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

December 3, 1991

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

Reference: Former Shell Service Station
2800 Telegraph Avenue
Oakland, California
WIC 204-5508-2303

Gentlemen:

As requested by Mr. Jack Brastad of Shell Oil Company, we are forwarding a copy of the third quarter 1991 ground-water sampling report for the above referenced location.

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

Sincerely,

John P. Werfal
Project Manager

JPW/kjj

enclosure

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

GeoStrategies Inc.

SITE UPDATE

Former Shell Service Station
2800 Telegraph Avenue
Oakland, California
WIC 204-5508-2303

761001-18

December 4, 1991

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HAYWARD, CALIFORNIA 94545
(510) 352-4800

December 4, 1991

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

Attn: Mr. Jack Brastad

Re: SITE UPDATE
Former Shell Service Station
2800 Telegraph Avenue
Oakland, California

Gentlemen:

This Site Update has been prepared by GeoStrategies Inc. (GSI), and presents the results of the 1991 fourth 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

Eleven ground-water monitoring wells (Wells S-1 through S-11) and one recovery well (SR-1) currently exist at the site (Plate 2). These wells were installed between the second quarter of 1988 and the fourth quarter of 1989. Four underground storage tanks were removed from the site in late 1988. Wells S-1 through S-3 and SR-1 are onsite. Wells S-4 through S-11 are offsite. These wells have been installed to evaluate the vertical and horizontal extent of petroleum hydrocarbons in the soil and shallow groundwater beneath the site.

Quarterly monitoring and sampling of wells began in 1989. 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 each well box, and recorded to the nearest $\pm$0.01 foot. Corresponding elevations relative to Mean Sea Level (MSL) are presented in Table 1. Water-level data were used to construct a quarterly potentiometric map (Plate 3). Shallow ground-water flow south-southwest 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, 0.11 feet thick, was observed in Well S-3 this quarter.

Ground-water Analytical Data

Ground-water samples were collected on October 4, 1991. The samples were analyzed for TPH-Gasoline according EPA Method 8015 (Modified) and BTEX according to EPA Method 8020 by International Technology (IT) Analytical Services, a State of California certified laboratory located in San Jose, California.

TPH-Gasoline was detected in Wells S-2, S-6, S-7, S-8 and S-11 at concentrations ranging from 0.09 parts per million (ppm) to 4.0 ppm. Benzene was detected in the same wells, at concentrations ranging from 0.015 ppm to 0.40 ppm. These data are summarized in Table 2 and included in Appendix A. Chemical concentration maps for TPH-Gasoline and benzene are presented on Plates 4 and 5, respectively. Historical chemical analytical data are presented in Table 3.

Quality Control

Quality Control samples for this quarter's sampling included a trip blank (TB) and duplicate sample (SD-2). The trip blank was prepared in the laboratory using organic-free water to evaluate laboratory and field handling procedures. The duplicate sample was collected as a split (second) sample to assess analytical precision. The results of QC sample analyses are presented in Table 2.

If you have any questions, please call.

GeoStrategies Inc. by,

Ellen C. Footenmiller for

Stephen J. Carter
Geologist

John F. Vargas

John F. Vargas
Senior Geologist
R.G. 5046

REGISTERED GEOLOGIST
JOHN F. VARGAS
NO. 5046
STATE OF CALIFORNIA

SJC/JFV/kjj

Plate 1. Vicinity Map
Plate 2. Site Plan
Plate 3. Potentiometric Map
Plate 4. TPH-G Isoconcentration Map
Plate 5. Benzene Isoconcentration Map

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

QC Review: JFV

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TABLES

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-1	04-Oct-91	3	27.8	35.31	10.48	----	24.83	5	6.26	66.6	367
S-2	04-Oct-91	3	25.5	33.91	10.47	----	23.44	2	6.90	68.2	483
S-3	04-Oct-91	3	----	33.56	10.22	0.11	23.43	----	----	----	----
S-4	04-Oct-91	3	28.9	34.08	11.14	----	22.94	3	7.38	71.7	326
S-5	04-Oct-91	3	30.6	33.42	10.66	----	22.76	5	6.96	70.5	86
S-6	04-Oct-91	3	22.1	32.59	10.21	----	22.38	2	7.24	71.6	545
S-7	04-Oct-91	3	30.7	33.33	12.00	----	21.33	5	6.32	71.3	557
S-8	04-Oct-91	3	19.2	31.97	10.87	----	21.10	5	6.71	72.9	412
S-9	04-Oct-91	3	30.0	31.86	11.24	----	20.62	5	6.28	69.6	523
S-10	04-Oct-91	3	24.3	32.95	9.89	----	23.06	2	7.20	68.8	706
S-11	04-Oct-91	3	19.2	30.78	10.79	----	19.99	5	6.06	69.4	439
SR-1	04-Oct-91	6	34.4	----	10.06	----	----	----	----	----	----

Notes:
1. Static water elevations referenced to Mean Sea Level (MSL).
2. Physical parameter measurements represent stabilized values.
3. Static water-levels corrected for floating product (conversion factor = 0.80).
4. Recovery Well SR-1 was monitored, but not sampled.

TABLE 2

GROUND-WATER ANALYSIS DATA

WELL NO	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
S-1	04-Oct-91	10-Oct-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-2	04-Oct-91	10-Oct-91	0.09	0.015	<0.0005	0.0007	0.0012
S-4	04-Oct-91	10-Oct-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-5	04-Oct-91	10-Oct-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-6	04-Oct-91	11-Oct-91	4.0	0.40	0.0060	0.0047	0.0095
S-7	04-Oct-91	10-Oct-91	1.2	0.10	0.0074	0.0018	0.014
S-8	04-Oct-91	10-Oct-91	0.96	0.018	0.024	0.038	0.13
S-9	04-Oct-91	09-Oct-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-10	04-Oct-91	10-Oct-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-11	04-Oct-91	10-Oct-91	0.44	0.020	0.0085	0.014	0.049

CURRENT REGIONAL WATER QUALITY CONTROL BOARD MAXIMUM CONTAMINANT LEVELS
Benzene 0.001 ppm Xylenes 1.750 ppm Ethylbenzene 0.680 ppm

CURRENT DHS ACTION LEVELS
Toluene 0.1000 ppm

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

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.

