August 31, 1995

131.0200.001

Ms. Lynn Tolin Christie Avenue Partners - J.S. 5800 Shellmound, Suite 210 Emeryville, California 94608

QUARTERLY GROUNDWATER MONITORING REPORT JULY 1995 SAMPLING EVENT EMERY BAY MARKETPLACE EMERYVILLE, CALIFORNIA

Dear Ms. Tolin:

This letter report presents data collected by PES Environmental, Inc. (PES) during the July 1995 quarterly groundwater monitoring conducted at the Emery Bay Marketplace site, located in Emeryville, California (Plate 1). PES has been retained by Christie Avenue Partners - J.S. to conduct quarterly groundwater monitoring at the subject site. The current groundwater monitoring program consists of measuring product thickness, if any, and depth to groundwater in 17 onsite and off-site monitoring wells on a quarterly basis, and purging and sampling six of the monitoring wells (Wells W-7, W-13, W-14, W-19, W-20 and W-24). Plate 2 shows the location of monitoring wells at the site.

The purpose of the groundwater monitoring program at this site is to: (1) evaluate the presence of hydrocarbons in groundwater; (2) monitor potential migration of dissolved-phase hydrocarbons; and (3) monitor seasonal water level variations at the subject property. The monitoring is performed in accordance with Alameda County Department of Environmental Health (ACDEH) requirements and the approved work plan for this site entitled Work Plan for Groundwater Monitoring and Free Product Removal at the Emery Bay Marketplace, Emeryville, California, prepared by McLaren Hart and dated July 6, 1990.

BACKGROUND

Beginning in the early 1980's, environmental activities at this site consisted of removal of underground fuel storage tanks (USTs) and hydrocarbon contaminated soils, performing soil borings, and installing groundwater monitoring wells. As a result of these activities, fuel oil found in onsite soils and groundwater was attributed to leaking USTs and/or piping associated with an asphalt refinery formerly located at the site. Additionally, free floating product was observed in onsite groundwater monitoring wells.

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Twenty-four monitoring wells have been installed at this site during the course of prior environmental investigations. Seven of these wells have been abandoned and 17 onsite and off-site wells currently remain. McLaren Hart began quarterly groundwater monitoring activities at the subject site in July 1990. The present sampling is the eighth since PES began performing quarterly groundwater monitoring in July 1993.

GROUNDWATER ELEVATIONS

Water-level Measurement Procedures

Prior to sampling on July 13, 1995, groundwater levels in the monitoring wells were measured to a precision of 0.01 foot using an electronic water-level indicator/interface probe. 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. The presence of free-phase product was evaluated and, if present, was measured to a precision of 0.01 foot using the interface probe.

Results

Two of the 17 wells scheduled for water level measurements were inaccessible during quarterly monitoring activities and therefore measurements were not obtained for these wells. Wells W-4 and W-16 were inaccessible due to grading related to construction activities along the adjacent railroad property. Water levels for the remaining 15 wells were measured on July 13. These levels were then 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 and product levels for wells at the site is presented in Table 1, and a report summarizing the water level measurement procedures is presented in Appendix A.

Water levels in all measured wells have varied relative to the April 1995 sampling event. Water levels decreased in eleven of the wells and increased in the four remaining wells. Based on measured water levels on July 13, 1995, groundwater at the site flows in a southwesterly direction with an approximate gradient of 0.006 to 0.011. These measurements show no significant changes from historical groundwater flow direction and gradient.

Consistent with historical monitoring results, a free-phase floating product layer 0.15 feet thick was found in Well W-5 and a thin layer (0.02 feet) was present in Well W-19. No free-phase product or sheen were found in the remaining wells.

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GROUNDWATER SAMPLING AND ANALYTICAL TESTING

Sampling Protocol

Groundwater samples were collected on July 13, 1995 by Blaine Tech Services, Inc. (Blaine Tech) and Lowney Associates (Lowney). Blaine Tech collected samples from W-7, W-19, W-20, and W-24. Wells W-13 and W-14 were sampled by Lowney and the samples were transferred to Blaine Tech. A minimum of three well volumes were purged prior to sampling using a clean teflon bailer. Purge water was contained and collected in a 55-gallon drum to be stored onsite prior to obtaining analytical results and subsequent disposal. During purging activities, 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 1-liter glass bottles preserved with hydrochloric acid.

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

Analytical Program

All groundwater samples collected during this quarterly monitoring event were analyzed by American Environmental Network (AEN), a State-certified laboratory located in Pleasant Hill, California. Samples were analyzed for total petroleum hydrocarbons quantified as diesel (TPH-diesel) and as motor oil (TPH-oil) by EPA Test Method 8015 (modified).

Analytical Results

Sample analytical results from the recent groundwater monitoring event indicate that TPH-diesel was detected in all five of the wells sampled, at concentrations ranging from 0.1 milligrams per liter (mg/l) in W-20 to 55 mg/l in W-7. TPH-oil was detected only in W-7 (13 mg/l) and W-19 (1 mg/l). Concentrations of TPH-diesel and TPH-oil have increased in Well W-7. TPH-diesel concentrations have decreased in all other wells sampled since the prior monitoring event.

Analytical results, including historical monitoring data for the previous sampling events, are presented in Table 2. The laboratory report and chain of custody records are provided in Appendix B. The distribution of hydrocarbons in groundwater at the site on July 13, 1995 is presented on Plate 4.

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SUMMARY

Groundwater elevations have fluctuated since the April 1995 sampling event, however, the groundwater flow direction and gradient have remained approximately the same. Consistent with historical monitoring results, free-phase product was found on the groundwater in Wells W-5 and W-19. Reported concentrations of TPH-diesel have increased only in Well W-7 and decreased in all other wells since the April 1995 monitoring activities. TPH-oil was detected only in two of the wells sampled, at a concentration within the range of previously reported levels.

Yours very truly,

PES ENVIRONMENTAL, INC.

Jenny F. Han

Staff Geologist

Andrew A. Briefer, P. E/

Associate Engineer

Attachments: Table 1 Summary of Groundwater Elevations

Table 2 Summary of Petroleum Hydrocarbon Analytical Results for

Groundwater Samples

Plate 1 Site Location Map
Plate 2 Well Location Map

Plate 3 Groundwater Elevation Contours on July 13, 1995

Plate 4 Dissolved Hydrocarbons in Groundwater on July 13, 1995

Appendix A Water Level and Groundwater Sampling Report

Appendix B Analytical Laboratory Report

cc: Ms. Susan Hugo - Alameda County Department of Environmental Health

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-1	07-Aug-81	wcc	11.47	4.30	6.20 (2)	
	10-Sep-81	WCC		4.40	6.10 (2)	
	06-May-87	WCC		6.00	6.08 (2)	
	20-Aug-89	MH		5.60	5.87	
	11-Oct-89	MH		5.63	5.84	
	22-Feb-90	MH		4.92	6.55	
	28-Feb-90	MH		5.02	6.45	
	09-Apr-90	MH		5.44	6.03	
	07-Jun-90	MH		5.37	6.10	
	25-Jul-90	MH		5.26	6.21	
	03-Oct-90	MH		5.43	6.04	
	03-Jan-91	MH		5.69	5.78	
	03-Apr-91	MH		4.74	6.73	
	25-Oct-91	MH		5.22	6.25	
	15-Jan-92	MH		4.88	6.59	
	23-Apr-92	MH		4.98	6.49	
	21-Jul-92	MH		5.16	6.31	
	22-Oct-92	MH		5.79	5.68	
	26-Jan-93	MH		4.82	6.65	
	29-Apr-93	MH		6.01	5.46	
	22-Jul-93	PES		6.05	5.42	
	07-Oct-93	PES		6.15	5.32	
	06-Jan-94	PES		5.50	5.97	
	05-Apr-94	PES		5.87	5.60	
	08-Jul-94	PES		5.86	5.61	
	04-Oct-94	PES		5.94	5.53	
	11-Jan-95	PES		4.93	6.54	
	06-Apr-95	PES		5.02	6.45	
	13-Jul-95	PES		5.52	5.95	
W-4	07-Aug-81	wcc	9.96	4.30	6.20 (2)	
	10-Sep-81	WCC		4.40	6.10 (2)	
	18-Jan-82	WCC		2.50	8.00 (2)	
	27-Mar-85	WCC		NA	8.65	
	20-Aug-89	MH		3.95	6.01	
	11-Oct-89	MH		3.87	6.09	
	22-Feb-90	MH		2.00	7.96	
	28-Feb-90	МН		2.39	7.57	
	09-Apr-90	МН		3.17	6.79	
	07-Jun-90	MH		2.73	7.23	
	25-Jul-90	MH		3.71	6.25	
	03-Oct-90	MH		4.18	5.78	
	03-Jan-91	MH		3.64	6.32	
	03-Apr-91	MH		1.45	8.51	

Table 1. Summary of Groundwater Elevations Through July 1995 Emery Bay Marketplace

Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-4	25-Oct-91	МН		4.29	5.67	
Cont	15-Jan-92	MH		2.56	7.40	
	23-Apr-92	MH		2.80	7.16	
	21-Jul-92	MH		4.03	5.93	
	22-Oct-92	MH		4.50	5.46	
	26-Jan-93	MH		1.52	8.44	
	29-Apr-93	MH		3.02	6.94	
	22-Jul-93	PES		3.86	6.10	
	07-Oct-93	PES		NM	NM	
	06-Jan-94	PES		NM	NM	
	05-Apr-94	PES		NM	NM	
	08-Jul-94	PES		NM	NM	
	4-Oct-94	PES		NM	NM	
	11-Jan-95	PES		NM	NM	
	06-Apr-95	PES		NM	NM	
	13-Jul-95	PES		NM	NM	
W-5	07-Aug-81	wcc	11.41	4.70	7.50 (2)	NA
	10-Sep-81	WCC		4.90	7.30 (2)	NA
	18-Jan-82	WCC		2.50	9.60 (2)	NA
	27-Mar-85	WCC		NA	9.28	NA
	11-Oct-89	MH		4.43	7.58	0.71
	22-Feb-90	MH		3.80	8.36	0.88
	28-Feb-90	MH		4.43	8.38	1.65
	09-Apr-90	MH		4.73	8.23	1.82
	07-Jun-90	MH		4.30	8.64	1.80
	25-Jul-90	MH		5.10	8.11	2.12
	03-Oct-90	MH		4.90	7.45	1.11
	03-Jan-91	MH		4.77	7.36	0.85
	03-Apr-91	MH		2.42	9.02	0.03
	25-Oct-91	MH		5.47	6.94	1.18
	15-Jan-92	MH		3.21	8.88	0.80
	23-Apr-92	MH		3.13	8.28	1.41
	21-Jul-92	MH		3.55	9.14	1.50
	22-Oct-92	MH		4.28	8.36	1.45
	26-Jan-93	MH		3.28	9.18	1.24
	29-Apr-93	MH		2.60	8.81	NP
	22-Jul-93	PES		5.78	7.48	2.18
	07-Oct-93	PES		4.46	7.35	0.48
	06-Jan-94	PES		5.38	7.02	1.17
	05-Apr-94	PES		4.62	7.86	1.26
	08-Jul-94	PES		4.95	7.79	1.57
	04-Oct-94	PES		5.20	7.35	1.34
	11-Jan-95	PES		2.65	9.53	0.90

Table 1. Summary of Groundwater Elevations
Through July 1995

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-5	06-Apr-95	PES		3.12	9.07	0.92
Cont	13-Jul-95	PES		5.01	6.53	0.15
W-7	06-May-87	wcc	9.05	3.00	6.88 (2)	
	20-Aug-89	МН		3.59	5.46	
	11-Oct-89	MH		3.08	5.97	
	22-Feb-90	МН		1.75	7.30	
	28-Feb-90	MH		1.31	7.74	
	09-Apr-90	MH		2.42	6.63	
	07-Jun-90	МН		1.21	7.84	
	25-Jul-90	МН		2.76	6.29	
	03-Oct-90	МН		3.22	5.83	
	03-Jan-91	MH		3.17	5.88	
	03-Apr-91	MH		1.18	7.87	
	25-Oct-91	МН		3.47	5.59	
	15-Jan-92	мн		3.88	5.17	
	23-Apr-92	МН		3.20	5.85	
	21-Jul-92	MH		3.65	5.40	
	22-Oct-92	мн		4.58	4.77	
	26-Jan-93	MH		1.12	7.93	
	29-Apr-93	MH		2.90	6.15	
	22-Jul-93	PES		4.26	4.79	
	07-Oct-93	PES		5.48	3.57	
	06-Jan-94	PES		5.10	3.95	
	05-Apr-94	PES		5.94	3.11	
	08-Jul-94			5.74	3.31	
		PES		5.74	3.22	
	04-Oct-94	PES			3.61	
	11-Jan-95	PES		5.44	3.26	
	06-Apr-95 13-Jul-95	PES PES		5.79 3.75	5.30	
	13-301-35	FES		3.73	0.50	
W-8	06-May-87	WCC	10.43	5.50	6.88 (2)	
	20-Aug-89	MH		3.59	6.84	
	22-Feb-90	MH		1.50	8.93	
	28-Feb-90	МН		1.78	8.65	
	09-Apr-90	MH		3.12	7.31	
	07-Jun-90	МН		2.90	7.53	
	27-Jul-90	MH		3.33	7.10	
	03-Oct-90	MH		3.65	6.78	
	03-Jan-91	MH		3.46	6.97	
	03-Apr-91	MH		1.47	8.96	
	25-Oct-91	MH		3.54	6.89	
	15-Jan-92	MH		2.98	7.45	
	24-Apr-92	MH		3.01	7.42	

Table 1. Summary of Groundwater Elevations
Through July 1995

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-8	21-Jul-92	МН		3.41	7.02	
Cont	22-Oct-92	MH		4.23	6.20	
	26-Jan-93	MH		NM	NM	
	29-Apr-93	MH		2.29	8.14	
	22-Jul-93	PES		3.17	7.26	
	07-Oct-93	PES		NM	NM	
	06-Jan-94	PES		2.69	7.74	
	05-Apr-94	PES		2.78	7.65	
	08-Jul-94	PES		3.26	7.17	
	04-Oct-94	PES		3.62	6.81	
	11-Jan-95	PES		2.69	7.74	
	06-Apr-95	PES		2.42	8.01	
	13-Jul-95	PES		3.20	7.23	
W-13	20-Aug-89	МН	8.15	4.64	3.51	
	11-Oct-89	MH		4.60	3.55	
	22-Feb-90	MH		3.85	4.30	
	28-Feb-90	MH		4.18	3.97	
	09-Apr-90	MH		4.31	3.84	
	07-Jun-90	MH		3.93	4.22	
	25-Jul-90	MH		4.40	3.75	
	03-Oct-90	MH		4.67	3.48	
	03-Jan-91	MH		4.43	3.72	
	03-Apr-91	MH		3.64	4.51	
	25-Oct-91	MH		4.54	3.72	
	15-Jan-92	MH		3.82	4.33	
	23-Apr-92	MH		4.12	4.03	
	21-Jul-92	MH		4.44	3.71	
	22-Oct-92	MH		4.42	3.73	
	26-Jan-93	MH		3.10	5.05	
	29-Apr-93	MH		4.04	4.11	
	22-Jul-93	PES		4.30	3.85	
	07-Oct-93	PES		4.32	3.83	
	06-Jan-94	PES		4.07	4.08	
	05-Apr-94	PES		4.20	3.95	
	08-Jul-94	PES		3.94	4.21	
	04-Oct-94	PES		4.37	3.78	
	11-Jan-95	PES		2.73	5.42	
	06-Apr-95	PES		3.60	4.55	
	13-Jul-95	PES		3.56	4.59	
W-14	20-Aug-89	МН	7.97	5.02	2.95	
	22-Feb-90	MH		4.19	3.78	
	28-Feb-90	МН		4.46	3.51	

Table 1. Summary of Groundwater Elevations
Through July 1995

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-14	09-Apr-90	МН		4.36	3.61	
Cont	07-Jun-90	MH		5.29	2.68	
	25-Jul-90	MH		4.83	3.14	
	03-Oct-90	MH		5.09	2.88	
	03-Jan-91	MH		4.32	3.65	
	03-Apr-91	MH		4.31	3.66	
	25-Oct-91	MH		4.41	3.56	
	15-Jan-92	MH		4.18	3.79	
	23-Apr-92	MH		4.93	3.04	
	21-Jul-92	MH		4.57	3.40	
	22-Oct-92	MH		5.28	2.69	
	26-Jan-93	МН		3.94	4.03	
	29-Apr-93	MH		4.59	3.38	
	22-Jul-93	PES		5.30	2.67	
	07-Oct-93	PES		5.18	2.79	
	06-Jan-94	PES		5.09	2.88	
	05-Apr-94	PES		5.39	2.58	
	08-Jul-94	PES		5.37	2.60	
	04-Oct-94	PES		4.97	3.00	
	11-Jan-95	PES		4.66	3.31	
	06-Apr-95	PES		4.13	3.84	
	13-Jul-95	PES		4.36	3.61	
W-15	20-Aug-89	МН	11.53	3.43	8.10	
	11-Oct-89	MH		4.26	7.27	
	22-Feb-90	MH		2.58	8.95	
	28-Feb-90	MH		2.53	9.00	
	09-Apr-90	MH		2.48	9.05	
	07-Jun-90	MH		4.54	6.99	
	25-Jul-90	MH		4.00	7.53	
	03-Oct-90	MH		3.46	8.07	
	03-Jan-91	MH		2.97	8.56	
	03-Apr-91	MH		3.05	8.48	
	25-Oct-91	MH		2.88	8.65	
	15-Jan-92	MH		3.54	7.99	
	23-Apr-92	MH		2.78	8.75	
	21-Jul-92	МН		2.67	8.86	
	22-Oct-92	MH		2.65	8.88	
	26-Jan-93	MH		2.47	9.06	
	29-Apr-93	МН		2.56	8.97	
	29-Apr-93	PES		3.38	8.15	
	07-Oct-93	PES		3.88	7.65	
	06-Jan-94	PES		3.03	8.50	
	05-Apr-94	PES		3.03	8.50	

