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

October 10, 1989

Gettler-Ryan Inc.
1992 National Avenue
Hayward, California 94545

Attn: Mr. John Werfal

Re: INTERIM GROUND-WATER SAMPLING REPORT
Shell Service Station
1800 Powell Street
Emeryville, California

Gentlemen:

This Interim Ground-water Sampling Report has been prepared for the above referenced location. The report presents the chemical analytical results of the ground-water sampling performed on July 7, 1989.

Six monitoring wells (S-5 through S-10) were sampled by Gettler-Ryan Inc. (G-R). The location of these monitoring wells are shown on the attached site map (Plate 1). Depth to groundwater and separate-phase petroleum hydrocarbons (floating product) measurements were made in each well prior to sampling. These data are included in the attached G-R Groundwater Sampling Report. Groundwater was observed from approximately 6 to 10.5 feet below ground surface and flows to the southwest (Plate 2). Floating product was observed in Well S-9 at a measured thickness of 1.20 feet.

Ground-water samples were 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. TPH-Gasoline was detected in monitoring wells S-5, S-6, S-7, S-8, and S-10 at concentrations ranging from 0.07 parts per million (ppm) in Well S-7, to 14 ppm in Well S-10 (Plate 3). Benzene was detected in monitoring wells S-5, S-6, S-7, S-8, and S-10 at or above current State of California Department of Health Services (DHS) action levels (Plate 4).

Ground-water samples were analyzed by International Technology Analytical Services (IT), a State-certified analytical laboratory in San Jose, California. The IT analytical reports for this quarterly sampling are included in the attached G-R Groundwater Sampling Report.

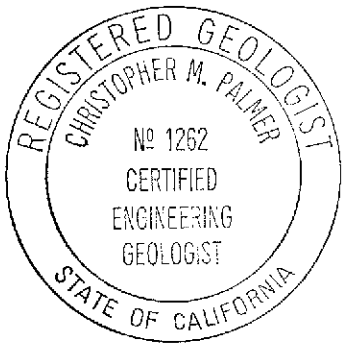
Based on the chemical analytical results of the July 7, 1989 sampling, we recommend that ground-water sampling and monitoring be continued at the site. Ground-water samples will be analyzed for TPH-Gasoline and BTEX. GSI will continue to review existing field and chemical data for this site and shall submit a work plan with our recommendations before November 15, 1989. The work plan will include proposed additional work, if necessary, describe a rationale for the work, and include field methods and procedures to be used.

If you have any questions, please call.

