HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

2394 Mariner Square Drive, Suite 2
Alameda, California 94501
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Massachusetts
New York
Maryland

January 22, 1998 **7-285.1**

Mr. Larry Seto
Alameda County
Health Care Services Agency
Environmental Protection Division
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502

Re: 2415 Mariner Square Drive, Alameda, California

Dear Mr. Seto:

Enclosed please find a copy of Hydro-Environmental Technologies, Inc.'s (HETI's) Quarterly Monitoring Report, Fourth Quarter 1997 for sampling conducted on December 12, 1997 at the above-referenced site.

If you have any questions or require additional information, please feel free to call me at (510) 521-2684.

Sincerely,
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

Gary M. Pischke
Senior Geologist

enclosure

cc: Mr. John Beery, Mariner Square & Associates
Mr. Mike Grant, Union Pacific, Inc.
Mr. Jeff Smith, Phillips Petroleum Company
Mr. Glen Anderson, TRMI, Inc.

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HYDRO
ENVIRONMENTAL
TECHNOLOGIES, INC.

QUARTERLY MONITORING REPORT, Fourth Quarter 1997

2415 Mariner Square Drive
Alameda, California 94501

Sampling Date: December 12, 1997

Prepared for:

Mariner Square & Associates
2900 Main Street, Suite 100
Alameda, California 94501

Union Pacific Lines, Inc.
One Market Plaza
San Francisco, California

Phillips Petroleum Company
4th and Keeler Avenue
Bartlesville, Oklahoma 74004

Texaco, Inc.
10 Universal City Plaza, Suite 830
Universal City, California 91608-7812

Prepared by:

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.
2394 Mariner Square Drive, Suite 2
Alameda, CA 94501
HETI Job No. 7-285.1

January 12, 1998

HYDRO
ENVIRONMENTAL
TECHNOLOGIES, INC.

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1.0 INTRODUCTION

This report presents the results of work conducted in the Fourth quarter of 1997 by Hydro-Environmental Technologies, Inc. (HETI) at 2415 Mariner Square Drive in Alameda, California (Figure 1). All work was performed in accordance with California State Water Resources Control Board and San Francisco Bay Regional Water Quality Control Board (SFRWQCB) recommended guidelines and procedures. A copy of HETI 's standard sampling protocols were submitted previously in HETI's Quarterly Monitoring Report, Fourth Quarter 1996 dated January 15, 1997.

2.0 BACKGROUND

The subject site is located in an area of commercial, light manufacturing and military usage immediately adjacent to and east of the Fleet Industrial Supply Center, Alameda Annex and south of the Oakland Inner Harbor. The site was reclaimed from marshlands in the late 1920's. Available maps indicate tidal channels were present in the former marshland covered by the site (Figure 2). In the past, the site was used for bulk fuel storage and distribution of refined oils, motor lubricants and fuel oils for use by ships until 1972.

Currently, the site is occupied by railroad boxcars which have been converted to offices, a restaurant and several buildings housing companies catering to the marine industry such as boat sales, storage, repairs, painting and sail manufacturing. The site no longer has bulk oils or fuel storage.

Proposed plans for the site include dividing the property into two parcels. A hotel and parking lot would be constructed on the eastern half parcel. A dry boat storage facility and parking would be constructed on the western half parcel. The western half parcel would include the existing monitoring wells and related environmental responsibility which would remain under Mariner Square and Associates.

The local geology consists primarily of clayey to silty sand (hydraulic fill) from approximately 7 to 17 feet below ground surface (bgs). Below the hydraulic fill, which was mechanically placed prior to the development of this portion of Alameda, the sediment consists of olive-grey sandy to silty clay with sand lenses, shells and organic matter from approximately 13 to 30 feet bgs (bay mud). Regional ground water flow is predominantly westerly, towards San Francisco Bay.

On November 25, 1991, AllWest Environmental, Inc. (AllWest) performed a Phase I Site Assessment of the property. AllWest recommended a soil and ground water investigation related to the fuel and oil storage, refining and distribution, and for contaminants related to boat maintenance, painting and repair. For complete details see AllWest's *Environmental Assessment* report dated December 3, 1991.

In April 1992, AllWest supervised the installation of 24 geoprobes and collecting and analyzing 23 soil samples and four ground water samples. Elevated concentrations of petroleum hydrocarbons were detected in 20 of the soil samples and two of the ground water samples with maximum concentrations of 13,000 parts per million (ppm) and 1,200 ppm, respectively. For complete details see AllWest's *Subsurface Investigation Report* dated May 1, 1992.

In 1992, Subsurface Consultants, Inc. (SCI) supervised the drilling of six soil borings and the installation of six two-inch diameter monitoring wells designated MW-1 through MW-6. Petroleum hydrocarbon concentrations were detected in all soil samples collected and analyzed from the soil borings (Subsurface Consultants, Inc., *Quarterly Groundwater Monitoring Report*, dated December 23, 1992).

On June 14, 1994, McLaren/Hart supervised the drilling of 13 soil borings, collecting and analyzing 28 soil samples and the installation of three four-inch diameter monitoring wells designated MW-7, MW-8, and MW-9. In the past, hydrocarbons were detected in ground water samples collected from wells MW-1 through MW-6, and vinyl chloride and Freon-113 were detected in ground water samples collected from wells MW-2 and MW-4 (McLaren/Hart, *Supplemental Site Investigation and Limited Feasibility Study Report*, dated March 31, 1995). All monitoring well locations are shown on Figure 2, the Site Plan.

On August 6, 1997, the two underground storage tanks were removed. Soil and ground water samples were collected by HETI from the tank excavations. Laboratory results indicated hydrocarbons were present in both soil and ground water (HETI, *Tank Removal Report*, dated November 5, 1997).

In a letter from Ms. Juliet Shin, Alameda County Environmental Protection Division, dated December 26, 1995, the County required a minimum of four quarterly ground water monitoring events to delineate the plume and assure that migration is not occurring off-site or into the San Francisco Bay. Two monitoring events were performed in 1996.

In a subsequent letter and in the meeting of October 16, 1997, Ms. Juliet Shin, Mr. Larry Seto, and Ms. Madhulla Logan of the ACHCSA discussed the requirements for closure of the site. This Quarterly Monitoring Report presents the results of the second sampling event; the first event was the third quarter 1997, as agreed by ACHCSA. Two additional quarters of monitoring and sampling are required to fully evaluate the risk from hydrocarbons in ground water at the site.

Closure of the site may be possible using the Regional Board's evaluation of the risk assessment for the Ecological Protection Zone (EPZ), which is any site within 300 feet of waters of the San Francisco Bay, performed by the Consolidated Tenant Group at the San Francisco International Airport (SFIA). The sites at SFIA have similar conditions of fill over Bay Mud and hydrocarbon concentrations. The Regional Board has used the EPZ levels for site cleanup and closure evaluation.

3.0 FIELD ACTIVITIES

On December 12, 1997, the monitoring wells were gauged for depth to first encountered ground water to the nearest hundredth of a foot using an electronic water sounder. Following gauging, all monitoring wells were purged of a minimum of three well volumes or purged dry while pH, temperature and conductivity measurements were monitored for stabilization. Separate phase hydrocarbons (SPH) of 0.39 feet were detected in well MW-6; however, the well was purged and sampled.

Purged water was stored on-site in two 55-gallon DOT drums with tight fitting lids. Gauging and purging data are included in Table 1 and Appendix A.

Following recovery of the water levels to at least 80% of their static level, ground water samples were collected from the monitoring wells using dedicated polyethylene bailers. Samples were then labeled, documented on a chain-of-custody form, and stored in a chilled cooler for transport to the analytical laboratory.

Ground water samples were analyzed for the following:

- total petroleum hydrocarbons as diesel (TPHd), motor oil (TPHmo) and gasoline (TPHg) by GC-FID using EPA Method 3510 for extraction, and EPA 3630M for silica gel cleanup;
- benzene, toluene, ethylbenzene and total xylenes (BTEX), and methyl-tert butyl ether (MTBE) using EPA method 8020;
- polynuclear aromatics (PNAs) by EPA Method 8310; and
- vinyl chloride by EPA Method 8010.

The sample analyses were performed by American Environmental Network (AEN), a state of California DHS-certified laboratory located in Pleasant Hill, California.

4.0 RESULTS

4.1 Ground Water Elevation

On December 12, 1997, depth to first encountered ground water in the wells ranged between 3.65 to 5.18 feet below the top of the well casing. Depth to water measurements and calculated ground water elevations in the wells are presented on Table 1. The depth to water measurements and the wellhead elevation data were used to calculate ground water elevation contours. These contours are shown on Figure 3, the Ground Water Contour Map. Figure 3 shows that ground water flows towards the southeast and east, with a ground water gradient of 0.57 to 0.81%.

4.2 Ground Water Sample Analytical Results

The analytical results indicated that dissolved TPHd was present in the ground water samples collected from five of the nine wells sampled, in concentrations ranging from 90 (MW-5) to 1,900,000 micrograms per liter (µg/L) (MW-6). TPHd was not detected above the laboratory method detection limit in wells MW-2, MW-3, MW-7 and MW-8. The analytical results are summarized in Tables 1 and 2, and a copy of the laboratory report is included in Appendix B.

TPHmo was not detected above the indicated laboratory method detection limit in the ground water samples collected from the nine wells except in well MW-6 at a concentration of 430,000 µg/L.

TPHg was detected above the indicated laboratory method detection limit in the ground water samples collected from seven of the nine wells in concentrations ranging from 80 (MW-3) to 21,000 µg/L (MW-6). TPHg was not detected above the laboratory method detection limit in wells MW-1 and MW-8. These results are shown on Figure 4, the TPHg Isoconcentration Map.

Benzene was detected above the indicated laboratory method detection limit in the ground water samples collected from six of the nine wells in concentrations ranging from 0.7 (MW-3) to 26 µg/L (MW-5). These results are shown on Figure 5, the Benzene Isoconcentration Map. MTBE was detected above the indicated laboratory method detection limit in the ground water samples collected from four of the nine wells in concentrations ranging from 9 (MW-3) to 320 µg/L (MW-4).

Vinyl chloride was not detected above the indicated laboratory method detection limit in any of the wells sampled except well MW-4 with a concentration of 3 µg/L.

Concentrations of polynuclear aromatics (PNAs) were detected above the indicated laboratory method detection limits in the ground water samples collected from all wells. These results are shown on Figure 6, The Polynuclear Aromatics Distribution Map.

The California Department of Health Services and the U.S. Environmental Protection Agency's (EPA) Drinking Water Standards, primary maximum contaminant levels (MCLs) for benzene are 1 µg/l and 5 µg/l, respectively. The state and federal MCLs for vinyl chloride are 0.5 µg/l and 2 µg/l, respectively. There are no state or federal MCLs for TPHd, TPHmo, or TPHg. The MCLs are listed on Tables 1 and 2.

As a comparison, the risk based standards for TPHg, TPHd, BTEX and vinyl chloride from San Francisco International Airport are included on Table 1. The standard shown is for the Ecological Protection Zone, which is any site within 300 feet of waters of the San Francisco Bay.

5.0 SUMMARY AND CONCLUSIONS

- The general ground water flow direction across the site is towards the southeast and east with an approximate ground water gradient ranging from 0.57% to 0.81%.

- TPHmo was detected in one of the nine wells sampled. TPHd was detected in five of the nine wells sampled. TPHg was detected in seven of the nine wells sampled.

- Benzene was detected in six of the nine wells sampled and exceeded the state MCL in five of the samples.

- Vinyl chloride was detected in one of the nine wells sampled and exceeded the state MCL in that sample.

- PNAs were detected in all wells sampled.

- SPH was noted in well MW-6 at a thickness of 0.39 feet. Previously, SPH had been noted in well MW-6 ranging from a sheen to 0.16 feet. The well was purged and sampled this quarter. TPHd and TPHmo concentrations reflect the SPH in the well. TPHg is a smaller constituent of the SPH in the well.

- The ground water flow direction and laboratory results from this sampling event are generally consistent with the results noted in the Quarterly Monitoring Report Third Quarter 1997 dated December 8, 1997.

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

60 CERTIFICATION

This report was prepared under the supervision of a registered geologist. All statements, conclusions and recommendations are based solely upon field observations and analytical analyses performed by a state-certified laboratory related to the work performed by Hydro-Environmental Technologies, Inc.

It is possible that variations in the soil or ground water conditions exist beyond the points explored in this investigation. Also, site conditions are subject to change at some time in the future due to variations in rainfall, temperature, regional water usage, or other factors.

The service performed by Hydro-Environmental Technologies, Inc. has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

Hydro-Environmental Technologies, Inc. includes in this report chemical analytical data from a state-certified laboratory. These analyses are performed according to procedures suggested by the U.S. EPA and the State of California. Hydro-Environmental Technologies, Inc. is not responsible for laboratory errors in procedure or result reporting.

Prepared by:

Gary Pischke, C.E.G.
Senior Geologist

REGISTERED GEOLOGIST
GARY PISCHKE
No. 1501
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

Reviewed by:

Michael Zimmerman, P.E.
Western Regional Manager

Table 1

GROUND WATER ELEVATONS AND SAMPLE ANALYTICAL RESULTS
Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well I.D. #	Sample Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHd (µg/L)	TPHmo (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Vinyl Cl (µg/L)
MW-1	7/30/92	5.08	6.41	-1.33	--	--	--	--	--	--	--	--	--
(SCI)	7/31/92	5.08	6.41	-1.33	--	--	--	--	--	--	--	--	--
	8/3/92	5.08	6.50	-1.42	580	ND<5000	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
	8/5/92	5.08	6.50	-1.42	--	--	--	--	--	--	--	--	--
	11/20/92	5.08	6.23	-1.15	600	ND<5000	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<2
	6/13/94	11.99	5.69	6.30	--	--	--	--	--	--	--	--	--
	9/27/94	11.99	5.64	6.35	530	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--
	10/25/94	11.99	5.86	6.13	--	--	--	--	--	--	--	--	--
	6/28/96	11.99	5.34	6.65	ND<50	ND<200 (1)	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	--	ND<0.5
	10/31/96	11.99	5.38	6.61	93	ND<200	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	11.99	5.08	6.91	ND<50	ND<200	120	4.7	ND<1.0	3.7	21	ND<10	ND<0.8
	12/12/97	11.99	4.16	7.83	ND<50	ND<200	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<5	ND<2
MW-2	7/30/92	8.30	5.98	2.32	--	--	--	--	--	--	--	--	--
(SCI)	7/31/92	8.30	6.07	2.23	--	--	--	--	--	--	--	--	--
	8/3/92	8.30	6.11	2.19	2,200	ND<5000	--	ND<0.5	6.5	3.2	5.3	--	--
	8/5/92	8.30	6.18	2.12	--	--	--	--	--	--	--	--	--
	11/20/92	8.30	6.42	1.88	2,100	ND<5000	340	ND<0.5	ND<0.5	ND<0.5	2.4	--	ND<2
	6/13/94	15.21	5.92	9.29	--	--	--	--	--	--	--	--	--
	9/26/94	15.21	6.51	8.70	ND<50	240	320	ND<3.0	ND<3.0	ND<3.0	ND<3.0	--	--
	10/25/94	15.21	6.67	8.54	--	--	--	--	--	--	--	--	--
	6/28/96 (2)	15.21	5.68	9.53	100 (3,4)	ND<200 (1)	980	0.5	ND<1.0	2.3	3.1	--	ND<0.5
	10/31/96	15.21	6.37	8.84	180	ND<200	220	ND<0.5	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	15.21	6.17	9.04	150 (8)	ND<200	900	0.8	ND<1.0	2	6.2	ND<10	ND<0.8
	12/12/97	15.21	5.18	10.03	ND<50	ND<200	360	1.1	ND<0.5	2.2	3	ND<5	ND<2
MW-3	7/30/92	7.28	4.97	2.31	--	--	--	--	--	--	--	--	--
(SCI)	7/31/92	7.28	5.05	2.23	--	--	--	--	--	--	--	--	--

