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

February 7, 1992

Mr. Rick Mueller
City of Pleasanton
Pleasanton Fire Department
Post Office Box 520
Pleasanton, California 94566-0802

Reference: Shell Service Station
3790 Hopyard Road
Pleasanton, California
WIC 204-6138-0501

Mr. Mueller:

As requested by Mr. Paul Hayes of Shell Oil Company, we are forwarding a copy of the February 7, 1992 Site Update report prepared for the above referenced location. The report presents the results of the ground-water sampling conducted during the fourth quarter of 1991.

If you have any questions, please call.

Sincerely,

Ellen Fostersmith

Ellen Fostersmith
Geologist

enclosure

cc: Mr. Tom Callaghan, Regional Water Quality Control Board
Mr. Paul Hayes, Shell Oil Company

GeoStrategies Inc.

SITE UPDATE

Shell Service Station
3790 Hopyard Road
Pleasanton, California
WIC 204-6138-0501

763201-12

February 7, 1992

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

February 7, 1992

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

Attn: Mr. Paul Hayes

Re: SITE UPDATE
Shell Service Station
3790 Hopyard Road
Pleasanton, 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

There are currently twelve ground-water monitoring wells in the site vicinity; Wells S-2 through S-10 and SR-1 through SR-3 (Plate 2). These wells were installed between 1986 and 1989 by EMCON Associates, Woodward-Clyde Consultants, Pacific Environmental Group, and GSI. The old underground storage tanks were replaced in August 1988. Wells S-2 through S-5 and SR-1 through SR-3 are onsite. Wells S-6 through S-10 are offsite. These wells were installed to evaluate the vertical and horizontal extent of petroleum hydrocarbons in soils and shallow groundwater beneath the site. Well S-1 was properly destroyed in August 1988.

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 from 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 Mean Sea Level (MSL) datum, are presented in Table 1. Water-level data were used to construct a quarterly potentiometric map (Plate 3). Shallow ground-water flows southeast 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 not observed in the wells this quarter.

Ground-water Analytical Data

Ground-water samples were collected on December 13, 1991. The samples were analyzed for TPH-Gasoline according to 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-4, S-5, S-6, SR-1 and SR-3 at concentrations ranging from 0.05 to 1.4 parts per million (ppm). Benzene was detected in these same wells, and in Well S-2 at concentrations ranging from 0.0012 to 0.58 ppm. These data are summarized in Table 2 and included in Appendix A. These data were used to construct TPH-Gasoline and benzene isoconcentration maps (Plates 4 and 5). Historical chemical analytical data are presented in Table 3.

Quality Control

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

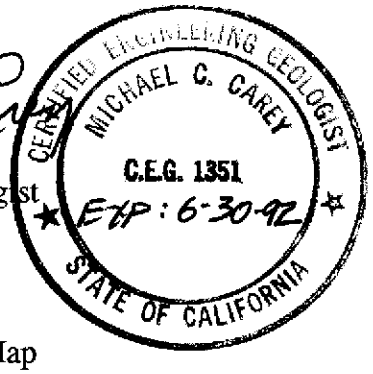
If you have any questions, please call.

GeoStrategies Inc. by,

Robert A. Laurito

Stephen J. Carter
Geologist

Michael Carey
Engineering Geologist
C.E.G. 1351



SJC/MCC/dls

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: RAL

763201-12

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-2	13-Dec-91	3	34.1	329.21	15.85	----	313.36	2	7.21	66.3	3360
S-3	13-Dec-91	3	34.9	327.67	13.87	----	313.80	5	6.79	69.5	3610
S-4	13-Dec-91	3	35.5	328.53	15.20	----	313.33	2	7.00	65.0	2760
S-5	13-Dec-91	3	34.4	329.66	17.48	----	312.18	5	7.50	63.9	2670
S-6	13-Dec-91	3	34.2	327.62	15.11	----	312.51	2	6.80	68.1	1561
S-7	13-Dec-91	3	34.8	328.67	17.70	----	310.97	5	6.73	67.1	3150
S-8	13-Dec-91	3	34.2	327.00	15.73	----	311.27	4	7.50	63.8	3490
S-9	13-Dec-91	3	34.9	328.24	18.18	----	310.06	3	7.50	63.4	3010
S-10	13-Dec-91	3	34.1	326.55	14.77	----	311.78	5	6.82	66.1	1904
SR-1	13-Dec-91	4	35.2	329.78	17.37	----	312.41	5	6.50	65.2	3460
SR-2	13-Dec-91	4	35.2	328.35	15.27	----	313.08	5	7.50	65.5	3070
SR-3	13-Dec-91	4	35.0	329.11	15.80	----	313.31	5	6.50	66.8	3140

Notes: 1. Static water elevations referenced to Mean Sea Level (MSL).
2. Physical parameter measurements represent stabilized values.

TABLE 2

GROUND-WATER ANALYSIS DATA

WELL NO	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
S-2	13-Dec-91	19-Dec-91	<0.05	0.0012	<0.0005	<0.0005	<0.0005
S-3	13-Dec-91	19-Dec-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-4	13-Dec-91	19-Dec-91	0.37*	0.024	0.0009	0.0013	0.046
S-5	13-Dec-91	19-Dec-91	1.4	0.58	0.019	0.11	0.080
S-6	13-Dec-91	19-Dec-91	0.15*	0.0023	<0.0005	<0.0005	0.15
S-7	13-Dec-91	19-Dec-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-8	13-Dec-91	19-Dec-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-9	13-Dec-91	20-Dec-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-10	13-Dec-91	18-Dec-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 0.680 ppm

CURRENT DHS ACTION LEVELS
Toluene 0.1000 ppm

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

SD = Duplicate Sample
SF = Field Blank
TB = Trip Blank

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

* Compounds detected and calculated as low boiling hydrocarbons consist of compounds eluting within the chromatographic range of gasoline, but are not characteristic of the standard gasoline standard pattern.

