HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

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File

January 27, 1994 **12-008**

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

S1 —
S2 2Qs
S3 ~
S4 2Qs
S5 3Qs+
S6 4Qs
S8 —
S7- 2Qs

Re: Shell Service Station, 5251 Hopyard Road, Pleasanton, California
WIC# 204-6138-0907

Dear Mr. Kirk,

Hydro-Environmental Technologies, Inc. (HETI) is pleased to present this report on the fourth 1993 ground water sampling event at the referenced location (Figure 1). Information presented in this report is based on the results of laboratory analysis of ground water samples collected by the Shell Oil Company (Shell) sampling contractor on December 8, 1993. A copy of this report has been forwarded to the Pleasanton Fire Department and to the Regional Board.

Site Description
Project history and background information has been presented in investigative reports prepared during the site characterization phase of this project. There are currently eight ground water monitoring wells present on-site.

Results of the Fourth 1993 Ground Water Sampling
Ground Water Gradient:
The depth to ground water was measured in all wells by the Shell sampling contractor, Blaine Tech Services (Blaine), on December 8, 1993. These measurements were combined with previously established well head elevations to yield ground water elevations (Table 1, Figure 2). Ground water elevations obtained this quarter defined a dome in the water table centered near monitoring well S-1. As shown on Table 1, ground water elevations have changed inconsistently across the site since the sampling visit in September, 1993.

Ground Water Analytical Data:
Monitoring wells S-1, S-3, S-5, S-6 and S-8 (Figure 3) were sampled during this event. Analytical results indicate that no detectable concentrations of petroleum hydrocarbons were present in the samples collected from wells S-5 or S-6. This is the third consecutive occurrence of non-detectable concentrations for samples collected from well S-5 and S-6. Low boiling point hydrocarbons (TPH-Gas), volatile aromatic hydrocarbons (BTEX) and medium boiling point hydrocarbons (TPHd)

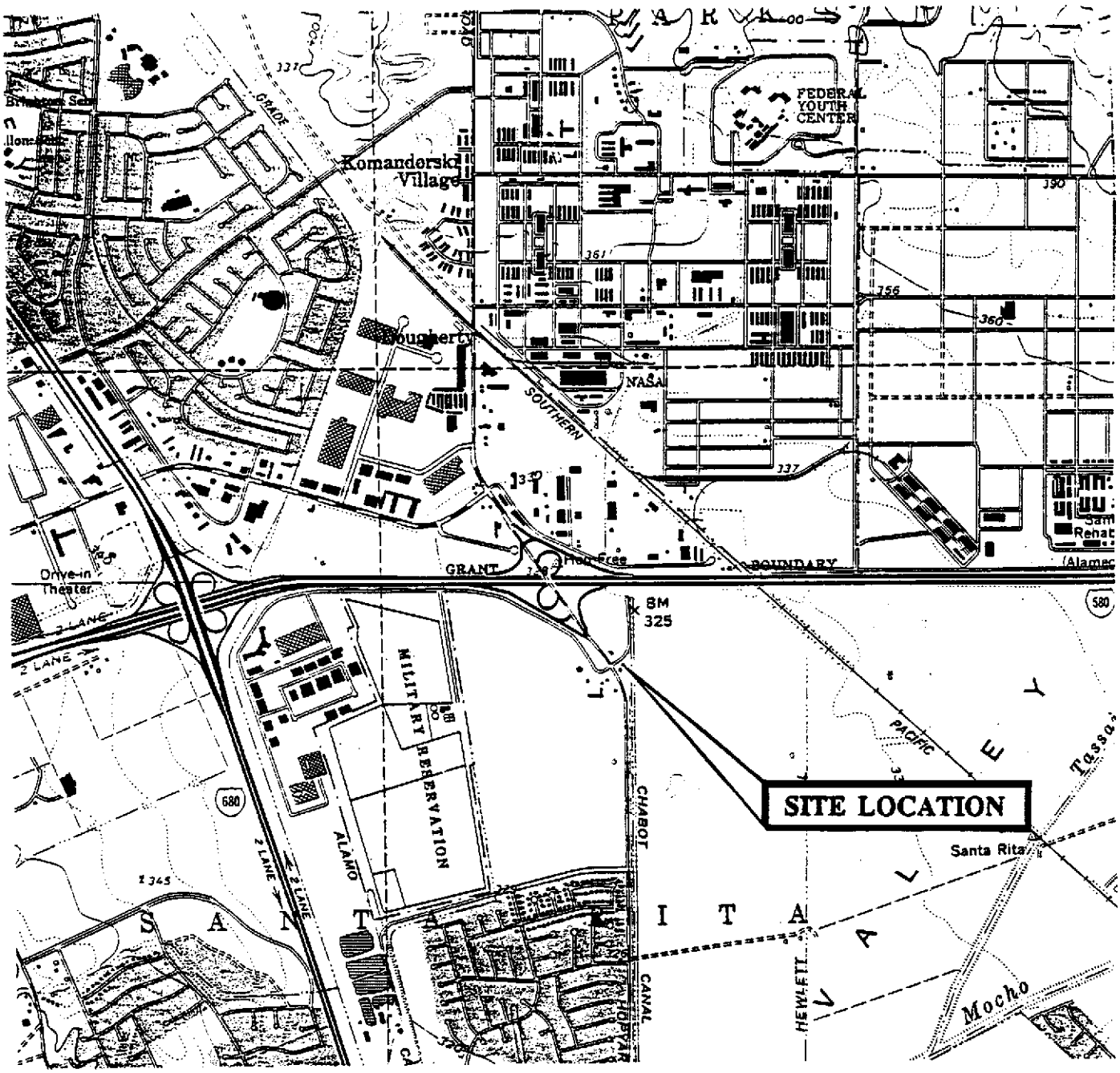
were detected in the samples collected from S-1 and S-3. Only TPHd was detected in the samples collected from S-8. Blaine sampling and analytical data is presented as an attachment to this report. Current and historical analytical results are presented in Table 1.

All information and interpretation in this report is presented in accordance with currently accepted professional practices. This report has been prepared for the sole use of Shell Oil Company. Any reliance on the information presented herein by third parties will be at such parties' sole risk. HETI is pleased to be of continued service to Shell. If you have any questions or comments regarding this report, please do not hesitate to call.

