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Department of Environmental Health

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**TRANSMITTAL
QUARTERLY MONITORING REPORT
FOURTH QUARTER 1996
POWELL STREET PLAZA
AND SHELLMOUND III SITES
EMERYVILLE, CALIFORNIA**

Dear Ms. Hugo:

Enclosed is one copy of the above titled report prepared by PES Environmental, Inc. for the former partners of Eastshore Partners (Eastshore) for the Powell Street Plaza and Shellmound III sites, Emeryville, California,. This quarterly report presents results of groundwater elevation monitoring and groundwater sampling activities for the fourth quarter of 1996 at the Powell Street Plaza and Shellmound III sites.

Yours very truly,

PES ENVIRONMENTAL, INC.

Elizabeth Large
Staff Geologist

Enclosure: Quarterly Monitoring Report

cc: Mr. Thomas Gram
Mr. Thomas Graf, Geomatrix Consultants

2410102T 035



A Report Prepared for:

Mr. Thomas Gram
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Department of Environmental Health

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**QUARTERLY MONITORING REPORT
FOURTH QUARTER 1996
POWELL STREET PLAZA
AND SHELLMOUND III SITES
EMERYVILLE, CALIFORNIA**

~~JANUARY 31, 1996~~

1997

By:

Elizabeth A. Large
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LIST OF ILLUSTRATIONS

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1.0 INTRODUCTION

This report presents data collected by PES Environmental, Inc. (PES) during groundwater monitoring at Powell Street Plaza and the adjacent Shellmound III properties in Emeryville, California during the fourth quarter of 1996. Monitoring during this quarter was performed on November 25, 1996. The purpose of the monitoring is to evaluate the degree and extent of petroleum hydrocarbons in groundwater at the subject sites. This monitoring was conducted on behalf of the former partners of Eastshore Partners pursuant to a June 4, 1993 letter to Aetna Real Estate Associates, L.P. (the current Powell Street Plaza property owner) from the Alameda County Department of Environmental Health (ACDEH).

The scope of monitoring activities was established in subsequent conversations with Ms. Susan Hugo of ACDEH and Mr. Rich Hiett of the California Regional Water Quality Control Board - San Francisco Bay Region (RWQCB). The groundwater monitoring schedule was outlined initially in a June 29, 1994 letter to Ms. Hugo. Subsequent modifications to the groundwater monitoring schedule were documented in the October 24, 1994 and the March 14, 1996 letters to Ms. Hugo. The March 1996 letter documented verbal authorization from Ms. Hugo to reduce the frequency for chemical analysis from quarterly to semi-annual.

2.0 SITE CONDITIONS SUMMARY

Monitoring wells PZ-1, MW-18, MW-19, MG-1, MG-2, MG-3, and MG-4 were covered by soil stockpiles or were inaccessible during sampling due to heavy equipment or materials blocking access to the wells. Monitoring well MW-10 was damaged by road excavation due to the realignment of Shellmound Street. Monitoring wells MW-4, MW-5, MW-7, MW-15, and MW-16 were abandoned during the North Interceptor relocation activities in accordance with Alameda County Flood Control District - Zone 7 well destruction permit conditions. Locations of all monitoring wells are shown on Plate 1.

3.0 QUARTERLY GROUNDWATER SAMPLING

Quarterly groundwater sampling was conducted by Blaine Tech Services, Inc. (Blaine Tech) under PES' observation on November 25, 1996. Groundwater samples were collected from monitoring wells MW-1, MW-2, MW-11, MW-12, and MG-7 in accordance with the monitoring well sampling schedule approved by ACDEH. Monitoring wells PZ-1, MW-19, MG-2, and MG-4 were scheduled to be sampled, but were inaccessible as described above. Monitoring well identification, corresponding sample numbers, and status of wells not sampled are presented on Table 1.

Groundwater samples were collected from each well after removing approximately three well volumes of water using a new disposable Teflon bailer at each well.

During purging, the discharge water was monitored for pH, temperature, electrical conductivity and turbidity. The samples were collected from the wells using a new disposable Teflon bailer at each well and decanted into the appropriate laboratory containers preserved with hydrochloric acid. The sample containers were then labeled and immediately placed in a chilled, thermally-insulated cooler for delivery under chain-of-custody protocol to American Environmental Network (AEN), a State-certified laboratory in Pleasant Hill, California. AEN received the samples on November 25, 1996. Samples were analyzed on November 26 and December 1, 1996.

AEN analyzed the samples using EPA Test Method 8015 (modified) for total petroleum hydrocarbons quantified as gasoline (TPHg), diesel (TPHd), and motor oil (TPHmo) and using EPA Test Method 8020 for benzene, toluene, ethylbenzene, and total xylenes (BTEX). Laboratory chemical analyses results for dissolved hydrocarbon compounds in groundwater, including results from previous sampling rounds, are listed in Table 2.

The laboratory reports and chain-of-custody records are attached as Appendix A. Sampling methods and field parameter measurements are described in the Blaine Tech sampling report in Appendix B.

4.0 DEPTH-TO-GROUNDWATER AND PRODUCT THICKNESS MEASUREMENTS

Depth-to-groundwater was measured in monitoring wells MW-1, MW-2, MW-11, MW-12 and MG-7 on November 25, 1996 by Blaine Tech prior to well purging and sampling. Depth-to-groundwater and product thickness (where present) were measured in monitoring wells MW-3, MW-6, MW-8, MW-9, MW-13, and MW-14 on November 25, 1996 by PES. Measurements were recorded to the nearest 0.01 foot using an electronic, dual-interface sounding probe. Depth-to-groundwater measurements were converted to groundwater elevations referenced to mean sea level (MSL) and corrected for displacement by free product, as noted in Table 3. To prevent cross-contamination between wells, the portion of the sounding probe submerged in the well was cleaned with analconox/deionized water solution and double-rinsed with deionized water between well measurements. Groundwater elevations and product thickness measurements are listed in Table 3 and illustrated on Plates 2 and 3, respectively.

5.0 SUMMARY OF RESULTS

This section presents a summary of groundwater chemistry and groundwater elevation data collected during the November 25, 1996 sampling event.

5.1 Groundwater Chemistry

TPHd was detected in groundwater samples collected from wells MW-1, MW-2, MW-11, MW-12, and MG-7. Concentrations of TPHd ranged from 0.57 parts per million (ppm) (MW-12) to 5.6 ppm (MW-2). TPHmo was detected in groundwater samples collected from

wells MW-2, MW-11, MW-12, and MG-7 at concentrations ranging from 0.21 ppm (MW-12) to 0.52 ppm (MG-7).

Benzene was detected in groundwater samples collected from wells MW-2 and MG-7 at concentrations of 1.7 parts per billion (ppb) and 0.8 ppb, respectively. Toluene, ethylbenzene, and total xylenes were not detected in any of the groundwater samples at or above their laboratory reporting limits.

5.2 Groundwater Elevations and Product Thickness Measurements

The November 25, 1996 groundwater elevations at the Powell Street Plaza and Shellmound III properties ranged from -0.10 to 4.80 feet above mean sea level (MSL). The November 25, 1996 groundwater elevations at the Powell Street Plaza property ranged from 0.96 foot higher (MW-9) to 1.31 feet lower (MW-14) than elevations measured on June 28, 1996. The November 25, 1996 groundwater elevation for MG-7 on the Shellmound III property was 0.27 foot lower than the June 28, 1996 elevation. In general, lower groundwater elevations were observed at the Powell Street Plaza and Shellmound III properties on November 25, 1996.

