gettler — ryan inc.

STID 4254

April 11, 1991

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. Jack Brastad of Shell Oil Company, we are forwarding a copy of the Site Update Report dated April 8, 1991. The enclosed report presents the results of the first quarter 1991 ground-water sampling at the above referenced location.

Please do not hesitate to call should you have any questions or comments.

Sincerely,

John P. Werfal
Project Manager

enclosure

cc: Mr. Jack Brastad, Shell Oil Company
Mr. Tom Callaghan, Regional Water Quality Control Board

91 APR 15

2150 west winton avenue • hayward, california 94545-1210 • (415) 783-7500

GeoStrategies Inc.

SITE UPDATE

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

764401-9

April 8, 1991

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(415) 352-4800

April 8, 1991

Gettler-Ryan Inc.
2150 West Winton Avenue
Hayward, California 94545

Attn: Mr. John Werfal

Re: SITE UPDATE
Former Shell Service Station
461 Eighth Street
Oakland, California

Gentlemen:

This Site Update has been prepared by GeoStrategies Inc. (GSI) and presents the results of the 1991 first quarter ground-water sampling performed by Gettler-Ryan Inc. (G-R) for the above referenced site (Plate 1). The scope of work presented in this document was performed at the request of Shell Oil Company. Field work and laboratory analysis methods were performed to comply with current State of California Water Resources Control Board guidelines.

SITE BACKGROUND

There are currently three monitoring wells in the site vicinity; Wells S-4 through S-6 (Plate 2). Seven ground-water monitoring wells (S-1 through S-7) were installed in 1981 by Groundwater Technology, Inc. (GTI). In 1982, GTI installed a ground-water recovery system in Well S-1. The recovery system was subsequently turned off in August 1982. Wells S-1 through S-3 and S-7 were destroyed in 1987. Wells S-4 through S-6 are off-site. These wells were installed to evaluate the vertical and horizontal extent of petroleum hydrocarbons in soils and shallow groundwater beneath and downgradient of the site.

Quarterly monitoring and sampling of wells began in 1988. Ground-water samples have been analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) according to EPA Method 8015 (Modified) and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) according to EPA Method 8020.

CURRENT QUARTERLY SAMPLING RESULTS

Potentiometric Data

Prior to ground-water sampling, depth to water-level measurements were obtained in each monitoring well using an electronic oil-water interface probe. Static ground-water levels were measured from the surveyed top of well box and recorded to the nearest 0.01 foot. Corresponding elevations, referenced to project site datum are presented in Table 1. Water-level data were used to construct the potentiometric map on Plate 3. Shallow ground-water flow is to the northwest at a calculated gradient of 0.01.

Floating Product Measurements

Each well was checked for the presence of floating product using an electronic oil-water interface probe. A clear acrylic bailer was used to confirm probe results. **Floating product was observed in Well S-5 at 0.13 feet in measured thickness.**

Ground-water Analytical Data

Ground-water samples were collected on March 6, 1991. The samples were analyzed for TPH-Gasoline to according EPA Method 8015 (Modified) and BTEX according to EPA Method 8020 by International Technology (IT), a State of California certified laboratory located in San Jose, California.

Well S-4 was monitored only and not sampled. TPH-Gasoline and benzene were detected in Well S-6 at concentrations of 35. and 3.9 parts per million (ppm), respectively. These data are summarized in Table 2 and included in Appendix A. A chemical concentration map for TPH-Gasoline and benzene is presented on Plate 4. Historical chemical analytical data are presented in Table 3.

Quality Control

The quality control (QC) sample for this quarter's sampling was a trip blank. This sample was prepared in the laboratory using organic-free water to evaluate laboratory handling procedures of samples. The results of QC sample analyses are presented in Table 2.

If you have any questions, please call.

