



January 4, 1994

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

STIP 4352

Attention: Ms. Susan Hugo

**QUARTERLY GROUNDWATER MONITORING REPORT  
NOVEMBER 1993 SAMPLING EVENT  
EMERY BAY PLAZA  
1650 65TH STREET  
EMERYVILLE, CALIFORNIA**

Dear Ms. Hugo:

This letter presents data collected by PES Environmental, Inc. (PES) during the November 15, 1993 quarterly groundwater monitoring conducted at Emery Bay Plaza, located at 1650 65th Street in Emeryville, California (Plate 1). PES has been retained by Emery Bay Plaza to conduct groundwater monitoring at the site. PES has also been providing operation, maintenance and monitoring of a groundwater extraction and treatment system at the site.

The purpose of the groundwater monitoring program at this site is to: (1) evaluate the presence of hydrocarbons in groundwater; (2) provide data to assess the performance and effectiveness of the groundwater remedial program; and (3) monitor seasonal water level variations at the site. The monitoring is performed in accordance with California Regional Water Quality Control Board (RWQCB) guidelines and the approved remedial action plan for this site.

**BACKGROUND**

Six monitoring wells and one extraction well were installed at the site (Plate 2) following removal of an on site underground storage tank (UST) in July 1987 and several offsite USTs in September and October 1989. Groundwater has been monitored since November 1989. An activated carbon groundwater treatment system was installed and its operation was begun in December 1990. Discharges of treated groundwater have been to the sanitary sewer under the authority of an East Bay Municipal Utility District wastewater discharge permit (Permit #502-45131). Groundwater extraction was discontinued on October 25, 1993 pending startup of a passive in-situ bioremediation pilot program. The present sampling is the seventeenth consecutive sampling event since groundwater monitoring was initiated, and the ninth to be conducted by PES.

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## GROUNDWATER ELEVATIONS

### Water-Level Measurement Procedures

Prior to sampling, the groundwater level in each of the six monitoring wells was measured to a precision of 0.01 feet using an electronic water-level indicator. Prior to each measurement, the portion of the water-level indicator that was submerged in the well was cleaned with a mild detergent solution and rinsed with de-ionized water.

### Results

Water-level data were converted to water-level elevations referenced to mean sea level (MSL). A groundwater elevation map constructed from the data is presented on Plate 3. An historical summary of groundwater elevations for wells at the site is presented in Table 1.

Groundwater elevations have decreased in all monitoring wells except MW-2 and MW-6 since the August 19, 1993 sampling event. Water levels in the vicinity of the extraction well have increased because the groundwater extraction system has not operated since October 25, 1993. Based on measured water levels on November 15, 1993, groundwater flow direction at the site was calculated to be toward the southwest, with an approximate gradient of 0.01 foot per foot. This is generally consistent with historical groundwater flow direction and gradient.

## GROUNDWATER SAMPLING AND ANALYTICAL TESTING

### Sampling Protocol

Groundwater samples were collected on November 15, 1993 by Blaine Tech Services, Inc. (Blaine Tech) from Monitoring Wells MW-2, MW-3, MW-4, MW-5, MW-6, MW-7 and extraction well EW-1. Prior to sampling, the groundwater was visually inspected to assess the presence of floating product. A minimum of three well volumes were evacuated prior to sampling using a teflon bladder pump. During pumping the discharge water was measured for pH, temperature, electrical conductivity and turbidity. Groundwater samples were collected with a clean teflon bailer and decanted into clean 40-milliliter glass vials with teflon lined caps.

Samples were immediately labeled to designate sample number, time and date collected, and analysis requested, and stored in a chilled, thermally insulated cooler for transport to the analytical laboratory for chemical analysis. The information collected during the groundwater sampling and the chain of custody records are presented in a groundwater sampling report prepared by Blaine Tech, provided in Appendix A.

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### Analytical Program

Groundwater samples from all wells including the extraction well were analyzed by Coast-to-Coast Analytical Services, Inc. (Coast to Coast) in San Jose, California, a State-certified chemical analysis laboratory. Samples were analyzed for total petroleum hydrocarbons quantified as gasoline (TPH gas) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Test Method 8015M/8020.

### Analytical Results

Detectable levels of TPH gas were found in wells MW-2, MW-3, MW-5, MW-7 and EW-1. Detectable levels of BTEX were found in all wells except MW-6. Consistent with historical monitoring data, Well MW-2, located within the backfill of the soil excavation at the former onsite UST, exhibited the highest levels of dissolved hydrocarbons (TPH and BTEX).

Analytical results for all wells, including historical monitoring results for the previous sampling events and relevant federal and state standards, are presented in Table 2. Laboratory reports and chain of custody records are provided in Appendix B. The distribution of hydrocarbons in groundwater at the site on November 15, 1993 is presented on Plate 4.

### **SUMMARY**

Groundwater elevations have decreased in all but one well since the August 19, 1993 sampling. The groundwater flow direction continues to be southwest.

Concentrations of petroleum hydrocarbons in groundwater samples increased significantly in wells MW-2 and EW-1. This may be due to the recovery of water levels in the tank backfill area, resulting from the interruption of groundwater extraction, to areas of greater soil contamination in the zone of water-level fluctuation. The increased concentrations of petroleum hydrocarbons from the zone of groundwater fluctuation is typical following the termination of groundwater extraction. Contamination of soil in the zone of groundwater fluctuation will be addressed by the proposed passive in-situ bioremediation program. Concentration of petroleum hydrocarbons in all other groundwater samples did not change significantly from last quarter.

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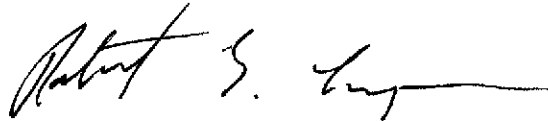
If you have any questions or comments, please do not hesitate to call either of the undersigned.

Yours very truly,

PES ENVIRONMENTAL, INC.



Andrew A. Briefer, P.E.  
Senior Engineer



Robert S. Creps, P. E.  
Associate Engineer



Attachments:

- |            |   |
|------------|---|
| Table 1    | Summary of Groundwater Elevations Through November 1993                     |
| Table 2    | Summary of Analytical Results for Groundwater Samples Through November 1993 |
| Plate 1    | Site Location Map   |
| Plate 2    | Well Location Map   |
| Plate 3    | Groundwater Elevation Contours on November 15, 1993                         |
| Plate 4    | Dissolved Hydrocarbons in Groundwater on November 15, 1993                  |
| Appendix A | Groundwater Sampling Report   |
| Appendix B | Analytical Laboratory Reports   |

pc: Mr. Thomas Gram - P. O. Partners  
Ms. Lynn Tolin - Emery Bay Plaza  
Mr. Matt Dulka - Hanson, Bridgett, Marcus, Vlahos & Rudy

Table 1. Summary of Groundwater Elevations Through November 1993  
 Emery Bay Plaza  
 1650 65th Street, Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Groundwater Elevations (feet MSL)
MW-2	21-Feb-90	ES	15.75	11.72	4.03
	25-May-90	ES	15.75	11.83	3.92
	29-Aug-90	ES	15.75	11.72	4.03
	29-Nov-90	ES	15.75	11.99	3.76
	1-Mar-91	ES	15.79	12.87	2.92
	28-May-91	ES	15.79	12.21	3.58
	1-Aug-91	ES	15.79	NA	NA
	27-Jan-92	PES	15.79	11.78	4.01
	28-Feb-92	PES	15.79	11.70	4.09
	28-May-92	PES	15.79	11.83	3.96
	27-Aug-92	PES	15.79	12.28	3.51
	10-Nov-92	PES	15.79	12.40	3.39
	18-Feb-93	PES	15.79	12.00	3.79
	20-May-93	PES	15.79	12.00	3.79
	19-Aug-93	PES	15.79	12.11	3.68
15-Nov-93	<b>PES</b>	<b>15.79</b>	<b>11.64</b>	<b>4.15</b>	
MW-3	21-Feb-90	ES	12.45	9.18	3.27
	25-May-90	ES	12.45	9.25	3.20
	29-Aug-90	ES	12.45	9.50	2.95
	29-Nov-90	ES	12.45	9.80	2.65
	1-Mar-91	ES	12.43	9.51	2.92
	28-May-91	ES	12.43	9.03	3.40
	1-Aug-91	ES	12.43	NA	NA
	27-Jan-92	PES	12.43	9.44	2.99
	28-Feb-92	PES	12.43	8.80	3.63
	28-May-92	PES	12.43	8.80	3.63
	27-Aug-92	PES	12.43	9.18	3.25
	10-Nov-92	PES	12.43	9.44	2.99
	18-Feb-93	PES	12.43	7.59	4.84
	20-May-93	PES	12.43	8.21	4.22
	19-Aug-93	PES	12.43	8.71	3.72
15-Nov-93	<b>PES</b>	<b>12.43</b>	<b>9.09</b>	<b>3.34</b>	
MW-4	21-Feb-90	ES	12.24	8.63	3.61
	25-May-90	ES	12.24	8.58	3.66
	29-Aug-90	ES	12.24	8.50	3.74
	29-Nov-90	ES	12.24	8.74	3.50
	1-Mar-91	ES	12.24	8.65	3.59
	28-May-91	ES	12.24	8.57	3.67