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-15	08-Jul-94	PES		2.89	8.64	
Cont	04-Oct-94	PES		2.90	8.63	
	11-Jan-95	PES		2.84	8.69	
	06-Apr-95	PES		2.62	8.91	
	13-Jul-95	PES		2.67	8.86	
W-16	11-Oct-89	МН	10.94	4.81	6.19	0.07
	22-Feb-90	MH		3.92	7.02	NP
	28-Feb-90	MH		3.88	7.06	NP
	09-Apr-90	МН		7.81	3.13	NP
	07-Jun-90	MH		6.19	4.75	NP
	27-Jul-90	MH		4.44	6.50	NP
	03-Oct-90	MH		4.38	6.58	0.02
	03-Jan-91	MH		4.67	6.29	0.02
	03-Apr-91	MH		3.50	7.46	0.02
	25-Oct-91	MH		4.64	6.30	NP
	15-Jan-92	MH		4.11	6.83	NP
	23-Apr-92	MH		3.89	7.05	NP
	21-Jul-92	MH		4.28	6.66	NP
	22-Oct-92	MH		NM	NM	NM
	26-Jan-93	MH		2.47	8.47	NP
	22-Jul-93	PES		NM	NM	NM
	07-Oct-93	PES		NM	NM	NM
	06-Jan-94	PES		NM	NM	NM
	05-Apr-94	PES		NM	NM	NM
	08-Jul-94	PES		NM	NM	NM
	04-Oct-94	PES		NM	NM	NM
	11-Jan-95	PES		NM	NM	NM
	06-Apr-95	PES		NM	NM	NM
	13-Jul-95	PES		NM	NM	NM
W-17	11-Oct-89	МН	12.14	9.12	3.02	
	22-Feb-90	MH		5.42	6.72	
	28-Feb-90	MH		5.35	6.79	
	09-Apr-90	MH		5.72	6.42	
	07-Jun-90	MH		NM	NM	
	26-Jul-90	MH		5.59	6.55	
	03-Oct-90	MH		5.72	6.42	
	03-Jan-91	MH		6.28	5.86	
	03-Apr-91	MH		4.69	7.45	
	25-Oct-91	MH		6.00	6.14	
	15-Jan-92	MH		5.57	6.57	
	23-Apr-92	MH		5.17	6.97	
	21-Jul-92	MH		5.54	6.60	

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-17	22-Oct-92	МН		6.10	6.04	
Cont	26-Jan-93	MH		4.45	7.69	
	29-Apr-93	MH		5.25	6.89	
	22-Jul-93	PES		NM	NM	
	07-Oct-93	PES		NM	NM	
	06-Jan-94	PES		5.88	6.26	
	05-Apr-94	PES		5.28	6.86	
	08-Jul-94	PES		5.35	6.79	
	04-Oct-94	PES		6.77	5.37	
	11-Jan-95	PES		NM	NM	
	06-Apr-95	PES		2.64	9.50	
	13-Jul-95	PES		5.29	6.85	
W-18	11-Oct-89	МН	11.34	5.52	5.82	
	22-Feb-90	MH		4.42	6.92	
	28-Feb-90	MH		4.77	6.57	
	09-Apr-90	MH		5.24	6.10	
	07-Jun-90	MH		4.28	7.06	
	25-Jul-90	MH		4.98	6.36	
	03-Oct-90	MH		5.44	5.90	
	03-Jan-91	MH		5.84	5.50	
	03-Apr-91	MH		4.94	6.40	
	25-Oct-91	MH		5.55	5.79	
	15-Jan-92	MH		5.24	6.10	
	23-Apr-92	MH		4.81	6.53	
	21-Jul-92	MH		5.01	6.33	
	22-Oct-92	MH		5.55	5.79	
	26-Jan-93	MH		4.72	6.62	
	29-Apr-93	MH		4.68	6.66	
	22-Jul-93	PES		5.07	6.27	
	07-Oct-93	PES		5.48	5.86	
	06-Jan-94	PES		5.49	5.85	
	05-Apr-94	PES		5.25	6.09	
	08-Jul-94	PES		4.98	6.36	
	04-Oct-94	PES		5.28	6.06	
	11-Jan-95	PES		4.55	6.79	
	06-Apr-95	PES		4.02	7.32	
	13-Jul-95	PES		4.95	6.39	
W-19	09-Apr-90	МН	10.27	5.11	5.16	
	07-Jun-90	MH		4.77	5.50	
	25-Jul-90	MH		4.93	5.34	
	03-Oct-90	MH		4.95	5.32	
	03-Jan-91	МН		5.95	4.32	

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thicknes (feet)
W-19	03-Apr-91	МН		5.39	4.88	
Cont	25-Oct-91	MH		5.47	4.80	
	15-Jan-92	MH		5.18	5.09	
	23-Apr-92	MH		5.34	4.93	
	21-Jul-92	MH		5.08	5.19	
	22-Oct-92	MH		5.31	4.96	
	26-Jan-93	MH		4.82	5.45	
	29-Apr-93	MH		5.09	5.18	
	22-Jul-93	PES		5.04	5.24	0.01
	07-Oct-93	PES		5.09	5.18	NP
	06-Jan-94	PES		5.13	5.14	NP
	05-Apr-94	PES		4.92	5.35	NP
	08-Jul-94	PES		5.01	5.26	
	04-Oct-94	PES		5.03	5.27	0.03
	11-Jan-95	PES		4.79	5.48	NP
	06-Apr-95	PES		4.92	5.38	0.03
	13-Jul-95	PES		4.99	5.30	0.02
W-20	09-Apr-90	МН	6.82	4.08	2.74	
	07-Jun-90	MH		3.79	3.03	
	25-Jul-90	MH		4.00	2.82	
	03-Oct-90	MH		4.03	2.79	
	03-Jan-91	MH		4.12	2.70	
	03-Apr-91	MH		3.84	2.98	
	25-Oct-91	MH		4.07	2.75	
	15-Jan-92	MH		3.75	3.07	
	23-Apr-92	MH		4.08	2.74	
	21-Jul-92	MH		4.02	2.80	
	22-Oct-92	MH		4.07	2.75	
	26-Jan-93	MH		3.30	3.52	
	29-Apr-93	MH		4.00	2.82	
	22-Jul-93	PES		3.84	2.98	
	07-Oct-93	PES		3.79	3.03	
	06-Jan-94	PES		3.84	2.98	
	05-Apr-94	PES		3.90	2.92	
	08-Jul-94	PES		3.63	3.19	
	06-Oct-94	PES		3.76	3.06	
	11-Jan-95	PES		2.76	4.06	
	06-Apr-95	PES		3.56	3.26	
	13-Jul-95	PES		3.09	3.73	
W-21	09-Apr-90	МН	9.48	5.21	4.27	
	07-Jun-90	MH		4.84	4.64	
	25-Jul-90	MH		5.05	4.43	

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-21	03-Oct-90	МН		5.18	4.30	
Cont	03-Jan-91	MH		5.47	4.01	
	03-Apr-91	MH		4.80	4.68	
	25-Oct-91	MH		5.04	4.44	
	15-Jan-92	MH		4.95	4.53	
	23-Apr-92	MH		5.17	4.31	
	21-Jul-92	MH		5.07	4.41	
	22-Oct-92	МН		5.28	4.20	
	26-Jan-93	MH		4.46	5.02	
	29-Apr-93	МН		5.39	4.09	
	22-Jul-93	PES		5.32	4.16	
	07-Oct-93	PES		5.38	4.10	
	06-Jan-94	PES		5.30	4.18	
	05-Apr-94	PES		5.18	4.30	
	08-Jul-94	PES		5.18	4.30	
	04-Oct-94	PES		5.08	4.40	
	11-Jan-95	PES		4.73	4.75	
	06-Apr-95	PES		4.92	4.56	
	13-Jul-95	PES		5.11	4.37	
W-22	09-Apr-90	мн	11.67	7.50	4.17	
	07-Jun-90	MH		7.36	4.31	
	25-Jul-90	MH		7.49	4.18	
	03-Oct-90	МН		7.68	3.99	
	03-Jan-91	МН		7.88	3.79	
	03-Apr-91	MH		7.64	4.03	
	25-Oct-91	MH		6.69	4.98	
	15-Jan-92	MH		7.61	4.06	
	23-Apr-92	MH		7.21	4.46	
	21-Jul-92	MH		7.69	3.98	
	22-Oct-92	MH		7.82	3.85	
	26-Jan-93	МН		7.40	4.27	
	29-Apr-93	МН		7.71	3.96	
	22-Jul-93	PES		7.76	3.91	
	07-Oct-93	PES *		7.35	4.32	
	06-Jan-94	PES		7.04	4.63	
	05-Apr-94	PES		NM 6.43	NM 5.24	
	08-Jul-94	PES		6.43	0.770.070.070 N	
	04-Oct-94	PES		6.66	5.01	
	11-Jan-95	PES		4.67	7.00	
	06-Apr-95	PES		6.16	5.51	
	13-Jul-95	PES		6.29	5.38	