GeoStrategies Inc. by,

Ellen C. Fostersmith

Ellen C. Fostersmith
Geologist

David H. Peterson

REGISTERED GEOLOGIST
DAVID H. PETERSON
No. 1186
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

David H. Peterson
Senior Geologist
C.E.G. 1186

ECF/DHP/kjj

Plate 1. Vicinity Map
Plate 2. Site Plan
Plate 3. Potentiometric Map
Plate 4. TPH-Gasoline/Benzene Concentration Map

Appendix A: Analytical Laboratory Report and Chain-of-Custody

QC Review: GP

764401-9

TABLE 1

FIELD MONITORING DATA

WELL NO.	MONITORING DATE	CASING DIA. (IN)	TOTAL WELL DEPTH (FT)	WELL ELEV. (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS (FT)	STATIC WATER ELEV. (FT)	PURGED WELL VOLUMES	pH	TEMPERATURE (F)	CONDUCTIVITY (uMHOS/cm)
S-4	06-Mar-91	4	16.3	93.51	15.23	----	78.28	----	----	----	----
S-5	06-Mar-91	4	----	99.36	23.0	0.13	76.46	----	----	----	----
S-6	06-Mar-91	4	38.5	100.58	22.40	----	78.18	5	6.49	67.1	930

Notes:
1. Water level elevations referenced to project site datum.
2. Physical parameter measurements represent stabilized values.
3. pH values reported in pH units.
4. Static water-levels corrected for floating product (conversion factor = 0.80).
5. Well S-4 had insufficient recharge for sampling.

TABLE 2

GROUND-WATER ANALYSIS DATA

WELL NO	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
S-6	06-Mar-91	14-Mar-91	35.	3.9	2.7	2.3	3.5
TB	----	13-Mar-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

CURRENT REGIONAL WATER QUALITY CONTROL BOARD MAXIMUM CONTAMINANT LEVELS
Benzene 0.001 ppm Xylenes 1.750 ppm Ethylbenzene 0.68 ppm

CURRENT DHS ACTION LEVELS
Toluene 0.100 ppm

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline TB = Trip Blank
PPM = Parts Per Million

Note: 1. All data shown as <x are reported as ND (none detected)
2. DHS Action Levels and MCLs are subject to change pending State review