GeoStrategies Inc. by,

David A. Ferreira
Geologist

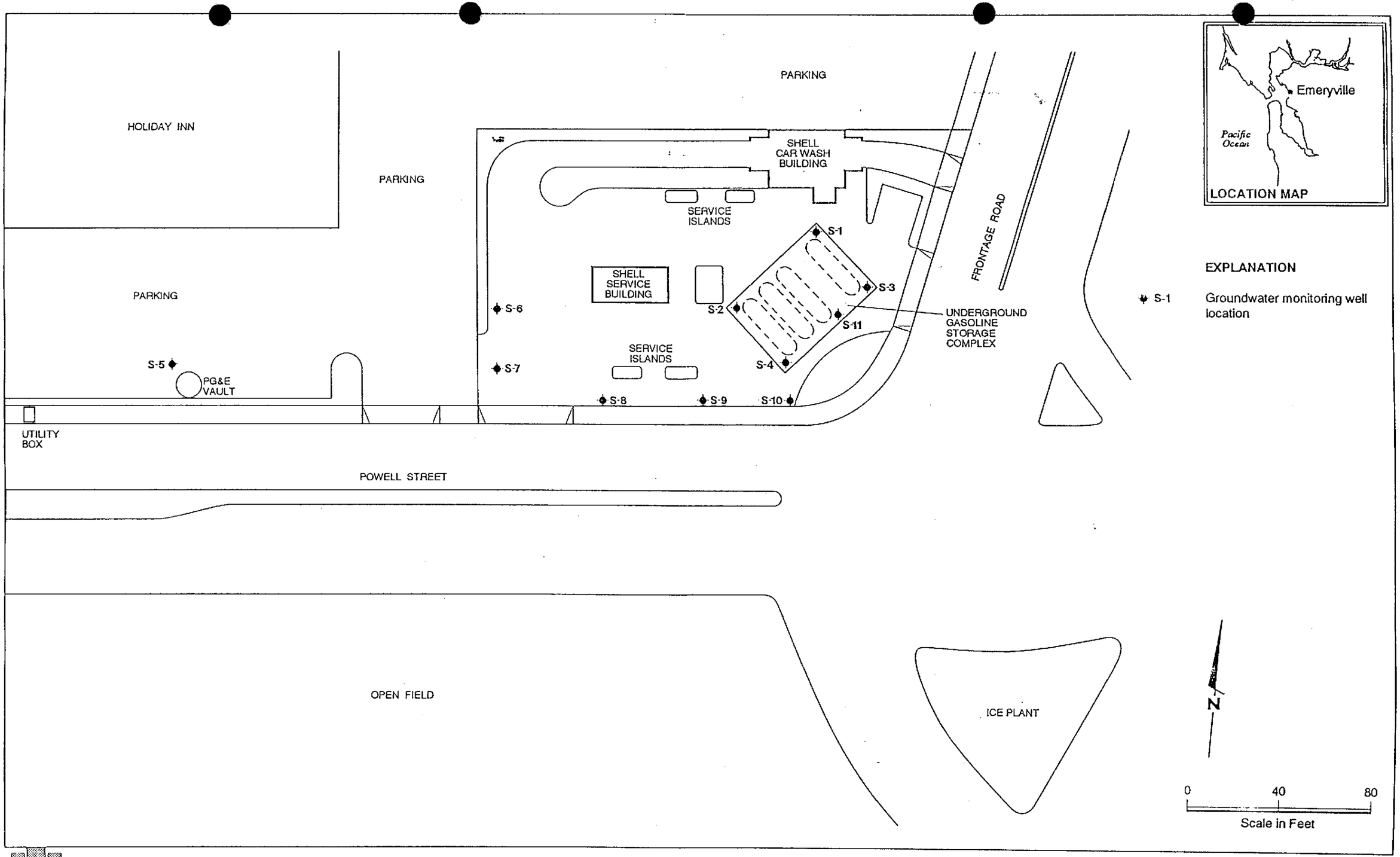
Jeffrey L. Peterson
Senior Hydrogeologist
R.E.A. 1021




Christopher M. Palmer
C.E.G. 1262, R.E.A. 285

JLP/DF/mlg

Attachments:
Plate 1. Site Plan
Plate 2. Potentiometric Map
Plate 3. TPH Isoconcentration Map
Plate 4. Benzene Isoconcentration Map
Gettler-Ryan Inc. Groundwater Sampling Report (July 7, 1989)

