GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(510) 352-4800

April 3, 1992

County of Alameda
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Reference: Former Shell Service Station
461 Eighth Street
Oakland, California
WIC 204-5508-6200

Gentlemen:

As requested by Mr. Dan Kirk of Shell Oil Company, we are forwarding a copy of the Quarterly Report dated April 3, 1992. The enclosed report presents the results of the first quarter 1992 ground-water sampling at the above referenced location.

If you have any questions, please call.

Sincerely,

Ellen Fostersmith
Geologist

enclosure

cc: Mr. Dan Kirk, Shell Oil Company
Mr. Tom Callaghan, Regional Water Quality Control Board
Mr. Larry Turner, Shell Oil Company

GeoStrategies Inc.

QUARTERLY REPORT

Former Shell Service Station
461 Eighth Street
Oakland, California
WIC 204-5508-6200

764401-13

April 3, 1992

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(510) 352-4800

April 3, 1992

Shell Oil Company
P.O. Box 5278
Concord, California

Attn: Mr. E. Paul Hayes

Re: QUARTERLY REPORT
Former Shell Service Station
461 Eighth Street
Oakland, California
WIC# 204-5508-6200

Gentlemen:

This Quarterly Report has been prepared by GeoStrategies Inc. (GSI) presents the results of the 1992 first quarter sampling for the above referenced site (Plate 1). Sampling data were furnished by the Shell Oil Company sampling contractor.

There are currently three monitoring wells at the site; Wells S-4,S-5, and S-6 (Plate 2). These wells were installed in 1981 by Groundwater Technology Inc. Wells S-1, S-2, S-3 and S-7 were destroyed in 1987.

CURRENT QUARTER SAMPLING RESULTS

Depth to water-level measurements were obtained in each monitoring well on February 13, 1992. Static ground-water levels were measured from the surveyed top of the well box and recorded to the nearest ± 0.01 foot. Water-level elevations, referenced to project site datum and the stabilized values of measured physical parameters are presented in the EMCON report in Appendix A. Water-level data were used to construct a quarterly water-level elevation map (Plate 2).

Each well was checked for the presence of floating product. Floating product was observed in Well S-5 this quarter.

Ground-water samples were collected on February 13, 1992. Samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline), according to EPA Method 8015 (Modified) and for BTEX according to EPA Method 8020. The ground-water samples were analyzed by International Technology (IT) Analytical Services, a California State-certified laboratory located in San Jose, California. These data are presented in the EMCON report (Appendix A). A chemical concentration map for benzene is presented on Plate 3. Historical chemical analytical data are presented in Appendix A.

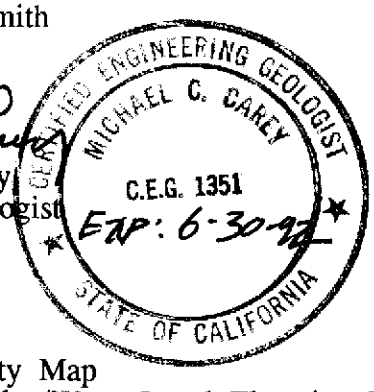
If you have any questions, please call.