Table 1

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Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well I.D. #	Sample Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHd (µg/L)	TPHmo (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Vinyl Cl (µg/L)
MW-3	8/3/92	7.28	4.43	2.85	1,000	ND<5000	--	ND<0.5	1	ND<0.5	2.4	--	--
	8/5/92	7.28	5.06	2.22	--	--	--	--	--	--	--	--	--
	11/20/92	7.28	5.27	2.01	2,000	ND<5000	98	ND<0.5	ND<0.5	0.9	1	--	ND<2
	6/13/94	14.19	4.91	9.28	--	--	--	--	--	--	--	--	--
	9/27/94	14.19	5.29	8.90	720	ND<50	ND<50	ND<3.0	ND<0.3	ND<0.3	ND<0.3	--	--
	10/25/94	14.19	5.42	8.77	--	--	--	--	--	--	--	--	--
	6/28/96	14.19	4.69	9.50	120 (3)	ND<200 (1)	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	--	ND<0.5
	10/31/96	14.19	5.24	8.95	160	ND<200	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	14.19	5.04	9.15	70 (8)	ND<200	ND<100	0.8	ND<1.0	ND<1.0	3.3	ND<10	ND<0.8
	12/12/97	14.19	4.32	9.87	ND<50	ND<200	80	0.7	ND<0.5	0.7	4	9	ND<2
MW-4	7/30/92	7.05	4.81	2.24	--	--	--	--	--	--	--	--	--
(SCI)	7/31/92	7.05	4.88	2.17	--	--	--	--	--	--	--	--	--
	8/5/92	7.05	4.96	2.09	1,300	ND<5000	--	**16**	2.6	0.6	2.7	--	**9**
	11/20/92	7.05	5.13	1.92	2,400	ND<5000	330	**31**	5.2	0.7	2	--	**13**
	6/13/94	13.95	4.50	9.45	--	--	--	--	--	--	--	--	--
	9/27/94	13.95	5.39	8.56	890	ND<50	ND<50	**12**	0.43	ND<0.3	ND<0.3	--	--
	10/25/94	13.95	5.55	8.40	--	--	--	--	--	--	--	--	--
	6/28/96	13.95	4.25	9.70	170 (3,4)	ND<200 (1)	180	**4**	ND<1.0	ND<1.0	ND<2.0	--	**2.5**
	10/31/96	13.95	5.05	8.90	330	ND<200	110	**6.2**	ND<1.0	ND<1.0	ND<2.0	ND<10	**4.3**
	9/30/97	13.95	4.73	9.22	170 (8)	ND<200	650	**3.9**	ND<1.0	ND<1.0	ND<2.0	**460**	**3.1**
	12/12/97	13.95	3.65	10.30	ND<50	ND<200	260	**4.9**	0.9	ND<0.5	ND<2.0	**320**	**3**
MW-5	7/30/92	7.68	5.30	2.38	--	--	--	--	--	--	--	--	--
(SCI)	7/31/92	7.68	5.42	2.26	--	--	--	--	--	--	--	--	--
	8/3/92	7.68	5.40	2.28	2,200	ND<5000	--	**9**	6	49	11	--	--
	8/5/92	7.68	5.47	2.21	--	--	--	--	--	--	--	--	--
	11/20/92	7.68	5.74	1.94	1,500	ND<5000	4,800	**7.6**	12	5.8	26	--	ND<2

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Mariner Square & Associates
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Well I.D. #	Sample Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHd (µg/L)	TPHmo (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Vinyl Cl (µg/L)
MW-5	6/13/94	14.60	5.30	9.30	--	--	--	--	--	--	--	--	--
	9/26/94	14.60	5.82	8.78	780	ND<500	3,100	7.9	11	8.7	14	--	--
	10/25/94	14.60	5.95	8.65	--	--	--	--	--	--	--	--	--
	6/28/96	14.60	5.04	9.56	610 (3,4)	790 (1)	5,000	1.2	6.8	21	14	--	ND<0.5
	10/31/96	14.60	5.73	8.87	4,900	860	6,800	20	5.9	15	19	ND<10	ND<1.0
	9/30/97	14.60	5.45	9.15	4100 (8)	520	9,000	35	5.3	36	32	12	ND<0.8
	12/12/97	14.60	4.71	9.89	90	ND<200	3,400	26	4.6	5.9	13	11	ND<2
MW-6	6/13/94	14.81	5.96	8.85	--	--	--	--	--	--	--	--	--
	9/27/94	14.81	5.90	8.91	9,900	3,200	1,100	ND<3.0	ND<3.0	ND<3.0	ND<3.0	--	--
	10/7/94	14.81	5.82	8.99	--	--	--	--	--	--	--	--	--
	10/14/94	14.81	5.89	8.92	--	--	--	--	--	--	--	--	--
	10/21/94	14.81	5.90	8.91	--	--	--	--	--	--	--	--	--
	10/25/94	14.81	5.99	8.82	--	--	--	--	--	--	--	--	--
	6/28/96	14.81	5.33	9.48	SPH (0.16')	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	10/31/96	14.81	5.17	9.64	SPH (0.02')	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	9/30/97	14.81	5.58	9.23	Sheen	--	--	--	--	--	--	--	--
SPH (0.39')	12/12/97	14.81	4.84	9.97	1,900,000	430,000	21,000	5	ND<0.5	8	19	ND<50	ND<2
MW-7	9/27/94	13.61	5.95	7.66	1,800	ND<250	ND<250	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--
	10/25/94	13.61	6.09	7.52	--	--	--	--	--	--	--	--	--
	6/28/96	13.61	5.42	8.19	490 (3,4)	ND<200 (1)	560	0.6	ND<1.0	ND<1.0	2.7	--	ND<0.5
	10/31/96	13.61	5.90	7.71	420	ND<200	200	1.1	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	13.61	5.71	7.90	190 (8)	ND<200	750	8.1	5.3	ND<1.0	6.9	ND<10	ND<0.8
	12/12/97	13.61	4.58	9.03	ND<50	ND<200	420	7.9	ND<0.5	ND<0.5	5	ND<5	ND<2
MW-8	9/27/94	12.64	6.06	6.58	320	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--
	10/25/94	12.64	6.26	6.38	--	--	--	--	--	--	--	--	--

Table 1

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Well I.D. #	Sample Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHd (µg/L)	TPHmo (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Vinyl Cl (µg/L)
MW-8	6/28/96	12.64	6.00	6.64	58 (3)	ND<200 (1)	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	--	ND<0.5
	10/31/96	12.64	5.85	6.79	120	ND<200	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	12.64	5.60	7.04	70 (8)	ND<200	110	4.2	ND<1.0	3.4	16	ND<10	ND<0.8
	12/12/97	12.64	4.87	7.77	ND<50	ND<200	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.0	15	ND<2
MW-9	9/26/94	14.92	5.88	9.04	2,200	ND<500	ND<500	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--
	10/25/94	14.92	6.04	8.88	--	--	--	--	--	--	--	--	--
	6/28/96	14.92	5.14	9.78	550 (3,4)	ND<200 (1)	390	5.2	ND<1.0	ND<1.0	ND<2.0	--	ND<0.5
	10/31/96	14.92	6.37	8.55	590	720	300	5.9	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	14.92	5.59	9.33	460 (8)	ND<200	150	0.6	ND<1.0	ND<1.0	2.7	ND<10	ND<0.8
	12/12/97	14.92	4.53	10.39	ND<50	ND<200	180	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<5	ND<2
CA Primary MCL (5)					--	--	--	1	100 (7)	680	1,750	35 (7)	0.5
Federal Primary MCL (6)					--	--	--	5	1,000	700	10,000	--	2
Saltwater Ecological Protection Zone Tier 1 (SFIA)					100	--	100	71	43	5000	2,200	--	17
Saltwater Ecological Protection Zone 1997 (SFIA)					393	site specific	9,150	71	86	5000	2,200	--	17

Table 1

GROUND WATER ELEVATONS AND SAMPLE ANALYTICAL RESULTS

Mariner Square & Associates

2415 Mariner Square Drive

Alameda, CA

Well I.D. #	Sample Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHd (µg/L)	TPHmo (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Vinyl Cl (µg/L)

Notes:

TOC : Top of well casing referenced to mean sea level. Survey conducted by a state-licensed surveyor.
DTW : Depth to water.
GWE : Ground water elevation.
TPHg : Total petroleum hydrocarbons as gasoline by EPA Method 8015 (modified).
BTEX : Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020.
TPHd : Total petroleum hydrocarbons as diesel by EPA Method 8015 (modified).
TPHmo : Total Petroleum Hydrocarbons as lubricating oil by Cal LUFT manual DHS method with EPA 3630 (modified)- silica gel cleanup.
Vinyl Cl : Vinyl chloride by EPA Method 524.2.
µg/L : Micrograms per Liter.
--- : Not analyzed/sampled.
ND : Not detected above the indicated laboratory method detection limit.
(SPH) : Separate phase hydrocarbons - No sample collected.
(1) : Lubricating oil can not be qualitatively identified by type of oil because of chromatographic likeness of different oil types. Due to non-volatility of certain oils, much of the oil present may never be quantified by this gas chromatographic method. Quantitation obtained for lubricating oil by this method should, therefore, be treated as an estimate. This method quantifies lubricating oil against 10-W-40 standards. For the most accurate analysis of lubricating oil, an infrared method is recommended.
(2) : Water sample collected from MW-2 was analyzed for Freon 113 by EPA Method 8010A. Results were below the detection limit of 1.0 µg/L.
(3) : Qualitative identification is uncertain because the material present does not match laboratory standards.
(4) : Quantitation uncertain due to matrix interferences.
(5) : Drinking Water Standards, California Department of Health Services, Primary Maximum Contaminant Level (MCL).
(6) : Drinking Water Standards, U.S. Environmental Protection Agency, Primary Maximum Contaminant Level (MCL).
(7) : California State Action Level, Department of Health Services.
(8): Qualitative identification of diesel fuel is uncertain because the material present does not match laboratory standards.
SFIA San Francisco Internation Airport standards from Board Order 95-136 and modifications by Consolidated Tenant Group and Regional Board.
[ ] = The analytical result is greater than the CA Primary MCL value, or EPZ limit

Table 2
POLYNUCLEAR AROMATICS SAMPLE ANALYTICAL RESULTS
Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well No.	Sample Date	Naph-thalene µg/L	Acenaph-thylene µg/L	Acenaph-thene µg/L	Fluorene µg/L	Phenan-threne µg/L	Anthra-cene µg/L	Fluoran-thene µg/L	Pyrene µg/L
MW-1	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	9/30/97	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	12/12/97	0.6	ND<1.0	ND<0.5	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
MW-2	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	0.82	0.77
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	9/30/97	ND<2.0	12.0	3.3	ND<2.0	ND<1.0	ND<1.0	1.0	1.1
	12/12/97	ND<0.5	ND<1.0	ND<0.5	ND<0.1	ND<0.1	ND<0.1	0.2	0.3
MW-3	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	9/30/97	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	12/12/97	0.6	ND<1.0	ND<0.5	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
MW-4	6/28/96	ND<2.0	2.5	2.3	ND<2.0	ND<1.0	ND<1.0	1.8	2.1
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	0.92	1.6
	9/30/97	ND<2.0	ND<2.0	3.7	ND<2.0	ND<1.0	ND<1.0	1.5	1.9
	12/12/97	0.8	ND<1.0	ND<0.5	ND<0.1	ND<1.0	ND<0.1	0.4	0.4
MW-5	6/28/96	2.0	96 (1)	3.0	ND<2.0	9.5	2.3	8.6	8.4
	10/31/96	ND<2.0	150	8.3	2.4	14	2.9	11	15
	9/30/97	2.6	100.0	11.0	5.0	16.0	3.9	15.0	16.0
	12/12/97	ND<0.5	ND<1.0	1.0	0.8	2.9	0.6	1.7	1.2
MW-6	6/28/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	10/31/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	9/30/97	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	12/12/97	ND<100	ND<200	ND<100	90.0	80.0	ND<20	250.0	40.0

Table 2
POLYNUCLEAR AROMATICS SAMPLE ANALYTICAL RESULTS
Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well No.	Sample Date	Naph-thalene µg/L	Acenaph-thylene µg/L	Acenaph-thene µg/L	Fluorene µg/L	Phenan-threne µg/L	Anthra-cene µg/L	Fluoran-thene µg/L	Pyrene µg/L
MW-7	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	9/30/97	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	12/12/97	1.0	ND<1.0	ND<0.5	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
MW-8	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	9/30/97	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	12/12/97	0.6	ND<1.0	ND<0.5	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
MW-9	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	0.73	ND<0.5
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	0.69	1.10
	9/30/97	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	0.56
	12/12/97	1.4	ND<1.0	ND<0.5	0.2	ND<0.1	0.2	0.6	0.3
CA Primary MCLs (2)		--	--	--	--	--	--	--	--
EPA Primary MCLs (3)		--	--	--	--	--	--	--	--

Table 2
POLYNUCLEAR AROMATICS SAMPLE ANALYTICAL RESULTS
Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well No.	Sample Date	Benzo[a]-anthracene µg/L	Chrysene µg/L	Benzo[b]fluor-anthene µg/L	Benzo[k]fluor-anthene µg/L	Benzo[a]-pyrene µg/L	Dibenzo[a,h]-anthracene µg/L	Benzo[g,h,i]-perylene µg/L	Indeno[1,2,3-cd]-pyrene µg/L
MW-1	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
MW-2	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
MW-3	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
MW-4	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
MW-5	6/28/96	1.0	0.68	ND<0.5	ND<0.5	0.78	ND<0.5	0.57	ND<0.5
	10/31/96	1.9	1.8	0.51	ND<0.5	0.84	ND<0.5	ND<0.5	ND<0.5
	9/30/97	2.1	2.5	ND<0.5	ND<0.5	1.1	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
MW-6	6/28/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	10/31/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	9/30/97	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	12/12/97	25.0	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20