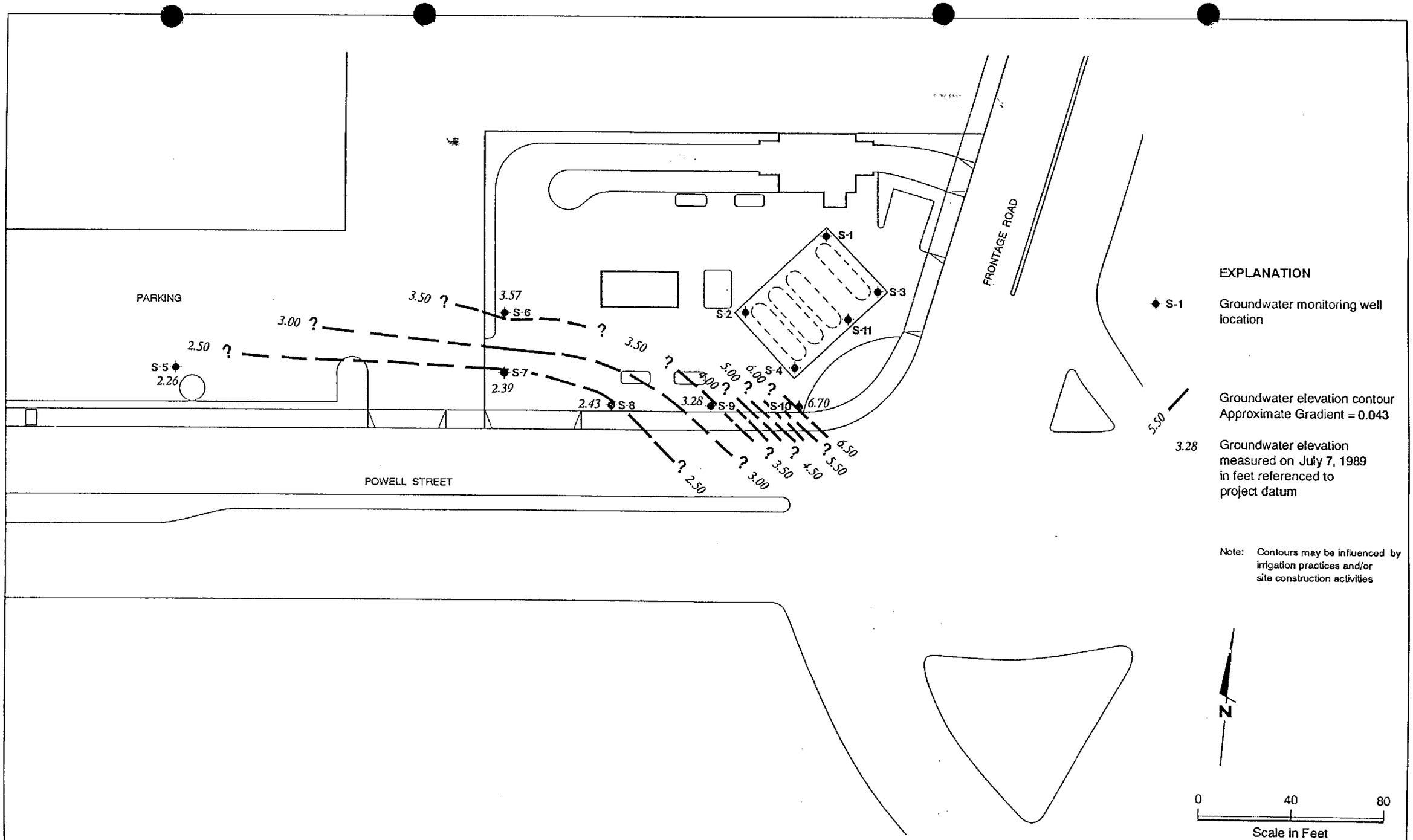



GeoStrategies Inc.

Site Plan
Shell Service Station
1800 Powell Street
Emeryville, California

PLATE 1

| JOB NUMBER | REVIEWED BY RG/CEG | DATE | REVISED DATE | REVISED DATE |
|---|---|---|---|---|
| 7605 | CWP CEG 12-02 | 8/89 | | |

