Starting on December 22, 1992, G-R monitored the hydrocarbon vapor concentrations in a sanitary sewer manhole immediately downgradient of the site 24 hrs

a day using a lower explosive limit meter. From December 22, 1992 until January 13, 1993, hydrocarbon vapors did not exceed 2% of the lower explosive limit. Since hydrocarbon concentrations in a recent water sample of the effluent in the sanitary sewer piping were below allowable limits, the Alameda County Department of Environmental Health approved of monitoring three times per day instead of continuously.

Sanitary Sewer Piping Replacement: To ensure that no additional floating hydrocarbons enter the sanitary sewer piping from this or future hydrocarbon releases, G-R will remove the existing sanitary sewer piping and replace it with piping that is resistant to hydrocarbon penetration. The section of the sanitary sewer that will be replaced is shown on Figure 2.

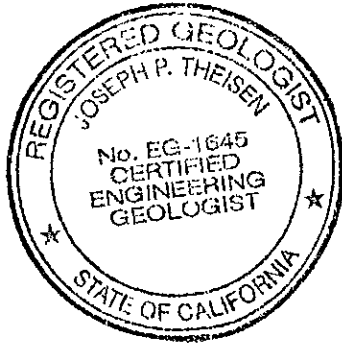
ANTICIPATED FIRST QUARTER 1993 ACTIVITIES:

- WA will submit a report presenting the results of the first quarter 1993 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 collect soil samples while assisting Gettler-Ryan Inc., a Shell subcontractor with the sanitary sewer line upgrade. Based on the analytic results for the soil samples from the southernmost/downgradient extent of the sanitary sewer line trench, we may collect soil vapor and/or soil samples further downgradient to assess the downgradient extent of hydrocarbons.
- WA will observe the installation of a horizontal ground water extraction well in the sanitary sewer excavation at a depth of about 12 ft, and
- WA will prepare a brief subsurface investigation report documenting the work.