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Potentiometric Surface Elevations (feet MSL)	Product Thickness (feet)
W-23	09-Apr-90	MH	9.16	1.51	7.65	
	07-Jun-90	MH		1.78	7.38	
	27-Jul-90	MH		2.63	6.53	
	03-Oct-90	MH		3.20	5.96	
	03-Jan-91	MH		2.36	6.80	
	03-Apr-91	MH		0.60	8.56	
	25-Oct-91	MH		2.36	6.80	
	15-Jan-92	MH		1.62	7.54	
	23-Apr-92	МН		1.18	7.98	
	21-Jul-92	MH		2.17	6.99	
	22-Oct-92	MH		2.76	6.40	
	26-Jan-93	МН		0.39	8.77	
	29-Apr-93	МН		0.97	8.19	
	22-Jul-93	PES		1.87	7.29	
	07-Oct-93	PES		2.86	6.30	
	06-Jan-94	PES		1.88	7.28	
	05-Apr-94	PES		1.30	7.86	
	08-Jul-94	PES		1.77	7.39	
	04-Oct-94	PES		2.39	6.77	
	11-Jan-95	PES		0.49	8.67	
	06-Apr-95	PES		0.86	8.30	
	13-Jul-95	PES		1.38	7.78	
W-24	07-Jun-90	МН	8.72	4.75	3.97	
	25-Jul-90	MH		5.02	3.70	
	03-Oct-90	MH		5.00	3.72	
	03-Jan-91	MH		5.25	3.47	
	03-Apr-91	MH		4.56	4.16	
	25-Oct-91	MH		5.09	3.63	
	15-Jan-92	MH		4.82	3.90	
	23-Apr-92	MH		4.94	3.78	
	21-Jul-92	MH		5.00	3.72	
	22-Oct-92	MH		5.13	3.59	
	26-Jan-93	MH		3.38	5.34	
	29-Apr-93	MH		4.98	3.74	
	22-Jul-93	PES		5.02	3.70	
	07-Oct-93	PES		4.46	4.26	
	06-Jan-94	PES		4.83	3.89	
	05-Apr-94	PES		4.85	3.87	
	08-Jul-94	PES		4.54	4.18	
	04-Oct-94	PES		4.69	4.03	
	11-Jan-95	PES		2.63	6.09	
	06-Apr-95	PES		4.44	4.28	
	13-Jul-95	PES		4.04	4.68	

Emery Bay Marketplace Emeryville, California

					Potentiometric	
Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Surface Elevations (feet MSL)	Product Thickness (feet)

NOTES:

- (1) Well W-1 is located on the Nielson property.
- (2) Groundwater elevation taken from earlier reports does not agree with calculated elevation using current top of casing elevation.

feet MSL = Feet above Mean Sea Level.

NA = Data not available.

NM = Not measured.

NP = Product not present or insufficient amount present to perform measurements.

WCC = Woodward Clyde Consultants

MH = McLaren Hart

PES = PES Environmental, Inc.

Table 2. Summary of Petroleum Hydrocarbon Analytical Results for Groundwater Samples Through July 1995

W-1 14-Apr-87 WCC NA <5 28-Feb-90 MH <0.5 NA 11-Apr-90 MH <0.5 NA 11-Apr-90 MH <0.1 0.57 NA 10-Apr-90 MH <0.1 <0.25 NA 10-Apr-90 MH <0.1 <0.25 NA 10-Apr-90 MH <0.1 <0.25 NA 25-Oct-91 MH NA	Well Number	Sample Date	Sampled by	TPH as Diesel	TPH as Motor Oil
28-Feb-90 MH	W-1	14-Apr-87	WCC	NA	<5
W-4 01-Mar-90 MH MH <0.5 NA 10-Apr-90 MH <0.1			MH	< 0.5	NA
10-Apr-90 MH		11-Apr-90	MH	< 0.1	0.57
W-5 27-Sep-89 MH 20 NA	W-4	01-Mar-90	МН	< 0.5	
25-Oct-91 MH NA NA W-7 26-Sep-89 MH 1.1 NA 28-Feb-90 MH <0.5 NA 11-Apr-90 MH 5.6 7.5 30-Jul-90 MH 5.0 6.0 04-Oct-90 MH 5.0 6.0 04-Jan-91 MH 4.0 12 03-Apr-91 MH 1.4 (3) 2.3 16-Jan-92 MH 1.6 3.6 24-Apr-92 MH 3.3 4.9 23-Jul-92 MH 2.6 4.0 23-Oct-92 MH 3.8 4.2 27-Jan-93 MH <0.5 8.0 (1) 29-Apr-93 MH 1.6 1.7(1) 22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES 2.90 1.70 08-Jul-94 PES 2.90 1.70 08-Jul-94 PES 2.90 1.70 08-Jul-94 PES 2.90 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA V-13 28-Feb-90 MH 5.3 NA		10-Apr-90	MH	< 0.1	< 0.25
W-7 26-Sep-89 MH 1.1 NA 28-Feb-90 MH < 0.5 NA 11-Apr-90 MH 5.6 7.5 30-Jul-90 MH 5.6 7.5 30-Jul-90 MH 5.0 6.0 04-Oct-90 MH 5.0 6.0 04-Jan-91 MH 4.0 12 03-Apr-91 MH 4.0 12 25-Oct-91 MH 1.4 (3) 2.3 16-Jan-92 MH 1.6 3.6 24-Apr-92 MH 3.3 4.9 23-Jul-92 MH 2.6 4.0 23-Oct-92 MH 3.8 4.2 27-Jan-93 MH < 0.5 8.0 (1) 29-Apr-93 MH 1.6 1.7(1) 22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES < 0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 2.90 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 NA W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA	W-5	27-Sep-89	МН		
28-Feb-90 MH		25-Oct-91	МН	NA	NA
11-Apr-90 MH 5.6 7.5 30-Jul-90 MH 2.6 2.0 04-Oct-90 MH 5.0 6.0 04-Jan-91 MH 4.0 12 03-Apr-91 MH 4.0 3.2 25-Oct-91 MH 1.4 (3) 2.3 16-Jan-92 MH 1.6 3.6 24-Apr-92 MH 3.3 4.9 23-Jul-92 MH 2.6 4.0 23-Oct-92 MH 3.8 4.2 27-Jan-93 MH 4.6 1.7(1) 29-Apr-93 MH 1.6 1.7(1) 22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES 2.90 1.70 08-Jul-94 PES 2.90 1.70 08-Jul-94 PES 2.90 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA	W-7	26-Sep-89	МН	1.1	
30-Jul-90 MH 2.6 2.0 04-Oct-90 MH 5.0 6.0 04-Jan-91 MH 4.0 12 03-Apr-91 MH 4.0 12 03-Apr-91 MH		28-Feb-90	MH	< 0.5	
04-Oct-90 MH 5.0 6.0 04-Jan-91 MH 4.0 12 03-Apr-91 MH 4.0 3.2 25-Oct-91 MH 1.4 (3) 2.3 16-Jan-92 MH 1.6 3.6 24-Apr-92 MH 3.3 4.9 23-Jul-92 MH 2.6 4.0 23-Oct-92 MH 3.8 4.2 27-Jan-93 MH <0.5 8.0 (1) 29-Apr-93 MH 1.6 1.7(1) 22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES <0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA W-13 28-Feb-90 MH <0.5 NA		11-Apr-90	MH	5.6	
04-Jan-91 MH 4.0 12 03-Apr-91 MH <1.0 3.2 25-Oct-91 MH 1.4 (3) 2.3 16-Jan-92 MH 1.6 3.6 24-Apr-92 MH 3.3 4.9 23-Jul-92 MH 2.6 4.0 23-Oct-92 MH 3.8 4.2 27-Jan-93 MH <0.5 8.0 (1) 29-Apr-93 MH 1.6 1.7(1) 22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES <0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA		30-Jul-90	MH	2.6	
03-Apr-91 MH <1.0 3.2 25-Oct-91 MH 1.4 (3) 2.3 16-Jan-92 MH 1.6 3.6 24-Apr-92 MH 3.3 4.9 23-Jul-92 MH 2.6 4.0 23-Oct-92 MH 3.8 4.2 27-Jan-93 MH <0.5 8.0 (1) 29-Apr-93 MH 1.6 1.7(1) 22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES <0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA		04-Oct-90	MH	5.0	
25-Oct-91 MH 1.4 (3) 2.3 16-Jan-92 MH 1.6 3.6 24-Apr-92 MH 3.3 4.9 23-Jul-92 MH 2.6 4.0 23-Oct-92 MH 3.8 4.2 27-Jan-93 MH 4.0 23-Oct-92 MH 3.8 4.2 27-Jan-93 MH 1.6 1.7(1) 29-Apr-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 2.90 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13		04-Jan-91	MH	4.0	
16-Jan-92 MH 1.6 3.6 24-Apr-92 MH 3.3 4.9 23-Jul-92 MH 2.6 4.0 23-Oct-92 MH 3.8 4.2 27-Jan-93 MH <0.5 8.0 (1) 29-Apr-93 MH 1.6 1.7(1) 22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES <0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA		03-Apr-91	MH	<1.0	
24-Apr-92 MH 3.3 4.9 23-Jul-92 MH 2.6 4.0 23-Oct-92 MH 3.8 4.2 27-Jan-93 MH <0.5 8.0 (1) 29-Apr-93 MH 1.6 1.7(1) 22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES <0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA		25-Oct-91	MH	1.4 (3)	
23-Jul-92 MH 2.6 4.0 23-Oct-92 MH 3.8 4.2 27-Jan-93 MH <0.5 8.0 (1) 29-Apr-93 MH 1.6 1.7(1) 22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES <0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA		16-Jan-92	MH	1.6	
23-Oct-92 MH 3.8 4.2 27-Jan-93 MH <0.5 8.0 (1) 29-Apr-93 MH 1.6 1.7(1) 22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES <0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 01-Mar-90 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA		24-Apr-92	MH	3.3	4.9
27-Jan-93 MH		23-Jul-92	MH	2.6	
29-Apr-93 MH 1.6 1.7(1) 22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES <0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH <0.5 NA		23-Oct-92	MH	3.8	4.2
22-Jul-93 PES 1.50 3.2 07-Oct-93 PES 2.90 2.90 06-Jan-94 PES <0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH <0.5 NA		27-Jan-93	MH	< 0.5	8.0 (1)
07-Oct-93 PES 2.90 2.90 06-Jan-94 PES <0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH <0.5 NA		29-Apr-93	МН	1.6	1.7(1)
06-Jan-94 PES <0.05 0.11 05-Apr-94 PES 2.90 1.70 08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH <0.5 NA		22-Jul-93	PES	1.50	3.2
06-Jan-94 PES <0.05			PES	2.90	2.90
08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2 06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH <0.5 NA		06-Jan-94	PES	< 0.05	0.11
08-Jul-94 PES 8.4 38 04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2		05-Apr-94	PES	2.90	1.70
04-Oct-94 PES 20 76 11-Jan-95 PES 17 <0.2			PES	8.4	38
06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH < 0.5 NA			PES	20	76
06-Apr-95 PES 25 4 13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH <0.5		11-Jan-95	PES	17	< 0.2
13-Jul-95 PES 55 13 W-8 17-Apr-87 WCC 10(2) NA 26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH < 0.5 NA			PES	25	4
26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH <0.5 NA		Charles The Calculate Contract of	PES	55	13
26-Sep-89 MH 7.1 NA 01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH <0.5 NA	\A/_Q	17-Apr-97	WCC	10(2)	NA
01-Mar-90 MH 4.5 NA 18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH <0.5 NA	44 -O				
18-Apr-90 MH 5.3 NA W-13 28-Feb-90 MH <0.5 NA					
W-13					
11.0	W-13	28-Feb-90	МН	< 0.5	NA
		12-Apr-90		< 0.5	NA