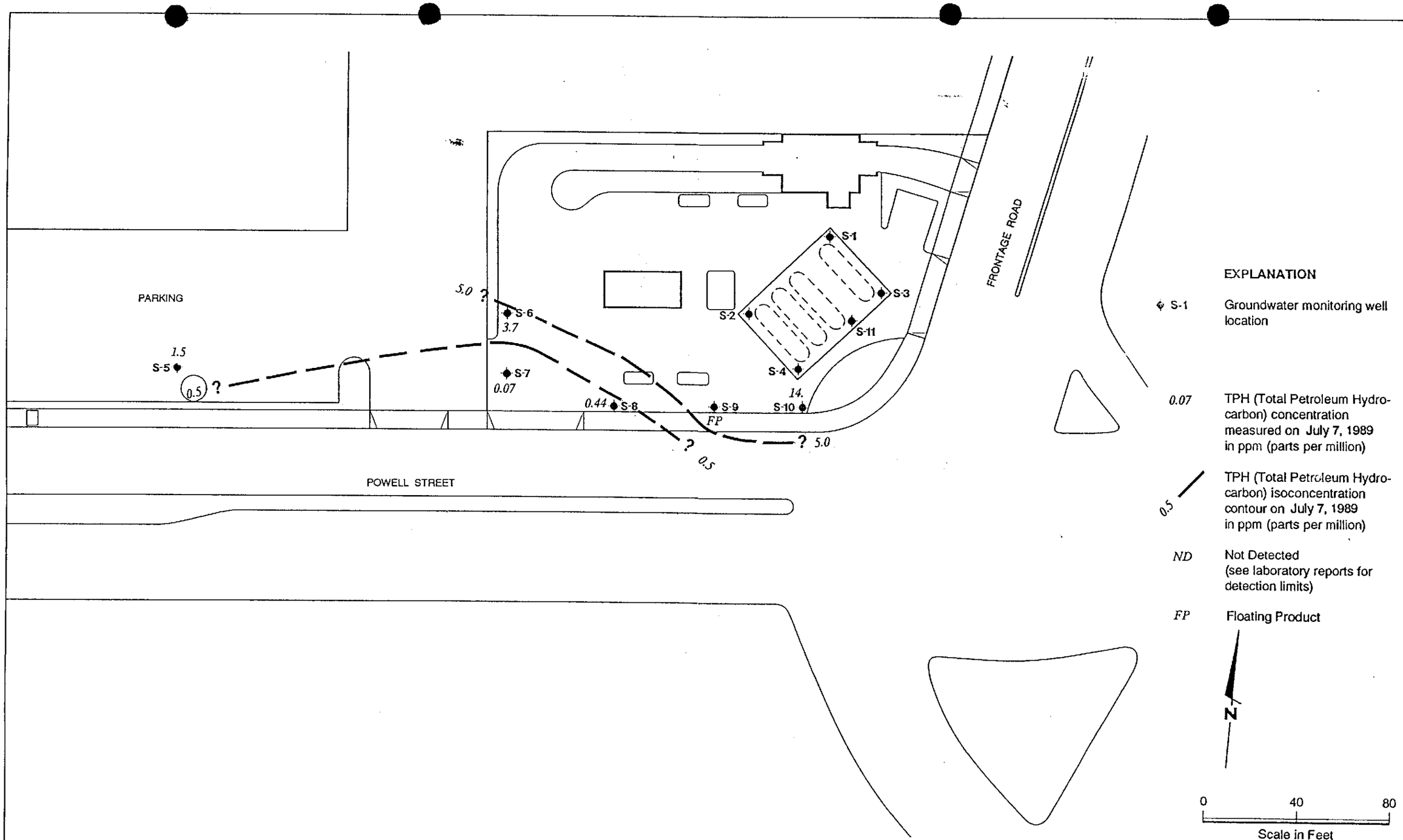



GeoStrategies Inc.

**Potentiometric Map**
Shell Service Station
1800 Powell Street
Emeryville, California

PLATE
**2**

| JOB NUMBER | REVIEWED BY RG/CEG | DATE | REVISED DATE | REVISED DATE |
|---|---|---|---|---|
| 7605 | CMP CEG 1262 | 8/89 | | |