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TABLE 2

GROUND-WATER ANALYSIS DATA

WELL NO	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
SD-2	04-Oct-91	10-Oct-91	0.08	0.012	<0.0005	0.0006	0.0010
TB	----	09-Oct-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE
2800 Telegraph Avenue
Oakland, CA

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)	OIL (PPM)
02-May-88	S-1	<0.05	0.5	<0.001	----	<0.004	<1.	<5.
08-Nov-88	S-1	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
02-May-89	S-1	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Aug-89	S-1	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Oct-89	S-1	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
16-Jan-90	S-1	<0.050	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
13-Apr-90	S-1	<0.050	<0.0005	0.0006	<0.0005	<0.001	N/A	N/A
05-Jul-90	S-1	<0.05	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
12-Oct-90	S-1	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
22-Jan-91	S-1	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
30-Apr-91	S-1	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
12-Jul-91	S-1	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
04-Oct-91	S-1	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
02-May-88	S-2	1.6	0.079	0.089	----	0.048	N/A	N/A
08-Nov-88	S-2	0.2	0.022	0.001	0.016	0.008	N/A	N/A
02-May-89	S-2	2.2	0.5	0.052	0.12	0.18	N/A	N/A
03-Aug-89	S-2	0.43	0.073	0.001	0.014	0.007	N/A	N/A
03-Oct-89	S-2	0.37	0.012	0.019	0.013	0.078	N/A	N/A
16-Jan-90	S-2	0.42	0.075	0.0099	0.032	0.052	N/A	N/A
13-Apr-90	S-2	0.34	0.063	0.0025	0.019	0.015	N/A	N/A
05-Jul-90	S-2	0.10	0.01	<0.0005	0.0018	0.002	N/A	N/A
12-Oct-90	S-2	<0.05	0.0020	<0.0005	<0.0005	<0.0005	N/A	N/A
22-Jan-91	S-2	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
30-Apr-91	S-2	0.60	0.060	0.0036	0.016	0.015	N/A	N/A
12-Jul-91	S-2	0.15	0.022	<0.0005	0.0036	0.0027	N/A	N/A
04-Oct-91	S-2	0.09	0.015	<0.0005	0.0007	0.0012	N/A	N/A
02-May-88	S-3	46.	2.7	10.	----	10.	N/A	N/A

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2800 Telegraph Avenue
Oakland, CA

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)	OIL (PPM)
02-May-89	S-3	47.	2.0	6.0	1.7	7.2	N/A	N/A
13-Apr-90	S-3	16.	0.54	2.4	0.81	3.9	N/A	N/A
05-Jul-90	S-3	16.	0.42	1.7	0.64	3.1	N/A	N/A
12-Oct-90	S-3	Free Product	0.12 ft					
22-Jan-91	S-3	Free Product	0.15 ft					
30-Apr-91	S-3	Free Product	0.13 ft					
12-Jul-91	S-3	Free Product	0.13 ft					
04-Oct-91	S-3	Free Product	0.11 ft					
08-Nov-88	S-4	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
22-Feb-89	S-4	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
02-May-89	S-4	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Aug-89	S-4	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Oct-89	S-4	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
16-Jan-90	S-4	<0.050	<0.0005	<0.0005	<0.0005	0.001	N/A	N/A
13-Apr-90	S-4	<0.050	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
05-Jul-90	S-4	<0.05	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
12-Oct-90	S-4	<0.05	0.0010	0.0047	0.0010	0.0032	N/A	N/A
22-Jan-91	S-4	<0.05	<0.0005	<0.0005	<0.0005	0.0029	N/A	N/A
30-Apr-91	S-4	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
12-Jul-91	S-4	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
04-Oct-91	S-4	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
08-Nov-88	S-5	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
22-Feb-89	S-5	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
02-May-89	S-5	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Aug-89	S-5	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Oct-89	S-5	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
16-Jan-90	S-5	<0.050	<0.0005	<0.0005	<0.0005	0.001	N/A	N/A
13-Apr-90	S-5	<0.050	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A

TABLE 3

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SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)	OIL (PPM)
05-Jul-90	S-5	<0.050	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
12-Oct-90	S-5	<0.05	0.0005	0.0026	0.0005	0.0017	N/A	N/A
22-Jan-91	S-5	<0.05	<0.0005	<0.0005	<0.0005	0.0010	N/A	N/A
30-Apr-91	S-5	<0.05	<0.0005	<0.0005	<0.0005	0.0008	N/A	N/A
12-Jul-91	S-5	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
04-Oct-91	S-5	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
08-Nov-88	S-6	5.5	1.7	0.02	0.02	0.12	N/A	N/A
22-Feb-89	S-6	6.0	2.4	0.05	0.11	0.3	N/A	N/A
02-May-89	S-6	9.1	3.7	0.12	0.28	0.3	N/A	N/A
03-Aug-89	S-6	7.1	2.4	<0.05	0.07	<0.2	N/A	N/A
03-Oct-89	S-6	5.9	1.6	0.033	0.058	0.10	N/A	N/A
16-Jan-90	S-6	5.9	1.8	0.15	0.16	0.41	N/A	N/A
13-Apr-90	S-6	5.9	1.8	0.07	0.02	0.16	N/A	N/A
05-Jul-90	S-6	4.2	1.2	0.02	0.03	0.08	N/A	N/A
12-Oct-90	S-6	1.7	0.39	0.0065	0.0036	0.016	N/A	N/A
22-Jan-91	S-6	2.2	0.44	0.015	<0.01	0.059	N/A	N/A
30-Apr-91	S-6	4.8	0.64	0.15	0.17	0.48	N/A	N/A
12-Jul-91	S-6	2.9	0.66	0.02	0.02	0.08	N/A	N/A
04-Oct-91	S-6	4.0	0.40	0.0060	0.0047	0.0095	N/A	N/A
08-Nov-88	S-7	2.6	0.088	0.43	0.086	0.43	N/A	N/A
22-Feb-89	S-7	0.8	0.025	0.027	0.029	0.17	N/A	N/A
02-May-89	S-7	0.8	0.032	0.014	0.021	0.11	N/A	N/A
03-Aug-89	S-7	5.0	0.66	0.38	0.23	0.71	N/A	N/A
03-Oct-89	S-7	0.96	0.11	0.008	0.013	0.046	N/A	N/A
16-Jan-90	S-7	0.23	0.0010	0.0018	0.0031	0.017	N/A	N/A
13-Apr-90	S-7	0.32	0.0051	0.0008	0.0023	0.012	N/A	N/A
05-Jul-90	S-7	0.27	0.0055	0.001	0.0006	0.005	N/A	N/A
12-Oct-90	S-7	0.63	0.043	0.0053	0.0048	0.012	N/A	N/A