GeoStrategies Inc. by,

Ellen C. Fostersmith

Ellen C. Fostersmith
Geologist

Michael C. Carey
Engineering Geologist
C.E.G. 1351



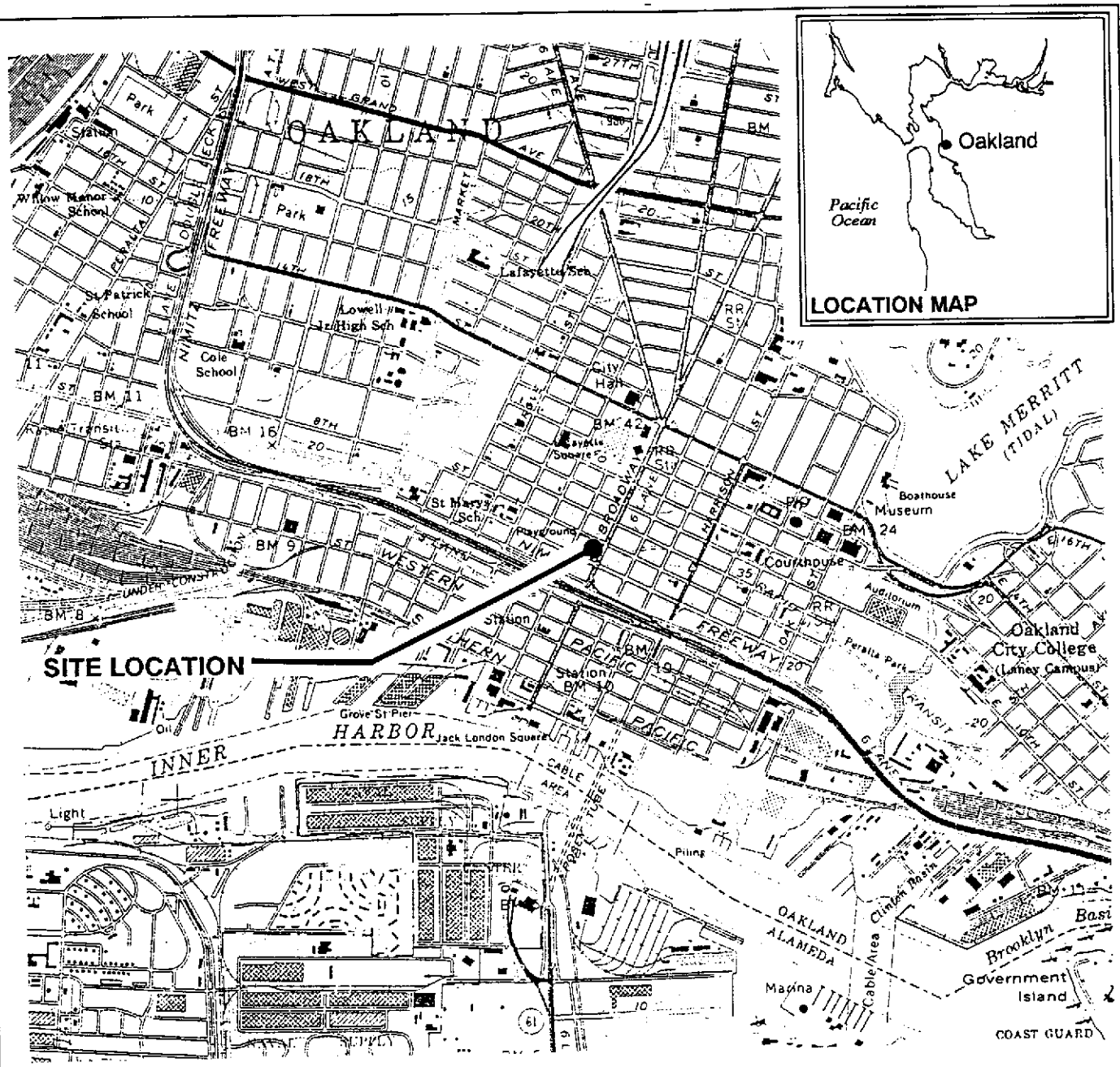
ECF/MCC/dls

Plate 1. Vicinity Map
Plate 2. Site Plan/Water-Level Elevation Map
Plate 3. Benzene Isoconcentration Map