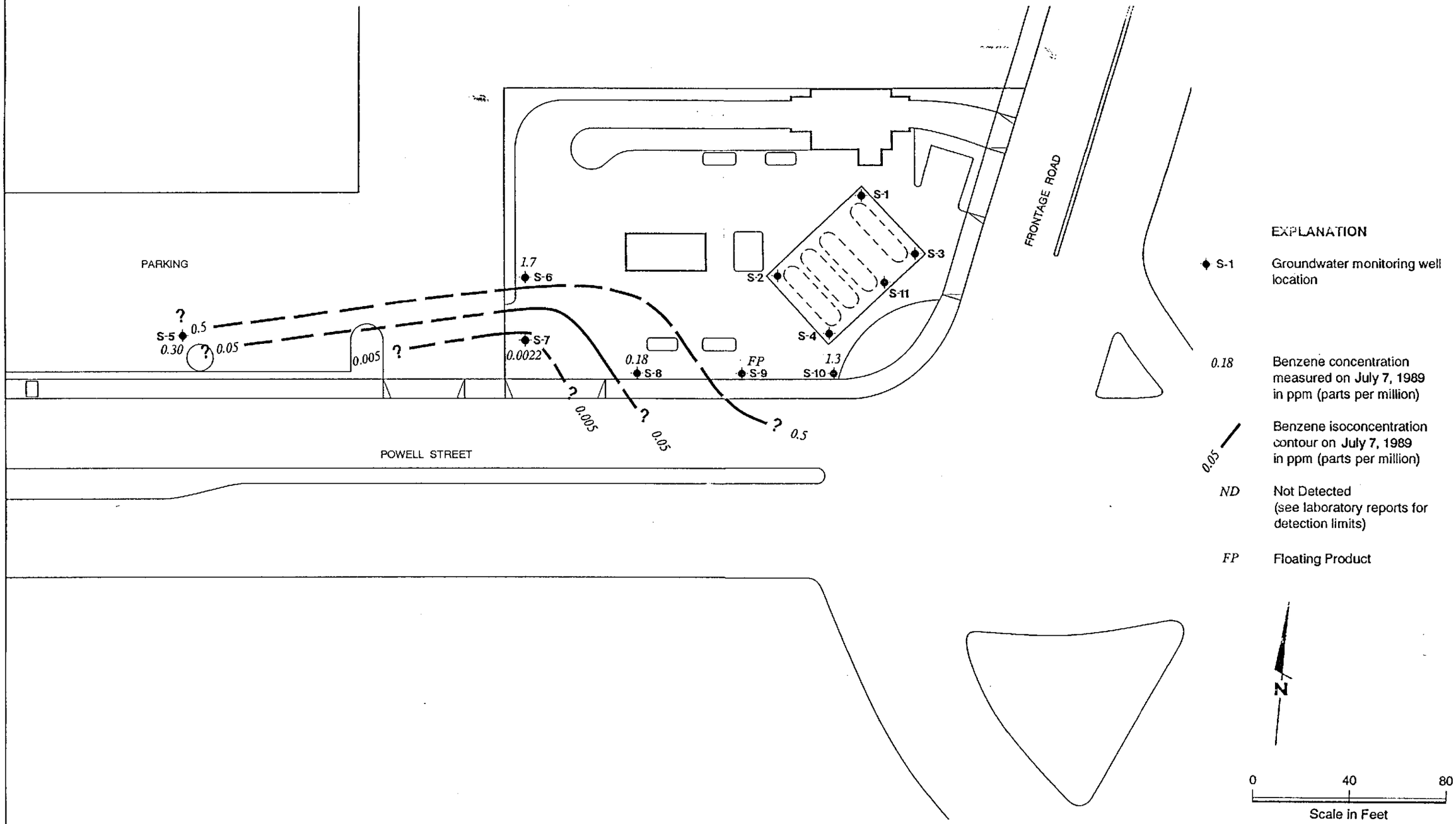



GeoStrategies Inc.

**TPH Isoconcentration Map**
Shell Service Station
1800 Powell Street
Emeryville, California

PLATE **3**

| JOB NUMBER | REVIEWED BY RG/CEG | DATE | REVISED DATE | REVISED DATE |
|---|---|---|---|---|
| 7605 | RMP CEG 12/92 | 8/89 | | |

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**Benzene Isoconcentration Map**
Shell Service Station
1800 Powell Street
Emeryville, California

PLATE
**4**

| JOB NUMBER | REVIEWED BY RG/CEG | DATE | REVISED DATE | REVISED DATE |
|---|---|---|---|---|
| 7605 | CWP CEG 1242 | 8/89 | | |

gettler — ryan inc.

August 11, 1989

GROUNDWATER SAMPLING REPORT

Referenced Site: Shell Service Station
1800 Powell Street
Emeryville, California

Sampling Date: July 7, 1989

This report presents the results of the quarterly groundwater sampling and analytical program conducted by Gettler-Ryan Inc. on July 7, 1989 at the referenced location. The site is occupied by an operating service station located on the northwest corner of Powell Street and I-80. The service station has underground storage tanks containing regular leaded, unleaded and super unleaded gasoline products and diesel.

There are currently six groundwater monitoring wells and five tank backfill wells on site at the locations shown on the attached site map. Groundwater samples were not collected from the tank backfill wells. Prior to sampling, all monitoring wells were inspected for total well depth, water levels, and presence of separate phase product using an electronic interface probe. A clean acrylic bailer was used to visually confirm the presence and thickness of separate phase product. Groundwater depths ranged from 5.92 to 10.44 feet below grade. Separate phase product was observed in well S-9.

Wells that did not contain separate phase product were purged and sampled. Standard sampling procedure calls for a minimum of four case volumes to be purged from each well. Each well was purged while pH, temperature, and conductivity measurements were monitored for stability. In cases where a well dewatered or less than four case volumes were purged, groundwater samples were obtained after the physical parameters had stabilized. The purge water was contained in drums for proper disposal. Details of the final well purging results are presented on the attached Table of Monitoring Data.

