

Pacific Gas and Electric Company

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ENVIRONMENTAL
PROTECTION

99 SEP 21 PM 2: 54

September 13, 1999

Handwritten:
3/13/99
SUE



Ms. Susan Hugo
Senior Hazardous Materials Specialist
Alameda County Health Agency
1131 Harbor Bay Parkway
2nd Floor
Alameda, CA 94502

Subject: Groundwater Monitoring and Sampling Report, Second Quarter 1999
Former Aboveground Storage Tank Area, Emeryville, California

Dear Ms. Hugo:

Enclosed is a copy of the report, Groundwater Monitoring and Sampling Report, Pacific Gas & Electric's Emeryville Materials Facility, 4525 Hollis Street, Emeryville, California, Second Quarter 1999. The report summarizes the groundwater flow direction, hydraulic gradient, and the results of chemical analyses of groundwater samples collected in May 1999.

Findings of the groundwater monitoring performed during the second quarter 1999 include:

- The depth to groundwater ranges from 10.65 to 14.12 feet below the surface. Groundwater flow was to the north with a gradient of 0.02 ft/ft between Wells ESE-2 and MW4, and to the north-northeast with a gradient of 0.11 ft/ft between Wells ESE-2 and ESE-1.
- All compounds were below the method-detection limit.

Should you have any questions or comments, please call me at 415.972.5719.

Sincerely,

Sue Fandel

Susan M. Fandel
Environmental Specialist

Enclosure

Ms. Susan Hugo
September 13, 1999
Page 2

bpc: Pete DeMartini
Fred Flint
Steve Grubb
Jesus Luna
Rudy Promani

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- All compounds were below the method-detection limit.

Should you have any questions or comments, please call me at 415.972.5719.

Sincerely,

A handwritten signature in cursive script that reads 'Sue Fandel'.

Susan M. Fandel
Environmental Specialist

Enclosure

ENVIRONMENTAL
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P. 11.1.1.1

TES

Groundwater Monitoring And Sampling Report

**Former Aboveground
Storage Tank
4525 Hollis Street
Emeryville, California**

Second Quarter 1999

Prepared by
Technical and Ecological Services

July 1999
Report No.: 402.331-99.141

TES 24-Hr. Service Line: 8-251-3197 or (925) 866-3197

**Pacific Gas and Electric Company
Technical and Ecological Services
3400 Crow Canyon Road, San Ramon, California 94583**

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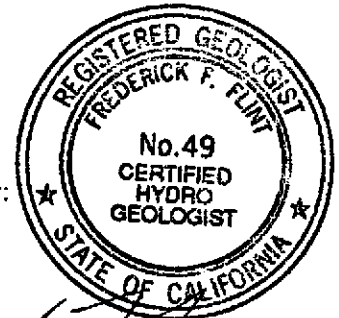
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1 INTRODUCTION

This report presents the results of groundwater monitoring performed during the second quarter 1999 in conjunction with the former aboveground storage tank at the Pacific Gas and Electric Company (PG&E) Emeryville Maintenance Facility at 4525 Hollis Street in Emeryville, California (see Figure 1).

2 GROUNDWATER GRADIENT AND DIRECTION

Second quarter groundwater levels were measured at the PG&E Maintenance Facility in Emeryville, California, on May 12, 1999, in wells ESE-1, ESE-2, ESE-3, and MW-4, using an electronic sounding device, and recorded on the water level / floating product survey form included in Appendix A. The groundwater elevations are summarized in Table 1. Well ESE-4 has been abandoned and is no longer part of the monitoring well network. The May data were used to construct a groundwater contour map (see Figure 2). May water levels ranged from 10.54 feet above mean sea level (MSL) in well ESE-1 to 17.49 feet above MSL in well MW-4. The groundwater gradient is 0.02 foot per foot (ft/ft) to the north between monitoring wells ESE-2 and MW-4, and 0.11 ft/ft to the north-northeast between monitoring wells ESE-2 and ESE-1.

3 SAMPLING, ANALYSIS, AND MONITORING PROGRAM RESULTS

Groundwater samples were collected from wells ESE-1 through ESE-3 on May 12, 1999, consistent with the protocol presented in Figure 3. The samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by U.S. Environmental Protection Agency (USEPA) Method 8020; polychlorinated biphenyls (PCBs) by USEPA Method 8080; and total extractable petroleum hydrocarbons (TEPH) as mineral oil by USEPA Method 3510/8015M. Temperature, pH, and electrical conductivity were measured in the field and recorded on the purging and sampling log sheets (see Appendix A). Field readings from the second quarter 1999 monitoring event are summarized in Table 1.

For the May 1999 sampling event, glass filtered groundwater samples were collected from the Emeryville Maintenance Facility site and analyzed for BTEX, MTBE, PCBs, and TEPH as mineral oil. Sample preparation for TEPH analysis also included silica gel clean-up to remove non-petroleum hydrocarbons.

Second quarter 1999 and historical analytical data are summarized in Table 2. Certified analytical reports and chain-of-custody records are included in Appendix B. The analytical results are discussed below.

- BTEX was not detected at or above the method reporting limit (MRL) in the filtered samples collected from wells ESE-1 through ESE-3.
- MTBE was not detected at or above the MRL in the filtered samples collected from wells ESE-1 through ESE-3.
- PCBs were not detected at or above the MRL in the filtered samples collected from wells ESE-1 through ESE-3.
- Mineral oil was not detected at or above the MRL in the filtered samples collected from wells ESE-1 through ESE-3.

4 FIELD LABORATORY QUALITY CONTROL RESULTS

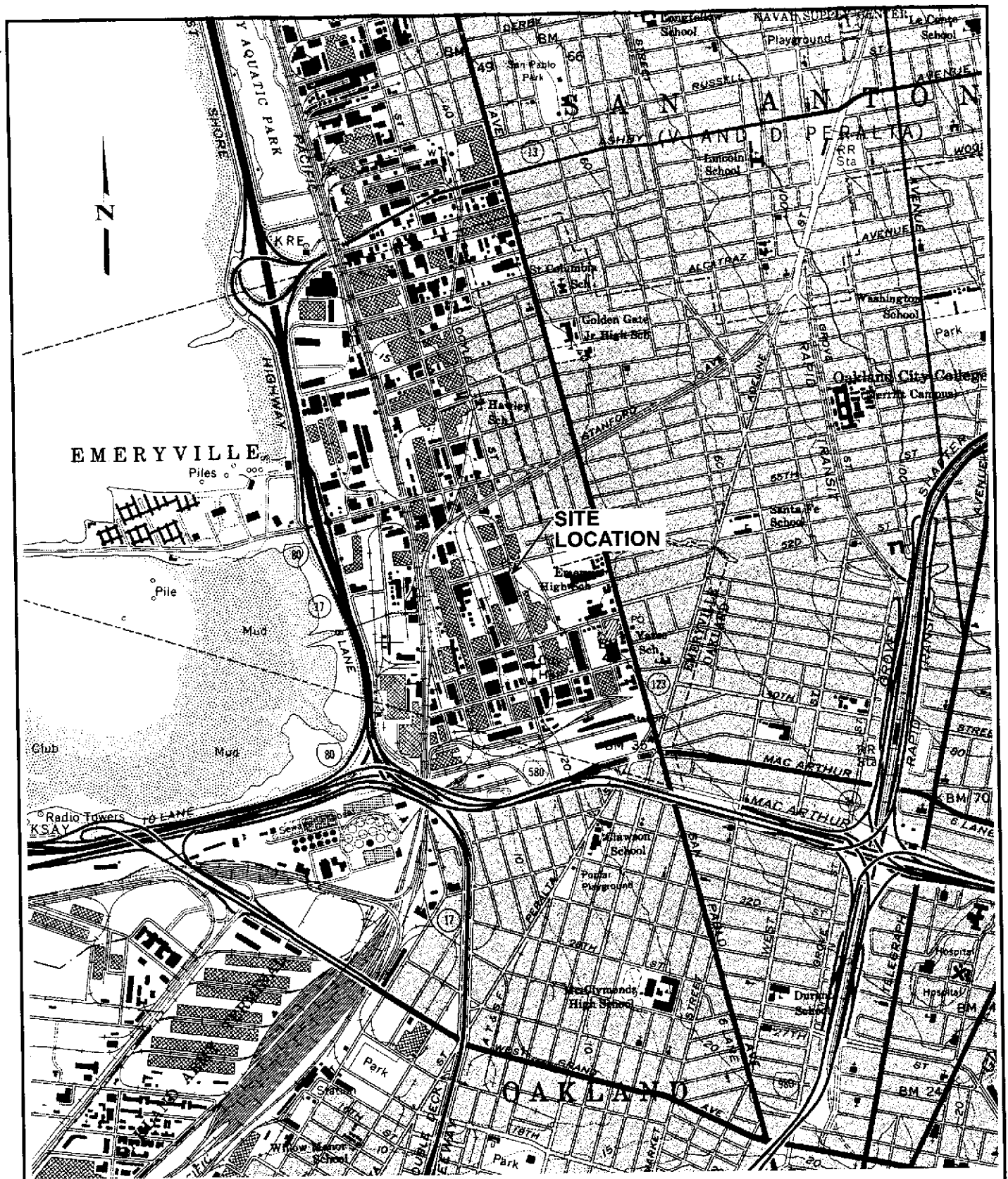
Analytical data were evaluated for accuracy and precision based on field and laboratory quality control (QC) sample performance.