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Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Groundwater Elevations (feet MSL)
MW-4	1-Aug-91	ES	12.24	NA	NA
	27-Jan-92	PES	12.24	8.62	3.62
	28-Feb-92	PES	12.24	8.52	3.72
	28-May-92	PES	12.94	8.35	3.89
	27-Aug-92	PES	12.24	9.00	3.24
	10-Nov-92	PES	12.24	8.85	3.39
	18-Feb-93	PES	12.24	8.17	4.07
	20-May-93	PES	12.24	8.21	4.03
	19-Aug-93	PES	12.24	8.20	4.04
	15-Nov-93	<b>PES</b>	<b>12.24</b>	<b>8.33</b>	<b>3.91</b>
MW-5	21-Feb-90	ES	12.81	6.91	5.90
	25-May-90	ES	12.81	7.58	5.23
	29-Aug-90	ES	12.81	7.75	5.06
	29-Nov-90	ES	12.81	8.17	4.64
	1-Mar-91	ES	12.82	8.11	4.71
	28-May-91	ES	12.82	7.39	5.43
	1-Aug-91	ES	12.82	NA	NA
	27-Jan-92	PES	12.82	7.90	4.92
	28-Feb-92	PES	12.82	7.73	5.09
	28-May-92	PES	12.82	7.18	5.64
	27-Aug-92	PES	12.82	7.54	5.28
	10-Nov-92	PES	12.82	7.90	4.92
	18-Feb-93	PES	12.82	6.58	6.24
	20-May-93	PES	12.82	6.29	6.53
	19-Aug-93	PES	12.82	6.89	5.93
15-Nov-93	<b>PES</b>	<b>12.82</b>	<b>7.43</b>	<b>5.39</b>	
MW-6	1-Mar-91	ES	12.03	8.59	3.44
	28-May-91	ES	12.03	8.35	3.68
	1-Aug-91	ES	12.03	NA	NA
	27-Jan-92	PES	12.03	8.32	3.71
	28-Feb-92	PES	12.03	8.08	3.95
	28-May-92	PES	12.03	8.04	3.99
	27-Aug-92	PES	12.03	8.48	3.55
	10-Nov-92	PES	12.03	8.52	3.51
	18-Feb-93	PES	12.03	8.14	3.89
	20-May-93	PES	12.03	8.46	3.57
	19-Aug-93	PES	12.03	8.61	3.42
	15-Nov-93	<b>PES</b>	<b>12.03</b>	<b>8.30</b>	<b>3.73</b>

Table 1. Summary of Groundwater Elevations Through November 1993  
 Emery Bay Plaza  
 1650 65th Street, Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Groundwater Elevations (feet MSL)
MW-7	1-Mar-91	ES	12.9	7.51	5.39
	28-May-91	ES	12.9	7.07	5.83
	1-Aug-91	ES	12.9	NA	NA
	27-Jan-92	PES	12.9	7.28	5.62
	28-Feb-92	PES	12.9	7.04	5.86
	28-May-92	PES	12.9	6.81	6.09
	27-Aug-92	PES	12.9	7.12	5.78
	10-Nov-92	PES	12.9	7.80	5.10
	18-Feb-93	PES	12.9	6.54	6.36
	20-May-93	PES	12.9	6.17	6.73
	19-Aug-93	PES	12.9	6.60	6.30
	15-Nov-93	PES	12.9	6.89	6.01

NOTES: Ft MSL = feet above Mean Sea Level  
 ES = Engineering-Science, Inc.  
 PES = PES Environmental, Inc.  
 NA = Information not available at this date.

Table 2. Summary of Analytical Results for Groundwater Samples Through November, 1993  
 Emery Bay Plaza  
 1650 65th Street, Emeryville, California

Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
					MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
MW-2	Nov-89	ES	100	NA	8.4	7.4	2.4	13	0.015 *	0.05
	Feb-90	ES	54	NA	7.8	5.6	1.6	8.4	0.032 *	0.021
	May-90	ES	40	NA	7.8	7.5	1.6	7.6	0.076 *	0.025
	Aug-90	ES	49	4.6	9	8	ND	8.9	0.040 *	0.0059
	Nov-90	ES	73	3.5	6.9	5.9	1.4	7.4	NA	NA
	Mar-91	ES	72	1.8	5.5	6.6	1	7.7	NA	NA
	May-91	ES	31	ND	8.4	4.7	1.7	6.3	NA	NA
	Aug-91	ES	47	ND	7.6	1.6	7.3	7.8	NA	NA
	29-Jan-92	PES	77.000	NA	10.000	8.700	2.000	7.600	NA	NA
	28-Feb-92	PES	70.000	NA	9.100	6.400	0.530	7.400	NA	NA
	28-May-92	PES	54.000	NA	8.000	4.800	2.400	6.200	NA	NA
	27-Aug-92	PES	47.000	NA	2.700	2.900	3.400	9.200	NA	NA
	10-Nov-92	PES	45.000	< 20.000	6.600	4.000	2.000	5.800	< 0.050	NA
	18-Feb-93	PES	14.000	NA	2.300	0.810	0.670	1.400	NA	NA
	20-May-93	PES	43.000	NA	7.300	5.200	1.500	5.500	NA	NA
19-Aug-93	PES	45.000	NA	4.900	3.700	1.300	3.400	NA	NA	
15-Nov-93	PES	97.000	NA	6.100	1.700	1.700	4.100	NA	NA	
MW-3	Nov-89	ES	0.13	NA	0.0022	ND	ND	0.003	ND	ND
	Feb-90	ES	ND	NA	0.0025	ND	ND	ND	NA	0.011
	May-90	ES	ND	ND	0.002	ND	ND	ND	ND	NA
	Aug-90	ES	ND	0.8	0.0044	0.0029	ND	0.0054	NA	NA
	Nov-90	ES	0.9	0.8	0.0034	ND	ND	ND	NA	NA
	Mar-91	ES	ND	ND	0.025	0.025	0.0053	0.32	NA	NA
	May-91	ES	ND	ND	0.0026	ND	ND	ND	NA	NA
	Aug-91	ES	ND	ND	0.0019	ND	ND	ND	NA	NA



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Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
					MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
MW-3	29-Jan-92	PES	0.092	NA	0.0024	<0.0003	0.0006	<0.0003	NA	NA
	28-Feb-92	PES	0.160***	NA	0.0028	<0.0003	0.0007	0.0005	NA	NA
	28-May-92	PES	<0.050	NA	0.0025	<0.0005	<0.0005	<0.0005	NA	NA
	27-Aug-92	PES	0.370	NA	0.0040	<0.001	<0.0005	<0.0005	NA	NA
	10-Nov-92	PES	0.240	<0.100	0.0042	<0.0003	<0.0003	<0.0006	<0.0003	NA
	18-Feb-93	PES	0.140	NA	0.0018	<0.0005	<0.0005	<0.0005	NA	NA
	20-May-93	PES	0.072	NA	0.0031	<0.0005	<0.0005	<0.0005	NA	NA
	19-Aug-93	PES	<0.050	NA	0.0032	<0.0005	<0.0005	0.0007	NA	NA
	15-Nov-93	PES	0.070	NA	0.0023	0.0007	<0.0005	0.0015	NA	NA
MW-4	Nov-89	ES	0.2	NA	0.0023	ND	ND	ND	ND	ND
	Feb-90	ES	ND	NA	ND	ND	ND	ND	NA	0.006
	May-90	ES	ND	ND	0.001	ND	ND	ND	ND	NA
	Aug-90	ES	ND	0.8	0.0089	0.0071	ND	0.0094	NA	NA
	Nov-90	ES	ND	0.7	0.0027	ND	ND	ND	NA	NA
	Mar-91	ES	NA	ND	0.003	ND	ND	ND	NA	NA
	May-91	ES	NA	ND	0.0024	ND	ND	ND	NA	NA
	Aug-91	ES	NA	ND	0.0015	ND	ND	ND	NA	NA
	29-Jan-92	PES	<0.050	NA	0.0022	0.0004	<0.0003	0.0007	NA	NA
	28-Feb-92	PES	<0.050	NA	0.0016	<0.0003	<0.0003	0.0003	NA	NA
	28-May-92	PES	<0.050	NA	0.0015	<0.0005	<0.0005	<0.0005	NA	NA
	27-Aug-92	PES	0.080	NA	0.003	<0.001	<0.0005	0.0005	NA	NA
	10-Nov-92	PES	0.180	<0.100	0.060	0.0009	<0.0003	<0.0006	<0.0003	NA
	18-Feb-93	PES	0.060	NA	0.0017	<0.0005	<0.0005	<0.0005	NA	NA
	20-May-93	PES	<0.050	NA	0.0022	<0.0005	<0.0005	<0.0005	NA	NA
	19-Aug-93	PES	<0.050	NA	0.0020	0.0006	<0.0005	0.0005	NA	NA
	15-Nov-93	PES	<0.050	NA	0.0020	0.0005	<0.0005	0.0009	NA	NA