Very truly yours,
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

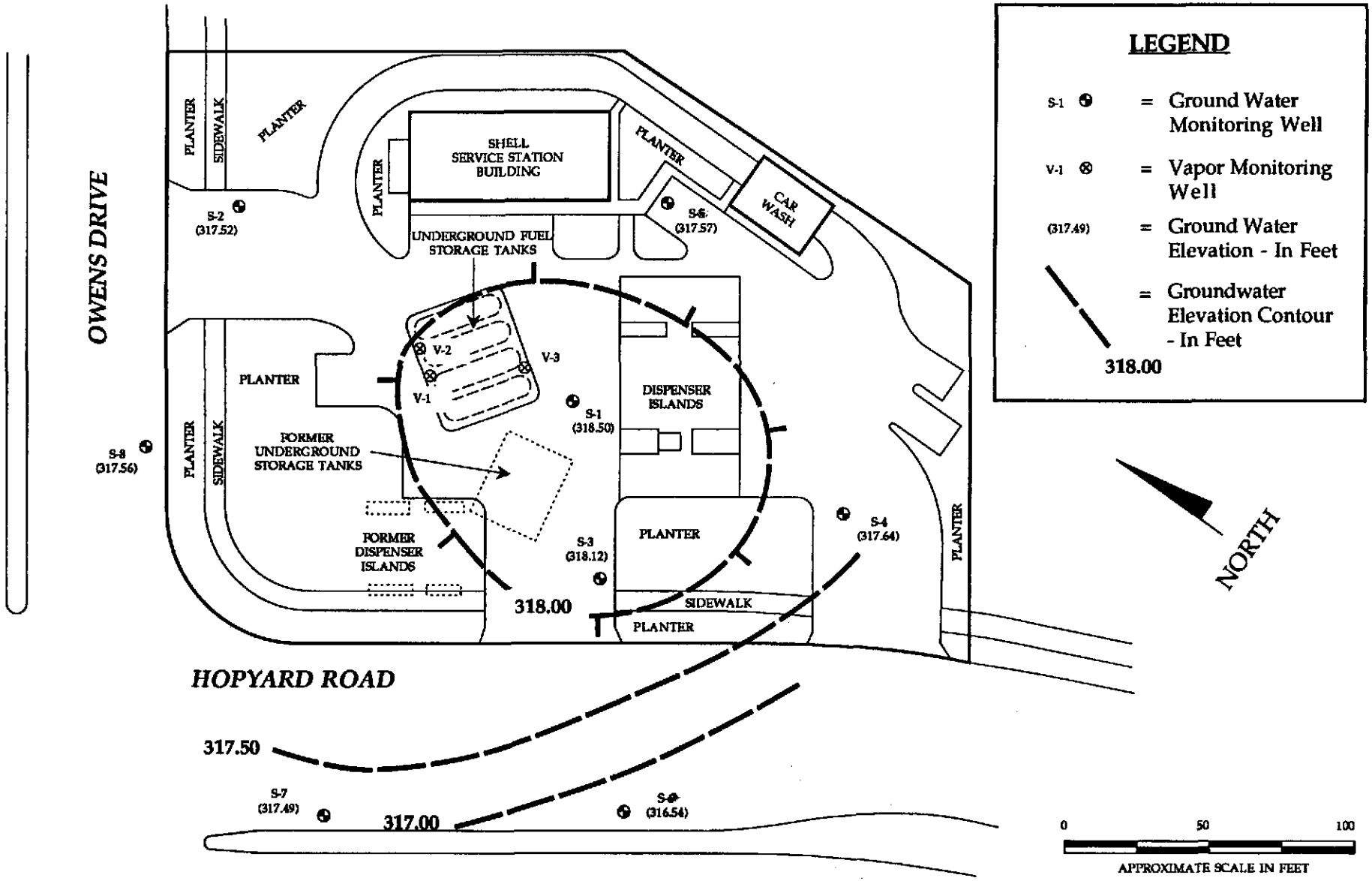
John H. Turney, P. E.
Senior Engineer

cc. Inspector Ted Klenk, Pleasanton Fire Department
Mr. Rich Hiett, SF Bay RWQCB



SOURCE:
USGS 7.5 MINUTE SERIES
DUBLIN QUADRANGLE
PHOTOREVISED 1980

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.	**SITE LOCATION MAP** Shell Service Station 5251 Hopyard Road Pleasanton, California WIC #204-6138-0907	Figure 1 12-008 6/93



BASED ON SITE PLAN/POTENTIOMETRIC MAP BY GEOSTRATEGIES INC. DATED 3/93, AND DATA COLLECTED 12/8/93.