Table 2. Summary of Petroleum Hydrocarbon Analytical Results for Groundwater Samples Through July 1995

Well Number	Sample Date	Sampled by	TPH as Diesel	TPH as Motor Oil
W-13	27-Jul-90	МН	< 0.5	<1
Cont	04-Oct-90	MH	< 0.5	<1
	03-Jan-91	MH	< 0.5	<1
	04-Apr-91	MH	< 0.5	<1
	25-Oct-91	MH	< 0.5	<1
	16-Jan-92	МН	< 0.5	< 0.5
	24-Apr-92	MH	< 0.5	< 0.5
	22-Jul-92	MH	< 0.5	< 0.5
	23-Oct-92	MH	< 0.5	< 0.5
	27-Jan-93	MH	< 0.05	0.11(1)
	29-Apr-93	MH	< 0.5	0.12(1)
	22-Jul-93	PES	< 0.05	0.25
	07-Oct-93	PES	< 0.05	0.35
	06-Jan-94	PES	< 0.05	< 0.10
	05-Apr-94	PES	< 0.05	< 0.10
	08-Jul-94	PES	< 0.05	0.5
	04-Oct-94	PES (4)	0.3	< 0.2
	11-Jan-95	PES (4)	0.5	< 0.2
	06-Apr-95	PES (4)	0.3	< 0.2
	13-Jul-95	PES(4)	0.3	< 0.2
W-14	28-Feb-90	МН	< 0.5	NA
	11-Apr-90	MH	< 0.1	< 0.25
	30-Jul-90	MH	< 0.6	<1
	04-Oct-90	MH	< 0.5	<1
	04-Jan-91	MH	< 0.5	<1
	04-Apr-91	MH	< 0.5	<1
	25-Oct-91	MH	< 0.5	<1
	16-Jan-92	MH	< 0.5	< 0.5
	24-Apr-92	MH	< 0.5	< 0.5
	22-Jul-92	MH	< 0.5	< 0.5
	23-Oct-92	MH	< 0.5	< 0.5
	27-Jan-93	MH	< 0.05	0.13
	29-Apr-93	MH	< 0.05	0.15
	22-Jul-93	PES	< 0.05	0.16
	07-Oct-93	PES	< 0.05	0.34
	06-Jan-94	PES	< 0.05	0.15
	05-Apr-94	PES	< 0.05	< 0.10
	ANGELER DE LONGO CON CO			0.3
	08-Jul-94	PES	< 0.05	0.5

Table 2. Summary of Petroleum Hydrocarbon Analytical Results for Groundwater Samples Through July 1995

Well Number	Sample Date	Sampled by	TPH as Diesel	TPH as Motor Oil
W-14	11-Jan-95	PES (4)	0.3	< 0.2
Cont	06-Apr-95	PES (4)	0.3	< 0.2
-	13-Jul-95	PES(4)	0.2	< 0.2
W-15	25-Sep-89	МН	1.2	NA
	13-Apr-90	МН	1.5	NA
W-16	27-Sep-89	МН	4.7	NA
	28-Feb-90	MH	22	NA
	13-Apr-90	MH	9.0	NA
W-17	25-Sep-89	мн	0.7	NA
	13-Apr-90	MH	1.6	NA
W-18	26-Sep-89	МН	3.1	NA
	13-Apr-90	MH	5.1	NA
W-19	12-Apr-90	мн	1.1	NA
	16-Apr-90	МН	< 0.5	NA
	27-Jul-90	MH	<1	8.0
	03-Oct-90	MH	< 0.5	3.0
	03-Jan-91	MH	< 0.5	<1
	03-Apr-91	MH	< 2.5	8.4
	25-Oct-91	MH	< 0.5	34
	17-Jan-92	MH	<10.0	29
	23-Apr-92	MH	<2.0	7.1
	23-Jul-92	MH	< 0.1	7.3
	22-Oct-92	MH	<10	28
	26-Jan-93	MH	0.79	35
	29-Apr-93	MH	< 0.05	8.2
	22-Jul-93	PES	< 0.50	20.00
	07-Oct-93	PES	0.45	2.00
	06-Jan-94	PES	0.50	7.10
	05-Apr-94	PES	< 0.20	2.70
	08-Jul-94	PES	3.4	2.5
	04-Oct-94	PES	13	11
	11-Jan-95	PES	7.2	< 0.2
	06-Apr-95	PES	NS (5)	NS (5)
	13-Jul-95	PES	5.1	1

Table 2. Summary of Petroleum Hydrocarbon Analytical Results for Groundwater Samples Through July 1995

Well Number	Sample Date	Sampled by	TPH as Diesel	TPH as Motor Oil
W-20	12-Apr-90	МН	< 0.5	NA
	16-Apr-90	MH	< 0.5	NA
	30-Jul-90	MH	< 0.5	<1
	03-Oct-90	МН	< 0.5	<1
	04-Jan-91	MH	< 0.5	<1
	04-Apr-91	MH	< 0.5	2.3
	25-Oct-91	МН	< 0.5	<1
	17-Jan-92	MH	< 0.5	< 0.5
	24-Apr-92	МН	< 0.5	< 0.5
	22-Jul-92	МН	< 0.5	< 0.5
	22-Oct-92	МН	< 0.5	< 0.5
	27-Jan-93	мн	< 0.10	0.42 (1)
	29-Apr-93	мн	< 0.05	0.38(1)
	22-Jul-93	PES	< 0.05	1.90
	07-Oct-93	PES	< 0.05	0.12
	06-Jan-94	PES	< 0.05	0.17
	05-Apr-94	PES	< 0.05	< 0.10
	08-Jul-94	PES	< 0.05	< 0.20
	06-Oct-94	PES	< 0.05	< 0.2
	11-Jan-95	PES	1.4	<0.2
		PES	2.0	< 0.2
	06-Apr-95		0.1	<0.2
	13-Jul-95	PES	0.1	V.2
W-21	12-Apr-90	МН	1.4	NA
	18-Apr-90	МН	1.7	NA
W-22	12-Apr-90	МН	< 0.5	NA
	18-Apr-90	MH	< 0.5	NA
W-23	12-Apr-90	MH	2.9	NA
	18-Apr-90	MH	3.6	NA
W-24	07-Jun-90	мн	< 0.5	NA
	27-Jul-90	MH	< 0.5	<1
	03-Oct-90	МН	< 0.5	<1
	03-Jan-91	мн	< 0.5	<1
	03-Apr-91	MH	< 0.5	1.1
	25-Oct-91	МН	< 0.5	<1
	17-Jan-92	МН	< 0.5	< 0.5
	24-Apr-92	МН	< 0.5	< 0.5
	23-Jul-92	MH	< 0.5	< 0.5

Table 2. Summary of Petroleum Hydrocarbon Analytical Results for Groundwater Samples Through July 1995

Emery Bay Marketplace Emeryville, California

Concentrations expressed in milligrams per liter [mg/L] - equivalent to parts per million [ppm]

Well Number	Sample Date	Sampled by	TPH as Diesel	TPH as Motor Oil
W-24	22-Oct-92	МН	< 0.5	< 0.5
Cont	26-Jan-93	MH	< 0.05	0.20 (1)
	29-Apr-93	MH	< 0.05	0.14(1)
	22-Jul-93	PES	< 0.05	0.42
	07-Oct-93	PES	< 0.05	0.45
	06-Jan-94	PES	< 0.05	< 0.10
	05-Apr-94	PES	< 0.05	< 0.10
	08-Jul-94	PES	0.06	< 0.20
	04-Oct-94	PES	0.5	< 0.2
	11-Jan-95	PES	0.5	< 0.2
	06-Apr-95	PES	0.3	< 0.2
	13-Jul-95	PES	0.2	< 0.2

Notes:

- (1) = TPH quantified as motor oil although chromatogram pattern not typical of motor oil.
- (2) = Semiquantified results include gasoline, diesel, and some oil and grease in Well W-8.
- (3) = TPH quantified as diesel although chromatograph pattern not typical of diesel.
- (4) = Wells W-13 and W-14 were sampled by personnel from Lowney Associates.
- (5) = Well not sampled due to the presence of free-phase product on the surface of the water column.
- < 0.5 = Not detected above indicated detection limit.