**Table 2. Summary of Analytical Results for Groundwater Samples Through November, 1993**  
 Emery Bay Plaza  
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Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
					MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
MW-5	Nov-89	ES	ND	NA	0.074	ND	ND	0.0042	ND	ND
	Feb-90	ES	ND	NA	0.2	ND	ND	ND	NA	0.012
	May-90	ES	ND	ND	0.11	ND	ND	ND	ND	NA
	Aug-90	ES	ND	0.7	0.066	0.0022	ND	0.0038	NA	NA
	Nov-90	ES	0.6	0.9	0.069	ND	ND	ND	NA	NA
	Mar-91	ES	ND	1.1	0.066	0.0023	ND	ND	NA	NA
	May-91	ES	ND	ND	0.11	ND	ND	ND	NA	NA
	Aug-91	ES	ND	ND	0.078	0.0021	ND	ND	NA	NA
	29-Jan-92	PES	0.190	NA	0.090	0.0005	<0.0003	0.0006	NA	NA
	28-Feb-92	PES	0.230***	NA	0.110	0.0009	<0.0003	0.0005	NA	NA
	28-May-92	PES	0.130	NA	0.100	<0.0005	<0.0005	<0.0005	NA	NA
	27-Aug-92	PES	0.520	NA	0.083	0.002	<0.0005	<0.0005	NA	NA
	10-Nov-92	PES	0.240	<0.100	0.074	0.0010	<0.0003	<0.0006	<0.0003	NA
	18-Feb-93	PES	0.190	NA	0.056	0.0006	<0.0005	<0.0005	NA	NA
	20-May-93	PES	<0.200	NA	0.056	<0.002	<0.002	<0.002	NA	NA
	19-Aug-93	PES	0.170	NA	0.050	0.0007	<0.0005	<0.0005	NA	NA
15-Nov-93	PES	0.220	NA	0.049	0.001	<0.001	<0.001	NA	NA	
MW-6	May-90	ES	NA	ND	ND	ND	ND	ND	ND	ND**
	Aug-90	ES	NA	ND	NA	NA	NA	NA	NA	ND**
	Nov-90	ES	1.2	1.4	0.0012	ND	ND	ND	0.0012	NA
	Mar-91	ES	ND	ND	ND	ND	ND	ND	NA	NA
	May-91	ES	ND	ND	ND	ND	ND	ND	NA	NA
	Aug-91	ES	ND	ND	ND	ND	ND	ND	NA	NA
	29-Jan-92	PES	<0.050	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
	28-Feb-92	PES	<0.050	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
	28-May-92	PES	<0.050	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	27-Aug-92	PES	0.050***	NA	<0.0005	<0.001	<0.0005	<0.0005	NA	NA

Table 2. Summary of Analytical Results for Groundwater Samples Through November, 1993  
 Emery Bay Plaza  
 1650 65th Street, Emeryville, California

Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
					MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
MW-6	10-Nov-92	PES	<0.050	<0.100	<0.0003	<0.0003	<0.0003	<0.0006	<0.0003	NA
	18-Feb-93	PES	<0.050	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	20-May-93	PES	<0.050	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	19-Aug-93	PES	<0.050	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	15-Nov-93	PES	<0.050	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
MW-7	May-90	ES	NA	0.6	0.24	ND	ND	ND	0.24	ND**
	Aug-90	ES	ND	ND	0.081	0.0018	ND	ND	0.0844	ND**
	Nov-90	ES	ND	0.8	0.054	ND	ND	ND	0.054	NA
	Mar-91	ES	ND	ND	0.1	0.0036	ND	ND	NA	NA
	May-91	ES	ND	ND	0.12	0.0027	ND	ND	NA	NA
	Aug-91	ES	ND	ND	0.074	0.0033	ND	ND	NA	NA
	29-Jan-92	PES	0.270	NA	0.025	0.0005	<0.0003	0.0008	NA	NA
	28-Feb-92	PES	0.100***	NA	0.033	0.0007	<0.0003	0.0007	NA	NA
	28-May-92	PES	0.150	NA	0.021	<0.0005	<0.0005	<0.0005	NA	NA
	27-Aug-92	PES	0.440	NA	0.011	0.001	<0.0005	<0.0005	NA	NA
	10-Nov-92	PES	0.370	<0.100	0.031	0.0012	<0.0003	0.0012	<0.0003	NA
	18-Feb-93	PES	0.270	NA	0.077	0.0013	<0.0005	0.0014	NA	NA
	20-May-93	PES	0.300	NA	0.150	0.003	<0.002	0.003	NA	NA
	19-Aug-93	PES	0.110	NA	0.040	0.0010	<0.0005	0.0011	NA	NA
	15-Nov-93	PES	0.120	NA	0.015	0.0006	<0.0005	0.0023	NA	NA
EW-1	May-90	ES	20	ND	7.5	4.5	1	6.3	0.068	ND**
	Aug-90	ES	NA	3.5	6	4.2	ND	4.6	0.016*	ND**
	Nov-90	ES	47	3.1	6	3.4	1	4.7	NA	NA
	17-Dec-90	ES	NA	NA	11	7.9	2.2	10	NA	NA
	19-Dec-90	ES	NA	NA	3.7	2.5	ND	2.3	NA	NA
	21-Dec-90	ES	NA	NA	3.2	2.2	ND	1.7	NA	NA

Table 2. Summary of Analytical Results for Groundwater Samples Through November, 1993  
 Emery Bay Plaza  
 1650 65th Street, Emeryville, California

Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

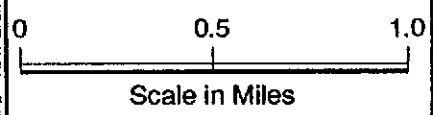
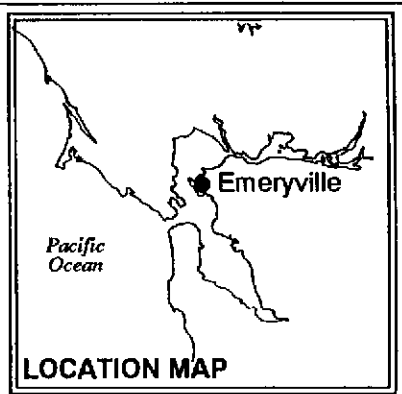
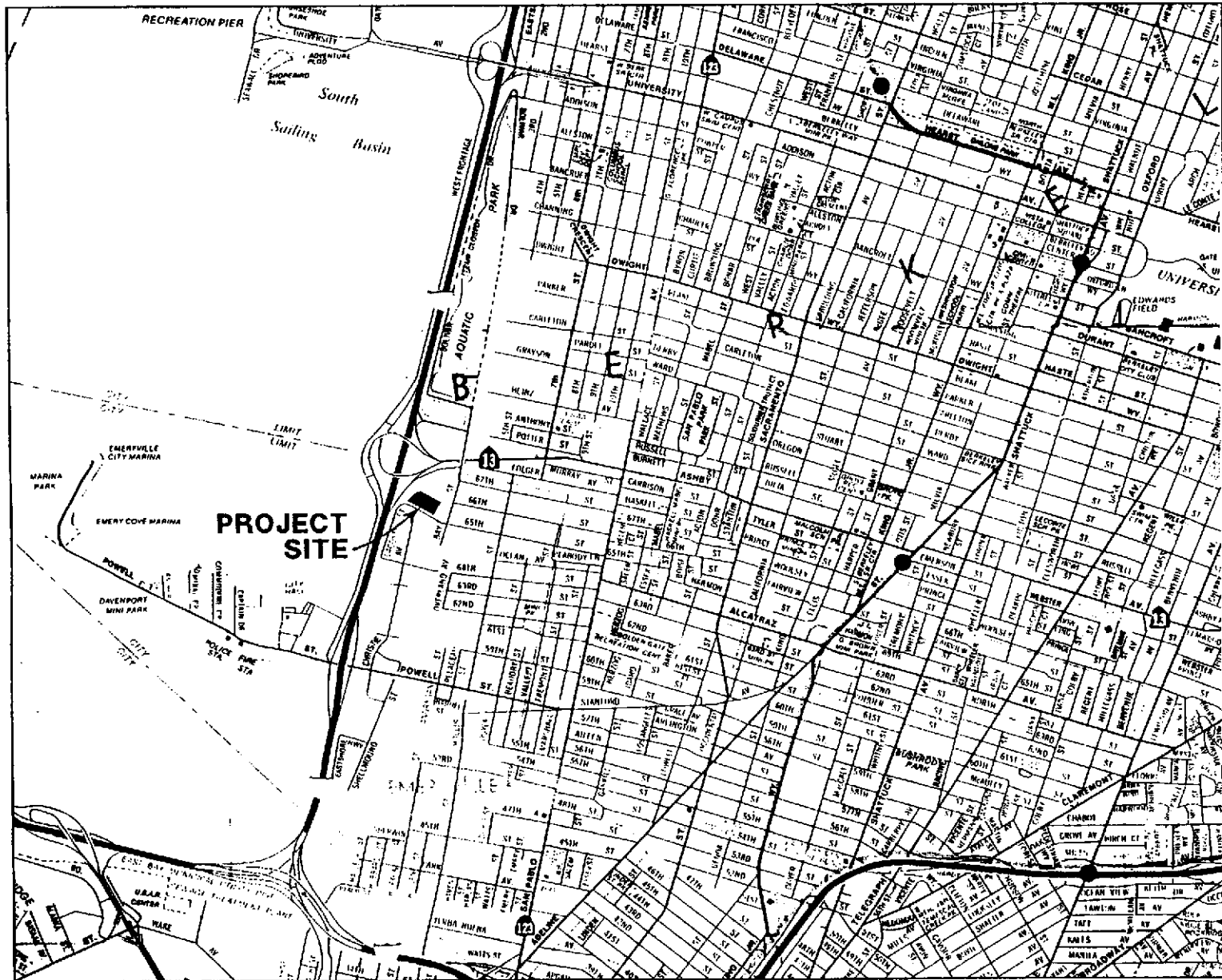
Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
					MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
EW-1	27-Dec-90	ES	NA	NA	2.9	2.1	0.16	1.5	NA	NA
	4-Jan-91	ES	NA	NA	3.2	2.8	ND	ND	NA	NA
	11-Jan-91	ES	NA	NA	3	2.4	0.2	1.8	NA	NA
	6-Feb-91	ES	NA	NA	0.47	0.23	0.011	0.39	NA	NA
	13-Feb-91	ES	NA	NA	1.2	0.28	ND	0.36	NA	NA
	15-Mar-91	ES	NA	NA	0.13	0.085	0.006	0.17	NA	NA
	3-Jul-91	ES	NA	NA	1.3	0.95	0.22	1.4	NA	NA
	1-Aug-91	ES	NA	NA	0.22	0.19	0.013	0.27	NA	NA
	16-Aug-91	ES	NA	NA	0.17	0.16	0.013	0.19	NA	NA
	13-Nov-91	ES	NA	NA	3.1	0.27	0.04	0.22	NA	NA
	29-Jan-92	PES	2.700	NA	0.570	0.150	0.0070	0.260	NA	NA
	26-Mar-92	PES	25.000	NA	3.600	2.600	0.530	2.600	NA	NA
	28-May-92	PES	16.000	NA	3.300	3.200	0.750	2.600	NA	NA
	29-Jun-92	PES	7.000	NA	2.200	3.100	0.270	1.400	NA	NA
	21-Jul-92	PES	1.600	NA	0.220	0.017	<0.0005	0.100	NA	NA
	27-Aug-92	PES	NS	NS	NS	NS	NS	NS	NS	NS
	23-Sep-92	PES	5.200	NA	1.100	0.590	0.100	1.000	NA	NA
	27-Oct-92	PES	1.300	NA	0.220	0.061	0.0053	0.110	NA	NA
	24-Nov-92	PES	7.100	NA	1.400	1.100	0.120	0.890	NA	NA

**Table 2. Summary of Analytical Results for Groundwater Samples Through November, 1993**  
 Emery Bay Plaza  
 1650 65th Street, Emeryville, California

Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
					MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
EW-1	18-Feb-93	PES	7.200	NA	1.400	0.930	0.210	1.000	NA	NA
	09-Mar-93	PES	4.600	NA	0.990	0.750	0.062	0.840	NA	NA
	21-Apr-93	PES	4.900	NA	0.270	0.180	0.020	0.190	NA	NA
	13-May-93	PES	2.600	NA	0.520	0.110	0.023	0.330	NA	NA
	28-Jun-93	PES	9.500	NA	1.900	0.460	0.230	1.000	NA	NA
	11-Aug-93	PES	1.300	NA	<0.002	<0.002	<0.002	0.400	NA	NA
	15-Nov-93	PES	46.000	NA	2.900	0.380	0.500	1.700	NA	NA

NOTES: \* = 1,2-Dichlorethane concentration (only 1,2-Dichloroethane detected).  
 \*\* = Organic Lead  
 \*\*\* = TPH quantified as gasoline but chromatogram pattern was not typical of gasoline.  
 \*\*\*\* = Small amount of Diesel 2 was detected in sample.  
 ES = Engineering-Science, Inc.  
 PES = PES Environmental, Inc.  
 NA = Not analyzed  
 ND = Not detected above method detection limit.  
 NS = Not sampled.  
 <0.0005 = Not detected above indicated method detection limit.  
 MCL = California Maximum Contaminant level, current as of January 1991.  
 DAL = Department of Health Services Action Levels, current as of January 1991.  
 TPH = Total Petroleum Hydrocarbons