Samples were collected, using Teflon bailers, in properly cleaned and laboratory prepared containers. All sampling equipment was thoroughly cleaned after each well was sampled and steam cleaned upon completion of work at the site. The samples were labeled, stored on blue ice, and transported to the laboratory for analysis. A field blank (SF-10) and trip blank, supplied by the laboratory, were included and analyzed to assess quality control. A duplicate sample (SD-8), was submitted without a well designation to assess laboratory performance. Analytical results for the blanks are included in the Certified Analytical Report (CAR's). Chain of custody records were established noting sample identification numbers, time, date, and custody signatures.



1992 national avenue • hayward, california 94545-1787 • (415) 783-7500

The samples were analyzed at International Technology Corporation - Santa Clara Valley Laboratory located at 2055 Junction Avenue, San Jose, California. The laboratory is assigned a California DHS-HMTL Certification number of 137. The results are presented as a Certified Analytical Report, a copy of which is attached to this report.

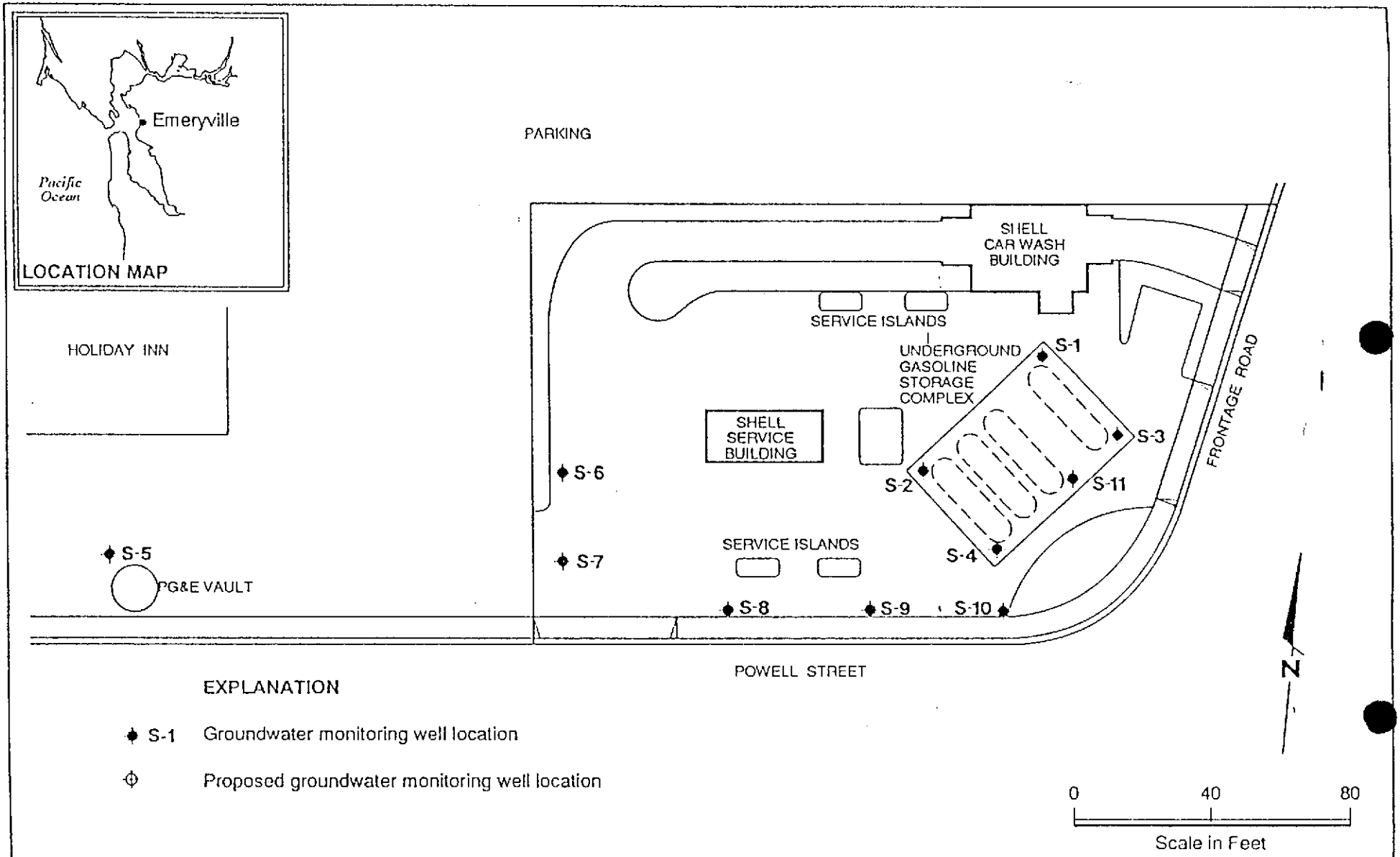
Tom Paulson
Sampling Manager

attachments

TABLE OF MONITORING DATA
GROUNDWATER WELL SAMPLING REPORT

| WELL I.D. | S-5 | S-6 | S-7 | S-8<br>SD-8 | S-9 | S-10 |
|---|---|---|---|---|---|---|
| Casing Diameter (inches) | 8 | 8 | 8 | 3 | ---- | 6 |
| Total Well Depth (feet) | 12.1 | 11.8 | 16.5 | 19.5 | ---- | 19.4 |
| Depth to Water (feet) | 9.50 | 9.08 | 10.44 | 10.36 | 10.38 | 5.92 |
| Free Product (feet) | none | none | none | none | 1.20 | none |
| Reason Not Sampled | ---- | ---- | ---- | ---- | free product | ---- |
