GeoStrategies Inc.

January 29, 1993

Ms. Susan Hugo
Alameda County
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

Reference: Shell Service Station
1800 Powell Street
Emeryville, California
WIC 204-2495-0101

Ms. Hugo:

As requested by Mr. Dan Kirk of Shell Oil Company, we are forwarding a copy of the Quarterly Report dated January 29, 1993 for the above referenced location. The report presents the results of the ground-water sampling conducted during the fourth quarter of 1992.

If you have any questions, please call.

Sincerely,

Ellen Fostersmith

Ellen Fostersmith
Geologist

EF/rmt

Enclosure

cc: Mr. Dan Kirk, Shell Oil Company
Mr. Lester Feldman, Regional Water Quality Control Board

:ellens\605-s.wp

GeoStrategies Inc.

January 29, 1993

Shell Oil Company
P.O. Box 5278
Concord, California 94520

Attn: Mr. Dan Kirk

Re: QUARTERLY REPORT
Shell Service Station
1800 Powell Street
Emeryville, California
WIC #204-2495-0101

Mr. Kirk:

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

EXECUTIVE SUMMARY

- Well S-14 was ND for Benzene this quarter, and Well S-12 contained 0.0012 parts per million (ppm) Benzene.

- Historical research indicates that the site overlies and old landfill. Tar paper and other debris have been encountered during drilling at the site.

SITE DESCRIPTION

There are currently seven monitoring wells at the site; S-5, S-8, S-9, S-10, S-12, S-13 and S-14 (Plate 2). Wells S-1 through S-10 were installed prior to 1983. GSI installed Wells S-11 through S-14 in 1989. Wells S-6 and S-7 were abandoned in 1989. Wells S-1 through S-4 and S-11 were redesignated as tank backfill wells S-A through S-E, respectively.

760501-17

CURRENT QUARTER SAMPLING RESULTS

Depth to water-level measurements were obtained in each monitoring well on December 4, 1992. Static ground-water levels were measured from the surveyed top of each well box and recorded to nearest $\pm$0.01 foot. Water-level elevations, referenced to Mean Sea Level (MSL) datum, and the stabilized values of measured physical parameters are presented in the EMCON Monitoring report (Appendix A). Water-level data were used to construct a quarterly potentiometric map (Plate 2). Shallow groundwater flow across the site is generally to the west at an approximate hydraulic gradient of 0.03.

Each well was checked for the presence of floating product. Floating product entered Well S-10 during purging, and the well was not sampled. Well S-9 has contained a high viscosity, black, sludge-like substance since 1986, and was not monitored or sampled. The product in Well S-9 is believed to be related to the tar paper and/or other landfill debris underlying the site.

Ground-water samples were collected on December 4, 1992. Samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline), according to EPA Method 8015 (Modified) and for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) according to EPA Method 8020. Samples from Wells S-12 and S-14 were also analyzed for TPH-Diesel according to EPA Method 8015. The ground-water samples were analyzed by Anametrix Inc., a California State-certified laboratory located in San Jose, California. These data are summarized in the EMCON Monitoring report (Appendix A). A chemical isoconcentration map for benzene is presented on Plate 3. Historical chemical analytical data are presented in Appendix A.

DISCUSSION

The dissolved hydrocarbon plume has been relatively stable and does not appear to be migrating from the site. The site is underlain by a landfill which operated from 1884 to 1969. Industrial and residential debris have been identified during drilling at the site. Given the already degraded condition resulting from past land use in the site vicinity, additional subsurface investigation and/or remediation at the Shell Service Station does not appear to be warranted.

If you have any questions, please call.