**PES Environmental, Inc.**  
 Engineering & Environmental Services

**Site Location Map**  
 1650 65th Street  
 Emeryville, California

PLATE

**1**

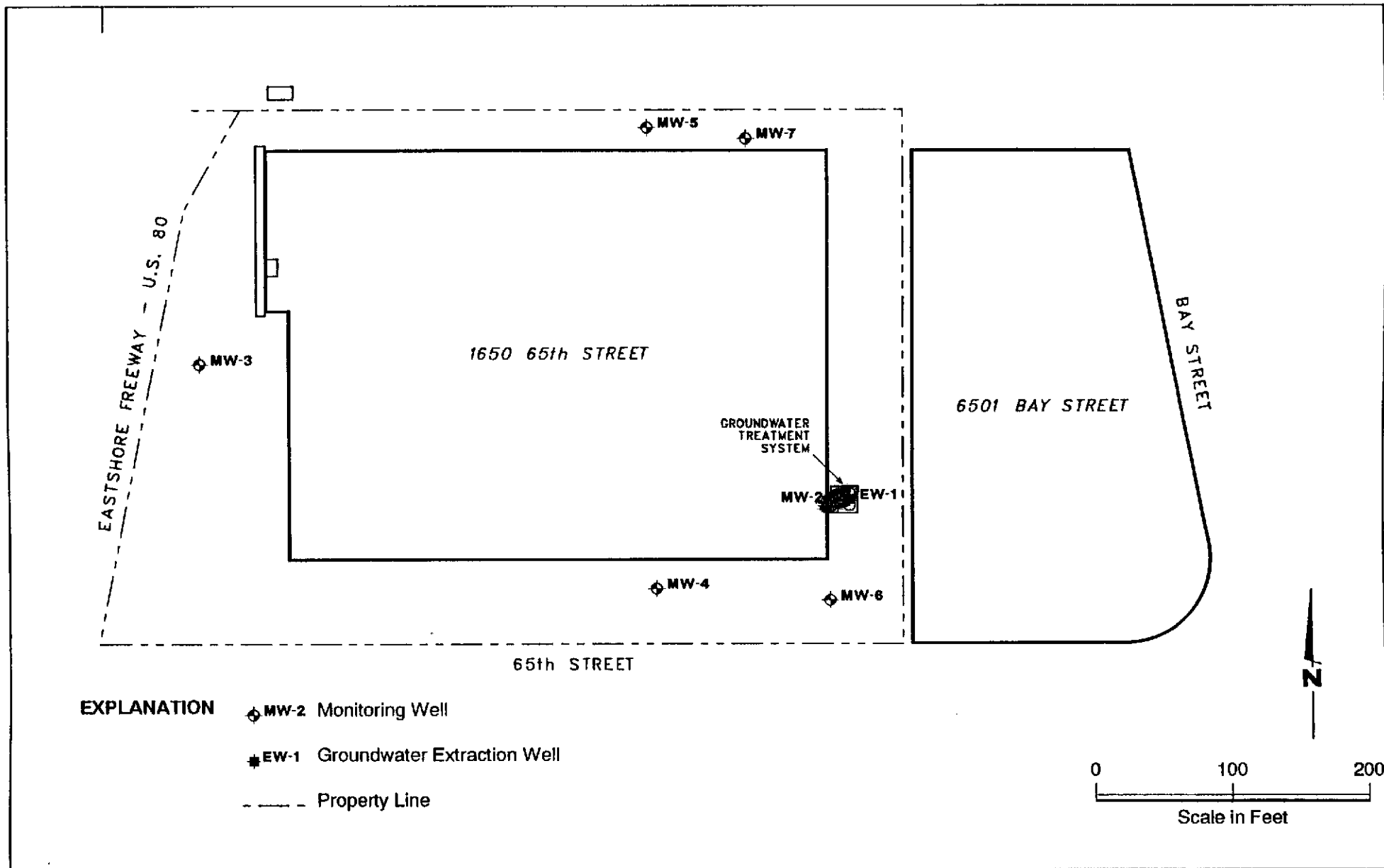
JOB NUMBER  
131.01.003

REVIEWED BY

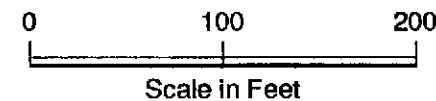
DATE  
12/93

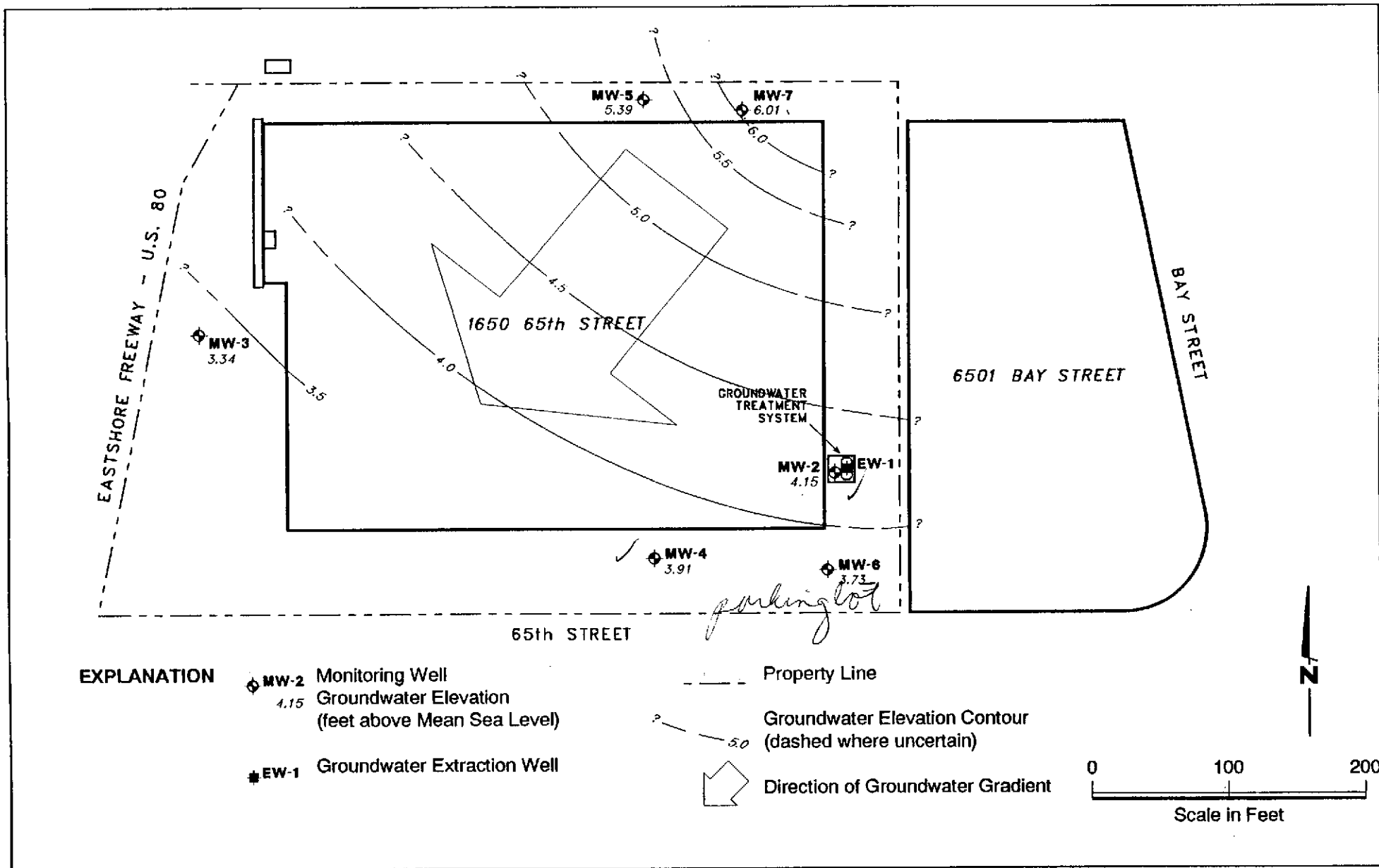
REVISED DATE

REVISED DATE

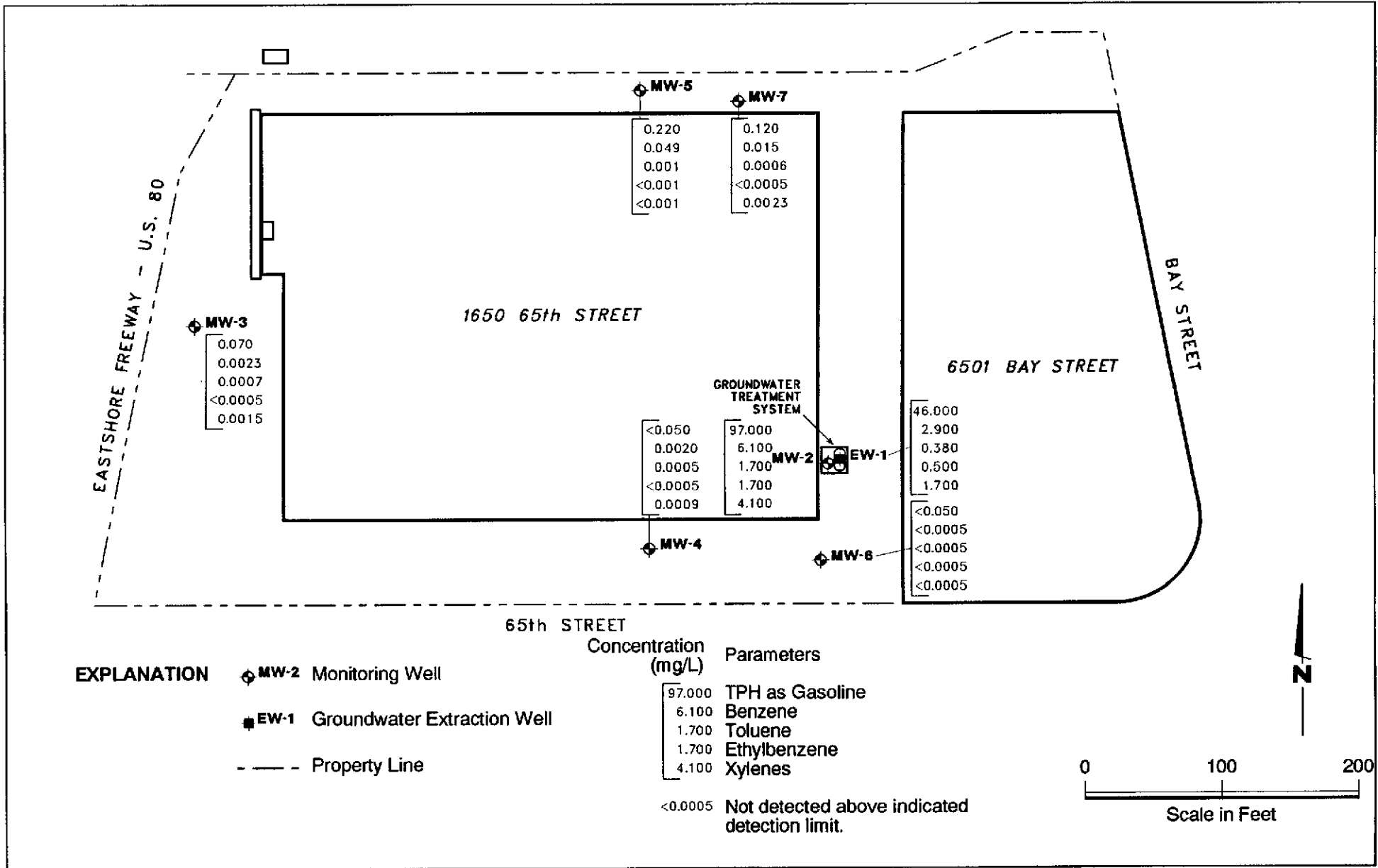


- EXPLANATION**
- ◆ MW-2 Monitoring Well
  - EW-1 Groundwater Extraction Well
  - - - Property Line