TABLE 2

GROUND-WATER ANALYSIS DATA

WELL NO	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
SR-1	13-Dec-91	18-Dec-91	0.07	0.0094	0.0071	0.0066	0.022
SR-2	13-Dec-91	19-Dec-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
SR-3	13-Dec-91	19-Dec-91	0.05	0.013	<0.0005	0.0031	0.0047
SD-5	13-Dec-91	19-Dec-91	1.7	0.70	0.029	0.13	0.10
SF-4	13-Dec-91	19-Dec-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	----	19-Dec-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHLYBENZENE (PPM)	XYLENES (PPM)
06-Nov-87	S-1	0.92	0.230	<0.005	0.150	0.150
14-Feb-88	S-1	3.5	1.3	<0.04	0.5	0.5
06-Aug-88	S-1	Well abandoned				
06-Nov-87	S-2	16.0	0.87	0.10	2.7	2.7
14-Feb-88	S-2	1.8	0.44	<0.01	0.14	0.14
13-Oct-88	S-2	0.55	0.11	0.001	0.045	0.015
31-Jan-89	S-2	0.62	0.17	0.002	0.062	0.014
07-Mar-89	S-2	1.90	0.26	0.27	0.13	0.26
26-Jun-89	S-2	0.32	0.088	0.001	0.032	0.010
08-Sep-89	S-2	0.23	0.08	0.001	0.030	0.015
14-Dec-89	S-2	0.16	0.056	0.0005	0.021	0.003
05-Mar-90	S-2	0.71	0.057	<0.0005	<0.0005	0.088
14-Jun-90	S-2	0.11	0.039	0.0005	0.011	0.002
02-Oct-90	S-2	0.29	0.084	0.0017	0.16	0.0081
18-Dec-90	S-2	0.061	0.018	0.0014	0.0022	0.0024
20-Mar-91	S-2	0.11	0.03	0.0022	0.01	0.0070
26-Jun-91	S-2	0.05*	0.0063	<0.0005	0.0033	0.0019
05-Sep-91	S-2	0.09	0.012	0.0032	0.0025	0.0023
13-Dec-91	S-2	<0.05	0.012	<0.0005	<0.0005	<0.0005
14-Feb-88	S-3	<0.05	<0.0005	<0.001	<0.004	<0.004
13-Oct-88	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
31-Jan-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
07-Mar-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
26-Jun-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
08-Sep-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
14-Dec-89	S-3	<0.05	<0.0005	<0.0005	<0.0005	<0.001

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHLYBENZENE (PPM)	XYLENES (PPM)
05-Mar-90	S-3	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-3	<0.5	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-3	<0.05	<0.0005	<0.0005	<0.0005	0.0010
18-Dec-90	S-3	<0.05	<0.0005	0.0016	<0.0005	0.0020
20-Mar-91	S-3	0.07	0.0023	0.0089	0.0040	0.023
26-Jun-91	S-3	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
05-Sep-91	S-3	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
13-Dec-91	S-3	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
14-Feb-88	S-4	5.1	0.16	0.008	0.73	0.73
13-Oct-88	S-4	0.53	0.024	0.001	0.025	0.016
31-Jan-89	S-4	1.1	0.033	0.002	0.020	0.024
07-Mar-89	S-4	0.65	0.037	0.001	0.035	0.027
26-Jun-89	S-4	0.67	0.11	<0.001	0.085	0.071
08-Sep-89	S-4	0.38	0.032	<0.001	0.036	0.026
14-Dec-89	S-4	0.21	0.021	<0.0005	0.030	0.023
05-Mar-90	S-4	0.35	0.043	<0.0005	0.024	0.047
14-Jun-90	S-4	0.43	0.074	<0.0005	0.071	0.046
02-Oct-90	S-4	0.70	0.074	0.0022	0.10	0.055
18-Dec-90	S-4	1.4	0.18	0.0029	0.28	0.23
20-Mar-91	S-4	1.2	0.10	<0.002	0.21	0.13
26-Jun-91	S-4	0.22	0.014	<0.0005	0.034	0.017
05-Sep-91	S-4	0.58	0.031	0.0008	0.053	0.026
13-Dec-91	S-4	0.37	0.024	0.0009	0.0013	0.046
14-Feb-88	S-5	1.0	0.04	0.086	0.180	0.180
13-Oct-88	S-5	0.56	0.066	0.020	0.018	0.036
31-Jan-89	S-5	0.18	0.027	0.008	0.009	0.013
07-Mar-89	S-5	3.8	0.52	0.53	0.26	0.57

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHLYBENZENE (PPM)	XYLENES (PPM)
26-Jun-89	S-5	<0.05	0.0038	<0.001	0.002	<0.003
08-Sep-89	S-5	0.11	0.025	0.002	0.002	0.012
14-Dec-89	S-5	1.7	0.30	0.086	0.067	0.14
05-Mar-90	S-5	1.1	0.10	0.11	0.079	0.24
14-Jun-90	S-5	0.6	0.094	0.036	0.04	0.062
02-Oct-90	S-5	4.5	1.4	0.16	0.26	0.30
20-Nov-90	S-5	16.	4.6	0.72	0.79	1.0
18-Dec-90	S-5	25.	7.6	1.1	1.3	2.3
20-Mar-91	S-5	0.31	0.039	0.012	0.018	0.03
26-Jun-91	S-5	1.3	0.25	0.062	0.12	0.16
05-Sep-91	S-5	4.7	0.66	0.15	0.17	0.28
13-Dec-91	S-5	1.4	0.58	0.019	0.11	0.08
13-Oct-88	S-6	1.1	0.0130	0.001	0.042	0.033
31-Jan-89	S-6	0.34	0.0038	<0.001	0.008	0.003
07-Mar-89	S-6	0.19	0.0038	<0.001	0.007	0.003
26-Jun-89	S-6	0.48	0.015	<0.001	0.006	<0.003
08-Sep-89	S-6	0.27	0.0013	0.001	0.007	<0.003
15-Dec-89	S-6	0.32	0.0010	<0.0005	0.0026	<0.001
06-Mar-90	S-6	0.42	0.0031	<0.0005	0.014	<0.001
14-Jun-90	S-6	0.37	0.0037	0.0009	0.0048	0.003
02-Oct-90	S-6	0.19	0.0066	0.0016	0.0019	0.0028
18-Dec-90	S-6	0.43	0.010	0.0007	0.0016	0.0015
20-Mar-91	S-6	0.13*	0.0066	0.0006	0.0007	0.003
26-Jun-91	S-6	0.12*	0.0038	0.0008	<0.0005	0.0017
05-Sep-91	S-6	0.06	<0.0005	0.0008	<0.0005	0.0005
13-Dec-91	S-6	0.15	0.0023	<0.0005	<0.0005	0.15
13-Oct-88	S-7	<0.05	0.0006	0.001	<0.001	<0.003