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SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)	OIL (PPM)
22-Jan-91	S-7	1.2	0.077	0.027	0.057	0.16	N/A	N/A
30-Apr-91	S-7	0.24	0.0032	0.0023	0.0036	0.010	N/A	N/A
12-Jul-91	S-7	0.96	0.067	0.0043	0.0068	0.032	N/A	N/A
04-Oct-91	S-7	1.2	0.10	0.0074	0.0018	0.014	N/A	N/A
03-Aug-89	S-8	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Oct-89	S-8	1.6	0.022	0.11	0.053	0.24	N/A	N/A
16-Jan-90	S-8	2.0	0.040	0.15	0.090	0.40	N/A	N/A
13-Apr-90	S-8	1.6	0.027	0.071	0.048	0.21	N/A	N/A
05-Jul-90	S-8	1.5	0.025	0.075	0.067	0.25	N/A	N/A
12-Oct-90	S-8	1.0	0.017	0.031	0.034	0.12	N/A	N/A
22-Jan-91	S-8	0.82	0.017	0.037	0.030	0.12	N/A	N/A
30-Apr-91	S-8	2.9	0.046	0.11	0.12	0.33	N/A	N/A
12-Jul-91	S-8	0.82	0.034	0.038	0.041	0.11	N/A	N/A
04-Oct-91	S-8	0.96	0.018	0.024	0.038	0.13	N/A	N/A
03-Aug-89	S-9	1.6	0.032	0.12	0.052	0.25	N/A	N/A
03-Oct-89	S-9	<0.05	<0.0005	0.001	<0.001	0.003	N/A	N/A
16-Jan-90	S-9	<0.050	<0.0005	<0.0005	<0.0005	0.001	N/A	N/A
13-Apr-90	S-9	<0.050	0.0007	0.0023	<0.0005	0.003	N/A	N/A
05-Jul-90	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
12-Oct-90	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
22-Jan-91	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
30-Apr-91	S-9	<0.05	<0.0005	<0.0005	<0.0005	0.0006	N/A	N/A
12-Jul-91	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
04-Oct-91	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
03-Aug-89	S-10	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Oct-89	S-10	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
16-Jan-90	S-10	<0.050	<0.0005	<0.0005	<0.0005	0.001	N/A	N/A

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE
2800 Telegraph Avenue
Oakland, CA