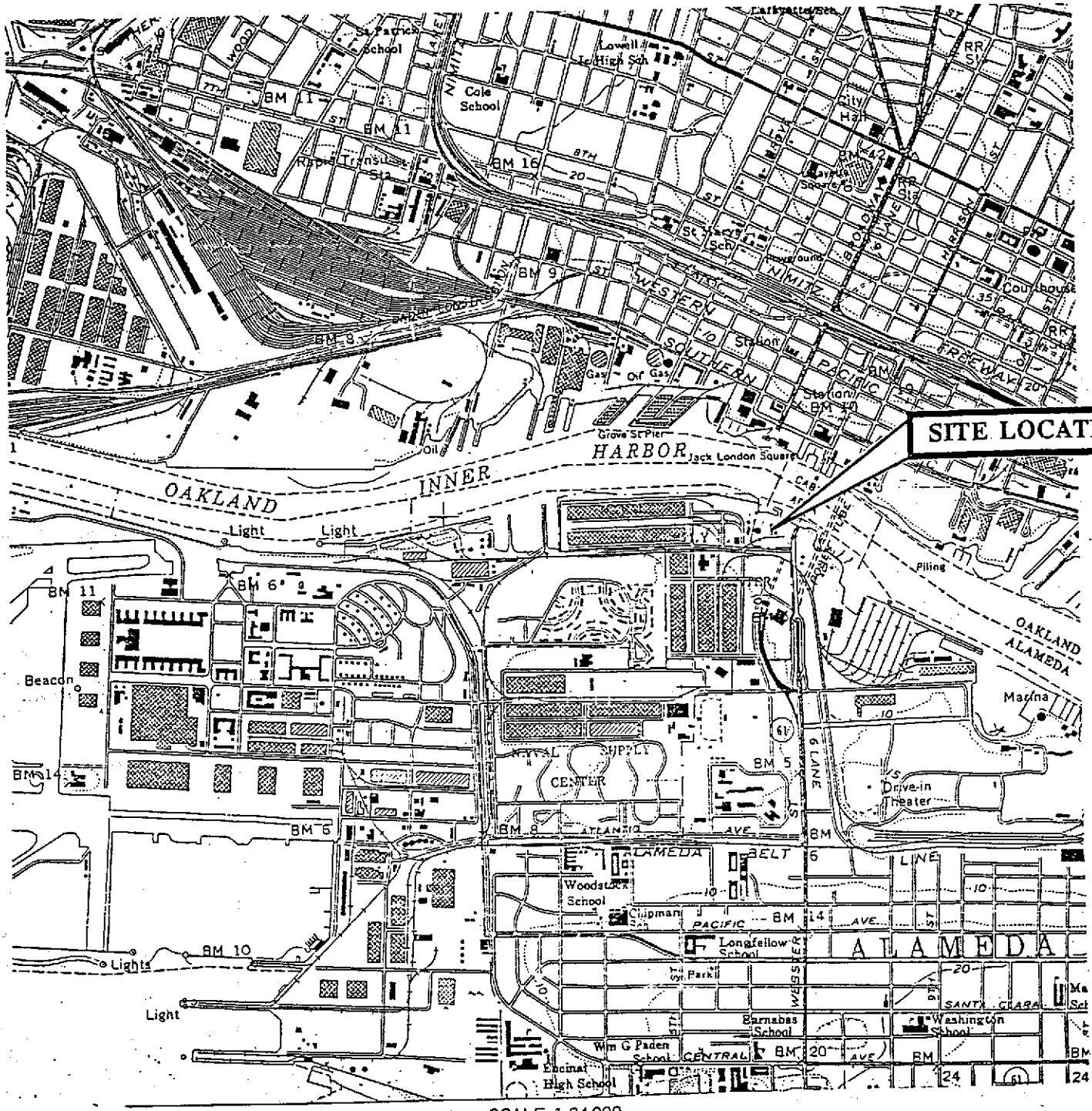
Table 2
POLYNUCLEAR AROMATICS SAMPLE ANALYTICAL RESULTS
Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well No.	Sample Date	Benzo[a]-anthracene µg/L	Chrysene µg/L	Benzo[b]fluor-anthene µg/L	Benzo[k]fluor-anthene µg/L	Benzo[a]-pyrene µg/L	Dibenzo[a,h]-anthracene µg/L	Benzo[g,h,i]-perylene µg/L	Indeno[1,2,3-cd]-pyrene µg/L
MW-7	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
MW-8	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
MW-9	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
CA Primary MCLs (2)		--	--	--	--	--	--	--	--
EPA Primary MCLs (3)		0.1	0.2	0.2	0.2	0.2	0.3	--	0.4

Table 2
POLYNUCLEAR AROMATICS SAMPLE ANALYTICAL RESULTS
Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Notes:

Polynuclear Aromatics:	Polynuclear Aromatics by EPA Method 8310.
Well No. :	Well identification number used by HETI.
Date:	Date ground water sample was collected.
µg/L :	Micrograms per liter (ppb).
ND :	Not detected in concentrations exceeding the laboratory method detection limit.
(1) :	The qualitative identification for Acenaphthylene is uncertain due to matrix interferences.
(2) :	Drinking Water Standards, California Department of Health Services, Primary Maximum Contaminant Level (MCL).
(3) :	Drinking Water Standards, U.S. Environmental Protection Agency, Primary Maximum Contaminant Level (MCL).
SPH :	Separate phase hydrocarbons - No sample collected.
	= The analytical result is greater than the MCL value.



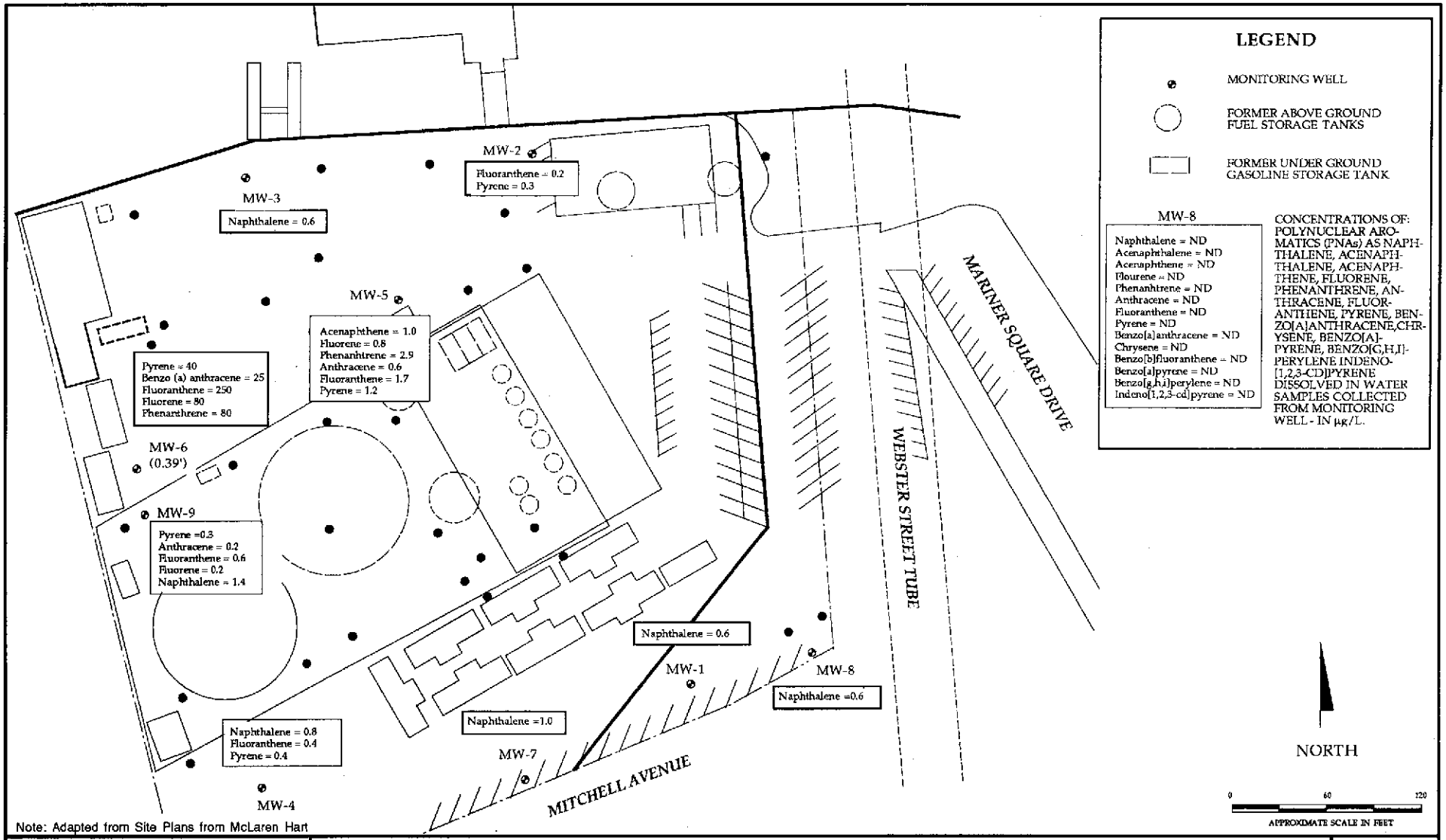
SOURCE: USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)
TITLED: OAKLAND WEST QUADRANGLE
PHOTOREVISED 1980

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

SITE LOCATION MAP
Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 1

7-285 11/96



Note: Adapted from Site Plans from McLaren Hart

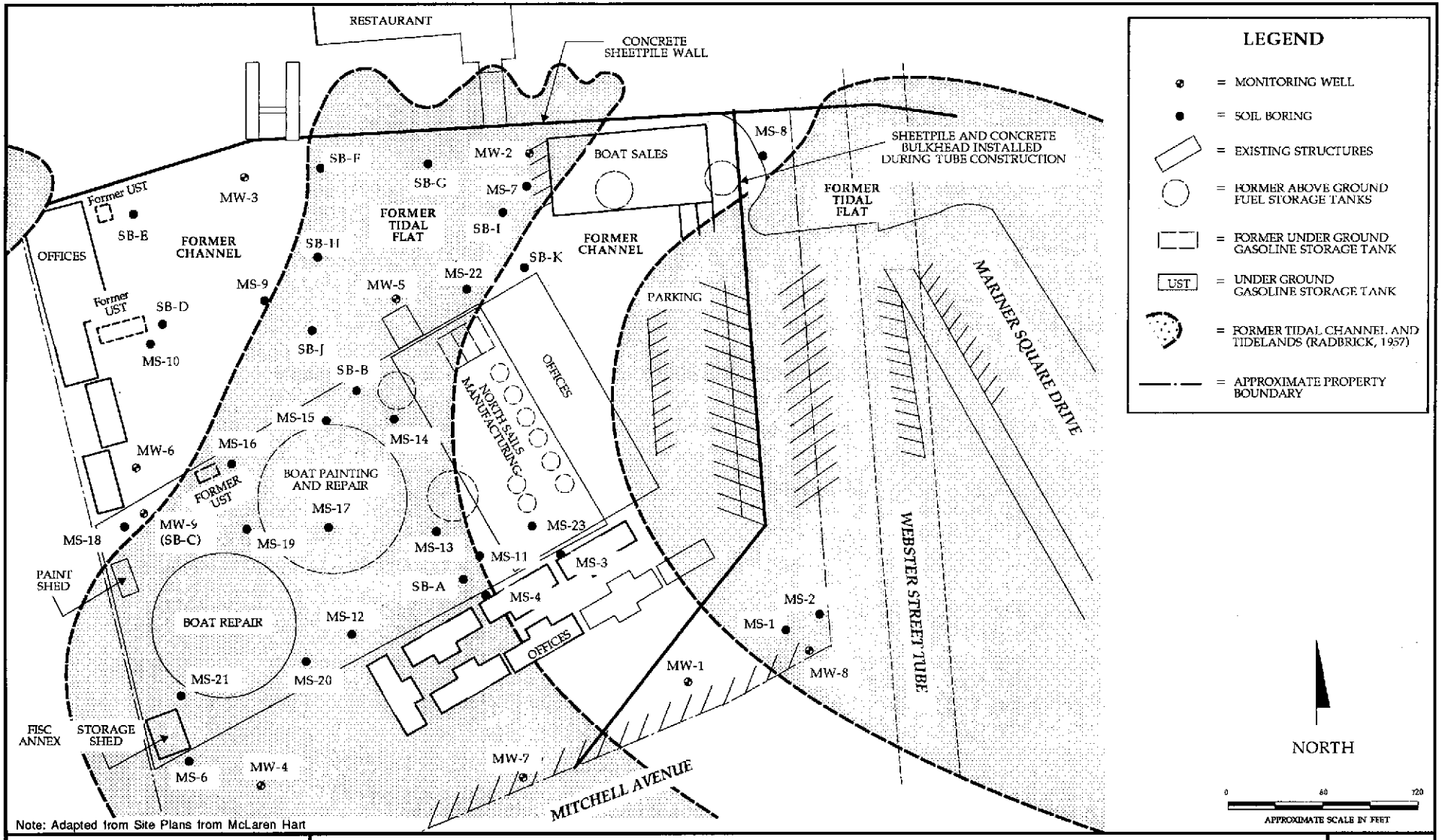
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

POLYNUCLEAR AROMATICS DISTRIBUTION MAP

Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 6

7-285.1 12/97



Note: Adapted from Site Plans from McLaren Hart

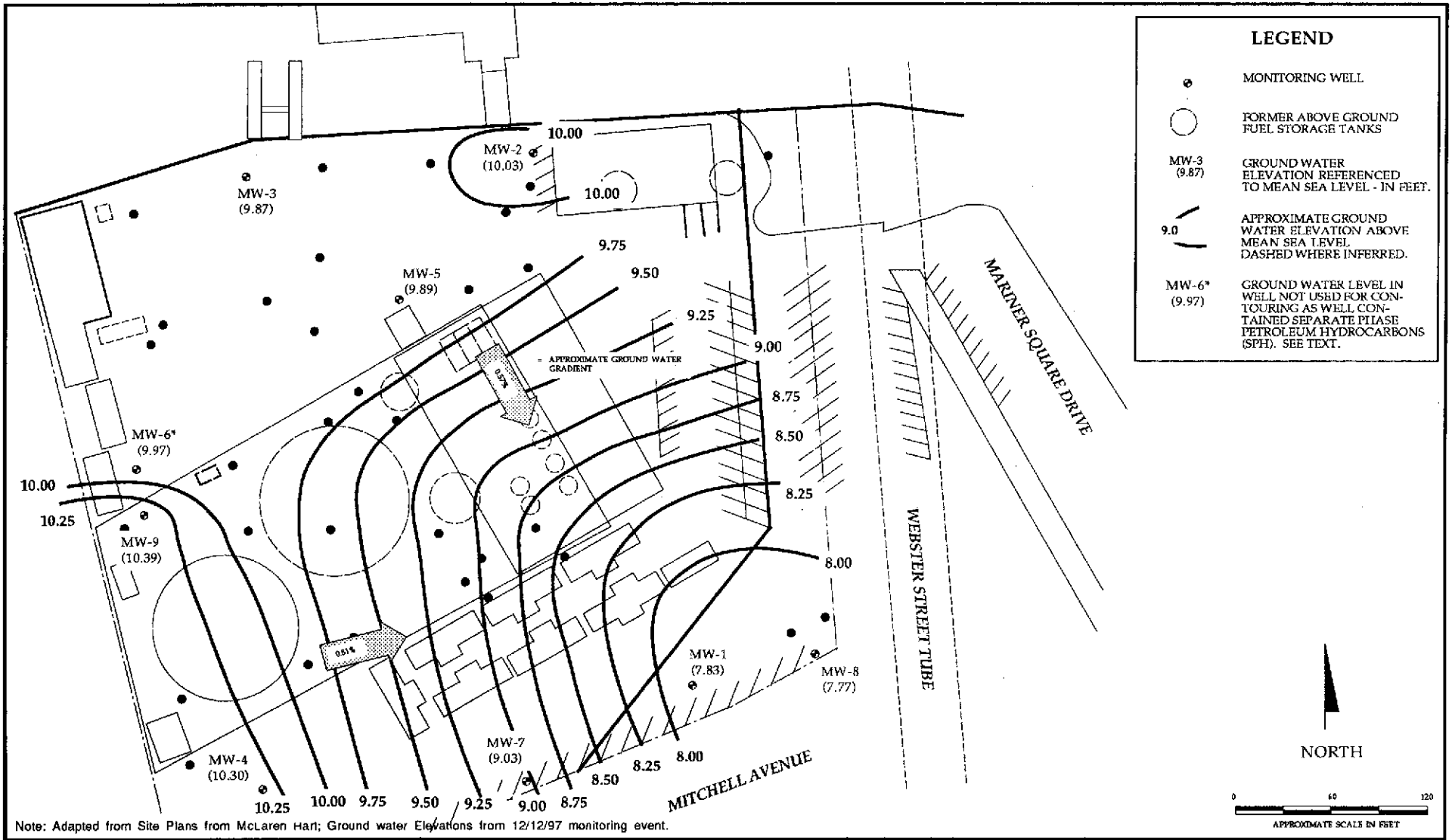
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

SITE PLAN

Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 2

7-285.1 11/97



Note: Adapted from Site Plans from McLaren Hart; Ground water Elevations from 12/12/97 monitoring event.