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHLYBENZENE (PPM)	XYLENES (PPM)
31-Jan-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003
07-Mar-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003
26-Jun-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003
08-Sep-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003
15-Dec-89	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.001
06-Mar-90	S-7	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-7	<0.05	<0.0005	0.0006	<0.0005	0.0009
18-Dec-90	S-7	<0.05	0.0005	<0.0005	<0.0005	0.00086
20-Mar-91	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
26-Jun-91	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
05-Sep-91	S-7	<0.05	<0.0005	0.0006	<0.0005	<0.0005
13-Dec-91	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
07-Mar-89	S-8	<0.05	0.0012	0.001	<0.001	<0.003
26-Jun-89	S-8	<0.05	0.0008	0.001	<0.001	<0.003
08-Sep-89	S-8	<0.05	<0.0005	<0.001	<0.001	<0.003
14-Dec-89	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.001
05-Mar-90	S-8	<0.050	<0.0005	0.0005	<0.0005	<0.001
14-Jun-90	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
18-Dec-90	S-8	<0.05	0.0029	0.0070	0.0010	0.0064
20-Mar-91	S-8	0.05*	0.0008	0.0016	0.0026	0.0052
26-Jun-91	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
05-Sep-91	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
13-Dec-91	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
07-Mar-89	S-9	<0.05	<0.0005	<0.001	<0.001	<0.003
26-Jun-89	S-9	<0.05	<0.0005	<0.001	<0.001	<0.003

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHLYBENZENE (PPM)	XYLENES (PPM)
08-Sep-89	S-9	<0.05	0.0017	0.002	<0.001	<0.003
15-Dec-89	S-9	<0.05	0.0005	<0.0005	<0.0005	<0.001
06-Mar-90	S-9	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
18-Dec-90	S-9	<0.05	0.020	0.027	0.0071	0.035
20-Mar-91	S-9	0.07*	0.0007	0.0007	<0.0005	0.0010
26-Jun-91	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
05-Sep-91	S-9	<0.05	<0.0005	0.0008	<0.0005	<0.0005
13-Dec-91	S-9	<0.05	<0.0005	0.0008	<0.0005	<0.0005
11-Aug-89	S-10	<0.05	<0.0005	<0.001	<0.001	<0.003
08-Sep-89	S-10	<0.05	<0.0005	<0.001	<0.001	<0.003
15-Dec-89	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.001
06-Mar-90	S-10	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	0.0010
18-Dec-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	0.0014
20-Mar-91	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
26-Jun-91	S-10	0.05	0.0018	0.0058	0.0019	0.013
05-Sep-91	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
13-Dec-91	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
11-Oct-89	SR-1	0.20	0.10	<0.001	0.010	0.010
14-Dec-89	SR-1	0.5	0.21	<0.0005	0.016	0.016
05-Mar-90	SR-1	0.064	0.020	<0.0005	0.0015	0.004
14-Jun-90	SR-1	0.06	0.017	<0.0005	0.0019	0.001
02-Oct-90	SR-1	<0.05	0.0050	<0.0005	<0.0005	<0.0005
18-Dec-90	SR-1	<0.05	0.028	0.0055	0.0045	0.0045

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHLYBENZENE (PPM)	XYLENES (PPM)
20-Mar-91	SR-1	<0.05*	0.0042	<0.0005	0.0014	0.0005
26-Jun-91	SR-1	<0.05	0.0050	<0.0005	0.0005	<0.0005
05-Sep-91	SR-1	<0.05	0.0086	<0.0005	0.0007	<0.0005
13-Dec-91	SR-1	0.07	0.0094	0.0071	0.0066	0.022
11-Oct-89	SR-2	0.88	<0.01	0.001	0.029	0.033
14-Dec-89	SR-2	1.1	0.017	<0.0005	0.10	0.067
05-Mar-90	SR-2	0.14	0.0030	<0.0005	0.012	0.007
14-Jun-90	SR-2	<0.05	<0.0005	<0.0005	0.0026	<0.001
02-Oct-90	SR-2	<0.05	<0.0005	<0.0005	0.0005	<0.0005
18-Dec-90	SR-2	<0.05	0.0016	0.0014	0.0016	0.0027
20-Mar-91	SR-2	0.09	0.0013	<0.0005	0.0061	0.0014
26-Jun-91	SR-2	<0.05	0.0006	<0.0005	0.0017	<0.0005
05-Sep-91	SR-2	<0.05	0.0012	<0.0005	0.0012	<0.0005
13-Dec-91	SR-2	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
11-Oct-89	SR-3	0.50	0.092	0.010	0.043	0.10
14-Dec-89	SR-3	2.4	0.31	0.027	0.17	0.34
05-Mar-90	SR-3	0.070	0.015	0.0008	0.0058	0.010
14-Jun-90	SR-3	0.47	0.059	0.0023	0.035	0.05
02-Oct-90	SR-3	1.7	0.091	0.0062	0.0070	0.10
18-Dec-90	SR-3	0.14	0.010	0.0008	0.0075	0.014
20-Mar-91	SR-3	1.35	0.97	0.0036	0.064	0.079
26-Jun-91	SR-3	0.24	0.048	0.015	0.020	N/A
26-Jun-91	SR-3	0.24	0.048	0.0042	0.015	0.020
05-Sep-91	SR-3	0.16	0.019	<0.0005	0.006	0.0059
13-Dec-91	SR-3	0.05	0.013	<0.0005	0.0031	0.0047