Jennifer Eberle
February 11, 1993

4


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

J:\SHELL\600\619QMFE3.WP

Attachments: Figures
Table

A - EMCON Associate's Ground Water Monitoring Report

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

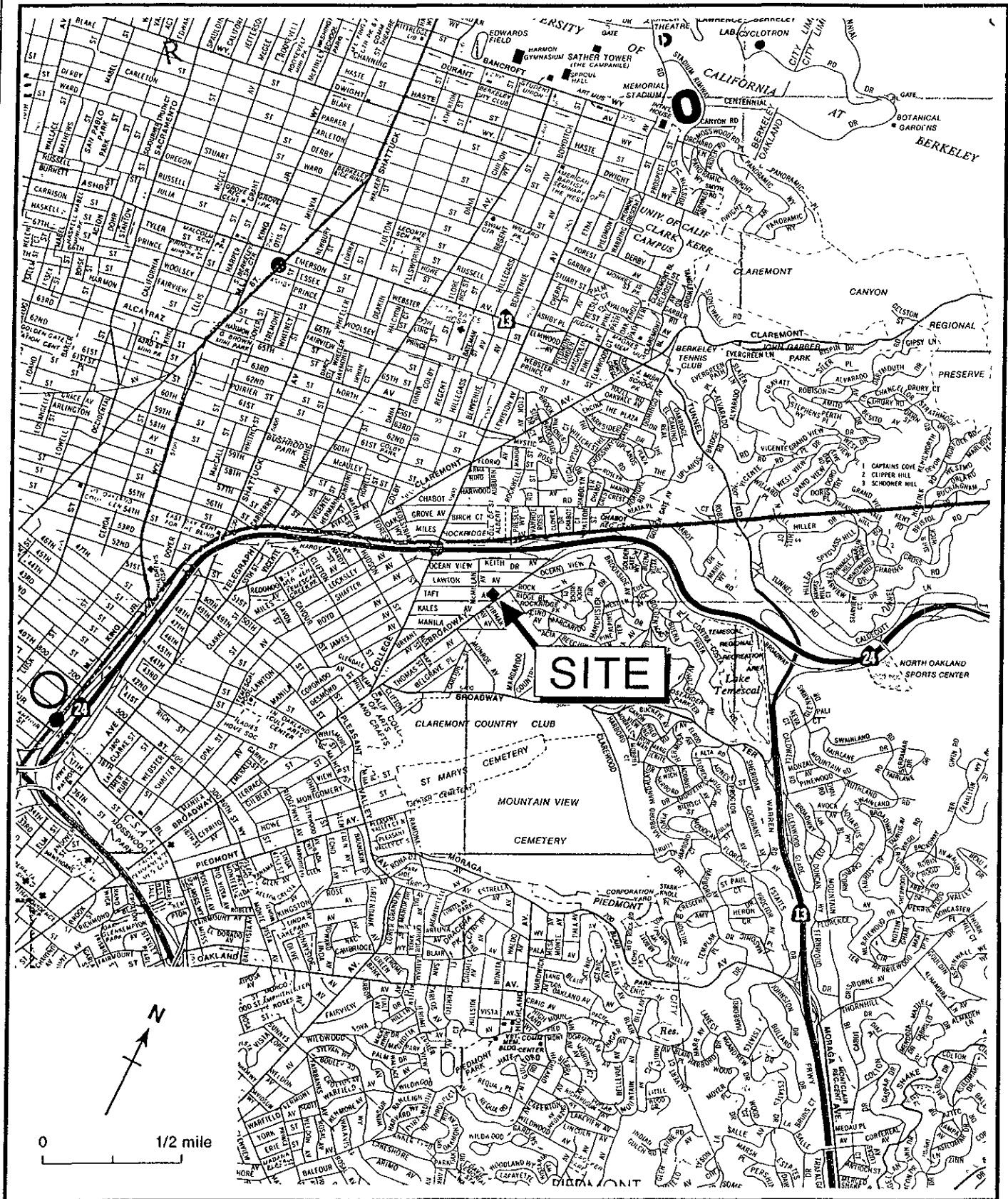


Figure 1. Site Location Map - Shell Service Station WIC #204-5510-0303, 5755 Broadway, Oakland, California