Well MW-8 continues to show a trend of uncharacteristically low groundwater elevations with respect to surrounding wells. This may be due to its proximity to utility corridors with permeable backfill located within Shellmound Street. Well MW-11 has shown uncharacteristically low groundwater elevations for the last three quarters compared to its historical groundwater elevations. The groundwater mound in the vicinity of wells MW-13 and MW-14 still persists, but has shifted slightly east toward MW-9 compared to the June 28, 1996 groundwater elevations. The primary direction of groundwater flow across the two sites is southwest toward Temescal Creek at an approximate gradient range of 0.006 to 0.013 foot per foot.

The presence of free product was slightly more evident in November 1996 than in June 1996, although product was observed only in wells MW-13 and MW-14. Product was measured in wells MW-13 and MW-14 with a thickness of 0.28 foot and 0.35 foot, respectively, which is within the historical range. The greater thickness of free product may also be an effect of the generally lower water levels coinciding with periods of minimal precipitation.

5.3 Summary of Product Removal

The passive free-phase product recovery skimmer has been operating in Well MW-13 and Well MW-14 at the Powell Street Plaza site since June 1996. From June 28, 1996 to November 25, 1996, the product recovery system removed approximately 0.125 gallons of product.

6.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Chemical data obtained from water sample analyses were validated according to accuracy, precision, and completeness criteria. Three types of control samples: spikes, spike duplicates, and blanks were used in the QA/QC program to evaluate the chemical data.

Data accuracy was assessed by evaluating results of analyses of a laboratory spike sample and a laboratory spike duplicate. The results of spike and spike duplicate analyses are presented in the laboratory report in Appendix A. The recoveries (the percentage difference between the spike concentration and the measured concentration) and differences (from duplicate analyses) were within project goals.

The evaluation procedure for blanks includes a qualitative review of the chemical analysis data reported by the laboratory. TPHg, TPHd, TPHmo and BTEX were not detected in the internal blanks prepared by the laboratory. One field blank (Sample Number 96480000) was submitted to the laboratory for analysis. TPHg, TPHd, TPHmo and BTEX were not detected in the field blank.

Internal laboratory blank, spike and spike duplicate data were within the laboratory QA/QC limits. No petroleum hydrocarbons or hydrocarbon constituents were detected in the internal blanks. The data are therefore, considered to be representative and acceptable.

TABLES

TABLE 1
Summary of Wells Sampled
November 25, 1996
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well ID	Sample Number	Status of Wells Not Sampled
MW-1	96480001	
MW-2	96480002	
MW-3	NS	Historical free-product.
MW-4	NS	Abandoned by permit.
MW-5	NS	Abandoned by permit.
MW-6	NS	Eliminated from sampling schedule.
MW-7	NS	Abandoned by permit.
MW-8	NS	Eliminated from sampling schedule.
MW-9	NS	Eliminated from sampling schedule.
MW-10	NS	Eliminated from sampling schedule.
MW-11	96480011	
MW-12	96480012	
MW-13	NS	Free-product present.
MW-14	NS	Free-product present.
MW-15	NS	Abandoned by permit.
MW-16	NS	Abandoned by permit.
MW-18	NS	Eliminated from sampling schedule.
MW-19	NS	Inaccessible.
MG-1	NS	Inaccessible.
MG-2	NS	Inaccessible.
MG-3	NS	Inaccessible.
MG-4	NS	Inaccessible.
MG-7	96480107	
PZ-1	NS	Eliminated from sampling schedule.
Trip Blank	95480000	

Note:

NS: Not sampled

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million)							Comments
			TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	
MW-1	3/14/88	8015	NT	<1	NT	NT	NT	NT	NT	
	3/25/91	8015/8020	<0.050	<0.050	NT	<0.0003	<0.0003	<0.0003	<0.0003	
	11/10/93	8260	<0.050	<0.050	NT	0.0013	0.0018	<0.0005	0.0020	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	8015/8020	<0.05	0.3	0.2	<0.0005	<0.0005	<0.0005	<0.002	
	3/3/95	8015/8020	<0.05	0.69	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	<0.05	0.4	0.3	<0.0005	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	<0.05	0.5	0.6	<0.0005	<0.0005	<0.0005	<0.002	
	11/29/95	8015/8020	<0.05	0.2	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	6/28/96	8015/8020	<0.05	0.9	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
11/25/96	8015/8020	<0.05	0.85	<0.2	<0.0005	<0.0005	<0.0005	<0.002		
MW-2	3/14/88	8015	NT	0.05	NT	NT	NT	NT	NT	
	3/25/91	8015/8020	0.053	<0.050	NT	0.0006	<0.0003	<0.0003	<0.0003	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	8/30/94	8260	<0.050	0.200	NT	0.0006	<0.0005	<0.0005	<0.0005	
	11/29/94	8015/8020	0.07	3.9	0.9	0.0009	<0.0005	<0.0005	<0.002	
	3/3/95	8015/8020	0.08	3.9	0.2	0.0007	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	0.05	2.4	0.2	0.0007	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	0.06	4.1	0.8	0.0007	<0.0005	<0.0005	<0.002	
	11/29/95	8015/8020	0.1	4.5	0.4	0.001	<0.0005	<0.0005	<0.002	
6/28/96	8015/8020	0.12	5.6	<0.2	0.015	<0.0005	<0.0005	<0.002		
11/25/96	8015/8020	<0.05	5.6	0.4	0.0017	<0.0005	<0.0005	<0.002		
MW-3	3/14/88	8015	NT	0.15	NT	NT	NT	NT	NT	
	3/25/91	NS	NS	NS	NT	NS	NS	NS	NS	Free product
	11/10/93	NS	NS	NS	NT	NS	NS	NS	NS	Free product (0.23 ft)
	2/23/94	8260	<0.050	11.000	NT	0.0007	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	NS	NS	NS	NS	NS	NS	NS	Well cover jammed
	8/30/94	8260	<0.050	1.300	NT	0.0013	<0.0005	<0.0005	0.0006	
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million)							Comments	
			TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes		
MW-3 (cont.)	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS		
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS		
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS		
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS		
	11/25/96	NS	NS	NS	NS	NS	NS	NS	NS		
MW-4	3/14/88	8015	NT	1.2	NT	NT	NT	NT	NT	Free product (0.02 ft)	
	3/25/91	8015/8020	1.300	2.500	NT	0.7100	0.0030	0.0020	0.0060		
	11/10/93	8260	0.800	34.000	NT	0.4400	0.0030	<0.0020	<0.0020		
	2/23/94	8260	0.560	18.000	NT	0.4500	0.0025	<0.0005	0.0020		
	6/2/94	8260	<0.500	13.000	NT	0.760	<0.005	<0.005	<0.005		
	8/30/94	8260	1.400	<0.050	NT	0.470	<0.0005	<0.0005	<0.0005		
	11/29/94	8015/8020	3.5	14	1.5	0.500	0.004	0.0007	0.003		
	3/3/95	8015/8020	3.1	11	0.7	0.610	0.004	0.001	0.004		
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS		Well buried under soil stockpile
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS		Well abandoned
MW-5	3/14/88	8015	NT	<1	NT	NT	NT	NT	NT	0.0005 - 1,2-DCA	
	11/10/93	8260	<0.050	6.800	NT	<0.0005	<0.0005	<0.0005	<0.0005		
	2/23/94	8260	<0.050	7.100	NT	<0.0005	<0.0005	<0.0005	<0.0005		
	6/2/94	8260	<0.500	8.100	NT	<0.005	<0.005	<0.005	<0.005		
	8/30/94	8260	<0.050	1.400	NT	<0.0005	<0.0005	<0.0005	<0.0005		
	11/29/94	8015/8020	2.1	4.3	1.1	0.0006	0.0006	<0.0005	<0.002		
	3/3/95	8015/8020	0.6	5.3	0.2	<0.0005	<0.0005	<0.0005	<0.002		
	5/25/95	8015/8020	0.06	5.2	0.8	<0.0005	<0.0005	<0.0005	<0.002		
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS		Well abandoned
MW-6	3/14/88	8015	NT	<0.05	NT	NT	NT	NT	NT		
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005		
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005		
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005		
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS		
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS		
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS		