TABLE 3

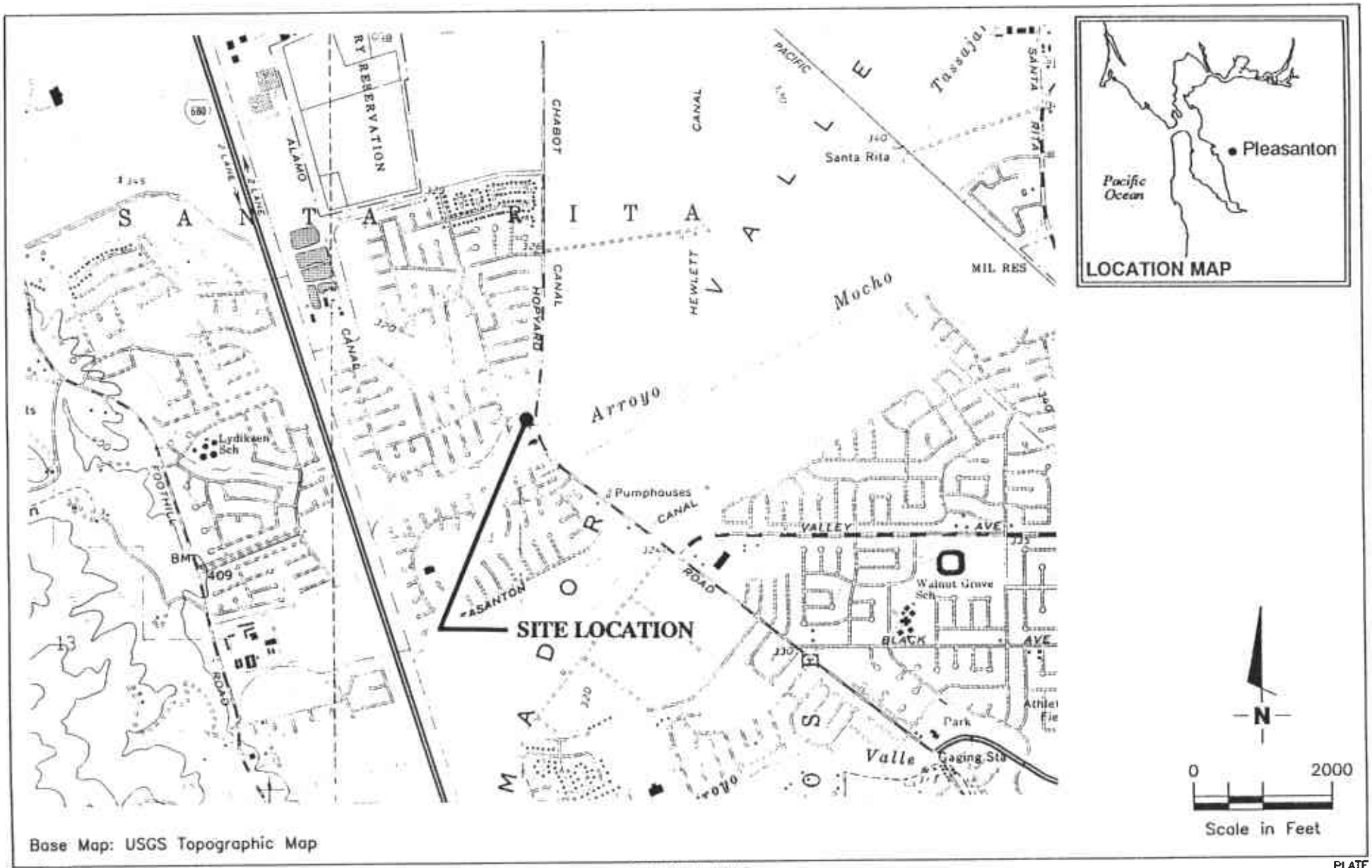
HISTORICAL GROUND-WATER QUALITY DATABASE

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

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
* Compounds detected and calculated as low boiling hydrocarbons consist of compounds eluting within the chromatographic range of gasoline, but are not characteristic of the standard gasoline standard pattern.
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).