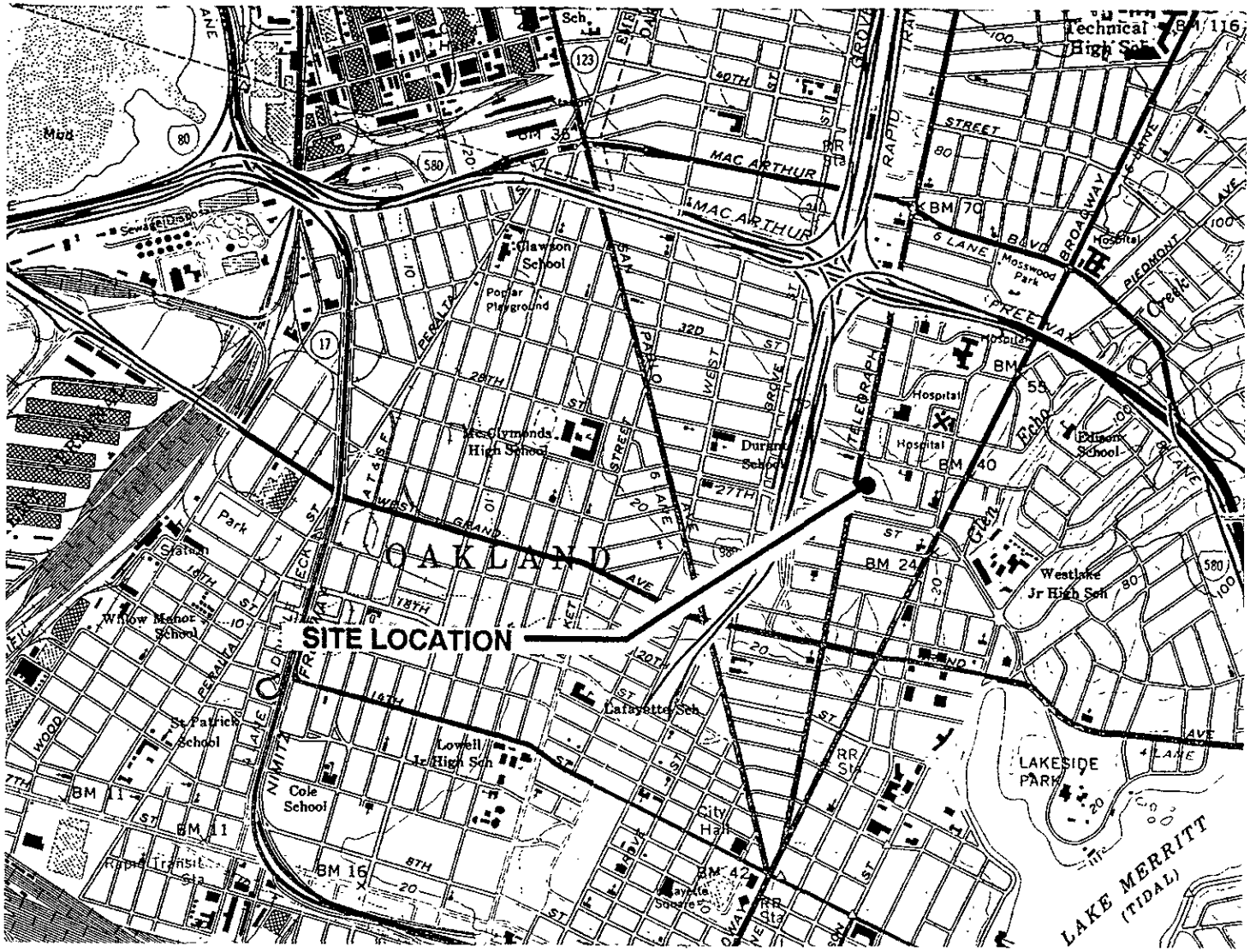
SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)	OIL (PPM)
13-Apr-90	S-10	<0.050	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
05-Jul-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
12-Oct-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
22-Jan-91	S-10	<0.05	0.0007	0.0082	0.0022	0.014	N/A	N/A
30-Apr-91	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
12-Jul-91	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
04-Oct-91	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
16-Oct-89	S-11	0.65	0.042	0.047	0.024	0.16	N/A	N/A
16-Jan-90	S-11	0.35	0.027	0.035	0.020	0.11	N/A	N/A
13-Apr-90	S-11	0.90	0.057	0.11	0.037	0.24	N/A	N/A
05-Jul-90	S-11	2.0	0.11	0.21	0.093	0.53	N/A	N/A
12-Oct-90	S-11	1.2	0.14	0.10	0.064	0.22	N/A	N/A
22-Jan-91	S-11	1.4	0.085	0.093	0.088	0.30	N/A	N/A
30-Apr-91	S-11	5.4	0.048	0.026	0.080	0.37	N/A	N/A
12-Jul-91	S-11	0.19	0.012	0.0023	0.010	0.044	N/A	N/A
04-Oct-91	S-11	0.44	0.020	0.0085	0.014	0.049	N/A	N/A

Current Regional Water Quality Control Board Maximum Contaminant Levels
Benzene 0.001 ppm Xylenes 1.750 ppm Ethylbenzene 0.680 ppm

Current DHS Action Levels Toluene 0.1000 ppm

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPM = Parts Per Million
NOTE: 1. DHS Action levels and MCL's are subject to change pending State of California review.
2. All data shown as <X are reported as ND (none detected).
3. Ethylbenzene and Xylenes were combined prior to May 1989.