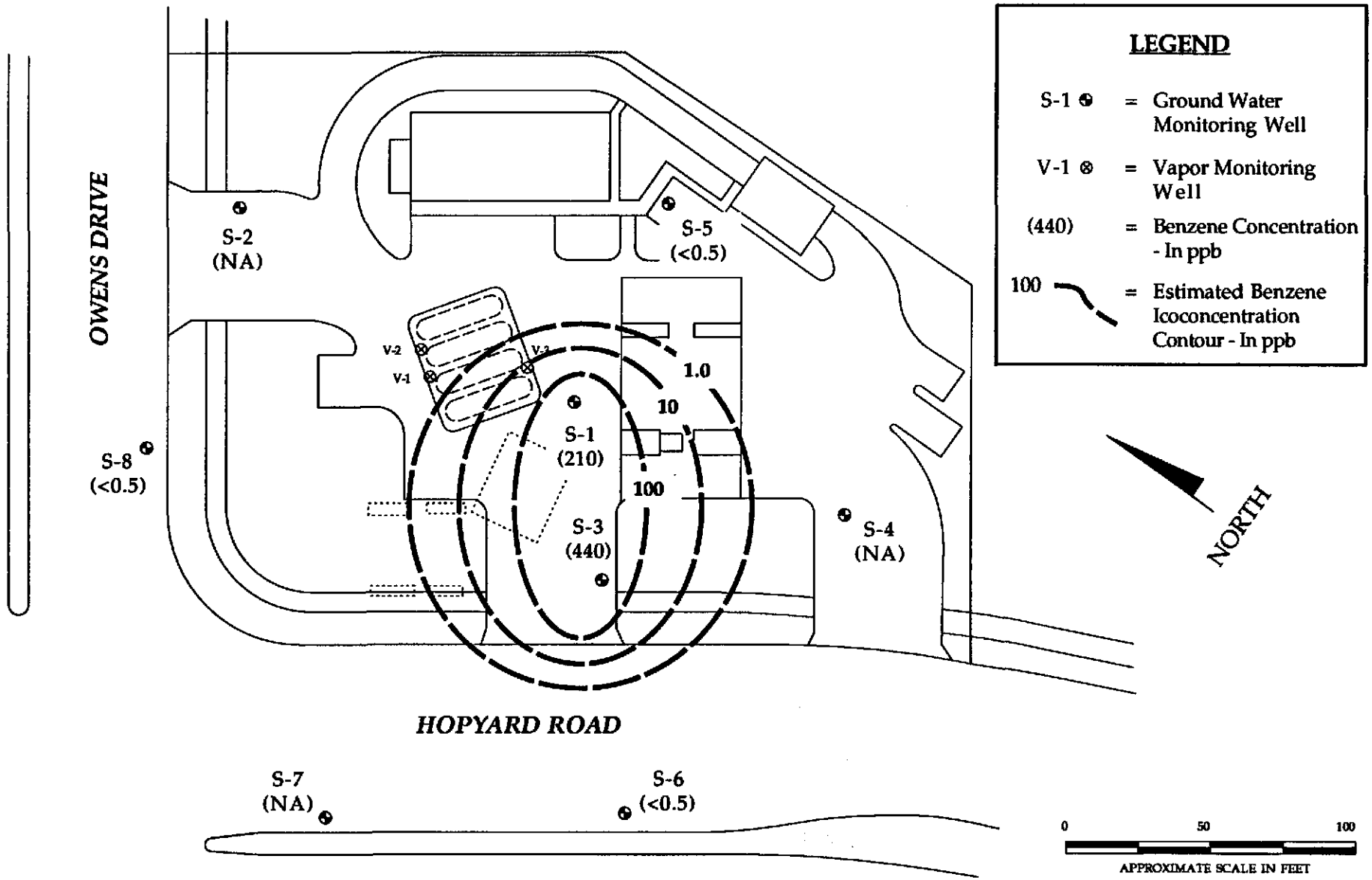
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

SITE PLAN/GROUND WATER CONTOUR MAP

Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC # 204-6138-0907

Figure 2

12-008 1/94



BASED ON ANALYTICAL DATA FROM GROUND WATER SAMPLES COLLECTED 12/8/93

HYDR◆-
ENVIR◆NMENTAL
TECHN◆LOGIES, INC.

BENZENE ISOCONCENTRATION MAP

Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC # 204-6138-0907

Figure
3

12-008 1/94

Table 1

GROUND WATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS

Former Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC#204-6138-0907

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	TPHd (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
S-1	1/6/88	---	---	---	600	<50	220	<5	#	<20
	12/14/88	---	---	---	17000	8000	5100	40	570	200
	3/30/89	---	---	---	8200	3600	2900	<20	330	160
	7/20/89	326.73	8.71	318.02	21000	8500	6200	1500	1100	700
	10/16/89	---	---	---	16000	11000	3900	890	1200	900
	1/5/90	---	---	---	8200	6500	2300	100	660	320
	4/11/90	---	---	---	11000	NA	3000	120	830	520
	7/12/90	---	---	---	20000	8000	4400	960	1300	1200
	10/25/90	---	---	---	6000	3500	1400	140	600	320
	1/25/91	---	---	---	2500	1500	460	<25	130	36
	4/16/91	---	---	---	6700	2600*	2600	14	580	250
	7/24/91	---	---	---	8800	3800*	2300	30	640	220
	10/18/91	326.73	8.85	317.88	12000	3300*	3600	380	990	580
	1/23/92	---	---	---	1600	890	450	3.0	120	17
	4/27/92	---	---	---	1100+	500*	610	<10	110	10
	7/21/92	---	---	---	5100	290@	1900	54	430	140
	10/16/92	---	---	---	13000	390@	3200	310	780	360
	1/23/93	326.73	7.96	318.77	2300	30**	640	<5	110	13
	4/28/93	326.73	9.07	317.66	4600	390	780	<0.5	250	<0.5
	9/22/93	326.73	8.68	318.05	3000	610*	660	28	160	17
	12/8/93	326.73	8.23	318.50	520	280	210	<2.5	49	<2.5

Table 1

GROUND WATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS

Former Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC#204-6138-0907

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	TPHd (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
S-2	5/11/89	—	—	—	<50	<100	<0.5	<1	<1	<3
	7/20/89	326.59	8.83	317.76	<50	<100	<0.5	<1	<1	<3
	10/16/89	—	—	—	<50	<100	<0.5	<1	<1	<3
	1/5/90	—	—	—	<50	<100	<0.5	<0.5	<0.5	<1
	4/11/90	—	—	—	<50	NA	<0.5	<0.5	<0.5	<1
	7/12/90	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	10/25/90	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	1/25/91	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	4/16/91	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	7/24/91	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	10/18/91	326.59	8.83	317.76	<50	<50	<0.5	<0.5	<0.5	<0.5
	1/23/92	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	4/27/92	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	7/17/92	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	10/16/92	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	1/23/93	326.59	8.10	318.49	<50	140*+	<0.5	<0.5	<0.5	<0.5
	4/28/93	326.59	9.06	317.53	<50	<50	<0.5	<0.5	<0.5	<0.5
	9/22/93	326.59	8.91	317.68	NA	NA	NA	NA	NA	NA
	12/8/93	326.59	9.07	317.52	NA	NA	NA	NA	NA	NA

To be sampled annually. Next sampling date 7/94.