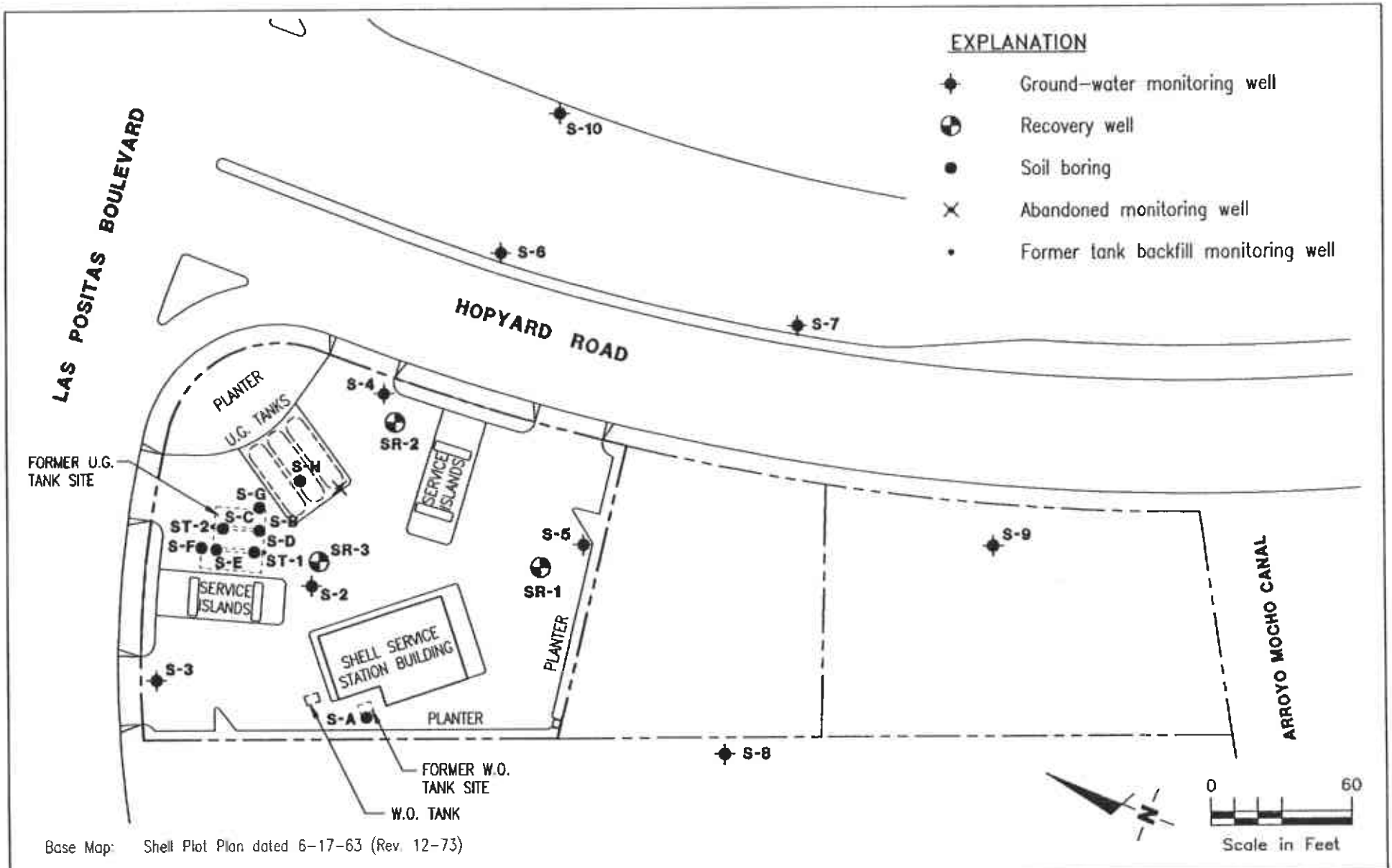
Base Map: USGS Topographic Map

GeoStrategies Inc.

VICINITY MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE 1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7632		2/91	



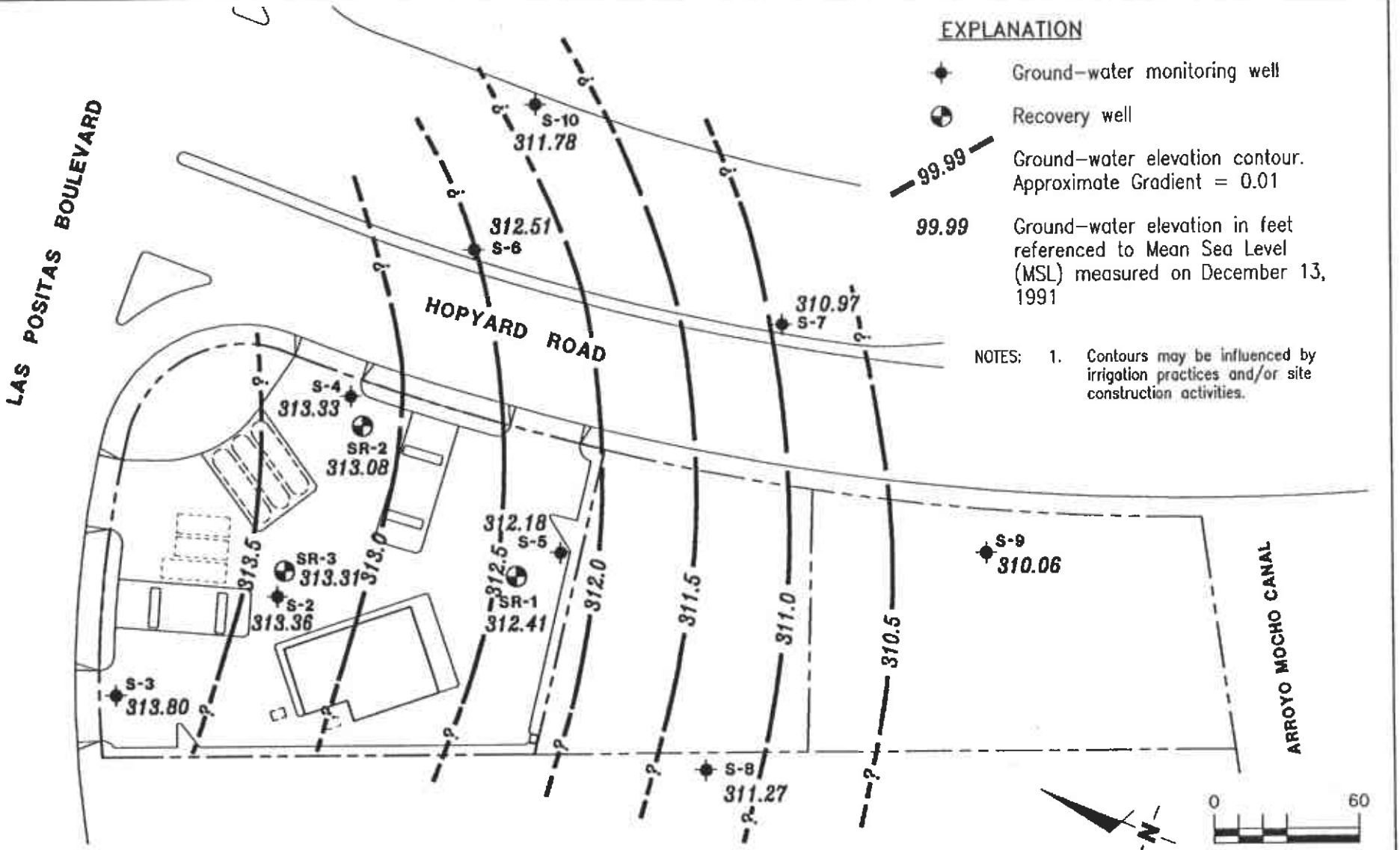
Base Map: Shell Plot Plan dated 6-17-63 (Rev. 12-73)

GeoStrategies Inc.