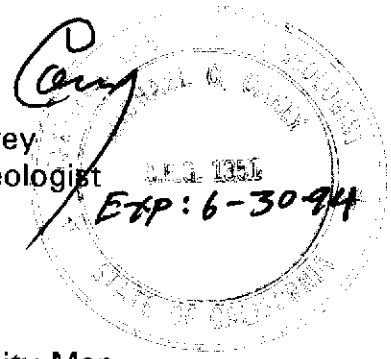
GeoStrategies Inc. by,

Ellen C. Fostersmith

Ellen C. Fostersmith
Geologist

Michael C. Carey

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



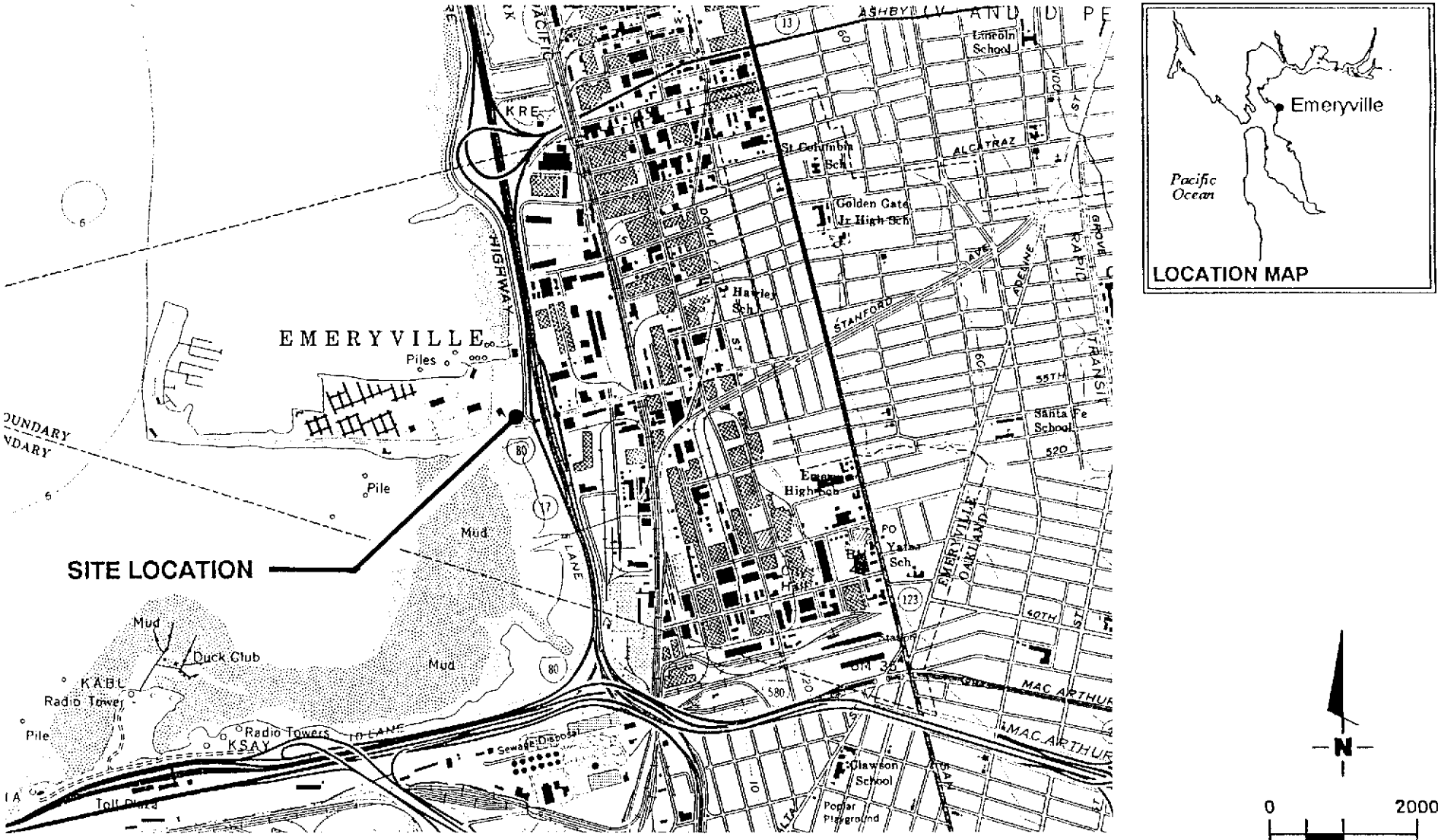
ECF/MCC/rmt

Plate 1. Vicinity Map
Plate 2. Site Plan/Potentiometric Map
Plate 3. Benzene Isoconcentration Map

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

QC Review:

760501-17



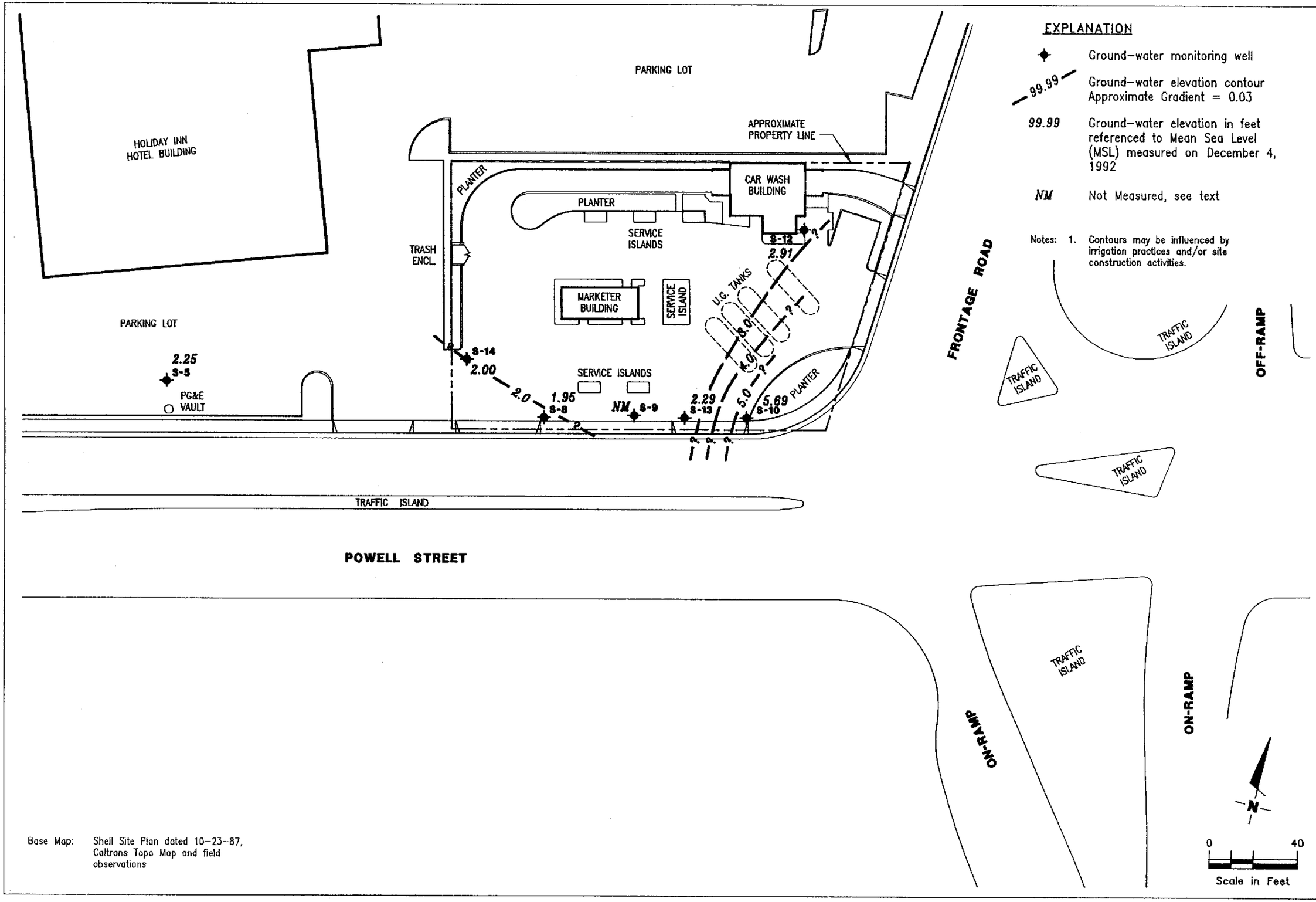
Base Map: USGS Topographic Map

GeoStrategies Inc.

VICINITY MAP
Shell Service Station
1800 Powell Street
Emeryville, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7605			



EXPLANATION

- Ground-water monitoring well
- 99.99 — Ground-water elevation contour Approximate Gradient = 0.03
- *99.99* — Ground-water elevation in feet referenced to Mean Sea Level (MSL) measured on December 4, 1992
- *NM* — Not Measured, see text

Notes: 1. Contours may be influenced by irrigation practices and/or site construction activities.

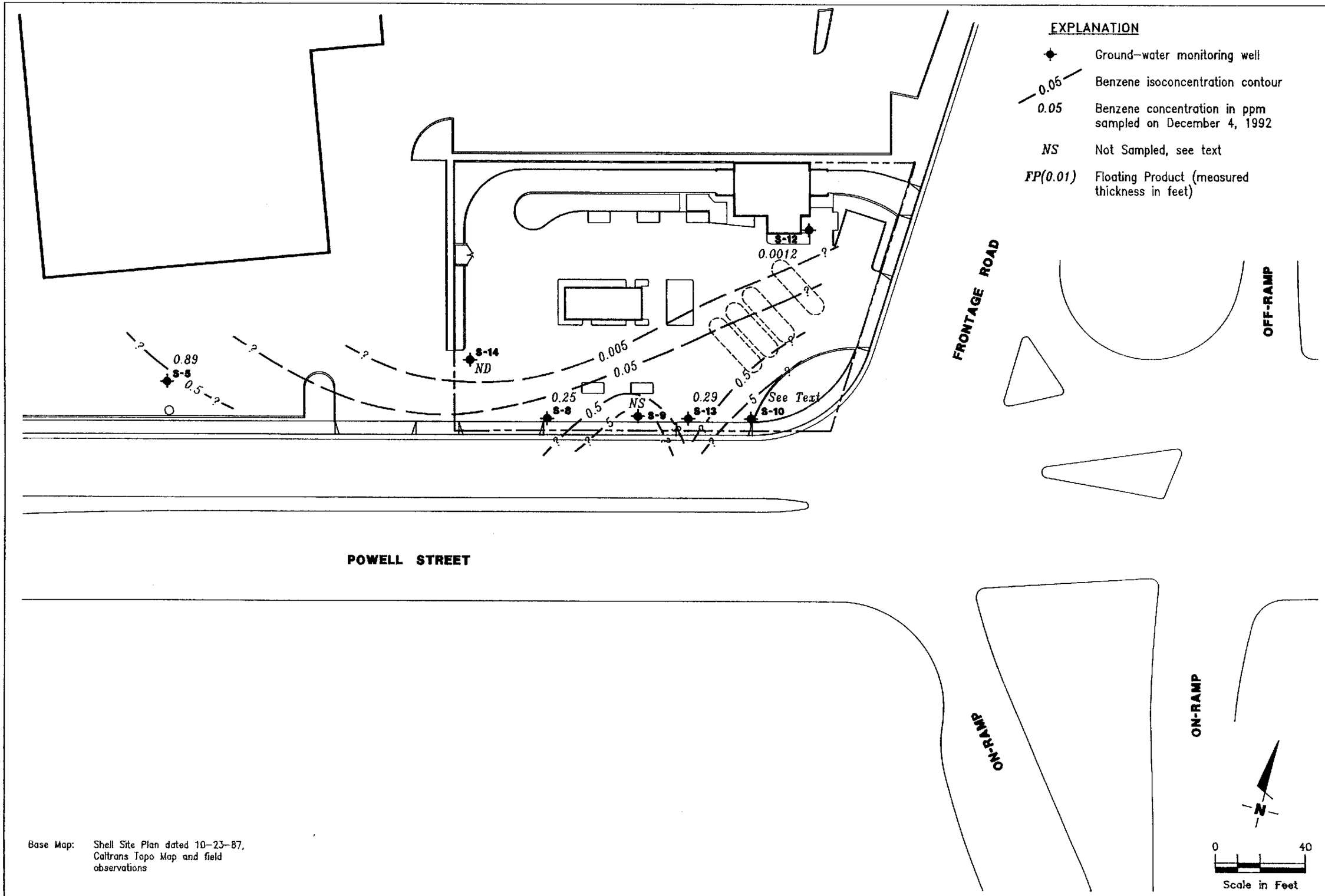
Base Map: Sheil Site Plan dated 10-23-87, Caltrans Topo Map and field observations