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million)							Comments
			TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	
MW-6 (cont.)	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	
	11/25/96	NS	NS	NS	NS	NS	NS	NS	NS	
MW-7	3/10/88	NS	NS	NS	NS	NS	NS	NS	NS	Free product (1.32 ft)
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.22 ft)
	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.02 ft)
	6/2/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.01 ft)
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	Well not accessible
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Well abandoned
MW-8	3/14/88	8015	NT	<0.05	NT	NT	NT	NT	NT	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	0.190	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	9/6/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
11/25/96	NS	NS	NS	NS	NS	NS	NS	NS		
MW-9	3/14/88	8015	NT	<1	NT	NT	NT	NT	NT	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	
8/23/95	NS	NS	NS	NS	NS	NS	NS	NS		

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million)							Comments
			TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	
MW-9 (cont)	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	
	11/25/96	NS	NS	NS	NS	NS	NS	NS	NS	
MW-10	3/14/88	8015	NT	<1.0	NT	NT	NT	NT	NT	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	
11/25/96	NS	NS	NS	NS	NS	NS	NS	NS		
MW-11	3/14/88	NS	NS	NS	NS	NS	NS	NS	NS	Well was dry
	11/10/93	8260	<0.050	<0.050	NT	0.0008	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	0.0008	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	0.0021	<0.0005	<0.0005	<0.0005	
	8/30/94	8260	<0.050	<0.050	NT	0.0028	<0.0005	<0.0005	<0.0005	
	11/29/94	8015/8020	0.07	2.0	0.8	0.002	<0.0005	<0.0005	<0.002	
	3/3/95	8015/8020	0.06	3.7	0.2	0.005	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	0.09	2.5	0.6	0.011	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	<0.05	3.3	0.5	0.001	<0.0005	<0.0005	<0.002	
	11/29/95	8015/8020	<0.05	2.8	0.4	<0.0005	<0.0005	<0.0005	<0.002	
6/28/96	8015/8020	<0.05	1.8	<0.2	<0.0005	<0.0005	<0.0005	<0.002		
11/25/96	8015/8020	<0.05	3.5	0.4	<0.0005	<0.0005	<0.0005	<0.002		
MW-12	3/14/88	8015	NT	0.05	NT	NT	NT	NT	NT	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	9/6/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/29/94	8015/8020	<0.05	0.3	<0.2	<0.0005	<0.0005	<0.0005	<0.002	

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million)							Comments
			TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	
MW-12 (cont.)	3/3/95	8015/8020	<0.05	0.3	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	<0.05	0.66	0.4	<0.0005	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	<0.05	0.6	0.2	<0.0005	<0.0005	<0.0005	<0.002	
	11/29/95	8015/8020	<0.05	0.4	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	6/28/96	8015/8020	<0.05	0.48	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	11/25/96	8015/8020	<0.05	0.57	0.21	<0.0005	<0.0005	<0.0005	<0.002	
MW-13	3/14/88	8015/8020	NT	1.7	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (1.06 ft)
	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	6/2/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.01 ft)
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.27 ft)
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.61 ft.)
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.02 ft.)
11/25/96	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.28 ft)	
MW-14	3/14/88	8015	NT	<1	NT	NT	NT	NT	NT	
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.27 ft)
	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	6/2/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.18 ft)
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
11/25/96	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.35 ft)	
MW-15	3/14/88	8015/8020	NT	1.8	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.15 ft)
	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	6/2/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million)							Comments	
			TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethylbenzene	Total Xylenes		
MW-15 (cont.)	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	NS	Well not accessible
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	NS	Well abandoned
MW-16	3/14/88	8015	NT	<0.05	NT	NT	NT	NT	NT	NT	
	4/21/89	8015	NT	<1.0	NT	0.0009	0.0026	0.0004	0.0041		
	3/25/91	8015/8020	<0.050	<0.050	NT	<0.0003	<0.0003	<0.0003	0.0003		
	5/20/92	8015/8020	<0.050	0.140	NT	<0.0003	<0.0003	<0.0003	<0.0003		Non-standard diesel pattern
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005		
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005		
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005		
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	3/3/95	8015/8020	<0.05	0.5	<0.2	<0.0005	<0.0005	<0.0005	<0.002		
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	NS	Well abandoned
MW-18	3/14/88	8015	NT	<0.05	NT	NT	NT	NT	NT		
	5/20/92	8015/8020	<0.050	<0.050	NT	<0.0003	<0.0003	<0.0003	<0.0003		
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005		
	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	NS	Well area flooded
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005		
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	NS	Well area flooded, almost under water
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	NS	Well area flooded
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	NS	Well buried under soil stockpile
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/25/96	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-19	10/6/94	8015/8020	<0.05	<0.05	0.4	<0.0005	<0.0005	<0.0005	<0.002		
	10/31/94	8015/8020	<0.05	0.2	<0.2	<0.0005	<0.0005	<0.0005	<0.002		
	11/29/94	8015/8020	0.07	<0.05	0.5	0.002	0.005	0.0009	0.005		
	3/3/95	8015/8020	<0.05	0.3	<0.2	<0.0005	<0.0005	<0.0005	<0.002		
	5/25/95	8015/8020	<0.05	0.4	0.4	<0.0005	<0.0005	<0.0005	<0.002		

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million)							Comments
			TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	
MW-19 (cont.)	8/23/95	8015/8020	<0.05	<0.05	0.5	<0.0005	<0.0005	<0.0005	<0.002	Well inaccessible
	11/29/95	8015/8020	<0.05	0.2	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	
	11/25/96	NS	NS	NS	NS	NS	NS	NS	NS	
MG-1	4/21/89	NS	NS	NS	NS	NS	NS	NS	NS	Free product
	3/25/91	NS	NS	NS	NS	NS	NS	NS	NS	Free product
	5/21/92	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.03 ft)
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.36 ft)
	2/23/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	6/2/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.09 ft)
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	5/25/95	NS	NS	NS	NS	NS	NS	NS	NS	Well buried under soil stockpile
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.49 ft)
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	
	11/25/96	NS	NS	NS	NS	NS	NS	NS	NS	
MG-2	4/21/89	8015	NT	<1.0	NT	0.09	0.0027	<0.0003	0.0017	Well covered by equipment
	3/25/91	8015/8020	<0.050	<0.050	NT	0.0010	<0.0003	<0.0003	<0.0003	
	5/21/92	8015	0.210	1.400	NT	0.0820	0.0018	0.0006	0.0014	
	11/10/93	8260	0.050	0.540	NT	0.0160	0.0009	<0.0005	<0.0005	
	2/23/94	8260	<0.050	3.300	NT	0.0033	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	0.490	<0.050	NT	0.016	0.0009	<0.0005	<0.0005	
	8/30/94	8260	<0.050	0.875	NT	0.0078	0.0006	<0.0005	0.0006	
	11/29/94	8015/8020	0.3	3.2	0.9	0.015	0.001	<0.0005	<0.002	
	3/3/95	8015/8020	0.8	3.1	0.7	0.002	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	0.8	3.9	0.4	0.098	0.003	<0.0005	<0.002	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	
11/25/96	NS	NS	NS	NS	NS	NS	NS	NS		