ILLUSTRATIONS



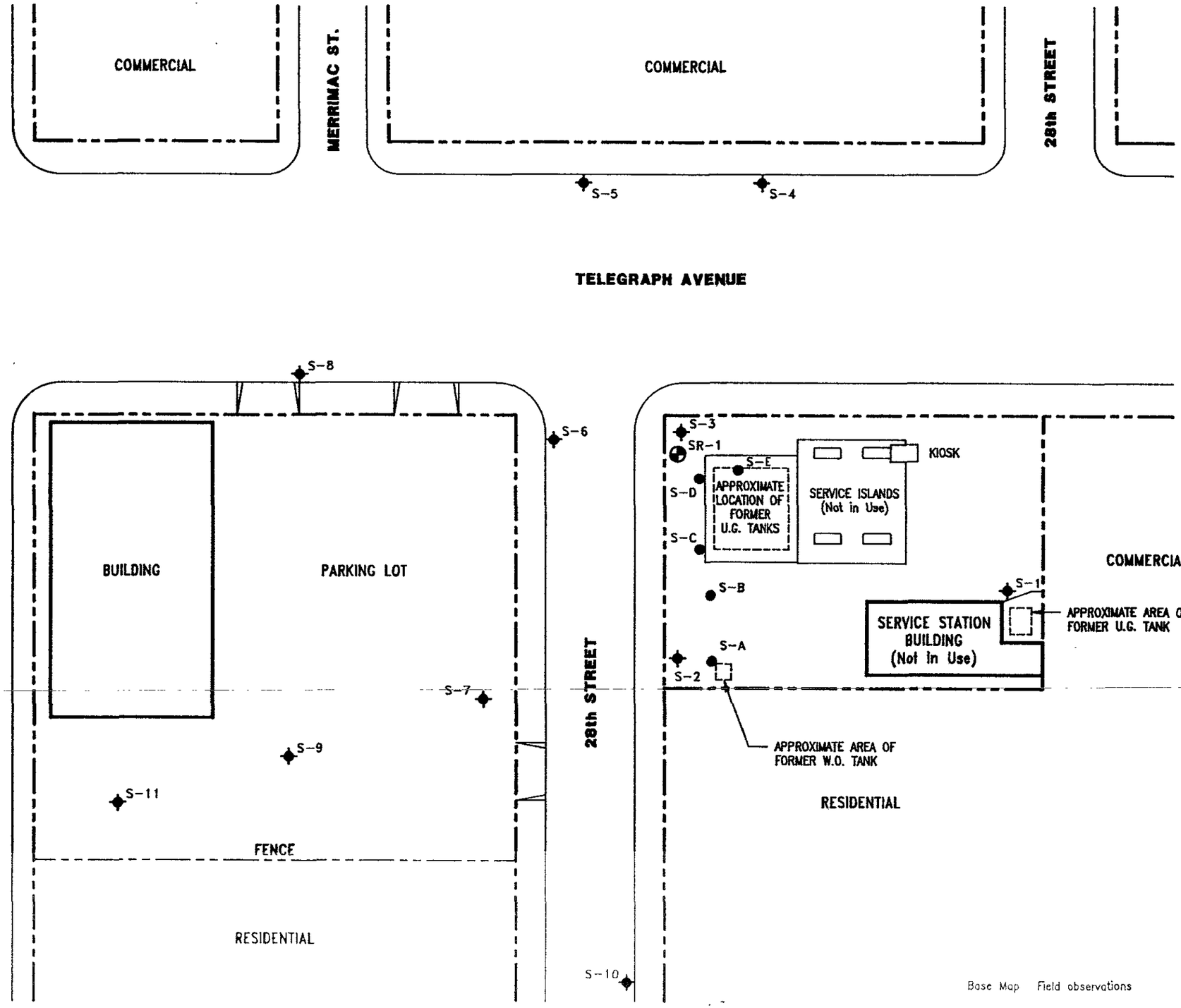
Base Map: USGS Topographic Map

GeoStrategies Inc.

VICINITY MAP
Former Shell Service Station
2800 Telegraph Avenue
Oakland, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7610		3/91	



EXPLANATION

- Ground–water monitoring well
- Ground–water recovery well
- Soil boring

PLATE 2

SITE PLAN
Former Shell Service Station
2800 Telegraph Avenue
Oakland, California

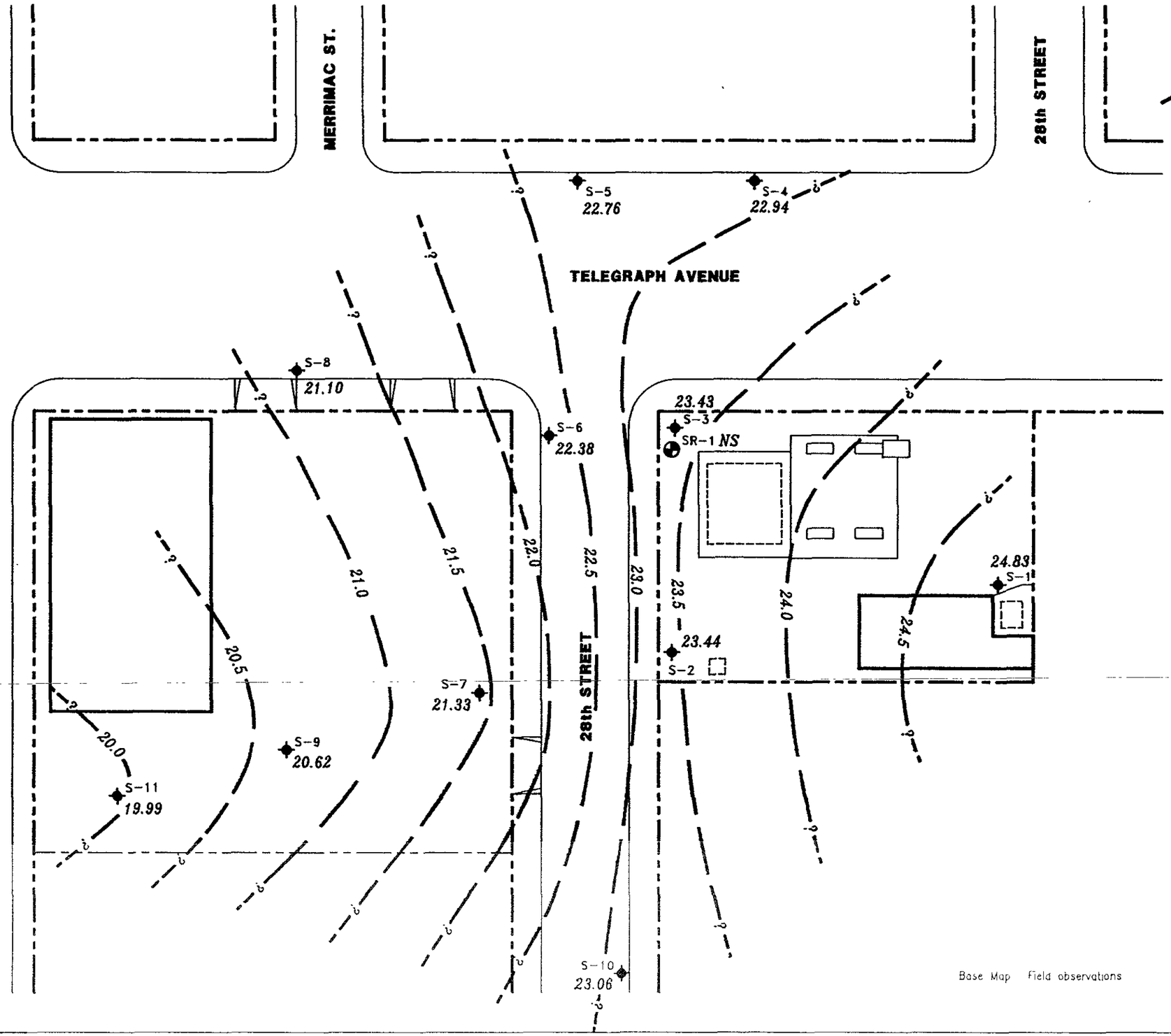
DATE 12/91

REVISED DATE

REVIEWED BY CRS

JOB NUMBER 761001–18

GeoStrategies Inc.