PLATE 2

SITE PLAN/POTENTIOMETRIC MAP
Shell Service Station
1800 Powell Street
Emeryville, California

GeoStrategies Inc.

JOB NUMBER 760501-17
REVIEWED BY
DATE 1/93
REVISED DATE



Base Map: Shell Site Plan dated 10-23-87, Caltrans Topo Map and field observations

PLATE 3

BENZENE ISOCONCENTRATION MAP
Shell Service Station
1800 Powell Street
Emeryville, California

GeoStrategies Inc.

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
760501-17		1/93	

APPENDIX A
EMCON MONITORING REPORT
AND
CHAIN-OF-CUSTODY FORM

EMCON ASSOCIATES
Consultants in Waste Management and Environmental Control

GeoStrategies Inc.

January 6, 1993
Project: 0G67-020.01
WIC#: 204-2495-0101

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

Re: Fourth quarter 1992 ground-water monitoring report, Shell Oil Company, 1800 Powell Street, Emeryville, California

Dear Ms. Fostersmith:

This letter presents the results of the fourth quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) site located at 1800 Powell Street, Emeryville, California. Fourth quarter monitoring was conducted on December 4, 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-5, S-8, S-10, S-12, S-13, and S-14 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. Although floating product was not detected in any wells during the water-level survey, floating product did enter wells ~~S-8~~, S-10~~, and S-14~~ during well purging. 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 monitoring wells S-5, S-8, S-12, S-13, and S-14 on December 4, 1992. Sampling of well S-10 was discontinued after a significant volume of floating product entered the well during purging. 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. Field measurements from fourth quarter monitoring, and available measurements from four previous monitoring events, are summarized in table 1. Purge water from the monitoring

1938 Junction Avenue, San Jose, California 95131-2102 (408) 453-7300 Fax (408) 453-8450

wells was contained in 55-gallon drums. The drums were identified with Shell-approved labels and secured for on-site storage.

Ground-water samples were collected with a Teflon® bailer, labeled, placed on ice, and transported to 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), a field blank (FB), and a duplicate well sample (SD-13) collected from well S-13. 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). Additional ground-water samples collected from wells S-12, S-13, and S-14, and duplicate sample SD-13, were analyzed for total petroleum hydrocarbons as diesel (TPH-d).

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 plan
Certified analytical report
Chain-of-custody document

Table 1
Monitoring Well Field Measurement Data
Fourth Quarter 1992

Shell Station: 1800 Powell Street
Emeryville, California
WIC #: 204-2495-0101

Date: 01/06/93
Project Number: G67-20.01

Well Designation	Water Level Field Date	TOB 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-5	07/08/91	11.72	9.15	2.57	12.1	ND	07/08/91	7.05	2400	68.8	NR
S-5	02/12/92	11.72	9.00	2.72	12.0	ND	02/12/92	7.00	2350	58.6	>200
S-5	05/11/92	11.72	8.61	3.11	11.9	ND	05/11/92	6.67	2880	67.9	>200
S-5	09/01/92	11.72	9.61	2.11	12.2	ND	09/01/92	6.72	2370	70.8	>200
S-5	12/04/92	11.72	9.47	2.25	12.3	ND	12/04/92	6.95	2100	66.7	509
S-8	07/08/91	12.76	10.45	2.31	19.3	ND	07/08/91	7.28	6300	69.3	NR
S-8	02/12/92	12.76	10.44	2.32	19.2	ND	02/12/92	7.04	7440	64.1	>200
S-8	05/11/92	12.76	10.17	2.59	18.6	ND	05/11/92	6.46	4340	70.3	>200
S-8	09/01/92	12.76	10.81	1.95	19.2	ND$	09/01/92	FP$	FP$	FP$	FP$
S-8	12/04/92	12.76	10.81	1.95	18.9	ND	12/04/92	7.05	6550	67.5	>1000
S-10	07/08/91	12.58	9.41	3.19**	NR	0.03	07/08/91	NR	NR	NR	NR
S-10	02/12/92	12.58	6.41	6.17	19.2	ND	02/13/92	6.12	696	63.5	109
S-10	05/11/92	12.58	9.04	3.54	19.6	ND	05/12/92	6.31	1911	68.7	>200
S-10	09/01/92	12.58	9.38	3.21**	19.1	0.01	09/01/92	FP	FP	FP	FP
S-10	12/04/92	12.58	6.89	5.69	19.6	ND$	12/04/92	FP$	FP$	FP$	FP$
S-12	07/08/91	12.84	9.50	3.34	24.4	ND	07/08/91	6.90	5810	67.0	NR
S-12	02/12/92	12.84	9.43	3.41	24.4	ND	02/12/92	6.45	6120	66.1	95.4
S-12	05/11/92	12.84	8.65	4.19	23.8	ND	05/11/92	5.98	6490	68.3	>200
S-12	09/01/92	12.84	9.86	2.98	24.4	ND	09/01/92	6.21	6860	67.6	>200
S-12	12/04/92	12.84	9.93	2.91	24.4	ND	12/04/92	6.61	6000	66.2	379