# BLAINE TECH SERVICES INC.

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

December 2, 1993

PES Environmental, Inc.  
1682 Novato Blvd., Suite 100  
Novato, CA 94947

Attn: Paul Lohman

SITE:  
P.O. Partners  
1650 65th Street  
Emeryville, California

DATE:  
November 15, 1993

## GROUNDWATER SAMPLING REPORT 931115-A-1

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Blaine Tech Services, Inc. perform specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. does not participate in the interpretation of analytical results or become involved with the marketing or installation of remedial systems.

This report deals with the groundwater well sampling performed by our firm on November 15, 1993, in response to your request. Data collected in the course of our work at the site are presented in the TABLE OF WELL MONITORING DATA. This information was collected during our inspection, well evacuation, and sample collection. Measurements include the total depth of the well and depth to water. Water surfaces were further inspected for the presence of immiscibles. A series of electrical conductivity, pH, and temperature readings were obtained during well evacuation and at the time of sample collection.

## TABLE OF WELL MONITORING DATA

Well I.D.	MW-2			MW-3			MW-4			MW-5		
Date Sampled	11/15/93			11/15/93			11/15/93			11/15/93		
Well Diameter (in.)	2			4			4			4		
Total Well Depth (ft.)	26.50			18.24			15.88			18.03		
Depth To Water (ft.)	11.64			9.09			8.33			7.43		
Free Product (in.)	NONE			NONE			NONE			NONE		
Reason If Not Sampled	--			--			--			--		
1 Case Volume (gal.)	2.42			5.94			4.90			6.89		
Did Well Dewater?	NO			NO			NO			NO		
Gallons Actually Evacuated	7.5			18.0			15.0			21.0		
Purging Device	BAILER			MIDDLEBURG			MIDDLEBURG			MIDDLEBURG		
Sampling Device	BAILER			BAILER			BAILER			BAILER		
Time	14:34	14:38	14:42	12:15	12:24	12:32	12:56	13:03	13:13	11:39	11:47	11:56
Temperature (Fahrenheit)	66.9	66.4	66.6	68.3	68.0	68.0	73.1	73.0	72.7	65.9	65.8	65.5
pH	8.0	8.0	8.0	7.7	7.8	7.8	7.8	7.9	8.1	7.6	7.7	7.7
Conductivity (micromhos/cm)	3500	4000	3600	3000	3200	3300	8400	7800	7800	2800	2800	2700
Nephelometric Turbidity Units	>200	>200	>200	14.0	5.16	18.79	12.49	9.15	4.57	112.2	73.2	16.96
BTS Chain of Custody	931115-A-1			931115-A-1			931115-A-1			931115-A-1		
BTS Sample I.D.	MW-2			MW-3			MW-4			MW-5		
DHS HMTL Laboratory	COAST TO COAST			COAST TO COAST			COAST TO COAST			COAST TO COAST		
Analysis	TPH (GAS), BTEX			TPH (GAS), BTEX			TPH (GAS), BTEX			TPH (GAS), BTEX		

## TABLE OF WELL MONITORING DATA

Well I.D.	MW-6	MW-7	EW-1						
Date Sampled	11/15/93	11/15/93	11/15/93						
Well Diameter (in.)	4	4	4						
Total Well Depth (ft.)	18.78	18.78	27.78						
Depth To Water (ft.)	8.30	6.89	11.64						
Free Product (in.)	NONE	NONE	NONE						
Reason If Not Sampled	--	--	--						
1 Case Volume (gal.)	6.81	7.72	10.49						
Did Well Dewater?	NO	NO	NO						
Gallons Actually Evacuated	21.0	24.0	32.0						
Purging Device	MIDDLEBURG	MIDDLEBURG	MIDDLEBURG						
Sampling Device	BAILER	BAILER	BAILER						
Time	13:55	14:03	14:11	10:41	10:53	11:04	15:17	15:24	15:29
Temperature (Fahrenheit)	66.8	69.7	69.2	64.8	64.9	64.8	66.9	65.4	65.2
pH	8.4	8.2	8.2	7.8	7.7	7.7	8.0	7.7	7.6
Conductivity (micromhos/cm)	7800	7400	7600	1700	1600	1600	3300	5000	5600
Nephelometric Turbidity Units	16.9	12.56	9.92	6.85	7.01	6.32	45.5	28.0	23.5
BTS Chain of Custody	931115-A-1	931115-A-1	931115-A-1						
BTS Sample I.D.	MW-6	MW-7	EW-1						
DHS HMTL Laboratory	COAST TO COAST	COAST TO COAST	COAST TO COAST						
Analysis	TPH (GAS), BTEX	TPH (GAS), BTEX	TPH (GAS), BTEX						

## **STANDARD PRACTICES**

---

### **Evacuation and Sampling Equipment**

As shown in the TABLE OF MONITORING DATA the wells at this site were evacuated according to a protocol requirement for three case volumes. The wells were evacuated using either bailers or a middleburg pumps.

Samples were collected using stainless steel bailers.

### **Decontamination**

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site.

### **Effluent Materials**

The evacuation process creates a volume of effluent water which must be contained. Purge water from this sampling event was discharged through the carbon filtration system on site.

### **Sampling Methodology**

Samples were obtained by standardized sampling procedures that follow an evacuation and sample collection protocol. The sampling methodology conforms both State and Regional Water Quality Control Board standards and specifically adheres to EPA requirements for apparatus, sample containers and sample handling as specified in publication SW 846 and the T.E.G.D. which is published separately.

### **Sample Containers**

Sample containers are supplied by the laboratory performing the analyses.

### **Sample Handling Procedures**

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice.

### **Sample Designations**

All sample containers are identified with both a sampling event number and a discrete sample identification number. Please note that the sampling event number is the number that appears on our chain of custody. It is roughly equivalent to a job number, but applies

only to work done on a particular day of the year rather than spanning several days as jobs and projects often do.

### Chain of Custody

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

### Hazardous Materials Testing Laboratory

The samples obtained at this site were transported in cooled ice chest to the office of Blaine Tech Services, Inc. to be stored in a refrigerator overnight. The following day, the samples were released into the custody of a courier for delivery to Coast to Coast Analytical Services.

### Personnel

All Blaine Tech Services, Inc. personnel receive 29 CFR 1910.120(e)(2) training as soon after being hired as is practical. In addition, many of our personnel have additional certifications that include specialized training in level B supplied air apparatus and the supervision of employees working on hazardous materials sites. Employees are not sent to a site unless we are confident they can adhere to any site safety provisions in force at the site and unless we know that they can follow the written provisions of an SSP and the verbal directions of an SSO.

In general, employees sent to a site to perform groundwater well sampling will assume an OSHA level D (wet) environment exists unless otherwise informed. The use of gloves and double glove protocols protects both our employees and the integrity of the samples being collected. Additional protective gear and procedures for higher OSHA levels of protection are available.

Please call if we can be of any further assistance.