Appendix A: EMCON Monitoring Report and Chain-of-Custody Form

QC Review RAL

764401-13

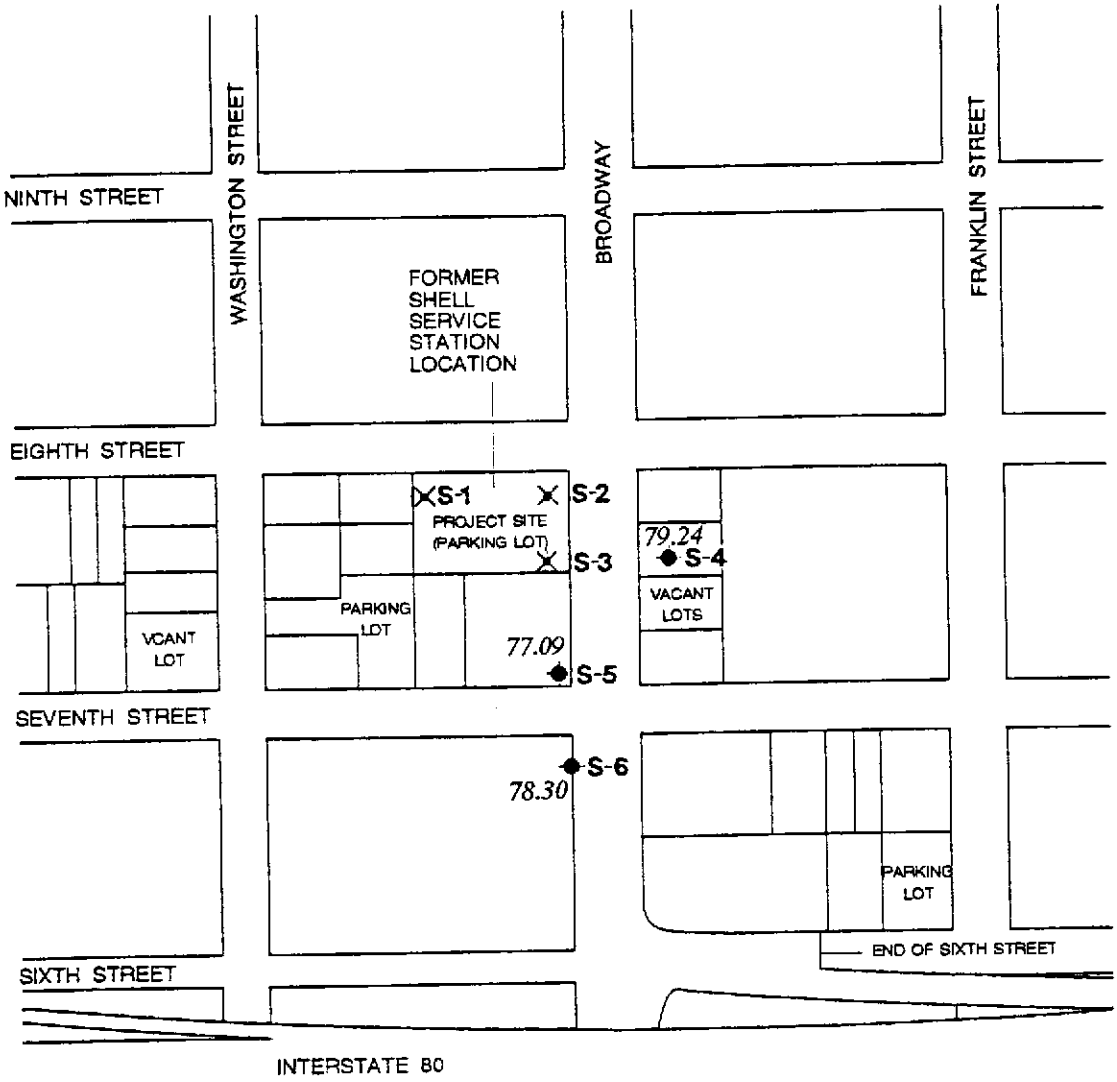


GeoStrategies Inc.