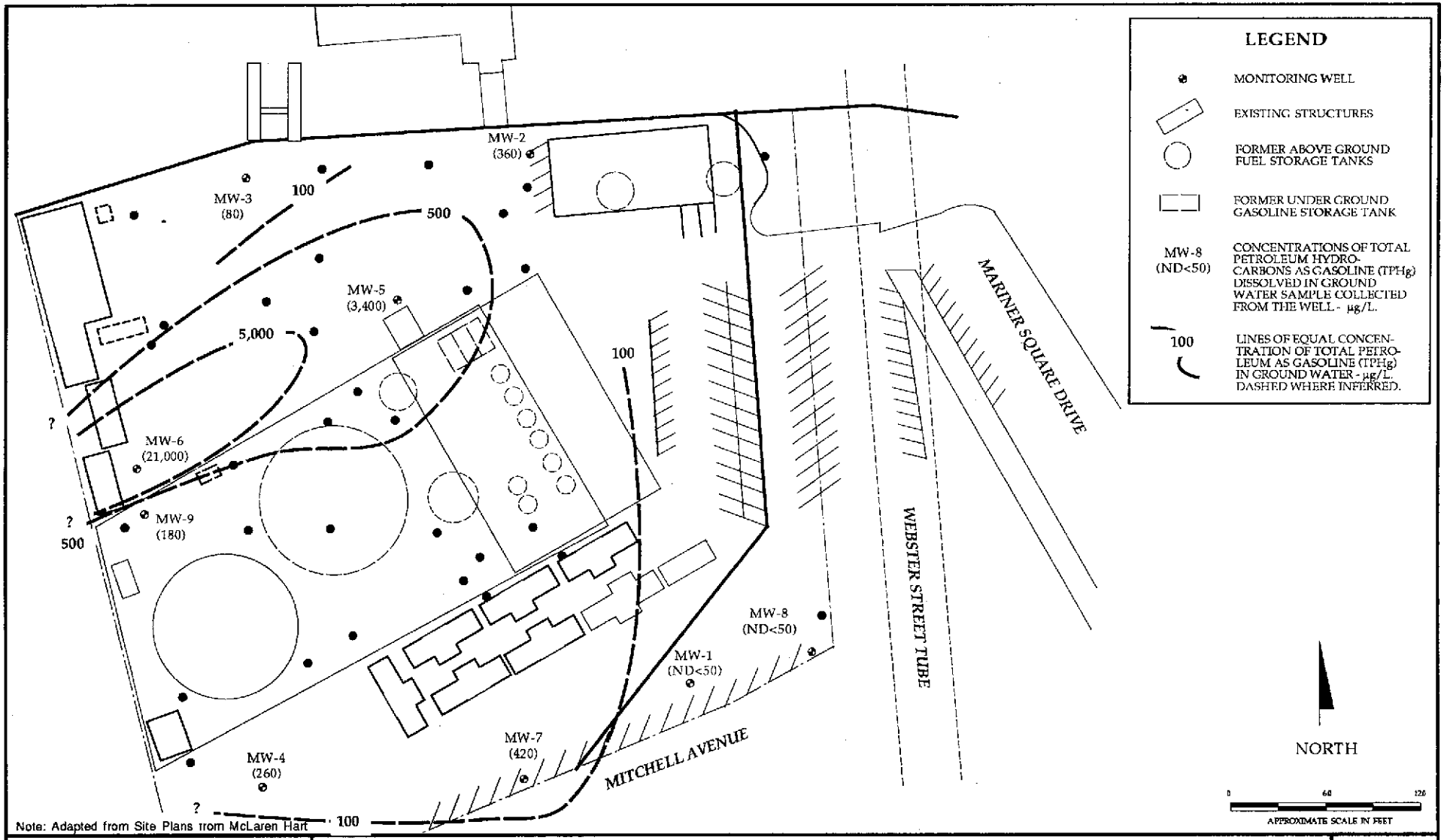
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

GROUND WATER CONTOUR MAP

Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 3

7-285.1 12/97



Note: Adapted from Site Plans from McLaren Hart

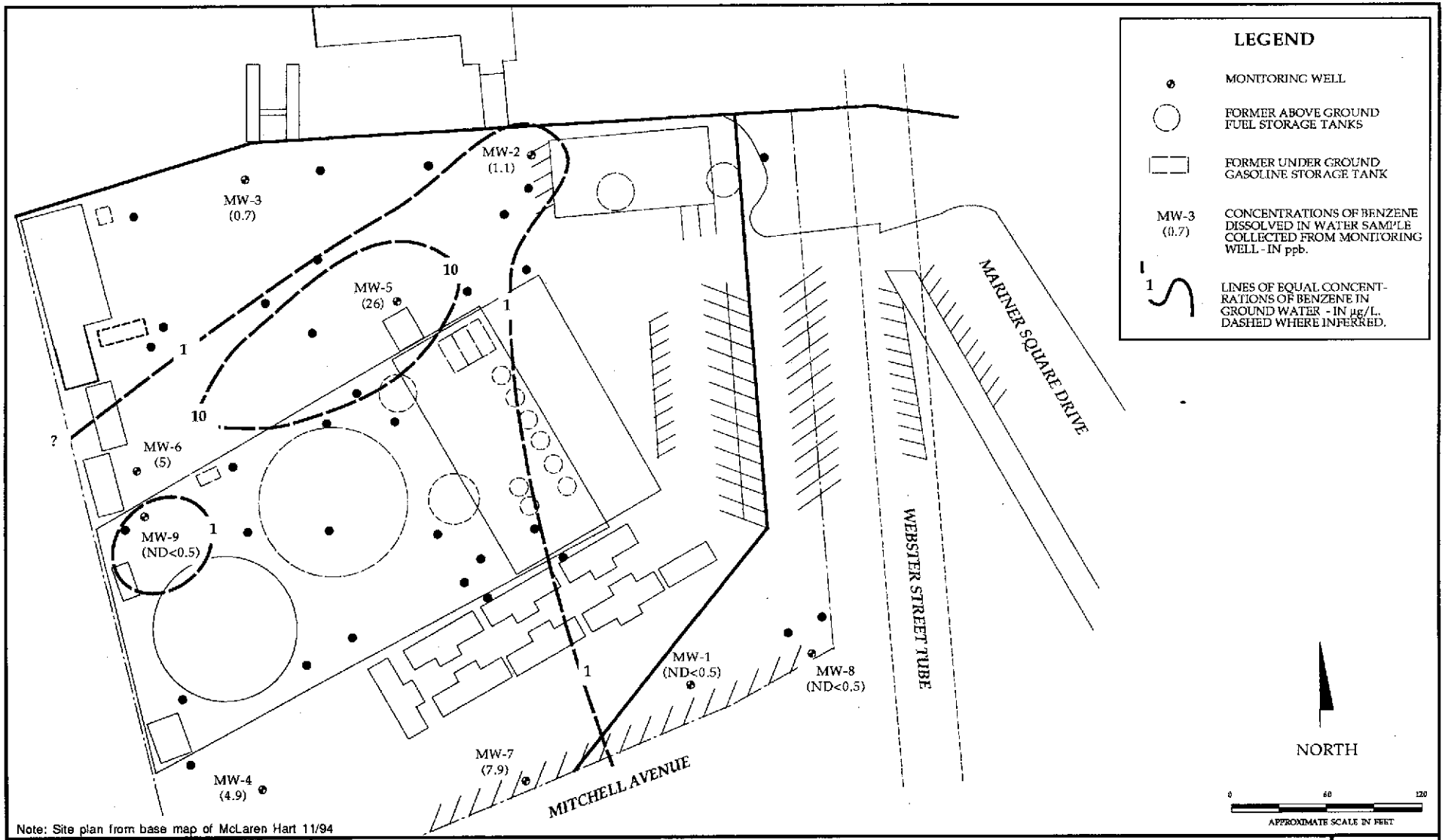
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

TPHg ISOCONCENTRATION MAP

Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 4

7-285.1 12/97



Note: Site plan from base map of McLaren Hart 11/94

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

BENZENE ISOCONCENTRATION MAP

Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 5

7-285.1 12/97

MONITORING WELL GAUGING DATA SHEET

GAUGED BY: Gary Pischke DATE: 12/12/97

GAUGED USING: MMC I/P, ORS I/P, Solinst: (#1) #2, #3

Monitoring Well I.D.	Depth to Water (feet)	Depth to Bottom (feet)	Seperate-phase hydrocarbons thickness (feet)	Replacements		Condition/ Comments
				Lock	Bailer	
MW-1	4.16	11.23	—	ok	ok	2"
MW-2	5.18	13.55	—	ok	ok	2"
MW-3	4.32	10.55	—	ok	ok	2"
MW-4	3.65	12.27	—	ok	ok	2"
MW-5	4.71	12.33	—	ok	ok	2" new bailer
MW-6	4.84	12.42	.39	ok	new	2" no bolts
MW-7	4.58	13.30	—	ok	ok	4"
MW-8	4.87	13.71	—	ok	ok	4"
MW-9	4.53	13.11	—	ok	ok	4"

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

LOCATION: Mariner Square
2415 Mariner Sq. Dr.
Alameda, Calif.

Job No. 7-285.1
SHEET
of

PURGED/SAMPLED BY: Gary Pischke DATE: 12/12/97

GAUGING DATA:

Depth to bottom: 12.42 ft.

Depth to water: 4.84 ft.

Saturated Thickness: 7.58 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.21 gallons

volumes to purge x 3 vols.

*Total volume to purge = 3.6 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ ~~Submersible pump~~/ ~~Suction~~ lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning.

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
4:22p.	0	—	—	—
4:34p	2.0	16.8	1.88	7.05
4:26p	4.0	16.3	1265	7.13
	sample @ 4:30p.			

Color: dark brown. Turbidity: mod-to high. droplet on purge water

Recharge: good. SPP _____ ft. check. Monday Sheen moderate.

SAMPLING DATA:

Sampling method: ~~Dedicated~~ bailer / ~~Disposable~~ new bailer

4:30p. 4:30p

Sample for: (circle)

TPHg/BTEX METALS TOG 8010

TPHd O-Pb TCL 8120

TPH mo Total Pb EDB 8240

601 602 Nitrates 8260

Other: MTBE, PNAs, Vinyl Cl.

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-6

LOCATION: 2415 Mariner Sq. Dr.

Job No. 7-285.1

SHEET of

PURGED/SAMPLED BY: Gary Pirchke DATE: 12/12/97

GAUGING DATA:

Depth to bottom: 12.33 ft.

Depth to water: 4.71 ft.

Saturated Thickness: 7.62 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.22 gallons

volumes to purge x 3 vols.

*Total volume to purge = 3.7 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ Submersible pump/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
3:34p.	0	—	—	—
3:36p.	2.0	16.9	4.34	7.14
3:37p	4.0	12.4	4.29	7.66
	Sample @ 3:40p.			

Color: gray

Turbidity: high - sand fine

Recharge: good.

SPP — ft.

Sheen — odor

SAMPLING DATA:

Sampling method: Dedicated bailer (new.) /Disposable bailer

Sample for: (circle)

3:59p. (IPHs/BTEX) METALS TOG 8010

3:40p (TPHd) O-Pb TEL 8020

(TPH mg) Total Pb EDB 8240

601 602 Nitrates 8260

Other: MTBE PNA, Ing. Cl.

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-5

LOCATION: 2415 Mariner Sq. Dr.

Job No. 7-285.1

SHEET of

PURGED/SAMPLED BY: Gary Pischke DATE: 12/12/97

GAUGING DATA:

Depth to bottom: 12.27 ft.

Depth to water: 3.65 ft.

Saturated Thickness: 8.62 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.38 gallons

volumes to purge x 3 vols.

*Total volume to purge = 4.13 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ Submersible pump/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
2:33p	0	—	—	—
2:35p	2.0	18.3	4.57	7.12
2:37p	4.2	18.3	3.39	6.81
	Sample @ 2:39pm.			

Color: gray brown Turbidity: moderate

Recharge: fair SPP — ft. Sheen —

SAMPLING DATA:

Sampling method: Dedicated bailer /Disposable bailer

Sample for: (circle)

3:00p (TPHg/BTEX) METALS TOG 8010

2:39pm (TPHd) O-Pb TEL 8020

(TPH mo) Total Pb EDB 8240

601 602 Nitrates 8260

Other: MTBE PNA, Vinyl Cl.

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-4

LOCATION: 2415 Mariner Sq. Dr.

Job No. 7-285.1

SHEET of

PURGED/SAMPLED BY: Gary Pischke DATE: 12/12/97

GAUGING DATA:

Depth to bottom: 13.55 ft.

Depth to water: 5.18 ft.

Saturated Thickness: 8.37 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.34 gallons

volumes to purge x 3 vols.

*Total volume to purge = 4 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ Submersible pump/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
1549p.	0.	—	—	—
1:52p.	2.0	17.4	1756.	7.13
1:54p	4.0	17.4	1050	7.34
	Sample @ 1:56pm			

Color: grey Turbidity: moderate

Recharge: good SPP — ft. Sheen —

SAMPLING DATA:

Sampling method: Dedicated bailer /Disposable bailer

Sample for: (circle)

2:12p. TPHg/BTEX METALS TOG 8010

1:56p. TPHd O-Fo TEL 8020

TPH mo Total Pb EDB 8240

601 602 Nitrates 8260

Other: MTBE, PNAs, Vinyl Ch.

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-2

LOCATION: 2415 Mariner Square

Job No. 7-285.1

SHEET of

PURGED/SAMPLED BY: Gary Pischke DATE: 12/12/97

GAUGING DATA:

Depth to bottom: 13.11 ft.

Depth to water: 4.53 ft.

Saturated Thickness: 8.58 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 5.6 gallons

volumes to purge x 3 vols.

*Total volume to purge = 16.7 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer / Submersible pump / Suction lift pump / _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH	
12:47p	0	—	—	—	
12:50p	4.0	17.5	1264.	7.63	
12:58p	8.5	17.6	1047.	7.34	
12:56p	12.5	17.7	1030.	7.31	recharge slower
1:05p	16.7	17.7	1044.	7.24	
	Sample @ 1:05pm.				

Color: Lt. brown - yel-brown Turbidity: Lt - moderate

Recharge: moderate - SPP ___ ft. Sheen ___

SAMPLING DATA:

Sampling method: Dedicated bailer / Disposable bailer

Sample for: (circle)

1:18p. TPHg/BTEX METALS TOG 8010

1:05p. TPHd O-Pb TEL 8021

TPH mo Total Pb EDB 8240

601 602 Nitrates 8260

Other: MTBE, PNAs, Dup/Cl.

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-9

LOCATION: 2415 Mariner Sq. Dr.

Job No. 7-285.1

SHEET of

PURGED/SAMPLED BY: Gary Pischke DATE: 12/12/97

GAUGING DATA:

Depth to bottom: 10.55 ft.

Depth to water: 4.32 ft.

Saturated Thickness: 6.23 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.0 gallons

volumes to purge x 3 vols.