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

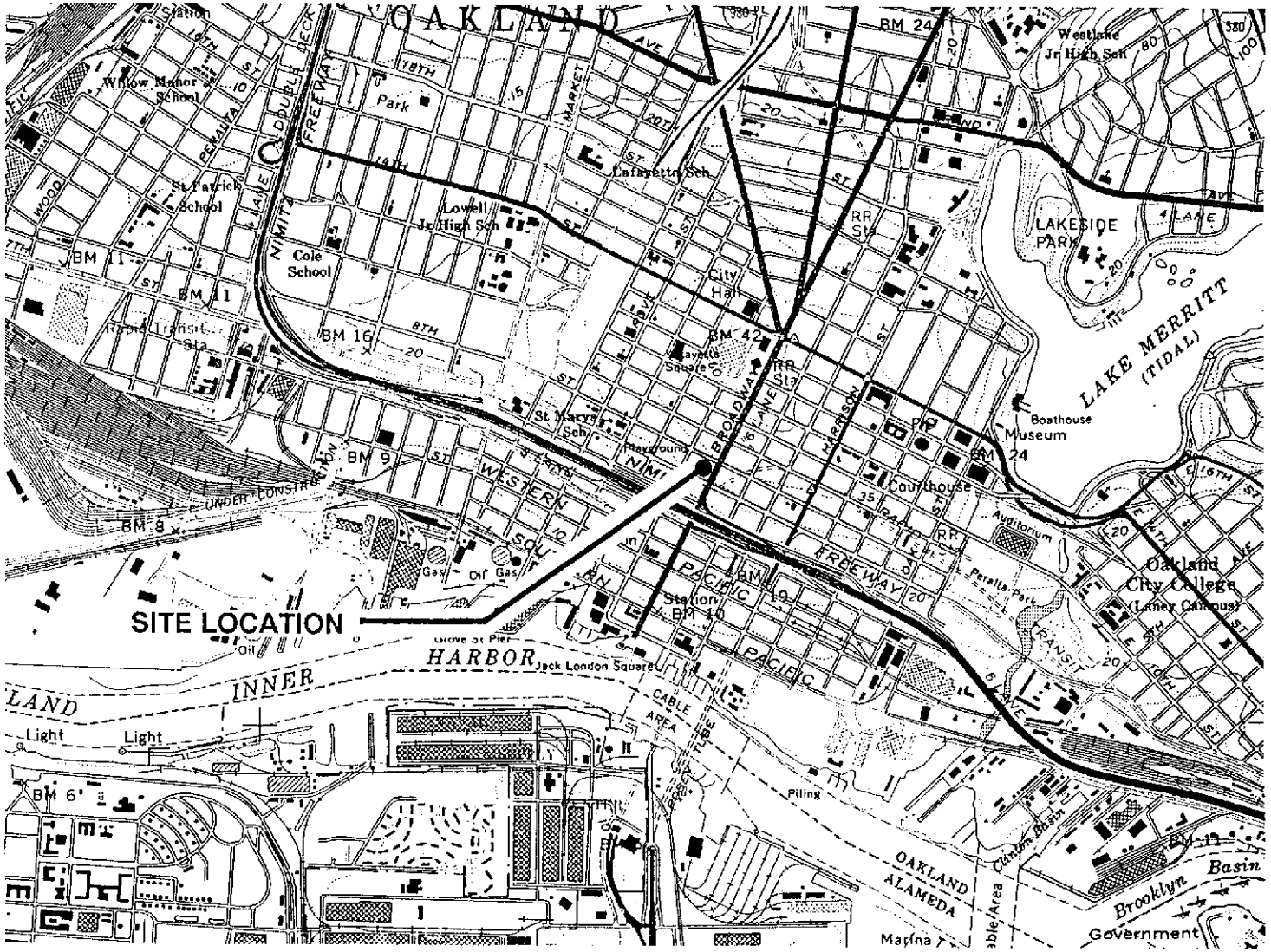
SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
16-Apr-87	S-2	47.	8.2	4.7	----	3.1
26-Oct-88	S-4	0.13	0.0038	0.013	0.004	0.03
15-Feb-89	S-4	<0.05	0.0005	<0.001	<0.001	0.003
30-Apr-90	S-4	<0.050	<0.0005	<0.0005	<0.0005	<0.001
16-Apr-87	S-5	130.	15.	16.	----	14.
26-Oct-88	S-5	110.	20.	25.	2.3	10.
15-Feb-89	S-5	94.	16.	21.	1.8	10.
02-May-89	S-5	120.	29.	35.	3.1	15.
27-Jul-89	S-5	110.	20.	29.	2.4	14.
30-Apr-90	S-5	100.	13.	22.	2.1	11.
31-Jul-90	S-5	53.	8.3	14.	1.2	7.4
16-Apr-87	S-6	81.	16.	9.	----	6.4
26-Oct-88	S-6	110.	29.	18.	2.5	8.2
15-Feb-89	S-6	54.	18.	4.5	1.4	4.
02-May-89	S-6	93.	43.	9.9	3.	8.
27-Jul-89	S-6	52.	20.	3.2	1.7	5.5
05-Oct-89	S-6	55.	20.	2.9	1.6	5.5
09-Jan-90	S-6	76.	35.	9.1	2.3	8.6
30-Apr-90	S-6	39.	13.	2.3	0.9	2.8
31-Jul-90	S-6	48.	20.	4.6	1.5	4.9
30-Oct-90	S-6	27.	7.4	0.9	0.6	1.4
06-Mar-91	S-6	35.	3.9	2.7	2.3	3.5

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPM = Parts per million

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)

NOTE: 1. All data shown as <X are reported as ND (none detected)
2. Ethylbenzenes and Xylenes were combined prior to May 1987