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million)							Comments
			TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	
MG-3	4/21/89	8015	NT	<1.0	NT	0.1	0.0023	<0.0003	0.0089	
	3/25/91	8015/8020	0.610	2.600	NT	0.0750	0.0008	0.0004	0.0020	
	5/21/92	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.85 ft)
	11/10/93	NS	NS	NS	NS	NS	NS	NS	NS	Free product (0.47 ft)
	2/23/94	8260	NS	NS	NS	NS	NS	NS	NS	Free product (0.02 ft)
	6/2/94	8260	NS	NS	NS	NS	NS	NS	NS	Free product (0.08 ft)
	11/29/94	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	Free product (Trace: <0.01 ft)
	5/25/95	8015/8020	12	130	<10	0.014	0.0007	0.001	0.003	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	
11/25/96	NS	NS	NS	NS	NS	NS	NS	NS		
MG-4	4/21/89	8015	NT	<1.0	NT	0.0003	<0.0003	<0.0003	0.0013	
	3/25/91	8015/8020	<0.050	<0.050	NT	0.0004	<0.0003	<0.0003	0.0005	
	5/20/92	8015/8020	<0.050	<0.050	NT	<0.0003	<0.0003	<0.0003	<0.0003	
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	9/6/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	0.0007 - 1,2-DCA
	11/29/94	8015/8020	<0.05	4.8	0.6	<0.0005	<0.0005	<0.0005	<0.002	
	3/3/95	8015/8020	0.05	9.9	0.9	<0.0005	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	<0.05	10	1	0.0007	<0.0005	<0.0005	<0.002	
	8/23/95	NS	NS	NS	NS	NS	NS	NS	NS	Well buried under soil stockpile
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	
	11/25/96	NS	NS	NS	NS	NS	NS	NS	NS	
MG-7	3/25/91	8015/8020	<0.050	<0.050	NT	0.0005	<0.0003	<0.0003	<0.0003	
	5/20/92	8015/8020	<0.050	0.060	NT	<0.0003	<0.0003	<0.0003	<0.0003	Non-standard diesel pattern
	11/10/93	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	
	8/30/94	8260	<0.050	<0.050	NT	<0.0005	<0.0005	<0.0005	<0.0005	0.0007 - 1,2-DCA

TABLE 2
Results of Chemical Analyses of Groundwater Samples
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Date Sampled	EPA Test Method	(concentrations expressed in parts per million)							Comments
			TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-benzene	Total Xylenes	
MG-7 (cont)	11/29/94	8015/8020	<0.05	2.6	0.4	<0.0005	<0.0005	<0.0005	<0.002	Well buried under soil stockpile
	3/3/95	NS	NS	NS	NS	NS	NS	NS	NS	
	5/25/95	8015/8020	<0.05	1.7	0.4	0.0007	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	0.1	2.8	<0.2	0.0008	<0.0005	<0.0005	<0.002	
	11/29/95	8015/8020	<0.05	0.97	<0.2	<0.0005	<0.0005	<0.0005	<0.002	
	6/28/96	8015/8020	<0.05	1.7	<0.2	0.0007	<0.0005	<0.0005	<0.002	
	11/25/96	8015/8020	<0.05	2.6	0.52	0.0008	<0.0005	<0.0005	<0.002	
PZ-1	3/25/91	8015/8020	0.320	0.340	NT	0.0004	<0.0003	<0.0003	0.0010	New casing
	5/21/92	8015/8020	0.120	0.600	NT	0.0018	0.0003	0.0003	0.0012	
	11/10/93	8260	<0.050	<0.050	NT	0.0015	<0.0005	<0.0005	<0.0005	
	2/23/94	8260	<0.050	<0.050	NT	0.0009	<0.0005	<0.0005	<0.0005	
	6/2/94	8260	<0.050	<0.050	NT	0.0016	<0.0005	<0.0005	<0.0005	
	11/29/94	8015/8020	0.2	1.4	1.7	0.0007	<0.0005	<0.0005	<0.002	
	3/3/95	8015/8020	2.0	3.7	0.8	0.0006	<0.0005	<0.0005	<0.002	
	5/25/95	8015/8020	0.6	3.7	0.6	0.002	<0.0005	<0.0005	<0.002	
	8/23/95	8015/8020	0.2	5.4	1.5	0.0007	<0.0005	<0.0005	<0.002	
	11/29/95	NS	NS	NS	NS	NS	NS	NS	NS	
	6/28/96	NS	NS	NS	NS	NS	NS	NS	NS	
	11/25/96	NS	NS	NS	NS	NS	NS	NS	NS	

Notes:

- NT = Not tested for indicated test parameter
- NS = Not sampled for indicated test parameter
- TPH = Total petroleum hydrocarbons
- 1,2-DCA = 1,2-Dichloroethane

TABLE 3
Groundwater Elevations and Product Thickness Measurements
November 25, 1996
Powell Street Plaza and Shellmound III Sites
Emeryville, California

Well Number	Top of Casing Elevation* (feet MSL)	11/25/96 Depth to Product (feet)	11/25/96 Depth to Water (feet)	11/25/96 Product Thickness (feet)	6/28/96 Product Thickness (feet)	Change in Product Thickness (feet)	11/25/96 Groundwater Elevation (feet MSL)	11/25/96 Corrected GW Elevation (feet MSL)	6/28/96 Groundwater Elevation (feet MSL)	Change in Elevation 6/28-11/25/96 (feet MSL)
MW-1	8.72	NP	5.65				3.07		3.22	-0.15
MW-2	9.83	NP	6.84				2.99		3.18	-0.19
MW-3	10.86	NP	8.00				2.86		NM	NM
MW-4 ⁽¹⁾	----	----	----				----		----	
MW-5 ⁽¹⁾	----	----	----				----		----	
MW-6	11.42	NP	8.21				3.21		3.42	-0.21
MW-7 ⁽¹⁾	----	----	----				----		----	
MW-8	7.48	NP	5.64		<0.01		1.84		1.25	0.59
MW-9	7.50	NP	2.70		<0.01		4.80		3.79	1.01
MW-10	7.38	NM	NM				NM		NM	NM
MW-11	11.89	NP	11.99				-0.10		0.66	-0.76
MW-12	9.42	NP	7.18				2.24		2.96	-0.72
MW-13	10.83	6.50	6.78	0.28	0.02	0.26	4.05	4.29	5.14	-0.85
MW-14	11.74	8.12	8.47	0.35	<0.01	0.35	3.27	3.57	5.34	-1.77
MW-15 ⁽¹⁾	----	----	----				----		----	
MW-16 ⁽¹⁾	----	----	----				----		----	
MW-18	6.21	NM	NM				NM		NM	NM
MW-19	9.94	NM	NM				NM		NM	NM
MG-1	11.82	NM	NM				NM		NM	NM
MG-2	10.83	NM	NM				NM		NM	NM
MG-3	9.76	NM	NM				NM		NM	NM
MG-4	7.38	NM	NM				NM		NM	NM
MG-7	13.10	NP	12.42				0.68		1.00	-0.32
PZ-1	7.99	NM	NM				NM		NM	NM

Notes:

* = Top of casing elevations based on December 27, 1994 and January 4, 1995 Kier & Wright survey.