*Total volume to purge = 3 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ Submersible pump/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: _____

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
12:03p	0	—	—	—
12:05p.	1.5	17.8	4.52	7.40.
12:06p	3.0	17.7	3.52.	7.47
	Sample @ 12:08pm.			

H_2S odor

Color: grey brn Turbidity: moderate to ~~heavy~~

Recharge: good SPP ~ ft. Sheen ~

SAMPLING DATA:

Sampling method: Dedicated bailer /Disposable bailer

Sample for: (circle)

12:25p TPHg/BTEX METALS TOG 8010

12:08p TPHd O-Pb TEL 8020

TPH mo Total Pb EDB 8240

601 602 Nitrates 8260

Other: MTBE, DNA, Cl-

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-3

LOCATION: 2415 Mariner Square Dr.

Job No. 7-285.1

SHEET of

PURGED/SAMPLED BY: Gary Pischke DATE: 12/12/97

GAUGING DATA:

Depth to bottom: 13.30 ft.

Depth to water: 4.58 ft.

Saturated Thickness: 8.72 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 5.7 gallons

volumes to purge x 3 vols.

*Total volume to purge = 17.0 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer / Submersible pump / ~~Suction lift pump~~ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
11:00am	0	—	—	—
11:03am	4.0	19.0	7.34	7.33
11:06am	9.5	19.0	4.79	7.25
11:09a	14.0	19.9	5.12	7.16
11:10a	17.0	19.9	5.65	7.08
	Sample @	11:13am		

Color: Lt. brown Turbidity: moderate

Recharge: good SPP — ft. Sheen —

SAMPLING DATA:

Sampling method: Dedicated bailer / Disposable bailer

11:24a 11:13a

Sample for: (circle)

TPHg/BTEX METALS TOG 8010

TPHd O-Pb TEL 8120

TPH mo Total Pb EDB 8240

601 602 Nitrates 8260

Other: MTBE, PNA, Vinyl Cl.

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-7

LOCATION: 2415 Mariner Sq. Dr.

Job No. 7-285.1

SHEET of

PURGED/SAMPLED BY: Gay Pischke DATE: _____

GAUGING DATA:

Depth to bottom: 11.23 ft.

Depth to water: 4.16 ft.

Saturated Thickness: 6.96 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.11 gallons

volumes to purge x 3 vols.

*Total volume to purge = 3.34 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer / Submersible pump / Suction lift pump / _____ (circle one)

Temp/Conductivity/pH Instrument: _____

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
10:15a	0	—	—	—
10:17a	1.5	18.2	7.38	7.52
10:18a	3.5	18.4	3.96	7.36.
	Sample @ 10:22 am			

Color: clear-Lt Brown Turbidity: clear

Recharge: good SPP — ft. Sheen —

SAMPLING DATA:

Sampling method: Dedicated bailer / Disposable bailer

Sample for: (circle)

10:37am TPHg/BTEX METALS TOG 5010

TPHd O-Pb TEL 8022

10:22 TPH mo Total Pb EDB 8240

601 602 Nitrates 8260

MTBE Other: PNAs, Methyl Chloride

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-1

LOCATION: 2415 Mariner Square

Job No. 7-2851

SHEET of

PURGED/SAMPLED BY: Gary Pischke DATE: 12/12/97

GAUGING DATA:

Depth to bottom: 13.71 ft.

Depth to water: 4.87 ft.

Saturated Thickness: 8.84 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 5.7 gallons

volumes to purge x 3 vols.

*Total volume to purge = 17.2 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer / Submersible pump / Suction lift pump / _____ (circle one)

Temp/Conductivity/pH Instrument: _____

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
9:15a.	0	—	—	—
9:18a	4.5	16.7	6.21	8.48
9:20a	9	17.9	6.77	7.92
9:23a	13	18.0	7.10	7.88
9:25a	17.2	17.8	7.43	7.83
				~~PNAs~~
	Sample @ 9:32a m.			

Color: clear Turbidity: clear

Recharge: good SPP 0 ft. Sheen 0

SAMPLING DATA:

Sampling method: Dedicated bailer / Disposable bailer

Sample for: (circle)

9:44a TPHg/BTEX METALS TOG 8010

9:28a TPHd O-Pb TEL 8020

TPH ext Total Pb EDB 8240

601 602 9:28a Nitrates 8260

Other: MTBE, PNA, Unfl Cl.

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-8

LOCATION: 2415 Mariner Sq. Dr.

Job No. 7-285.1

SHEET of

7-285.1 4th QTR

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

RECEIVED JAN 0 9 1998

HYDRO ENVIRONMENTAL TECH
2394 MARINER SQUARE DR. STE 2
ALAMEDA, CA 94501

ATTN: GARY PISCHKE
CLIENT PROJ. ID: 7-285.1
CLIENT PROJ. NAME: MARINER SQUARE
C.O.C. NUMBER: 40119

REPORT DATE: 01/09/98
DATE(S) SAMPLED: 12/12/97
DATE RECEIVED: 12/15/97
AEN WORK ORDER: 9712241

PROJECT SUMMARY:

On December 15, 1997, this laboratory received 3 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

William Luksa, for
Larry Klein
Laboratory Director

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-3
AEN LAB NO: 9712241-01
AEN WORK ORDER: 9712241
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 12/12/97
DATE RECEIVED: 12/15/97
REPORT DATE: 01/09/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	0.7 *	0.5	ug/L	12/20/97
Toluene	108-88-3	ND	0.5	ug/L	12/20/97
Ethylbenzene	100-41-4	0.7 *	0.5	ug/L	12/20/97
Xylenes, Total	1330-20-7	4 *	2	ug/L	12/20/97
Purgeable HCs as Gasoline	5030/GCFID	0.08 *	0.05	mg/L	12/20/97
Methyl t-Butyl Ether	1634-04-4	9 *	5	ug/L	12/20/97
#Silica gel Cleanup	EPA 3630M	-		Cleanup	12/29/97
#Extraction for TPH	EPA 3510	-		Extrn Date	12/23/97
TPH as Diesel	GC-FID	ND	0.05	mg/L	12/29/97
TPH as Oil	GC-FID	ND	0.2	mg/L	12/29/97
Polynuclear Aromatic HCs	EPA 8310				
Acenaphthene	83-32-9	ND	0.5	ug/L	12/19/97
Acenaphthylene	208-96-8	ND	1	ug/L	12/19/97
Anthracene	120-12-7	ND	0.1	ug/L	12/19/97
Benzo(a)anthracene	56-55-3	ND	0.1	ug/L	12/19/97
Benzo(b)fluoranthene	205-99-2	ND	0.1	ug/L	12/19/97
Benzo(k)fluoranthene	207-08-9	ND	0.1	ug/L	12/19/97
Benzo(g,h,i)perylene	191-24-2	ND	0.1	ug/L	12/19/97
Benzo(a)pyrene	50-32-8	ND	0.1	ug/L	12/19/97
Chrysene	218-01-9	ND	0.1	ug/L	12/19/97
Dibenzo(a,h)anthracene	53-70-3	ND	0.1	ug/L	12/19/97
Fluoranthene	206-44-0	ND	0.1	ug/L	12/19/97
Fluorene	86-73-7	ND	0.1	ug/L	12/19/97
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.1	ug/L	12/19/97
Naphthalene	91-20-3	0.6 *	0.5	ug/L	12/19/97
Phenanthrene	85-01-8	ND	0.1	ug/L	12/19/97
Pyrene	129-00-0	ND	0.1	ug/L	12/19/97
#Extraction for EPA 8310	EPA 3510	-		Extrn Date	12/18/97
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	12/24/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-2
AEN LAB NO: 9712241-02
AEN WORK ORDER: 9712241
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 12/12/97
DATE RECEIVED: 12/15/97
REPORT DATE: 01/09/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	1.1 *	0.5	ug/L	12/22/97
Toluene	108-88-3	ND	0.5	ug/L	12/22/97
Ethylbenzene	100-41-4	2.2 *	0.5	ug/L	12/22/97
Xylenes, Total	1330-20-7	3 *	2	ug/L	12/22/97
Purgeable HCs as Gasoline	5030/GCFID	0.36 *	0.05	mg/L	12/22/97
Methyl t-Butyl Ether	1634-04-4	ND	5	ug/L	12/22/97
#Silica gel Cleanup	EPA 3630M	-		Cleanup	12/29/97
#Extraction for TPH	EPA 3510	-		Extrn Date	12/23/97
TPH as Diesel	GC-FID	ND	0.05	mg/L	12/29/97
TPH as Oil	GC-FID	ND	0.2	mg/L	12/29/97
Polynuclear Aromatic HCs	EPA 8310				
Acenaphthene	83-32-9	ND	0.5	ug/L	12/19/97
Acenaphthylene	208-96-8	ND	1	ug/L	12/19/97
Anthracene	120-12-7	ND	0.1	ug/L	12/19/97
Benzo(a)anthracene	56-55-3	ND	0.1	ug/L	12/19/97
Benzo(b)fluoranthene	205-99-2	ND	0.1	ug/L	12/19/97
Benzo(k)fluoranthene	207-08-9	ND	0.1	ug/L	12/19/97
Benzo(g,h,i)perylene	191-24-2	ND	0.1	ug/L	12/19/97
Benzo(a)pyrene	50-32-8	ND	0.1	ug/L	12/19/97
Chrysene	218-01-9	ND	0.1	ug/L	12/19/97
Dibenzo(a,h)anthracene	53-70-3	ND	0.1	ug/L	12/19/97
Fluoranthene	206-44-0	0.2 *	0.1	ug/L	12/19/97
Fluorene	86-73-7	ND	0.1	ug/L	12/19/97
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.1	ug/L	12/19/97
Naphthalene	91-20-3	ND	0.5	ug/L	12/19/97
Phenanthrene	85-01-8	ND	0.1	ug/L	12/19/97
Pyrene	129-00-0	0.3 *	0.1	ug/L	12/19/97
#Extraction for EPA 8310	EPA 3510	-		Extrn Date	12/18/97
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	12/24/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-5
AEN LAB NO: 9712241-03
AEN WORK ORDER: 9712241
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 12/12/97
DATE RECEIVED: 12/15/97
REPORT DATE: 01/09/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	26 *	0.5	ug/L	12/22/97
Toluene	108-88-3	4.6 *	0.5	ug/L	12/22/97
Ethylbenzene	100-41-4	5.9 *	0.5	ug/L	12/22/97
Xylenes, Total	1330-20-7	13 *	2	ug/L	12/22/97
Purgeable HCs as Gasoline	5030/GCFID	3.4 *	0.05	mg/L	12/22/97
Methyl t-Butyl Ether	1634-04-4	11 *	5	ug/L	12/22/97
#Silica gel Cleanup	EPA 3630M	-		Cleanup	12/29/97
#Extraction for TPH	EPA 3510	-		Extrn Date	12/23/97
TPH as Diesel	GC-FID	0.09 *	0.05	mg/L	12/29/97
TPH as Oil	GC-FID	ND	0.2	mg/L	12/29/97
Polynuclear Aromatic HCs	EPA 8310				
Acenaphthene	83-32-9	1.0 *	0.5	ug/L	12/19/97
Acenaphthylene	208-96-8	ND	1	ug/L	12/19/97
Anthracene	120-12-7	0.6 *	0.1	ug/L	12/19/97
Benzo(a)anthracene	56-55-3	ND	0.1	ug/L	12/19/97
Benzo(b)fluoranthene	205-99-2	ND	0.1	ug/L	12/19/97
Benzo(k)fluoranthene	207-08-9	ND	0.1	ug/L	12/19/97
Benzo(g,h,i)perylene	191-24-2	ND	0.1	ug/L	12/19/97
Benzo(a)pyrene	50-32-8	ND	0.1	ug/L	12/19/97
Chrysene	218-01-9	ND	0.1	ug/L	12/19/97
Dibenzo(a,h)anthracene	53-70-3	ND	0.1	ug/L	12/19/97
Fluoranthene	206-44-0	1.7 *	0.1	ug/L	12/19/97
Fluorene	86-73-7	0.8 *	0.1	ug/L	12/19/97
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.1	ug/L	12/19/97
Naphthalene	91-20-3	ND	0.5	ug/L	12/19/97
Phenanthrene	85-01-8	2.9 *	0.1	ug/L	12/19/97
Pyrene	129-00-0	1.2 *	0.1	ug/L	12/19/97
#Extraction for EPA 8310	EPA 3510	-		Extrn Date	12/18/97
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	12/24/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9712241
CLIENT PROJECT ID: 7-285.1

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spikes(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analyses.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behaviour, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrument performance.

D: Surrogates diluted out.

I: Interference.

!: Indicates result outside of established laboratory QC limits.

ANALYSIS: Polynuclear Aromatic HCs

MATRIX: Water

METHOD BLANK SAMPLES

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: MB-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/1/
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	703			1000	70.3	50	150		
Acenaphthylene	ND		1						
Phenanthrene	ND		0.1						
Pyrene	ND		0.1						
Benzo(k)fluoranthene	ND		0.1						
Dibenzo(a,h)anthracene	ND		0.1						
Acenaphthene	ND		0.5						
Anthracene	ND		0.1						
Benzo(a)anthracene	ND		0.1						
Benzo(b)fluoranthene	ND		0.1						
Benzo(g,h,i)perylene	ND		0.1						
Benzo(a)pyrene	ND		0.1						
Chrysene	ND		0.1						
Fluoranthene	ND		0.1						
Fluorene	ND		0.1						
Indeno(1,2,3-cd)pyrene	ND		0.1						
Naphthalene	ND		0.5						

LABORATORY CONTROL SAMPLES

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCD-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/3/ 1
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	709	703		1000	70.9	50	150		
Acenaphthylene	9379	ND	1	10000	93.79	50	150		
Phenanthrene	944	ND	0.1	1000	94.4	50	150		
Pyrene	897	ND	0.1	1000	89.7	50	150		
Benzo(k)fluoranthene	907	ND	0.1	1000	90.7	50	150		
Dibenzo(a,h)anthracene	757	ND	0.1	1000	75.7	50	150		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCS-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/2/ 1
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	606	703		1000	60.6	50	150		
Acenaphthylene	8524	ND	1	10000	85.24	50	150		
Phenanthrene	912	ND	0.1	1000	91.2	50	150		
Pyrene	841	ND	0.1	1000	84.1	50	150		
Benzo(k)fluoranthene	842	ND	0.1	1000	84.2	50	150		
Dibenzo(a,h)anthracene	707	ND	0.1	1000	70.7	50	150		

LABORATORY CONTROL DUPLICATES

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCR-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/4/ 2
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	709	606		1000	70.9	50	150		
Acenaphthylene	9379	8524	1	10000				9.551	40
Phenanthrene	944	912	0.1	1000				3.45	40

ANALYSIS: Polynuclear Aromatic HCs

MATRIX: Water

LABORATORY CONTROL DUPLICATES

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCR-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/4/ 2
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Pyrene	897	841	0.1	1000				6.44	40
Benzo(k)fluoranthene	907	842	0.1	1000				7.43	40
Dibenzo(a,h)anthracene	757	707	0.1	1000				6.83	40
Acenaphthene	ND	ND	0.5					0	
Anthracene	ND	ND	0.1					0	
Benzo(a)anthracene	ND	ND	0.1					0	
Benzo(b)fluoranthene	ND	ND	0.1					0	
Benzo(g,h,i)perylene	ND	ND	0.1					0	
Benzo(a)pyrene	ND	ND	0.1					0	
Chrysene	ND	ND	0.1					0	
Fluoranthene	ND	ND	0.1					0	
Fluorene	ND	ND	0.1					0	
Indeno(1,2,3-cd)pyrene	ND	ND	0.1					0	
Naphthalene	ND	ND	0.5					0	