Field blank was collected to assess the effect of field environments on the analytical results and to identify false positives. No petroleum hydrocarbons or MTBE were detected in the field blank. There were no adverse effects from sampling or analytical procedures.

The laboratory QC consisted of checking adherence to holding times and evaluating method blanks and matrix spike (MS) results. Holding times are established by the USEPA and refer to the maximum time allowed to pass between sample collection and analysis by the laboratory. These limits assist in determining data validity. The method blank results are used to assess the effect of the laboratory environment on the analytical results. The MS recoveries are used to assess accuracy.

All analyses were done within the holding times specified by the USEPA. No compounds were detected in the daily method blanks. The MS results were within the laboratory acceptance limits.

The laboratory QC results indicated that the analytical data are of acceptable quality.

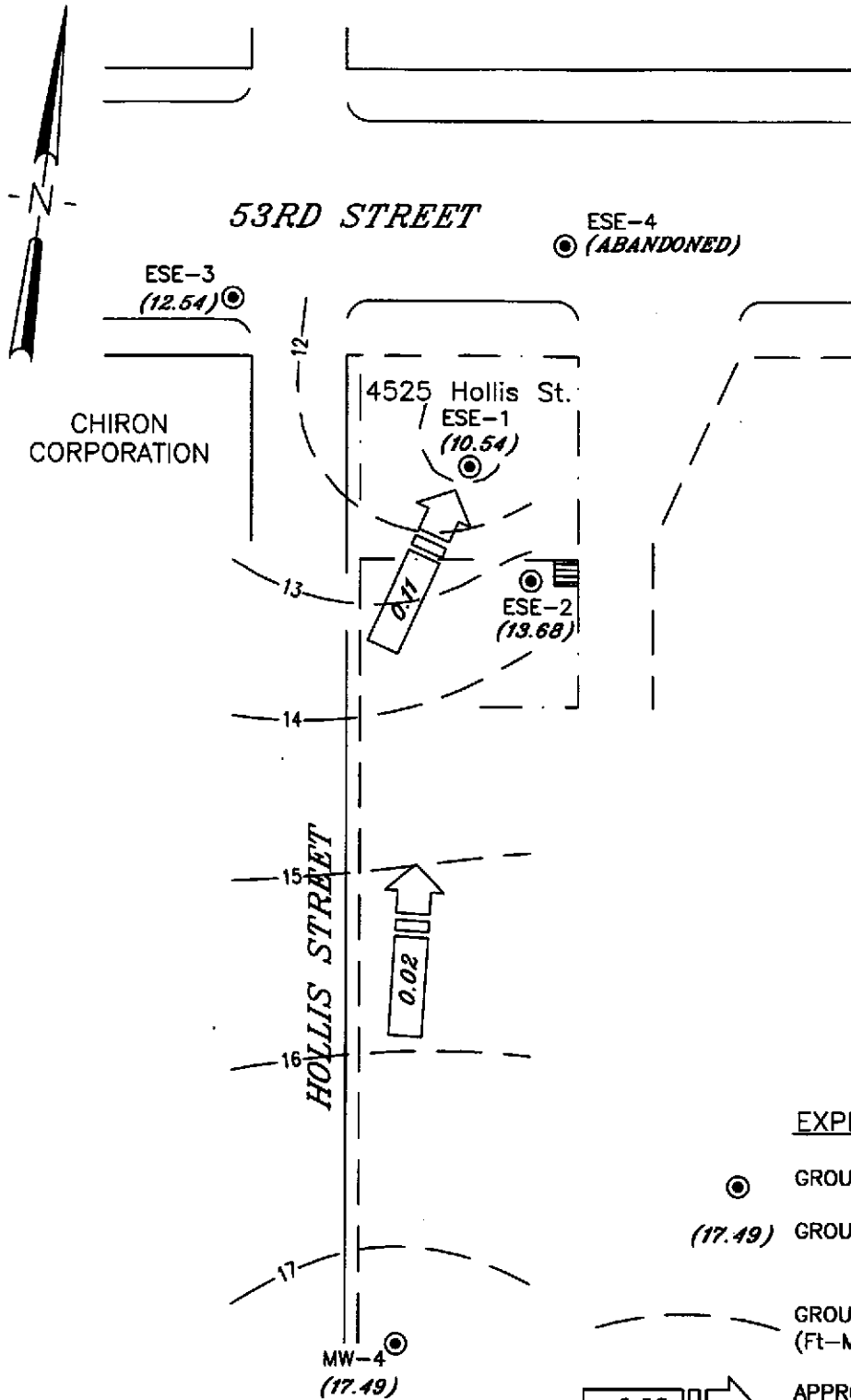


Base map from U.S. Geological Survey 7.5 minute series.
 Quadrangle: Oakland West, Calif.

0 2000 Feet



Figure 1. Site Location Map of Emeryville Service Center



EXPLANATION

- ⊙ GROUNDWATER MONITORING WELL
- (17.49) GROUNDWATER ELEVATION (Ft-MSL)
- - - GROUNDWATER ELEVATION CONTOUR (Ft-MSL)
- 0.02 → APPROXIMATE DIRECTION OF GROUNDWATER FLOW SHOWING GRADIENT (Ft/Ft)

SCALE: 0 40 80 FEET



**Emeryville Maintenance Facility
Groundwater Contour Map - May 12, 1999**

TECHNICAL AND ECOLOGICAL SERVICES - LWQU

DRN:EMK	DATE : 6-7-99
CHK:F. Flint	SCALE: As Shown
APR:KDC	SHEET Emeryville
REV.	0

FIGURE 2

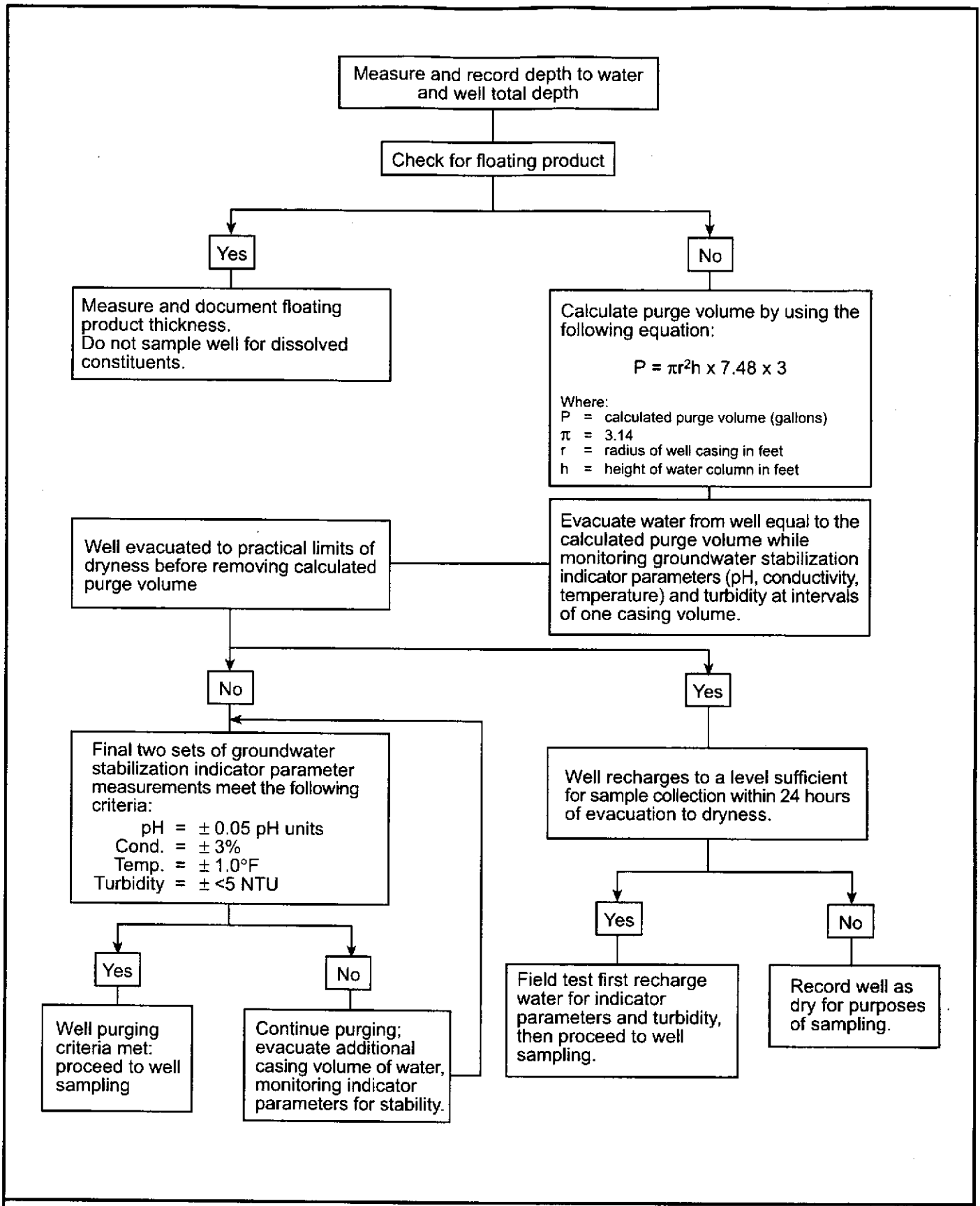


Figure 3. Monitoring Well Purging Protocol



Table 1
Emeryville Service Center
Second Quarter 1999 and Historical Field Measurement Data