  
Richard C. Blaine

RCB/dk

attachments: chain of custody

# BLAINE TECH SERVICES INC.

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

### CONDUCT ANALYSIS TO DETECT

LAB COAST-TO-COAST DHS #  
ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS  
SET BY CALIFORNIA DHS AND  
 EPA  
 LIA  
 OTHER

CHAIN OF CUSTODY  
**93115A1**  
CLIENT PES ENVIRONMENTAL  
SITE P.O. PARTNERS  
1650 65th Street  
Emeryville CA

SPECIAL INSTRUCTIONS  
INVOICE & REPORT TO:  
PES ENVIRONMENTAL  
ATTN: Paul Kohman  
JOB # 131-0100.003

SAMPLE ID.	DATE	TIME	MATRIX S = SOIL W = WATER	CONTAINERS		C = COMPOSITE ALL CONTAINERS	TPH	GAS	BTEX	OTHER	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
				TOTAL	NOAS									
<u>WW2</u>	<u>11-15-93</u>		<u>W</u>	<u>3</u>	<u>NOAS</u>							<u>Routine</u>		
<u>WW3</u>														
<u>WW4</u>														
<u>WW5</u>														
<u>WW6</u>														
<u>WW7</u>														
<u>EW1</u>														

SAMPLING COMPLETED 11-15-93 1535 SAMPLING PERFORMED BY Jeff Luster RESULTS NEEDED NO LATER THAN

RELEASED BY Jeff Luster DATE 11-16 TIME 1220 RECEIVED BY T. White DATE 11-16 TIME 1220

RELEASED BY \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_ RECEIVED BY \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

RELEASED BY \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_ RECEIVED BY \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

SHIPPED VIA \_\_\_\_\_ DATE SENT \_\_\_\_\_ TIME SENT \_\_\_\_\_ COOLER # \_\_\_\_\_

**COAST - TO -  
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 Anaheim, CA • Tempe, AZ • Valparaiso, IN • Westbrook, ME • Indianapolis, IN

NorCal Division (San Jose Laboratory)  
 2059 Junction Ave.

San Jose, CA 95131  
 (408) 955-9077

CLIENT: Paul Lohman  
 PES Environmental Inc  
 1682 Novato Boulevard, Suite 100  
 Novato, CA 94947

Lab Number : JJ-2462-1  
 Project : 131.0100.003, P.O.  
 Partners  
 Analyzed : 11/22/93  
 Analyzed by: CB  
 Method : EPA 8020/8015M

REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED	
MW-2	Groundwater	Jeff Curtis	11/15/93	11/16/93
CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
BTEX + TPH (Gasoline)				1
Benzene		500.	6100.	
Toluene		500.	1700.	
Ethylbenzene		500.	1700.	
Xylenes		500.	4100.	
Total Petroleum Hydrocarbons (Gasoline)		50000.	97000.	
Percent Surrogate Recovery			103.	

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)  
 (1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
 GC#2\N22B314  
 DT/mcc  
 W-BTX-112293

Respectfully submitted,  
 COAST-TO-COAST ANALYTICAL SERVICES, INC.

*Dudley Torres*  
 Dudley Torres  
 Organics Manager





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2059 Junction Ave.

San Jose, CA 95131  
(408) 955-9077

CLIENT: Paul Lohman  
PES Environmental Inc  
1682 Novato Boulevard, Suite 100  
Novato, CA 94947

Lab Number : JJ-2462-2  
Project : 131.0100.003, P.O.  
Partners  
Analyzed : 11/23/93  
Analyzed by: CB  
Method : EPA 8020/8015M

REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED	
MW-3	Groundwater	Jeff Curtis	11/15/93	11/16/93
CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
BTEX + TPH (Gasoline)				1
Benzene		0.5	2.3	
Toluene		0.5	0.7	
Ethylbenzene		0.5	ND	
Xylenes		0.5	1.5	
Total Petroleum Hydrocarbons (Gasoline)		50.	70.	
Percent Surrogate Recovery			98.	

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)  
(1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
GC#2\N22A325  
DT/mcc  
W-BTX-112293

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.

*M. Torres*  
Dudley Torres  
Organics Manager

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NorCal Division (San Jose Laboratory)  
 2059 Junction Ave.

San Jose, CA 95131  
 (408) 955-9077

CLIENT: Paul Lohman  
 PES Environmental Inc  
 1682 Novato Boulevard, Suite 100  
 Novato, CA 94947

Lab Number : JJ-2462-3  
 Project : 131.0100.003, P.O.  
 Partners  
 Analyzed : 11/24/93  
 Analyzed by: CB  
 Method : EPA 8020/8015M

REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED	
MW-4	Groundwater	Jeff Curtis	11/15/93	11/16/93
CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
BTEX + TPH (Gasoline)				1
Benzene		0.5	2.0	
Toluene		0.5	0.5	
Ethylbenzene		0.5	ND	
Xylenes		0.5	0.9	
Total Petroleum Hydrocarbons (Gasoline)		50.	ND	
Percent Surrogate Recovery			101.	

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)  
 (1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
 GC#2\N24B317  
 DT/mcc  
 W-BTX-112493

Respectfully submitted,  
 COAST-TO-COAST ANALYTICAL SERVICES, INC.

*Dudley Torres*  
 Dudley Torres  
 Organics Manager



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NorCal Division (San Jose Laboratory)  
2059 Junction Ave.

San Jose, CA 95131  
(408) 955-9077

CLIENT: Paul Lohman  
PES Environmental Inc  
1682 Novato Boulevard, Suite 100  
Novato, CA 94947

Lab Number : JJ-2462-4  
Project : 131.0100.003, P.O. Partners  
Analyzed : 11/23/93  
Analyzed by: CB  
Method : EPA 8020/8015M

REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED		
MW-5	Groundwater	Jeff Curtis	11/15/93	11/16/93	
CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE	
BTEX + TPH (Gasoline)				1	
Benzene		1.	49.		
Toluene		1.	1.		
Ethylbenzene		1.	ND		
Xylenes		1.	ND		
Total Petroleum Hydrocarbons (Gasoline)		100.	220.		
Percent Surrogate Recovery			97.		

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)  
(1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
GC#2\N23A316  
DT/mcc  
W-BTX-112393

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.

*Dudley Torres*  
Dudley Torres  
Organics Manager

**COAST - TO -  
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San Jose, CA 95131  
(408) 955-9077

CLIENT: Paul Lohman  
PES Environmental Inc  
1682 Novato Boulevard, Suite 100  
Novato, CA 94947

Lab Number : JJ-2462-5  
Project : 131.0100.003, P.O.  
Partners  
Analyzed : 11/23/93  
Analyzed by: CB  
Method : EPA 8020/8015M

REPORT OF ANALYTICAL RESULTS

Page 1 of 1

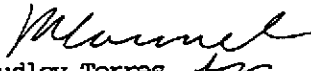
SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED	
MW-6	Groundwater	Jeff Curtis	11/15/93	11/16/93
CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
BTEX + TPH (Gasoline)				1
Benzene		0.5	ND	
Toluene		0.5	ND	
Ethylbenzene		0.5	ND	
Xylenes		0.5	ND	
Total Petroleum Hydrocarbons (Gasoline)		50.	ND	
Percent Surrogate Recovery			101.	

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)  
(1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
GC32\N23B314  
DT/mcc  
W-BTX-112393

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.

  
Dudley Torres  
Organics Manager



Air, Water & Hazardous Waste Sampling, Analysis & Consultation  
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

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NorCal Division (San Jose Laboratory)  
2059 Junction Ave.

San Jose, CA 95131  
(408) 955-9077

CLIENT: Paul Lohman  
PES Environmental Inc  
1682 Novato Boulevard, Suite 100  
Novato, CA 94947

Lab Number : JJ-2462-6  
Project : 131.0100.003, P.O.  
Partners  
Analyzed : 11/23/93  
Analyzed by: CB  
Method : EPA 8020/8015M

REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED	
MW-7	Groundwater	Jeff Curtis	11/15/93	11/16/93
CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
BTEX + TPH (Gasoline)				1
Benzene		0.5	15.	
Toluene		0.5	0.6	
Ethylbenzene		0.5	ND	
Xylenes		0.5	2.3	
Total Petroleum Hydrocarbons (Gasoline)		50.	120.	
Percent Surrogate Recovery			112.	

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
GC#2\N23A315  
DT/mcc  
W-BTX-112393

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.

*M. Torres*  
Dudley Torres  
Organics Manager

**COAST-TO-COAST  
ANALYTICAL  
SERVICES**

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2059 Junction Ave.

San Jose, CA 95131  
(408) 955-9077

CLIENT: Paul Lohman  
PES Environmental Inc  
1682 Novato Boulevard, Suite 100  
Novato, CA 94947

Lab Number : JJ-2462-7  
Project : 131.0100.003, P.O.  
Partners  
Analyzed : 11/23/93  
Analyzed by: CB  
Method : EPA 8020/8015M

REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED	
EW-1	Groundwater	Jeff Curtis	11/15/93	11/16/93
CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE
BTEX + TPH (Gasoline)				1
Benzene		300.	2900.	
Toluene		300.	380.	
Ethylbenzene		300.	500.	
Xylenes		300.	1700.	
Total Petroleum Hydrocarbons (Gasoline)		30000.	46000.	
Percent Surrogate Recovery			100.	