Vicinity Map
Former Shell Service Station
461 Eighth Street
Oakland, California

PLATE **1**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
7644		5/90		



EXPLANATION

- ◆ S-1 — Ground-water monitoring well location
- ✕ — Destroyed well
- *77.01* — Ground-water elevation in feet referenced to project datum measured on February 13, 1992

Water-levels corrected for Floating Product by a factor of 0.80

Note: Well S-7 located at Washington and Fifth Streets was destroyed in 1987

N

0 200 400

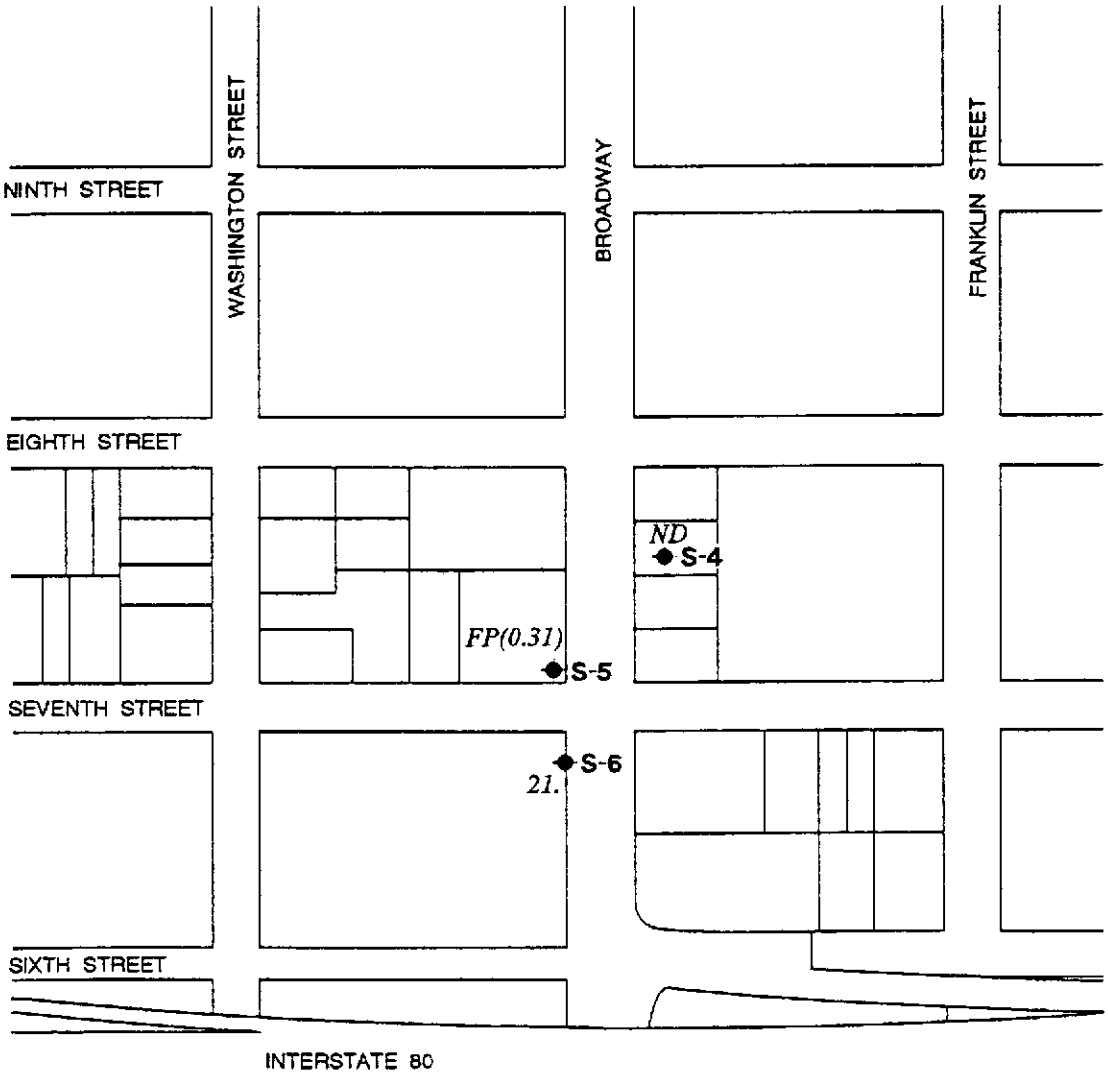
Scale in Feet

GeoStrategies Inc.