EXPLANATION

- Ground-water monitoring well
- Ground-water recovery well
- 99.99 — Ground-water elevation contour Approximate Gradient = 0.01
- *99.99* — Ground-water elevation in feet referenced to Mean Sea Level (MSL) measured on October 4, 1991
- *NS* — Not sampled

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

PLATE **3**

POTENTIOMETRIC MAP
Former Shell Service Station
2800 Telegraph Avenue
Oakland, California

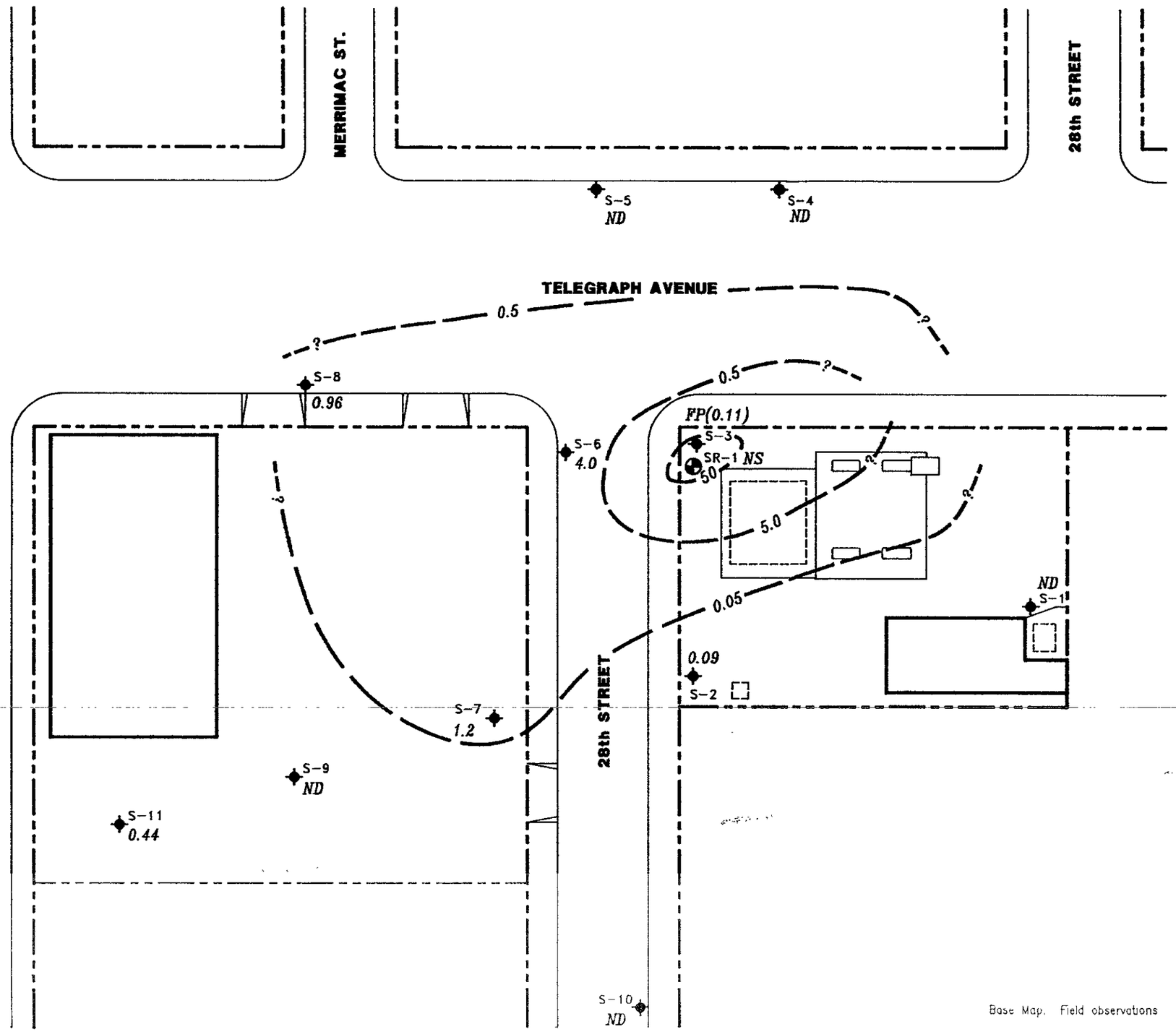
REVISED DATE

DATE 12/91

REVIEWED BY CS

JOB NUMBER 761001-18

GeoStrategies Inc.



EXPLANATION

- Ground-water monitoring well
- Ground-water recovery well
- 5.00 — TPH-G isoconcentration contour
- 5.0 — TPH-G (Total Petroleum Hydrocarbons calculated as Gasoline) concentration in ppm sampled on October 4, 1991
- FP(0.01) — Floating Product (measured thickness in feet)
- ND — Not Detected (See laboratory reports for detection limits)
- NS — Not sampled