Sample Designation	Date	Top-of-Casing		Groundwater		Measured Well		pH (units)	Temperature (°F)	Electrical Conductivity (umhos/cm)
		Elevation (ft/MSL) ¹	Depth to Water (feet)	Elevation (ft/MSL)	Depth (feet)	Depth (feet)				
ESE-1	03/28/94	23.66	10.06	13.60	20.8	8.48	73.1	600		
ESE-1	04/07/94	23.66	10.22	13.44	NM ³	NS ⁴	NS	NS		
ESE-1	12/12/94	23.66	9.18	14.48	30.6	7.26	63.4	588		
ESE-1	03/13/95	23.66	8.20	15.46	30.6	7.33	63.3	548		
ESE-1	06/15/95	23.66	9.50	14.16	30.6	6.90	64	505		
ESE-1	09/15/95	23.66	10.13	13.53	30.6	6.80	65.1	505		
ESE-1	12/15/95	23.66	10.55	13.11	33.8	7.04	65.1	511		
ESE-1	03/15/96	23.66	11.79	11.87	33.6	6.94	64.9	540		
ESE-1	06/14/96	23.66	12.68	10.98	33.6	6.93	67.4	517		
ESE-1	10/07/96	23.66	12.56	11.10	34.0	6.94	73.3	494		
ESE-1	12/04/96	23.66	12.67	10.99	34.2	6.80	64.4	507		
ESE-1	02/14/97	23.66	12.62	11.04	34.2	6.96	67.5	509		
ESE-1	05/16/97	23.66	13.05	10.61	34.2	7.07	69.0	534		
ESE-1	08/22/97	23.66	12.60	11.06	34.0	6.32	67.4	597		
ESE-1	11/14/97	23.66	12.32	11.34	33.7	7.35	65.9	600		
ESE-1	02/13/98	23.66	10.61	13.05	33.7	7.21	61.8	621		
ESE-1	05/15/98	23.66	12.64	11.02	33.7	7.19	68.0	598		
ESE-1	08/21/98	23.66	12.61	11.05	33.6	7.15	68.2	603		
ESE-1	12/01/98	23.66	12.16	11.50	33.2	6.86	66.7	483		
ESE-1	02/11/99	23.66	11.45	12.21	33.2	6.80	66.6	567		
ESE-1	05/12/99	23.66	13.12	10.54	33.7	6.95	67.6	562		
ESE-2	03/28/94	27.80	10.13	17.67	34.2	7.67	67.5	580		
ESE-2	04/07/94	27.80	14.37	13.43	NM	NS	NS	NS		
ESE-2	12/12/94	27.80	13.05	14.75	34.3	7.05	64.6	610		
ESE-2	03/13/95	27.80	12.48	15.32	34.3	7.19	62.5	596		
ESE-2	06/15/95	27.80	13.85	13.95	34.3	7.02	65.1	601		
ESE-2	09/15/95	27.80	14.22	13.58	34.3	6.91	65.6	627		
ESE-2	12/15/95	27.80	11.65	16.15	34.1	7.12	64.7	591		
ESE-2	03/15/96	27.80	12.87	14.93	34.1	7.01	65.8	669		
ESE-2	06/14/96	27.80	13.94	13.86	34.1	7.08	67.1	607		
ESE-2	10/07/96	27.80	13.58	14.22	34.0	7.10	74.6	558		

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Table 1
Emeryville Service Center
Second Quarter 1999 and Historical Field Measurement Data

Sample Designation	Date	Top-of-Casing		Groundwater		Measured Well		Electrical Conductivity (umhos/cm)
		Elevation (ft/MSL) ¹	Depth to Water (feet)	Elevation (ft/MSL)	Depth (feet)	pH (units)	Temperature (°F)	
ESE-2	12/04/96	27.80	14.20	13.60	34.4	6.89	65.0	618
ESE-2	02/14/97	27.80	13.80	14.00	34.4	7.02	66.3	578
ESE-2	05/16/97	27.80	14.07	13.73	34.4	7.00	69.9	580
ESE-2	08/22/97	27.80	14.35	13.45	34.4	6.49	66.1	623
ESE-2	11/14/97	27.80	13.80	14.00	34.4	7.23	66.8	649
ESE-2	02/13/98	27.80	11.52	16.28	34.4	7.15	62.4	646
ESE-2	05/15/98	27.80	13.56	14.24	34.4	7.29	68.7	611
ESE-2	08/21/98	27.80	13.63	14.17	34.4	7.21	67.1	603
ESE-2	12/01/98	27.80	13.18	14.62	34.1	6.88	71.8	516
ESE-2	02/11/99	27.80	12.39	15.41	34.1	6.50	67.1	633
ESE-2	05/12/99	27.80	14.12	13.68	34.2	6.94	68.4	546
ESE-3	03/28/94	23.91	11.23	12.68	30.9	7.47	68.7	610
ESE-3	04/07/94	23.91	11.29	12.62	NM	NS	NS	NS
ESE-3	12/12/94	23.91	10.62	13.29	31.0	7.19	63.9	600
ESE-3	03/13/95	23.91	9.45	14.46	31.0	6.99	62.5	600
ESE-3	06/15/95	23.91	10.27	13.64	31.0	7.10	64.9	556
ESE-3	09/15/95	23.91	10.87	13.04	31.0	6.96	65.5	559
ESE-3	12/19/95	23.91	9.40	14.51	31.0	7.28	64.2	556
ESE-3	03/15/96	23.91	10.02	13.89	30.9	7.01	65.0	583
ESE-3	06/14/96	23.91	10.63	13.28	30.9	7.09	67.0	546
ESE-3	10/07/96	23.91	10.85	13.06	31.0	6.87	68.8	514
ESE-3	12/04/96 ⁵	23.91	10.67	13.24	30.9	NM	NM	NM
ESE-3	02/14/97	23.91	10.75	13.16	30.9	7.01	65.9	506
ESE-3	05/16/97	23.91	10.99	12.92	31.0	7.40	69.9	539
ESE-3	08/22/97	23.91	10.65	13.26	31.0	6.86	66.6	563
ESE-3	11/14/97	23.91	10.50	13.41	31.0	7.47	65.8	583
ESE-3	02/13/98	23.91	9.32	14.59	31.0	7.04	63.7	602
ESE-3	05/15/98	23.91	10.72	13.19	31.0	7.42	67.8	593
ESE-3	08/21/98	23.91	10.65	13.26	31.0	6.95	65.8	600
ESE-3	12/01/98	23.91	10.35	13.56	30.8	6.92	65.5	489
ESE-3	02/11/99	23.91	10.44	13.47	30.8	6.80	66.7	564
ESE-3	05/12/99	23.91	11.37	12.54	30.9	6.87	68.7	530

Table 1
Emeryville Service Center
Second Quarter 1999 and Historical Field Measurement Data