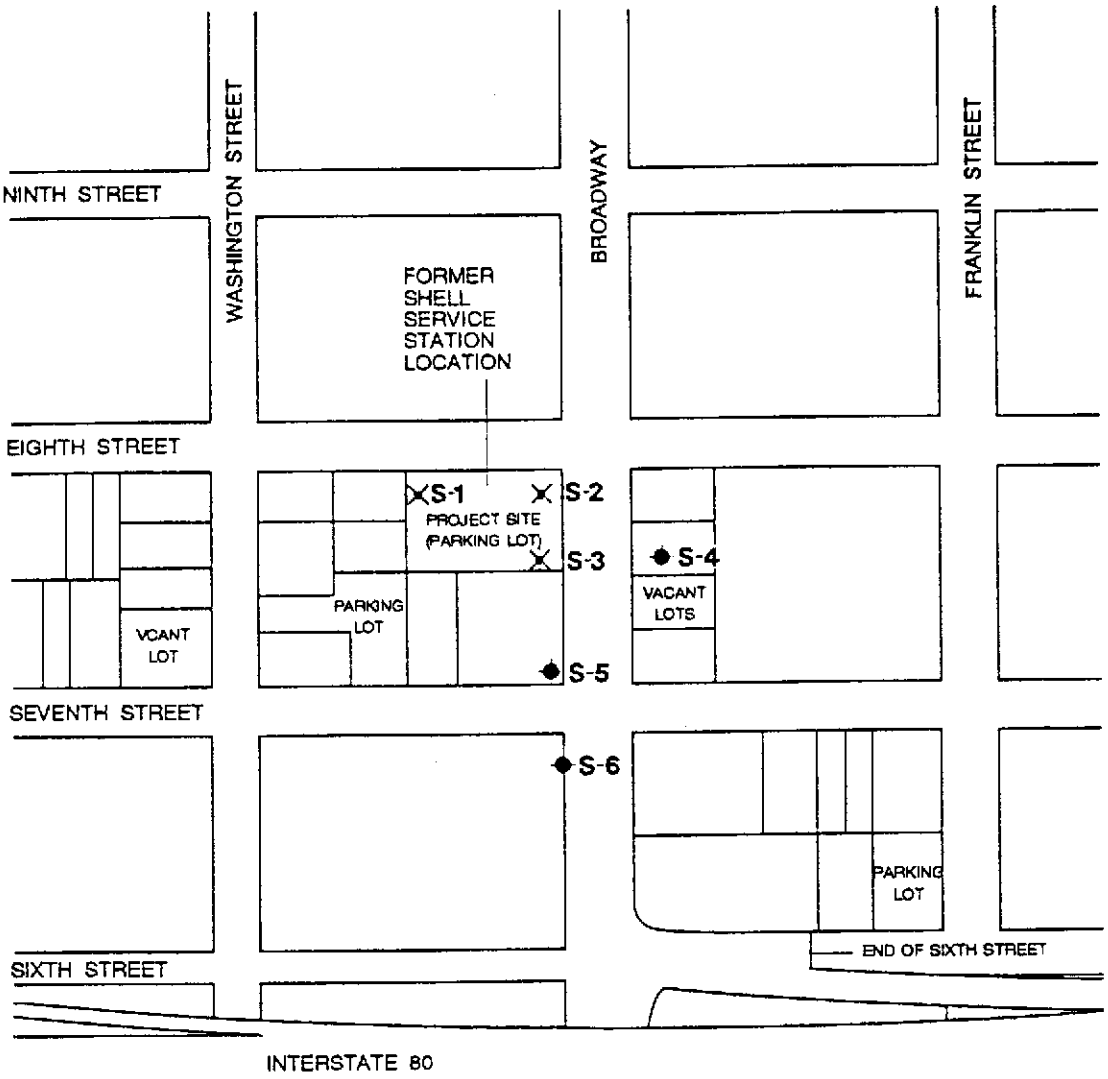
Base Map: USGS Topographic Map

GeoStrategies Inc.