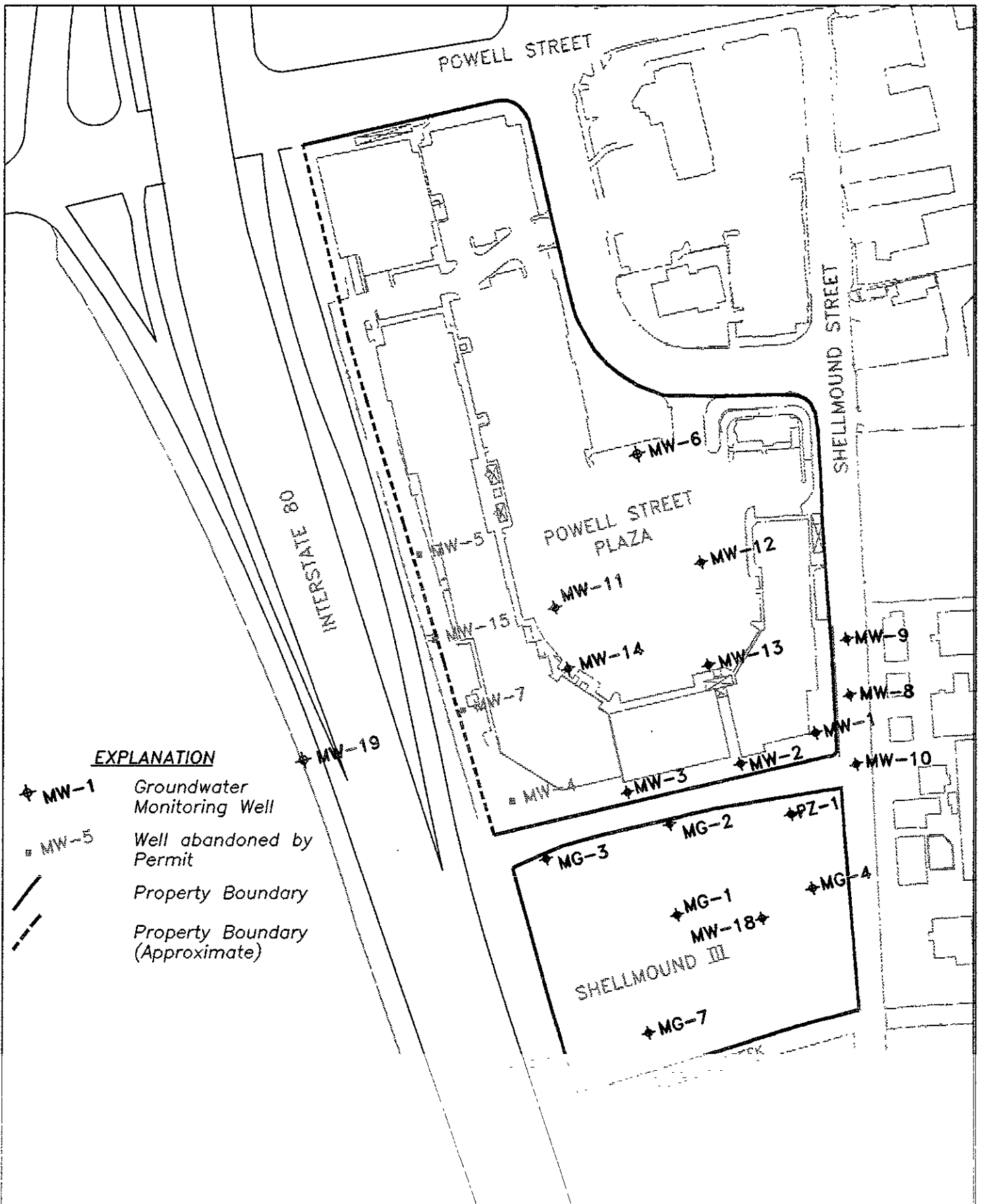
NP = No free product observed

NM = Not measured

GW = Groundwater

(1) = Well has been abandoned.

ILLUSTRATIONS

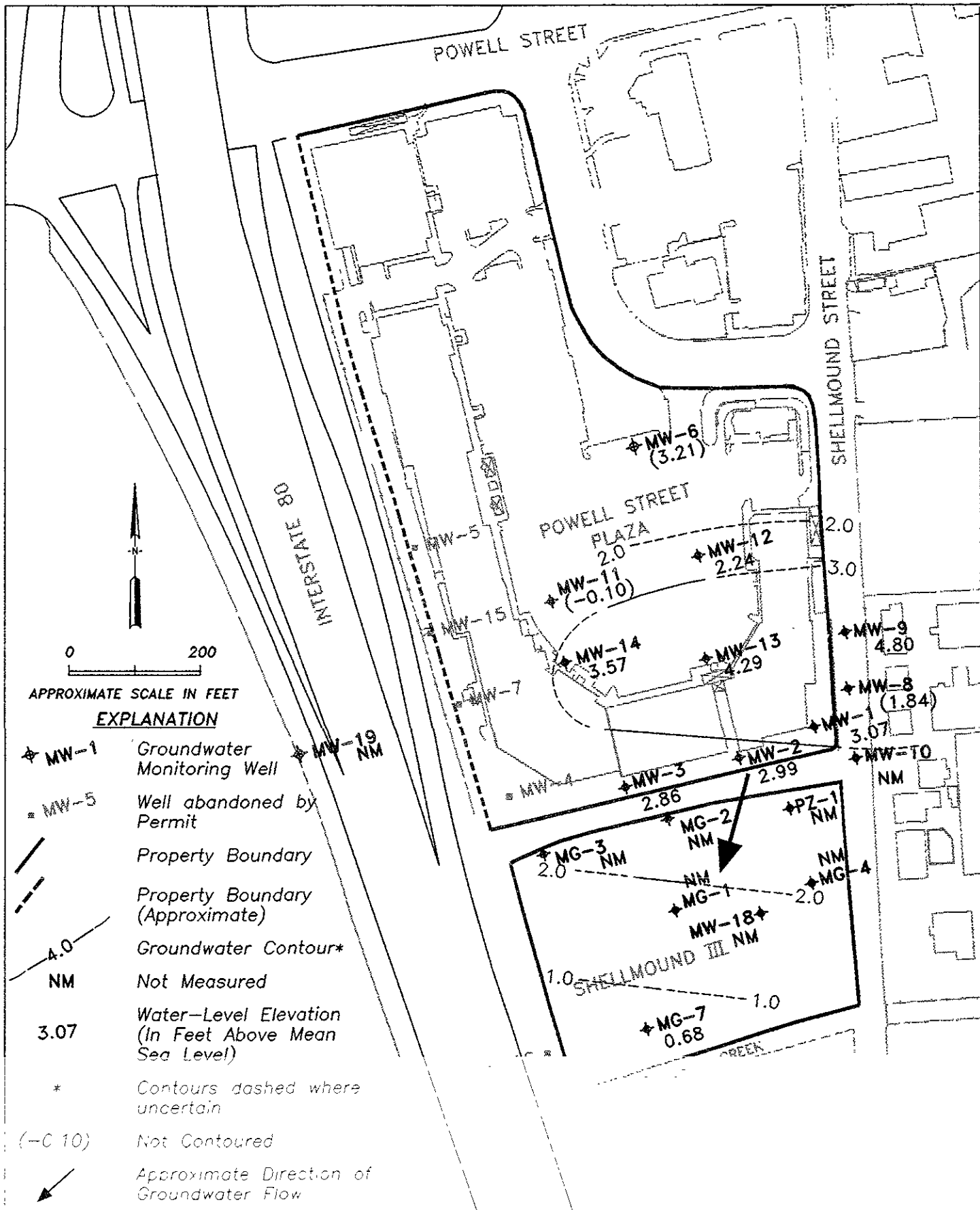


EXPLANATION

- ◆ MW-1 Groundwater Monitoring Well
- MW-5 Well abandoned by Permit
- Property Boundary
- - - Property Boundary (Approximate)