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Sample Designation	Date	Top-of-Casing Elevation (ft/MSL) ¹	Depth to Water (feet)	Groundwater Elevation (ft/MSL)	Measured Well Depth (feet)	pH (units)	Temperature (°F)	Electrical Conductivity (umhos/cm)
ESE-4	03/28/94	24.33	10.63	13.70	31.4	7.77	66.3	610
ESE-4	04/07/94	24.33	10.85	13.48	NM	NS	NS	NS
ESE-4	12/12/94	24.33	9.63	14.70	31.6	7.11	63.1	591
ESE-4	03/13/95	24.33	8.90	15.43	31.6	7.16	61.2	595
ESE-4	06/15/95	24.33	9.81	14.52	31.6	7.05	64.1	565
ESE-4	09/15/95	24.33	10.85	13.48	31.6	7.01	66.3	584
ESE-4	12/15/95	24.33	8.72	15.61	31.6	7.05	64.6	555
ESE-4	03/15/96	24.33	9.29	15.04	31.5	7.01	63.7	600
ESE-4	06/14/96	24.33	10.23	14.10	31.5	7.04	66.0	591
ESE-4	10/07/96	24.33	10.44	13.89	31.5	6.89	70.1	541
ESE-4	12/04/96 ⁵	24.33	10.31	14.02	31.5	NM	NM	NM
ESE-4	02/14/97	24.33	10.12	14.21	31.5	7.11	65.3	511
ESE-4	05/16/97	24.33	10.56	13.77	31.6	7.40	69.1	559
ESE-4	08/22/97 ⁵	24.33	NM	NM	NM	NM	NM	NM
ESE-4	11/14/97	24.33	10.20	14.13	31.5	7.52	65.5	576
ESE-4	02/13/98 ⁶	24.33	NM	NM	NM	NM	NM	NM
ESE-4	Well Abandoned							
MW-4	03/13/95	28.14	9.84	18.30	14.7	NS	NS	NS
MW-4	06/15/95	28.14	10.74	17.40	14.7	NS	NS	NS
MW-4	09/15/95	28.14	10.90	17.24	14.7	NS	NS	NS
MW-4	12/15/95	28.14	6.53	21.61	14.7	NS	NS	NS
MW-4	03/15/96	28.14	8.12	20.02	14.7	NS	NS	NS
MW-4	06/14/96	28.14	10.78	17.36	14.7	NS	NS	NS
MW-4	10/07/96	28.14	10.81	17.33	14.7	NS	NS	NS
MW-4	12/04/96	28.14	10.44	17.70	14.7	NS	NS	NS
MW-4	02/14/97	28.14	10.41	17.73	14.7	NS	NS	NS
MW-4	05/16/97	28.14	10.78	17.36	14.7	NS	NS	NS
MW-4	08/22/97	28.14	10.55	17.59	14.7	NS	NS	NS
MW-4	11/14/97	28.14	10.15	17.99	14.7	NS	NS	NS
MW-4	02/13/98	28.14	9.75	18.39	14.7	NS	NS	NS

Table 1
Emeryville Service Center
Second Quarter 1999 and Historical Field Measurement Data

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Sample Designation	Date	Top-of-Casing Elevation (ft/MSL) ¹	Depth to Water (feet)	Groundwater Elevation (ft/MSL)	Measured Well Depth (feet)	pH (units)	Temperature (°F)	Electrical Conductivity (umhos/cm)
MW-4	05/15/98	28.14	10.29	17.85	14.7	NS	NS	NS
MW-4	08/21/98	28.14	10.65	17.49	14.7	NS	NS	NS
MW-4	12/01/98	28.14	9.86	18.28	14.5	NS	NS	NS
MW-4	02/11/99	28.14	10.04	18.10	14.5	NS	NS	NS
MW-4	05/12/99	28.14	10.65	17.49	14.5	NS	NS	NS

¹ ft/MSL = feet relative to mean sea level.
² umhos/cm = micromhos per centimeter at 77°F.
³ NM = not measured.
⁴ NS = not sampled.
⁵ Wells not sampled due to construction in the area resulting in heavy traffic.
⁶ Unable to locate well. Well area covered with mud and crushed rock from road construction.

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Table 2
Emeryville Service Center
Second Quarter 1999 and Historical Analytical Data

Sample Designation	Sampling Date	PCBs ¹⁰ (µg/L) ¹	TEPH ² as Motor Oil (µg/L)	MTBE ¹¹ (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
ESE-1	03/28/94	<1	340	---	<0.3	<0.3	<0.3	<0.3
ESE-1	12/12/94	<0.5	80	---	<0.5	<0.5	<0.5	<0.5
ESE-1	03/13/95	1.3	500 ³	---	<0.5	<0.5	<0.5	<0.5
ESE-1	06/15/95	<0.5	350 ³	---	<0.5	<0.5	<0.5	<0.5
ESE-1	09/15/95	<0.5	470 ³	---	<0.5	<0.5	<0.5	<0.5
ESE-1	12/15/95	<0.5	440 ³	---	<0.5	<0.5	<0.5	<0.5
ESE-1	03/15/96	<0.5	277	---	<0.5	<0.5	<0.5	<0.5
ESE-1	06/14/96	<0.5	<500	---	<0.5	<0.5	<0.5	<0.5
ESE-1	10/07/96	<0.5	110 ⁴	---	<0.5	<0.5	<0.5	<0.5
ESE-1	12/04/96	<0.5	430 ⁴	---	<0.5	<0.5	<0.5	<0.5
ESE-1	02/14/97	<0.5	1,600	---	<0.5	<0.5	<0.5	<0.5
ESE-1	05/16/97	<0.5	510 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-1	08/22/97	<0.5	740 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-1	11/14/97	<0.5	410 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-1	02/13/98	<0.5	<100 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-1	05/15/98	<0.5	<500	---	<0.5	<0.5	<0.5	<0.5
ESE-1	08/21/98	<0.5	<500	---	<0.5	<0.5	<0.5	<0.5
ESE-1	12/01/98	<0.50 / <0.54 ^A	180 / <100 ^A	---	<0.50	<0.50	<0.50	<0.50
ESE-1	02/11/99	<0.50	<100 ^B	---	<0.50	<0.50	<0.50	<0.50
ESE-1	05/12/99	<1	<500 ^B	<5	<0.50	<0.50	<0.50	<0.50
ESE-2	03/28/94	<1	250	---	0.8	1.5	<0.3	2.7
ESE-2	12/12/94	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-2	03/13/95	<0.5	120 ⁵	---	<0.5	<0.5	<0.5	<0.5
ESE-2	06/15/95	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-2	09/15/95	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-2	12/15/95	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-2	03/15/96	<0.5	<59	---	<0.5	<0.5	<0.5	<0.5
ESE-2	06/14/96	<0.5	<500	---	<0.5	<0.5	<0.5	<0.5
ESE-2	10/07/96	<0.5	150 ⁴	---	<0.5	<0.5	<0.5	<0.5

Table 2
Emeryville Service Center
Second Quarter 1999 and Historical Analytical Data

Sample Designation	Sampling Date	PCBs ¹⁰ (µg/L) ¹	TEPH ² as Motor Oil (µg/L)	MTBE ¹¹ (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
ESE-2	12/04/96	<0.5	380 ⁴	---	<0.5	<0.5	<0.5	<0.5
ESE-2	02/14/97	<0.5	510	---	<0.5	<0.5	<0.5	<0.5
ESE-2	05/16/97	<0.5	190 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-2	08/22/97	<0.5	<100 ⁸	---	<0.5	<0.5	0.51	<0.5
ESE-2	11/14/97	<0.52	<100 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-2	02/13/98	<0.5	<100 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-2	05/15/98	<0.5	<500	---	<0.5	<0.5	<0.5	<0.5
ESE-2	08/21/98	<0.5	<500	---	<0.5	<0.5	<0.5	<0.5
ESE-2	12/01/98	<0.50 / <0.54 ^A	<100 / <100 ^A	---	<0.50	<0.50	<0.50	<0.50
ESE-2	02/11/99	<0.50	<100 ^B	---	<0.50	<0.50	<0.50	<0.50
ESE-2	05/12/99	<1	<500 ^B	<5	<0.50	<0.50	<0.50	<0.50
ESE-3	03/28/94	<1	<50	---	<0.3	<0.3	<0.3	<0.3
ESE-3	12/12/94	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-3	03/13/95	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-3	06/15/95	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-3	09/15/95	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-3	12/15/95	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-3	03/15/96	<0.5	<59	---	<0.5	<0.5	<0.5	<0.5
ESE-3	06/14/96	<0.5	<500	---	<0.5	<0.5	<0.5	<0.5
ESE-3	10/07/96	<0.5	<100	---	<0.5	<0.5	<0.5	<0.5
ESE-3	12/04/96 ⁶	NA ⁷	NA	---	NA	NA	NA	NA
ESE-3	02/14/97	<0.5	<100	---	<0.5	<0.5	<0.5	<0.5
ESE-3	05/16/97	<0.5	<110 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-3	08/22/97	<0.5	<100 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-3	11/14/97	<0.5	<100 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-3	02/13/98	<0.5	<100 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-3	05/15/98	<0.5	<500	---	<0.5	<0.5	<0.5	<0.5
ESE-3	08/21/98	<0.5	<500	---	<0.5	<0.5	<0.5	<0.5
ESE-3	12/01/98	<0.50 / <0.53 ^A	<100 / <100 ^A	---	<0.50	<0.50	<0.50	<0.50

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Table 2
Emeryville Service Center
Second Quarter 1999 and Historical Analytical Data