TPH = Total petroleum hydrocarbons

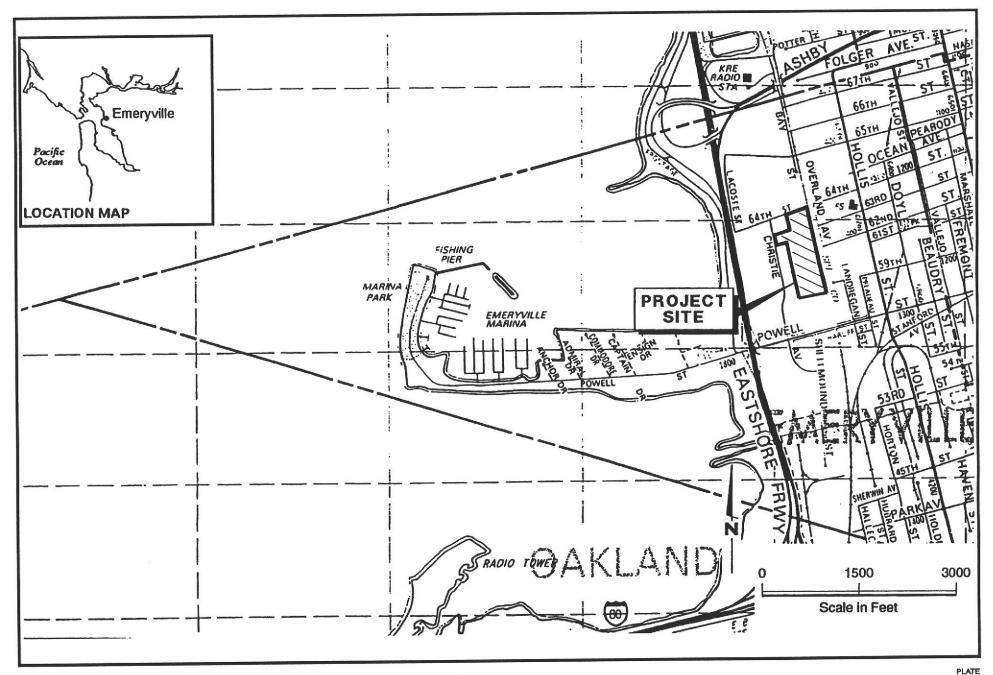
NA = Not Analyzed

NS = Not Sampled

WCC = Woodward Clyde Consultants

MH = McLaren Hart

PES = PES Environmental, Inc.

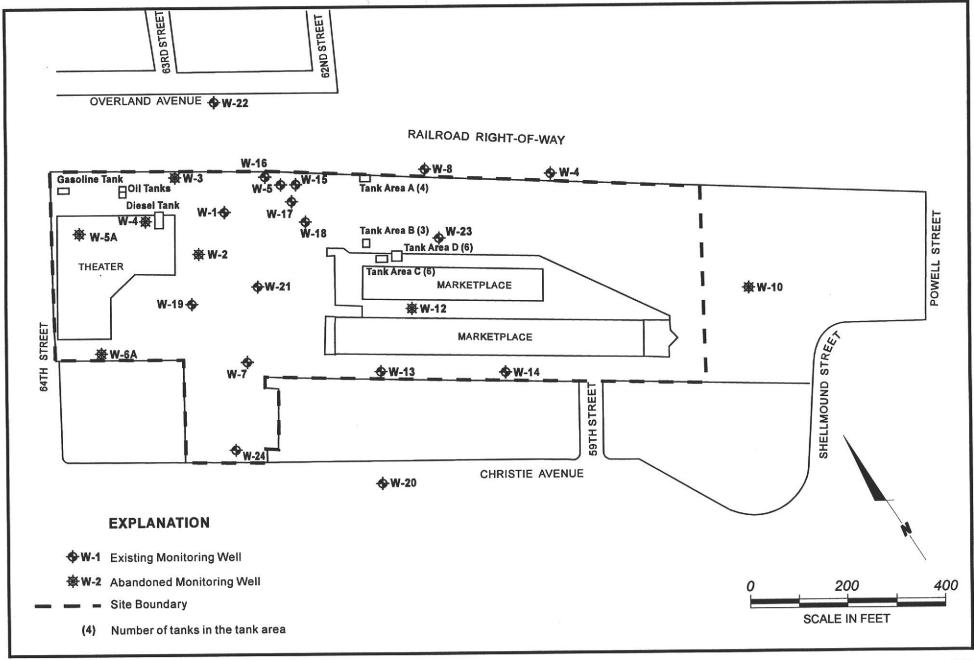




Site Location Map Emery Bay Marketplace Emeryville, California

1

5/95

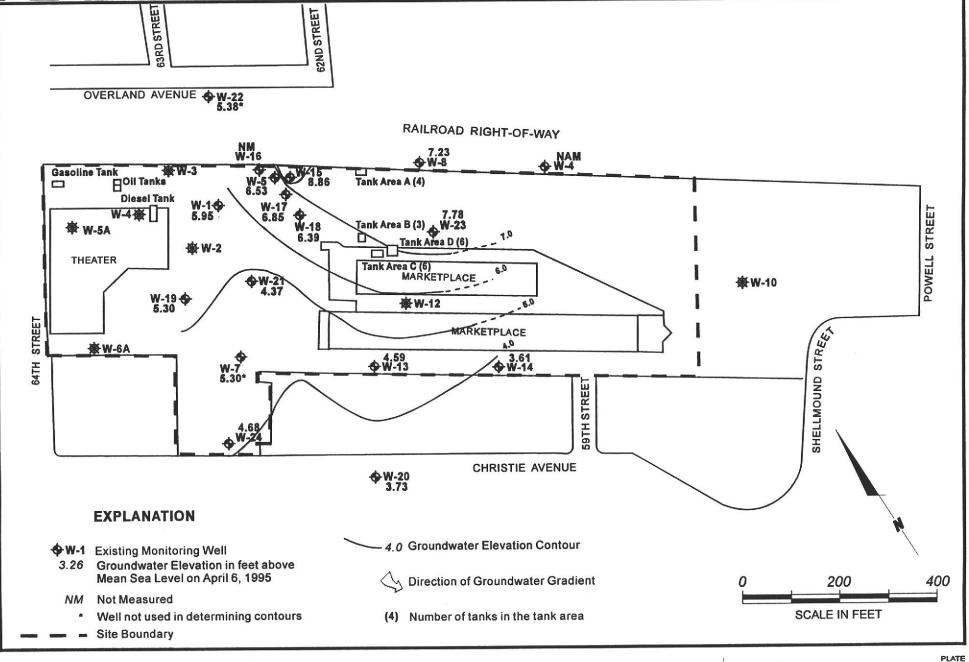




Well Location Map Emery Bay Marketplace Emeryville, California

PLATE

131.0200.001 131020W1.CDR 8/95





Groundwater Elevation Contours on July 13, 1995 Emery Bay Marketplace Emeryville, California 3

131.0200.001

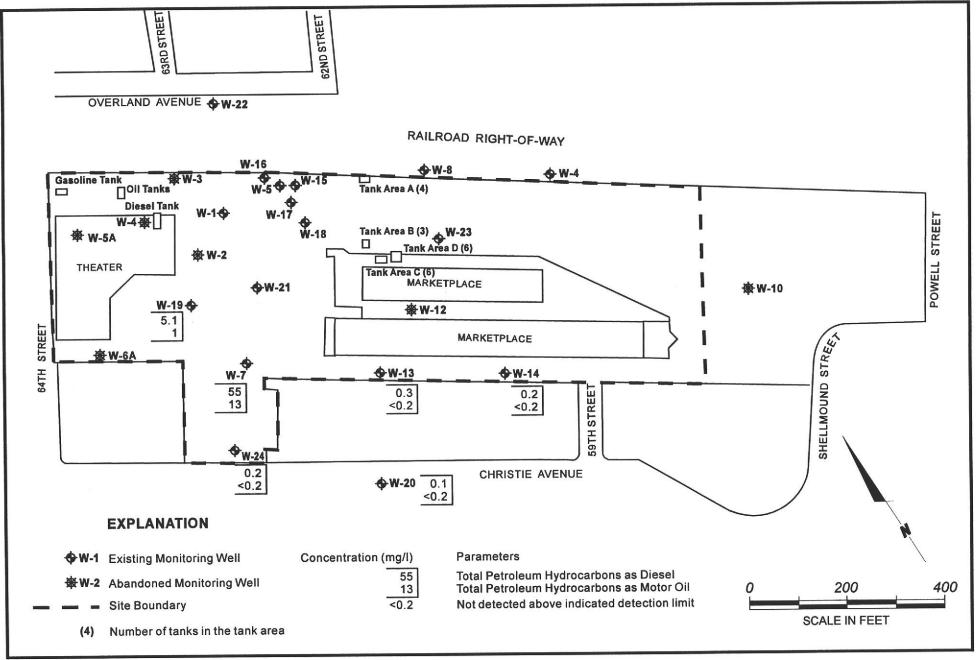
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DRAWING NUMBER

REVIEWED BY

8/95

DATE





Dissolved Hydrocarbons in Groundwater on July 13, 1995 Emery Bay Marketplace Emeryville, California **4**

131020A2.CDR

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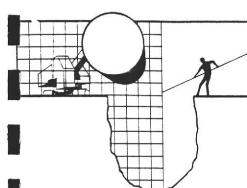
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APPENDIX A

WATER LEVEL AND GROUNDWATER SAMPLING REPORT



BLAINE TECH SERVICES INC.