SITE PLAN
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763201-12	GPS	2/92	



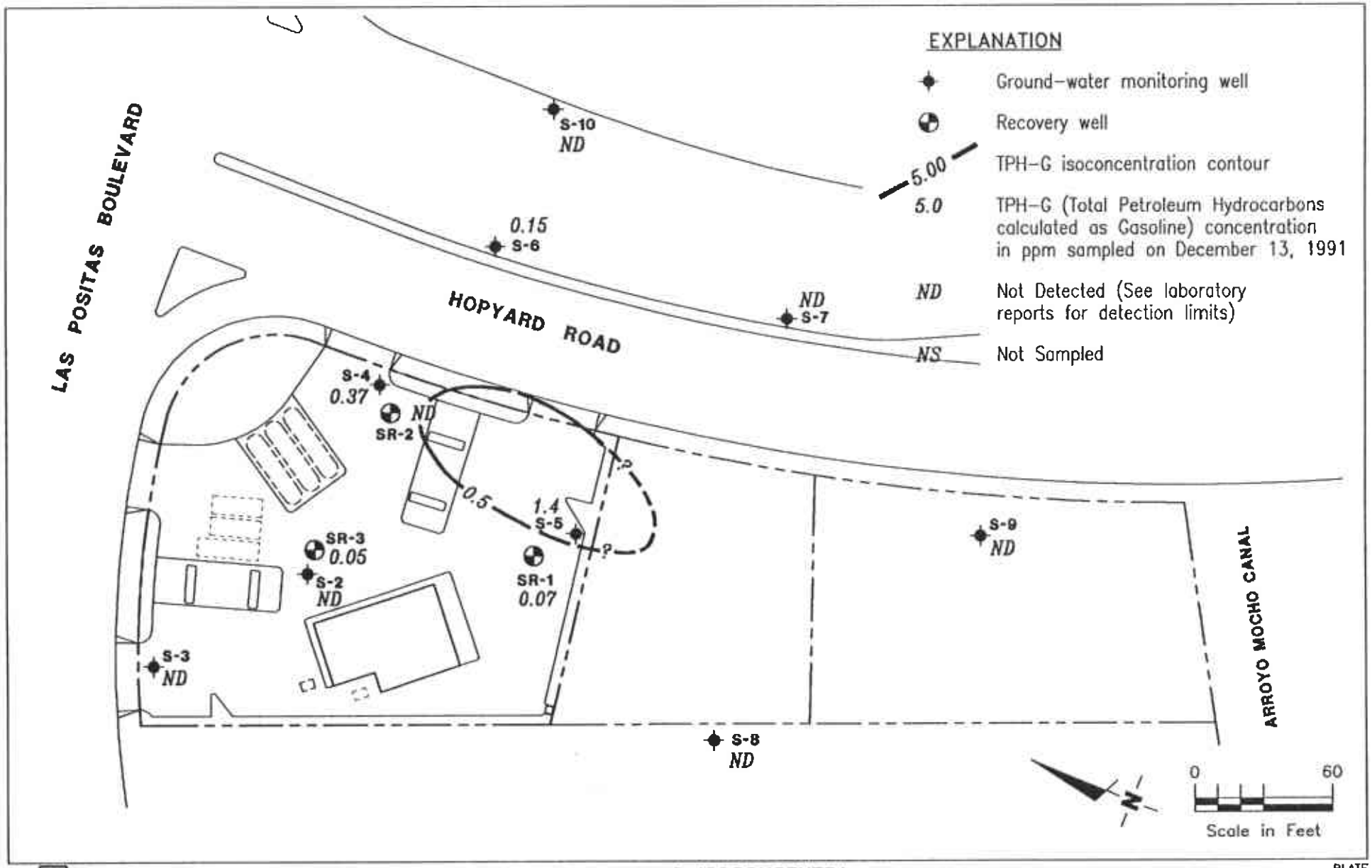
Base Map: Shell Plot Plan dated 6-17-63 (Rev. 12-73)

GeoStrategies Inc.

POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE **3**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763201-12	QRS	2/92	