Sample Designation	Sampling Date	PCBs ¹⁰ (µg/L) ¹	TEPH ² as Motor Oil (µg/L)	MTBE ¹¹ (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
ESE-3	02/11/99	<0.50	<100 ^B	---	<0.50	<0.50	<0.50	<0.50
ESE-3	05/12/99	<1	<500 ^B	<5	<0.50	<0.50	<0.50	<0.50
ESE-4	03/28/94	<1	<50	---	<0.3	<0.3	<0.3	<0.3
ESE-4	12/12/94	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-4	03/13/95	<0.5	56 ⁵	---	<0.5	<0.5	<0.5	<0.5
ESE-4	06/15/95	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-4	09/15/95	<0.5	<50	---	<0.5	<0.5	<0.5	<0.5
ESE-4	12/15/95	<0.5	57 ⁵	---	<0.5	<0.5	<0.5	<0.5
ESE-4	03/15/96	<0.5	<59	---	<0.5	<0.5	<0.5	<0.5
ESE-4	06/14/96	<0.5	<500	---	<0.5	<0.5	<0.5	<0.5
ESE-4	10/07/96	<0.5	<100	---	<0.5	<0.5	<0.5	<0.5
ESE-4	12/04/96 ⁶	NA	NA	---	NA	NA	NA	NA
ESE-4	02/14/97	<0.5	270 ⁴	---	<0.5	<0.5	<0.5	<0.5
ESE-4	05/16/97	<0.5	<110 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-4	08/22/97 ⁶	NA	NA	---	NA	NA	NA	NA
ESE-4	11/14/97	<0.5	<100 ⁸	---	<0.5	<0.5	<0.5	<0.5
ESE-4	02/13/98 ⁹	NA	NA	---	NA	NA	NA	NA
ESE-4	Well Abandoned							
Trip Blank	03/28/94	<1	<50	---	<0.3	<0.3	<0.3	<0.3
Trip Blank	12/12/94	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Trip Blank	03/13/95	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Trip Blank	06/15/95	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Trip Blank	09/15/95	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Trip Blank	12/15/95	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	03/28/94	NA	NA	---	NA	NA	NA	NA
Field Blank	12/12/94	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	03/13/95	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	06/15/95	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	09/15/95	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	12/15/95	NA	NA	---	<0.5	<0.5	<0.5	<0.5

Table 2
Emeryville Service Center
Second Quarter 1999 and Historical Analytical Data

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Sample Designation	Sampling Date	PCBs ¹⁰ (µg/L) ¹	TEPH ² as Motor Oil (µg/L)	MTBE ¹¹ (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
Field Blank	03/15/96	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	06/14/96	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	10/07/96	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	12/04/96	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	02/14/97	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	05/16/97	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	08/22/97	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	11/14/97	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	02/13/98	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	05/15/98	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	08/21/98	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	12/01/98	NA	NA	---	<0.5	<0.5	<0.5	<0.5
Field Blank	02/11/99	---	---	---	---	---	---	---
Field Blank	05/12/99	NA	NA	<5	<0.5	<0.5	<0.5	<0.5

--- Samples not collected.
¹ µg/L = micrograms per liter.
² TEPH = Total Extractable Petroleum Hydrocarbons.
³ Compounds similar to client-supplied transformer oil were found.
⁴ Hydrocarbon reported does not match the pattern of laboratory standard for mineral oil.
⁵ Compounds in diesel range not similar to laboratory standard for transformer oil.
⁶ Wells not sampled due to construction in the area resulting in heavy traffic.
⁷ NA = not analyzed.
⁸ Quantitation for mineral oil is based on the response factor of diesel.
⁹ Unable to locate well. Well area covered with mud and crushed rock from road construction.
¹⁰ PCBs = Polychlorinated Biphenols.
¹¹ MTBE = Methyl Tertiary Butyl Ether.
^A Analyses run on both unfiltered and filtered (silica gel) samples. Results reported as unfiltered / filtered.
^B Analyses run on filtered (silica gel clean-up and glass filtration) samples.

Appendix A

**WATER LEVEL / FLOATING PRODUCT SURVEY FORM
AND
PURGING AND SAMPLING LOG SHEETS**

PG & E PURGING AND SAMPLING LOG

SITE Emerald JOB ID _____
 PURGE DATE 5/12/99 BY DW
 SAMPLE DATE 5/12/99 BY DW

WELL # ESE-1
 WEATHER SUNNY 50° F

WATER ELEVATION / VOLUME CALCULATIONS

MEASURING POINT (MP) TOC @ HYDROCARBON CONC. YES NO
 DEPTH OF WELL (DTB) 33.68 FT THICKNESS _____
 DEPTH TO WATER (DTW) 13.12 FT
 TOTAL WATER DEPTH 20.56 FT
 MEASUREMENT METHOD SOLINST SLOPE INDICATOR

TOC ELEV. = _____ FT - DTW _____ FT = GW ELEV. _____ FT

PURGE VOLUME CALCULATIONS

20.56 FT WATER * CASING FACTOR = 3.5 GAL/CASING VOL. * 4 VOLUMES = 14 TOTAL PURGED (GALS)
 CASING FACTOR (CIRCLE ONE) FOR 2" DIA = 0.17 GAL / FT
 FOR 3" DIA = 0.38 GAL / FT
 FOR 4" DIA = 0.66 GAL / FT

PURGING

TIME		CUMULATIVE DISCHARGE (GAL)	pH	CONDUCTIVITY umho/cm	TURBIDITY	°C TEMP	COMMENTS
START	END						
1015	1019	3.5	7.30	612	HEAVY	19.9	
1019	1023	7.0	7.12	581	HEAVY	19.4	
1023	1027	10.5	7.00	566	MEDIUM	19.6	
1027	1032	15.0	6.95	562	HEAVY	19.8	

METHOD OF DISCHARGE DISPOSAL GROUND BARREL POND (CIRCLE ONE)
 METHOD OF PURGING HOMELITE BAILER HAND PUMP SUBMERSIBLE WATERRA (CIRCLE ONE) HONDA
 METHOD OF SAMPLING WELL WIZARD TEFLON BAILER HAND PUMP DISPOSABLE BAILER (CIRCLE ONE)
 METHOD OF CLEANING ALCONOX / DI WATER STEAM CLEANER / DI WATER (CIRCLE ONE)
 PUMP LINES / BAILER ROPES NEW, CLEANED, OR DEDICATED (CIRCLE ONE)
 pH METER YSI 3500 CALIBRATED YES NO COND. METER YSI 3500 CALIBRATED YES NO
 TEMP. CORRECTED YES NO CALIBRATION DATA pH 4 = 3.98 COND. 1,000 = 979
 pH 7 = 7.00 COND. 10,000 = _____
 pH 10 = 10.00

SAMPLES
 LAB ANALYSIS SEE LOG
 LABORATORY _____
 SAMPLE TIME _____
 REMARKS _____

PG & E PURGING AND SAMPLING LOG

SITE EMERYVILLE JOB ID _____
 PURGE DATE 5/12/99 BY DLW
 SAMPLE DATE 5/12/99 BY DLW

WELL # 558-2
 WEATHER SUNNY 60°+

WATER ELEVATION / VOLUME CALCULATIONS

MEASURING POINT (MP)	<u>TOC @</u>	HYDROCARBON ODOR	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
DEPTH OF WELL (DTB)	<u>34.15</u> FT	THICKNESS	_____
DEPTH TO WATER (DTW)	<u>14.12</u> FT		
TOTAL WATER DEPTH	<u>20.03</u> FT		
MEASUREMENT METHOD	<u>SOLINST</u>	<u>SLOPE INDICATOR</u>	

TOC ELEV = _____ FT - DTW _____ FT = GW ELEV. _____ FT

PURGE VOLUME CALCULATIONS

20.03 FT WATER * CASING FACTOR = 3.41 GAL/CASING VOL * 4 VOLUMES = 13.64 TOTAL PURGED (GALS)

CASING FACTOR (CIRCLE ONE)
 FOR 2" DIA = 0.17 GAL / FT
 FOR 3" DIA = 0.38 GAL / FT
 FOR 4" DIA = 0.66 GAL / FT

PURGING

TIME		CUMULATIVE DISCHARGE	CONDUCTIVITY	°C	COMMENTS
START	END	(GAL)	pH	umho/cm	TURBIDITY
<u>1115</u>	<u>1119</u>	<u>3.5</u>	<u>6.92</u>	<u>559</u>	<u>HEAVY</u>
<u>1119</u>	<u>1122</u>	<u>7.0</u>	<u>6.92</u>	<u>554</u>	<u>MEDIUM</u>
<u>1122</u>	<u>1126</u>	<u>10.5</u>	<u>6.93</u>	<u>554</u>	<u>LIGHT</u>
<u>1126</u>	<u>1130</u>	<u>14.0</u>	<u>6.94</u>	<u>546</u>	<u>CLEAR</u>

METHOD OF DISCHARGE DISPOSAL: GROUND BARREL POND (CIRCLE ONE)

METHOD OF PURGING: HOMELITE BAILER HAND PUMP SUBMERSIBLE WATERRA HONDA (CIRCLE ONE)

METHOD OF SAMPLING: WELL WIZARD TEFLON BAILER HAND PUMP DISPOSABLE BAILER (CIRCLE ONE)

METHOD OF CLEANING: ALCONOX / DI WATER STEAM CLEANER / DI WATER (CIRCLE ONE)