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: 9712241-01I
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/11/
BATCH ID: 8310W121897
DILUTION: 1.00

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl	(surr)	531			1000	53.1	50	150		

SAMPLE TYPE: Sample-Client
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: 9712241-02I
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/12/
BATCH ID: 8310W121897
DILUTION: 1.00

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl	(surr)	536			1000	53.6	50	150		

SAMPLE TYPE: Sample-Client
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: 9712241-03I
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/13/
BATCH ID: 8310W121897
DILUTION: 1.00

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl	(surr)	1073			1000	107.3	50	150		

ANALYSIS: TPH as Diesel

MATRIX: Water

METHOD BLANK SAMPLES

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: BLNK-1223-1
PREPARED: 12/23/97
ANALYZED: 12/23/97
INSTR RUN: GC C\971223000000/1/
BATCH ID: DSCW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		ND		0.05						
Motor Oil		ND		0.2						
n-Pentacosane	(surr)	102.4			100	102	65	125		

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: SGBL-1229-1
PREPARED: 12/29/97
ANALYZED: 12/30/97
INSTR RUN: GC C\971223000000/19/
BATCH ID: DSCW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		ND		0.05						
Motor Oil		ND		0.2						
n-Pentacosane	(surr)	102.4			100	102	65	125		

LABORATORY CONTROL SAMPLES

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCDW-1223-1
PREPARED: 12/23/97
ANALYZED: 12/23/97
INSTR RUN: GC C\971223000000/3/1
BATCH ID: DSCW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.12	ND	0.05	2.00	106	60	110		
n-Pentacosane	(surr)	109.1	102.4		100	109	65	125		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCSW-1223-1
PREPARED: 12/23/97
ANALYZED: 12/23/97
INSTR RUN: GC C\971223000000/2/1
BATCH ID: DSCW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.08	ND	0.05	2.00	104	60	110		
n-Pentacosane	(surr)	104.9	102.4		100	105	65	125		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: SGLC-1229-1
PREPARED: 12/29/97
ANALYZED: 12/30/97
INSTR RUN: GC C\971223000000/20/19
BATCH ID: DSCW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.18	ND	0.05	2.00	109	60	110		
n-Pentacosane	(surr)	106.1	102.4		100	106	65	125		

LABORATORY CONTROL DUPLICATES

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCRW-1223-1
PREPARED: 12/23/97
ANALYZED: 12/23/97
INSTR RUN: GC C\971223000000/4/2
BATCH ID: DSCW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.12	2.08	0.05	2030				1.90	15
Motor Oil		ND	ND	0.2	200				0	
n-Pentacosane	(surr)	109.1	104.9			3.925	65	125		

ANALYSIS: TPH as Diesel

MATRIX: Water

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: 9712241-01G
PREPARED: 12/29/97
ANALYZED: 12/29/97

INSTR RUN: GC C\971223000000/21/
BATCH ID: DSIW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	104.1			100	104	65	125		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: 9712241-02G
PREPARED: 12/29/97
ANALYZED: 12/29/97

INSTR RUN: GC C\971223000000/22/
BATCH ID: DSIW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	102.8			100	103	65	125		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: 9712241-03G
PREPARED: 12/29/97
ANALYZED: 12/29/97

INSTR RUN: GC C\971223000000/23/
BATCH ID: DSIW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	105.4			100	105	65	125		

QUALITY CONTROL DATA

METHOD: EPA 8010

AEN JOB NO: 9712241
INSTRUMENT: I
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery: Bromochloro-methane	Percent Recovery: 1-Bromo-3-chloro-propane
12/24/97	MW-3	01	100	96
12/24/97	MW-2	02	101	99
12/24/97	MW-5	03	99	103
QC Limits:			70-130	70-130

DATE ANALYZED: 12/24/97
SAMPLE SPIKED: LCS
INSTRUMENT: I

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits: Percent Recovery	QC Limits: RPD
1,1-Dichloroethene	25	101	1	70-130	20
Trichloroethene	25	114	1	70-130	20
Chlorobenzene	25	102	6	70-130	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9712241
INSTRUMENT: H
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/20/97	MW-3	01	98
12/22/97	MW-2	02	106
12/22/97	MW-5	03	90
QC Limits:			70-130

DATE ANALYZED: 12/22/97
SAMPLE SPIKED: LCS
INSTRUMENT: H

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	100	85	1	70-130	20
Toluene	100	95	3	70-130	20
Ethylbenzene	100	98	2	70-130	20
Total Xylenes	300	99	3	70-130	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

971241

AEN

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080 PIKE LANE, SUITE C
CONCORD, CA 94520
(510) 685-7852
(800) 423-7143

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

40119

Company Name: Hydro Envir. Tech.
Phone #: 510-521-2684
FAX #: 510-521-5078
Company Address: 2394 Mariner Sq. Dr. #2 Alameda, Calif. 94501
Site Location: 2415 Mariner Sq. Dr.
Project Manager: Gary Pischke
Client Project ID: (#) 7-285.1
(NAME) Mariner Square
I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Gary Pischke

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	UNPRESERVED	OTHER (Specify)	Sampling: DATE	TIME
MW-3		6	X						X						12/12/97	12:25p
MW-3		2	X						X						12/12/97	12:05p
MW-3		2	X										X		12/12/97	12:08p
MW-2		6	X						X						12/12/97	2:12p
MW-2		2	X						X						12/12/97	1:56p
MW-2		2	X										X		12/12/97	1:56p
MW-5		6	X						X						12/12/97	3:59p
MW-5		2	X						X						12/12/97	3:40p
MW-5		2	X										X		12/12/97	3:46p

ANALYSIS REQUEST

BTEX 602 ☐ 8020 ☐ with MTBE ☐	BTEX/Gas Hydrocarbons PID/FID ☐ with MTBE ☒	Hydrocarbons GC/FID Gas ☐ Diesel ☐ Screen ☐	Hydrocarbon Profile (SIMDIS) ☐	Oil and Grease 413.1 ☐ 413.2 ☐ SM-503 ☐	TPH/IR 418.1 ☐ SM 503 ☐ B15Y	EDB by 504 ☐ DBCP by 504 ☐ 8310	EPA 503.1 ☐ EPA 502.2 ☐ m,p,x D3328	EPA 601/☐ EPA 8010 ☐ 1,2-DCA only	EPA 602 ☐ EPA 8020 ☐	EPA 608 ☐ 8080 ☐ PCB only ☐	EPA 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐	EPA 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	EPA 610 ☐ 8310 ☒ PNAs	EP TOX Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi-VOA ☐ Pest ☐ Herb ☐	EPA Metals - Priority Pollutant ☐ TAL ☐ RCRA ☐	CAM Metals TTLC ☐ STLC ☐	Lead 239.2 ☐ 200.7 ☐ 7420 ☐ 7421 ☐ 6010 ☐	Organic Lead ☐	Corrosivity ☐ Flash Point ☐ Reactivity ☐
	X																			
								X												
													X							
	X																			
								X					X							
													X							
	X																			
								X					X							
													X							

Vinyl Chloride 8010B

SPECIAL DETECTION LIMITS

REMARKS: Silica gel cleanup on diesel & motor oil

SPECIAL REPORTING REQUIREMENTS

Lab Use Only Lot #: Storage Location

Work Order #:

TAT
Priority (24 hr) ☐
Expedited (48 hr) ☐
7 Business Days ☐
Other 10
Business Days ☑

Special Handling
GTEL Contact
Quote/Contract #
Confirmation #
P.O. #

QA/QC Level
Blue ☐ CLP ☐ Other ☐

FAX ☑

CUSTODY RECORD

	Date	Time	
Relinquished by Sampler: Gary Pischke	12/15/97	12:08pm	Received by: Rick Gilmore
Relinquished by: Rick Gilmore	12-15-97	13:10	Received by:
Relinquished by:			Received by Laboratory: Greg Galan
			Waybill #

7-285.1 4th QTR

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

RECEIVED JAN 0 9 1998

HYDRO ENVIRONMENTAL TECH
2394 MARINER SQUARE DR. STE 2
ALAMEDA, CA 94501

ATTN: GARY PISCHKE
CLIENT PROJ. ID: 7-285.1
CLIENT PROJ. NAME: MARINER SQUARE
C.O.C. NUMBER: 40117

REPORT DATE: 01/09/98
DATE(S) SAMPLED: 12/12/97
DATE RECEIVED: 12/15/97
AEN WORK ORDER: 9712239

PROJECT SUMMARY:

On December 15, 1997, this laboratory received 3 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

William Larkin, for
Larry Klein
Laboratory Director

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-4
AEN LAB NO: 9712239-01
AEN WORK ORDER: 9712239
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 12/12/97
DATE RECEIVED: 12/15/97
REPORT DATE: 01/09/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	4.9 *	0.5	ug/L	12/22/97
Toluene	108-88-3	0.9 *	0.5	ug/L	12/22/97
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/22/97
Xylenes, Total	1330-20-7	ND	2	ug/L	12/22/97
Purgeable HCs as Gasoline	5030/GCFID	0.26 *	0.05	mg/L	12/22/97
Methyl t-Butyl Ether	1634-04-4	320 *	5	ug/L	12/22/97
#Silica gel Cleanup	EPA 3630M	-		Cleanup	12/30/97
#Extraction for TPH	EPA 3510	-		Extrn Date	12/30/97
TPH as Diesel	GC-FID	ND	0.05	mg/L	12/31/97
TPH as Oil	GC-FID	ND	0.2	mg/L	12/31/97
Polynuclear Aromatic HCs	EPA 8310				
Acenaphthene	83-32-9	ND	0.5	ug/L	12/19/97
Acenaphthylene	208-96-8	ND	1	ug/L	12/19/97
Anthracene	120-12-7	ND	0.1	ug/L	12/19/97
Benzo(a)anthracene	56-55-3	ND	0.1	ug/L	12/19/97
Benzo(b)fluoranthene	205-99-2	ND	0.1	ug/L	12/19/97
Benzo(k)fluoranthene	207-08-9	ND	0.1	ug/L	12/19/97
Benzo(g,h,i)perylene	191-24-2	ND	0.1	ug/L	12/19/97
Benzo(a)pyrene	50-32-8	ND	0.1	ug/L	12/19/97
Chrysene	218-01-9	ND	0.1	ug/L	12/19/97
Dibenzo(a,h)anthracene	53-70-3	ND	0.1	ug/L	12/19/97
Fluoranthene	206-44-0	0.4 *	0.1	ug/L	12/19/97
Fluorene	86-73-7	ND	0.1	ug/L	12/19/97
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.1	ug/L	12/19/97
Naphthalene	91-20-3	0.8 *	0.5	ug/L	12/19/97
Phenanthrene	85-01-8	ND	0.1	ug/L	12/19/97
Pyrene	129-00-0	0.4 *	0.1	ug/L	12/19/97
#Extraction for EPA 8310	EPA 3510	-		Extrn Date	12/18/97
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	3 *	2	ug/L	12/23/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-6
AEN LAB NO: 9712239-02
AEN WORK ORDER: 9712239
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 12/12/97
DATE RECEIVED: 12/15/97
REPORT DATE: 01/09/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	5 *	5	ug/L	12/23/97
Toluene	108-88-3	ND	5	ug/L	12/23/97
Ethylbenzene	100-41-4	8 *	5	ug/L	12/23/97
Xylenes, Total	1330-20-7	19 *	20	ug/L	12/23/97
Purgeable HCs as Gasoline	5030/GCFID	21 *	0.5	mg/L	12/23/97
Methyl t-Butyl Ether	1634-04-4	ND	50	ug/L	12/23/97
#Silica gel Cleanup	EPA 3630M	-		Cleanup	12/30/97
#Extraction for TPH	EPA 3510	-		Extrn Date	12/30/97
TPH as Diesel	GC-FID	1,300 *	10	mg/L	12/31/97
TPH as Oil	GC-FID	190 *	50	mg/L	12/31/97
Polynuclear Aromatic HCs	EPA 8310				
Acenaphthene	83-32-9	ND	100	ug/L	12/19/97
Acenaphthylene	208-96-8	ND	200	ug/L	12/19/97
Anthracene	120-12-7	ND	20	ug/L	12/19/97
Benzo(a)anthracene	56-55-3	25 *	20	ug/L	12/19/97
Benzo(b)fluoranthene	205-99-2	ND	20	ug/L	12/19/97
Benzo(k)fluoranthene	207-08-9	ND	20	ug/L	12/19/97
Benzo(g,h,i)perylene	191-24-2	ND	20	ug/L	12/19/97
Benzo(a)pyrene	50-32-8	ND	20	ug/L	12/19/97
Chrysene	218-01-9	ND	20	ug/L	12/19/97
Dibenzo(a,h)anthracene	53-70-3	ND	20	ug/L	12/19/97
Fluoranthene	206-44-0	250 *	20	ug/L	12/19/97
Fluorene	86-73-7	90 *	20	ug/L	12/19/97
Indeno(1,2,3-cd)pyrene	193-39-5	ND	20	ug/L	12/19/97
Naphthalene	91-20-3	ND	100	ug/L	12/19/97
Phenanthrene	85-01-8	80 *	20	ug/L	12/19/97
Pyrene	129-00-0	40 *	20	ug/L	12/19/97
#Extraction for EPA 8310	EPA 3510	-		Extrn Date	12/18/97
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	12/23/97

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-6
AEN LAB NO: 9712239-02
AEN WORK ORDER: 9712239
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 12/12/97
DATE RECEIVED: 12/15/97
REPORT DATE: 01/09/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED

Reporting limits for EPA 8310 elevated due to high levels of non-target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-9
AEN LAB NO: 9712239-03
AEN WORK ORDER: 9712239
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 12/12/97
DATE RECEIVED: 12/15/97
REPORT DATE: 01/09/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/22/97
Toluene	108-88-3	ND	0.5	ug/L	12/22/97
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/22/97
Xylenes, Total	1330-20-7	ND	2	ug/L	12/22/97
Purgeable HCs as Gasoline	5030/GCFID	0.18 *	0.05	mg/L	12/22/97
Methyl t-Butyl Ether	1634-04-4	ND	5	ug/L	12/22/97
#Silica gel Cleanup	EPA 3630M	-		Cleanup	12/30/97
#Extraction for TPH	EPA 3510	-		Extrn Date	12/30/97
TPH as Diesel	GC-FID	ND	0.05	mg/L	12/31/97
TPH as Oil	GC-FID	ND	0.2	mg/L	12/31/97
Polynuclear Aromatic HCs	EPA 8310				
Acenaphthene	83-32-9	ND	0.5	ug/L	12/19/97
Acenaphthylene	208-96-8	ND	1	ug/L	12/19/97
Anthracene	120-12-7	0.2 *	0.1	ug/L	12/19/97
Benzo(a)anthracene	56-55-3	ND	0.1	ug/L	12/19/97
Benzo(b)fluoranthene	205-99-2	ND	0.1	ug/L	12/19/97
Benzo(k)fluoranthene	207-08-9	ND	0.1	ug/L	12/19/97
Benzo(g,h,i)perylene	191-24-2	ND	0.1	ug/L	12/19/97
Benzo(a)pyrene	50-32-8	ND	0.1	ug/L	12/19/97
Chrysene	218-01-9	ND	0.1	ug/L	12/19/97
Dibenzo(a,h)anthracene	53-70-3	ND	0.1	ug/L	12/19/97
Fluoranthene	206-44-0	0.6 *	0.1	ug/L	12/19/97
Fluorene	86-73-7	0.2 *	0.1	ug/L	12/19/97
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.1	ug/L	12/19/97
Naphthalene	91-20-3	1.4 *	0.5	ug/L	12/19/97
Phenanthrene	85-01-8	ND	0.1	ug/L	12/19/97
Pyrene	129-00-0	0.3 *	0.1	ug/L	12/19/97
#Extraction for EPA 8310	EPA 3510	-		Extrn Date	12/18/97
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	12/23/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9712239
CLIENT PROJECT ID: 7-285.1

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spikes(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analyses.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behaviour, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrument performance.