Site Plan/Water-Level Elevation Map
Former Shell Service Station
461 Eighth Street
Oakland, California

PLATE **2**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
764401-13		4/92		



EXPLANATION

◆ S-1	Ground-water monitoring well location
21.	Benzene concentration in ppm sampled on February 13, 1992
ND	Not Detected (see laboratory reports for detection limits)
FP(0.01)	Floating Product (measured thickness in feet)

N

0 200 400

Scale in Feet

GeoStrategies Inc.

Benzene Concentration Map
Former Shell Service Station
461 Eighth Street
Oakland, California

PLATE
3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
764401-13		4/92		

APPENDIX A
EMCON MONITORING REPORT
AND
CHAIN-OF-CUSTODY

EMCON ASSOCIATES
Consultants in Wastes Management and Environmental Control

March 13, 1992
Project: G67-23.01
WIC#: 204-5508-6200

Ms. Ellen Fostersmith
Geo Strategies Inc.
2140 West Winton Avenue
Hayward, California 94545

Re: First quarter 1992 ground-water monitoring report, Shell Oil Company, 461 Eighth Street, Oakland, California

Dear Ms. Fostersmith:

This letter presents the results of the first quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) service station located at 461 Eighth Street, Oakland, California. First quarter monitoring was conducted on February 13, 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 1 (supplied by Geo Strategies, Inc.). During the survey, wells S-4, S-5, and S-6 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. Well S-5 contained 0.31 foot of floating product. Total depth was measured to the nearest 0.1 foot. Results of the first quarter water-level survey, and available data from four previous water level surveys, are summarized in table 1.

SAMPLING AND ANALYSIS

Ground-water samples were collected from wells S-4 and S-6 on February 13, 1992. Well S-5 contained 0.31 foot of floating product and was not sampled during first quarter monitoring. Prior to sample collection, the wells were purged with a polyvinyl chloride (PVC) bailer. 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. Well S-4 was evacuated to dryness before three casing volumes were removed. The well was allowed to recharge for up to 24 hours. Samples were collected after the well had recharged to a level sufficient for sample collection.

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

Field measurements from first quarter monitoring, and available data from four previous monitoring events, are summarized in table 1. Purge water from the monitoring wells was contained in a 55-gallon drum. The drum was removed from the site on February 13, 1992 by Crosby-Overton.

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 on site with steaming hot deionized water prior to use at each well.

Quality control samples for first quarter monitoring included one trip blank (TB). All water samples from the first quarter 1992 monitoring event were analyzed for total petroleum hydrocarbons (TPH) as gasoline, and benzene, toluene, ethylbenzene, and total xylenes (BTEX).

ANALYTICAL RESULTS

Analytical results for the first 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 map
Certified analytical report
Chain-of-custody document