PUMP LINES / BAILER ROPES NEW, CLEANED, OR DEDICATED (CIRCLE ONE)

pH METER YSI 3500 CALIBRATED YES NO COND. METER YSI 3500 CALIBRATED YES NO

TEMP. CORRECTED YES NO CALIBRATION DATA _____

pH 4 = 3.98 COND. 1,000- 970

pH 7 = 7.00 COND. 10,000- _____

pH 10 = 10.00

SAMPLES

LAB ANALYSIS SEE COC

LABORATORY _____

SAMPLE TIME _____

REMARKS _____

PG & E PURGING AND SAMPLING LOG

SITE Emeryville JOB ID _____
 PURGE DATE 5/12/99 BY DW
 SAMPLE DATE 5/12/99 BY DW

WELL # ESE-3
 WEATHER SUN 62°

WATER ELEVATION / VOLUME CALCULATIONS

MEASURING POINT (MP) TOC @ HYDROCARBON COOR. YES NO
 DEPTH OF WELL (DTB) 30.85 FT THICKNESS _____
 DEPTH TO WATER (DTW) 11.37 FT
 TOTAL WATER DEPTH 19.48 FT
 MEASUREMENT METHOD SOLINST SLOPE INDICATOR _____

TOC ELEV. = _____ FT - DTW _____ FT = GW ELEV. _____ FT

PURGE VOLUME CALCULATIONS

19.48 FT WATER * CASING FACTOR 3.31 GAL/CASING VOL. * 4 VOLUMES = 13.24 TOTAL PURGED (GALS)
 CASING FACTOR (CIRCLE ONE) FOR 2" DIA = 0.17 GAL / FT
 FOR 3" DIA = 0.38 GAL / FT
 FOR 4" DIA = 0.66 GAL / FT

PURGING

TIME		CUMULATIVE DISCHARGE (GAL)	PH	CONDUCTIVITY umho/cm	TURBIDITY	°C TEMP	COMMENTS
START	END						
1330	1334	3.5	6.94	531	HEAVY	20.2	
1334	1338	2.0	6.92	523	MEDIUM	20.1	
1338	1341	1.0	6.90	526	MEDIUM	20.2	
1341	1345	14.0	6.87	530	LIGHT	20.4	

METHOD OF DISCHARGE DISPOSAL GROUND BARREL POND (CIRCLE ONE)
 METHOD OF PURGING HOMELITE BAILER HAND PUMP SUBMERSIBLE WATERRA (CIRCLE ONE) Handra
 METHOD OF SAMPLING WELL WIZARD TEFLON BAILER HAND PUMP DISPOSABLE BAILER (CIRCLE ONE)
 METHOD OF CLEANING ALCONOX / DI WATER STEAM CLEANER / DI WATER (CIRCLE ONE)
 PUMP LINES / BAILER ROPES NEW CLEANED, OR DEDICATED (CIRCLE ONE)
 PH METER YSI 3500 CALIBRATED YES NO COND. METER YSI 3500 CALIBRATED YES NO
 TEMP. CORRECTED YES NO CALIBRATION DATA _____
 PH 4 = 3.98 COND. 1,000 = 979
 PH 7 = 7.00 COND. 10,000 = _____
 PH 10 = 10.00

SAMPLES

LAB ANALYSIS SEE COC

LABORATORY _____

SAMPLE TIME _____

REMARKS _____

Appendix B

**CERTIFIED ANALYTICAL REPORTS AND
CHAIN-OF-CUSTODY DOCUMENTATION**

Volatile Hydrocarbons by 8015/8020

P.G.& E-Water Quality Group, TES



3400 Crow Canyon Road
San Ramon, CA 94583-1393

Attn: Karen Piini

Phone: (925) 820-8000 Fax: (925) 866-5681

Project #:

Project: Emeryville S.C.

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
ESE-1	Water	05/12/1999 11:00	1
ESE-2	Water	05/12/1999 12:00	2
ESE-3	Water	05/12/1999 14:00	3
FB-1	Water	05/12/1999	4

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES

Test Method: 8020

Attn.: Karen Piini

Prep Method: 5030

Volatile Hydrocarbons by 8015/8020

Sample ID: ESE-1	Lab Sample ID: 1999-05-1124-001
Project: Emeryville S.C.	Received: 05/13/1999 16:04
Sampled: 05/12/1999 11:00	Extracted: 05/19/1999 22:11
Matrix: Water	QC-Batch: 1999/05/19-01.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Benzene	ND	0.50	ug/L	1.00	05/19/1999 22:11	
Toluene	ND	0.50	ug/L	1.00	05/19/1999 22:11	
Ethyl benzene	ND	0.50	ug/L	1.00	05/19/1999 22:11	
Xylene(s)	ND	0.50	ug/L	1.00	05/19/1999 22:11	
MTBE	ND	5.0	ug/L	1.00	05/19/1999 22:11	
<i>Surrogate(s)</i> Trifluorotoluene	108.1	58-124	%	1.00	05/19/1999 22:11	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES

Test Method: 8020

Attn.: Karen Piini

Prep Method: 5030

Volatile Hydrocarbons by 8015/8020

Sample ID: ESE-2	Lab Sample ID: 1999-05-1124-002
Project: Emeryville S.C.	Received: 05/13/1999 16:04
Sampled: 05/12/1999 12:00	Extracted: 05/19/1999 22:39
Matrix: Water	QC-Batch: 1999/05/19-01.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Benzene	ND	0.50	ug/L	1.00	05/19/1999 22:39	
Toluene	ND	0.50	ug/L	1.00	05/19/1999 22:39	
Ethyl benzene	ND	0.50	ug/L	1.00	05/19/1999 22:39	
Xylene(s)	ND	0.50	ug/L	1.00	05/19/1999 22:39	
MTBE	ND	5.0	ug/L	1.00	05/19/1999 22:39	
Surrogate(s)						
4-Bromofluorobenzene	72.8	50-150	%	1.00	05/19/1999 22:39	
Trifluorotoluene	60.7	58-124	%	1.00	05/19/1999 22:39	

1220 Quarry Lane * Pleasanton, CA 94566-4756
Telephone: (925) 484-1919 * Facsimile: (925) 484-1096

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES
Attn.: Karen Piini

Test Method: 8020
Prep Method: 5030

Volatile Hydrocarbons by 8015/8020

Sample ID: ESE-3	Lab Sample ID: 1999-05-1124-003
Project: Emeryville S.C.	Received: 05/13/1999 16:04
Sampled: 05/12/1999 14:00	Extracted: 05/19/1999 23:06
Matrix: Water	QC-Batch: 1999/05/19-01.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Benzene	ND	0.50	ug/L	1.00	05/19/1999 23:06	
Toluene	ND	0.50	ug/L	1.00	05/19/1999 23:06	
Ethyl benzene	ND	0.50	ug/L	1.00	05/19/1999 23:06	
Xylene(s)	ND	0.50	ug/L	1.00	05/19/1999 23:06	
MTBE	ND	5.0	ug/L	1.00	05/19/1999 23:06	
Surrogate(s) Trifluorotoluene	110.7	58-124	%	1.00	05/19/1999 23:06	

1220 Quarry Lane * Pleasanton, CA 94566-4756
Telephone: (925) 484-1919 * Facsimile: (925) 484-1096

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES

Test Method: 8020

Attn.: Karen Piini

Prep Method: 5030

Volatile Hydrocarbons by 8015/8020

Sample ID: FB-1	Lab Sample ID: 1999-05-1124-004
Project: Emeryville S.C.	Received: 05/13/1999 16:04
Sampled: 05/12/1999	Extracted: 05/19/1999 23:34
Matrix: Water	QC-Batch: 1999/05/19-01.02

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Benzene	ND	0.50	ug/L	1.00	05/19/1999 23:34	
Toluene	ND	0.50	ug/L	1.00	05/19/1999 23:34	
Ethyl benzene	ND	0.50	ug/L	1.00	05/19/1999 23:34	
Xylene(s)	ND	0.50	ug/L	1.00	05/19/1999 23:34	
MTBE	ND	5.0	ug/L	1.00	05/19/1999 23:34	
<i>Surrogate(s)</i> Trifluorotoluene	65.2	58-124	%	1.00	05/19/1999 23:34	

1220 Quarry Lane * Pleasanton, CA 94566-4756
Telephone: (925) 484-1919 * Facsimile: (925) 484-1096

To: P.G.& E-Water Quality Group, TES

Test Method: 8020

Attn.: Karen Piini

Prep Method: 5030

Batch QC Report
Volatile Hydrocarbons by 8015/8020

Method Blank	Water	QC Batch # 1999/05/19-01.02
MB: 1999/05/19-01.02-001		Date Extracted: 05/19/1999 06:45