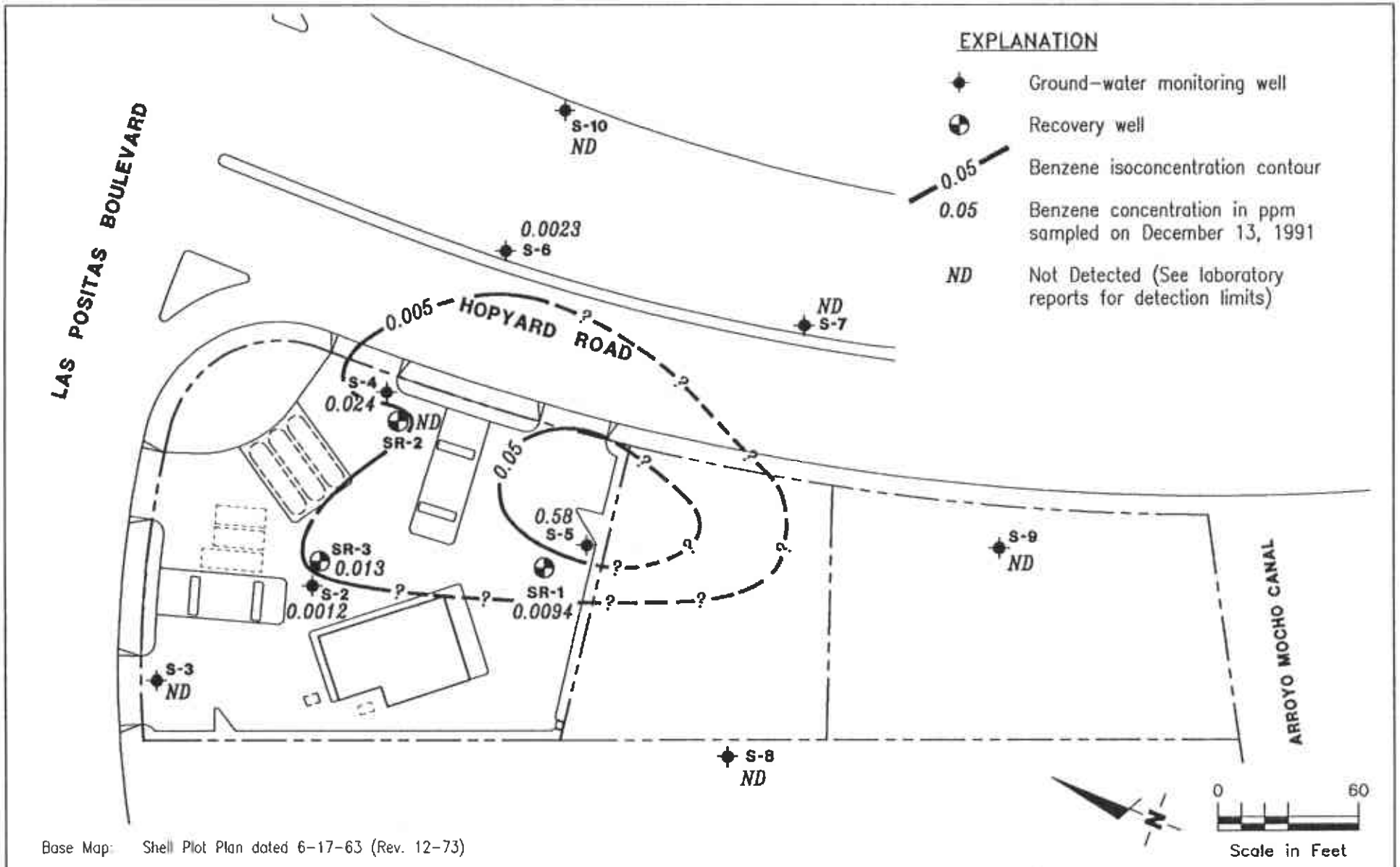


GeoStrategies Inc.

TPH-G ISOCONCENTRATION MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE **4**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763201-12		2/92	



GeoStrategies Inc.

BENZENE ISOCONCENTRATION MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE **5**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763201-12	EG	2/92	

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: 12/27/91

Work Order: T1-12-152 P.O. Number: MOH 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3632, 3790 Hopyard, Plsntn
Date Received: 12/16/91
Number of Samples: 8
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Richard Jacobs
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-152

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-2**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112152-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH > 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

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

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	84.
1,3-Dichlorobenzene (BTEX)	95.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-152

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-3**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112152-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

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)	99.
1,3-Dichlorobenzene (BTEX)	95.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-152

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-4**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112152-03**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH > 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

PARAMETER	DETECTION LIMIT	DETECTED	
Low Boiling Hydrocarbons calculated as Gasoline	0.05	0.37	&
BTEX			
Benzene	0.0005	0.024	
Toluene	0.0005	0.0009	
Ethylbenzene	0.0005	0.0013	
Xylenes (total)	0.0005	0.046	

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	113.
1,3-Dichlorobenzene (BTEX)	105.

Comments:
& Compounds detected and calculated as low boiling hydrocarbons consist of compounds eluting within the chromatographic range of gasoline, but are not characteristic of the standard gasoline standard pattern.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-152

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-5**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112152-04**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.25	1.4
BTEX		
Benzene	0.0025	0.58
Toluene	0.0025	0.019
Ethylbenzene	0.0025	0.11
Xylenes (total)	0.0025	0.080

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	102.
1,3-Dichlorobenzene (BTEX)	104.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-152

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-6**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112152-05**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

PARAMETER	DETECTION LIMIT	DETECTED	
Low Boiling Hydrocarbons calculated as Gasoline	0.05	**0.15**	&
BTEX			
Benzene	0.0005	**0.0023**	
Toluene	0.0005	**None**	
Ethylbenzene	0.0005	**None**	
Xylenes (total)	0.0005	**0.15**	

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	100.
1,3-Dichlorobenzene (BTEX)	98.

Comments:
& Compounds detected and calculated as low boiling hydrocarbons consist of compounds eluting within the chromatographic range of gasoline, but are not characteristic of the standard gasoline standard pattern.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-152

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-7**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112152-06**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

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)	98.
1,3-Dichlorobenzene (BTEX)	98.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-152

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-8**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112152-07**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

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)	99.
1,3-Dichlorobenzene (BTEX)	96.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-152

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-9**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112152-08**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/20/91
Low Boiling Hydrocarbons	Mod.8015		12/20/91

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)	89.
1,3-Dichlorobenzene (BTEX)	91.

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-12-152

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **Quality Control**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T112152-09A**
EXTRACTION DATE:
ANALYSIS DATE: **12/20/91**
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	39.3	33.6	79.	67.	16.
Toluene	ND<0.5	50.0	39.6	33.9	79.	68.	15.
Ethyl benzene	ND<0.5	50.0	39.8	34.3	80.	69.	15.
Xylenes	ND<0.5	150.	127.	110.	85.	73.	15.

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

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-152

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **Quality Control**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T112152-09B**
EXTRACTION DATE:
ANALYSIS DATE: **12/18/91**
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	48.5	46.2	97.	92.	5.
Toluene	ND<0.5	50.0	47.7	45.1	95.	90.	5.
Ethyl benzene	ND<0.5	50.0	48.9	46.2	98.	92.	6.
Xylenes	ND<0.5	150.	156.	148.	104.	99.	5.