Table 1

GROUND WATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS

Former Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC#204-6138-0907

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	TPHd (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
S-3	5/11/89	—	—	—	2600	1400	330	14	220	200
	7/20/89	327.38	9.55	317.83	9700	2200	2300	30	880	160
	10/16/89	—	—	—	3400	2800	700	8.0	360	60
	1/5/90	—	—	—	860	1600	140	1.6	78	2.0
	4/11/90	—	—	—	1000	NA	210	<2	150	13
	7/12/90	—	—	—	2800	2000	490	8.5	210	81
	10/25/90	—	—	—	1200	860	120	<2.5	82	5.1
	1/25/91	—	—	—	870	330	230	<2.5	130	<2.5
	4/16/91	—	—	—	190	140*	12	0.8	6.2	1.5
	7/24/91	—	—	—	1700	1200*	450	4.4	150	2.9
	10/18/91	327.38	9.64	317.74	1900	500	370	3.1	120	220
	1/23/92	—	—	—	2000	650*	580	3.0	200	<0.5
	4/27/92	—	—	—	1100	230*	150	<3	76	14
	7/17/92	—	—	—	810	58	200	<2.5	57	3.8
	10/16/92	—	—	—	440	190@	79	1.8	18	4.6
	1/23/93	327.38	8.81	318.57	670	170**	79	1.5	46	15
	4/28/93	327.38	9.87	317.51	2000	<50	300	3.4	210	38
	9/22/93	327.38	9.65	317.73	4800	670*	2000	34	150	51
	12/8/93	327.38	9.26	318.12	1200	110	440	<5.0	120	29

Table 1

GROUND WATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS

Former Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC#204-6138-0907

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	TPHd (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
[redacted]	5/11/89	—	—	—	<50	<100	<0.5	<1	<1	<3
	7/20/89	327.38	8.03	319.35	<50	<100	<0.5	<1	<1	<3
	10/16/89	—	—	—	<50	<100	<0.5	<1	<1	<3
	1/5/90	—	—	—	<50	<100	<0.5	<0.5	<0.5	<1
	4/11/90	—	—	—	<50	NA	<0.5	<0.5	<0.5	<1
	7/12/90	—	—	—	<50	<50	<0.5	1.7	<0.5	2.1
	10/25/90	—	—	—	<50	<50	<0.5	<0.5	<0.5	0.6
	1/25/91	—	—	—	<50	<50	<0.5	1.5	<0.5	2.8
	4/16/91	—	—	—	<50	<50	0.7	<0.5	<0.5	<0.5
	7/24/91	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	10/18/91	327.38	8.82	318.56	<50	<50	<0.5	<0.5	<0.5	<0.5
	1/23/92	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	4/27/92	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	7/17/92	—	—	—	<500	74	<0.5	<0.5	<0.5	<0.5
	10/16/92	—	—	—	<500	<50	<0.5	<0.5	<0.5	<0.5
	1/23/93	327.38	8.32	319.06	<500	94*+	<0.5	<0.5	<0.5	<0.5
	4/28/93	327.38	9.76	317.62	<50	<50	<0.5	<0.5	<0.5	<0.5
	9/22/93	327.38	9.30	318.08	NA	NA	NA	NA	NA	NA
	12/8/93	327.38	9.74	317.64	NA	NA	NA	NA	NA	NA

To be sampled annually. Next sampling date 7/94.

Table 1

GROUND WATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS

Former Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC#204-6138-0907

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	TPHd (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
[redacted]	5/11/89	---	---	---	50	<100	<0.5	<1	1.0	3.0
	7/20/89	327.76	9.62	318.14	<50	<100	10	<1	<1	<3
	10/16/89	---	---	---	<50	<100	<0.5	<1	<1	<3
	1/5/90	---	---	---	<50	<100	<0.5	<0.5	<0.5	<1
	4/11/90	---	---	---	<50	NA	0.5	3.4	0.8	4.0
	7/12/90	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	10/25/90	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	1/25/91	---	---	---	<50	<50	<0.5	<0.5	<0.5	0.7
	4/16/91	---	---	---	<50	<50	<0.5	<0.5	<0.5	0.8
	7/24/91	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	10/18/91	327.76	10.00	317.76	120^	<50	43	<0.5	1.0	0.7
	1/23/92	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	4/27/92	---	---	---	50	<50	<0.5	<0.5	<0.5	0.6
	7/17/92	---	---	---	<50	70	<0.5	<0.5	<0.5	<0.5
	10/16/92	---	---	---	230	57	13	<0.5	4.9	4.3
	1/23/93	327.76	8.88	318.88	<50	150*+	<0.5	<0.5	<0.5	<0.5
	4/30/93	327.76	10.20	317.56	<50	<50	<0.5	<0.5	<0.5	<0.5
	9/22/93	327.76	9.92	317.84	<50	<50	<0.5	<0.5	<0.5	<0.5
	12/8/93	327.76	10.19	317.57	<50	<50	<0.5	<0.5	<0.5	<0.5

Table 1

GROUND WATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS

Former Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC#204-6138-0907

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	TPHd (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
[redacted]	11/15/89	---	---	---	<50	<100	<0.5	<0.5	<0.5	<1
	1/5/90	---	---	---	<50	<100	<0.5	0.5	<0.5	<1
	4/11/90	---	---	---	<50	NA	<0.5	<0.5	<0.5	<1
	7/12/90	---	---	---	<50	<50	<0.5	0.5	<0.5	0.6
	10/25/90	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	1/25/91	---	---	---	<50	<50	<0.5	1.7	<0.5	2.8
	4/16/91	---	---	---	<50	<50	<0.5	<0.5	<0.5	0.6
	7/24/91	---	---	---	<50	<50	<0.5	<0.5	<0.5	0.5
	10/18/91	326.56	8.84	317.72	<50	<50	<0.5	<0.5	<0.5	0.5
	1/23/92	---	---	---	<50	<50	<0.5	<0.5	<0.5	0.5
	4/27/92	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	7/17/92	---	---	---	400	130	<0.5	<0.5	<0.5	<0.5
	10/16/92	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	1/23/93	326.56	7.82	318.74	<50	230*+	<0.5	<0.5	<0.5	<0.5
	4/28/93	326.56	9.00	317.56	<50	<50	<0.5	<0.5	<0.5	<0.5
	9/22/93	326.56	8.61	317.95	<50	<50	<0.5	<0.5	<0.5	<0.5
	12/8/93	326.56	10.02	316.54	<50	<50	<0.5	<0.5	<0.5	<0.5