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Benzene	ND	0.5	ug/L	05/19/1999 06:45	
Toluene	ND	0.5	ug/L	05/19/1999 06:45	
Ethyl benzene	ND	0.5	ug/L	05/19/1999 06:45	
Xylene(s)	ND	0.5	ug/L	05/19/1999 06:45	
MTBE	ND	5.0	ug/L	05/19/1999 06:45	
Surrogate(s)					
Trifluorotoluene	110.2	58-124	%	05/19/1999 06:45	
4-Bromofluorobenzene-FID	91.1	50-150	%	05/19/1999 06:45	

To: P.G.& E-Water Quality Group, TES
 Attn: Karen Piini

Test Method: 8020
 Prep Method: 5030

Batch QC Report

Volatile Hydrocarbons by 8015/8020

Laboratory Control Spike (LCS/LCSD)	Water	QC Batch # 1999/05/19-01.02
LCS: 1999/05/19-01.02-002	Extracted: 05/19/1999 13:48	Analyzed: 05/19/1999 13:48
LCSD: 1999/05/19-01.02-003	Extracted: 05/19/1999 08:07	Analyzed: 05/19/1999 08:07

Compound	Conc. [ug/L]		Added Amount	Recovery %		RPD	Control Limits %		Flags	
	LCS	LCSD		LCS	LCSD		Recovery	RPD	LCS	LCSD
Benzene	539.1010	509.5136	500	107.8	101.9	5.6	77-123	20		
Toluene	528.2584	499.0477	500	105.7	99.8	5.7	78-122	20		
Ethyl benzene	502.5680	473.0621	500	100.5	94.6	6.0	70-130	20		
Xylene(s)	1510.7556	1431.8123	1500	100.7	95.4	5.4	75-125	20		
Surrogate(s)										
Trifluorotoluene	489.7518	446.4091	500	98.0	89.3		58-124			
4-Bromofluorobenzene-FI	552.6790	542.4359	500	110.5	108.5		50-150			

To: P.G.& E-Water Quality Group, TES
 Attn.: Karen Piini

Test Method: 8020
 Prep Method: 5030

Batch QC Report

Volatile Hydrocarbons by 8015/8020

Matrix Spike (MS / MSD)

Water

QC Batch # 1999/05/19-01.02

Sample ID: MW1

Lab Sample ID: 1999-05-1102-001

MS: 1999/05/19-01.02-004 Extracted: 05/19/1999 10:58 Analyzed: 05/19/1999 10:58 Dilution: 1.0

MSD: 1999/05/19-01.02-005 Extracted: 05/19/1999 11:52 Analyzed: 05/19/1999 11:52 Dilution: 1.0

Compound	Conc. [ug/L]			Added Amount	Recovery %		RPD	Control Limits %		Flags	
	MS	MSD	Sample		MS	MSD		Recovery	RPD	MS	MSD
Benzene	536.69	526	6.2	500	106.1	104.0	1.9	65-135	20		
Toluene	493	494	2.0	500	98.2	98.4	0.5	65-135	20		
Ethyl benzene	477	493	0.62	500	95.3	98.5	0.6	65-135	20		
Xylene(s)	1396.0153	1451.1014	4.3	1500	92.8	96.5	0.6	65-135	20		
Surrogate(s)											
Trifluorotoluene	510.5589	480.3565		500	102.1	96.1		58-124			
4-Bromofluorobenzene-F	565.3360	550.8349		500	113.1	110.2		50-150			

TEPH w/ Silica Gel Clean-up

P.G.& E-Water Quality Group, TES

✉ 3400 Crow Canyon Road
San Ramon, CA 94583-1393

Attn: Karen Piini

Phone: (925) 820-8000 Fax: (925) 866-5681

Project #:

Project: Emeryville S.C.

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
ESE-1	Water	05/12/1999 11:00	1
ESE-2	Water	05/12/1999 12:00	2
ESE-3	Water	05/12/1999 14:00	3

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G. & E-Water Quality Group, TES
Attn.: Karen Piini

Test Method: 8015m
Prep Method: 3510/8015M

TEPH w/ Silica Gel Clean-up

Sample ID: ESE-1	Lab Sample ID: 1999-05-1124-001
Project: Emeryville S.C.	Received: 05/13/1999 16:04
Sampled: 05/12/1999 11:00	Extracted: 05/21/1999 12:00
Matrix: Water	QC-Batch: 1999/05/21-04.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Mineral Oil	ND	500	ug/L	1.00	05/24/1999 15:50	
Surrogate(s) o-Terphenyl	103.4	60-130	%	1.00	05/24/1999 15:50	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES

Test Method: 8015m

Attn.: Karen Piini

Prep Method: 3510/8015M

TEPH w/ Silica Gel Clean-up

Sample ID: ESE-2	Lab Sample ID: 1999-05-1124-002
Project: Emeryville S.C.	Received: 05/13/1999 16:04
Sampled: 05/12/1999 12:00	Extracted: 05/21/1999 12:00
Matrix: Water	QC-Batch: 1999/05/21-04.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Mineral Oil	ND	500	ug/L	1.00	05/24/1999 16:25	
<i>Surrogate(s)</i> o-Terphenyl	113.7	60-130	%	1.00	05/24/1999 16:25	

1220 Quarry Lane * Pleasanton, CA 94566-4756
Telephone: (925) 484-1919 * Facsimile: (925) 484-1096

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES

Test Method: 8015m

Attn.: Karen Piini

Prep Method: 3510/8015M

TEPH w/ Silica Gel Clean-up

Sample ID: ESE-3	Lab Sample ID: 1999-05-1124-003
Project: Emeryville S.C.	Received: 05/13/1999 16:04
Sampled: 05/12/1999 14:00	Extracted: 05/21/1999 12:00
Matrix: Water	QC-Batch: 1999/05/21-04.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Mineral Oil	ND	500	ug/L	1.00	05/24/1999 17:01	
<i>Surrogate(s)</i> o-Terphenyl	98.8	60-130	%	1.00	05/24/1999 17:01	

1220 Quarry Lane * Pleasanton, CA 94566-4756

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CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES
Attn.: Karen Piini

Test Method: 8015m
Prep Method: 3510/8015M

Batch QC Report
TEPH w/ Silica Gel Clean-up

Method Blank	Water	QC Batch # 1999/05/21-04.10
MB: 1999/05/21-04.10-001		Date Extracted: 05/21/1999 12:00

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Mineral Oil	ND	500	ug/L	05/24/1999 15:14	
<i>Surrogate(s)</i> o-Terphenyl	80.7	60-130	%	05/24/1999 15:14	

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES

Test Method: 8015m

Attn: Karen Piini

Prep Method: 3510/8015M

Batch QC Report

TEPH w/ Silica Gel Clean-up

Laboratory Control Spike (LCS/LCSD)	Water	QC Batch # 1999/05/21-04.10
LCS: 1999/05/21-04.10-002	Extracted: 05/21/1999 12:00	Analyzed: 05/24/1999 15:14
LCSD: 1999/05/21-04.10-003	Extracted: 05/21/1999 12:00	Analyzed: 05/24/1999 15:50

Compound	Conc. [%]		Added Amount	Recovery %		RPD	Control Limits %		Flags	
	LCS	LCSD		LCS	LCSD		Recovery	RPD	LCS	LCSD
Surrogate(s) o-Terphenyl	21.8899	22.1613	20	109.4	110.8		60-130			

PCBs

P.G. & E-Water Quality Group, TES	<input checked="" type="checkbox"/> 3400 Crow Canyon Road San Ramon, CA 94583-1393
Attn: Karen Piini	Phone: (925) 820-8000 Fax: (925) 866-5681
Project #:	Project: Emeryville S.C.

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
ESE-1	Water	05/12/1999 11:00	1
ESE-2	Water	05/12/1999 12:00	2
ESE-3	Water	05/12/1999 14:00	3

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES
Attn.: Karen Piini

Test Method: 8080A
Prep Method: 3510/8080

PCBs

Sample ID: ESE-1	Lab Sample ID: 1999-05-1124-001
Project: Emeryville S.C.	Received: 05/13/1999 16:04
Sampled: 05/12/1999 11:00	Extracted: 05/18/1999 14:08
Matrix: Water	QC-Batch: 1999/05/18-02.14

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aroclor 1016	ND	1.0	ul/L	1.00	05/25/1999 12:16	
Aroclor 1221	ND	1.0	ug/L	1.00	05/25/1999 12:16	
Aroclor 1232	ND	1.0	ug/L	1.00	05/25/1999 12:16	
Aroclor 1242	ND	1.0	ug/L	1.00	05/25/1999 12:16	
Aroclor 1248	ND	1.0	ug/L	1.00	05/25/1999 12:16	
Aroclor 1254	ND	1.0	ug/L	1.00	05/25/1999 12:16	
Aroclor 1260	ND	1.0	ug/L	1.00	05/25/1999 12:16	
Surrogate(s)						
2,4,5,6-Tetrachloro-m-xylene	90.4	65-135	%	1.00	05/25/1999 12:16	
Decachlorobiphenyl	65.3	65-135	%	1.00	05/25/1999 12:16	