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

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-152

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

Date: 12/27/91

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

Work Order: T1-12-153 P.O. Number: MOE 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3632, 3790 Hopyard, Plsntn
Date Received: 12/16/91
Number of Samples: 7
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Richard Jacobs
Project Manager

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA
Work Order: T1-12-153

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-10
SAMPLE DATE: 12/13/91
LAB SAMPLE ID: T112153-01
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/18/91
Low Boiling Hydrocarbons	Mod.8015		12/18/91

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)	99.
1,3-Dichlorobenzene (BTEX)	93.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-153

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: SR-1
SAMPLE DATE: 12/13/91
LAB SAMPLE ID: T112153-02
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/18/91
Low Boiling Hydrocarbons	Mod.8015		12/18/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	0.07
BTEX		
Benzene	0.0005	0.0094
Toluene	0.0005	0.0071
Ethylbenzene	0.0005	0.0066
Xylenes (total)	0.0005	0.022

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	104.
1,3-Dichlorobenzene (BTEX)	102.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-153

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **SR-2**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112153-03**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

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)	99.
1,3-Dichlorobenzene (BTEX)	96.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-153

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **SR-3**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112153-04**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	**0.05**
BTEX		
Benzene	0.0005	**0.013**
Toluene	0.0005	**None**
Ethylbenzene	0.0005	**0.0031**
Xylenes (total)	0.0005	**0.0047**

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	103.
1,3-Dichlorobenzene (BTEX)	103.

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-12-153

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **SD-5**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112153-05**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.25	1.7
BTEX		
Benzene	0.0025	0.70
Toluene	0.0025	0.029
Ethylbenzene	0.0025	0.13
Xylenes (total)	0.0025	0.10

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	102.
1,3-Dichlorobenzene (BTEX)	104.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-153

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **SF-4**
SAMPLE DATE: **12/13/91**
LAB SAMPLE ID: **T112153-06**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

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)	97.
1,3-Dichlorobenzene (BTEX)	93.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-153

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **TRIP BLANK**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T112153-07**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	Mod.8015		12/19/91
Low Boiling Hydrocarbons	Mod.8015		12/19/91

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)	95.
1,3-Dichlorobenzene (BTEX)	91.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-153

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **Quality Control**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T112153-08A**
EXTRACTION DATE:
ANALYSIS DATE: 12/18/91
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	48.5	46.2	97.	92.	5.
Toluene	ND<0.5	50.0	47.7	45.1	95.	90.	5.
Ethyl benzene	ND<0.5	50.0	48.9	46.2	98.	92.	6.
Xylenes	ND<0.5	150.	156.	148.	104.	99.	5.

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

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 12/27/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-12-153

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.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: 11-12-152

Date:
Page 1 of 2

Site Address: 3790 Hopyard, Pleasanton CA

WIC#: 204-6138-0501

Shell Engineer: J Brastad
Phone No. 685-3850
Fax #: (510) 685-3943

Consultant Name & Address: Gettler-Ryan / GeoStrategies
2150 W. Winton Ave.
Hayward, California 94545

Consultant Contact: Tom Paulson
Phone No. 783-7500
Fax #: 783-1089

Comments: ~~J Brastad~~ GR job#3632.01

Sampled By:

Printed Name: Randall F. Hedegaard

LAB: IT (SCV)

CHECK ONE (1) BOX ONLY	CT/DT
Quarterly Monitoring	X 5461
Site Investigation	5441
Soil for disposal	5442
Water for disposal	5443
Air Sample- Sys O&M	5452
Water Sample - Sys O&M	5453
Other	

TURN AROUND TIME
- 24 hours
- 48 hours
- 15 days X (Normal)
- Other

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

Analysis Required

Sample ID	Date	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Container Size	Preservation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-2	12-13-91		X		3	X		X			40ml	HCl	N	groundwater/gas	Cool
S-3															
S-4															
S-5															
S-6															
S-7															
S-8															
S-9															

Relinquished By (signature):	Printed name: Randall F. Hedegaard	Date: 12 13 91	Received (signature): Kelly #1	Printed name:	Date: 12 13 91
Relinquished By (signature): Kelly #1	Printed name: Frank Alm	Time: 1515	Received (signature):	Printed name:	Time: 1515
Relinquished By (signature):	Printed name:	Date: 12-16-91	Received (signature): Josephine DeCarli	Printed name: Josephine DeCarli	Date:
		Time: 14:00			Time:
		Date:			Date: 12/16/91
		Time:			Time: 13:55

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

Last Revision Date: 10/15/91

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: T1-12-153

Date:
Page 2 of 2

Site Address: 3790 Hopyard, Pleasanton

WIC#: 204-6138-0501

Shell Engineer: J Brastad — Phone No. (510) 685-3850 — Fax #: 685-3943

Consultant Name & Address: Gettler-Ryan / GeoStrategies
2150 W. Winton Ave.
Hayward, California 94545

Consultant Contact: Tom Paulson — Phone No. 783-7500 — Fax #: 783-1089

Comments: GR job # 3632.01

Sampled By:

Printed Name: Randall F. Hedegaard

LAB: IT (SCV) 137

CHECK ONE (1) BOX ONLY		CT/DT
Quarterly Monitoring	X	5461
Site Investigation		5441
Soil for disposal		5442
Water for disposal		5443
Air Sample- Sys O&M		5452
Water Sample - Sys O&M		5453
Other		

TURN AROUND TIME
- 24 hours
- 48 hours
- 15 days X (Normal)
- Other

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

Analysis Required: TPH (EPA 8015 Mod. Gas); TPH (EPA 8015 Mod. Diesel); BTEX (EPA 8020/602); Volatile Organics (EPA 8240); Test for Disposal

Sample ID	Date	Soil	Water	Air	No. of conts.	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-10	121391		X		3	40ml	HCl	N	groundwater/gas	Cool
SR-1	"		"		"	"	"	"	"	"
SR-2	"		"		"	"	"	"	"	"
SR-3	"		"		"	"	"	"	"	"
SD-5	"		"		"	"	"	"	"	"
SF-4	"		"		"	"	"	"	"	"
Trip Blank	—		"		1	"	"	"	"	"

Relinquished By (signature):

Printed name: Randall F. Hedegaard — Date: 121391 — Time: 1515

Relinquished By (signature): Refrg #1

Printed name: Frank Acini — Date: 12-16-91 — Time: 4 PM

Relinquished By (signature):

Printed name: — Date: — Time:

Received (signature):

Printed name: — Date: 121391 — Time: 1515

Received (signature): Refrg #1

Printed name: — Date: — Time:

Received (signature): Josephine DeCarli

Printed name: Josephine DeCarli — Date: 12/16/91 — Time: 13:55

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

Last Revision Date: 10/15/91