VICINITY MAP
Shell Service Station
461 8th Street
Oakland, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7644		12/90	



EXPLANATION

◆ S-1 Ground-water monitoring well location

✕ Destroyed well

N

0 200 400

Scale in Feet

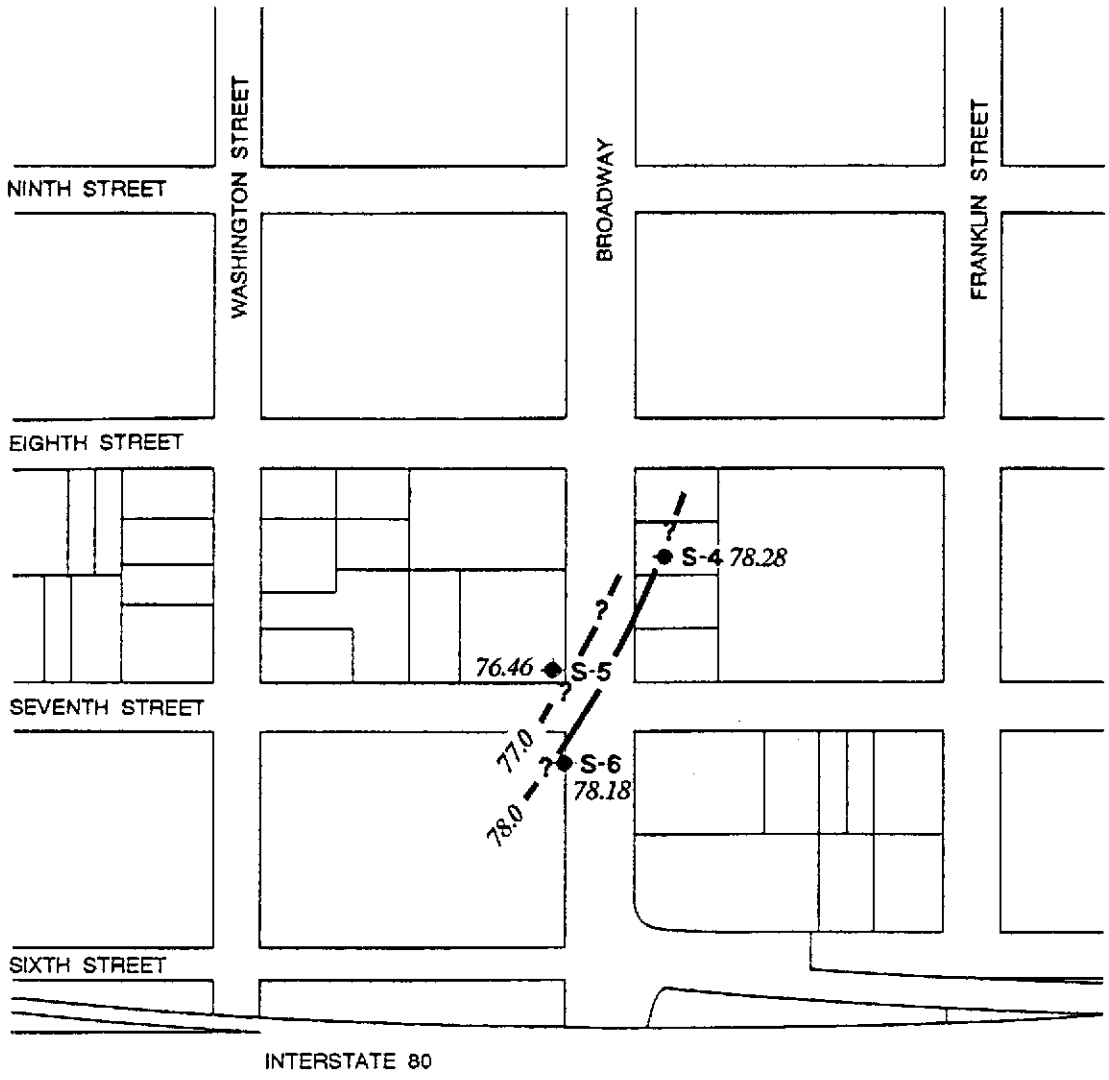
Note: Well S-7 located at Washington and Fifth Streets was destroyed in 1987