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
GC#2\N23B318  
DT/mcc  
W-BTX-112393

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.

*Dudley Torres*  
Dudley Torres  
Organics Manager



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NorCal Division (San Jose Laboratory)  
2059 Junction Ave.

San Jose, CA 95131  
(408) 955-9077

QC Batch ID: W-BTX-112393

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 11/23/93  
Analyzed by: CB  
Method : EPA 8020/8015M

METHOD BLANK  
REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED		
METHOD BLANK	Aqueous				
CONSTITUENT	(CAS RN)	*PQL µg/L	RESULT µg/L	NOTE	
BTEX + TPH (Gasoline)				1	
Benzene		0.5	ND		
Toluene		0.5	ND		
Ethylbenzene		0.5	ND		
Xylenes		0.5	ND		
Total Petroleum Hydrocarbons (Gasoline)		50.	ND		
Percent Surrogate Recovery			98.		

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)  
(1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
GC#2\N23B304  
DT/mcc  
JJ2453-1

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Dudley Torres  
Organics Manager

**COAST - TO -  
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 2059 Junction Ave.

San Jose, CA 95131  
 (408) 955-9077

QC Batch ID: W-BTX-112393

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 11/23/93  
 Analyzed by: CB  
 Method : EPA 8020/8015M

QC MATRIX SPIKE  
 REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY		SAMPLED DATE RECEIVED	
MATRIX SPIKE	Aqueous				
CONSTITUENT	ORIGINAL RESULT	SPIKE AMOUNT	RESULT	%REC	NOTE
BTEX + TPH (Gasoline)					1
Benzene	ND	10.	10.	100.	
Toluene	ND	10.	10.	100.	
Ethylbenzene	ND	10.	10.	100.	
Xylenes	ND	30.	30.	100.	
Total Petroleum Hydrocarbons (Gasoline)	ND	250.	270.	108.	

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
 GC#2\N23B321  
 DT/mcc  
 JJ2453-1

Respectfully submitted,  
 COAST-TO-COAST ANALYTICAL SERVICES, INC.

*M. Torres*  
 Dudley Torres  
 Organics Manager





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2059 Junction Ave.

San Jose, CA 95131  
(408) 955-9077

QC Batch ID: W-BTX-112393

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 11/23/93  
Analyzed by: CB  
Method : EPA 8020/8015M

QC MATRIX SPIKE  
REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY		SAMPLED DATE RECEIVED		
MATRIX SPIKE DUPLICATE	Aqueous					
CONSTITUENT	ORIGINAL RESULT	SPIKE AMOUNT	RESULT $\mu\text{g/L}$	%REC	%DIFF	NOTE
BTEX + TPH (Gasoline)						1
Benzene	ND	10.	11.	110.	9.5	
Toluene	ND	10.	10.	100.	0.	
Ethylbenzene	ND	10.	10.	100.	0.	
Xylenes	ND	30.	31.	103.	3.3	
Total Petroleum Hydrocarbons (Gasoline)	ND	250.	260.	104.	3.8	

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
GC#2\N23B322  
DT/mcc  
JJ2453-1

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Dudley Torres  
Organics Manager

**COAST - TO -  
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NorCal Division (San Jose Laboratory)  
 2059 Junction Ave.

San Jose, CA 95131  
 (408) 955-9077

QC Batch ID: W-BTX-112293

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 11/22/93  
 Analyzed by: CB  
 Method : EPA 8020/8015M

METHOD BLANK  
 REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED		
METHOD BLANK	Aqueous				
CONSTITUENT	(CAS RN)	*PQL μg/L	RESULT μg/L	NOTE	
BTEX + TPH (Gasoline)				1	
Benzene		0.5	ND		
Toluene		0.5	ND		
Ethylbenzene		0.5	ND		
Xylenes		0.5	ND		
Total Petroleum Hydrocarbons (Gasoline)		50.	ND		
Percent Surrogate Recovery			94.		

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)

(1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
 GC#2\N22B313A  
 DT/mcc  
 JJ2475-2

Respectfully submitted,  
 COAST-TO-COAST ANALYTICAL SERVICES, INC.

*Dudley Torres*  
 Dudley Torres  
 Organics Manager

**COAST - TO -  
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NorCal Division (San Jose Laboratory)  
 2059 Junction Ave.

San Jose, CA 95131  
 (408) 955-9077

QC Batch ID: W-BTX-112293

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 11/22/93  
 Analyzed by: CB  
 Method : EPA 8020/8015M

QC MATRIX SPIKE  
 REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE RECEIVED		
MATRIX SPIKE	Aqueous				
CONSTITUENT	ORIGINAL RESULT	SPIKE AMOUNT	RESULT µg/L	%REC	NOTE
BTEX + TPH (Gasoline)					1
Benzene	2.0	10.	12.	100.	
Toluene	ND	10.	9.7	97.	
Ethylbenzene	0.5	10.	9.7	92.	
Xylenes	2.6	30.	30.	91.	
Total Petroleum Hydrocarbons (Gasoline)	50.	250.	250.	80.	

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)  
 (1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
 GC#2\N22B318  
 DT/mcc  
 JJ2475-2

Respectfully submitted,  
 COAST-TO-COAST ANALYTICAL SERVICES, INC.

*Dudley Torres*  
 Dudley Torres  
 Organics Manager



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(408) 955-9077

QC Batch ID: W-BTX-112293

CLIENT: Coast-to-Coast Analytical Services, Inc.

Analyzed : 11/22/93  
Analyzed by: CB  
Method : EPA 8020/8015M

QC MATRIX SPIKE  
REPORT OF ANALYTICAL RESULTS

Page 1 of 1

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY		SAMPLED DATE RECEIVED		
MATRIX SPIKE DUPLICATE	Aqueous					
CONSTITUENT	ORIGINAL RESULT	SPIKE AMOUNT	RESULT $\mu\text{g/L}$	%REC	%DIFF	NOTE
BTEX + TPH (Gasoline)						1
Benzene	2.0	10.	12.	100.	0.	
Toluene	ND	10.	10.	100.	3.	
Ethylbenzene	0.5	10.	10.	95.	3.2	
Xylenes	2.6	30.	32.	98.	7.	
Total Petroleum Hydrocarbons (Gasoline)	50.	250.	230.	72.	11.	

San Jose Lab Certifications: CAELAP #1204

\*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)  
(1) EXTRACTED by EPA 5030 (purge-and-trap)

11/30/93  
GC#2\N22B319  
DT/mcc  
JJ2475-2

Respectfully submitted,  
COAST-TO-COAST ANALYTICAL SERVICES, INC.

Dudley Torres  
Organics Manager

# BLAINE

TECH SERVICES INC.

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

CONDUCT ANALYSIS TO DETECT

LAB COAST-TO-COAST DHS # \_\_\_\_\_  
 ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND  
 EPA  RWQCB REGION 2  
 LIA  
 OTHER

CHAIN OF CUSTODY  
931115A1  
 CLIENT PES ENVIRONMENTAL  
 SITE P.O. PARTNERS  
1650 65th Street  
Emeryville CA

C = COMPOSITE ALL CONTAINERS

TPH, gas, BTEX

SPECIAL INSTRUCTIONS  
Invoice & Report to:  
PES ENVIRONMENTAL  
ATTN: Paul Hohman  
JOB # 131-0100.003

SAMPLE I.D.	DATE	TIME	MATRIX		TOTAL	CONTAINERS	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
			S = SOIL	W = H2O						
MW 2	11-15-93		1	1	3	VOAS		Routine		11/24/02-1
MW 3										-2
MW 4										-3
MW 5										-4
MW 6										-5
MW 7										-6
EW 1										-7

SAMPLING COMPLETED 11-15-93 1535 SAMPLING PERFORMED BY Jeff Hutto RESULTS NEEDED NO LATER THAN \_\_\_\_\_

RELEASED BY Jeff Hutto DATE 11/16 TIME 1220 RECEIVED BY T. J. Ar DATE 11-16 TIME 1220

RELEASED BY Sam Putz (A) DATE 11/16/93 TIME 1245 RECEIVED BY Wilson A. Graham DATE 11/16/93 TIME 1245

RELEASED BY \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_ RECEIVED BY \_\_\_\_\_ DATE \_\_\_\_\_ TIME \_\_\_\_\_

SHIPPED VIA \_\_\_\_\_ DATE SENT \_\_\_\_\_ TIME SENT \_\_\_\_\_ COOLER # \_\_\_\_\_

*cool, intact  
 vials placed in guard bottles & lab*