D: Surrogates diluted out.

I: Interference.

!: Indicates result outside of established laboratory QC limits.

ANALYSIS: Polynuclear Aromatic HCs

MATRIX: Water

METHOD BLANK SAMPLES

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: MB-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/1/
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	703			1000	70.3	50	150		
Acenaphthylene	ND		1						
Phenanthrene	ND		0.1						
Pyrene	ND		0.1						
Benzo(k)fluoranthene	ND		0.1						
Dibenzo(a,h)anthracene	ND		0.1						
Acenaphthene	ND		0.5						
Anthracene	ND		0.1						
Benzo(a)anthracene	ND		0.1						
Benzo(b)fluoranthene	ND		0.1						
Benzo(g,h,i)perylene	ND		0.1						
Benzo(a)pyrene	ND		0.1						
Chrysene	ND		0.1						
Fluoranthene	ND		0.1						
Fluorene	ND		0.1						
Indeno(1,2,3-cd)pyrene	ND		0.1						
Naphthalene	ND		0.5						

LABORATORY CONTROL SAMPLES

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCD-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/3/ 1
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	709	703		1000	70.9	50	150		
Acenaphthylene	9379	ND	1	10000	93.79	50	150		
Phenanthrene	944	ND	0.1	1000	94.4	50	150		
Pyrene	897	ND	0.1	1000	89.7	50	150		
Benzo(k)fluoranthene	907	ND	0.1	1000	90.7	50	150		
Dibenzo(a,h)anthracene	757	ND	0.1	1000	75.7	50	150		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCS-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/2/ 1
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	606	703		1000	60.6	50	150		
Acenaphthylene	8524	ND	1	10000	85.24	50	150		
Phenanthrene	912	ND	0.1	1000	91.2	50	150		
Pyrene	841	ND	0.1	1000	84.1	50	150		
Benzo(k)fluoranthene	842	ND	0.1	1000	84.2	50	150		
Dibenzo(a,h)anthracene	707	ND	0.1	1000	70.7	50	150		

LABORATORY CONTROL DUPLICATES

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCR-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/4/ 2
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	709	606		1000	70.9	50	150		
Acenaphthylene	9379	8524	1	10000				9.551	40
Phenanthrene	944	912	0.1	1000				3.45	40

ANALYSIS: Polynuclear Aromatic HCs

MATRIX: Water

LABORATORY CONTROL DUPLICATES

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCR-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/4/ 2
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Pyrene	897	841	0.1	1000				6.44	40
Benzo(k)fluoranthene	907	842	0.1	1000				7.43	40
Dibenzo(a,h)anthracene	757	707	0.1	1000				6.83	40
Acenaphthene	ND	ND	0.5					0	
Anthracene	ND	ND	0.1					0	
Benzo(a)anthracene	ND	ND	0.1					0	
Benzo(b)fluoranthene	ND	ND	0.1					0	
Benzo(g,h,i)perylene	ND	ND	0.1					0	
Benzo(a)pyrene	ND	ND	0.1					0	
Chrysene	ND	ND	0.1					0	
Fluoranthene	ND	ND	0.1					0	
Fluorene	ND	ND	0.1					0	
Indeno(1,2,3-cd)pyrene	ND	ND	0.1					0	
Naphthalene	ND	ND	0.5					0	

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: 9712239-01I
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/9/
BATCH ID: 8310W121897
DILUTION: 1.00

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl	(surr)	565			1000	56.5	50	150		

SAMPLE TYPE: Sample-Client
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: 9712239-02I
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/8/
BATCH ID: 8310W121897
DILUTION: 200

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl	(surr)	D			1000	0 !	50	150		

SAMPLE TYPE: Sample-Client
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: 9712239-03I
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/10/
BATCH ID: 8310W121897
DILUTION: 1.00

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl	(surr)	600			1000	60.0	50	150		

ANALYSIS: TPH as Diesel

MATRIX: Water

METHOD BLANK SAMPLES

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: BLNK-1230-1
PREPARED: 12/30/97
ANALYZED: 01/01/98

INSTR RUN: GC C\971230000000/1/
BATCH ID: DSCW123097-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	HIGH	RPD (%)	RPD LIMIT (%)
Diesel		ND		0.05						
Motor Oil		ND		0.2						
n-Pentacosane	(surr)	112			100		65	125		

LABORATORY CONTROL SAMPLES

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: LCDW-1230-1
PREPARED: 12/30/97
ANALYZED: 01/01/98

INSTR RUN: GC C\971230000000/3/1
BATCH ID: DSCW123097-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.00	ND	0.05	2.00	100	60	110		
n-Pentacosane	(surr)	108	112		100	108	65	125		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: LCSW-1230-1
PREPARED: 12/30/97
ANALYZED: 01/01/98

INSTR RUN: GC C\971230000000/2/1
BATCH ID: DSCW123097-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.12	ND	0.05	2.00	106	60	110		
n-Pentacosane	(surr)	106	112		100	106	65	125		

LABORATORY CONTROL DUPLICATES

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: LCRW-1230-1
PREPARED: 12/30/97
ANALYZED: 01/01/98

INSTR RUN: GC C\971230000000/4/2
BATCH ID: DSCW123097-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.00	2.12	0.05	2030				5.83	15
Motor Oil		ND	ND	0.2	200				0	
n-Pentacosane	(surr)	108	106			1.87	65	125		

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: 9712239-01G
PREPARED: 12/30/97
ANALYZED: 12/31/98

INSTR RUN: GC C\971230000000/5/
BATCH ID: DSCW123097-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	105			100	105	65	125		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: 9712239-02H
PREPARED: 12/30/97
ANALYZED: 12/31/98

INSTR RUN: GC C\971230000000/6/
BATCH ID: DSCW123097-1
DILUTION: 100.0000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	D			10000	0 !	65	125		

ANALYSIS: TPH as Diesel

MATRIX: Water

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: 9712239-02H
PREPARED: 12/30/97
ANALYZED: 12/31/98

INSTR RUN: GC C\971230000000/6/
BATCH ID: DSCW123097-1
DILUTION: 100.0000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: 9712239-03H
PREPARED: 12/30/97
ANALYZED: 12/31/98

INSTR RUN: GC C\971230000000/7/
BATCH ID: DSCW123097-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	105			100	105	65	125		

QUALITY CONTROL DATA

METHOD: EPA 8010

AEN JOB NO: 9712239
INSTRUMENT: I
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Bromochloro-methane	Percent Recovery 1-Bromo-3-chloro-propane
12/23/97	MW-4	01	88	88
12/23/97	MW-6	02	94	94
12/23/97	MW-9	03	94	94
QC Limits:			70-130	70-130

DATE ANALYZED: 12/22/97
SAMPLE SPIKED: LCS
INSTRUMENT: I

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
1,1-Dichloroethene	25	102	<1	70-130	20
Trichloroethene	25	118	14	70-130	20
Chlorobenzene	25	104	6	70-130	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9712239
INSTRUMENT: F, H
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/22/97	MW-4	01	100
12/23/97	MW-6	02	96
12/22/97	MW-9	03	100
QC Limits:			70-130

DATE ANALYZED: 12/22/97
SAMPLE SPIKED: LCS
INSTRUMENT: H

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	100	85	2	70-130	20
Toluene	100	95	3	70-130	20
Ethylbenzene	100	98	2	70-130	20
Total Xylenes	300	99	3	70-130	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

AEN

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080 PIKE LANE, SUITE C
CONCORD, CA 94520
(510) 685-7852
(800) 423-7143

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

40117

Company Name: Hydro. Enviro. Tech.
Phone #: 510-521-2684
FAX #: 510-521-5078

Company Address: 2394 Mariner Sq. Dr. #2 Alameda, Calif. 94501
Site Location: 2415 Mariner Sq. Drive.

Project Manager: Gary Pischke
Client Project ID: (#) 7-285.1
(NAME) Mariner Square.

I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Gary Pischke

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	UNPRESERVED	OTHER (Specify)	Sampling: DATE	TIME
MW-4		6	X						X						12/12/97	3:00p
MW-4		2	X						X						12/13/97	2:39p
MW-4		2	X										X		12/12/97	2:39p
* MW-6		6	X						X						12/12/97	4:55p
MW-6		2	X						X						12/12/97	4:35p
MW-6		2	X										X		12/12/97	4:35p
MW-9		6	X						X						12/12/97	1:18p
MW-9		2	X						X						12/12/97	1:05p
MW-9		2	X										X		12/12/97	1:05p

BTEX 602 ☐ 8020 ☐ with MTBE ☐	BTEX/Gas Hydrocarbons PID/FID ☐ with MTBE ☒	Hydrocarbons GC/FID Gas ☐ Diesel ☐ Screen ☐	Hydrocarbon Profile (SIMDIS) ☐	Oil and Grease 413.1 ☐ 413.2 ☐ SM-503 ☐	TPH/IR 418.1 ☐ SM 503 ☐	EDB by 504 ☐ DBCP by 504 ☐	EPA 503.1 ☐ EPA 502.2 ☐	EPA 601 ☐ EPA 8010 ☒ 8 Vinyl Chloride	EPA 602 ☐ EPA 8020 ☐ TPH diesel/motor oil	EPA 608 ☐ 8080 ☐ PCB only ☐	EPA 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐	EPA 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	EPA 610 ☐ 8310 ☒ PNAs	EP TOX Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi-VOA ☐ Pest ☐ Herb ☐	EPA Metals - Priority Pollutant ☐ TAL ☐ RCRA ☐	CAM Metals TTLC ☐ STLC ☐	Lead 239.2 ☐ 200.7 ☐ 7420 ☐ 7421 ☐ 6010 ☐	Organic Lead ☐	Corrosivity ☐ Flash Point ☐ Reactivity ☐
	X							X											
									X										
													X						
	X							X											
									X										
													X						
	X							X											
									X										
													X						

TAT
Priority (24 hr) ☐
Expedited (48 hr) ☐
7 Business Days ☐
Other 10 Business Days ☑

Special Handling
GTEL Contact
Quote/Contract #
Confirmation #
P.O. #

QA/QC Level
Blue ☐ CLP ☐ Other ☐

SPECIAL DETECTION LIMITS

SPECIAL REPORTING REQUIREMENTS
FAX ☑

REMARKS: Silica gel cleanup on diesel & motor oil
* MW-6 had free product *

Lab Use Only Lot #:
Storage Location
Work Order #:

CUSTODY RECORD

	Date	Time	
Relinquished by Sampler: Gary Pischke	12/15/97	12:08pm	Received by: Rich Gilmore
Relinquished by: Rich Gilmore	12-15-97	13:10	Received by:
Relinquished by:	Date	Time	Received by Laboratory: Greg Galan
			Waybill #

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HYDRO ENVIRONMENTAL TECH
2394 MARINER SQUARE DR. STE 2
ALAMEDA, CA 94501

ATTN: GARY PISCHKE
CLIENT PROJ. ID: 7-285.1
CLIENT PROJ. NAME: MARINER SQUARE
C.O.C. NUMBER: 40118

REPORT DATE: 01/09/98

DATE(S) SAMPLED: 12/12/97-12/16/97

DATE RECEIVED: 12/15/97

AEN WORK ORDER: 9712240

PROJECT SUMMARY:

On December 15, 1997, this laboratory received 3 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

William Luthy for
Larry Klein
Laboratory Director

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-8
AEN LAB NO: 9712240-01
AEN WORK ORDER: 9712240
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 12/12/97
DATE RECEIVED: 12/15/97
REPORT DATE: 01/09/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/20/97
Toluene	108-88-3	ND	0.5	ug/L	12/20/97
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/20/97
Xylenes, Total	1330-20-7	ND	2	ug/L	12/20/97
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/20/97
Methyl t-Butyl Ether	1634-04-4	15 *	5	ug/L	12/20/97
#Silica gel Cleanup	EPA 3630M	-		Cleanup	12/29/97
#Extraction for TPH	EPA 3510	-		Extrn Date	12/23/97
TPH as Diesel	GC-FID	ND	0.05	mg/L	12/29/97
TPH as Oil	GC-FID	ND	0.2	mg/L	12/29/97
Polynuclear Aromatic HCs	EPA 8310				
Acenaphthene	83-32-9	ND	0.5	ug/L	12/19/97
Acenaphthylene	208-96-8	ND	1	ug/L	12/19/97
Anthracene	120-12-7	ND	0.1	ug/L	12/19/97
Benzo(a)anthracene	56-55-3	ND	0.1	ug/L	12/19/97
Benzo(b)fluoranthene	205-99-2	ND	0.1	ug/L	12/19/97
Benzo(k)fluoranthene	207-08-9	ND	0.1	ug/L	12/19/97
Benzo(g,h,i)perylene	191-24-2	ND	0.1	ug/L	12/19/97
Benzo(a)pyrene	50-32-8	ND	0.1	ug/L	12/19/97
Chrysene	218-01-9	ND	0.1	ug/L	12/19/97
Dibenzo(a,h)anthracene	53-70-3	ND	0.1	ug/L	12/19/97
Fluoranthene	206-44-0	ND	0.1	ug/L	12/19/97
Fluorene	86-73-7	ND	0.1	ug/L	12/19/97
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.1	ug/L	12/19/97
Naphthalene	91-20-3	0.6 *	0.5	ug/L	12/19/97
Phenanthrene	85-01-8	ND	0.1	ug/L	12/19/97
Pyrene	129-00-0	ND	0.1	ug/L	12/19/97
#Extraction for EPA 8310	EPA 3510	-		Extrn Date	12/18/97
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	12/24/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-1
AEN LAB NO: 9712240-02
AEN WORK ORDER: 9712240
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 12/16/97
DATE RECEIVED: 12/15/97
REPORT DATE: 01/09/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/20/97
Toluene	108-88-3	ND	0.5	ug/L	12/20/97
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/20/97
Xylenes, Total	1330-20-7	ND	2	ug/L	12/20/97
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/20/97
Methyl t-Butyl Ether	1634-04-4	ND	5	ug/L	12/20/97
#Silica gel Cleanup	EPA 3630M	-		Cleanup	01/06/98
#Extraction for TPH	EPA 3510	-		Extrn Date	01/05/98
TPH as Diesel	GC-FID	ND	0.05	mg/L	01/07/98
TPH as Oil	GC-FID	ND	0.2	mg/L	01/07/98
Polynuclear Aromatic HCs	EPA 8310				
Acenaphthene	83-32-9	ND	0.5	ug/L	12/19/97
Acenaphthylene	208-96-8	ND	1	ug/L	12/19/97
Anthracene	120-12-7	ND	0.1	ug/L	12/19/97
Benzo(a)anthracene	56-55-3	ND	0.1	ug/L	12/19/97
Benzo(b)fluoranthene	205-99-2	ND	0.1	ug/L	12/19/97
Benzo(k)fluoranthene	207-08-9	ND	0.1	ug/L	12/19/97
Benzo(g,h,i)perylene	191-24-2	ND	0.1	ug/L	12/19/97
Benzo(a)pyrene	50-32-8	ND	0.1	ug/L	12/19/97
Chrysene	218-01-9	ND	0.1	ug/L	12/19/97
Dibenzo(a,h)anthracene	53-70-3	ND	0.1	ug/L	12/19/97
Fluoranthene	206-44-0	ND	0.1	ug/L	12/19/97
Fluorene	86-73-7	ND	0.1	ug/L	12/19/97
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.1	ug/L	12/19/97
Naphthalene	91-20-3	0.6 *	0.5	ug/L	12/19/97
Phenanthrene	85-01-8	ND	0.1	ug/L	12/19/97
Pyrene	129-00-0	ND	0.1	ug/L	12/19/97
#Extraction for EPA 8310	EPA 3510	-		Extrn Date	12/18/97
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	12/24/97