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
764401-9	EFS	4/91		



EXPLANATION

S-1 — Ground-water monitoring well location

78.0 — Ground-water elevation contour
Approximate Gradient = 0.01

78.18 — Ground-water elevation in feet referenced to project datum measured on March 6, 1991

N

0 200 400
Scale in Feet

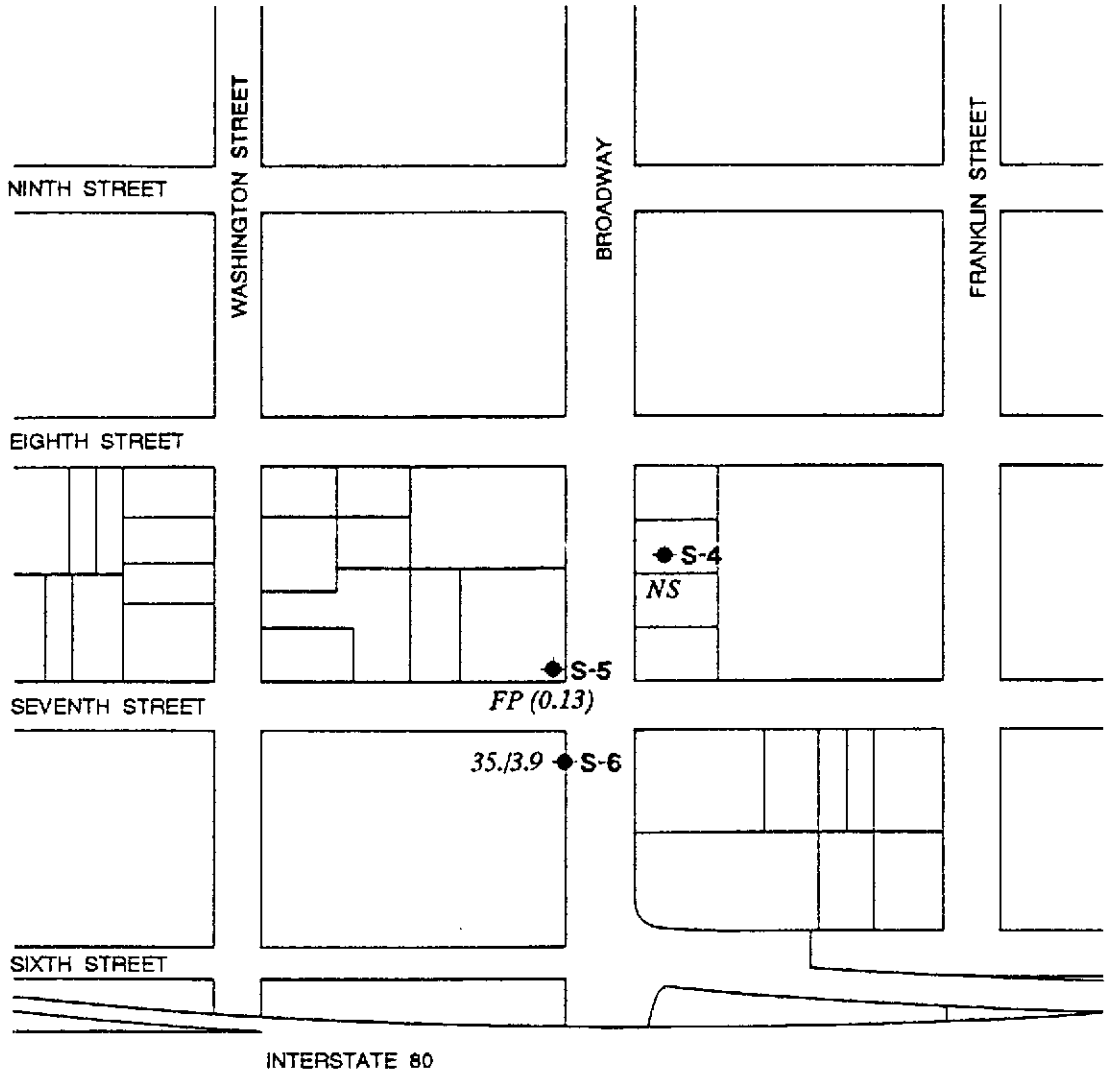
Note: Contours may be influenced by irrigation practices and/or site construction activities

GeoStrategies Inc.