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

July 24, 1995

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

Attention: Mary Williams

SITE:

Emery Bay Market Place Christie Street Emeryville, California

DATE: July 13, 1995

Water Level Report 950713-K-1

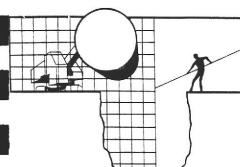
Personnel from our office were present at the site on Thursday, July 13, 1995, to obtain water levels and conduct a sheen and odor check. Please note that we are reporting only the water levels, not elevations.

Well Designation	Date	Well Size	Depth to Immiscible Liquid	Thickness of Immiscible Liquid	Volume of Immiscibles Removed (ml)	Depth to Water	Depth to Well Bottom	Survey Point: TOB or TOC
W-1	7/13/95	2"		NONE		5.52'	10.52'	TOC
W-4	7/13/95	COU	LD NOT LO	CATE				
W-5	7/13/95	2"	4.86'	0.15'		5.01'		TOC
W-7	7/13/95	2"		NONE		3.75'	12.43'	TOC
W-8	7/13/95	2"		NONE		3.20'	11.77'	TOC
W-13	7/13/95	2"		NONE		3.56'	10.02'	TOC
W-14	7/13/95	2"		NONE		4.36'	9.92'	TOC
W-15	7/13/95	2"		NONE		2.67'	19.74'	TOC

Well Designation	Date	Well Size	Depth to Immiscible Liquid	Thickness of Immiscible Liquid	Volume of Immiscibles Removed (ml)	Depth to Water	Depth to Well Bottom	Survey Point: TOB or TOC
W-16	7/13/95	COUL	D NOT LOC	ATE				
W-17	7/13/95	2"		NONE		5.29'	24.32'	TOC
W-18	7/13/95	2"		NONE		4.95'	19.73'	TOC
W-19	7/13/95	2"	4.97'	0.02'		4.99'	13.57'	TOC
W-20	7/13/95	2"		NONE	••	3.09'	16.74'	TOC
W-21	7/13/95	2"		NONE		5.11'	12.34'	TOC
W-22	7/13/95	2"	••	NONE	-	6.29'	14.92'	TOC
W-23	7/13/95	2"		NONE	•••	1.38'	8.99'	TOC
W-24	7/13/95	2"		NONE		4.04'	11.06'	TOC

Richard C. Blaine

RCB/lp



BLAINE TECH SERVICES INC.

985 TIMOTHY DRIVE SAN JOSE, CA 95130 (408) 995-5536 FAX (408) 293-8770

July 24, 1995

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

ATTN: Mary Williams

Site: Emery Bay Market Place Christie Street Emeryville, California

Date: July 13, 1995

GROUNDWATER SAMPLING REPORT 950713-K-1

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. 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 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 the 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.

STANDARD PRACTICES

Evacuation and Sampling Equipment

As shown in the TABLE OF WELL MONITORING DATA, the wells at this site were evacuated according to a protocol requirement for the removal of three case volumes of water, before sampling. The wells were evacuated using bailers.

Samples were collected using bailers.

Bailers: A bailer, in its simplest form, is a hollow tube which has been fitted with a check valve at the lower end. The device can be lowered into a well by means of a cord. When the bailer enters the water, the check valve opens and liquid flows into the interior of the bailer. The bottom check valve prevents water from escaping when the bailer is drawn up and out of the well.

Two types of bailers are used in groundwater wells at sites where fuel hydrocarbons are of concern. The first type of bailer is made of a clear material such as acrylic plastic and is used to obtain a sample of the surface and the near surface liquids, in order to detect the presence of visible or measurable fuel hydrocarbon floating on the surface. The second type of bailer is made of Teflon or stainless steel, and is used as an evacuation and/or sampling device.

Bailers are inexpensive and relatively easy to clean. Because they are manually operated, variations in operator technique may have a greater influence than would be found with more automated sampling equipment. Also, where fuel hydrocarbons are involved, the bailer may include near surface contaminants that are not representative of water deeper in the well.

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. Blaine Tech Services, Inc. will place this water in appropriate containers of the client's choice or bring new 55 gallon DOT 17 E drums to the site, which are appropriate for the containment of the effluent materials. The determination of how to properly dispose of the effluent water must usually await the results of laboratory analyses of the sample collected from the groundwater

well. If that sample does not establish whether or not the effluent water is contaminated, or if effluent from more than one source has been combined in the same container, it may be necessary to conduct additional analyses on the effluent material.

Sampling Methodology

Samples were obtained by standardized sampling procedures that follow an evacuation and sample collection protocol. The sampling methodology conforms to 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 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 deionized ice or an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with 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 accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to American Environmental Network in Pleasant Hill, California. AEN is certified by the California Department of Health Services as a Hazardous Materials Testing Laboratory, and is listed as DOHS HMTL #1172.

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/lp

attachments: table of well monitoring data

chain of custody

TABLE OF WELL MONITORING DATA

Well I.D. Date Sampled	W-7 7/13/95		W-19 7/13/95			W-20 7/13/95	i		W-24 7/13/95		
Well Diameter (in.) Total Well Depth (ft.) Depth To Water (ft.)	2 12.43 3.75		2 13.57 4.99			2 16.74 3.09			2 11.06 4.04		
Free Product (in.) Reason If Not Sampled	NONE		NONE			NONE			NONE		
1 Case Volume (gal.) Did Well Dewater? Gallons Actually Evacuated	1.4 YES @ 2 2.0	.0 GALS.	1.3 NO 4.0			2.2 NO 7.0			1.1 NO 3.5		
Purging Device Sampling Device	BAILER BAILER		BAILER BAILER			BAILER BAILER			BAILER BAILER		
Time Temperature (Fahrenheit) pH Conductivity (micromhos/cm) Nephelometric Turbidity Units	11:28 71.4 7.0 2700 >200	12:12 73.4 7.0 4500 >200	11:46 72.0 7.2 3200 31.2	11:48 72.0 7.2 2900 15.3	11:50 72.8 7.2 2800 10.8	10:49 67.8 7.1 8600 93.2	10:53 67.0 7.1 8600 118.3	10:56 67.2 7:0 8600 104.7	11:11 73.4 7.4 1500 149.2	11:13 73.2 7.6 1400 191.2	11:15 73.4 7.4 1400 >200
BTS Chain of Custody BTS Sample I.D. DOHS HMTL Laboratory Analysis	950713-1 W-7 AEN TPH (DII	ESEL) AND		K-1 ESEL) AND TOR OIL))		K-1 ESEL) AND TOR OIL)			K-1 ESEL) AND TOR OIL))

NOTE: SAMPLES W-13 AND W-14 WERE COLLECTED BY PERSONNEL OF LOWNEY ASSOCIATES.

BLAINE	985 TIMOTHY DRIVE SAN JOSE, CA 95133		CONDUCT	NALYSIS TO DETECT	LAB AEN			DHS #	
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APPENDIX B

ANALYTICAL LABORATORY REPORT

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172

AIHA Accreditation: 11134

PAGE 1

PES ENVIRONMENTAL, INC. 1682 NOVATO BLVD. SUITE 100 NOVATO, CA 94947

ATTN: JENNY HAN

CLIENT PROJ. ID: LOWNEY ASSOC. CLIENT PROJ. NAME: EMERY BAY MKT REPORT DATE: 07/31/95

DATE(S) SAMPLED: 07/13/95

DATE RECEIVED: 07/14/95

AEN WORK ORDER: 9507150

PROJECT SUMMARY:

On July 14, 1995, this laboratory received 2 water sample(s).

Client requested sample(s) be analyzed for organic 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.

Larry Klein

Laboratory Director

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-13

AEN LAB NO: 9507150-01 AEN WORK ORDER: 9507150

CLIENT PROJ. ID: LOWNEY ASSOC.

DATE SAMPLED: 07/13/95 DATE RECEIVED: 07/14/95

REPORT DATE: 07/31/95

ANALYTE	METHOD/ R CAS# RESULT		EPORTING LIMIT UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	-	Extrn Date	07/24/95
TPH as Diesel	GC-FID	0.3 *	0.05 mg/L	07/25/95
TPH as Oil	GC-FID	ND	0.2 mg/L	07/25/95

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-14 **AEN LAB NO:** 9507150-02

AEN WORK ORDER: 9507150 CLIENT PROJ. ID: LOWNEY ASSOC.