G672301A.DOC

Table 1
Monitoring Well Field Measurement Data
First Quarter 1992

Shell Station: 461 Eighth Street
Oakland, California
WIC #: 204-5508-6200

Date: 03/16/92
Project Number: G67-23.01

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)
S-4	02/15/89	NR	NR	NR	NR	ND	02/15/89	NR	NR	NR	NR
S-4	04/30/90	NR	NR	NR	NR	ND	04/30/90	NR	NR	NR	NR
S-4	06/27/91	NR	NR	NR	NR	ND	06/27/91	NR	NR	NR	NR
S-4	09/24/91	93.51	15.85	77.66	16.3	ND	09/24/91	NR	NR	NR	NR
S-4	02/13/92	93.51	14.27	79.24	16.2	ND	02/13/92	6.40	489	61.3	80
S-5	07/27/89	NR	NR	NR	NR	ND	07/27/89	NR	NR	NR	NR
S-5	04/30/90	NR	NR	NR	NR	ND	04/30/90	NR	NR	NR	NR
S-5	07/31/90	NR	NR	NR	NR	ND	07/31/90	NR	NR	NR	NR
S-5	09/24/91	99.36	21.40@	77.96	NR	0.06	09/24/91	NR	NR	NR	NR
S-5	02/13/92	99.36	22.52	76.84	38.2	~~0.31~~	02/13/92	FP	FP	FP	FP
S-6	10/30/90	NR	NR	NR	NR	ND	10/30/90	NR	NR	NR	NR
S-6	03/06/91	NR	NR	NR	NR	ND	03/06/91	NR	NR	NR	NR
S-6	06/27/91	NR	NR	NR	NR	ND	06/27/91	NR	NR	NR	NR
S-6	09/24/91	100.58	22.26	78.32	38.3	ND	09/24/91	6.52	684	68.4	NR
S-6	02/13/92	100.58	22.28	78.30	36.5	ND	02/13/92	6.38	1135	63.9	50

TOC = top of casing
ft-~~MSL~~ = elevation in feet, relative to ~~mean sea level~~ 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
@ = depth to water was anamalous due to floating product; corrected ground-water elevation = 78.01 feet.
FP = floating product; well contained floating product and was not sampled

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

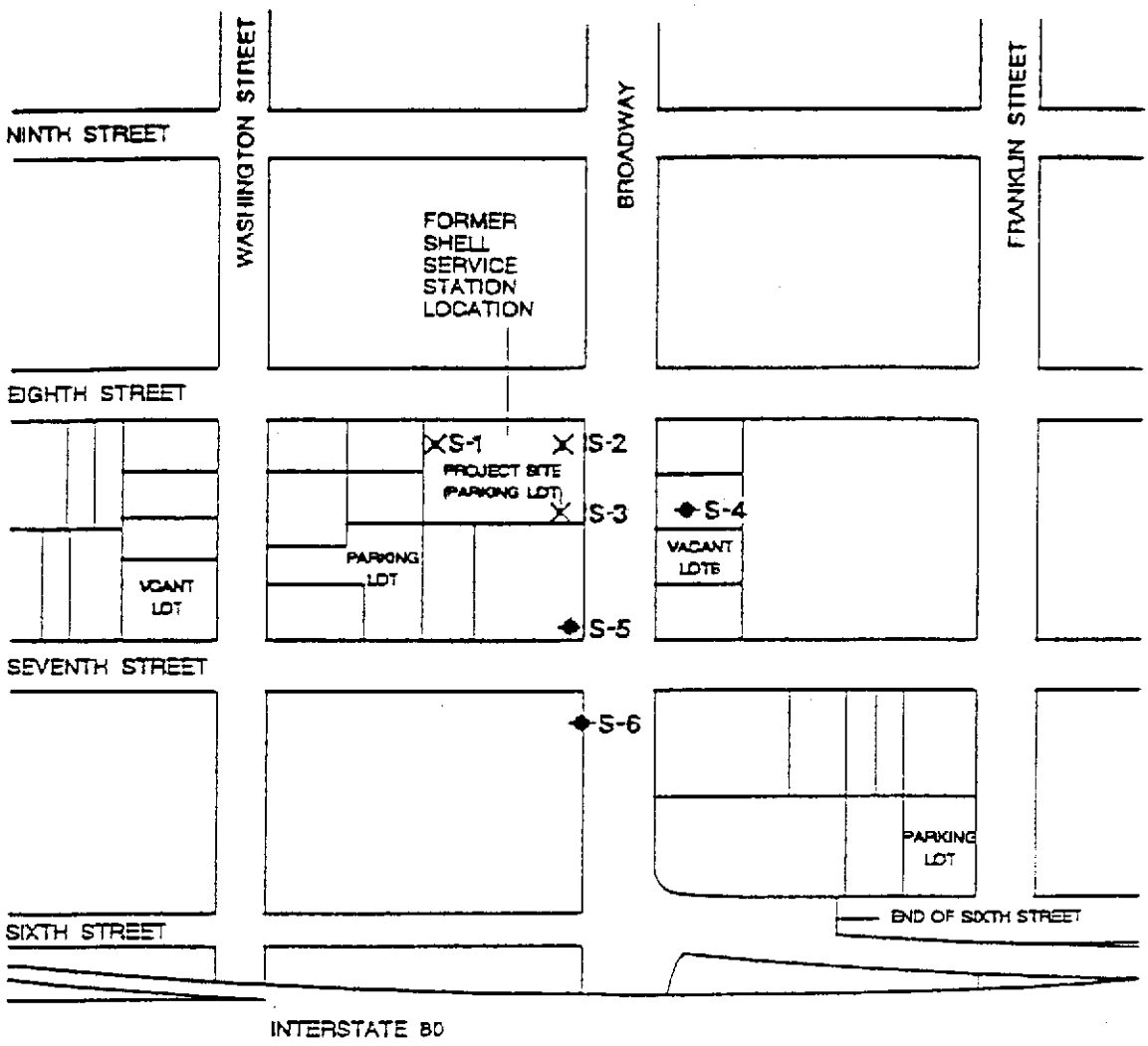
Shell Station: 461 Eighth Street
Oakland, California
WIC #: 204-5508-6200