Site Plan
Powell Street Plaza and
Shellmound III Sites
Emeryville, California





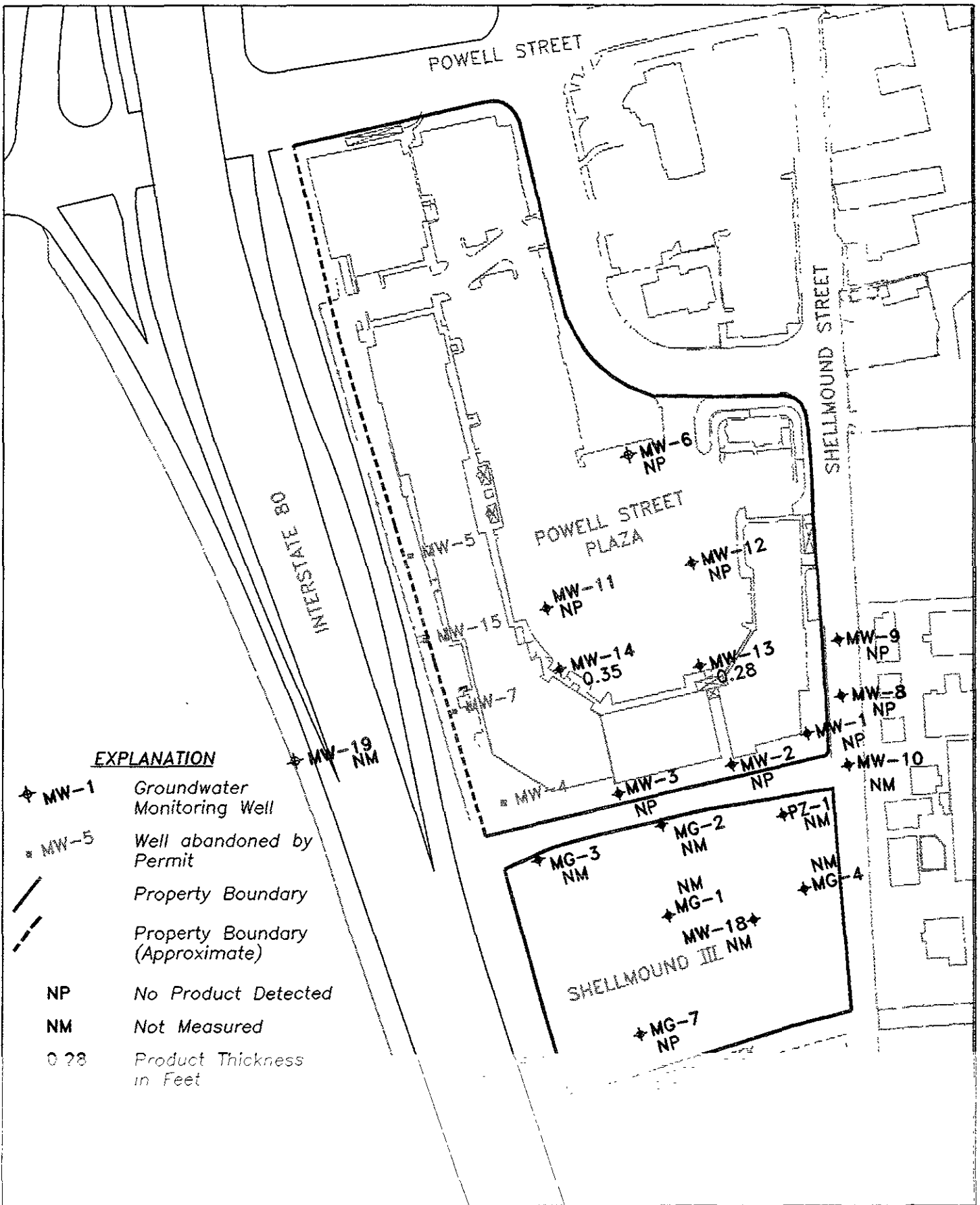
PES Environmental, Inc.
Engineering & Environmental Services

Groundwater Elevations on November 25, 1996
Powell Street Plaza and
Shellmound III Sites
Emeryville, California

PLATE

2

RFH



PES Environmental, Inc.
 Engineering & Environmental Services

Free-Phase Product Thickness on November 25, 1996 PLATE
 Powell Street Plaza and
 Shellmound III Sites
 Emeryville, California

3



APPENDIX A

**LABORATORY REPORT AND
CHAIN OF CUSTODY RECORDS**

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: ELIZABETH LARGE
CLIENT PROJ. ID: POWELL ST PLAZA

C.O.C. NUMBER: 961125-J1

REPORT DATE: 01/13/97

DATE(S) SAMPLED: 11/25/96

DATE RECEIVED: 11/25/96

AEN WORK ORDER: 9611345

PROJECT SUMMARY:

On November 25, 1996, this laboratory received 6 water sample(s).

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

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

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


Larry Klein
Laboratory Director

Revision of report dated 12/08/96

PES ENVIRONMENTAL, INC.

SAMPLE ID: 9648001
 AEN LAB NO: 9611345-01
 AEN WORK ORDER: 9611345
 CLIENT PROJ. ID: POWELL ST PLAZA

DATE SAMPLED: 11/25/96
 DATE RECEIVED: 11/25/96
 REPORT DATE: 01/13/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5 ug/L		11/26/96
Toluene	108-88-3	ND	0.5 ug/L		11/26/96
Ethylbenzene	100-41-4	ND	0.5 ug/L		11/26/96
Xylenes, Total	1330-20-7	ND	2 ug/L		11/26/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05 mg/L		11/26/96
#Extraction for TPH	EPA 3510	-		Extrn Date	11/26/96
TPH as Diesel	GC-FID	0.85 *	0.05 mg/L		12/01/96
TPH as Oil	GC-FID	ND	0.2 mg/L		12/01/96

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 96480002
 AEN LAB NO: 9611345-02
 AEN WORK ORDER: 9611345
 CLIENT PROJ. ID: POWELL ST PLAZA

DATE SAMPLED: 11/25/96
 DATE RECEIVED: 11/25/96
 REPORT DATE: 01/13/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	1.7 *	0.5 ug/L		11/26/96
Toluene	108-88-3	ND	0.5 ug/L		11/26/96
Ethylbenzene	100-41-4	ND	0.5 ug/L		11/26/96
Xylenes, Total	1330-20-7	ND	2 ug/L		11/26/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05 mg/L		11/26/96
#Extraction for TPH	EPA 3510	-		Extrn Date	11/26/96
TPH as Diesel	GC-FID	5.6 *	0.05 mg/L		12/01/96
TPH as Oil	GC-FID	0.4 *	0.2 mg/L		12/01/96