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

PLATE
3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
764401-9	EPS	4/91		



EXPLANATION

◆ S-1	Ground-water monitoring well location
35./3.9	TPH-G (Total Petroleum Hydrocarbons calculated as Gasoline)/Benzene concentrations in ppm sampled on March 6, 1991
FP (0.13)	Floating Product (thickness in feet)
NS	Not Sampled

N

0 200 400

Scale in Feet

GeoStrategies Inc.

TPH-G/Benzene Concentration Map
Former Shell Service Station
461 Eighth Street
Oakland, California

PLATE **4**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
764401-9	EFS	4/91		

APPENDIX A
ANALYTICAL LABORATORY REPORT
CHAIN-OF-CUSTODY

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Shell Oil Company
Gettler-Ryan
2150 West Winton
Hayward, CA 94545
Tom Paulson

Date: 03/19/91

Work Order: T1-03-068 P.O. Number: MOH 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3644 461 8th St, Oakland
Date Received: 03/07/91
Number of Samples: 2
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 03/19/91
Client Work ID: GR3644 461 8th St, Oakland

Work Order: T1-03-068

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-6
SAMPLE DATE: 03/06/91
LAB SAMPLE ID: T103068-01
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		03/14/91
Low Boiling Hydrocarbons	Mod.8015		03/14/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	10.	35.
BTEX		
Benzene	0.1	3.9
Toluene	0.1	2.7
Ethylbenzene	0.1	2.3
Xylenes (total)	0.1	3.5

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 03/19/91
Client Work ID: GR3644 461 8th St, Oakland

Work Order: T1-03-068

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **Trip Blank**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T103068-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		03/13/91
Low Boiling Hydrocarbons	Mod.8015		03/13/91

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

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 03/19/91
Client Work ID: GR3644 461 8th St, Oakland

Work Order: T1-03-068

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T103068-03A
EXTRACTION DATE:
ANALYSIS DATE: 03/13/91
ANALYSIS METHOD: Mod.8015

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	ND<0.5	20.	20.3	19.9	102.	100.	2.
Toluene	ND>0.5	20.	20.3	20.3	102.	102.	0
Ethyl benzene	ND<0.5	20.	21.3	20.8	106.	104.	2.
Xylene isomers	ND<0.5	60.	69.3	67.8	116.	113.	3.

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

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 03/19/91
Client Work ID: GR3644 461 8th St, Oakland

Work Order: T1-03-068

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.

COMPANY Shell Oil Co JOB NO.

JOB LOCATION 7th and Broadway

CITY Oakland PHONE NO. (415) 783-7500

AUTHORIZED Tom Paulson DATE 3-6-91 P.O. NO. 3644 01

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
S-6	3	Liquid	3-6-91/1016	THC gas BTXE	OK Cool
Trip Blank	1	↓	1-14-91	↓	Bubble

RELINQUISHED BY: Randall M. Ihrig 3-6-91 1610 RECEIVED BY: REFRIG #1 3-6-91 1610

RELINQUISHED BY: Kelly 3-6-91 0800 RECEIVED BY: [signature] 3-7-91 0800

RELINQUISHED BY: [signature] 3-7-91 1025 RECEIVED BY LAB: James W Marlow

DESIGNATED LABORATORY: ZT/SCX DHS #: 8102

REMARKS: Normal TAT

DATE COMPLETED 3-6-91 FOREMAN Randall M. Ihrig

ORIGINAL