1220 Quarry Lane * Pleasanton, CA 94566-4756
Telephone: (925) 484-1919 * Facsimile: (925) 484-1096

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES
Attn.: Karen Piini

Test Method: 8080A
Prep Method: 3510/8080

PCBs

Sample ID: ESE-2	Lab Sample ID: 1999-05-1124-002
Project: Emeryville S.C.	Received: 05/13/1999 16:04
Sampled: 05/12/1999 12:00	Extracted: 05/18/1999 14:08
Matrix: Water	QC-Batch: 1999/05/18-02.14
Sample/Analysis Flag: rl (See Legend & Note section)	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aroclor 1016	ND	1.0	ul/L	1.02	05/20/1999 21:18	
Aroclor 1221	ND	1.0	ug/L	1.02	05/20/1999 21:18	
Aroclor 1232	ND	1.0	ug/L	1.02	05/20/1999 21:18	
Aroclor 1242	ND	1.0	ug/L	1.02	05/20/1999 21:18	
Aroclor 1248	ND	1.0	ug/L	1.02	05/20/1999 21:18	
Aroclor 1254	ND	1.0	ug/L	1.02	05/20/1999 21:18	
Aroclor 1260	ND	1.0	ug/L	1.02	05/20/1999 21:18	
Surrogate(s)						
2,4,5,6-Tetrachloro-m-xylene	72.3	65-135	%	1.00	05/20/1999 21:18	
Decachlorobiphenyl	47.5	65-135	%	1.00	05/20/1999 21:18	s

1220 Quarry Lane * Pleasanton, CA 94566-4756
Telephone: (925) 484-1919 * Facsimile: (925) 484-1096

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G. & E-Water Quality Group, TES
Attn.: Karen Piini

Test Method: 8080A
Prep Method: 3510/8080

PCBs

Sample ID: ESE-3	Lab Sample ID: 1999-05-1124-003
Project: Emeryville S.C.	Received: 05/13/1999 16:04
Sampled: 05/12/1999 14:00	Extracted: 05/18/1999 14:08
Matrix: Water	QC-Batch: 1999/05/18-02.14
Sample/Analysis Flag: rl (See Legend & Note section)	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Aroclor 1016	ND	1.0	ul/L	1.01	05/20/1999 21:55	
Aroclor 1221	ND	1.0	ug/L	1.01	05/20/1999 21:55	
Aroclor 1232	ND	1.0	ug/L	1.01	05/20/1999 21:55	
Aroclor 1242	ND	1.0	ug/L	1.01	05/20/1999 21:55	
Aroclor 1248	ND	1.0	ug/L	1.01	05/20/1999 21:55	
Aroclor 1254	ND	1.0	ug/L	1.01	05/20/1999 21:55	
Aroclor 1260	ND	1.0	ug/L	1.01	05/20/1999 21:55	
Surrogate(s)						
2,4,5,6-Tetrachloro-m-xylene	70.1	65-135	%	1.00	05/20/1999 21:55	
Decachlorobiphenyl	57.9	65-135	%	1.00	05/20/1999 21:55	s

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CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES
Attn.: Karen Piini

Test Method: 8080A
Prep Method: 3510/8080

Batch QC Report PCBs

Method Blank	Water	QC Batch # 1999/05/18-02.14
MB: 1999/05/18-02.14-001		Date Extracted: 05/18/1999 14:31

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Aroclor 1016	ND	1.0	ul/L	05/20/1999 16:22	
Aroclor 1221	ND	1.0	ug/L	05/20/1999 16:22	
Aroclor 1232	ND	1.0	ug/L	05/20/1999 16:22	
Aroclor 1242	ND	1.0	ug/L	05/20/1999 16:22	
Aroclor 1248	ND	1.0	ug/L	05/20/1999 16:22	
Aroclor 1254	ND	1.0	ug/L	05/20/1999 16:22	
Aroclor 1260	ND	1.0	ug/L	05/20/1999 16:22	
Surrogate(s)					
2,4,5,6-Tetrachloro-m-xylene	55.7	65-135	%	05/20/1999 16:22	s
Decachlorobiphenyl	67.0	65-135	%	05/20/1999 16:22	

1220 Quarry Lane * Pleasanton, CA 94566-4756
Telephone: (925) 484-1919 * Facsimile: (925) 484-1096

CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-05-1124

To: P.G.& E-Water Quality Group, TES
Attn: Karen Piini

Test Method: 8080A
Prep Method: 3510/8080

Batch QC Report

PCBs

Laboratory Control Spike (LCS/LCSD)	Water	QC Batch # 1999/05/18-02.14
LCS: 1999/05/18-02.14-002	Extracted: 05/18/1999 14:31	Analyzed: 05/20/1999 16:59
LCSD: 1999/05/18-02.14-003	Extracted: 05/18/1999 14:31	Analyzed: 05/20/1999 17:36

Compound	Conc. [u/L]		Added Amount	Recovery %		RPD	Control Limits %		Flags	
	LCS	LCSD		LCS	LCSD		Recovery	RPD	LCS	LCSD
Aroclor 1016	140.2139	151.9184	200	70.1	76.0	8.1	65-135	30		
Aroclor 1260	144.4939	144.5137	200	72.2	72.3	0.1	65-135	30		
Surrogate(s)										
2,4,5,6-Tetrachloro-m-xyI	15.3187	16.0757	25	61.3	64.3		65-135		s	
Decachlorobiphenyl	18.6742	18.8682	25	74.7	75.5		65-135			

1220 Quarry Lane * Pleasanton, CA 94566-4756
Telephone: (925) 484-1919 * Facsimile: (925) 484-1096

To: P.G.& E-Water Quality Group, TES
Attn: Karen Piini

Test Method: 8080A
Prep Method: 3510/8080

Legend & Notes

PCBs

Sample Notes

ESE-2 (Lab# 1999-05-1124-002)

Analysis Flags

rl

Reporting limits raised due to insufficient sample volume.

Analyte Flags

s

One surrogate recovery out of control, but second surrogate within QC limits confirms test performance.



99-05-1124

46053

Chain of Custody Record

From: Pacific Gas & Electric Company PG&E Facility Sample Site
 Address or Location: 3400 Crown Cyn. Rd.
 City: San Ramon, CA (Zip) 94583
 Contact Name/Phone No.: Fred Flint 925-866-5828

Ship To: Lab Name: Chemist 0913
 Address: _____
 City: _____, CA (Zip) _____
 Phone No. _____
 Contact Name: _____

Turnaround Time
 NORMAL (10 days or less) RUSH OTHER, Specify 10 DAY
Due Date & Time PHONE 925-866-5372
 TELEPHONE FAX Give Results to: Karen Pini Name 925-866-5681 PHONE
 Project Name: EMERYVILLE S.C. Project Supervisor (Name/Phone No.): Fred Flint
 Sampled by: (Signature) _____ (Print Name)

Sample No./ Equipment Serial No.	Sampled		Sample Type/Description	Containers		Analysis Requested							Remarks	
	Date	Time		No.	Size	TEPH	PCB's	BTEX						
1. ESE-1	5/12	1100	H ₂ O	6		X	X	X						FOR TEPH: SILICAT GEL CLEANUP + GLASS FILTRATION @ O. J. MILL INCLUDE MS/MSD RESULTS IN LAB QC DATA
2. ESE-2	5/12	1200		6		X	X	X						
3. ESE-2 MS/MSD	5/12	1200		6		X	X	X						
4. ESE-3	5/12	1400		6		X	X	X						
5. FB-1	5/12			3				X						
6.														
7.														
8.														
9.														
10.														
11.														
12.														

Relinquished by (Name&Dept.): <u>L. ANTHONY SILVER</u>	Date&Time: <u>5/13/99</u>	Received by (Name&Dept.): <u>[Signature]</u>	Date&Time: <u>5/13/99 1205</u>	Ship Via:
Relinquished by (Name&Dept.): <u>[Signature]</u>	Date&Time: <u>5-13-99 1604</u>	Received by (Name&Dept.): <u>Nenne Harrington</u>	Date&Time: <u>5/13/99 1604</u>	Bill of Lading/Airbill No.:
Relinquished by (Name&Dept.): _____	Date&Time: _____	Received by (Name&Dept.): _____	Date&Time: _____	

SAP Accounting Data: _____ Billing Contact: _____ Billing Address: _____

- Notes:
1. Samples are discarded by the laboratory 90 days after results are reported unless other arrangements are made.
 2. File a copy of this Chain of Custody Record, complete with appropriate laboratory signatures, with the test analysis results.
 3. The first "Relinquished by/Date" is the shipping date unless otherwise noted.
 4. The final PCB results will be the cumulative results added together for each PCB.
 5. When this form is computer-generated, send the completed original to the laboratory, and make copies for the originator and sampler.

cooler temp 4.2°C
 Distribution (See note #5)
 White: Laboratory
 Canary: Originator
 Pink: Sampler