TOB = top of well box
ft-MSL = elevation in feet, relative to mean sea level
std. units = standard pH units
micromhos/cm = micromhos per centimeter
degrees F = degrees Fahrenheit
NTU = nephelometric turbidity units
ND = None detected
NR = Not reported; data not available
$ = Floating product entered the well during purging, well sampling was discontinued
FP = Floating product; well contained floating product and was not sampled
** = groundwater elevation corrected to include 80 percent of the floating product thickness measured in the well

Table 1
Monitoring Well Field Measurement Data
Fourth Quarter 1992

Shell Station: 1800 Powell Street
Emeryville, California
WIC #: 204-2495-0101

Date: [illegible] 6/93
Project Number: [illegible] -20.01

Well Designation	Water Level Field Date	TOB 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-13	07/08/91	12.59	10.38	2.21	20.1	ND	07/08/91	7.27	9150	68.9	NR
S-13	02/12/92	12.59	10.48	2.11	20.0	ND	02/12/92	7.02	1066	63.3	66.9
S-13	05/11/92	12.59	9.48	3.11	19.5	ND	05/11/92	6.50	1327	68.9	>200
S-13	09/01/92	12.59	10.74	1.86**	24.6	0.01	09/01/92	FP	FP	FP	FP
S-13	12/04/92	12.59	10.30	2.29	20.6	ND	12/04/92	7.07	10900	64.6	>1000
S-14	07/08/91	12.69	10.32	2.37	23.2	ND	07/08/91	7.35	8210	67.7	NR
S-14	02/12/92	12.69	10.40	2.29	23.9	ND	02/12/92	6.77	6850	64.3	80.1
S-14	05/11/92	12.69	9.66	3.03	23.4	ND	05/11/92	6.68	9490	68.8	>200
S-14	09/01/92	12.69	10.74	1.95	24.0	ND	09/01/92	6.73	7040	66.0	>200
S-14	12/04/92	12.69	10.69	2.00	24.0	ND	12/04/92	6.76	5700	63.0	>1000

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

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

Shell Station: 1800 Powell Street
Emeryville, California
WIC #: 204-2495-0101

Date: [illegible]/93
Project Number: [illegible]20.01

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)
S-5	07/08/91	3.2	1.0	0.016	0.009	0.012	NA	NA
S-5	02/12/92	1.3	0.30	0.005	<0.005	<0.005	NA	NA
S-5	05/11/92	1.9	0.49	<0.005	<0.005	<0.005	NA	NA
S-5	09/01/92	6.7	0.75	<0.025	<0.025	<0.025	NA	NA
S-5	12/04/92	2.9	0.89	0.0053	0.0073	0.013	NA	NA
S-8	07/08/91	1.1	0.45	0.015	<0.0025	0.042	NA	NA
S-8	02/12/92	<1.0	0.26	<0.01	<0.01	0.011	NA	NA
S-8	05/11/92	1.8	0.70	0.014	<0.005	0.046	NA	NA
S-8	09/01/92	FP$	FP$	FP$	FP$	FP$	FP$	FP$
S-8	12/04/92	0.96	0.25	0.0043	<0.0025	0.014	NA	NA
S-10	07/08/91	NR	NR	NR	NR	NR	NR	NR
S-10	02/13/92	1.2	0.47	0.016	<0.005	0.014	NA	NA
S-10	05/12/92	1.1	0.10	0.006	0.004	0.019	NA	NA
S-10	09/01/92	FP	FP	FP	FP	FP	FP	FP
S-10	12/04/92	FP$	FP$	FP$	FP$	FP$	FP$	FP$
S-12	07/08/91	0.07	0.0025	0.0008	<0.0005	0.0024	NA	NA
S-12	02/12/92	0.11	0.0008	<0.0005	<0.0005	0.0013	2.5#	1.4
S-12	05/11/92	0.14	0.0008	0.0008	<0.0005	0.0025	3.8^	NA
S-12	09/01/92	0.19	0.0030	0.015	0.0005	0.0045	2.6^	NA
S-12	12/04/92	0.18	0.0012	0.0010	0.0010	0.0077	3.9^	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
FP = Floating product; well contained floating product and was not sampled
$ = Floating product entered the well during purging, well sampling was discontinued
NR = Not reported; data not available
# = Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline
^ = Concentration reported as diesel is primarily due to the presence of a heavier petroleum product, possibly motor oil