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 96480011
 AEN LAB NO: 9611345-03
 AEN WORK ORDER: 9611345
 CLIENT PROJ. ID: POWELL ST PLAZA

DATE SAMPLED: 11/25/96
 DATE RECEIVED: 11/25/96
 REPORT DATE: 01/13/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5 ug/L		11/26/96
Toluene	108-88-3	ND	0.5 ug/L		11/26/96
Ethylbenzene	100-41-4	ND	0.5 ug/L		11/26/96
Xylenes, Total	1330-20-7	ND	2 ug/L		11/26/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05 mg/L		11/26/96
#Extraction for TPH	EPA 3510	-		Extrn Date	11/26/96
TPH as Diesel	GC-FID	3.5 *	0.05 mg/L		12/01/96
TPH as Oil	GC-FID	0.4 *	0.2 mg/L		12/01/96

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 96480012
 AEN LAB NO: 9611345-04
 AEN WORK ORDER: 9611345
 CLIENT PROJ. ID: POWELL ST PLAZA

DATE SAMPLED: 11/25/96
 DATE RECEIVED: 11/25/96
 REPORT DATE: 01/13/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5 ug/L		11/26/96
Toluene	108-88-3	ND	0.5 ug/L		11/26/96
Ethylbenzene	100-41-4	ND	0.5 ug/L		11/26/96
Xylenes, Total	1330-20-7	ND	2 ug/L		11/26/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05 mg/L		11/26/96
#Extraction for TPH	EPA 3510	-		Extrn Date	11/26/96
TPH as Diesel	GC-FID	0.57 *	0.05 mg/L		12/01/96
TPH as Oil	GC-FID	0.21 *	0.2 mg/L		12/01/96

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 96480107
 AEN LAB NO: 9611345-05
 AEN WORK ORDER: 9611345
 CLIENT PROJ. ID: POWELL ST PLAZA

DATE SAMPLED: 11/25/96
 DATE RECEIVED: 11/25/96
 REPORT DATE: 01/13/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	0.8 *	0.5 ug/L		11/26/96
Toluene	108-88-3	ND	0.5 ug/L		11/26/96
Ethylbenzene	100-41-4	ND	0.5 ug/L		11/26/96
Xylenes, Total	1330-20-7	ND	2 ug/L		11/26/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05 mg/L		11/26/96
#Extraction for TPH	EPA 3510	-		Extrn Date	11/26/96
TPH as Diesel	GC-FID	2.6 *	0.05 mg/L		12/01/96
TPH as Oil	GC-FID	0.52 *	0.2 mg/L		12/01/96

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: 9648000
 AEN LAB NO: 9611345-06
 AEN WORK ORDER: 9611345
 CLIENT PROJ. ID: POWELL ST PLAZA

DATE SAMPLED: 11/25/96
 DATE RECEIVED: 11/25/96
 REPORT DATE: 01/13/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	11/26/96
Toluene	108-88-3	ND	0.5	ug/L	11/26/96
Ethylbenzene	100-41-4	ND	0.5	ug/L	11/26/96
Xylenes, Total	1330-20-7	ND	2	ug/L	11/26/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	11/26/96

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

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9611345

CLIENT PROJECT ID: POWELL ST PLAZA

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: 9611345
 DATE EXTRACTED: 11/26/96
 INSTRUMENT: C
 MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery	
			n-Pentacosane	
12/01/96	96480001	01	80	
12/01/96	96480002	02	85	
12/01/96	96480011	03	78	
12/01/96	96480012	04	85	
12/01/96	96480107	05	75	
QC Limits:			65-125	

DATE EXTRACTED: 11/25/96
 DATE ANALYZED: 11/30/96
 SAMPLE SPIKED: 9611125-05
 INSTRUMENT: C

Matrix Spike Recovery Summary

Analyte	Spike Added (mg/L)	Average Percent Recovery	RPD	QC Limits	
				Percent Recovery	RPD
Diesel	4.00	94	1	60-110	15

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

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9611345
 INSTRUMENT: E. F
 MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
11/26/96	96480001	01	74
11/26/96	96480002	02	75
11/26/96	96480011	03	74
11/26/96	96480012	04	74
11/26/96	96480107	05	74
11/26/96	96480000	06	103
QC Limits:			70-130

DATE ANALYZED: 11/26/96
 SAMPLE SPIKED: 9611226-03
 INSTRUMENT: F

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits	
				Percent Recovery	RPD
Benzene	23.5	86	<1	85-109	17
Toluene	74.8	105	1	87-111	16
Hydrocarbons as Gasoline	500	108	<1	66-117	19

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

*** END OF REPORT ***

BLAINE

TECH SERVICES INC.

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

CONDUCT ANALYSIS TO DETECT

LAB AEN R35 29611345 DHS # _____
ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
 EPA RWQCB REGION _____
 LIA
 OTHER

CHAIN OF CUSTODY
961125-J1
CLIENT PES ENVIRONMENTAL INC.
SITE POWELL ST. PLAZA
SHELL MOUND & CHESTNUT
EMERYVILLE

SAMPLE ID	Date	Time	MATRIX S = SOL W = H2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS			ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
					TPH-GAS/BTEX	TPH-DIESEL	TPH-MOTOR OIL				
96480001	11/25	925	W	5	X	X	X				
MG-7	950			5	X	X	X				
96480001	11/15	1055	W	5	X	X	X				DIA-E
96480002		905		5	X	X	X				OZA-E
96480011		1130		4	X	X	X				O3A-D
96480012		1015		5	X	X	X				O4A-E
96480107		950		5	X	X	X				O5A-E
96480000		-		3	X						O6A-C

SPECIAL INSTRUCTIONS: INVOICE & REPORT TO PES ENVIRONMENTAL ATTN: ELIZABETH LARGE
* NOTE: ANALYZE 96480001 ONLY!!
IF SAMPLE 96480002 HAS A HIT.

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY	RESULTS NEEDED NO LATER THAN	
	11/25	1130	Matt James	"As Contracted"	
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
<i>[Signature]</i>	11-25-96	12:00	<i>[Signature]</i>	11-25-96	12:00
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
<i>[Signature]</i>	11-25-96	1246	Anna Gillespie	11-25-96	1246
SHIPPED VIA	DATE SENT	TIME SENT	COOLER #		

APPENDIX B

**GROUNDWATER SAMPLING REPORT
BLAINE TECH SERVICES, INC.**

**DEPTH-TO-GROUNDWATER AND DEPTH TO FREE PRODUCT
FIELD DATA SHEETS
PES ENVIRONMENTAL, INC.**

December 9, 1996

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

ATTN: Elizabeth Large

Site:
Shellmound 3
Powell Street Plaza
Shellmound & Christie
Emeryville, California

Date:
November 25, 1996

GROUNDWATER SAMPLING REPORT 961125-J-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 disposable bailers.

Samples were collected using disposable 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

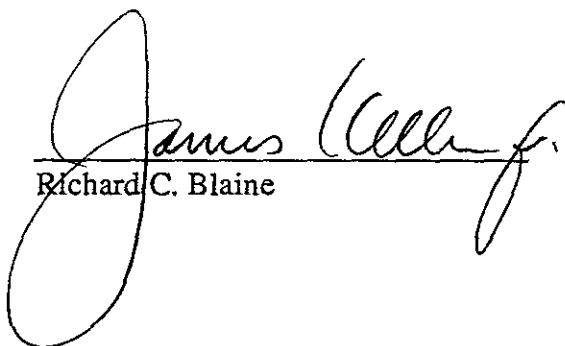
The samples obtained at this site were delivered to American Environmental Network in Pleasant Hill, California. AEN is certified by the California Department of Health Services as a Hazardous Materials Testing Laboratory, and is listed as DOHS HMTL #1172.