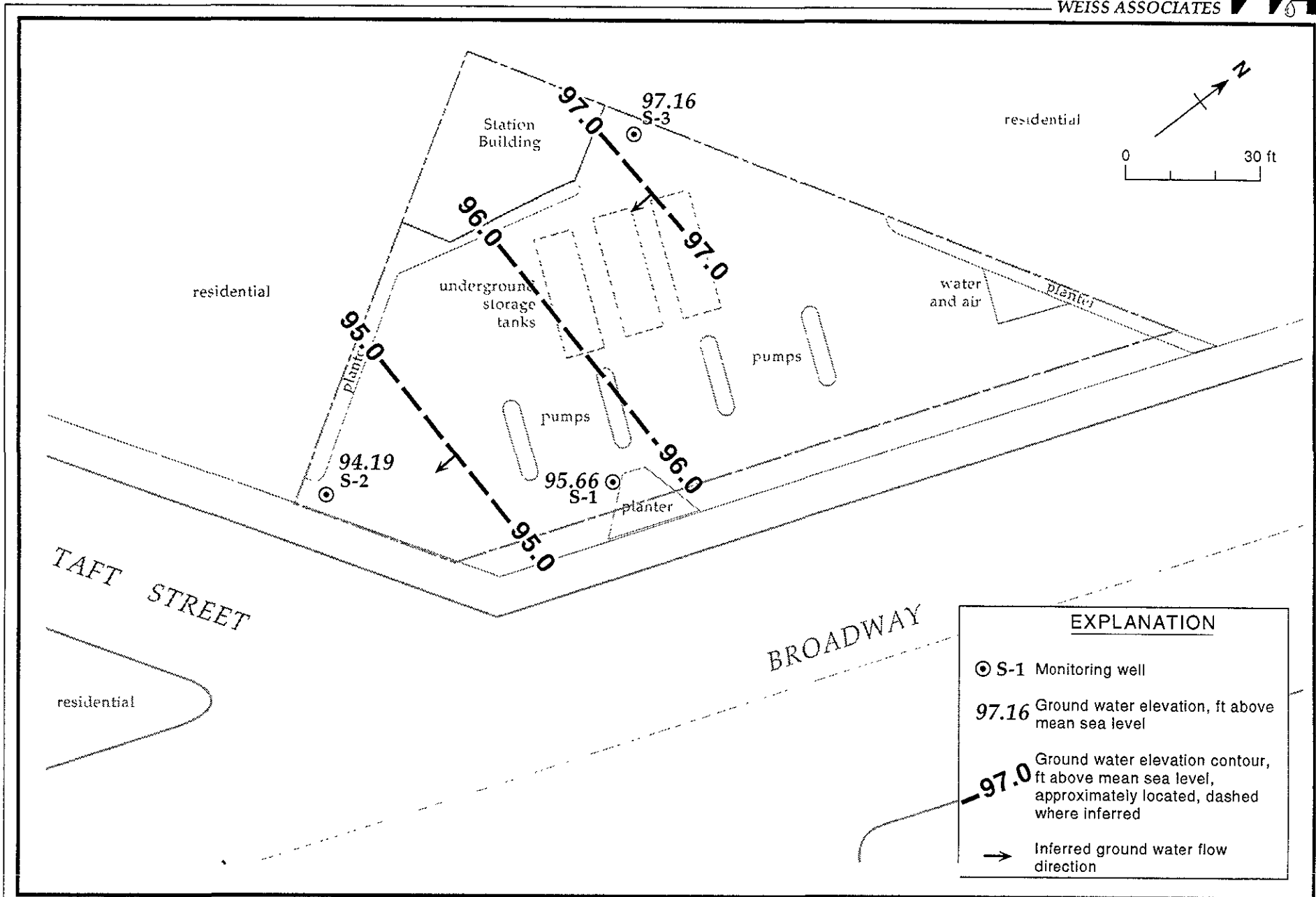


Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - November 11, 1992 - Shell Service Station WIC#204-2004-0204, 5755 Broadway, Oakland, California

ATTACHMENT A

EMCON'S GROUND WATER MONITORING REPORT AND ANALYTIC REPORT



EMCON
ASSOCIATES

Consultants in Wastes
Management and
Environmental Control

December 10, 1992
Project: 0G67-040.01
WIC#: 204-5510-0303

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

Re: Fourth quarter 1992 ground-water monitoring report, Shell Oil
Company, 5755 Broadway, Oakland, California

Dear Mr. Elias:

This letter presents the results of the fourth quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) site located at 5755 Broadway, Oakland, California (figure 1). Fourth quarter monitoring was conducted on November 18, 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 S-1, S-2, and S-3 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 fourth 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 S-1, S-2, and S-3 on November 17, 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. All three wells were evacuated to dryness before three casing volumes were removed. The wells were allowed to recharge for up to 24 hours. Samples were collected after the wells had recharged to a sufficient level. Field measurements from fourth quarter monitoring, and available measurements from four previous monitoring events, are summarized in table 1. Purge water from the monitoring

0G6704001D.DOC



wells was contained in a 55-gallon drum. The drum was identified with a Shell-approved label and secured for on-site storage.

Ground-water samples were collected with a Teflon® bailer, labeled, placed on ice, and transported to Anametrix Inc. 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 fourth quarter monitoring included a trip blank (TB) and a field blank (FB). All water samples collected during fourth 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 fourth quarter 1992 monitoring event, and available results from four previous monitoring events, are summarized in table 2. The original certified analytical report and final chain-of-custody document are attached.

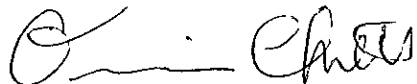
If you have any questions, please call.