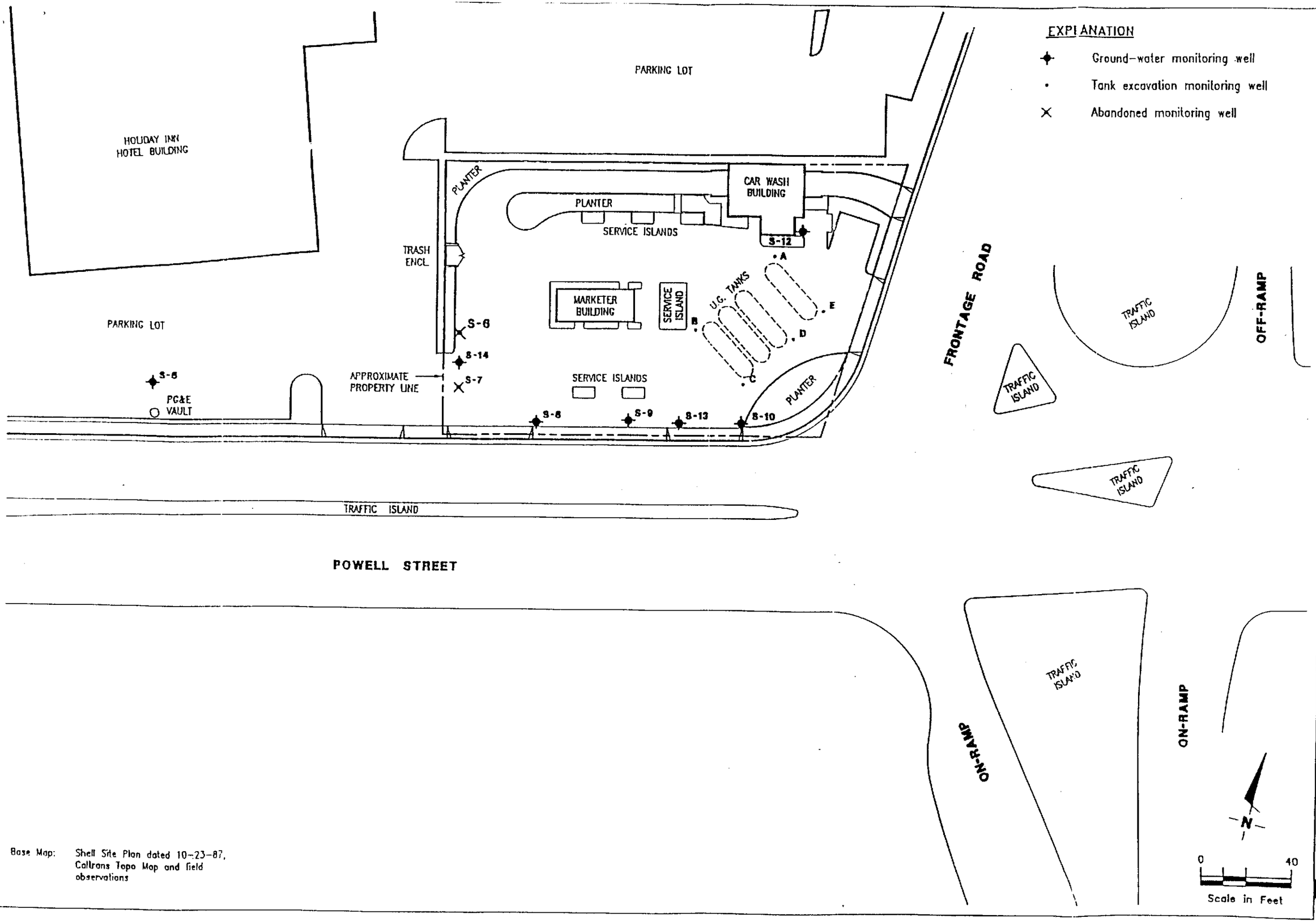
Table 2
Summary of Analytical Results
Fourth Quarter 1992
milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 1800 Powell Street
Emeryville, California
WIC #: 204-2495-0101

Date: 01/06/93
Project Number: G67-20.01

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)
S-13	07/08/91	1.5	0.88	0.010	0.006	0.16	NA	NA
S-13	02/12/92	1.3	0.51	<0.01	<0.01	0.086	1.3∂	1.3
S-13	05/11/92	1.0	0.47	<0.005	<0.005	0.050	1.3^	NA
S-13	09/01/92	FP	FP	FP	FP	FP	FP	FP
S-13	12/04/92	0.90	0.29	0.0032	<0.0025	0.020	1.8^	NA
SD-13	12/04/92	0.88	0.24	0.0046	<0.0025	0.020	2.4^	NA
S-14	07/08/91	0.19	0.0065	0.0006	0.0019	0.026	NA	NA
S-14	02/12/92	0.37	0.0046	<0.0025	<0.0025	0.026	12.*	2.5
S-14	05/11/92	0.65	0.0029	<0.0025	<0.0025	0.024	2.2^	NA
S-14	09/01/92	0.70	0.0032	<0.0025	<0.0025	0.015	7.9	NA
S-14	12/04/92	0.21	<0.0005	<0.0005	0.0008	0.0068	11.^	NA
FB	09/01/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
FB	12/04/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
TB	02/13/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
TB	05/11/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
TB	09/01/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
TB	12/04/92	<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
∂ = Compounds detected within the diesel range are not characteristic of the standard diesel chromatographic pattern
^ = Concentration reported as diesel is primarily due to the presence of a heavier petroleum product, possibly motor oil
FP = Floating product; well contained floating product and was not sampled
* = Compounds detected and calculated a diesel do not match the diesel standard; pattern is characteristic of weathered diesel