Table 1

GROUND WATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS

Former Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC#204-6138-0907

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	TPHd (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
S-2	1/15/89	—	—	—	<50	<100	<0.5	<0.5	<0.5	<1
	11/15/89	—	—	—	<50	<100	<0.5	<0.5	<0.5	<1
	1/5/90	—	—	—	<50	NA	<0.5	<0.5	<0.5	<1
	4/11/90	—	—	—	<50	NA	<0.5	<0.5	<0.5	0.7
	7/12/90	—	—	—	<50	<50	<0.5	0.6	<0.5	1.0
	10/25/90	—	—	—	<50	<50	<0.5	0.5	<0.5	<0.5
	1/25/91	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	4/16/91	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	7/24/91	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	10/18/91	326.49	8.92	317.57	<50	140&	<0.5	<0.5	<0.5	<0.5
	1/23/92	—	—	—	<50	140&	<0.5	<0.5	<0.5	<0.5
	4/27/92	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	7/17/92	—	—	—	<50	<50	<0.5	1.8	0.6	4.1
	10/16/92	—	—	—	<50	<50	<0.5	<0.5	<0.5	<0.5
	1/23/93	326.49	8.06	318.43	<50	110*+	<0.5	<0.5	<0.5	<0.5
	4/28/93	326.49	8.94	317.55	<50	<50	<0.5	<0.5	<0.5	<0.5
	9/22/93	326.49	8.57	317.92	NA	NA	NA	NA	NA	NA
	12/8/93	326.49	9.00	317.49	NA	NA	NA	NA	NA	NA

To be sampled annually. Next sampling date 7/94.

Table 1

GROUND WATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS

Former Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC#204-6138-0907

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	TPHd (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
S-8	11/15/89	---	---	---	<50	<100	<0.5	<0.5	<0.5	<1
	1/5/90	---	---	---	<50	<100	<0.5	<0.5	<0.5	<1
	4/11/90	---	---	---	<50	NA	<0.5	<0.5	<0.5	<1
	7/12/90	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	10/25/90	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	1/25/91	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	4/16/91	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	7/24/91	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	10/18/91	325.32	7.62	317.70	<50	360&	<0.5	<0.5	<0.5	<0.5
	1/23/92	---	---	---	<50	90	<0.5	<0.5	<0.5	<0.5
	4/27/92	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	7/21/92	---	---	---	53	<50	<0.5	1.0	<0.5	1.8
	10/16/92	---	---	---	<50	<50	<0.5	<0.5	<0.5	<0.5
	1/23/93	325.32	7.00	318.32	<50	<50	<0.5	<0.5	<0.5	<0.5
	4/28/93	325.32	7.77	317.55	<50	<50	<0.5	<0.5	<0.5	<0.5
	9/22/93	325.32	7.67	317.65	<50	160	<0.5	<0.5	<0.5	<0.5
	12/8/93	325.32	7.76	317.56	<50	210	<0.5	<0.5	<0.5	<0.5

Table 1

GROUND WATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS

Former Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC#204-6138-0907

Well Number	Sampling Date	TOB (feet)	DTW (feet)	GWE (feet)	TPHg (ppb)	TPHd (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
V-1	12/14/88	---	---	---	770	4500	6.4	21	9.0	87
V-2	12/14/88	---	---	---	160	1000	3.8	<1	<1	4.0
V-3	12/14/88	---	---	---	140	800	9.0	<1	<1	3.0

Notes :

TOB	Top of well box rim referenced to mean sea level
DTW :	Depth to water
GWE :	Ground water elevation
TPHg :	Total low-to-medium boiling point petroleum hydrocarbons by EPA Method 8015 (DHS-modified)
TPHd	Total high boiling point hydrocarbons by EPA method 8015
BTEX :	Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020
NA:	Not analyzed
#	Ethylbenzene and xylenes were combined in January 1988, well S-1.
*	Compounds detected as diesel appear to be the less volatile constituents of gasoline.
**	Concentration reported as diesel includes a heavier petroleum product.
^	Compounds detected within the chromatographic range of gasoline but not characteristic of the standard gasoline pattern.
&	Compounds detected within the chromatographic range of diesel but not characteristic of the standard diesel pattern.
+	The chromatographic pattern of the purgeable hydrocarbons found is similar to the pattern of weathered gasoline.
*+	The concentration reported as diesel primarily due to the presence of a heavier petroleum product.
@	The concentration reported as diesel primarily due to the presence of a lighter petroleum product.

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

January 11, 1993

Shell Oil Company
P.O. Box 5278
Concord, CA 94520-9998

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-6138-0907
5251 Hopyard Road
Pleasanton, California

QUARTER:
4th quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 931208-K-1

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a TABLE OF WELL GAUGING DATA. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

STANDARD PROCEDURES

Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water are removed in cases where more evacuation is needed to achieve stabilization of water parameters and when requested by the local implementing agency. Less water may be removed in cases where the well dewaters and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty four hours and collect sample material from the water which has recharged into the well case.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site. Effluent water from purging and on-site equipment cleaning is collected and transported to Shell's Martinez Manufacturing Complex in Martinez, California.

Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This

recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such sites is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

Sample Containers

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

Sampling

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label.

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to Anametrix, Inc. in San Jose, California. Anametrix, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1234.

Objective Information Collection

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/lpn

attachments: table of well gauging data
chain of custody
certified analytical report

cc: Hydro Environmental Technologies, Inc.
2363 Mariner Square Drive, Suite 243
Alameda, CA 94501
ATTN: Markus Niebanck

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-1	12/8/93	TOB	ODOR	NONE	--	--	8.23	29.82
S-2	12/8/93	TOB	--	NONE	--	--	9.07	24.48
S-3 *	12/8/93	TOB	ODOR	NONE	--	--	9.26	24.73
S-4	12/8/93	TOB	--	NONE	--	--	9.74	24.43
S-5	12/8/93	TOB	--	NONE	--	--	10.19	24.64
S-6	12/8/93	TOB	--	NONE	--	--	10.02	25.95
S-7	12/8/93	TOB	--	NONE	--	--	9.00	25.26
S-8	12/8/93	TOB	--	NONE	--	--	7.76	25.12

* Sample DUP was a duplicate sample taken from well S-3.