DATE SAMPLED: 07/13/95 DATE RECEIVED: 07/14/95

۱ı	_	NLCL	TAFD.	0//14/90
R	FF	ORT	DATE .	07/31/95

ANALYTE	METHOD/ CAS#		PORTING LIMIT UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	-	Extrn Date	07/24/95
TPH as Diesel	GC-FID	0.2 *	0.05 mg/L	07/25/95
TPH as Oil	GC-FID	ND	0.2 mg/L	07/25/95

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

AEN (CALIFORNIA) QUALITY CONTROL REPORT

AEN JOB NUMBER: 9507150

CLIENT PROJECT ID: LOWNEY ASSOC.

Quality Control and Project Summary

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

Definitions

Laboratory Control Sample (LCS)/Method Spike(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 analysis.

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 behavior, 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 instrumental performance.

- D: Surrogates diluted out.
- #: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 3510 GCFID

AEN JOB NO: 9507150

DATE EXTRACTED: 07/24/95

INSTRUMENT: C MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery n-Pentacosane
07/25/95 07/25/95	W-13 W-14	01 02	96 97
QC Limits:			59-118

DATE EXTRACTED: 07/21/95 DATE ANALYZED: 07/21/95 SAMPLE SPIKED: DI WATER

INSTRUMENT: C

Method Spike Recovery Summary

				QC Lim	its
Analyte	Spike Added (mg/L)	Average Percent Recovery	RPD	Percent Recovery	RPD
Diesel	1.82	85	1	65-103	12

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

						1	15-175-6
BLAINE 985 TIMOTHY DRIVE SAN JOSE, CA 95133	3		COND	UCT ANALY	SIS TO DET	ECT	LAB AEN 9507150 DHS#
(408) 995-5535 FAX (408) 293-8773							ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND RWQCB REGION
HAINOFCUSTODY Lowney Assoc.	- SF		,	Reference of the			☐ LIA ☐ OTHER
SITE Emery Bay Market Pace Emery Me Ca	COMPOSITE ALL CONTAINERS	Disco/	Mober C.	And the state of t		34	SPECIAL INSTRUCTIONS Invoice & Report to PES Attn: Jenny Han
MATRIX CONTAINERS	C = COMPOSIT	HdL	Hd.				ADD'L INFORMATION STATUS CONDITION LAB SAMPLE #
W-13 1030 W 2	_	X	X				OIAR OZAB
N-14 931 W 2							OEI/X/
				8			
	+	-					
	reg	1	し	1/2/	. RECEIVE	I I	RESULTS NEEDED NO LATER THAN AS CONTRACTED DATE TIME
(Sveg Wolter >	15/2	1	7	539	y	10	7/13 1230 DATE TIME
RELEASED BY DA	(TE'2 -14,	95	- I	440	RECEIVE	D BY	Voicety 7/14/95 1440
RELEASED BY DATE OF THE PROPERTY OF THE PROPER	114	198	TTIME	208	RECEIVE	OOM	APMUN 7-14-95 1725
SHIPPED VIA	ATE ŠE	:NT	TIM	E SENT	COOLER	Ŧ	

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172

MHA Accreditation: 11134

PAGE 1

PES ENVIRONMENTAL, INC. 1682 NOVATO BLVD. SUITE 100 NOVATO. CA 94947

ATTN: JENNY HAN

CLIENT PROJ. ID: 950713-K1

CLIENT PROJ. NAME: EMERY BAY MKT

REPORT DATE: 07/31/95

DATE(S) SAMPLED: 07/13/95

DATE RECEIVED: 07/14/95

AEN WORK ORDER: 9507152

PROJECT SUMMARY:

On July 14, 1995, this laboratory received 4 water sample(s).

Client requested sample(s) be analyzed for organic 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.

LarryKlein

Laboratory Director

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-7

AEN LAB NO: 9507152-01 AEN WORK ORDER: 9507152 CLIENT PROJ. ID: 950713-K1

DATE SAMPLED: 07/13/95 DATE RECEIVED: 07/14/95 **REPORT DATE: 07/31/95**

METHOD/ CAS#		R RESULT	EPORTING LIMIT UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	-	Extrn Date	07/24/95
TPH as Diesel	GC-FID	55 *	0.05 mg/L	07/26/95
TPH as Oil	GC-FID	13 *	0.2 mg/L	07/26/95

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-19

AEN LAB NO: 9507152-02 AEN WORK ORDER: 9507152 CLIENT PROJ. ID: 950713-K1 DATE SAMPLED: 07/13/95 DATE RECEIVED: 07/14/95 REPORT DATE: 07/31/95

ANALYTE	METHOD/ CAS#	RESULT		REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	_			Extrn Date	07/24/95
TPH as Diesel	GC-FID	5.1	*	0.05	mg/L	07/25/95
TPH as Oil	GC-FID	1	*	0.2	mg/L	07/25/95

ND = Not detected at or above the reporting limit

^{* =} Value at or above reporting limit

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-20

AEN LAB NO: 9507152-03 AEN WORK ORDER: 9507152 CLIENT PROJ. ID: 950713-K1

DATE SAMPLED: 07/13/95 DATE RECEIVED: 07/14/95 REPORT DATE: 07/31/95

ANALYTE	METHOD/ CAS#	RESULT RI	EPORTING LIMIT UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	_	Extrn Date	07/24/95
TPH as Diesel	GC-FID	0.1 *	0.05 mg/L	07/25/95
TPH as Oil	GC-FID	ND	0.2 mg/L	07/25/95

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: W-24

AEN LAB NO: 9507152-04 AEN WORK ORDER: 9507152 CLIENT PROJ. ID: 950713-K1

DATE SAMPLED: 07/13/95 DATE RECEIVED: 07/14/95 **REPORT DATE:** 07/31/95

ANALYTE METHOD/ CAS#		R RESULT	EPORTING LIMIT UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	-	Extrn Dat	e 07/24/95
TPH as Diesel	GC-FID	0.2 *	0.05 mg/L	07/25/95
TPH as Oil	GC-FID	ND	0.2 mg/L	07/25/95

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

AEN (CALIFORNIA) QUALITY CONTROL REPORT

AEN JOB NUMBER: 9507152

CLIENT PROJECT ID: 950713-K1

Quality Control and Project Summary

Diesel surrogate recovery diluted out for sample W-7 due to high levels of target compounds. Sample run at dilution.

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

Definitions

Laboratory Control Sample (LCS)/Method Spike(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 analysis.

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 behavior, 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 instrumental performance.

- D: Surrogates diluted out.
- #: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 3510 GCFID

AEN JOB NO: 9507152

DATE EXTRACTED: 07/24/95

INSTRUMENT: C MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery n-Pentacosane
07/26/95 07/25/95 07/25/95 07/25/95	W-7 W-19 W-20 W-24	01 02 03 04	D 108 99 97
QC Limits:			59-118

D: Surrogates diluted out

DATE EXTRACTED: 07/21/95 DATE ANALYZED: 07/21/95 SAMPLE SPIKED: DI WATER

INSTRUMENT: C

Method Spike Recovery Summary

	-			QC Lim	its
Analyte	Spike Added (mg/L)	Average Percent Recovery	RPD	Percent Recovery	RPD
Diesel	1.82	85	1	65-103	12

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

Ruisi

BLAINE	985 TIMOTHY DRIVI SAN JOSE, CA 9513	3		CONDUCT ANALYSIS TO DETECT				LAB AEN	100	1150	DHS#
TECH SERVICES INC	(408) 995-553 FAX (408) 293-877							ALL ANALYSES MUST SET BY CALIFORNIA	MEET SPECIFI DHS AND		REGION
CHAIN OF CUSTODY 950713-1<1 CLIENTES CENERY BAY MARK + Place SITE CHRISHE STREET EMERY VIILE			/×	10.7°				DEPA DIA DOTHER SPECIAL INSTRUCTION THUSICE	ons 4 Zepa		
MATRIX CONTAINERS			TPH Die	174 Mo				INVOICE ATTN. Je	NAY P	HAN	
1 1 1	DA TOTAL Life HC	C = COMPOSITE	1	H				ADD'L INFORMATION	STATUS	-	LAB SAMPLE #
	W 2		X	X						1	DIAB
W-19 1155			X	X_{\perp}							2AB
W-20 1100			X	X.	11					1	3 AB
W-24 1120	1 1 1	+	\geq	\times							14AB
		-	-								
								*			
								RESULTS NEEDED			
SAMPLING DATE TIME COMPLETED 13 55 (222)	SAMPLING PERFORMED BY	Le ATE	Cet.	TIME	Bu	RECEIVE	DBY	NO LATER THAN	ROU	TINE DATE L	TIME
Munt C. la		1/12L	195		30	RECEIVE	0 - "		\1	1DATE	TIME
RELEASED BY	72 %	ATE 14	95	170	5	7	Oav	i X Pru	<i>ts</i>	7-14-95	1705 TIME
RELEASED BY		ATE		TIME		RECEIVE	D BY			DATE	THAIC
SHIPPED VIA	D	ATE SE	NT	TIME S	ENT	COOLER	#				