| Calculated 4 Case Vol.(gal.) | 27.0 | 28.3 | 63.1 | 13.9 | ---- | 80.9 |
| Did Well Dewater? | yes | no | no | yes | ---- | yes |
| Volume Evacuated (gal.) | 19.0 | 36.0 | 79.0 | 13.0 | ---- | 27.0 |
| Purging Device | Suction | Suction | Suction | Suction | ---- | Suction |
| Sampling Device | Bailer | Bailer | Bailer | Bailer | ---- | Bailer |
| Time | 12:16 | 10:52 | 11:27 | 10:13 | ---- | 09:07 |
| Temperature (F)* | 72.0 | 72.3 | 66.8 | 70.1 | ---- | 71.6 |
| pH* | 6.98 | 6.97 | 6.98 | 6.97 | ---- | 6.99 |
| Conductivity (umhos/cm)* | 3310 | 1174 | 9000 | 9250 | ---- | 1651 |

* Indicates Stabilized Value




GeoStrategies Inc.

**Site Plan**
Shell Service Station
1800 Powell Street
Emeryville, California

PLATE
1

| JOB NUMBER | REVIEWED BY TG/CEG | DATE | REVISED DATE | REVISED DATE |
|---|---|---|---|---|
| 605 | | 7/89 | | |

INTERNATIONAL TECHNOLOGY CORPORATION

# ANALYTICAL SERVICES

## CERTIFICATE OF ANALYSIS

Gettler-Ryan
1992 National Avenue
Hayward, CA 94545
ATTN: John Werfal

Date: July 31, 1989

Work Order Number: S9-07-061

P.O. Number: 3605

This is the Certificate of Analysis for the following samples:

| | |
|---|---|
| Client Project ID: | GR #3605, Shell, 1800 Powell Street, Emeryville, CA |
| Date Received by Lab: | 7/10/89 |
| Number of Samples: | 8 |
| Sample Type: | Water |

The method of analysis for low boiling hydrocarbons is taken from EPA Methods 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 as well as a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline and includes benzene, toluene, ethyl benzene and xylenes.

Reviewed and Approved

Michael E. Dean
Project Manager

MED/an
1 Page Following - Table of Results

Date: July 31, 1989
Client Project ID: GR #3605, Shell,
1800 Powell Street, Emeryville, CA