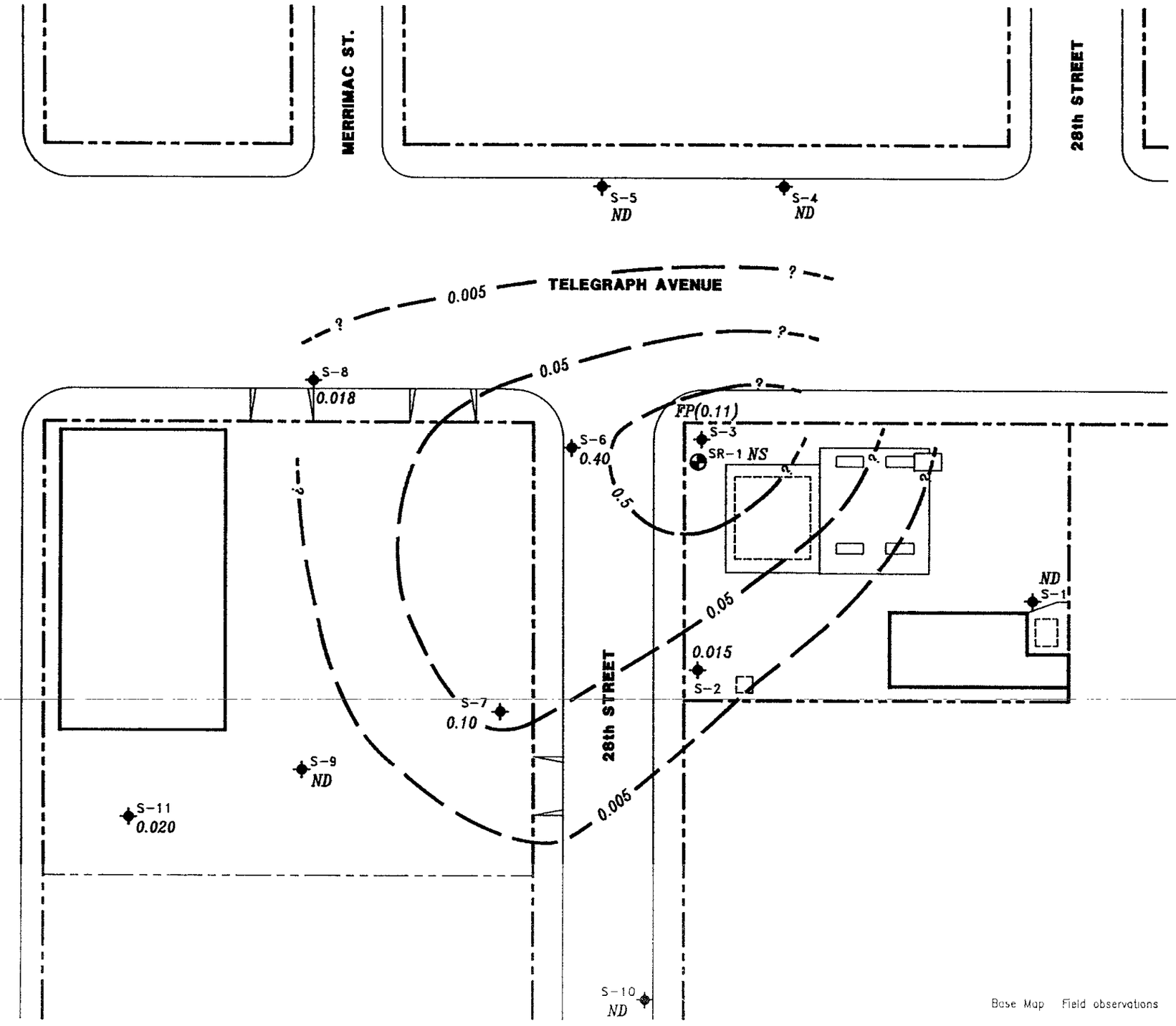
Base Map: Field observations

TPH-G ISOCONCENTRATION MAP
Former Shell Service Station
2800 Telegraph Avenue
Oakland, California

PLATE 4

GeoStrategies Inc.

DATE	REVISED DATE	REVIEWED BY	JOB NUMBER
12/91		EPS	761001-18



EXPLANATION

- Ground-water monitoring well
- Ground-water recovery well
- 0.05 — Benzene isoconcentration contour
- *0.05* — Benzene concentration in ppm sampled on October 4, 1991
- *FP(0.01)* — Floating Product (measured thickness in feet)
- *ND* — Not Detected (See laboratory reports for detection limits)
- *NS* — Not sampled

PLATE **5**

BENZENE ISOCONCENTRATION MAP
Former Shell Service Station
2800 Telegraph Avenue
Oakland, California

DATE 12/91

REVISED DATE

REVIEWED BY

JOB NUMBER 761001-16

GeoStrategies Inc.

APPENDIX A
ANALYTICAL LABORATORY REPORT
AND 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: 10/23/91

Work Order: T1-10-092 P.O. Number: MOH 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3610, 2800 Telegraph, Oklnd
Date Received: 10/07/91
Number of Samples: 7
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Hamid Allameh
Petroleum GC Team Leader

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-092

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-1
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110092-01
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/10/91
Low Boiling Hydrocarbons	Mod.8015		10/10/91

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

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	94.
1,3-Dichlorobenzene (BTEX)	97.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-092

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-2
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110092-02
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/10/91
Low Boiling Hydrocarbons	Mod.8015		10/10/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	0.09
BTEX		
Benzene	0.0005	0.015
Toluene	0.0005	None
Ethylbenzene	0.0005	0.0007
Xylenes (total)	0.0005	0.0012

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	93.
1,3-Dichlorobenzene (BTEX)	100.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-092

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-4
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110092-03
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/10/91
Low Boiling Hydrocarbons	Mod.8015		10/10/91

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

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	94.
1,3-Dichlorobenzene (BTEX)	97.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-092

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-5
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110092-04
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/10/91
Low Boiling Hydrocarbons	Mod.8015		10/10/91

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

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	94.
1,3-Dichlorobenzene (BTEX)	98.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-092

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-6
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110092-05
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/11/91
Low Boiling Hydrocarbons	Mod.8015		10/11/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.25	4.0
BTEX		
Benzene	0.0025	0.40
Toluene	0.0025	0.0060
Ethylbenzene	0.0025	0.0047
Xylenes (total)	0.0025	0.0095

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	* 125.
1,3-Dichlorobenzene (BTEX)	* 124.

*Surrogate elevated due to hydrocarbon interferences.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-092

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-7
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110092-06
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/10/91
Low Boiling Hydrocarbons	Mod.8015		10/10/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	1.2
BTEX		
Benzene	0.0005	0.10
Toluene	0.0005	0.0074
Ethylbenzene	0.0005	0.0018
Xylenes (total)	0.0005	0.014

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	* 124.
1,3-Dichlorobenzene (BTEX)	104.