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/mc

attachments: table of well monitoring data
chain of custody

TABLE OF WELL MONITORING DATA

Well I.D.	MW-1	MW-2	MW-11	MW-12
Date Sampled	11/25/96	11/25/96	11/25/96	11/25/96
Well Diameter (in.)	4	4	2	2
Total Well Depth (ft.)	13.59	14.15	12.70	11.53
Depth To Water (ft.)	5.65	6.84	11.99	7.18
Free Product (in.)	NONE	NONE	NONE	NONE
Reason If Not Sampled	--	--	--	--
1 Case Volume (gal.)	5.20	4.80	0.11	0.70
Did Well Dewater?	YES @ 6.0 GALS.	NO	YES @ 0.25 GALS.	YES @ 1.0 GALS.
Gallons Actually Evacuated	6.00	14.50	0.25	1.00
Purging Device	BAILER	BAILER	BAILER	BAILER
Sampling Device	BAILER	BAILER	BAILER	BAILER
Time	09:20 10:45	08:40 08:49 08:59	08:15 08:20	08:30 08:33 10:10
Temperature (Fahrenheit)	67.2 67.4	66.6 67.0 67.2	65.8 65.4	66.2 66.0 65.8
pH	7.3 6.9	6.8 6.9 7.0	7.4 7.3	7.1 7.2 7.3
Conductivity (micromhos/cm)	5300 3400	>10,000 >10,000 >10,000	1700 1500	1000 1000 2600
Nephelometric Turbidity Units	>200 >200	49.6 19.2 14.7	16.7 22.0	>200 >200 >200
BTS Chain of Custody	961125-J1	961125-J1	961125-J1	961125-J1
BTS Sample I.D.	96480001	96480002	96480011	96480012
DHS HMTL Laboratory	AEN	AEN	AEN	AEN
Analysis	TPH (GAS), BTEX, TPH (DIESEL) & TPH (MOTOR OIL)	TPH (GAS), BTEX, TPH (DIESEL) & TPH (MOTOR OIL)	TPH (GAS), BTEX, TPH (DIESEL) & TPH (MOTOR OIL)	TPH (GAS), BTEX, TPH (DIESEL) & TPH (MOTOR OIL)

TABLE OF WELL MONITORING DATA

Well I.D.	MG-7		
Date Sampled	11/25/96		
Well Diameter (in.)	2		
Total Well Depth (ft.)	17.44		
Depth To Water (ft.)	12.42		
Free Product (in.)	NONE		
Reason If Not Sampled	--		
1 Case Volume (gal.)	0.8		
Did Well Dewater?	NO		
Gallons Actually Evacuated	2.5		
Purging Device	BAILER		
Sampling Device	BAILER		
Time	09:36	09:39	09:41
Temperature (Fahrenheit)	67.2	66.2	65.6
pH	7.0	7.1	7.1
Conductivity (micromhos/cm)	6000	5000	4800
Nephelometric Turbidity Units	16.8	>200	>200
BTS Chain of Custody	961125-J1		
BTS Sample I.D.	96480107		
DHS HMTL Laboratory	AEN		
Analysis	TPH (GAS), BTEX, TPH (DIESEL) & TPH (MOTOR OIL)		

CHAIN OF CUSTODY
 961125-J1
 CLIENT: PES ENVIRONMENTAL INC.
 SITE: Powell St. Plaza
 Shell mound a Christie
 Emeryville

CONDUCT ANALYSIS TO DETECT			
SAMPLE ID	Date	Time	MATRIX
			CONTAINERS
			S = SOIL W = H2O
			TOTAL
			C = COMPOSITE ALL CONTAINERS
			TPH-GAS/BTEX
			TPH-DIESEL
			TPH-MOTOR OIL

LAB AEN DHS # _____
 ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
 EPA RWQCB REGION _____
 LIA
 OTHER

SPECIAL INSTRUCTIONS INVOICE of Report to PES ENVIRONMENTAL MAIL: Elizabeth Lange
 * Note: ANALYZE 96480001 ONLY!! IF SAMPLE 96480002 HAS A hit.

SAMPLE ID	Date	Time	MATRIX	TOTAL	TPH-GAS/BTEX	TPH-DIESEL	TPH-MOTOR OIL	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
96480001	11/25	905	W	5	X	X	X				
96480002	11/25	905	W	5	X	X	X				
96480001	11/15	1055	W	5	X	X	X				
96480002		905		5	X	X	X				
96480011		1130		4	X	X	X				
96480012		1015		5	X	X	X				
96480107		950		5	X	X	X				
96480000		-		3	X						

SAMPLING COMPLETED DATE 11/25 TIME 1130 SAMPLING PERFORMED BY Matt James RESULTS NEEDED NO LATER THAN "As Contracted"

RELEASED BY _____ DATE 11-25-96 TIME 12:00 RECEIVED BY _____ DATE 11-25-96 TIME 12:00

RELEASED BY _____ DATE _____ TIME _____ RECEIVED BY _____ DATE _____ TIME _____

RELEASED BY _____ DATE _____ TIME _____ RECEIVED BY _____ DATE _____ TIME _____

SHIPPED VIA _____ DATE SENT _____ TIME SENT _____ COOLER # _____



Water-Level Elevation and Free-Product Thickness Field Data Sheet
Powell Street Plaza and Shellmound III Sites

Recorded by: E. Large Date: 11-25-96

Well Number	Time	Top of Casing (feet MSL)	Depth to Product (feet)		Depth to Water (feet)		Notes
MW-1		8.72					
MW-2		9.83					
* MW-3	0905	10.86	—————		08.00	8.00	
MW-4		11.58					
MW-5		11.16					
* MW-6	0840	11.42	8.21 ^{NP} 8.21		8.21	8.21	
MW-7		11.84					
* MW-8	0930	7.48	—	—	5.64	5.64	
* MW-9	0940	7.50	—	—	2.70	2.70	
MW-10		7.38					
MW-11		11.89					
MW-12		9.42					
* MW-13	1022	10.83	6.50	6.50	6.78	6.78	
* MW-14	0955	11.74	8.12	8.12	8.47	8.47	
MW-15		11.86					
MW-16		10.82					
MW-18		6.21					
MW-19		9.94					
MG-1		11.82					
MG-2		10.83					
MG-3		9.76					
MG-4		7.38					
MG-7		10.06					
PZ-1		7.99					

Notes:

Revised top of casing elevations based on December 27, 1994 and January 4, 1995 Kier & Wright surveying

NP = No free product observed

Trace = Slight residue on interface probe or other indication of free-product. Product thickness is less than 0.01 feet

W-L = Water-Level

DISTRIBUTION

**QUARTERLY MONITORING REPORT
FOURTH QUARTER 1996
POWELL STREET PLAZA
AND SHELLMOUND III SITES
EMERYVILLE, CALIFORNIA**

JANUARY 31, 1996

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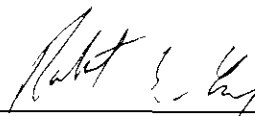
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QUARTERLY MONITORING REPORT
FOURTH QUARTER 1996
POWELL STREET PLAZA
AND SHELLMOUND III SITES
EMERYVILLE, CALIFORNIA

JANUARY 31, 1996

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QUALITY CONTROL REVIEWER



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