Base Map: Shell Site Plan dated 10-23-87, Caltrans Topo Map and field observations

Figure 1: Site Map

REVISED DATE

SITE PLAN
Shell Service Station
1800 Powell Street
Emeryville, California

GeoStrategies Inc.

GSI

JOB NUMBER 760501-12

REVIEWED BY

DATE 10/91

ANAMETRIX INC

Environmental & Analytical Chemistry

Part of Inchcape Environmental

REPORT

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

Workorder # : 9212085
Date Received : 12/04/92
Project ID : 204-2495-0101
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9212085- 1	S-12
9212085- 2	S-14
9212085- 3	S-8
9212085- 4	S-13
9212085- 5	S-5
9212085- 6	SD-13
9212085- 7	TB
9212085- 8	FB

This report consists of 7 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

[signature]
Sarah Schoen, Ph.D.
Laboratory Director

01-07-93
Date

EMCON ASSOCIATES

DEC 18 1992

RECEIVED

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

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

Workorder # : 9212085
Date Received : 12/04/92
Project ID : 204-2495-0101
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9212085- 1	S-12	WATER	12/04/92	TPHd
9212085- 2	S-14	WATER	12/04/92	TPHd
9212085- 4	S-13	WATER	12/04/92	TPHd
9212085- 6	SD-13	WATER	12/04/92	TPHd
9212085- 1	S-12	WATER	12/04/92	TPHg/BTEX
9212085- 2	S-14	WATER	12/04/92	TPHg/BTEX
9212085- 3	S-8	WATER	12/04/92	TPHg/BTEX
9212085- 4	S-13	WATER	12/04/92	TPHg/BTEX
9212085- 5	S-5	WATER	12/04/92	TPHg/BTEX
9212085- 6	SD-13	WATER	12/04/92	TPHg/BTEX
9212085- 7	TB	WATER	12/04/92	TPHg/BTEX
9212085- 8	FB	WATER	12/03/92	TPHg/BTEX

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

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

Workorder # : 9212085
Date Received : 12/04/92
Project ID : 204-2495-0101
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as diesel for samples S-12, S-14, S-13 and SD-13 are primarily due to the presence of a heavier petroleum product, possibly motor oil.

Department Supervisor Date

Chemist Date

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

Anametrix W.O.: 9212085
Matrix : WATER
Date Sampled : 12/04/92

Project Number : 204-2495-0101
Date Released : 12/15/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# S-12 -01	Sample I.D.# S-14 -02	Sample I.D.# S-8 -03	Sample I.D.# S-13 -04	Sample I.D.# S-5 -05
Benzene	0.0005	0.0012	ND	0.25	0.29	0.89
Toluene	0.0005	0.0010	ND	0.0043	0.0032	0.0053
Ethylbenzene	0.0005	0.0010	0.0008	ND	ND	0.0073
Total Xylenes	0.0005	0.0077	0.0068	0.014	0.020	0.013
TPH as Gasoline	0.050	0.18	0.21	0.96	0.90	2.9
% Surrogate Recovery		98%	102%	92%	92%	83%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		12/08/92	12/08/92	12/08/92	12/08/92	12/08/92
RLMF		1	1	5	5	10

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

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

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

Charleston Burch 12.15.92
Analyst Date

Cheryl Brown 12/15/92
Supervisor Date

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

Anametrix W.O.: 9212085
Matrix : WATER
Date Sampled : 12/03 & 04/92

Project Number : 204-2495-0101
Date Released : 12/15/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# SD-13 -06	Sample I.D.# TB -07	Sample I.D.# FB -08	Sample I.D.# BD801E3 BLANK
Benzene	0.0005	0.24	ND	ND	ND
Toluene	0.0005	0.0046	ND	ND	ND
Ethylbenzene	0.0005	ND	ND	ND	ND
Total Xylenes	0.0005	0.020	ND	ND	ND
TPH as Gasoline	0.050	0.88	ND	ND	ND
% Surrogate Recovery		103%	102%	107%	111%
Instrument I.D.		HP4	HP4	HP4	HP4
Date Analyzed		12/08/92	12/08/92	12/08/92	12/08/92
RLMF		5	1	1	1

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

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

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

Luna Shee 1/7/93
Analyst Date

Cheryl Balmer 1/7/93
Supervisor Date

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

Anametrix W.O.: 9212085
Matrix : WATER
Date Sampled : 12/04/92
Date Extracted: 12/08/92

Project Number : 204-2495-0101
Date Released : 12/15/92
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/L)	Amount Found (mg/L)
9212085-01	S-12	12/09/92	0.050	3.9
9212085-02	S-14	12/09/92	0.050	11
9212085-04	S-13	12/09/92	0.050	1.8
9212085-06	SD-13	12/09/92	0.050	2.4
DWBL120892	METHOD BLANK	12/08/92	0.050	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 0.050 mg/L.
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.