#461 ~~9912115~~ 931215 (10/12) (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:

Date:
Page 1 of 1

Site Address:	5251 Hopyard Road, Pleasanton, CA
WIC#:	204-6138-0907
Shell Engineer: Dan Kirk	Phone No.: (510) 675-6168 Fax #: 675-6160
Consultant Name & Address: Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133	
Consultant Contact: Jim Keller	Phone No.: (408) 995-5535 Fax #: 293-8773
Comments:	
Sampled by: KCB	
Printed Name: Keith C. Brown	

LAB: Anametrix

CHECK ONE (1) BOX ONLY	C1/D1	TURN AROUND TIME
Quarterly Monitoring	X 6441	24 hours ☐
Site Investigation	☐ 6441	48 hours ☐
Soil Closure/Disposal	☐ 6442	96 days X (Normal)
Water Closure/Disposal	☐ 6443	Other ☐
Soil/Air Rem. or Sys. O & M	☐ 6462	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M	☐ 6463	
Other	☐	

Analysis Required

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1) S-1	12/8			W		5		X				X								
(2) S-3				W		5		X				X								
(3) S-5				W		5		X				X								
(4) S-6				W		5		X				X								
(5) S-8				W		5		X				X								
(6) DUP				W		5		X				X								
(7) EB				W		5		X				X								
(8) TB	↓			W		2						X								

Relinquished By (Signature):	Printed Name: Keith Brown	Date: 12-9-93 Time: 0855	Received (Signature):	Printed Name: BENNY S. CARRIZOSA	Date: 12-9-93 Time: 0855		
Relinquished By (Signature):	Printed Name: BENNY S. CARRIZOSA	Date: 12-9-93 Time: 0915	Received (Signature):	Printed Name: Maria Barajas	Date: 12-9-93 Time: 09:15		
Relinquished By (Signature):	Printed Name:	Date: Time:	Received (Signature):	Printed Name:	Date: Time:		

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

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel: 408-432-8192
Fax: 408-432-8198

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9312115
Date Received : 12/09/93
Project ID : 204-6138-0907
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9312115- 1	S-1
9312115- 2	S-3
9312115- 3	S-5
9312115- 4	S-6
9312115- 5	S-8
9312115- 6	DUP
9312115- 7	EB
9312115- 8	TB

This report consists of 8 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

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

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

Sarah Schoen, Ph.D.
Laboratory Director

12-27-93
Date

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

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9312115
Date Received : 12/09/93
Project ID : 204-6138-0907
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9312115- 1	S-1	WATER	12/08/93	TPHd
9312115- 2	S-3	WATER	12/08/93	TPHd
9312115- 3	S-5	WATER	12/08/93	TPHd
9312115- 4	S-6	WATER	12/08/93	TPHd
9312115- 5	S-8	WATER	12/08/93	TPHd
9312115- 6	DUP	WATER	12/08/93	TPHd
9312115- 7	EB	WATER	12/08/93	TPHd
9312115- 1	S-1	WATER	12/08/93	TPHgBTEX
9312115- 2	S-3	WATER	12/08/93	TPHgBTEX
9312115- 3	S-5	WATER	12/08/93	TPHgBTEX
9312115- 4	S-6	WATER	12/08/93	TPHgBTEX
9312115- 5	S-8	WATER	12/08/93	TPHgBTEX
9312115- 6	DUP	WATER	12/08/93	TPHgBTEX
9312115- 7	EB	WATER	12/08/93	TPHgBTEX
9312115- 8	TB	WATER	12/08/93	TPHgBTEX

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

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9312115
Date Received : 12/09/93
Project ID : 204-6138-0907
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Department Supervisor 12/21/93 Date

Chemist 12/22/93 Date

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9312115 | Client Project ID : 204-6138-0907

Matrix : WATER | Units : ug/L

Compound Name	Method Reporting Limit*	Client ID S-1 Lab ID 9312115-01	Client ID S-3 Lab ID 9312115-02	Client ID S-5 Lab ID 9312115-03	Client ID S-6 Lab ID 9312115-04	Client ID S-8 Lab ID 9312115-05
Benzene	0.50	210	440	ND	ND	ND
Toluene	0.50	ND	ND	ND	ND	ND
Ethylbenzene	0.50	49	120	ND	ND	ND
Total Xylenes	0.50	ND	29	ND	ND	ND
TPH as Gasoline	50	520	1200	ND	ND	ND
Surrogate Recovery		129%	123%	111%	109%	108%
Instrument ID		HP21	HP21	HP21	HP21	HP21
Date Sampled		12/08/93	12/08/93	12/08/93	12/08/93	12/08/93
Date Analyzed		12/15/93	12/15/93	12/14/93	12/14/93	12/14/93
RLMF		5	10	1	1	1
Filename Reference		FRD11501.D	FRD11502.D	FPD11503.D	FPD11504.D	FPD11505.D

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 61-139%.

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

Corinne Pham 12/22/93
Analyst Date

Reggie Dawson 12/22/93
Supervisor Date

Issued on 12/22/93 @ 8:42 AM

Organic Analysis Data Sheet
Total Petroleum Hydrocarbons as Gasoline with BTEX
ITS - Anametrix Laboratories - (408)432-8192

Lab Workorder : 9312115 | Client Project ID : 204-6138-0907

Matrix : WATER | Units : ug/L

Compound Name	Method Reporting Limit*	Client ID DUP / Lab ID 9312115-06	Client ID EB / Lab ID 9312115-07	Client ID TB / Lab ID 9312115-08	Client ID / Lab ID METHOD BLANK	Client ID / Lab ID METHOD BLANK
Benzene	0.50	430	ND	ND	ND	ND
Toluene	0.50	ND	ND	ND	ND	ND
Ethylbenzene	0.50	110	ND	ND	ND	ND
Total Xylenes	0.50	26	ND	ND	ND	ND
TPH as Gasoline	50	1600	ND	ND	ND	ND
Surrogate Recovery		128%	109%	106%	105%	114%
Instrument ID		HP21	HP21	HP21	HP21	HP21
Date Sampled		12/08/93	12/08/93	12/08/93	N/A	N/A
Date Analyzed		12/15/93	12/14/93	12/14/93	12/14/93	12/15/93
RLMF		10	1	1	1	1
Filename Reference		FRD11506.D	FPD11507.D	FPD11508.D	BD1401E1.D	BD1501E1.D

* The Method Reporting Limit must be multiplied by the Reporting Limit Multiplication Factor (RLMF) to achieve the compound's reporting limit in the analysis.