*Surrogate elevated due to hydrocarbon interferences.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-092

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-8
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110092-07
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/10/91
Low Boiling Hydrocarbons	Mod.8015		10/10/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.25	0.96
BTEX		
Benzene	0.0025	0.018
Toluene	0.0025	0.024
Ethylbenzene	0.0025	0.038
Xylenes (total)	0.0025	0.13

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	97.
1,3-Dichlorobenzene (BTEX)	102.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-092

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T110092-08A
EXTRACTION DATE:
ANALYSIS DATE: 10/09/91
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	ND<0.5	50.0	52.2	53.5	104.	107.	3.
Toluene	ND<0.5	50.0	51.7	52.5	103.	105.	2.
Ethyl benzene	ND<0.5	50.0	49.4	49.6	98.8	99.2	0
Xylenes	ND<0.5	150.	114.	115.	76.0	76.7	1.

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	100.	101.

C

682-1-BS

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-092

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T110092-08B
EXTRACTION DATE:
ANALYSIS DATE: 10/10/91
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
Gasoline	142.	500.	514.	542.	74.	80.	8.

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	107.	108.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-092

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 to 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.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

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

Date: 10/23/91

Work Order: T1-10-093 P.O. Number: MOH 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3610, 2800 Telegraph, Oklnd
Date Received: 10/07/91
Number of Samples: 5
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Hamid Allameh
Petroleum GC Team Leader

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-093

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-9
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110093-01
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/09/91
Low Boiling Hydrocarbons	Mod.8015		10/09/91

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

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	94.
1,3-Dichlorobenzene (BTEX)	98.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-093

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: S-9 MS/MSD
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110093-01D
EXTRACTION DATE:
ANALYSIS DATE: 10/09/91
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	ND<0.5	50.0	52.2	53.5	104.	107.	3.
Toluene	ND<0.5	50.0	51.7	52.5	103.	105.	2.
Ethyl benzene	ND<0.5	50.0	49.4	49.6	98.8	99.2	0
Xylenes	ND<0.5	150.	114.	115.	76.0	76.7	1.

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	100.	101.

682-1-89

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-093

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-10
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110093-02
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/10/91
Low Boiling Hydrocarbons	Mod.8015		10/10/91

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

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	93.
1,3-Dichlorobenzene (BTEX)	96.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-093

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-11
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110093-03
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/10/91
Low Boiling Hydrocarbons	Mod.8015		10/10/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	0.44
BTEX		
Benzene	0.0005	0.020
Toluene	0.0005	0.0085
Ethylbenzene	0.0005	0.014
Xylenes (total)	0.0005	0.049

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	104.
1,3-Dichlorobenzene (BTEX)	97.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-093

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: SD-2
SAMPLE DATE: 10/04/91
LAB SAMPLE ID: T110093-04
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/10/91
Low Boiling Hydrocarbons	Mod.8015		10/10/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	0.08
BTEX		
Benzene	0.0005	0.012
Toluene	0.0005	None
Ethylbenzene	0.0005	0.0006
Xylenes (total)	0.0005	0.0010

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	93.
1,3-Dichlorobenzene (BTEX)	100.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-093

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: Trip Blank
SAMPLE DATE: not spec
LAB SAMPLE ID: T110093-05
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		10/09/91
Low Boiling Hydrocarbons	Mod.8015		10/09/91

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

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	93.
1,3-Dichlorobenzene (BTEX)	101.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-093

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T110093-06A
EXTRACTION DATE:
ANALYSIS DATE: 10/08/91
ANALYSIS METHOD: Mod. 8015

QUALITY CONTROL REPORT

Laboratory Spike(LS) and Laboratory Spike Duplicate(LSD) Analyses

RESULTS in Micrograms per Liter

PARAMETER	Sample Amt	Spike Amt	LS Result	LSD Result	LS %Rec	LSD %Rec	RPD
Gasoline	None	500.	418.	N/A	84.	N/A	N/A

SURROGATES	LS %Rec	LSD %Rec
1-3-Dichlorobenzene	100.	N/A

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-093

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T110093-06A
EXTRACTION DATE:
ANALYSIS DATE: 10/08/91
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
Gasoline	ND<50.	500.	473.	463.	95.	93.	2.

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	101.	100.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 10/23/91
Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-10-093

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 to 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.

Gettler - Ryan Inc. T1-10-092 ENVIRONMENTAL DIVISION **1514 Chain of Custody**

COMPANY Shell T1-10-093 JOB NO. ____

JOB LOCATION 2800 Telegraph

CITY Oakland PHONE NO. 783-7500

AUTHORIZED Tom Paulson DATE 10-4-91 P.O. NO. 3610.01

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
S-1	3	H_2O	10-4-91 / 1129	THC (gas) BTXE	COOL / 10-7-91 / IT (SC)
S-2			/ 1254		
S-4			/ 1246		
S-5			/ 1108		
S-6			/ 1240		
S-7			/ 1001		
S-8			/ 1025		
S-9			/ 942		
S-10			/ 1255		
S-11			/ 926		
SD-2			/ —		
Trip Blank	1		—		

RELINQUISHED BY: 10-4-91 1330 RECEIVED BY: 10-4-91 1330

RELINQUISHED BY: Kelrig #1 10-7-91 09:00 RECEIVED BY: REFRIG #1

RELINQUISHED BY: 10-7-91 17:15 RECEIVED BY: 10-7-91 09:

RECEIVED BY LAB: M. LeGrand 10-7-91 1715

DESIGNATED LABORATORY: IT (SCV) DHS #: 137

REMARKS: Normal TAT

WIC # 204-5508-2303

Exp: 5461

Eng: J Brastad

DATE COMPLETED 10-4-91 FOREMAN