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
Fourth Quarter 1992

Shell Station: 5755 Broadway
Oakland, California
WIC #: 204-5510-0303

Date: 01/12/93
Project Number: G67-40.01

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)
S-1	11/22/91	100.00	4.29	95.71	NR	NR	11/22/91	NR	NR	NR	NR
S-1	03/13/92	100.00	2.87	97.13	11.8	ND	03/13/92	7.38	922	63.2	>200
S-1	05/28/92	100.00	3.79	96.21	11.7	ND	05/28/92	6.98	1061	68.8	>200
S-1	08/19/92	100.00	4.43	95.57	12.0	ND	08/19/92	7.42	940	72.6	>200
S-1	11/18/92	100.00	4.34	95.66	11.8	ND	11/18/92	7.60	995	70.8	>200
S-2	11/22/91	98.92	4.72	94.20	NR	NR	11/22/91	NR	NR	NR	NR
S-2	03/13/92	98.92	3.47	95.45	9.4	ND	03/13/92	7.18	1140	62.3	>200
S-2	05/28/92	98.92	4.45	94.47	9.4	ND	05/28/92	7.12	1094	68.4	>200
S-2	08/19/92	98.92	4.84	94.08	9.5	ND	08/19/92	7.82	1057	75.8	191
S-2	11/18/92	98.92	4.73	94.19	9.4	ND	11/18/92	7.22	1123	70.7	>200
S-3	11/22/91	101.67	4.81	96.86	NR	NR	11/22/91	NR	NR	NR	NR
S-3	03/13/92	101.67	2.29	99.38	9.5	ND	03/13/92	7.26	1385	63.2	>200
S-3	05/28/92	101.67	3.62	98.05	9.5	ND	05/28/92	7.15	1181	65.5	>200
S-3	08/19/92	101.67	4.66	97.01	9.5	ND	08/19/92	7.29	1080	70.2	190
S-3	11/18/92	101.67	4.51	97.16	9.5	ND	11/18/92	7.49	1116	69.9	>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
 Fourth Quarter 1992
 milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 5755 Broadway
 Oakland, California
 WIC #: 204-5510-0303

Date: 01/12/93
 Project Number: G67-40.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)
S-1	11/22/91	<0.03	0.0023	0.00046	<0.0003	<0.00065
S-1	03/13/92	<0.03	0.00052	<0.0003	<0.0003	<0.0003
S-1	05/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-1	08/19/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-1	11/18/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-2	11/22/91	1.6	0.110	0.0093	0.029	0.150
S-2	03/13/92	1.3	0.21	0.0057	0.034	0.079
S-2	05/28/92	0.10	0.028	<0.0005	<0.0005	<0.0005
S-2	08/19/92	0.47	0.042	<0.0005	0.0083	0.0040
S-2	11/18/92	0.49	0.043	0.039	0.017	0.029
S-3	11/22/91	<0.03	<0.0003	<0.0003	<0.0003	<0.0003
S-3	03/13/92	<0.03	<0.0003	<0.0003	<0.0003	<0.0003
S-3	05/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-3	08/19/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-3	11/18/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
FB	08/19/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
FB	11/18/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	03/13/92	<0.03	<0.0003	<0.0003	<0.0003	<0.0003
TB	05/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	08/19/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	11/18/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TPH-g = total petroleum hydrocarbons as gasoline