Date: 03/16/92
Project Number: G67-23.01

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-4	02/15/89	<0.05	0.0005	<0.001	<0.001	0.003
S-4	04/30/90	<0.050	<0.0005	<0.0005	<0.0005	<0.001
S-4	06/27/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-4	09/24/91	NR	NR	NR	NR	NR
S-4	02/13/92	<0.05	<0.0005	<0.0005	<0.0005	0.0030
S-5	07/27/89	110.	20.	29.	2.4	14.
S-5	04/30/90	100.	13.	22.	2.1	11.
S-5	07/31/90	53.	8.3	14.	1.2	7.4
S-5	09/24/91	NR	NR	NR	NR	NR
S-5	02/13/92	FP	FP	FP	FP	FP
S-6	10/30/90	27.	7.4	0.9	0.6	1.4
S-6	03/06/91	35.	3.9	2.7	2.3	3.5
S-6	06/27/91	51.	19.	5.6	1.7	6.3
S-6	09/24/91	42.	14.	4.3	1.2	4.0
S-6	02/13/92	64.	26.	6.2	1.6	5.1
TB-1	02/13/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TPH-g = total petroleum hydrocarbons as gasoline
NR = not reported; data not available
FP = floating product; well contained floating product and was not sampled

Figure 1
(Supplied byGeo Strategies, Inc.)



EXPLANATION

◆ S-1 Ground-water monitoring well location

X Destroyed well

N

0 200 400

Scale in Feet

Note: Well S-7 located at Washington and Fifth Streets was destroyed in 1987

GSI GeoStrategies Inc.

Site Plan
Former Shell Service Station
461 Eighth Street
Oakland, California

PLATE 2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
764401-11	CHS	10/91		

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Shell Oil Company
Emcon Associates
1938 Junction Ave.
San Jose, CA 95131
David Larsen

Date: 02/26/92

Work Order: T2-02-121

P.O. Number: MOH 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: G6723 461 8th St, Oakland
Date Received: 02/13/92
Number of Samples: 3
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Thomas L. Paulson
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/26/92
Client Work ID: G6723 461 8th St, Oakland

Work Order: T2-02-121

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: S-4
SAMPLE DATE: 02/13/92
LAB SAMPLE ID: T202121-01
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/20/92
Low Boiling Hydrocarbons	Mod.8015		02/20/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None.
BTEX		
Benzene	0.0005	None.
Toluene	0.0005	None.
Ethylbenzene	0.0005	None.
Xylenes (total)	0.0005	0.0030

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	118.
1,3-Dichlorobenzene (BTEX)	104.