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-1
AEN LAB NO: 9712240-02
AEN WORK ORDER: 9712240
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 12/16/97
DATE RECEIVED: 12/15/97
REPORT DATE: 01/09/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED

Reporting limits for diesel/oil elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-7
AEN LAB NO: 9712240-03
AEN WORK ORDER: 9712240
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 12/12/97
DATE RECEIVED: 12/15/97
REPORT DATE: 01/09/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	7.9 *	0.5	ug/L	12/20/97
Toluene	108-88-3	ND	0.5	ug/L	12/20/97
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/20/97
Xylenes, Total	1330-20-7	5 *	2	ug/L	12/20/97
Purgeable HCs as Gasoline	5030/GCFID	0.42 *	0.05	mg/L	12/20/97
Methyl t-Butyl Ether	1634-04-4	ND	5	ug/L	12/20/97
#Silica gel Cleanup	EPA 3630M	-		Cleanup	12/29/97
#Extraction for TPH	EPA 3510	-		Extrn Date	12/23/97
TPH as Diesel	GC-FID	ND	0.05	mg/L	12/29/97
TPH as Oil	GC-FID	ND	0.2	mg/L	12/29/97
Polynuclear Aromatic HCs	EPA 8310				
Acenaphthene	83-32-9	ND	0.5	ug/L	12/19/97
Acenaphthylene	208-96-8	ND	1	ug/L	12/19/97
Anthracene	120-12-7	ND	0.1	ug/L	12/19/97
Benzo(a)anthracene	56-55-3	ND	0.1	ug/L	12/19/97
Benzo(b)fluoranthene	205-99-2	ND	0.1	ug/L	12/19/97
Benzo(k)fluoranthene	207-08-9	ND	0.1	ug/L	12/19/97
Benzo(g,h,i)perylene	191-24-2	ND	0.1	ug/L	12/19/97
Benzo(a)pyrene	50-32-8	ND	0.1	ug/L	12/19/97
Chrysene	218-01-9	ND	0.1	ug/L	12/19/97
Dibenzo(a,h)anthracene	53-70-3	ND	0.1	ug/L	12/19/97
Fluoranthene	206-44-0	ND	0.1	ug/L	12/19/97
Fluorene	86-73-7	ND	0.1	ug/L	12/19/97
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.1	ug/L	12/19/97
Naphthalene	91-20-3	1.0 *	0.5	ug/L	12/19/97
Phenanthrene	85-01-8	ND	0.1	ug/L	12/19/97
Pyrene	129-00-0	ND	0.1	ug/L	12/19/97
#Extraction for EPA 8310	EPA 3510	-		Extrn Date	12/18/97
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	12/24/97

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9712240
CLIENT PROJECT ID: 7-285.1

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spikes(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analyses.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behaviour, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrument performance.

D: Surrogates diluted out.

I: Interference.

!: Indicates result outside of established laboratory QC limits.

ANALYSIS: Polynuclear Aromatic HCs

MATRIX: Water

METHOD BLANK SAMPLES

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: MB-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/1/
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	703			1000	70.3	50	150		
Acenaphthylene	ND		1						
Phenanthrene	ND		0.1						
Pyrene	ND		0.1						
Benzo(k)fluoranthene	ND		0.1						
Dibenzo(a,h)anthracene	ND		0.1						
Acenaphthene	ND		0.5						
Anthracene	ND		0.1						
Benzo(a)anthracene	ND		0.1						
Benzo(b)fluoranthene	ND		0.1						
Benzo(g,h,i)perylene	ND		0.1						
Benzo(a)pyrene	ND		0.1						
Chrysene	ND		0.1						
Fluoranthene	ND		0.1						
Fluorene	ND		0.1						
Indeno(1,2,3-cd)pyrene	ND		0.1						
Naphthalene	ND		0.5						

LABORATORY CONTROL SAMPLES

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCD-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/3/ 1
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	709	703		1000	70.9	50	150		
Acenaphthylene	9379	ND	1	10000	93.79	50	150		
Phenanthrene	944	ND	0.1	1000	94.4	50	150		
Pyrene	897	ND	0.1	1000	89.7	50	150		
Benzo(k)fluoranthene	907	ND	0.1	1000	90.7	50	150		
Dibenzo(a,h)anthracene	757	ND	0.1	1000	75.7	50	150		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCS-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/2/ 1
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	606	703		1000	60.6	50	150		
Acenaphthylene	8524	ND	1	10000	85.24	50	150		
Phenanthrene	912	ND	0.1	1000	91.2	50	150		
Pyrene	841	ND	0.1	1000	84.1	50	150		
Benzo(k)fluoranthene	842	ND	0.1	1000	84.2	50	150		
Dibenzo(a,h)anthracene	707	ND	0.1	1000	70.7	50	150		

LABORATORY CONTROL DUPLICATES

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCR-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/4/ 2
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl (surr)	709	606		1000	70.9	50	150		
Acenaphthylene	9379	8524	1	10000				9.551	40
Phenanthrene	944	912	0.1	1000				3.45	40

ANALYSIS: Polynuclear Aromatic HCs

MATRIX: Water

LABORATORY CONTROL DUPLICATES

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: LCR-121897
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/4/ 2
BATCH ID: 8310W121897
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Pyrene	897	841	0.1	1000				6.44	40
Benzo(k)fluoranthene	907	842	0.1	1000				7.43	40
Dibenzo(a,h)anthracene	757	707	0.1	1000				6.83	40
Acenaphthene	ND	ND	0.5					0	
Anthracene	ND	ND	0.1					0	
Benzo(a)anthracene	ND	ND	0.1					0	
Benzo(b)fluoranthene	ND	ND	0.1					0	
Benzo(g,h,i)perylene	ND	ND	0.1					0	
Benzo(a)pyrene	ND	ND	0.1					0	
Chrysene	ND	ND	0.1					0	
Fluoranthene	ND	ND	0.1					0	
Fluorene	ND	ND	0.1					0	
Indeno(1,2,3-cd)pyrene	ND	ND	0.1					0	
Naphthalene	ND	ND	0.5					0	

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: 9712240-01I
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/14/
BATCH ID: 8310W121897
DILUTION: 1.00

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl	(surr)	624			1000	62.4	50	150		

SAMPLE TYPE: Sample-Client
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: 9712240-02I
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/15/
BATCH ID: 8310W121897
DILUTION: 1.00

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl	(surr)	583			1000	58.3	50	150		

SAMPLE TYPE: Sample-Client
INSTRUMENT:
UNITS: ug/L
METHOD:

LAB ID: 9712240-03I
PREPARED:
ANALYZED: 12/19/97

INSTR RUN: HPLC\971219000000/16/
BATCH ID: 8310W121897
DILUTION: 1.00

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Biphenyl	(surr)	703			1000	70.3	50	150		

ANALYSIS: TPH as Diesel

MATRIX: Water

METHOD BLANK SAMPLES

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: BLNK-1223-1
PREPARED: 12/23/97
ANALYZED: 12/23/97
INSTR RUN: GC C\971223000000/1/
BATCH ID: DS□W122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		ND		0.05						
Motor Oil		ND		0.2						
n-Pentacosane	(surr)	102.4			100	102	65	125		

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: SGBL-1229-1
PREPARED: 12/29/97
ANALYZED: 12/30/97
INSTR RUN: GC C\971223000000/19/
BATCH ID: DS□W122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		ND		0.05						
Motor Oil		ND		0.2						
n-Pentacosane	(surr)	102.4			100	102	65	125		

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: SGBL-0106-1
PREPARED: 01/06/98
ANALYZED: 01/07/98
INSTR RUN: GC C\980105000000/5/
BATCH ID: DS□W010598-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		ND		0.05						
Motor Oil		ND		0.2						
n-Pentacosane	(surr)	98.1			100	98.1	65	125		

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: TCLPBL-0105
PREPARED: 01/05/98
ANALYZED: 01/07/98
INSTR RUN: GC C\980105000000/8/
BATCH ID: DS□W010598-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		ND		0.05						
Motor Oil		ND		0.2						
n-Pentacosane	(surr)	101.1			100	101	65	125		

LABORATORY CONTROL SAMPLES

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCDW-1223-1
PREPARED: 12/23/97
ANALYZED: 12/23/97
INSTR RUN: GC C\971223000000/3/1
BATCH ID: DS□W122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.12	ND	0.05	2.00	106	60	110		
n-Pentacosane	(surr)	109.1	102.4		100	109	65	125		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCSW-1223-1
PREPARED: 12/23/97
ANALYZED: 12/23/97
INSTR RUN: GC C\971223000000/2/1
BATCH ID: DS□W122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.08	ND	0.05	2.00	104	60	110		
n-Pentacosane	(surr)	104.9	102.4		100	105	65	125		

ANALYSIS: TPH as Diesel

MATRIX: Water

LABORATORY CONTROL SAMPLES

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: SGLC-1229-1
PREPARED: 12/29/97
ANALYZED: 12/30/97
INSTR RUN: GC C\971223000000/20/19
BATCH ID: DSLW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.18	ND	0.05	2.00	109	60	110		
n-Pentacosane	(surr)	106.1	102.4		100	106	65	125		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: SGLC-0106-1
PREPARED: 01/06/98
ANALYZED: 01/07/98
INSTR RUN: GC C\980105000000/6/5
BATCH ID: DSLW010598-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.12	ND	0.05	2.00	106	60	110		
n-Pentacosane	(surr)	98.2	98.1		100	98.2	65	125		

LABORATORY CONTROL DUPLICATES

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCRW-1223-1
PREPARED: 12/23/97
ANALYZED: 12/23/97
INSTR RUN: GC C\971223000000/4/2
BATCH ID: DSLW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		2.12	2.08	0.05	2030				1.90	15
Motor Oil		ND	ND	0.2	200				0	
n-Pentacosane	(surr)	109.1	104.9			3.925	65	125		

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: 9712240-01G
PREPARED: 12/29/97
ANALYZED: 12/29/97
INSTR RUN: GC C\971223000000/24/
BATCH ID: DSLW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	104.1			100	104	65	125		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: 9712240-03G
PREPARED: 12/29/97
ANALYZED: 12/29/97
INSTR RUN: GC C\971223000000/25/
BATCH ID: DSLW122397-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	102.7			100	103	65	125		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: 9712240-02G
PREPARED: 01/06/98
ANALYZED: 01/07/98
INSTR RUN: GC C\980105000000/7/
BATCH ID: DSLW010598-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	103.5			100	104	65	125		

QUALITY CONTROL DATA

METHOD: EPA 8010

AEN JOB NO: 9712240
INSTRUMENT: I
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery: Bromochloro-methane	Percent Recovery: 1-Bromo-3-chloro-propane
12/24/97	MW-8	01	100	98
12/24/97	MW-1	02	95	97
12/24/97	MW-7	03	96	94
QC Limits:			70-130	70-130

DATE ANALYZED: 12/22/97
SAMPLE SPIKED: LCS
INSTRUMENT: I

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits: Percent Recovery	QC Limits: RPD
1,1-Dichloroethene	25	102	<1	70-130	20
Trichloroethene	25	118	14	70-130	20
Chlorobenzene	25	104	6	70-130	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9712240
INSTRUMENT: H
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/20/97	MW-8	01	98
12/20/97	MW-1	02	99
12/20/97	MW-7	03	91
QC Limits:			70-130

DATE ANALYZED: 12/20/97
SAMPLE SPIKED: LCS
INSTRUMENT: H

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	100	89	7	70-130	20
Toluene	100	98	7	70-130	20
Ethylbenzene	100	102	7	70-130	20
Total Xylenes	300	102	7	70-130	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

9712240

AEN-1

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080 PIKE LANE, SUITE C
CONCORD, CA 94520
(510) 685-7852
(800) 423-7143

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

40118

Company Name: Hydro Environmental Tech
Phone #: 510-521-2684
FAX #: 510-521-5048
Company Address: 2394 Mariner Sq. Dr. #2 Alameda, Calif. 94501
Site Location: 2415 Mariner Square Dr.
Project Manager: Gary Pischke
Client Project ID: (#) 7-285.1
(NAME) Mariner Square
I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Gary Pischke

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	UNPRESERVED	OTHER (Specify)	Sampling: DATE	TIME
MW-8		6	X						X						12/12/97	9:44a
MW-8		2	X						X						12/12/97	9:28a
MW-8		2	X										X		12/12/97	9:28a
MW-1		6	X						X						12/12/97	10:32a
MW-1		2	X						X						12/12/97	10:22a
MW-1		2	X										X		12/12/97	10:22a
MW-7		6	X						X						12/12/97	10:24a
MW-7		2	X						X						12/12/97	11:13a
MW-7		2	X										X		12/12/97	11:13a

ANALYSIS REQUEST																													OTHER
BTEX 602 ☐ 8020 ☐ with MTBE ☐	BTEX/Gas Hydrocarbons PID/FID ☐ with MTBE ☒	Hydrocarbons GC/FID Gas ☐ Diesel ☐ Screen ☐	Hydrocarbon Profile (SIMDIS) ☐	Oil and Grease 413.1 ☐ 413.2 ☐ SM-503 ☐	TPH/IR 418.1 ☐ SM 503 ☐	EDB by 504 ☐ DBCP by 504 ☐	EPA 503.1 ☐ EPA 502.2 ☐	EPA 601 ☐ EPA 8010 ☐ TPHd/mo D3328	EPA 602 ☐ EPA 8020 ☐	EPA 608 ☐ 8080 ☐ PCB only ☐	EPA 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐	EPA 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	EPA 610 ☐ 8310 ☒ PNAs	EP TOX Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi-VOA ☐ Pest ☐ Herb ☐	EPA Metals - Priority Pollutant ☐ TAL ☐ RCRA ☐	CAM Metals TTLC ☐ STLC ☐	Lead 239.2 ☐ 200.7 ☐ 7420 ☐ 7421 ☐ 6010 ☐	Organic Lead ☐	Corrosivity ☐ Flash Point ☐ Reactivity ☐	~~8240 8270 8310~~	X Vinyl Chloride 8010					
	X																							X					1A
								X																					1G
													X																1L
	X																							X					2A
								X																					2F
													X																2L
	X																							X					3A
								X																					3K
													X																3P

TAT
Priority (24 hr) ☐
Expedited (48 hr) ☐
7 Business Days ☐
Other 10
Business Days ☒

Special Handling
GTEL Contact
Quote/Contract #
Confirmation #
P.O. #

QA/QC Level
Blue ☐ CLP ☐ Other ☐

SPECIAL DETECTION LIMITS

SPECIAL REPORTING REQUIREMENTS
FAX ☑

REMARKS: Silica gel cleanup on diesel & motor oil
Invoice: Mariner Square & Assoc. c/o Hydro

Lab Use Only Lot #:
Storage Location
Work Order #:

CUSTODY RECORD

	Date	Time	
Relinquished by Sampler: Gary Pischke	12/15/97	12:08pm	Received by: Rich Gilmore
Relinquished by: Rich Gilmore	12-15-97	13:10	Received by:
Relinquished by:	Date	Time	Received by Laboratory: Greg Glaser
			Waybill #