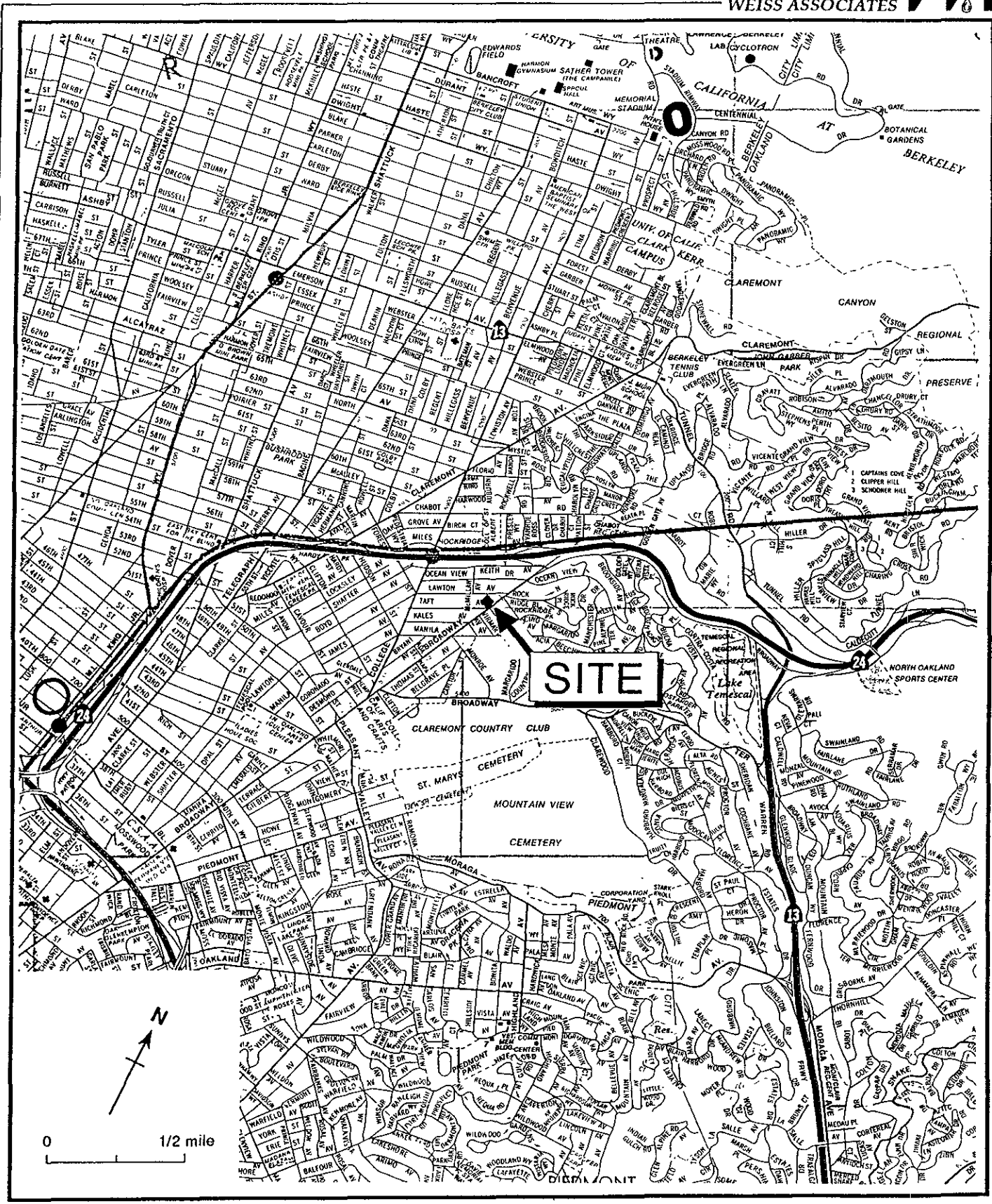


Figure 1. Site Location Map - Shell Service Station WIC #204-5510-0303, 5755 Broadway, Oakland, California