Charleston Burch 12.15.92
Analyst Date

Cheryl Balman 12/15/92
Supervisor Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 204-2495-0101 SD-13	Anametrix I.D.	: 9212085-06
Matrix	: WATER	Analyst	: GMG
Date Sampled	: 12/04/92	Supervisor	: CB
Date Analyzed	: 12/08/92	Date Released	: 12/15/92
		Instrument ID	: HP4

COMPOUND	SPIKE AMT (mg/L)	SAMPLE AMT (mg/L)	REC MS (mg/L)	% REC MS	REC MD (mg/L)	% REC MD	RPD	% REC LIMITS
GASOLINE	2.50	0.88	3.60	109%	3.50	105%	-3%	48-145
P-BFB				92%		91%		53-147

* Limits established by Anametrix, Inc.

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Analyzed : 12/08/92

Anametrix I.D. : LCSW1208
Analyst : CMB
Supervisor : [illegible]
Date Released : 12/16/92
Instrument I.D.: HP4

COMPOUND	SPIKE AMT. (mg/L)	REC LCS (mg/L)	%REC LCS	% REC LIMITS
GASOLINE	0.50	0.54	108%	56-116
SURROGATE		83%		53-147

* Quality control established by Anametrix, Inc.

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

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Extracted: 12/08/92
Date Analyzed : 12/08/92

Anametrix I.D. : LCS1208
Analyst : UMP
Supervisor : CS
Date Released : 12/15/92
Instrument I.D.: HP23

COMPOUND	SPIKE AMT (mg/L)	LCS REC (mg/L)	% REC LCS	LCSD REC (mg/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1.25	0.93	74%	0.95	76%	2%	63-130

*Quality control established by Anametrix, Inc.

9212085 123 12/15

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: ____________

Date:

Site Address: 1800 Powell Street, Emeryville, CA

WIC#: 204-2495-0101

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

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

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

Comments: 3-VOAs (HCl) for gas, BTEX; 2-Liter Glass (SR) for TPH-d

Sampled by:

Printed Name:

LAB: Anametrix

CHECK ONE (1) BOX ONLY		CT/DT
Quarterly Monitoring	[X]	5461
Site Investigation	[ ]	5441
Soil Classify/Disposal	[ ]	5442
Water Classify/Disposal	[ ]	5443
Soil/Air Rem. or Sys. O & M	[ ]	5462
Water Rem. or Sys. O & M	[ ]	5463
Other	[ ]	

TURN AROUND TIME

- 24 hours [ ]
- 48 hours [ ]
- 16 days [X] (Normal)
- Other [ ] ____

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

Analysis Required

Sample ID	Date	Sludge	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	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-12	12/4/92			X		5		X				X				40 ml	HCl	No		bubbles 2xVOA
S-14	↓			↓		5		X				X				↓	↓	↓		" " 3xVOA
S-8	↓			↓		3						X				↓	↓	↓		" " 3xVOA
S-13	↓			↓		5		X				X				↓	↓	↓		2xVOA
S-5	↓			↓		~~3~~ 3						X				↓	↓	↓		3xVOA
~~S-10~~	NO SAMPLE TAKEN or PRODUCT					~~3~~ 3						X				↓	↓	↓		
SD-13	12/4/92			↓		~~3~~ 5		X				X				↓	↓	↓		
TB	↓			↓		3						X				↓	↓	↓		

Relinquished By (signature):	Printed Name:	Date: / Time:	Received (signature):	Printed Name:	Date: / Time:
[signature]	IAN GRAHAM	Date: 12-4-92 Time: 1145	[signature] Kathy Haffle	Kathy Haffle	Date: 12-4-92 Time: 1145
		Date: Time:			Date: Time:
		Date: Time:			Date: Time:

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

9212085 12/23 (15) 1.1.5

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:_____

Date:
Page 2 of 2

Site Address: 1800 Powell Street Emeryville, CA

WIC#: 204-2495-0101

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: see page 1.

Sampled by:

Printed Name:

LAB: Anametrix

CHECK ONE (1) BOX ONLY	C1/D1
Quarterly Monitoring	X 6441
Site Investigation	☐ 6441
Soil Classify/Disposal	☐ 6442
Water Classify/Disposal	☐ 6443
Soil/Air Rem. or Sys. O & M	☐ 6452
Water Rem. or Sys. O & M	☐ 6453
Other	☐

TURN AROUND TIME: 24 hours ☐ 48 hours ☐ 15 days X (Normal) Other ☐ ____

NOTE: Notify Lab as soon as Possible of 24/48 hr TAT

Sample ID	Date	Sludge	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	Combination TPH 8015 & BTEX 8020	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
~~FB-1~~ FB	12/5/92			X		3						X		40 ml	HCl	No		

Relinquished By (signature):	Printed Name: IAN GRAHAM	Date: 12-4-92 Time: 1145	Received (signature): Kathy Ybarra	Printed Name: KATHY IBARRA	Date: 12-4-92 Time: 1145
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