ND : Not detected at or above the reporting limit for the analysis as performed.
TPHg : Determined by GC/FID following sample purge & trap by EPA Method 5030.
BTEX : Determined by modified EPA Method 8020 following sample purge & trap by EPA Method 5030.

Lab Control Limits for surrogate compound p-Bromofluorobenzene are 61-139%.

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

Reggie Davison 12/22/93
Analyst Date

Corinne Ham 12/22/93
Supervisor Date

Matrix Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Project ID : 204-6138-0907
Sample ID : S-5
Matrix : WATER
Date Sampled : 12/08/93

Laboratory ID : 9312115-03
Analyst : RD
Supervisor : JS
Instrument ID : HP21
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	SAMPLE RESULTS	MS RECOVERY	MSD RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS
Benzene	20	ND	110%	110%	45-139	0%	30
Toluene	20	ND	110%	110%	51-138	0%	30
Ethylbenzene	20	ND	115%	115%	48-146	0%	30
Total Xylenes	20	ND	110%	110%	50-139	0%	30
Surrogate Recovery		111%	107%	101%			
Date Analyzed		12/14/93	12/14/93	12/14/93			
Multiplier		1	1	1			
Filename Reference		FPD11503.D	FMD11503.D	FDD11503.D			

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

Laboratory Control Spike Report
Total Petroleum Hydrocarbons as BTEX
ITS - Anametrix Laboratories - (408)432-8192

Instrument ID : HP21
Matrix : LIQUID

Analyst : RD
Supervisor : TS
Units : ug/L

COMPOUND NAME	SPIKE AMOUNT	LCS RECOVERY	RECOVERY LIMITS
Benzene	20	110%	52-133
Toluene	20	115%	57-136
Ethylbenzene	20	120%	56-139
Total Xylenes	20	115%	56-141
Surrogate Recovery		103%	61-139
Date Analyzed		12/14/93	
Multiplier		1	
Filename Reference		MD1401E1.D	

* Limits established by Inchcape Testing Services, Anametrix Laboratories.

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

Anametrix W.O.: 9312115
Matrix : WATER
Date Sampled : 12/08/93
Date Extracted: 12/13/93

Project Number : 204-6138-0907
Date Released : 12/23/93
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)	Surrogate %Rec
9312115-01	S-1	12/14/93	50	280	87%
9312115-02	S-3	12/14/93	50	110	85%
9312115-03	S-5	12/14/93	50	ND	80%
9312115-04	S-6	12/15/93	50	ND	92%
9312115-05	S-8	12/15/93	50	210	86%
9312115-06	DUP	12/14/93	50	110	81%
9312115-07	EB	12/15/93	50	ND	84%
BD1311F1	METHOD BLANK	12/14/93	50	ND	84%

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
The surrogate recovery limits for C25 are 30-130%.

ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as C10-C28 is determined by GCFID following sample extraction by EPA Method 3510.

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

CRPatel 12/27/93
Analyst Date

Lucia Shen 12/27/93
Supervisor Date

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

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Extracted: 12/13/93
Date Analyzed : 12/14/93

Anametrix I.D. : MD1311F1
Analyst : AP
Supervisor : CP
Date Released : 12/23/93
Instrument I.D.: HP23

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	1210	97%	1240	99%	2%	47-130
SURROGATE			101%		96%		30-130

* Quality control limits established by Anametrix, Inc.

915
1510

WELL GAUGING DATA

WIC# 204-6138-0907

Project # 93208-K1 Date 12/8/93 Client Shell

Site 5251 Hopyard, Pleasanton Sampler Keith Brown

Well I.D.	Well Size (in.)	Sheen/ Odor	Depth to Immisible Liquid (feet)	Thickness of Immisible Liquid (ft.)	Volume of Immisibles Removed (ml)	Depth to Water (feet)	Depth to Well Bottom (feet)	Measured to: Top of Pipe or Grade
S-1	3	strong odor				8.23	29.82	TOB
S-2	3					9.07	24.48	
S-3	3	strong odor				9.26	24.73	
S-4	3					9.74	24.43	
S-5	3					10.19	24.64	
S-6	3					10.02	25.95	
S-7	3					9.00	25.26	
S-8	3					7.76	25.12	

SHELL WELL MONITORING DATA SHEET

Project #: 931208-K1	Wic # 204-6138-0907
Sampler: KCB	Date Sampled: 12/8/98
Well I.D.: S-1	Well Diameter: (circle one) 2 (3) 4 6 ___
Total Well Depth: Before 29.82 After	Depth to Water: Before 8.23 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: PVC (Grade) Other --	

Volume Conversion Factor (VCF):
$(12 \times (d^2/4) \times \pi)/231$
where
12 = in./foot
d = diameter (in.)
π = 3.1416
231 = cu. in./gal.