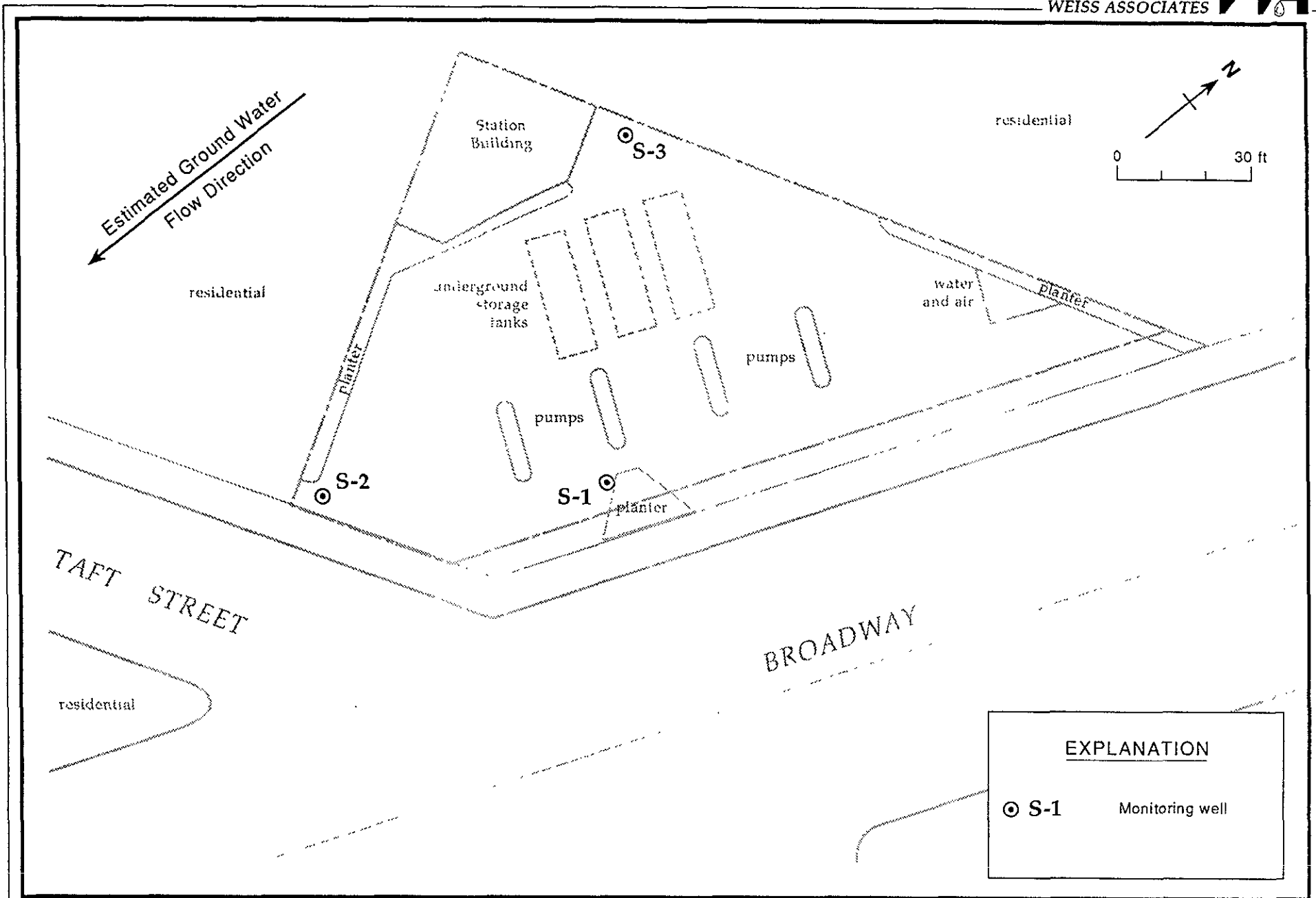


Figure 2. Monitoring Well Locations - Shell Service Station WIC#204-2004-0204, 5755 Broadway, Oakland, California



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

Workorder # : 9211276
Date Received : 11/18/92
Project ID : 204-5510-0303
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9211276- 1	S-3
9211276- 2	S-1
9211276- 3	S-2
9211276- 4	TB
9211276- 5	FB

This report consists of 5 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

12-01-92

Date

EMCON ASSOCIATES

**DEC 03 1992
RECEIVED**

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

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

Workorder # : 9211276
Date Received : 11/18/92
Project ID : 204-5510-0303
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9211276- 1	S-3	WATER	11/18/92	TPHg/BTEX
9211276- 2	S-1	WATER	11/18/92	TPHg/BTEX
9211276- 3	S-2	WATER	11/18/92	TPHg/BTEX
9211276- 4	TB	WATER	11/18/92	TPHg/BTEX
9211276- 5	FB	WATER	11/18/92	TPHg/BTEX

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

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

Workorder # : 9211276
Date Received : 11/18/92
Project ID : 204-5510-0303
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Bauman 12/1/92
Department Supervisor Date

Charles M Burch 12.1.92
Chemist Date

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

Anamatrix W.O.: 9211276
Matrix : WATER
Date Sampled : 11/18/92

Project Number : 204-5510-0303
Date Released : 11/25/92

Reporting Limit	Sample I.D.# S-3	Sample I.D.# S-1	Sample I.D.# S-2	Sample I.D.# TB	Sample I.D.# FB
COMPOUNDS (mg/L)	-01	-02	-03	-04	-05
Benzene	0.0005	ND	ND	0.043	ND
Toluene	0.0005	ND	ND	0.039	ND
Ethylbenzene	0.0005	ND	ND	0.017	ND
Total Xylenes	0.0005	ND	ND	0.029	ND
TPH as Gasoline	0.050	ND	ND	0.49	ND
% Surrogate Recovery	112%	96%	109%	130%	114%
Instrument I.D.	HP4	HP4	HP4	HP4	HP4
Date Analyzed	11/20/92	11/20/92	11/20/92	11/20/92	11/21/92
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.

Charles M. Burch 12-1-92
Analyst Date

Charles Balmer 12/1/92
Supervisor Date

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

Anamatrix W.O.: 9211276
 Matrix : WATER
 Date Sampled : N/A

Project Number : 204-5510-0303
 Date Released : 11/25/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# BN2001E3 BLANK
Benzene	0.0005	ND
Toluene	0.0005	ND
Ethylbenzene	0.0005	ND
Total Xylenes	0.0005	ND
TPH as Gasoline	0.050	ND
% Surrogate Recovery		113%
Instrument I.D.		HP4
Date Analyzed		11/20/92
RLMF		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.

Charlton Burch 12/1/92
 Analyst Date

Charly Balmer 12/1/92
 Supervisor Date

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

Sample I.D. : LAB CONTROL SAMPLE	Anamatrix I.D.: LCSW1120
Matrix : WATER	Analyst : <i>CMB</i>
Date Sampled : N/A	Supervisor : <i>CS</i>
Date Analyzed : 11/20/92	Date Released : 12/01/92
	Instrument ID : HP4

COMPOUND	SPIKE AMT. (mg/L)	LCS (mg/L)	REC LCS	%REC LIMITS
<hr style="border-top: 1px dashed black;"/>				
Benzene	0.020	0.017	85%	49-159
Toluene	0.020	0.019	95%	53-156
Ethylbenzene	0.020	0.019	95%	54-151
TOTAL-Xylenes	0.020	0.020	100%	56-157
P-BFB			66%	53-147

* Limits established by Anamatrix, Inc.



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: 1505-C

Date: _____
Page 1 of 1

Site Address: 5755 Broadway
Oakland, CA

Analysis Required

LAB: Anamatrix

WIC#: 204-5510-0303

Shell Engineer: Dan Kirk Phone No.: (510) 675-6168

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

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

Comments: 3-VOAS (HEI) for gas, BTEX

Sampled by: Steve Horton

Printed Name: Steve Horton

CHECK ONE (1) BOX ONLY	CT/DI	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/>	6441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	6441	48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/>	6442	16 days <input checked="" type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/>	6443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	6452	
Water Rem. or Sys. O & M <input type="checkbox"/>	6453	
Other <input type="checkbox"/>		

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

Sample ID	Date	Sludge	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	Combination TPH 8015 & BTEX 8020	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
① S-3	11/18/92			X		3						X		40 ml	HEI	No		
② S-1	11/18/92			X		3						X						
③ S-2	11/18/92			X		3						X						
④ TB	11/18/92			X		3						X						
⑤ FB	11/18/92			X		3						X						

Relinquished By (signature): <u>Steve Horton</u>	Printed Name: <u>Steve Horton</u>	Date: <u>11/18/92</u> Time: <u>14:05</u>	Received (signature): <u>Michele D Aguilar</u>	Printed Name: <u>MICHELE D AGUILAR</u>	Date: <u>11/18/92</u> Time: <u>14:05</u>
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name:	Date: Time:
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

ATTACHMENT B
SAMPLING FREQUENCY CRITERIA