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/26/92
Client Work ID: G6723 461 8th St, Oakland

Work Order: T2-02-121

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: S-6
SAMPLE DATE: 02/13/92
LAB SAMPLE ID: T202121-02
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/20/92
Low Boiling Hydrocarbons	Mod.8015		02/20/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	10.	64.
BTEX		
Benzene	0.1	21.
Toluene	0.1	6.2
Ethylbenzene	0.1	1.6
Xylenes (total)	0.1	5.1

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	110.
1,3-Dichlorobenzene (BTEX)	107.

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/27/92
Client Work ID: G6723 461 8th St, Oakland

Work Order: T2-02-121

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **TRIP BLANK**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: T202121-03
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/20/92
Low Boiling Hydrocarbons	Mod.8015		02/20/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None.
BTEX		
Benzene	0.0005	None.
Toluene	0.0005	None.
Ethylbenzene	0.0005	None.
Xylenes (total)	0.0005	None.

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	120.
1,3-Dichlorobenzene (BTEX)	97.

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/26/92
Client Work ID: G6723 461 8th St, Oakland

Work Order: T2-02-121

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **Quality Control**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: T202121-04A
EXTRACTION DATE:
ANALYSIS DATE: 02/20/92
ANALYSIS METHOD: 8020

QUALITY CONTROL REPORT

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Analyses

RESULTS in Micrograms per Liter

PARAMETER	Sample Amt	Spike Amt	MS Result	MSD Result	MS %Rec	MSD %Rec	RPD
Benzene	None	50.0	54.4	53.8	109	108	1
Toluene	None	50.0	50.6	49.7	101	99	2
Ethylbenzene	None	50.0	50.9	50.3	102	101	1
Total Xylenes	None	150	153	149	102	99	3

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	102	101

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/26/92
Client Work ID: G6723 461 8th St, Oakland

Work Order: T2-02-121

TEST CODE QC TEST NAME Quality Control

Quality control (QC) samples are analyzed and used to assess the laboratory control measures. Routine QC samples include method blanks, spikes and duplicates. The purpose of the method blank (MB) analysis is to demonstrate that artifacts of the test do not yield false positives. The laboratory control spike (LS) and /or matrix spike (MS) analysis is used to evaluate the ability of the test to recover analytes of interest, i.e. accuracy. Accuracy is expressed as percent (%) recovery. The laboratory spike duplicate (LSD), matrix spike duplicate (MSD), or duplicate sample (DUP) is used tc determine the precision of the test, by comparing the result from the original spike (or sample) to the duplicate spike (or sample). Precision is expressed as relative percent difference (RPD).

The results of appropriate QC samples from QC batches associated with the listed samples are included in this report.

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from EPA Methods modified 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector in series with a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline. Results in soils are corrected for moisture content and are reported on a dry soil basis unless otherwise noted.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: 12-02-121

Date:
Page 1 of 1

Site Address: 4461 9th Street, Oakland

WIC#: 204-5508-6200

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 TPH-g, BTEX
1-VOA for trip blank

Sampled By:

Printed Name:

LAB: IT Analytical - San Jose

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 TIME
24 hours [ ]
48 hours [ ]
15 days X (Normal)
Other [ ] ____
NOTE: Notify Lab as 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	Preservation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
1 3C	S-4	2/13/92		X		3	X		X			40 ml	HCl	No		Cool
	S-5					3	X		X							1
2 3C	S-6	2/13/92				3	X		X							No Sample Product in well
A	TB-1	2/13/92				1	X		X							1

Relinquished By (signature): Lisle Ruth
Printed name: Lisle Ruth
Date: 2/13/92 Time: 1602

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

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

Received (signature): Josephine DeCarli
Printed name: Josephine DeCarli
Date: 2/13/92 Time: 16:05

Received (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