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order Number: S9-07-061

| Lab Sample ID | Client Sample ID | Sample Date | Date Analysis Completed | Sample Condition on Receipt |
|---|---|---|---|---|
| S9-07-061-01 | S-5 | 7/7/89 | 7/21/89 | cool pH <2 |
| S9-07-061-02 | S-6 | 7/7/89 | 7/21/89 | cool pH <2 |
| S9-07-061-03 | S-7 | 7/7/89 | 7/21/89 | cool pH <2 |
| S9-07-061-04 | S-8 | 7/7/89 | 7/20/89 | cool pH <2 |
| S9-07-061-05 | S-10 | 7/7/89 | 7/21/89 | cool pH <2 |
| S9-07-061-06 | SD-8 | 7/7/89 | 7/21/89 | cool pH >2 |
| S9-07-061-07 | SF-10 | 7/7/89 | 7/21/89 | cool pH <2 |
| S9-07-061-08 | TRIP BLANK | 7/7/89 | 7/13/89 | cool pH <2 |

Total Petroleum Hydrocarbons - Modified E.P.A. Methods 8015, 8020

ND = None Detected — Results - Milligrams per Liter

| Lab Sample ID | Client Sample ID | Low Boiling Hydrocarbons (calculated as Gasoline) | Benzene | Toluene | Ethyl Benzene | Xylenes (total) |
|---|---|---|---|---|---|---|
| S9-07-061-01* | S-5 | 1.5 | 0.30 | 0.008 | 0.007 | 0.009 |
| Detection Limit | | 1.0 | 0.01 | 0.001 | 0.001 | 0.003 |
| S9-07-061-02* | S-6 | 3.7 | 1.7 | 0.034 | 0.055 | 0.20 |
| Detection Limit | | 0.10 | 0.001 | 0.002 | 0.002 | 0.006 |
| S9-07-061-03* | S-7 | 0.07 | 0.0022 | ND | ND | ND |
| Detection Limit | | 0.05 | 0.0005 | 0.001 | 0.001 | 0.003 |
| S9-07-061-04* | S-8 | 0.44 | 0.18 | 0.005 | 0.002 | 0.012 |
| Detection Limit | | 0.05 | 0.0005 | 0.001 | 0.001 | 0.003 |
| S9-07-061-05* | S-10 | 14. | 1.3 | 0.31 | 0.27 | 2.4 |
| Detection Limit | | 2. | 0.02 | 0.05 | 0.05 | 0.2 |
| S9-07-061-06* | SD-8 | 1.4 | 0.62 | 0.02 | 0.01 | 0.08 |
| Detection Limit | | 0.5 | 0.005 | 0.01 | 0.01 | 0.03 |
| S9-07-061-07 | SF-10 | ND | ND | ND | ND | ND |
| Detection Limit | | 0.05 | 0.0005 | 0.001 | 0.001 | 0.003 |
| S9-07-061-08 | TRIP BLANK | ND | ND | ND | ND | ND |
| Detection Limit | | 0.05 | 0.0005 | 0.001 | 0.001 | 0.003 |

*Sample contains compounds which caused severe foaming during analysis.
A foaming matrix could affect analytical results.

**Gettler - Ryan Inc.** — ENVIRONMENTAL DIVISION — **Chain of Custody**

COMPANY Shell Oil Company — JOB NO. [redacted]

JOB LOCATION 1800 Powell / I-80/580 Frontage Rd. (415)

CITY Emeryville, CA — PHONE NO. 783-7500

AUTHORIZED John Werfal — DATE 7/7/89 — P.O. NO. 3605

| SAMPLE ID | NO. OF CONTAINERS | SAMPLE MATRIX | DATE/TIME SAMPLED | ANALYSIS REQUIRED | SAMPLE CONDITION LAB ID |
|---|---|---|---|---|---|
| S-5 | 3 | Liquid | 7-7/1216 | THC (Low) BTXE | OK/Cool |
| S-6 | | | /1052 | | |
| S-7 | | | /1127 | | |
| S-8 | | | /1013 | | |
| S-10 | | | /0907 | | |
| SD-6 | | | /— | | |
| SF-10 | | | /— | | |
| Trip blank | 2 | | 7-5/— | | |

RELINQUISHED BY: Philip J. Pye 7-7-89 17:00

RECEIVED BY: [signature] 7-7-89 17:00

RELINQUISHED BY: [signature] 7-10-89 11:15 am

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LAB: Josephine DeCarli 7/10/89 11:27

DESIGNATED LABORATORY: ET SCV — DHS #: 137

REMARKS: Normal TAT

DATE COMPLETED July 7, 1989 — FOREMAN Philip J. Pye

ORIGINAL