Well dia.	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.65
6"	= 1.47
10"	= 4.08
12"	= 5.87

2.7	x	3	=	23.1
1 Case Volume		Specified Volumes		gallons

Purging: Bailer ☑
Middleburg ☐
Electric Submersible ☐
Suction Pump ☐
Type of Installed Pump _____

Sampling: Bailer ☑
Middleburg ☐
Electric Submersible ☐
Suction Pump ☐
Installed Pump ☐

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
1333	69.1	7.6	1800	>200	8	
1344	68.4	7.6	1200	>200	16	
1354	67.9	7.6	1800	>200	24	

Did Well Dewater? __ If yes, gals. Gallons Actually Evacuated: 25

Sampling Time: 1400

Sample I.D.: S-1 Laboratory: Anametrix

Analyzed for: TPHG, BTEX, TPHD

Duplicate I.D.: Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:

SHELL WELL MONITORING DATA SHEET

Project #: 93208-K1	Wic # 204-6138-0907
Sampler: KCB	Date Sampled: 12/8/93
Well I.D.: S-3	Well Diameter: (circle one) 2 (3) 4 6 ___
Total Well Depth: Before 24.48 After	Depth to Water: Before 9.07 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: PVC (Grade)	Other --

Volume Conversion Factor (VCF):
$(12 \times (d^2/4) \times \pi)/231$
Where
12 = in/feet
d = diameter (in.)
π = 3.1416
231 = in³/gal

Well dia.	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.65
6"	= 1.47
10"	= 4.08
12"	= 5.87

1 Case Volume	x	Specified Volumes	=	gallons
5.7	x	3	=	17.1

Purging: Bailer ☑ Middleburg ☐ Electric Submersible ☐ Suction Pump ☐ Type of Installed Pump _____

Sampling: Bailer ☑ Middleburg ☐ Electric Submersible ☐ Suction Pump ☐ Installed Pump ☐

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
1434	65.7	7.6	1800	>200	6	
1438	67.1	7.5	1700	>200	12	
1442	66.1	7.6	1800	>200	18	

Did Well Dewater? ___ If yes, gals. Gallons Actually Evacuated: 19

Sampling Time: 1450

Sample I.D.: S-3 Laboratory: Anantrix

Analyzed for: TPHG, BTEX, TPHD

Duplicate I.D.: DUP Cleaning Blank I.D.:

Analyzed for: TPHG, BTEX, TPHD

Shipping Notations:

Additional Notations:

SHELL WELL MONITORING DATA SHEET

Project #: 931208-K1	Wic # 204-6138-0907
Sampler: KCB	Date Sampled: 12/8/93
Well I.D.: 5-5	Well Diameter: (circle one) 2 (3) 4 6 ___
Total Well Depth: Before 24.64 After	Depth to Water: Before 10.19 After
Depth to Free Product: —	Thickness of Free Product (feet):
Measurements referenced to: PVC (Grade) Other --	

Volume Conversion Factor (VCF):

$(\pi = (d^2/4) \times h)/231$

Where

π = gallons/foot

d = diameter (in.)

h = 1.0000

231 = in.3/gal

Well dia.	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.65
6"	= 1.47
10"	= 4.08
12"	= 5.87

5.3	x	3	=	15.9
1 Case Volume		Specified Volumes		gallons

Purging: Bailer ☐ Middleburg ☐ Electric Submersible ☑ Suction Pump ☐ Type of Installed Pump ___

Sampling: Bailer ☑ Middleburg ☐ Electric Submersible ☐ Suction Pump ☐ Installed Pump ☐

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
1016	65.5	7.2	1000	>200	5.5	
1018	66.1	7.3	980	152.5	12.0	
1024	65.0	7.4	970	103.7	18.5	

Did Well Dewater? — If yes, gals. Gallons Actually Evacuated: 18

Sampling Time: 1029

Sample I.D.: 5-5 Laboratory: Hnamatrix

Analyzed for: TPHG, BTEX, TPHD

Duplicate I.D.: Cleaning Blank I.D.: EB

Analyzed for: TPHG, BTEX, TPHD

Shipping Notations:

Additional Notations:

SHELL WELL MONITORING DATA SHEET

Project #: 93208-K1	Wic # 204-6138-0907
Sampler: KCB	Date Sampled: 12/8/93
Well I.D.: S-6	Well Diameter: (circle one) 2 (3) 4 6 ___
Total Well Depth: Before 25.95 After	Depth to Water: Before 10.02 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: PVC (Grade) Other --	

Volume Conversion Factor (VCF):
$(12 \times (d^2/4) \times \pi)/231$
Where
12 = in/ft
d = diameter (in.)
π = 3.1416
231 = in3/gal

Well dia.	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.65
6"	= 1.47
10"	= 4.08
12"	= 5.87

5.9	x	3	=	17.7
1 Case Volume		Specified Volumes		gallons

Purging: Bailer ☐
Middleburg ☐
Electric Submersible ☑
Suction Pump ☐
Type of Installed Pump _____

Sampling: Bailer ☑
Middleburg ☐
Electric Submersible ☐
Suction Pump ☐
Installed Pump ☐

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
1108	69.5	7.6	480	>200	6.0	very silty
1110	68.4	7.4	490	>200	12.0	
1112	70.0	7.4	480	>200	18.0	

Did Well Dewater? ___ If yes, gals. Gallons Actually Evacuated: 19

Sampling Time: 1123

Sample I.D.: S-6 Laboratory: Anametrix

Analyzed for: TPHG, BTEX, TPH D

Duplicate I.D.: Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:

SHELL WELL MONITORING DATA SHEET

Project #: 931208-K1	Wic # 204-6138-0907
Sampler: KCB	Date Sampled: 12/8/93
Well I.D.: 5-8	Well Diameter: (circle one) 2 (3) 4 6 ___
Total Well Depth: Before 25.12 After	Depth to Water: Before 2.76 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: PVC (Grade) Other --	

Volume Conversion Factor (VCF):
$(12 \times (d^2/4) \times \pi)/231$
Where
12 = in./foot
d = Diameter (in.)
π = 3.1416
231 = in.³/gal.

Well Dia.	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.65
6"	= 1.47
10"	= 4.08
12"	= 5.87

6.4	x	3	=	19.2
1 Case Volume		Specified Volumes		gallons

Purging: Bailer ☑
Middleburg ☐
Electric Submersible ☐
Suction Pump ☐
Type of Installed Pump ___

Sampling: Bailer ☑
Middleburg ☐
Electric Submersible ☐
Suction Pump ☐
Installed Pump ☐

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
1233	68.6	2.6	2400	>200	6.5	
1242	68.6	2.5	2800	>200	13.0	
1249	68.4	2.5	3000	>200	19.5	

Did Well Dewater? ___ If yes, gals. Gallons Actually Evacuated: 20

Sampling Time: 1252

Sample I.D.: 5-8 Laboratory: Anametrix

Analyzed for: TPHG, BTEX, TPHD

Duplicate I.D.: Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations: