BASELINE

SUBSURFACE INVESTIGATION INTERIM DATA REPORT

DECEMBER 1994

SEABREEZE YACHT CENTER
Oakland, California

For:

Port of Oakland
Oakland, California

S9171-B0

5900 Hollis Street, Suite D • Emeryville, CA 94608 • (510) 420-8686

PORT OF OAKLAND

Sender's Tel. No. (510) 272-1220

December 15, 1994

Mr. Barney M. Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency,
Department of Environmental Health,
Environmental Protection Division
1131 Harbor Bay Parkway #250
Alameda, California 94502-6577

Re: Transmittal of Seabreeze Yacht Center, Inc., Subsurface Investigation Interim Data Report dated December 1994

Dear Mr. Chan:

As you know, during November and December of this year, the Port of Oakland (Port) has been conducting further environmental investigations of the Seabreeze and adjacent sites to further define the scope of contamination at the site(s) as part of the current litigation involving past users and owners of the site(s) including Seabreeze and Pacific Gas and Electric Company. Enclosed please find the above-referenced report that documents the Port's most recent investigation activities.

If you have any questions or comments, do not hesitate to contact me at your earliest convenience.

Very truly yours,

Dan Schoenholz
Associate Environmental Scientist

Attachment

cc w/attach.: Ravi Arulanantham
Regional Water Quality Control Board
Michele Heffes
Jonathan Redding

BASELINE

ENVIRONMENTAL CONSULTING

14 December 1994
S9171-B0

Ms. Michele Heffes
Port of Oakland
Legal Department
530 Water Street
Oakland, CA 94607

Subject: **Subsurface Investigation, Seabreeze Yacht Center, November/December 1994**

Dear Michele:

Enclosed please find this Interim Data Report for our subsurface investigation at and adjacent to the Seabreeze Yacht Center site in November/December 1994. Should you have any questions or comments, please do not hesitate to contact us at your convenience.

Sincerely,

Yane Nordhav
Principal
Reg. Geologist No. 4009

Julie Pettijohn, M.P.H.
Staff Scientist

YN:JP:tt
Enclosures

S9171-B0.RPT-12/14/94

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SEABREEZE YACHT CENTER
Oakland, California

For:

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BASELINE Environmental Consulting
5900 Hollis Street, Suite D • Emeryville, California 94608
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Seabreeze Yacht Center
December 1994

INTRODUCTION

BASELINE Environmental Consulting performed additional subsurface investigations at and adjacent to the Seabreeze Yacht Center (the Site) (Figure 1) in November/December 1994 at the request of the Port of Oakland Legal Department. The purpose of the additional investigation was to further characterize the subsurface conditions at and adjacent to the Site. This Interim Data Report documents the field activities performed during November/December 1994, the field methods, and the analytical results obtained from the laboratory on soil and groundwater samples.

FIELD ACTIVITIES

Soil samples were collected from six soil boring locations, one surface location, and three monitoring well locations. A total of 20 soil samples were collected and submitted to the laboratory. Three new monitoring wells were installed on the Site (Figure 1). A total of five groundwater samples were collected from the three wells installed in November as well as from two previously installed groundwater monitoring wells.

Selection of Sampling Locations and Analytical Methods

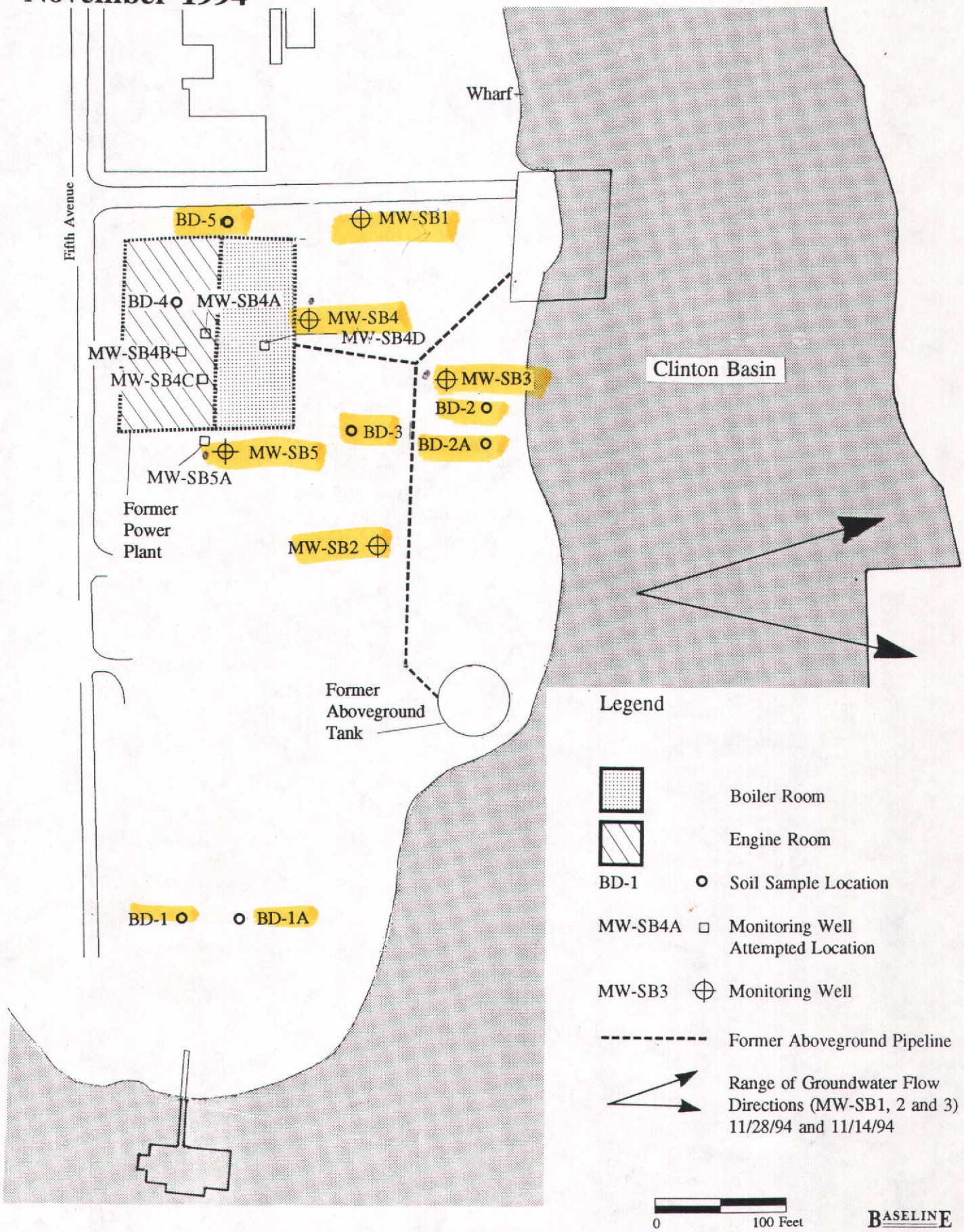
The sampling locations for this investigation were selected along the Clinton Basin shoreline and areas near the former power plant and the former pipeline supplying fuel to the power plant (Figure 1). In a site history investigation, performed previously by BASELINE for the Port, Bunker C oil was identified as being used at the power plant to generate steam. No other users of Bunker C oil have been identified on the Site. The Bunker C fuel consists of a mixture of medium to high boiling point hydrocarbons, including about 5 to 20 percent hydrocarbons that are generally considered to be within the diesel range. In this investigation petroleum hydrocarbons have been quantified by the laboratory by using a diesel standard and two Bunker C standards: one Bunker C standard from the laboratory and a second standard from a sample of a thick black substance collected from below a concrete containment on-Site, formerly containing the aboveground Bunker C fuel storage tank (Figure 1). The free product was collected as part of a previous investigation on the site.

Bunker C oil has been found in previous investigations in shallow soil samples throughout the site. This investigation assessed the quality of soil near Bunker C source areas, i.e., along the aboveground fuel pipeline from the aboveground storage tank to the plant and under and adjacent to the boiler room of the former plant (Figure 1).

Soil borings BD-1, BD-1A, BD-2, and BD-2A were randomly located in the southern and southeastern part of the Site where fill had been placed along the shoreline. BD-3 was located downgradient of the footprint of the former power plant. BD-4 was located within the footprint of the former power plant. BD-5 was located adjacent to and crossgradient from the footprint of the

SAMPLING LOCATIONS
November 1994

Figure 1



former power plant. Monitoring well MW-SB3 was located downgradient of the former location of a pipeline juncture extending northward from the concrete containment structure toward the power plant. MW-SB4 was located outside the footprint of the former power plant in the area near the boiler room. MW-SB5 was located adjacent to and crossgradient from the footprint of the former power plant.

Field Methods

Field activities were conducted in accordance with a site-specific safety plan. The site safety plan was reviewed by BASELINE staff prior to commencement of field activities, and an on-Site safety tailgate meeting was conducted by BASELINE staff prior to work on the Site. Drilling activities were conducted in accordance with an Alameda County Flood Control and Water Conservation District Zone 7 permit. The Underground Service Alert and the Port of Oakland were contacted for underground utility clearance prior to field activities.

Soil Borings and Sampling

The soil borings and monitoring well boreholes were completed by Gregg Drilling, Inc., of Pacheco, and HEW Drilling of East Palo Alto under the supervision of a BASELINE geologist. The borings were completed using an eight-inch hollow stem auger. Steam-cleaned augers were used for each boring. Drill cuttings were stored in five labeled 55-gallon drums. Drilling equipment was steam cleaned on-Site and the rinsate and purged water were stored in two labeled 55-gallon drums. Drums were secured and stored on-Site. Each borehole was backfilled to grade using a cement/bentonite grout. The boring logs are included in Appendix A.

Soil samples were collected from each boring using a California Modified sampler (two-inch diameter) fitted with six-inch stainless steel liners. The sampler was driven into the ground by a 140-lb hammer. The filled stainless steel liners were removed from the sampler, capped with teflon and plastic caps, labeled, placed in a zip-lock bag, and placed in a refrigerated cooler. The sampling equipment was decontaminated using trisodium phosphate, water, and deionized water prior to each sampling event. The soil samples were submitted under chain-of-custody to Curtis and Tompkins Laboratory.

Monitoring Well Installation and Groundwater Sampling

Three monitoring wells were installed under the supervision of a BASELINE geologist (well construction summaries are included in Appendix A). The monitoring wells were installed in an eight-inch borehole. The casing material was two-inch, Schedule 40 PVC, and the screen was two-inch, 0.020-inch machine-slotted PVC. The monitoring wells were developed using a double diaphragm pump and bailer. Well development records are included in Appendix B. A sheen was observed in the development water from MW-SB4.

Groundwater samples were collected after the wells were checked for floating product using a dual-interface probe, calibrated to the nearest 1/100th of a foot; no floating product was identified in the wells. The water levels were then measured with a probe. The wells were then purged of two to five well volumes using a disposable plastic bailer.

Groundwater samples were collected from the wells using a disposable, bottom-valve, plastic bailer and transferred into glass containers. The containers were labeled, placed in a refrigerated plastic cooler, and submitted under chain-of-custody to Curtis and Tompkins Laboratory. A duplicate sample was collected from MW-SB3 and also submitted to the laboratory for analysis. The well sampling records are included in Appendix C.

Field Observations

Unusual field conditions were encountered during drilling at three locations: boring BD-5 and wells MW-SB4 and MW-SB5. The field observations at these three locations are described below.

BD-5

One soil sample was collected at BD-5 at 2.5-3.0 feet below ground surface (bgs). A sample was not collected at the groundwater interface at BD-5 due to a lack of recovery at depth within the borehole. Wood was encountered between 4.0 and 5.5 feet bgs which made it difficult to obtain a sample. A second boring was attempted adjacent to BD-5 to obtain a representative sample at the groundwater interface, but wood was also encountered at this location. No further sampling attempts were made at this location since access was limited by a fence in the northeastern direction and the concrete pad in the southwestern direction in the area.

MW-SB4

During drilling of MW-SB4A, a concrete slab was encountered at a depth of about 1.5 feet; the concrete appeared to be loosely cemented. At five feet bgs, limited wood chips appeared in the drill cuttings. Drilling was continued through about 5.5 feet of concrete at which time drilling was stopped to attempt an adjacent location that might not contain the same thickness of concrete. A second attempt at drilling was made southwest of the original location (MW-SB4B). At the second location, concrete was encountered at a depth of about one foot. Drilling was continued through five feet of concrete at which point the drill bit was destroyed. Subsequently, the hole was abandoned and a third attempt was made to install a well about 30 feet southwest of the original location but still within the footprint of the former power plant (MW-SB4C). At the third location, concrete was encountered at a depth of about one foot and drilling was terminated at about three feet.

Since the subsurface conditions did not appear to vary, an attempt to continue drilling at the first location (MW-SB4A) was made, and an additional three feet of concrete was penetrated. At this depth, about 9.5 feet below ground surface, the drilling was not advancing and the bit was pulled out of the hole. The bottom of the drill stem was coated with black liquid and water. One sample of the cuttings with the black liquid was collected for laboratory analysis (MW-SB4A). Inspection of the boring indicated that black liquid was seeping into the borehole at a depth of about 5.5 feet from the ground surface. The borehole was immediately sealed with concrete and bentonite pellets.

It appeared that drilling had taken place in the location of that part of the foundation of the former power plant where the stacks had been located and, based on foundation drawings, the concrete would be about 15 feet thick. The location was therefore abandoned for well installation. The hole was then moved about 45 feet to the southeast in a location where the foundation drawings indicated about six feet of concrete (MW-SB4D). During drilling, concrete was encountered at about one foot below the ground surface. The concrete was different from the concrete at the previously abandoned

locations; it was substantially harder to drill through. After drilling through about 3.5 feet of concrete, the drill bit was damaged and the hole was abandoned. This hole, as well as all other holes, were grouted to the ground surface.

MW-SB4 was installed outside the footprint of the former power plant. Two soil samples were collected during the drilling of MW-SB4 at 2.0 to 2.5 feet bgs and 5.0 to 5.5 feet bgs, respectively. The shallow groundwater table (1.75 feet bgs) observed during drilling may have been due to recent heavy rains. A groundwater interface sample was collected at 5.0 to 5.5 feet bgs, based on previous groundwater levels measured at the Site. When the auger was pulled out of the hole for the collection of the deeper sample, a black tarry substance in Bay mud was observed on the bit. A grab sample of this material was collected from approximately 4.75 to 5.0 feet bgs (MW-SB4-grab). This sample is being kept refrigerated at BASELINE's office.

MW-SB5

One soil sample was collected at 2.0 to 2.5 feet bgs at MW-SB5A. During drilling, a strong petroleum odor was noted at 3.5 feet bgs; at this depth, the HNu photoionization detector registered 25 ppm in the borehole. Drilling was continued to 5.25 feet at which point a hard substance (concrete?) was encountered and the drill would no longer advance. The drill bit was pulled out of the hole and a second reading in the borehole was taken; the HNu registered greater than 200 ppm. Soils at 3.5 to 5.0 feet bgs were dark brown/greenish gray sands with gravel and shell fragments, and were medium dense and moist (fill). Soils at 5.0 feet bgs had a strong petroleum hydrocarbon odor and became black in color. A grab sample of this material (MW-SB5-grab) was collected from the auger in a six-inch sampling tube and submitted to the laboratory for analysis. A second attempt at drilling was made about ten feet southeast of MW-SB5A at MW-SB5. An additional sample was collected at this location at 3.0 to 3.5 feet bgs. The soils encountered above the Bay muds (at 3.0 feet bgs) were gravel with clay and sand and greenish gray to very dark gray in color. Drilling was continued to a total depth of 15 feet bgs to allow for installation of a monitoring well at this location.

WELL SURVEY

The elevation of the ground surface and the top of casing of each of the monitoring wells were surveyed by Bates and Bailey, a licensed surveyor. Table 6 contains groundwater elevations for each of the five monitoring wells. On the basis of groundwater elevation data from MW-SB1, MW-SB2, and MW-SB3 on 14 and 28 November 1994, the groundwater flow direction is toward Clinton Basin during specific tidal conditions. The surveyor's report is included in Appendix D.

SAMPLE ANALYSES AND DISCUSSION

The analyses performed on the soil and groundwater samples collected in November/December 1994 are shown in Tables 1 and 2, respectively. The summary of the organic analyses on soil samples is shown in Table 3 and the results of metal analyses on soil samples are shown in Table 4. The results of analyses performed on groundwater samples collected from the five on-Site monitoring wells are presented in Table 5 and the laboratory reports are included in Appendix E.

Soil

Petroleum hydrocarbons (quantified as Bunker C and diesel by the laboratory) were identified in all of the soil samples collected during this investigation. The highest concentration (55,000 mg/kg quantified as Bunker C) of petroleum hydrocarbons was identified in the soil sample from the abandoned borehole MW-SB4A. The second highest concentration of petroleum hydrocarbons (16,000 mg/kg quantified as Bunker C) was identified in the 3.0 to 3.5-foot soil sample from the borehole in which MW-SB5 was installed; the groundwater sample from MW-SB5 also contained the highest concentration of petroleum hydrocarbons (74,000 µg/L quantified as Bunker C); the shallower sample (at 2.0-2.5 feet) contained petroleum hydrocarbons at order-of-magnitude lower concentrations, suggesting a subsurface source. The soil quality data indicate significant contamination of the soils in the unsaturated soil column in and around the footprint of the former power plant and along and near the fuel pipeline formerly located aboveground between the fuel tank and the power plant. Bunker C has been identified as the only, or in places, a constituent of the petroleum hydrocarbons in the analyzed soil samples. Bunker C has only been associated with the operation of the former power plant on the Site, according to site history research previously conducted on the Site.

Groundwater

Petroleum hydrocarbons (quantified as Bunker C and diesel by the laboratory) were identified in significant concentrations in each of the five groundwater monitoring wells on the Site. The highest concentration was found in MW-SB5 (74,000 µg/L) adjacent to the former power plant's southern boundary. MW-SB4, adjacent to the former power plant along the eastern boundary, contained 4,300 µg/L of petroleum hydrocarbons. The remaining three wells, downgradient from the former power plant, including MW-SB3 located downgradient of the former aboveground fuel pipeline, contained between 30,000 and 460 µg/L of petroleum hydrocarbons; the lowest concentration (460 µg/L in MW-SB3) was closest to Clinton Basin (about 60 feet from the shoreline). The groundwater flow direction is toward Clinton Basin; the petroleum hydrocarbons (including Bunker C) found in the five on-Site monitoring wells appear to be migrating into Clinton Basin.

CONCLUSIONS

There are significant concentrations of Bunker C compounds adjacent to and beneath the structures used for the transport, storage, handling, and use of Bunker C fuel in connection with the operation of the Pacific Gas and Electric Company's power generation plant. There are no data in the historic record indicating that there have been other users of Bunker C on the Site than the Pacific Gas and Electric Company's power generation plant.

The Bunker C compounds identified in the soil appear also to have significantly affected the underlying groundwater with petroleum hydrocarbons identified by the laboratory as Bunker C and diesel. The extent of groundwater contamination has not been fully defined at the current time. Additional investigations and coordination with regulatory agency officials would be required to determine the scope of additional investigations and ultimate remedial actions.

TABLE 1

ANALYSES PERFORMED, SOILS
Seabreeze Yacht Center, Oakland, California
November 1994

Location	Depth (feet bgs)	Diesel[1]	Kerosene[1]	Bunker C[1,2]	Metals			Volatile Organic Compounds[6]	Creosote[7]
					Title 26[3]	Total Lead[4]	Total Copper[5]		
BD-1	2.0-2.5	✓		✓		✓	✓		✓
BD-1	6.0-6.5	✓		✓		✓	✓		✓
BD-1A	2.0-2.5	✓		✓		✓	✓		
BD-1A	4.0-4.5	✓		✓		✓	✓		
BD-2	2.0-2.5	✓		✓		✓	✓		
BD-2	4.0-4.5	✓		✓		✓	✓		
BD-2A	2.0-2.5	✓		✓		✓	✓		
BD-2A	4.5-5.0	✓		✓		✓	✓		
BD-3	5.0-5.5	✓		✓	✓				
BD-3	2.5-3.0	✓		✓		✓	✓		
BD-4	0.0-0.4	✓	✓	✓	✓			✓	
BD-5	2.5-3.0	✓		✓		✓	✓		
MW-SB3	2.0-2.5	✓		✓		✓	✓		
MW-SB3	4.5-5.0	✓		✓		✓	✓		
MW-SB4	2.0-2.5	✓		✓		✓	✓		
MW-SB4	5.0-5.5	✓		✓	✓				
MW-SB4A	5.0-5.5	✓	✓	✓	✓				

Table 1, Analyses Performed, Soils - *continued*

Location	Depth (feet bgs)	Diesel[1]	Kerosene[1]	Bunker C[1,2]	Metals			Volatile Organic Compounds[6]	Creosote[7]
					Title 26[3]	Total Lead[4]	Total Copper[5]		
MW-SB5	2.0-2.5	✓		✓		✓	✓		
MW-SB5	3.0-3.5	✓		✓	✓				
MW-SB5-grab	--	✓		✓				✓	

1 California DOHS Method, LUFT Manual, October 1989.
2 Quantification based on a Bunker C standard obtained from the liquids below the concrete containment and a laboratory Bunker C standard.
3 EPA Methods 6010, 7060, 7421, 7471, 7740, and 7841.
4 EPA Method 6010.
5 EPA Method 7420.
6 EPA Method 8240.
7 EPA Method 8270.

TABLE 2

ANALYSES PERFORMED, GROUNDWATER
Seabreeze Yacht Center, Oakland, California
November/December 1994

Location	Gasoline[1]	Diesel[1]	Bunker C[1, 2]	Total Lead[3]	Total Copper[4]	Volatile Organic Compounds[5]	BTXE[6]
MW-SB1		✓	✓	✓	✓	✓	
MW-SB2		✓	✓	✓	✓	✓	
MW-SB3	✓	✓	✓	✓	✓		✓
MW-SB3A[7]			✓	✓	✓		
MW-SB4		✓	✓	✓	✓	✓	
MW-SB5		✓	✓	✓	✓	✓	

Notes: BTXE = Benzene, toluene, xylenes, and ethylbenzene.

1 California DOHS Method, LUFT Manual, October 1989.
2 Quantification based on a Bunker C standard obtained from the liquids below the concrete containment and a laboratory Bunker C standard.
3 EPA Method 6010.
4 EPA Method 7421.
5 EPA Method 8240.
6 EPA Method 602.
7 Duplicate sample.

TABLE 3

SUMMARY OF ORGANIC ANALYTICAL RESULTS, SOILS
Seabreeze Yacht Center, Oakland, California
November 1994
(mg/kg)

Location	Depth (feet bgs)	Sample Date	Kerosene	Diesel	Bunker C	
					Lab Standard	Site Standard
BD-1[1]	2.0-2.5	11/10/94	--	2	210	230
	6.0-6.5	11/10/94	--	6	370	410
BD-1A	2.0-2.5	11/10/94	--	2	280	250
	4.0-4.5	11/10/94	--	1	<30	<30
BD-2	2.0-2.5	11/10/94	--	40	1,600	1,800
	4.0-4.5	11/10/94	--	<20	2,300	2,500
BD-2A	2.0-2.5	11/10/94	--	<1	110	100
	4.5-5.0	11/10/94	--	<20	11,000	12,000
BD-3	2.5-3.0	11/22/94	--	70	1,700	1,500
	5.0-5.5	11/22/94	--	480	1,500	1,800
BD-4[2]	0.0-0.4	11/10/94	<10	<1	1,600	1,900
BD-5	2.5-3.0	11/22/94	--	350	7,100	7,800
MW-SB3	2.0-2.5	11/10/94	--	66	4,000	4,500
	4.5-5.0	11/10/94	--	11	300	340
MW-SB4	2.0-2.5	11/22/94	--	2	160	140
	5.0-5.5	11/22/94	--	21	410	460
MW-SB4A	5.0-5.5	11/10/94	[3]	11,000	49,000	55,000
MW-SB5	2.0-2.5	11/22/94	--	30	1,200	1,100
	3.0-3.5	11/22/94	--	820	16,000	15,000
MW-SB5-grab[4]	NA	11/22/94	--	8	140	150

Notes: -- = Analysis not requested.
NA = Not applicable.
Refer to Table 1 for analytical methods.
Refer to Figure 1 for sampling locations.

1 Samples also analyzed for creosote (EPA Method 8270). Creosote was not identified above laboratory reporting limits (2,000 µg/kg).

2 Sample also analyzed for volatile organic compounds (EPA Method 8240). Concentrations of all volatile organic compounds were below laboratory reporting limits.

3 Kerosene range not reported due to overlap of hydrocarbon ranges.

4 Sample also analyzed for volatile organic compounds (EPA Method 8240). All compounds were below reporting limits, except ethylbenzene (150 µg/kg) and total xylenes (340 µg/kg). This sample was collected from borehole MW-SB5A.

TABLE 4

SUMMARY OF METAL ANALYTICAL RESULTS, SOILS
Seabreeze Yacht Center, Oakland, California
November 1994
(mg/kg)

Sample ID	Depth (feet)	Sample Date	Sb	Ar	Ba	Be	Cd	Cr (total)	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	V	Zn
BD-1	2.0-2.5	11/10/94	--	--	--	--	--	--	--	7.6	<5	--	--	--	--	--	--	--	--
	6.0-6.5	11/10/94	--	--	--	--	--	--	--	15	190	--	--	--	--	--	--	--	--
BD-1A	2.0-2.5	11/10/94	--	--	--	--	--	--	--	13	21	--	--	--	--	--	--	--	--
	4.0-4.5	11/10/94	--	--	--	--	--	--	--	14	23	--	--	--	--	--	--	--	--
BD-2	2.0-2.5	11/10/94	--	--	--	--	--	--	--	18	230	--	--	--	--	--	--	--	--
	4.0-4.5	11/10/94	--	--	--	--	--	--	--	20	130	--	--	--	--	--	--	--	--
BD-2A	2.0-2.5	11/10/94	--	--	--	--	--	--	--	23	590	--	--	--	--	--	--	--	--
	4.5-5.0	11/10/94	--	--	--	--	--	--	--	28	91	--	--	--	--	--	--	--	--
BD-3	2.5-3.0	11/22/94	--	--	--	--	--	--	--	2,300	160	--	--	--	--	--	--	--	--
	5.0-5.5	11/22/94	<3.0	<2.5	33	0.40	<0.25	41	5.5	19	8.1	<0.10	<0.99	35	<25	<0.50	<25	31	43
BD-4	0.0-0.4	11/10/94	<5.9	11	360	0.63	0.77	31	8.2	53	150	0.29	<2	39	<2.5	<0.99	<2.5	40	300
BD-5	2.5-3.0	11/22/94	--	--	--	--	--	--	--	38	78	--	--	--	--	--	--	--	--
MW-SB3	2.0-2.5	11/10/94	--	--	--	--	--	--	--	50	190	--	--	--	--	--	--	--	--
	4.5-5.0	11/10/94	--	--	--	--	--	--	--	53	310	--	--	--	--	--	--	--	--
MW-SB4	2.0-2.5	11/22/94	--	--	--	--	--	--	--	35	79	--	--	--	--	--	--	--	--
	5.0-5.5	11/22/94	<3.0	3.9	35	0.33	<0.25	37	4.5	15	10	<0.091	<1.0	28	<2.5	<0.50	<2.5	29	32
MW-SB4A	5.0-5.5	11/10/94	<6	13	440	1	<0.50	29	8.1	13	6.2	<0.091	<2	34	<2.5	<1	<2.5	30	30
MW-SB5	2.0-2.5	11/22/94	--	--	--	--	--	--	--	24	63	--	--	--	--	--	--	--	--
	3.0-3.5	11/22/94	<3.0	11	200	1.2	2.4	38	11	150	320	0.40	1.7	180	<2.5	<0.5	<2.5	250	280

Notes: -- = No analysis requested.
Refer to Table 1 for analytical methods.
Refer to Figure 1 for sampling locations.

TABLE 5

SUMMARY OF ANALYTICAL RESULTS, GROUNDWATER
Seabreeze Yacht Center, Oakland, California
November/December 1994
(µg/L)

Sample ID	Date	Gasoline	Diesel	Bunker C		Total Lead	Total Copper	VOCs	BTXE
				Lab Standard	Site Standard				
MW-SB1	11/28/94	--	1,300	4,800	4,800	<3.0	14	[2]	--
MW-SB2	11/28/94	--	12,000	30,000	30,000	<3.0	54	[3]	--
MW-SB3	11/14/94	--	--	--	460	<3.0	10	--	--
	12/07/94	--	1,400/1,100	3,000/2,500	3,000/2,300	--	--	--	<0.5
MW-SB3A[1]	11/14/94	--	--	--	350	<3.0	<10	--	--
MW-SB4	11/28/94	--	1,100	4,300	4,300	93	78	[4]	--
MW-SB5	11/28/94	--	34,000	74,000	74,000	<3.0	19	[5]	--

Notes: -- = No analysis requested.
xx/xx = Duplicate sample.
VOCs = Volatile organic compounds.
BTXE = Benzene, toluene, xylenes, and ethylbenzene.
Refer to Table 1 for analytical methods.
Refer to Figure 1 for well locations.

[1] Duplicate sample.
[2] All compounds below reporting levels except acetone (43 µg/L), a common laboratory contaminant.
[3] All compounds below reporting levels except acetone (33 µg/L), a common laboratory contaminant. Toluene was detected below the reporting limit (5 µg/L) at 3 µg/L.
[4] All compounds below reporting levels except acetone (75 µg/L), a common laboratory contaminant.
[5] All compounds below reporting levels except acetone (130 µg/L), a common laboratory contaminant. Chloroform was detected below the reporting limit of 5 µg/L (detected concentration not reported).

TABLE 6

GROUNDWATER ELEVATION
Seabreeze Yacht Center, Oakland, California

Well	Date	Time	Surface Elevation (msl)	TOC Elevation (msl)	Depth to Groundwater (feet)	Groundwater Elevation (msl)
MW-SB1	4/17/91	10:36	5.9	7.25	5.93	1.32
	7/9/91	10:03			5.92	1.33
	1/10/94	11:45			5.0	2.25
	1/26/94	13:10			5.03	2.22
	11/14/94	7:32			4.48	2.77
		10:55			5.02	2.23
		14:08			5.27	1.98
	11/28/94	8:56			4.82	2.43
MW-SB2	4/19/91	11:09	6.2	7.18	5.38	1.8
	7/9/91	11:04			3.7	3.48
	1/10/94	12:31			3.08	4.1
	1/26/94	13:40			1.63	5.5
	11/14/94	7:30			4.8	2.38
		11:05			4.76	2.42
		14:14			4.73	2.45
	11/28/94	9:00			2.85	4.33
MW-SB3	11/14/94	7:25	6.0	8.10	8.23	-0.13
		11:00			8.14	-0.04
		14:12			8.07	0.03
	11/28/94	8:53			6.32	1.78
	12/06/94	8:37			6.15	1.95
MW-SB4	11/28/94	9:02	6.6	6.39	1.05	5.34
MW-SB5	11/28/94	8:40	6.9	6.30	6.32	-0.02

Notes: 11/14/94: High tide 9:21 a.m.; Low tide 3:50 p.m.
11/28/94: High tide 7:46 a.m.
msl = Feet above mean sea level.
TOC = Top of casing.
Refer to Figure 1 for well locations.

APPENDIX A

BORING LOGS AND WELL CONSTRUCTION SUMMARIES

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS — MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS — MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS — LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS — LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

DEFINITION OF TERMS

U.S. STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENINGS			
200	40	10	4	3/4"	3"	12"	
SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

GRAIN SIZES

SANDS AND GRAVELS	BLOWS/FOOT†
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

RELATIVE DENSITY

SILTS AND CLAYS	STRENGTH‡	BLOWS/FOOT†
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

CONSISTENCY

†Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split spoon (ASTM D-1586).

‡Unconfined compressive strength in tons/sq. ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

SAMPLE DRILLING LOG

DRILLING LOG

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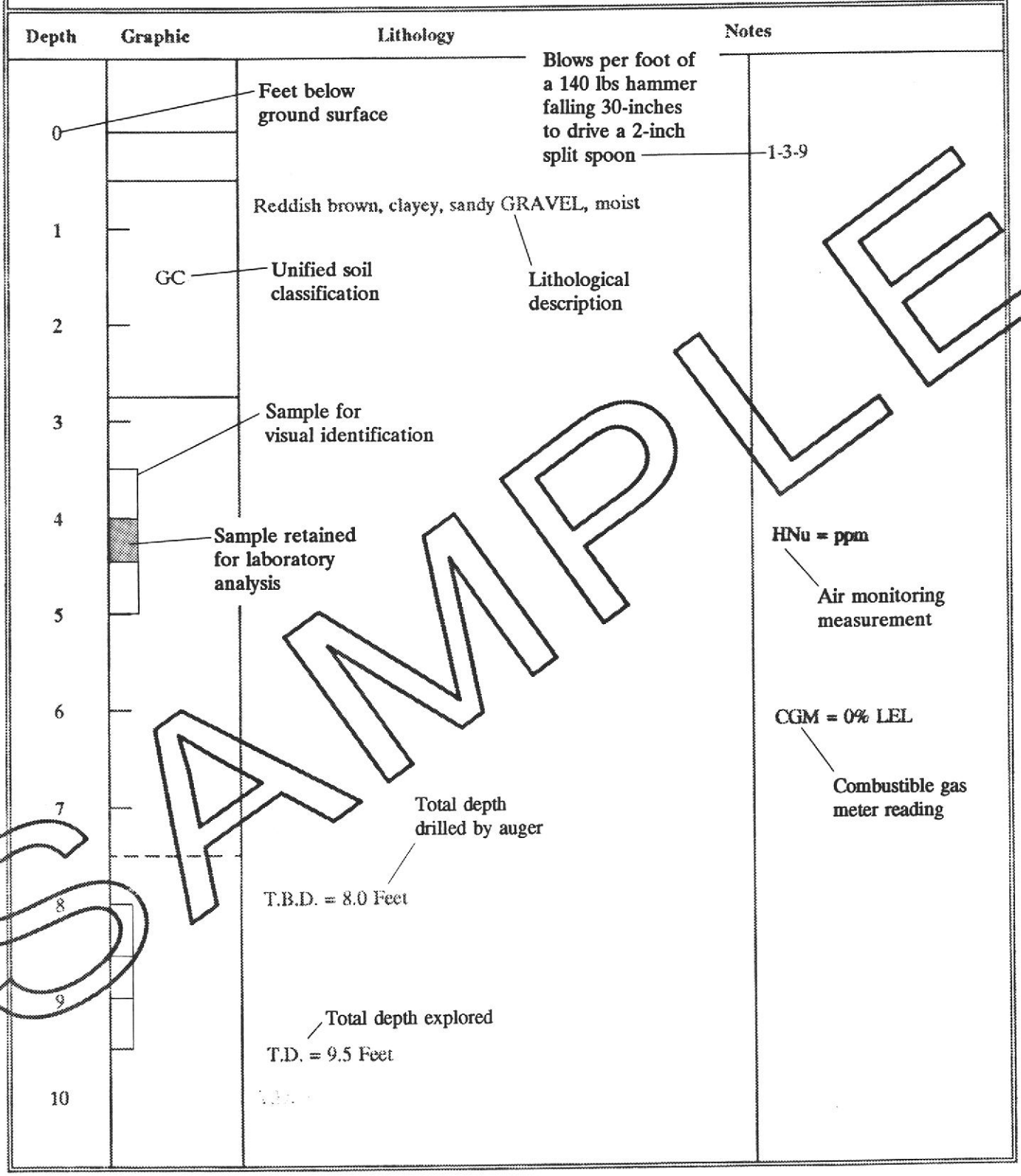
Location _____ Boring No. _____
Driller _____ Project No. _____
Method _____ Date _____
Logger _____ Datum _____ Bore size _____ Casing size _____



Scale: 1 inch = 1.5 feet

Signature _____

DRILLING LOG

Location	Seabreeze, Port of Oakland, 10 5th Avenue, Oakland, CA	Boring no.	BD-1
Driller	Gregg Drilling	Project no.	S9171-00
Method	Hollow-stem, continuous-flight auger	Date	11/10/94
Logger	WKS Datum	Bore size 8"	Casing size

Depth (ft.)	Graphic	Lithology	Notes
0		Asphalt.	
1	SP	Reddish brown, SAND, fine-grained, loose to very loose, wet (Fill).	
2	GC	Dark brown, very dark gray, clayey GRAVEL, medium dense, pieces of concrete, brick, moist (Fill).	8-16-21 HNu = 0 ppm in breathing zone LEL = 0% HNu = 0 ppm at sample
3			
4		Concrete pieces at 4.0 feet.	10-50 (6")
5			
6	CH	Black, silty CLAY with gravel and sand, high plasticity, very moist, wet (Bay mud).	8-12-14 HNu = 0 ppm in breathing zone HNu = 0 ppm at sample LEL = 0%
7			
8		Greenish gray to very dark gray, silty CLAY with sand, high plasticity, wet (Bay mud).	HNu = 0 ppm in borehole Gastech = 50 ppm in borehole LEL = 0%
9		Total depth = 9.5 feet.	
10			

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DRILLING LOG

Location	Seabreeze, Port of Oakland, 10 5th Avenue, Oakland, CA	Boring no.	BD-1A
Driller	Gregg Drilling	Project no.	S9171-00
Method	Hollow-stem, continuous-flight auger	Date	11/10/94
Logger	WKS Datum	Bore size 8"	Casing size

Depth (ft.)	Graphic	Lithology	Notes
0	GW	Brown, GRAVEL with sand, 1/3- to 3/4-inch diameter subangular clasts, loose, moist (Fill).	HNu = 0 ppm in breathing zone LEL = 0%
1			
2	SP	Brown, SAND, fine- to very fine-grained, medium dense, very moist (Fill).	8-7-12
3			
4	SW	Very dark gray, silty SAND with clay, minor gravel, medium dense, wet (Fill).	7-14-14 HNu = 0 ppm in borehole Gastech = 25 ppm in borehole LEL = 0% in borehole
5 ▼		Total depth = 5.0 feet.	
6			
7			
8			
9			
10			

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DRILLING LOG

Location	Seabreeze, Port of Oakland, 280 6th Avenue, Oakland, CA	Boring no.	BD-2
Driller	Gregg Drilling	Project no.	S9171-00
Method	Hollow-stem, continuous-flight auger	Date	11/10/94
Logger	WKS Datum	Bore size 8"	Casing size

Depth (ft.)	Graphic	Lithology	Notes
0			
	SW	Brown, SAND with gravel, fine- to medium-grained, 1/3- to 3/4-inch diameter subangular clasts, loose to medium dense, moist to very moist (Fill).	HNu = 0 ppm in breathing zone LEL = 0%
1			
2			5-8-11
3			
		Increase in gravel content and clast size at 3.5 feet.	
4			6-7-5 HNu = 0 ppm in borehole Gastech = 90 ppm in borehole LEL = 0% in borehole
5		Total depth = 5.0 feet.	
6			
7			
8			
9			
10			

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DRILLING LOG

Location	Seabreeze, Port of Oakland, 280 6th Avenue, Oakland, CA	Boring no.	BD-2A
Driller	Gregg Drilling	Project no.	S9171-00
Method	Hollow-stem, continuous-flight auger	Date	11/10/94
Logger	WKS Datum	Bore size 8"	Casing size

Depth (ft.)	Graphic	Lithology	Notes
0			
	SW	Brown, SAND, with gravel, fine- to medium-grained, very loose, very moist (Fill).	HNu = 0 ppm in breathing zone LEL = 0%
1			
			3-5-14
2			
	GW	Dark brown, GRAVEL with sand, 1/3- to 1 3/4-inch diameter subangular clasts, concrete and wood pieces, medium dense, very moist (Fill).	
3			
			12-45-32 12" recovery HNu = 0 ppm in borehole Gastech = 0 ppm in borehole LEL = 0% in borehole
4			
▼			
5		Total depth = 5.0 feet.	
6			
7			
8			
9			
10			

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DRILLING LOG

Location	Seabreeze Yacht Center	Boring no.	BD-3
Driller	HEW	Project no.	S9171
Method	Hollow-stem, continuous-flight auger	Date	11/22/94
Logger	WKS Datum	Bore size 8"	Casing size 2"

Depth (ft.)	Graphic	Lithology	Notes
0			HNu = 0 ppm in breathing zone
			LEL = 0% in breathing zone
	SW	Dark gray, SAND, very fine- to fine-grained, some gravel, loose, concrete and wood pieces, wet (Fill).	HNu = 0 ppm in borehole
1			LEL = 0% in borehole
			Ground surface near hole has standing water due to dripping pipe near hole.
2			Groundwater interface assumed at approx. 4-5 feet, indicative of site.
			Hit concrete pieces at 2.0 feet.
3			Drilled to 2.5 feet to take sample.
	CH	Greenish gray, silty CLAY, high plasticity, soft, wet (Bay mud).	2-1-2
			HNu = 0 ppm at sample
		Some interbedding of plant matter	LEL = 0% at sample
4			
			3-3-3
5			
		Total depth = 5.5 feet.	
6			
7			
8			
9			
10			

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DRILLING LOG

Location	Seabreeze, Port of Oakland, 10 5th Avenue, Oakland, CA	Boring no.	BD-4
Driller	Gregg Drilling	Project no.	S9171-00
Method	Hollow-stem, continuous-flight auger	Date	11/10/94
Logger	WKS Datum	Bore size 8"	Casing size

Depth (ft.)	Graphic	Lithology	Notes
0	GC	Greenish gray, clayey GRAVEL, with sand, 1/3- to 3/4-inch diameter subangular clasts, medium dense, very moist (Fill).	HNu = 0 ppm in breathing zone LEL = 0%
1		Concrete slab.	Drove sampler four times to collect sample
2			
3			
4			
5			
6			
7			
8			
9			
10			

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DRILLING LOG

Location	Seabreeze Yacht Center	Boring no.	BD-5
Driller	HEW	Project no.	S9171
Method	Hollow-stem, continuous-flight auger	Date	11/22/94
Logger	WKS Datum	Bore size 8"	Casing size NA

Depth (ft.)	Graphic	Lithology	Notes
0			
	GW	Brown, GRAVEL with clay and sand, 1/3- to 3/4-inch subangular clasts, crushed brick and concrete, medium dense, very moist (Fill).	Gastech malfunction HNu = 0 ppm in breathing zone
1			
2			8-4-8 HNu = 0 ppm at sample
3	CH	Greenish gray, silty CLAY, high plasticity, wood fragments, very moist (Bay mud).	
4			2-2-3 No recovery. Moved 2 feet, attempted again. No recovery. Too much wood.
5		Total depth = 5.5 feet.	
6			
7			
8			
9			
10			

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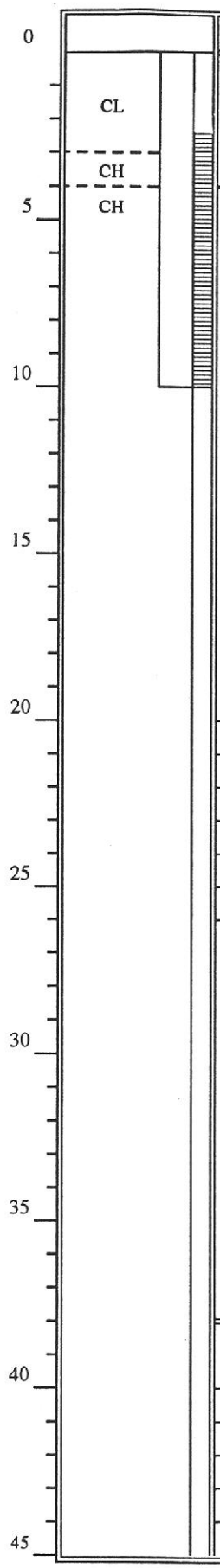

WELL CONSTRUCTION SUMMARY

Project name	Seabreeze Yacht Center
Location	280 6th Avenue
	Oakland, CA

Project no.	S9171-00
Well no.	MW-SB3
Date	11/10/94
Personnel	WKS
Driller	Gregg Drilling

DRILLING SUMMARY

Drill rig	M10
Auger/bits	Hollow stem
Drilling fluid	None
Boring diameter (inch)	8
Boring depth (feet)	10.0
Surface completion	Stove pipe
Ground surface elevation (feet)	6.0
TOC elevation (feet)	8.10

CONSTRUCTION TIME LOG

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling	11/10/94	11:00	11/10/94	11:18
Geophys log				
Casing	11/10/94	11:19	11/10/94	11:20
Filter placement	11/10/94	11:20	11/10/94	11:41
Cementing	11/10/94	11:45	11/10/94	11:56
Development	11/11/94	10:00	11/11/94	13:00
Other				

WELL DESIGN

Basis: Geologic log x Geophysical log

Casing Diameter (inch)	Material and Length (feet)	Slot Size	Interval (feet bgs)
2	PVC 4.86	--	+2.06-2.80
2	PVC 6.20	0.20	2.80-9.00

Centralizer	None	
Filter material	#2/16	2.5-10
Bentonite	Pellets	2.0-2.5
Cement	Neat	0-2.0

WATER LEVELS

	Date	Time	Depth (ft bgs)
During drilling:	None	--	NA
After completion:	NA	--	NA
Before development:	11/11/94	10:48	NA

WELL DEVELOPMENT

Method: Double diaphragm Date: 11/11/94

Time	Gallons	Appearance
10:00	0.5	Very slightly turbid
12:31	1.0	Clear
12:33	1.5	Clear
12:35	1.75	Clear
12:40	2.0	Very slightly turbid
13:00	2.5	Very slightly turbid

COMMENTS

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Signature: _____

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DRILLING LOG

Location	Seabreeze, Port of Oakland, 280 6th Avenue, Oakland, CA	Boring no.	MW-SB3 .
Driller	Gregg Drilling	Project no.	S9171-00
Method	Hollow-stem, continuous-flight auger	Date	11/10/94
Logger	WKS Datum TOC 8.10 Bore size 8"	Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
0	CL	Very dark brown, gravelly CLAY with sand, 1/3- to 1-inch diameter clasts, sub-angular, low plasticity, wet to very moist (Fill).	
1			
2		Increase in sand.	4-5-9 HNu=0 ppm in breathing zone LEL = 0% HNu = 0 ppm at sample
3	CH	Black, silty CLAY, some sand and gravel, high plasticity, concrete pieces, 2-inch thick abundant wood pieces at 3.0 feet, wet (Fill).	
4	CH	Greenish gray, silty CLAY, high plasticity, wood pieces, wet (Bay mud).	2-2-1 HNu = 0 ppm in breathing zone LEL = 0% HNu = 0 ppm at sample
▼ 5			
6			
7			
8			
9			
10		Total boring depth = 10.0 feet.	

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DRILLING LOG

Location	Seabreeze, Port of Oakland, 10 5th Avenue, Oakland, CA	Boring no.	MW-SB4-A
Driller	Gregg Drilling	Project no.	S9171-00
Method	Hollow-stem, continuous-flight auger	Date	11/10/94
Logger	WKS Datum	Bore size 8"	Casing size

Depth (ft.)	Graphic	Lithology	Notes
0			
	GW	Reddish brown, sandy GRAVEL with clay, 1/3- to 1-inch diameter subangular clasts, medium dense, very moist (Fill).	HNu = 0 ppm in breathing zone LEL = 0%
1			
2		Concrete slab.	
3			
4			
5		Wood chips and pipe.	Black liquid and water seen seeping into boring at 5.5 feet
6			
7			
8			
9		Total depth = 9.5 feet.	Hole abandoned
10			

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DRILLING LOG

Location	Seabreeze, Port of Oakland, 10 5th Avenue, Oakland, CA	Boring no.	MW-SB4-B
Driller	Gregg Drilling	Project no.	S9171-00
Method	Hollow-stem, continuous-flight auger	Date	11/10/94
Logger	WKS Datum	Bore size 8"	Casing size

Depth (ft.)	Graphic	Lithology	Notes
0			
	GW	Reddish brown, sandy GRAVEL with clay, 1/3- to 1-inch diameter subangular clasts, medium dense, very moist (Fill).	HNu = 0 ppm in breathing zone LEL = 0%
1			
2		Concrete slab.	
3			
4			
5			
6		Total depth = 6.0 feet	Hole abandoned
7			
8			
9			
10			

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DRILLING LOG

Location	Seabreeze, Port of Oakland, 10 5th Avenue, Oakland, CA	Boring no.	MW-SB4-C
Driller	Gregg Drilling	Project no.	S9171-00
Method	Hollow-stem, continuous-flight auger	Date	11/10/94
Logger	WKS Datum	Bore size 8"	Casing size

Depth (ft.)	Graphic	Lithology	Notes
0	GW	Reddish brown, sandy GRAVEL with clay, 1/3- to 1-inch diameter subangular clasts, medium dense, very moist (Fill).	HNu = 0 ppm in breathing zone LEL = 0%
1			
2		Concrete slab.	
3			
4			
5			
6		Total depth = 6.0 feet.	Hole abandoned
7			
8			
9			
10			

(S9117NOV.XLW-11/11/94)

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DRILLING LOG

Location	Seabreeze, Port of Oakland, 10 5th Avenue, Oakland, CA	Boring no.	MW-SB4-D
Driller	Gregg Drilling	Project no.	S9171-00
Method	Hollow-stem, continuous-flight auger	Date	11/10/94
Logger	WKS Datum - Bore size 8"	Casing size	-

Depth (ft.)	Graphic	Lithology	Notes
0			
	GW	Reddish brown, sandy GRAVEL with clay, 1/3- to 1-inch diameter subangular clasts, medium dense, very moist (Fill).	HNu = 0 ppm in breathing zone LEL = 0%
1			
2		Concrete slab.	
3			
4			
5		Total depth = 5.0 feet.	Hole abandoned
6			
7			
8			
9			
10			

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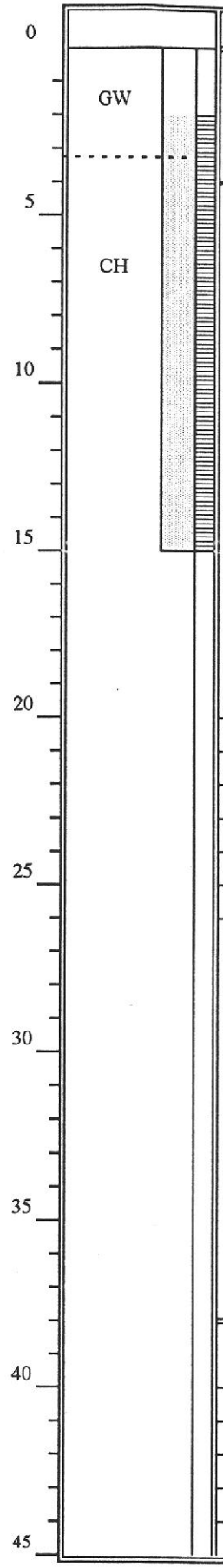

WELL CONSTRUCTION SUMMARY

Project name	Seabreeze Yacht Center	Project no.	S9171-B0
Location	10 Fifth Avenue	Well no.	MW-SB4
	Oakland, CA	Date	11/22/94
		Personnel	WKS
		Driller	HEW Drilling

DRILLING SUMMARY

Drill rig	CME-75
Auger/bits	Hollow-stem
Drilling fluid	None
Boring diameter (inch)	8
Boring depth (feet)	15.0
Surface completion	Christy box
Ground surface elevation (feet)	6.60
TOC elevation (feet)	6.39

CONSTRUCTION TIME LOG

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling	11/22/94	9:15	11/22/94	9:43
Geophys log				
Casing	11/22/94	9:55	11/22/94	10:00
Filter placement	11/22/94	10:40	11/22/94	11:16
Cementing	11/22/94	15:30	11/22/94	15:45
Development	11/23/94	10:00	11/23/94	11:30
Other				

WELL DESIGN

Basis: × Geologic log Geophysical log

Casing Diameter (inch)	Material and Length (feet)	Slot Size	Interval (feet bgs)
2	PVC 2.55	--	-0.25 - 2.8
2	PVC 10.0	0/0	2.8 - 12.8
2	PVC 2.2		12.8 - 15

Centralizer	None	
Filter material	#2/16	2.5-15.0
Bentonite	Pellets	2.0-2.5
Cement	Neat	0-2.0

WELL DEVELOPMENT

Method: Double diaphragm Date: 11/23/94

Time	Gallons	Appearance
10:00	3	Very turbid
10:05	6	Very turbid
10:10	9	Very turbid; well pumped dry
10:20	12	Slightly turbid
10:45	20	Very slightly turbid to slightly turbid
11:30	32	Very slightly turbid

WATER LEVELS

	Date	Time	Depth (ft bgs)
During drilling:	11/22/94	9:35	~2.0
After completion:	11/22/94	9:45	~2.0
Before development:	11/23/94	9:55	1.69

COMMENTS

S9171SB4.XLW (12/2/94)

Signature: _____

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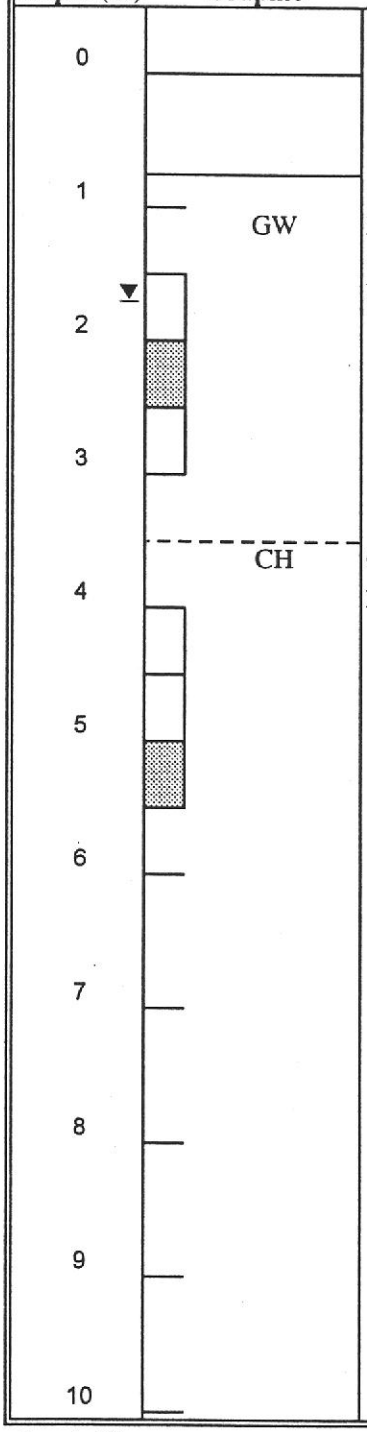
DRILLING LOG

Location	Seabreeze Yacht Center	Boring no.	MW-SB4
Driller	HEW	Project no.	S9171
Method	Hollow-stem, continuous-flight auger	Date	11/22/94
Logger	WKS Datum TOC 6.39 Bore size 8"	Casing size	2"



Depth (ft.)	Lithology	Notes
0	Concrete slab	HNu = 0 ppm in breathing zone
1–3	GW: Light gray, GRAVEL with sand and clay, 1/3- to 3/4-inch diameter subangular clasts, medium dense, damp, pieces of fine brick, concrete pieces, wet (Fill).	9-12-15
4–10	CH: Greenish gray, silty CLAY, high plasticity, very soft, lenses of plant matter with black tarry substance, wet (Bay mud).	2-1-1 Grab sample at 4.75-5.0 feet, tarry substance. HNu = 0 ppm at sample

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DRILLING LOG

Location	Seabreeze Yacht Center	Boring no.	MW-SB4
Driller	HEW	Project no.	S9171
Method	Hollow-stem, continuous-flight auger	Date	11/22/94
Logger	WKS Datum TOC 6.39 Bore size 8"	Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
10			
	CH		
11			
12			
13			
14			
15		Total depth = 15.0 feet.	
16			
17			
18			
19			
20			

S9171N94.XLW-12/6/94

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DRILLING LOG

Location	Seabreeze Yacht Center	Boring no.	MW-SB5A
Driller	HEW	Project no.	S9171
Method	Hollow-stem, continuous-flight auger	Date	11/22/94
Logger	WKS Datum	Bore size 8"	Casing size 2"

Depth (ft.)	Graphic	Lithology	Notes
0	GW	Greenish gray, GRAVEL with clay and sand, 1/3- to 3/4-inch diameter subangular clasts, medium dense, moist (Baserock fill).	HNu = 0 ppm in breathing zone LEL = 0% in breathing zone
1			
2	SP	Brown, SAND, fine-grained, shell fragments, medium dense to dense, moist (Fill).	25-40-50 (4") Concrete piece at 2.75 feet
3		Large concrete pieces at 3 feet.	HNu = 25 ppm in borehole LEL = 0% in borehole Petroleum odor at 3.5 feet
4 ▼	SW	Dark brown/greenish gray, SAND with gravel, shell fragments, fine-grained, medium dense, moist to very moist (Fill).	5-6-Refusal, no recovery. Very hard at 5.25 feet.
5		Becoming black at 5.0 feet. Total depth = 5.25 feet.	HNu = >200 ppm in borehole LEL = 0% in borehole Pulled out. Redrilled due to refusal at approx. 5.25 feet.
6			(Redrilled 2 feet east, 7 feet southwest of previous location).
7			
8			
9			
10			

S9171N94.XLW-12/6/94

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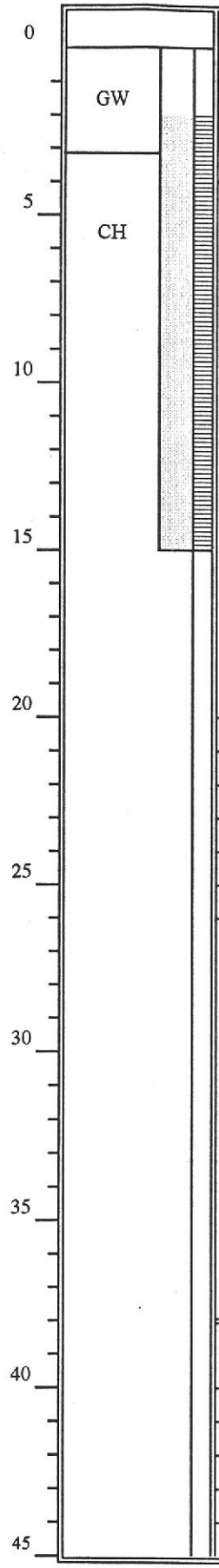

WELL CONSTRUCTION SUMMARY

Project name	Seabreeze Yacht Center
Location	10 Fifth Avenue
	Oakland, CA

Project no.	S9171-B0	Well no.	MW-SB5
Date	11/22/94		
Personnel	WKS		
Driller	HEW Drilling		

DRILLING SUMMARY

Drill rig	CME-75
Auger/bits	Hollow-stem
Drilling fluid	None
Boring diameter (inch)	8
Boring depth (feet)	15.0
Surface completion	Christy box
Ground surface elevation (feet)	6.90
TOC elevation (feet)	6.30

CONSTRUCTION TIME LOG

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling	11/22/94	12:20	11/22/94	13:40
Geophys log				
Casing	11/22/94	13:56	11/22/94	13:56
Filter placement	11/22/94	14:00	11/22/94	14:45
Cementing	11/22/94	14:50	11/22/94	15:00
Development	11/23/94	8:00	11/23/94	8:20
Other				

WELL DESIGN

Basis: × Geologic log Geophysical log

Casing Diameter (inch)	Material and Length (feet)	Slot Size	Interval (feet bgs)
2	PVC 2.55	--	-0.25-2.8
2	PVC 5.0	0/0	2.8-7.8
2	PVC 7.2		7.8-15.0

Centralizer	None	--
Filter material	#2/16	2.5-15.0
Bentonite	Pellets	2.0-2.5
Cement	Neat	0-2.0

WELL DEVELOPMENT

Method: Double diaphragm Date: 11/23/94

Time	Gallons	Appearance
8:00	0.1	Light amber
8:05	0.5	Light amber
8:10	1.0	Light amber
8:15	1.5	Light amber
8:20	1.75	Light amber

WATER LEVELS

	Date	Time	Depth (ft bgs)
During drilling:	11/22/94	12:30	None
After completion:	11/22/94	13:40	Trace
Before development:	11/23/94	7:58	12.94
Before development:	11/28/94	8:40	6.32

COMMENTS

S9171SB4.XLW (12/6/94)

Signature: _____

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DRILLING LOG

Location	Seabreeze Yacht Center	Boring no.	MW-SB5
Driller	HEW	Project no.	S9171
Method	Hollow-stem, continuous-flight auger	Date	11/22/94
Logger	WKS Datum TOC 6.30 Bore size 8"	Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
0			
	GW	Greenish gray/very dark gray, GRAVEL with clay and sand, 1/3- to 3/4-inch diameter subangular clasts, very moist (Fill).	HNu= 0 ppm in breathing zone LEL = 0% in breathing zone
1			
2			6-7-9
3			HNu = 0 ppm in borehole LEL = 0% in borehole No return (moved 2 feet northeast to take sample)
4	CH	Greenish gray, silty CLAY, high plasticity, soft, wood chips, wet (Bay mud).	
5			
6			
7			
8			
9			
10			

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DRILLING LOG

Location	Seabreeze Yacht Center	Boring no.	MW-SB5
Driller	HEW	Project no.	S9171
Method	Hollow-stem, continuous-flight auger	Date	11/22/94
Logger	WKS Datum TOC 6.30 Bore size 8"	Casing size	2"

Depth (ft.)	Graphic	Lithology	Notes
10			
	CH	Increase in wood pieces.	
11			
12			
13			
14			
15		Total depth = 15.0 feet.	
16			
17			
18			
19			
20			

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APPENDIX B

WELL DEVELOPMENT FORMS

WELL DEVELOPMENT

Project no.:	S9171-00	Well no.:	MW-SB3	Date:	11/11/94
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	11.06		
Location:	280 6th Avenue	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet)	+2.06-11.06		
Recorded by:	WKS	TOC elevation (feet msl):	8.10		
Weather:	Sunny	Water level from TOC (feet):	10.48	Time	9:40
Precip in past		Product level from TOC (feet):	None	Time	--
5 days (inch):	0.80	Water level measurement:	Double diaphragm pump/bailer		

FIELD MEASUREMENTS

Time	Gallons Removed	Appearance	Recharge: Time	Water Level (feet)
10:00	0.5	Well ran dry; very slightly turbid	10:30	9.90
12:31	1.0	Clear	10:32	9.85
12:33	1.5	Clear	10:36	9.80
12:35	1.75	Clear	10:40	9.75
12:40	2.0	Very slightly turbid	10:46	9.70
13:00	2.5	Very slightly turbid	10:54	9.65
			11:39	9.52
			12:30	9.46 (static)

Comments:

Total gallons removed	2.5	Average recharge rate (ft/min)	0.0036
Development method	Double diaphragm pump and bailer	Purged water disposal	MW-SB3 W1
		Number of drums	1
Decontamination method	TSP-DI	Rinsate disposal	MW-SB3 W1

S9171NOV.XLW-12/6/94

WELL DEVELOPMENT

Project no.:	S9171-B0	Well no.:	MW-SB4	Date:	11/23/94
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	14.8		
Location:	10 Fifth Avenue	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet)	2.55-14.75		
Recorded by:	WKS	TOC elevation (feet msl):	6.39		
Weather:	Sunny	Water level from TOC (feet):	1.69	Time	9:55
Precip in past		Product level from TOC (feet):	Sheen	Time	9:55
5 days (inch):	0	Water level measurement:	Double diaphragm pump		

FIELD MEASUREMENTS

Time	Gallons Removed	Appearance	Recharge: Time	Water Level (feet)
10:00	3	Very turbid	10:15:06	11
10:05	6	Very turbid	10:15:50	9
10:10	9	Very turbid; well pumped dry	10:16:10	8
10:20	12	Slightly turbid	10:16:37	7
10:45	20	Very slightly to slightly turbid	10:16:58	6
11:30	32	Very slightly turbid	10:17:18	5
			10:17:41	4
			10:18:10	3

Comments:

Total gallons removed	32	Average recharge rate (ft/min)	2.6
Development method	Double diaphragm pump	Purged water disposal	Drum SB-W2
		Number of drums	1
Decontamination method	TSP & DI water	Rinsate disposal	Drum SB-W2

S9171SB4.XLW (12/2/94)

WELL DEVELOPMENT

Project no.:	S9171-B0	Well no.:	MS-SB5	Date:	11/23/94
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	14.75		
Location:	10 Fifth Avenue	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet)	2.55-14.75		
Recorded by:	WKS	TOC elevation (feet msl):	6.30		
Weather:	Sunny	Water level from TOC (feet):	12.94	Time	7:58
Precip in past		Product level from TOC (feet):	None	Time	7:58
5 days (inch):	0	Water level measurement	Double diaphragm pump		

FIELD MEASUREMENTS

Time	Gallons Removed	Appearance	Recharge: Time	Water Level (feet)
8:00	0.1	Light amber	8:23	14.60
8:05	0.5	Light amber	8:24	14.50
8:10	1.0	Light amber	8:28	14.40
8:15	1.5	Light amber	8:42	14.30
8:20	1.75	Light amber	9:24	14.20
			11:36	14.00

Comments:

Total gallons removed	1.75	Average recharge rate (ft/min)	0.0065
Development method	Double diaphragm pump	Purged water disposal	Drum SB-W2
		Number of drums	1
Decontamination method	TSP & DI water	Rinsate disposal	Drum SB-W2

S9171SB4.XLW (12/2/94)

APPENDIX C

GROUNDWATER SAMPLING FORMS

GROUNDWATER SAMPLING

Project no.:	S9171-B0	Well no.:	MW-SB1	Date:	11/28/94
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	10.5		
Location:	260 6th Avenue	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet):	2.8-15		
Recorded by:	WKS	TOC elevation (feet):	7.25		
Weather:	Sunny	Water level from TOC (feet):	4.82	Time	8:56
Precip in past		Product level from TOC (feet):	None	Time	8:56
5 days (inch):	1.0	Water level measurement:	Dual interface probe		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(10.5 ft) - (4.82 ft)] × (0.083 ft)² × 3.14 × 7.48 =

Well depth Water level Well radius

0.9 gallons in one well volume
4.6 gallons in 5 well volumes
3.8 total gallons removed

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:			7.00-10.01	10,000
Before Purging:	9:17	13.0	7.00-10.01	7,000
After Purging:	11:15	18.5	7.06-10.0	8,000

FIELD MEASUREMENTS:

Time	Temp (° C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
9:20	15.0	7.43	4,800	1.0	Clear with black algae particles
9:29	15.6	7.48	4,800	2.0	Clear with black algae particles
9:39	16.2	7.37	4,850	3.0	Clear with black algae particles
	WELL PUMPED DRY			3.8	Clear with black algae particles

Water level after purging prior to sampling (feet):	7.39			Time	12:30
Appearance of sample:	Clear			Time	12:30
Duplicate/blank number:	None			Time	--
Purge method:	Double diaphragm pump				
Sampling equipment:	Disposable PVC bailer	VOC attachment:	Used for VOA		
Sample containers:					
Sample analyses:	TEH-Bunker C & diesel, Cu, Pb, VOCs (8240)	Laboratory:	Curtis & Tompkins		
Decontamination method:	TSP and water, DI water rinse	Rinsate disposal:	Drum SB-W1		

S9171SB4.XLW (12/2/94)

GROUNDWATER SAMPLING

Project no.:	S9171-B0	Well no.:	MW-SB2	Date:	11/28/94
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	11.0		
Location:	260 6th Avenue	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet):	2.8-14.75		
Recorded by:	WKS	TOC elevation (feet):	7.18		
Weather:	Sunny	Water level from TOC (feet):	2.85	Time	9:00
Precip in past		Product level from TOC (feet):	None	Time	9:00
5 days (inch):	1.0	Water level measurement:	Dual interface probe		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(14.75 ft) - (2.85 ft)] × (0.083 ft)² × 3.14 × 7.48 = 2.0 gallons in one well volume
Well depth Water level Well radius
10.0 gallons in 5 well volumes
6.5 total gallons removed

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:			7.00-10.01	10,000
Before Purging:	9:17	13.0	7.00-10.01	7,000
After Purging:	11:15	18.5	7.06-10.0	8,000

FIELD MEASUREMENTS:

Time	Temp (° C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
9:54	15.6	6.87	10,000	1	Clear, sulfur smell
10:00	15.0	6.91	10,000	2	Clear, sulfur smell
10:11	15.9	6.74	11,000	4	Clear, sulfur smell
10:14	15.9	9.98	11,000	6	Clear, sulfur smell
WELL PUMPED DRY				6.5	Clear, sulfur smell

Water level after purging prior to sampling (feet):	9.0			Time	12:40
Appearance of sample:	Clear			Time	12:40
Duplicate/blank number:	None			Time	--
Purge method:	Double diaphragm pump				
Sampling equipment:	Disposable PVC bailer	VOC attachment:	Used for VOA		
Sample containers:					
Sample analyses:	TEH-Bunker C & diesel, Cu, Pb, VOCs (8240)	Laboratory:	Curtis & Tompkins		
Decontamination method:	TSP and water, DI water rinse	Rinsate disposal:	Drum SB-W1		

S9171SB4.XLW (12/2/94)

GROUNDWATER SAMPLING

Project no.:	S9171-00	Well no.:	MW-SB3	Date:	11/14/94
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	11.06		
Location:	280 6th Avenue	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet):	4.86 - 11.06		
Recorded by:	WKS	TOC elevation (feet):	8.10		
Weather:	Sunny	Water level from TOC (feet):	8.07	Time	14:12
Precip in past		Product level from TOC (feet):	None	Time	--
5 days (inch):	0.80	Water level measurement:	Dual interface probe		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(11.06 ft) - (8.07 ft)] × (0.083 ft)² × 3.14 × 7.48 = 0.49 gallons in one well volume
Well depth Water level Well radius
2.4 gallons in 5 well volumes
1.5 total gallons removed

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:		--	7.00-10.01	1,000
Before Purging:	14:20	16.0	7.00-10.01	1,000
After Purging:	14:55	16.0	6.81-9.97	1,000

FIELD MEASUREMENTS:

Time	Temp (° C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
14:30	19.9	6.94	8,500	0.25	Clear
14:40	20.1	6.85	9,000	0.75	Clear
14:45	19.8	6.90	10,000	1.00	Clear
14:50	19.6	6.90	12,000	1.50	Clear

Water level after purging prior to sampling (feet):	9.56			Time	13:30
Appearance of sample:	Clear			Time	15:40
Duplicate/blank number:	Duplicate, MW-SB3A			Time	15:45
Purge method:	Disposable bailer				
Sampling equipment:	Disposable PVC bailer	VOC attachment:			
Sample containers:	1-liter amber, 1-liter plastic				
Sample analyses:	Copper, lead, Bunker C	Laboratory:	Curtis & Tompkins		
Decontamination method:	TSP and water, DI water rinse	Rinsate disposal:	Drum MW-SBW1		

S9171NOV.XLW (11/16/94)

GROUNDWATER SAMPLING

Project no.:	S9171-B0	Well no.:	MW-SB3	Date:	12/7/94
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	11.06		
Location:	280 6th Street	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet):	4.86-11.06		
Recorded by:	WKS	TOC elevation (feet):	8.1		
Weather:	Sunny	Water level from TOC (feet):	8.03	Time	10:55
Precip in past		Product level from TOC (feet):	None	Time	10:55
5 days (inch):	0.25	Water level measurement:	Dual interface probe		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(11.06 ft) - (8.03 ft)] × (0.083 ft)² × 3.14 × 7.48 =

Well depth Water level Well radius

0.50 gallons in one well volume
2.50 gallons in 5 well volumes
1.50 total gallons removed

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:	--	--	7.00-10.01	10,000
Before Purging:	10:56	10.4	7.00-10.01	6,500
After Purging:		10.4	7.07-10.17	

FIELD MEASUREMENTS:

Time	Temp (° C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
11:04	17.1	6.79	13,000	0.25	Clear
11:06	18.2	6.77	20,000	0.50	Clear
11:08	18.4	6.75	21,000	0.75	Clear
11:15	17.9	6.77	19,000	1.50	Clear

Water level after purging prior to sampling (feet):	9.07			Time	11:40
Appearance of sample:	Clear			Time	11:45
Duplicate/blank number:	None			Time	--
Purge method:	Bailer				
Sampling equipment:	Disposable PVC bailer	VOC attachment:	For BTXE and gasoline		
Sample containers:					
Sample analyses:	TPH-gas, -diesel, -Bunker C, BTXE	Laboratory:	Curtis & Tompkins		
Decontamination method:	TSP and water, DI water rinse	Rinsate disposal:	Drum MW-SBW3		

S9171SB4.XLW (12/8/94)

GROUNDWATER SAMPLING

Project no.:	S9171-B0	Well no.:	MW-SB4	Date:	11/28/94
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	14.75		
Location:	260 6th Avenue	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet):	2.55-14.75		
Recorded by:	WKS	TOC elevation (feet):	6.39		
Weather:	Sunny	Water level from TOC (feet):	1.05	Time	9:02
Precip in past		Product level from TOC (feet):	None	Time	9:02
5 days (inch):	1.0	Water level measurement:	Dual interface probe		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(14.75 ft) - (1.05 ft)] × (0.083 ft)² × 3.14 × 7.48 =

Well depth Water level Well radius

2.2 gallons in one well volume
11.2 gallons in 5 well volumes
10 total gallons removed

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:			7.00-10.01	10,000
Before Purging:	9:17	13.0	7.00-10.01	7,000
After Purging:	11:15	18.5	7.06-10.0	8,000

FIELD MEASUREMENTS:

Time	Temp (° C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
10:22	16.3	7.43	3,200	1.0	Clear
10:24	15.6	7.41	2,000	2.0	Clear
10:29	15.3	7.42	1,700	4.0	Clear
10:38	14.6	7.23	1,700	8.0	Clear
10:42	14.6	7.27	1,700	10.0	Clear

Water level after purging prior to sampling (feet):	1.05			Time	12:09
Appearance of sample:	Clear - very slightly turbid			Time	12:10
Duplicate/blank number:	None			Time	--
Purge method:	Double diaphragm pump				
Sampling equipment:	Disposable PVC bailer	VOC attachment:	Used for VOA		
Sample containers:					
Sample analyses:	TEH-Bunker C & diesel, Cu, Pb, VOCs (8240)	Laboratory:	Curtis & Tompkins		
Decontamination method:	TSP and water, DI water rinse	Rinsate disposal:	Drum SB-W1		

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GROUNDWATER SAMPLING

Project no.:	S9171-B0	Well no.:	MW-SB5	Date:	11/28/94
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	14.75		
Location:	260 6th Avenue	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet):	2.8-14.75		
Recorded by:	WKS	TOC elevation (feet):	6.30		
Weather:	Sunny	Water level from TOC (feet):	6.32	Time	8:40
Precip in past		Product level from TOC (feet):	None	Time	8:40
5 days (inch):	1.0	Water level measurement:	Dual interface probe		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(14.75 ft) - (6.32 ft)] × (0.083 ft)² × 3.14 × 7.48 =

Well depth Water level Well radius

1.4 gallons in one well volume
6.9 gallons in 5 well volumes
3 total gallons removed

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:			7.00-10.01	10,000
Before Purging:	9:17	13.0	7.00-10.01	7,000
After Purging:	11:15	18.5	7.06-10.0	8,000

FIELD MEASUREMENTS:

Time	Temp (° C)	pH	EC (µmho/cm)	Cumulative Gallons Removed	Appearance
11:00	18.2	6.98	20,000	1.0	Light amber
11:03	19.4	6.94	21,000	2.0	Light amber
11:08	19.3	6.97	17,000	3.0	Light amber

Purged water to depth of ~12.0 feet below TOC

Water level after purging prior to sampling (feet):	8.55			Time	13:10
Appearance of sample:	Light amber			Time	13:15
Duplicate/blank number:	None			Time	--
Purge method:	Double diaphragm pump				
Sampling equipment:	Disposable PVC bailer	VOC attachment:	Used for VOA		
Sample containers:					
Sample analyses:	TEH-Bunker C & diesel, Cu, Pb, VOCs (8240)	Laboratory:	Curtis & Tompkins		
Decontamination method:	TSP and water, DI water rinse	Rinsate disposal:	Drum SB-W1		

S9171SB4.XLW (12/6/94)

APPENDIX D

SURVEYOR'S REPORT

BATES AND BAILEY
LAND SURVEYORS
15 Shattuck Square Berkeley, CA 94704
P. O. Box 592 Berkeley, CA 94701

(415) 843-2007

NOV 2 1 1994

BASELINE

LETTER OF TRANSMITTAL

DATE	JOB NO.
Nov. 18, 1994	14401

ATTENTION: Bill Scott

RE: Monitor Wells at 280 6th Avenue
Oakland, CA

TO Baseline Environmental Consulting
5900 Hollis Street Suite D
Emeryville, CA 94608

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☒ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit_____copies for approval
☒ For your use ☐ Approved as noted ☐ Submit_____copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return_____corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19_____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

WELL	T.C. ELEVATION	GROUND ELEVATION
MW-SB 1	7.25	5.9
MW-SB 2	7.18	6.2
MW-SB 3	8.10	6.0

Elevations based on Mean Sea Level datum

COPY TO _____

SIGNED: Robert W Wilson

If enclosures are not as noted, kindly notify us at once.

BATES AND BAILEY
LAND SURVEYORS
15 Shattuck Square Berkeley, CA 94704
P. O. Box 592 Berkeley, CA 94701
(510) ~~(415)~~ 843-2007

RECEIVED
NOV 29 1994
BASELINE

LETTER OF TRANSMITTAL

DATE	JOB NO.
November 28, 1994	14401

ATTENTION: Bill Scott

RE: 2 additional monitor wells at 280 6th Ave., Oakland, CA

TO Baseline Environmental Consulting
5900 Hollis Street, Suite D
Emeryville, CA 94608

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☒ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19_____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

WELL	T.C. ELEVATION	GROUND ELEVATION
MW - SB 4	6.39	6.6
MW - SB 5	6.30	6.9

Elevations based on Mean Sea Level Datum
Hard copy to follow.

COPY TO _____

SIGNED: Christopher D. Bailey

If enclosures are not as noted, kindly notify us at once.

APPENDIX E

LABORATORY REPORTS

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Deputy Port Attorney,Port of Oakland
530 Water Street
P.O. Box 2064
Oakland, CA 94604-2064

Date: 08-DEC-94
Lab Job Number: 118790
Project ID: N/A
Location: Seabreeze Yacht Oakland

Reviewed by: Mary Plessas

Reviewed by: Cynthia E. Schlag

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118790
CLIENT: DEPUTY PORT ATTORNEY,PORT OF OAKLAND
LOCATION: Seabreeze Yacht Oakland

DATE SAMPLED: 11/10/94
DATE RECEIVED: 11/10/94
DATE REQUESTED: 11/29/94
DATE EXTRACTED: 12/05/94
DATE ANALYZED: 12/06,07/94
DATE REPORTED: 12/08/94

Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	SAMPLE ID	DIESEL RANGE (mg/Kg)	BASELINE BUNKER "C" (mg/Kg)	C&T BUNKER "C" (mg/Kg)
118790-001	BD-2A:2.0-2.5	ND(1)	100	110*
118790-002	BD-2A:4.5-5.0	ND(20)	11,000*	12,000*
118790-003	BD-1A:4.0-4.5	2*	250	280*
118790-004	BD-1A:2.0-2.5	ND(1)	ND(30)	ND(30)
	METHOD BLANK	ND(1)	ND(30)	ND(30)

ND = Not detected at or above reporting limit; reporting limit indicated in parentheses.

* Sample chromatogram does not resemble hydrocarbon standard pattern.

QA/QC SUMMARY

LCS RECOVERY, %	88

CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze Yacht Oakland
MATRIX: Soil

DATE REPORTED: 12/09/94

Metals Analytical Report

				Copper				
Sample ID	Lab ID	Sample Date	Receive Date	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
BD-2A:2.0-2.5	118790-001	11/10/94	11/10/94	23	0.50	17892	EPA 6010	12/06/94
BD-2A:4.5-5.0	118790-002	11/10/94	11/10/94	28	0.50	17892	EPA 6010	12/06/94
BD-1A: 4.0-4.5	118790-003	11/10/94	11/10/94	14	0.50	17892	EPA 6010	12/06/94
BD-1A:2.0-2.5	118790-004	11/10/94	11/10/94	13	0.50	17892	EPA 6010	12/06/94

CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze Yacht Oakland
MATRIX: Soil

DATE REPORTED: 12/09/94

Metals Analytical Report

				Lead				
Sample ID	Lab ID	Sample Date	Receive Date	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
BD-2A:2.0-2.5	118790-001	11/10/94	11/10/94	590	15	17892	EPA 6010	12/06/94
BD-2A:4.5-5.0	118790-002	11/10/94	11/10/94	91	5.0	17892	EPA 7420	12/06/94
BD-1A: 4.0-4.5	118790-003	11/10/94	11/10/94	23	5.0	17892	EPA 7420	12/06/94
BD-1A:2.0-2.5	118790-004	11/10/94	11/10/94	21	5.0	17892	EPA 7420	12/06/94

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland DATE REPORTED: 12/09/94
JOB NUMBER: 118790

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS % Recovery	BSD % Recovery	Average Recovery	RPD	QC Batch	Method	Analysis Date
Copper	250	240.6	244.1	ug/L	96	98	97	1	17892	EPA 6010	12/06/94
Lead	500	429.1	436.6	ug/L	86	87	87	2	17892	EPA 6010	12/06/94
Lead	500	490	480	ug/L	98	96	97	2	17892	EPA 7420	12/06/94

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland
JOB NUMBER: 118790

DATE REPORTED: 12/09/94

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	QC Batch	Method	Analysis Date
Copper	ND	0.5	mg/Kg	17892	EPA 6010	12/06/94
Lead	ND	15	mg/Kg	17892	EPA 6010	12/06/94
Lead	ND	5	mg/Kg	17892	EPA 7420	12/06/94

ND = Not Detected at or above reporting limit

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(510) 420-8686

CHAIN OF CUSTODY RECORD

Turn-around Time: Normal
Lab: Curtis & Tompkins
BASELINE Contact Person:

11/29/94 GCP

Project No.	Project Name and Location
S9171	Seabreeze, Port of Oakland

Samplers: (Signature) William K Scott / Julie C. Pettijohn

Sample ID No. Station	Date	Time	Media	Depth	No. of Containers	TEH	(TPH with BTX&E)	Oil & Grease	Motor Oil	PNAs	Title 26 Metals	Total Lead (TTLC)	TEH as Bunker C w/ vis	Creosote (8270)	Total Copper (TTLC)	Solvents (8240)			Remarks/ Composite	Detection Limits
BD-1; 2.0-2.5	11-10-94	9:51	soil	2.0-2.5	1							X	X	X	X					
BD-1; 6.0-6.5	11-10-94	10:00	soil	6.0-6.5	1							X	X	X	X					
mw-SB-3; 2.0-2.5	11-10-94	11:05	soil	2.0-2.5	1							X	X		X					
mw-SB-3; 4.5-5.0	11-10-94	11:10	soil	4.0-4.5	1							X	X		X					11/29
BD-2A; 2.0-2.5	11-10-94	12:10	soil	2.0-2.5	1							X	X		X				Hold YL	Run Bunker C only
BD-2A; 4.5-5.0	11-10-94	12:15	soil	4.5-5.0	1							X	X		X				Hold YL	
BD-2; 4.0-4.5	11-10-94	13:30	soil	4.0-4.5	1							X	X		X					
BD-2; 2.0-2.5	11-10-94	13:10	soil	2.0-2.5	1							X	X		X					
BD-1A; 4.0-4.5	11-10-94	16:00	soil	4.0-4.5	1							X	X	X	X				Hold YL	Run Bunker [illegible]
mw-SB4A	11-10-94	14:56	soil	5.0-5.5	1	X w					X w		X							
BD-1A; 2.0-2.5	11-10-94	15:55	soil	2.0-2.5	1							X	X	X	X				Hold YL	Run Bunker [illegible]
BD-4; 0-0.4	11-10-94	16:25	soil	0.0-0.4	1	X					X					X				[illegible]

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Conditions of Samples Upon Arrival at Laboratory:
Julie C. Pettijohn	11/10/94 5:20 pm	[signature]	11/10/94 5:20 pm	OK 11/29 GCP
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks: Please send results to Michelle Heffes, Deputy Port Attorney, Port of Oakland, 530 Water Street, PO Box 2064, Oakland CA 94604-2064
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	

Do not send to Baseline

After analysis of BD-1A + BD-2A hold samples YL
[illegible] Bunker C (sample originally collected [illegible]) ←

COSTRCDF1.92 ADMIN(AD4) 5/27

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Deputy Port Attorney,Port of Oakland
530 Water Street
P.O. Box 2064
Oakland, CA 94604-2064

Date: 08-DEC-94
Lab Job Number: 118673
Project ID: N/A
Location: Seabreeze

Reviewed by: Mary Pleszar

Reviewed by: Cynthia E. Schlicker

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118786
CLIENT: DEPUTY PORT ATTORNEY,PORT OF OAKLAND
LOCATION: Seabreeze Yacht Oakland

DATE SAMPLED: 11/22/94
DATE RECEIVED: 11/22/94
DATE REQUESTED: 11/29/94
DATE EXTRACTED: 12/05/94
DATE ANALYZED: 12/07/94
DATE REPORTED: 12/07/94

Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	SAMPLE ID	DIESEL RANGE (mg/Kg)	BASELINE BUNKER "C" (mg/Kg)	C&T BUNKER "C" (mg/Kg)
118786-001	MWSB4;2.0-2.5	2*	140	160*
118786-002	MWSB4;5.0-5.5	21*	410	460*
118786-003	BD-3;5.0-5.5	480*	1,800*	2,000*
118786-004	BD-3;2.5-3.0	70*	1,500	1,700*
118786-005	MWSB5;2.0-2.5	30*	1,100*	1,200*
118786-006	MWSB5;3.0-3.5	820*	15,000*	16,000*
118786-007	BD-5;2.5-3.0	350*	7,100*	7,800*
	METHOD BLANK	ND(1)	ND(30)	ND(30)

ND = Not detected at or above reporting limit; reporting limit indicated in parantheses.

* Sample chromatogram does not resemble hydrocarbon standard pattern.

QA/QC SUMMARY

LCS RECOVERY, %	88

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118673
CLIENT: DEPUTY PORT ATTORNEY,PORT OF OAKLAND
LOCATION: Seabreeze Yacht Oakland

DATE SAMPLED: 11/22/94
DATE RECEIVED: 11/22/94
DATE EXTRACTED: 11/29/94
DATE ANALYZED: 12/02/94
DATE REPORTED: 12/07/94

Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	SAMPLE ID	DIESEL RANGE (mg/Kg)	BASELINE BUNKER "C" (mg/Kg)	C&T BUNKER "C" (mg/Kg)
118673-007	MWSB5;GRAB	8*	150*	140*
	METHOD BLANK	ND(1)	ND(30)	ND(30)

ND = Not detected at or above reporting limit; reporting limit applies to all analytes indicated in paranthesis.

* Sample chromatogram does not resemble hydrocarbon standard pattern.

QA/QC SUMMARY

RPD,%	8
RECOVERY, %	69

Curtis & Tompkins, Ltd.

SAMPLE ID: MWSB4;5.0-5.5
LAB ID: 118673-002
CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze
MATRIX: Soil

DATE SAMPLED: 11/22/94
DATE RECEIVED: 11/22/94
DATE REPORTED: 12/07/94

California TITLE 26 Metals

Compound	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
Antimony	ND	3.0	17751	EPA 6010	11/28/94
Arsenic	3.9	2.5	17742	EPA 7060	11/28/94
Barium	35	0.50	17751	EPA 6010	11/28/94
Beryllium	0.33	0.10	17751	EPA 6010	11/28/94
Cadmium	ND	0.25	17751	EPA 6010	11/28/94
Chromium (total)	37	0.50	17751	EPA 6010	11/28/94
Cobalt	4.5	1.0	17751	EPA 6010	11/28/94
Copper	15	0.50	17751	EPA 6010	11/28/94
Lead	10	1.5	17742	EPA 7421	11/28/94
Mercury	ND	0.091	17848	EPA 7471	12/02/94
Molybdenum	ND	1.0	17751	EPA 6010	11/28/94
Nickel	28	1.0	17751	EPA 6010	11/28/94
Selenium	ND	2.5	17742	EPA 7740	11/28/94
Silver	ND	0.50	17751	EPA 6010	11/28/94
Thallium	ND	2.5	17742	EPA 7841	11/28/94
Vanadium	29	0.50	17751	EPA 6010	11/28/94
Zinc	32	1.0	17751	EPA 6010	11/28/94

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

SAMPLE ID: BD-3;5.0-5.5
LAB ID: 118673-003
CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze
MATRIX: Soil

DATE SAMPLED: 11/22/94
DATE RECEIVED: 11/22/94
DATE REPORTED: 12/07/94

California TITLE 26 Metals

Compound	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
Antimony	ND	3.0	17751	EPA 6010	11/28/94
Arsenic	ND	2.5	17742	EPA 7060	11/28/94
Barium	33	0.50	17751	EPA 6010	11/28/94
Beryllium	0.40	0.099	17751	EPA 6010	11/28/94
Cadmium	ND	0.25	17751	EPA 6010	11/28/94
Chromium (total)	41	0.50	17751	EPA 6010	11/28/94
Cobalt	5.5	0.99	17751	EPA 6010	11/28/94
Copper	19	0.50	17751	EPA 6010	11/28/94
Lead	8.1	1.5	17742	EPA 7421	11/28/94
Mercury	ND	0.10	17848	EPA 7471	12/02/94
Molybdenum	ND	0.99	17751	EPA 6010	11/28/94
Nickel	35	0.99	17751	EPA 6010	11/28/94
Selenium	ND	2.5	17742	EPA 7740	11/28/94
Silver	ND	0.50	17751	EPA 6010	11/28/94
Thallium	ND	2.5	17742	EPA 7841	11/28/94
Vanadium	31	0.50	17751	EPA 6010	11/28/94
Zinc	43	0.99	17751	EPA 6010	11/28/94

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

SAMPLE ID: MWSB5;3.0-3.5
LAB ID: 118673-006
CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze
MATRIX: Soil

DATE SAMPLED: 11/22/94
DATE RECEIVED: 11/22/94
DATE REPORTED: 12/07/94

California TITLE 26 Metals

Compound	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
Antimony	ND	3.0	17751	EPA 6010	11/28/94
Arsenic	11	2.5	17742	EPA 7060	11/28/94
Barium	200	0.50	17751	EPA 6010	11/28/94
Beryllium	1.2	0.10	17751	EPA 6010	11/28/94
Cadmium	2.4	0.25	17751	EPA 6010	11/28/94
Chromium (total)	38	0.50	17751	EPA 6010	11/28/94
Cobalt	11	1.0	17751	EPA 6010	11/28/94
Copper	150	0.50	17751	EPA 6010	11/28/94
Lead	320	15	17742	EPA 7421	11/28/94
Mercury	0.40	0.10	17848	EPA 7471	12/02/94
Molybdenum	1.7	1.0	17751	EPA 6010	11/28/94
Nickel	180	1.0	17751	EPA 6010	11/28/94
Selenium	ND	2.5	17742	EPA 7740	11/28/94
Silver	ND	0.50	17751	EPA 6010	11/28/94
Thallium	ND	2.5	17742	EPA 7841	11/28/94
Vanadium	250	0.50	17751	EPA 6010	11/28/94
Zinc	280	1.0	17751	EPA 6010	11/28/94

ND = Not detected at or above reporting limit

CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze
MATRIX: Soil

DATE REPORTED: 12/07/94

Metals Analytical Report

				Copper				
Sample ID	Lab ID	Sample Date	Receive Date	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
MWSB4;2.0-2.5	118673-001	11/22/94	11/22/94	35	0.50	17739	EPA 6010	11/28/94
BD-3;2.5-3.0	118673-004	11/22/94	11/22/94	2300	2.5	17739	EPA 6010	11/28/94
MWSB5;2.0-2.5	118673-005	11/22/94	11/22/94	24	0.49	17739	EPA 6010	11/28/94
BD-5;2.5-3.0	118673-008	11/22/94	11/22/94	38	2.5	17739	EPA 6010	11/28/94

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze
MATRIX: Soil

DATE REPORTED: 12/07/94

Metals Analytical Report

				Lead				
Sample ID	Lab ID	Sample Date	Receive Date	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
MWSB4;2.0-2.5	118673-001	11/22/94	11/22/94	79	15	17739	EPA 6010	11/28/94
BD-3;2.5-3.0	118673-004	11/22/94	11/22/94	160	75	17739	EPA 6010	11/28/94
MWSB5;2.0-2.5	118673-005	11/22/94	11/22/94	63	15	17739	EPA 6010	11/28/94
BD-5;2.5-3.0	118673-008	11/22/94	11/22/94	78	75	17739	EPA 6010	11/28/94

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland DATE REPORTED: 12/07/94
JOB NUMBER: 118673

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	QC Batch	Method	Analysis Date
Antimony	ND	3	mg/Kg	17751	EPA 6010	11/28/94
Arsenic	ND	2.5	mg/Kg	17742	EPA 7060	11/28/94
Barium	ND	0.5	mg/Kg	17751	EPA 6010	11/28/94
Beryllium	ND	0.1	mg/Kg	17751	EPA 6010	11/28/94
Cadmium	ND	0.25	mg/Kg	17751	EPA 6010	11/28/94
Chromium (total)	ND	0.5	mg/Kg	17751	EPA 6010	11/28/94
Cobalt	ND	1	mg/Kg	17751	EPA 6010	11/28/94
Copper	ND	0.5	mg/Kg	17739	EPA 6010	11/23/94
Copper	ND	0.5	mg/Kg	17751	EPA 6010	11/28/94
Lead	ND	15	mg/Kg	17739	EPA 6010	11/23/94
Lead	ND	1.5	mg/Kg	17742	EPA 7421	11/28/94
Mercury	ND	0.1	mg/Kg	17848	EPA 7471	12/02/94
Molybdenum	ND	1	mg/Kg	17751	EPA 6010	11/28/94
Nickel	ND	1	mg/Kg	17751	EPA 6010	11/28/94
Selenium	ND	2.5	mg/Kg	17742	EPA 7740	11/28/94
Silver	ND	0.5	mg/Kg	17751	EPA 6010	11/28/94
Thallium	ND	2.5	mg/Kg	17742	EPA 7841	11/28/94
Vanadium	ND	0.5	mg/Kg	17751	EPA 6010	11/28/94
Zinc	ND	1	mg/Kg	17751	EPA 6010	11/28/94

ND = Not Detected at or above reporting limit

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland DATE REPORTED: 12/07/94
JOB NUMBER: 118673

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS % Recovery	BSD % Recovery	Average Recovery	RPD	QC Batch	Method	Analysis Date
Antimony	500	472.8	396	ug/L	95	79	87	18	17751	EPA 6010	11/28/94
Arsenic	40	402.4	417.6	ug/L	101	104	103	4	17742	EPA 7060	11/28/94
Barium	2000	1906	1828	ug/L	95	91	93	4	17751	EPA 6010	11/28/94
Beryllium	50	46.1	48.3	ug/L	92	97	95	5	17751	EPA 6010	11/28/94
Cadmium	50	46.8	48.1	ug/L	94	96	95	3	17751	EPA 6010	11/28/94
Chromium (total)	200	177.1	190.6	ug/L	89	95	92	7	17751	EPA 6010	11/28/94
Cobalt	500	464.6	483.8	ug/L	93	97	95	4	17751	EPA 6010	11/28/94
Copper	250	240.8	230.2	ug/L	96	92	94	5	17739	EPA 6010	11/23/94
Copper	250	232.3	232.1	ug/L	93	93	93	0	17751	EPA 6010	11/28/94
Lead	500	451.2	458.9	ug/L	90	92	91	2	17739	EPA 6010	11/23/94
Lead	30	292.3	285.5	ug/L	97	95	96	2	17742	EPA 7421	11/28/94
Mercury	4	3.904	3.904	ug/L	98	98	98	0	17848	EPA 7470	12/02/94
Molybdenum	400	340.9	340.8	ug/L	85	85	85	0	17751	EPA 6010	11/28/94
Nickel	500	461.8	479.7	ug/L	92	96	94	4	17751	EPA 6010	11/28/94
Selenium	30	295.9	307.3	ug/L	99	102	101	4	17742	EPA 7740	11/28/94
Silver	50	39	40.6	ug/L	78	81	80	4	17751	EPA 6010	11/28/94
Thallium	40	386.1	401.4	ug/L	97	100	99	4	17742	EPA 7841	11/28/94
Vanadium	500	457.1	474.5	ug/L	91	95	93	4	17751	EPA 6010	11/28/94
Zinc	500	454.1	466.4	ug/L	91	93	92	3	17751	EPA 6010	11/28/94

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118673-007
CLIENT: Deputy Port Attorney,Port of Oak
LOCATION: Seabreeze
SAMPLE ID: MWSB5;GRAB

DATE SAMPLED: 11/22/94
DATE RECEIVED: 11/22/94
DATE ANALYZED: 12/06/94
DATE REPORTED: 12/08/94

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES

COMPOUND	Result (ug/Kg)	Reporting Limit (ug/Kg)
Chloromethane	ND	100
Bromomethane	ND	100
Vinyl chloride	ND	100
Chloroethane	ND	100
Methylene chloride	ND	200
Acetone	ND	200
Carbon disulfide	ND	50
Trichlorofluoromethane	ND	50
1,1-Dichloroethene	ND	50
1,1-Dichloroethane	ND	50
trans-1,2-Dichloroethene	ND	50
cis-1,2-Dichloroethene	ND	50
Chloroform	ND	50
Freon 113	ND	50
1,2-Dichloroethane	ND	50
2-Butanone	ND	100
1,1,1-Trichloroethane	ND	50
Carbon tetrachloride	ND	50
Vinyl acetate	ND	500
Bromodichloromethane	ND	50
1,2-Dichloropropane	ND	50
cis-1,3-Dichloropropene	ND	50
Trichloroethene	ND	50
Dibromochloromethane	ND	50
1,1,2-Trichloroethane	ND	50
Benzene	ND	50
trans-1,3-Dichloropropene	ND	50
Bromoform	ND	50
2-Hexanone	ND	100
4-Methyl-2-pentanone	ND	100
1,1,2,2-Tetrachloroethane	ND	50
Tetrachloroethene	ND	50
Toluene	ND	50
Chlorobenzene	ND	50
Ethyl benzene	150	50
Styrene	ND	50
Total xylenes	340	50

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	96 %
Toluene-d8	105 %
Bromofluorobenzene	104 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118673-METHOD BLANK DATE ANALYZED: 12/06/94
CLIENT: Deputy Port Attorney,Port of Oak DATE REPORTED: 12/08/94
LOCATION: Seabreeze
SAMPLE ID: MB

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES

COMPOUND	Result (ug/Kg)	Reporting Limit (ug/Kg)
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Acetone	ND	20
Carbon disulfide	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Vinyl acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
trans-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethyl benzene	ND	5
Styrene	ND	5
Total xylenes	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	88 %
Toluene-d8	100 %
Bromofluorobenzene	97 %

Curtis & Tompkins, Ltd.

QC SUMMARY SHEET FOR EPA 8240

Laboratory Number: 118673 Date Analyzed: 12/06/94
Client: Deputy Port Attorney, Port of Oakland
Sample type: Soil

BLANK SPIKE DATA (spiked at 25 ppb)

SPIKE COMPOUNDS	RECOVERY	LIMITS
1,1-Dichloroethene	82 %	80-120
Benzene	96 %	80-120
Toluene	95 %	80-120
Chlorobenzene	97 %	80-120
Trichloroethene	97 %	80-120

MS/MSD SUMMARY SHEET FOR EPA 8010

MATRIX SPIKE DATA (spiked at 25 ppb)

SPIKE COMPOUNDS	RECOVERY	LIMITS
1,1-Dichloroethene	112 %	59-172
Benzene	106 %	66-142
Toluene	109 %	59-139
Chlorobenzene	104 %	60-133
Trichloroethene	107 %	62-137

MATRIX SPIKE DUP DATA (spiked at 25 ppb)

SPIKE COMPOUNDS	RECOVERY	LIMITS
1,1-Dichloroethene	108 %	59-172
Benzene	105 %	66-142
Toluene	103 %	59-139
Chlorobenzene	102 %	60-133
Trichloroethene	102 %	62-137

RPD DATA

SPIKE COMPOUNDS	RPD	LIMITS
1,1-Dichloroethene	4 %	< 22
Benzene	1 %	< 21
Toluene	6 %	< 21
Chlorobenzene	2 %	< 21
Trichloroethene	5 %	< 24

118673

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(510) 420-8686

CHAIN OF CUSTODY RECORD

Turn-around Time: Standard (2 weeks)
Lab: Curtis & Tompkins
BASELINE Contact Person: Julie Pettijohn

Project No.	Project Name and Location
S9171-H0	Seabreeze / 280 6th Avenue Yacht Center / 10 6th Avenue, Oakland

Samplers: (Signature) William K Scott / Julie C. Pettijohn

	Sample ID No. Station	Date	Time	Media	Depth	No. of Containers	TEH as Bunker C	~~(TPH with BTX&E)~~ as Bunker C	Oil & Grease	Motor Oil	PNAs	Title ~~22~~ 26 Metals	Total Lead (TTLC)	Total Copper (TTLC)	TPH as Bunker C	~~[illegible]~~	8240-Volatiles			Remarks/ Composite	Detection Limits
-1	MWSB4, 2.0-2.5	11-22-94	9:20	Soil	2.0-2.5	1							X	X	X					Hold analysis of TPH until further notification (rows -1 to -6)	
-2	MWSB4, 5.0-5.5	11-22-94	9:35	Soil	5.0-5.5	1						X			X						
-3	BD-3, 5.0-5.5	11-22-94	8:59	Soil	5.0-5.5	1						X			X						
-4	BD-3, 2.5-3.0	11-22-94	8:53	Soil	2.5-3.0	1							X	X	X						
-5	MWSB5, 2.0-2.5	11-22-94	13:30	Soil	2.0-2.5	1							X	X	X						
-6	MWSB5, 3.0-3.5	11-22-94	15:30	Soil	3.0-3.5	1						X			X						
-7	MWSB5 grab	11-22-94	13:05	Soil		1	X	X								X	X				
-8	BD-5, 2.5-3.0	11-22-94	16:30	Soil	2.5-3.0								X	X	X					Hold analysis of TPH	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	
Julie C. Pettijohn	11-22-94 5:55 pm			Conditions of Samples Upon Arrival at Laboratory:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks: Send results to: Michele Heffes, Port of Oakland Legal Dept, P.O. Box 2064, 530 Water Street, Oakland, CA 94604-2064. DO NOT SEND RESULTS TO BASELINE
Relinquished by: (Signature)	Date / Time	Received by: (Signature) [signature] C+T	11/22/94 1755	

CCSTRCDE.FM2

ADMIN(AD4)-5/27/92

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(510) 420-8686

CHAIN OF CUSTODY RECORD

Turn-around Time: Standard (2 weeks)
Lab: Curtis & Tompkins
BASELINE Contact Person: Julie Pettijohn

Project No.	Project Name and Location
S9171-H0	Seabreeze Yacht Center / 280 6th Avenue / 10 6th Avenue Oakland

Samplers: (Signature) William K Scott / Julie C. Pettijohn

Analysis 11-25-94 11-22-94

Sample ID No. Station	Date	Time	Media	Depth	No. of Containers	TEH	~~TPH~~ cs Bunker (TPH with BTX&E)	Oil & Grease	Motor Oil	PNAs	Title ~~22~~ 26 Metals	Total Lead (TTLC)	Total Copper (TTLC)	TPH (as Bunker C)	~~[struck out]~~	8240-volatiles		Remarks/ Composite	Detection Limits
MWSB4; 2.0-2.5	11-22-94	9:25	Soil	2.0-2.5	1							X	X	X				Hold analysis of TPH until further notification (rows 1–6)	
MWSB4; 5.0-5.5	11-22-94	9:35	Soil	5.0-5.5	1						X			X					
BD-3 · 5.0-5.5	11-22-94	8:59	Soil	5.0-5.5	1						X			X					
BD-3; 2.5-3.0	11-22-94	8:53	Soil	2.5-3.0	1							X	X	X					
MWSB5, 2.0-2.5	11-22-94	12:30	Soil	2.0-2.5	1							X	X	X					
MWSB5, 3.0-3.5	11-22-94	15:20	Soil	3.0-3.5	1						X			X					
MWSB5 grab	11-22-94	13:05	Soil		1	X	X								[scribbled out]	X			
BD-5; 2.5-3.0	11-22-94	16:30	Soil	2.5-3.0								X	X	X				Hold analysis of TPH	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Conditions of Samples Upon Arrival at Laboratory:
Julie C. Pettijohn	11-22-94 5:55 pm			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks: Send results to: Michele Heffes, Port of Oakland Legal Dept, P.O. Box 2064, 530 Water Street, Oakland, CA 94604-2064
Relinquished by: (Signature)	Date / Time	Received by: (Signature) [signature] C&T	Date / Time 11/22/94 1755	DO NOT SEND RESULTS TO BASELINE

CCSTRCDE.FM2

ADMIN(AD4)-5/27/92

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710. Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Deputy Port Attorney, Port of Oakland
530 Water Street
P.O. Box 2064
Oakland, CA 94604-2064

Date: 22-NOV-94
Lab Job Number: 118501
Project ID: N/A
Location: Seabreeze

Reviewed by: Teresa K Morrison

Reviewed by: Kathy OR

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118501
CLIENT: DEPUTY PORT ATTORNEY, PORT OF OAKLAND
LOCATION: SEABREEZE

DATE SAMPLED: 11/14/94
DATE RECEIVED: 11/14/94
DATE EXTRACTED: 11/16/94
DATE ANALYZED: 11/17/94
DATE REPORTED: 11/22/94

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	TEH as BUNKER C (ug/L)	REPORTING LIMIT (ug/L)
118501-001	MW-SB3	460 *	250
118501-002	MW-SB3A	350 *	250
METHOD BLANK		ND	250

* Samples were quantitated using a Bunker C standard provided by Baseline Environmental. Sample chromatograms do not resemble this standard.

ND = Not detected at or above reporting limit. Reporting limit applies to all analytes.

QA/QC SUMMARY:

RPD, %	5
RECOVERY, %	85

Curtis & Tompkins, Ltd.

SAMPLE ID: MW-SB3A
LAB ID: 118501-001
CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze
MATRIX: Water

DATE SAMPLED: 11/14/94
DATE RECEIVED: 11/14/94
DATE REPORTED: 12/14/94

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	QC Batch	Method	Analysis Date
Copper	10	10	17571	EPA 6010	11/15/94
Lead	ND	3.0	17569	EPA 7421	11/16/94

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

SAMPLE ID: MW-SB3A
LAB ID: 118501-002
CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze
MATRIX: Water

DATE SAMPLED: 11/14/94
DATE RECEIVED: 11/14/94
DATE REPORTED: 12/14/94

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	QC Batch	Method	Analysis Date
Copper	ND	10	17571	EPA 6010	11/15/94
Lead	ND	3.0	17569	EPA 7421	11/16/94

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland DATE REPORTED: 12/14/94
JOB NUMBER: 118501

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS % Recovery	BSD % Recovery	Average Recovery	RPD	QC Batch	Method	Analysis Date
Copper	250	253.3	253	ug/L	101	101	101	0	17571	EPA 6010	11/15/94
Lead	30	24.99	25.03	ug/L	83	83	83	0	17569	EPA 7421	11/16/94

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland DATE REPORTED: 12/14/94
JOB NUMBER: 118501

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	QC Batch	Method	Analysis Date
Copper	ND	10	ug/L	17571	EPA 6010	11/15/94
Lead	ND	3	ug/L	17569	EPA 7421	11/16/94

ND = Not Detected at or above reporting limit

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(510) 420-8686

11800

CHAIN OF CUSTODY RECORD

Turn-around Time: Normal
Lab: Curtis & Tompkins
BASELINE Contact Person: Bill Scott

Project No.	Project Name and Location
SA171-110	Seabreeze

Samplers: (Signature) William K. Scott

Sample ID No. Station	Date	Time	Media	Depth	No. of Containers	TEH	(TPH with BTX&E)	Oil & Grease	Motor Oil	PNAs	Title 22 Metals TTLC Lead + Copper	Bunker C against std + sample previously collected						Remarks/ Composite	Detection Limits
MW-SB3	11-14-94	15:40	Water		2						X	X							
MW-SB3A	11-14-94	15:45	Water		2						X	X							

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Conditions of Samples Upon Arrival at Laboratory:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks: Send Result To Michela Hefling Deputy Port Attorney Port of Oakland 530 Water Street P.O. Box 2064 Oakland CA 94604-2064 Do not Send To BASELINE
Relinquished by: (Signature) William K. Scott	Date / Time 11-14-94 / 1610	Received by: (Signature)	Date / Time 11/14/94 1610	

USTRCDUFM2

ADMIN(AD4)-5/27/92

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Deputy Port Attorney,Port of Oakland
530 Water Street
P.O. Box 2064
Oakland, CA 94604-2064

Date: 07-DEC-94
Lab Job Number: 118785
Project ID: N/A
Location: Seabreeze

Reviewed by: Mary Klosa

Reviewed by: Cynthia E Schlag

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118785
CLIENT: Deputy Port Attorney, Port of Oakland
LOCATION: Seabreeze

DATE SAMPLED: 11/28/94
DATE RECEIVED: 11/28/94
DATE REQUESTED: 11/29/94
DATE EXTRACTED: 12/05/94
DATE ANALYZED: 12/07/94
DATE REPORTED: 12/07/94

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	BASELINE BUNKER "C" (ug/L)	C&T BUNKER "C" (ug/L)	DIESEL RANGE (ug/L)
118785-001	MW-SB1	4,800*	4,800*	1,300*
118785-002	MW-SB4	4,300*	4,300*	1,100*
118785-003	MW-SB2	30,000*	30,000*	12,000*
118785-004	MW-SB5	74,000*	74,000*	34,000*
	METHOD BLANK	ND(50)	ND(50)	ND(50)

ND = Not detected at or above reporting limit. Reporting limit applies to all analytes.

* Sample chromatogram does not resemble hydrocarbon standard.

QA/QC SUMMARY:

RPD, %	6
RECOVERY, %	80

CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze
MATRIX: Water

DATE REPORTED: 12/07/94

Metals Analytical Report

				Copper				
Sample ID	Lab ID	Sample Date	Receive Date	Result (ug/L)	Reporting Limit (ug/L)	QC Batch	Method	Analysis Date
MW-SB1	118723-001	11/28/94	11/28/94	14	10	17860	EPA 6010	12/05/94
MW-SB4	118723-002	11/28/94	11/28/94	78	10	17860	EPA 6010	12/05/94
MW-SB2	118723-003	11/28/94	11/28/94	54	10	17860	EPA 6010	12/05/94
MW-SB5	118723-004	11/28/94	11/28/94	19	10	17860	EPA 6010	12/05/94

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze
MATRIX: Water

DATE REPORTED: 12/07/94

Metals Analytical Report

Lead

Sample ID	Lab ID	Sample Date	Receive Date	Result (ug/L)	Reporting Limit (ug/L)	QC Batch	Method	Analysis Date
MW-SB1	118723-001	11/28/94	11/28/94	ND	3.0	17819	EPA 7421	12/01/94
MW-SB4	118723-002	11/28/94	11/28/94	93	12	17819	EPA 7421	12/01/94
MW-SB2	118723-003	11/28/94	11/28/94	ND	3.0	17819	EPA 7421	12/01/94
MW-SB5	118723-004	11/28/94	11/28/94	ND	3.0	17819	EPA 7421	12/01/94

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland DATE REPORTED: 12/07/94
JOB NUMBER: 118723

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	QC Batch	Method	Analysis Date
Copper	ND	10	ug/L	17860	EPA 6010	12/05/94
Lead	ND	3	ug/L	17819	EPA 7421	12/01/94

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland DATE REPORTED: 12/07/94
JOB NUMBER: 118723

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS % Recovery	BSD % Recovery	Average Recovery	RPD	QC Batch	Method	Analysis Date
Copper	250	260.6	261.4	ug/L	104	105	105	0	17860	EPA 6010	12/05/94
Lead	30	33.2	33.9	ug/L	111	113	112	2	17819	EPA 7421	12/01/94

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118723-001
CLIENT: Deputy Port Attorney,Port of Oak
LOCATION: Seebreeze
SAMPLE ID: MW-SB1

DATE SAMPLED: 11/28/94
DATE RECEIVED: 11/28/94
DATE ANALYZED: 12/05/94
DATE REPORTED: 12/07/94

EPA METHOD 8240: VOLATILE ORGANICS IN WATER

COMPOUND	Result ug/L	Reporting Limit (ug/L)
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Acetone	43	20
Carbon disulfide	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Vinyl acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
trans-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethyl benzene	ND	5
Styrene	ND	5
Total xylenes	ND	5

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	104 %
Toluene-d8	101 %
Bromofluorobenzene	103 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118723-003
CLIENT: Deputy Port Attorney,Port of Oak
LOCATION: Seebreeze
SAMPLE ID: MW-SB2

DATE SAMPLED: 11/28/94
DATE RECEIVED: 11/28/94
DATE ANALYZED: 12/05/94
DATE REPORTED: 12/07/94

EPA METHOD 8240: VOLATILE ORGANICS IN WATER

COMPOUND	Result ug/L	Reporting Limit (ug/L)
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Acetone	33	20
Carbon disulfide	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Vinyl acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
trans-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	Detected (3)	5
Chlorobenzene	ND	5
Ethyl benzene	ND	5
Styrene	ND	5
Total xylenes	ND	5

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	102 %
Toluene-d8	101 %
Bromofluorobenzene	98 %

Curtis &.Tompkins, Ltd.

LABORATORY NUMBER: 118723-002
CLIENT: Deputy Port Attorney,Port of Oak
LOCATION: Seebreeze
SAMPLE ID: MW-SB4

DATE SAMPLED: 11/28/94
DATE RECEIVED: 11/28/94
DATE ANALYZED: 12/05/94
DATE REPORTED: 12/07/94

EPA METHOD 8240: VOLATILE ORGANICS IN WATER

COMPOUND	Result ug/L	Reporting Limit (ug/L)
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Acetone	75	20
Carbon disulfide	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Vinyl acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
trans-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethyl benzene	ND	5
Styrene	ND	5
Total xylenes	ND	5

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	102 %
Toluene-d8	103 %
Bromofluorobenzene	104 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118723-004
CLIENT: Deputy Port Attorney,Port of Oak
LOCATION: Seebreeze
SAMPLE ID: MW-SB5

DATE SAMPLED: 11/28/94
DATE RECEIVED: 11/28/94
DATE ANALYZED: 12/06/94
DATE REPORTED: 12/07/94

EPA METHOD 8240: VOLATILE ORGANICS IN WATER

COMPOUND	Result ug/L	Reporting Limit (ug/L)
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Acetone	130	20
Carbon disulfide	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
Chloroform	Detected (3)	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Vinyl acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
trans-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethyl benzene	ND	5
Styrene	ND	5
Total xylenes	ND	5

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	109 %
Toluene-d8	101 %
Bromofluorobenzene	97 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118723-METHOD BLANK DATE ANALYZED: 12/05/94
CLIENT: Deputy Port Attorney,Port of Oak DATE REPORTED: 12/07/94
LOCATION: Seebreeze
SAMPLE ID: MB

EPA METHOD 8240: VOLATILE ORGANICS IN WATER

COMPOUND	Result ug/L	Reporting Limit (ug/L)
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Acetone	ND	20
Carbon disulfide	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Vinyl acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
trans-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethyl benzene	ND	5
Styrene	ND	5
Total xylenes	ND	5

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	101 %
Toluene-d8	97 %
Bromofluorobenzene	100 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118723-METHOD BLANK DATE ANALYZED: 12/06/94
CLIENT: Deputy Port Attorney,Port of Oak DATE REPORTED: 12/07/94
LOCATION: Seebreeze
SAMPLE ID: MB

EPA METHOD 8240: VOLATILE ORGANICS IN WATER

COMPOUND	Result ug/L	Reporting Limit (ug/L)
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Acetone	ND	20
Carbon disulfide	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Vinyl acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
trans-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethyl benzene	ND	5
Styrene	ND	5
Total xylenes	ND	5

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	108 %
Toluene-d8	98 %
Bromofluorobenzene	97 %

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd

8240 MS/MSD Report

Matrix Sample Number: 118685-002
Lab No: QC79821 QC79822
Matrix: WATER
Batch No: 17882 414339216014 414339224015 414339142005 Analyst: TW

Date Analyzed: 05-DEC-94
Spike File: BL514
Spike Dup File: BL515

	Instrdg	SpikeAmt	% Rec	Limits
MS RESULTS				
1,1-Dichloroethene	55.43	50	111 %	61-145%
Trichloroethene	50.18	50	100 %	71-120%
Benzene	67.33	50	101 %	76-127%
Toluene	151.79	50	91 %	76-125%
Chlorobenzene	49.24	50	99 %	75-130%
Surrogate Recoveries				
1,2-Dichloroethane-d4	50.55	50	101 %	70-121%
Toluene-d8	50.29	50	101 %	84-138%
Bromofluorobenzene	49.46	50	99 %	59-113%
MSD RESULTS				
1,1-Dichloroethene	58.18	50	116 %	61-145%
Trichloroethene	53.22	50	106 %	71-120%
Benzene	70.09	50	106 %	76-127%
Toluene	152.84	50	94 %	76-125%
Chlorobenzene	49.19	50	98 %	75-130%
Surrogate Recoveries				
1,2-Dichloroethane-d4	52.63	50	105 %	70-121%
Toluene-d8	47.11	50	94 %	84-138%
Bromofluorobenzene	51	50	102 %	59-113%
MATRIX RESULTS				
1,1-Dichloroethene	0			
Trichloroethene	0			
Benzene	16.98			
Toluene	106.07			
Chlorobenzene	0			
RPD DATA				
1,1-Dichloroethene	5 %			< 14%
Trichloroethene	6 %			< 14%
Benzene	4 %			< 11%
Toluene	1 %			< 13%
Chlorobenzene	0 %			< 13%

Results within Specifications - PASS

Curtis & Tompkins, Ltd

110423

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(510) 420-8686

CHAIN OF CUSTODY RECORD

HOLD per Julie 11/20/94 JQW

Turn-around Time: Normal
Lab: Curtis & Tompkins
BASELINE Contact Person: Bill Scott

Project No.: S9171-H0
Project Name and Location: Seebreeze
Samplers: (Signature) William K Scott

	Sample ID No. Station	Date	Time	Media	Depth	No. of Containers	TEH + Bunker C	(TPH with BTX&E)	Oil & Grease	Motor Oil	PNAs	Pb + Cu (TTLC) Metals	Total Lead	8240					Remarks/ Composite	Detection Limits
-1	MW-SB1	11-28-94	12:30	Water		5	X					X		X						
-2	MW-SB4	11-28-94	12:10	Water		5	X					X		X						
-3	MW-SB2	11-28-94	12:40	Water		5	X					X		X						
-4	MW-SB5	11-28-94	13:15	Water		5	X					X		X						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	
William K Scott	11/28/94 1440	Troy E. Wimber	11/28/94 1440	Conditions of Samples Upon Arrival at Laboratory:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks: SEND RESULTS TO: Michele Heffs, Port of Oakland Legal Dept. P.O. Box 2064, 530 Water Street, Oakland, CA 94604-2064. Do not send results to BASELINE
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	

* For Bunker C, use Laboratory Bunker C + Bunker C previously collected by Baseline.
Hold Bunker C Analysis until further notice

CCSTRCDE.FM2

ADMIN(AD4)-5/27/92

118785 & 118785

CHAIN OF CUSTODY RECORD

[B]ASELINE
[51]00 Hollis Street, Suite D
[E]meryville, CA 94608
[(5]10) 420-8686

Turn-around Time: Normal
Lab: Curtis & Tompkins
BASELINE Contact Person: Bill Scott

Project No.	Project Name and Location
S9171-HO	Seebreeze

Samplers: (Signature) William K Scott

Sample ID No. Station	Date	Time	Media	Depth	No. of Containers	TEH + (Bunker C + diesel)	(TPH with BTX&E)	Oil & Grease	Motor Oil	PNAs	Pb + Cu (TTLC) ~~Title 22~~ Metals	Total Lead	8240						Remarks/ Composite	Detection Limits
MW-SB1	11-28-94	12:30	Water		5	X					X		X						Run TEH as	
MW-SB4	11-28-94	12:10	Water		5	X					X		X						Bunker C	
MW-SB2	11-28-94	12:40	Water		5	X					X		X						+ diesel	
MW-SB5	11-28-94	13:15	Water		5	X					X		X						11/29/94	
																			– JLP	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Conditions of Samples Upon Arrival at Laboratory:
William K Scott	11/28/94 1440	Troy E. Winker	11/28/94 1440	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks: SEND RESULTS TO: Michele Heffes, Port of Oakland Legal Dept. P.O. Box 2064, 530 Water Street, OAKLAND, CA 94604-2[...]
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Do not Send Results to BASELINE

→ * For Bunker C, use Laboratory Bunker C + Bunker C previously collected by Baseline. ←

CSTRCDFLM2 ADMIN(AD4):5/27/92

11/29/94 17:35 ☎ 510 420 1707 BASELINE P.05

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Baseline Environmental
5900 Hollis Street
Suite D
Emeryville, CA 94608

Date: 08-DEC-94
Lab Job Number: 118918
Project ID: S9171
Location: Seabreeze Yacht Oakland

Reviewed by: _____

Reviewed by: _____

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118918
CLIENT: BASELINE ENVIRONMENTAL
PROJECT ID: S9171-HO
LOCATION: Seabreeze Yacht Oakland

DATE SAMPLED: 12/07/94
DATE RECEIVED: 12/07/94
DATE ANALYZED: 12/08/94
DATE REPORTED: 12/08/94

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
118918-001	MW-SB3	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
	METHOD BLANK	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	2
RECOVERY, %	95

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118918
CLIENT: BASELINE ENVIRONMENTAL
PROJECT ID: S9171-HO
LOCATION: Seabreeze Yacht Oakland

DATE SAMPLED: 12/07/94
DATE RECEIVED: 12/07/94
DATE EXTRACTED: 12/07/94
DATE ANALYZED: 12/08/94
DATE REPORTED: 12/08/94

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	BASELINE BUNKER "C" (ug/L)	C&T BUNKER "C" (ug/L)	DIESEL RANGE (ug/L)
118918-001	MW-SB3	2,300*	2,500*	1,100*
	METHOD BLANK	ND(50)	ND(50)	ND(50)

Note: Extracts were produced using a separatory funnel extraction. The sample was filtered prior to extraction.

ND = Not detected at or above reporting limit. Reporting limit applies to all analytes.

* Sample chromatogram does not match hydrocarbon standard.

QA/QC SUMMARY:

RPD, %	27
RECOVERY, %	50

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118918
CLIENT: BASELINE ENVIRONMENTAL
PROJECT ID: S9171-HO
LOCATION: Seabreeze Yacht Oakland

DATE SAMPLED: 12/07/94
DATE RECEIVED: 12/07/94
DATE EXTRACTED: 12/07/94
DATE ANALYZED: 12/07/94
DATE REPORTED: 12/08/94

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	BASELINE BUNKER "C" (ug/L)	C&T BUNKER "C" (ug/L)	DIESEL RANGE (ug/L)
118918-001	MW-SB3	3,000*	3,000*	1,400*
	METHOD BLANK	ND(50)	ND(50)	ND(50)

Note: Extracts were produced using a liquid-liquid extraction.
The sample was filtered prior to extraction.

ND = Not detected at or above reporting limit. Reporting limit applies to all analytes.

* Sample chromatogram does not match hydrocarbon standard.

QA/QC SUMMARY:

RPD, %	<1
RECOVERY, %	87

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(510) 420-8686

CHAIN OF CUSTODY RECORD

11891B

Turn-around Time: 24-hr
Lab: Curtis + Tompkins
BASELINE Contact Person: Yane

Project No.	Project Name and Location
59171	Seabreeze - Oakland

Samplers: (Signature)

	Sample ID No. Station	Date	Time	Media	Depth	No. of Containers	TEH	(TPH with BTX&E)	Oil & Grease	Motor Oil	PNAs	Title 22 Metals	Total Lead	Bunker C - Baseline	Bunker C - Lab	Diesel	Gasoline	BTXE	Remarks/ Composite	Detection Limits
1	MW-SB3	12/7/94	11:45	water		6								X	X	X	X	X		

SPECIAL INSTRUCTIONS
contact John

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Conditions of Samples Upon Arrival at Laboratory:
				Cold
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks: TPH analyses by • Liquid-Liquid extraction • separator funnel Filter samples Send Results to Baseline
William K Scott	12-7-94/12:06		12/7/94 1206	

CCSTRCDE.FM2

ADMIN(AD4)-5/27/92

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118450
CLIENT: DEPUTY PORT ATTORNEY,PORT OF OAKLAND
PROJECT ID: S9171
LOCATION: Seebreeze Yacht Oakland

DATE SAMPLED: 11/10/94
DATE RECEIVED: 11/10/94
DATE EXTRACTED: 11/15/94
DATE ANALYZED: 12/03,04/94
DATE REPORTED: 12/06/94

Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	SAMPLE ID	DIESEL RANGE (mg/Kg)	BASELINE BUNKER "C" (mg/Kg)	C&T BUNKER "C" (mg/Kg)
118450-001	BD-1:2.0-2.5	2*	230*	210*
118450-002	BD-1:6.0-6.5	6*	410*	370*
118450-003	MW-SB-3:2.0-2.5	66*	4,500*	4,000*
118450-004	MW-SB-3:4.5-5.0	11*	340*	300*
118450-007	BD-2:4.0-4.5	ND(20)	2,500*	2,300*
118450-008	BD-2:2.0-2.5	40*	1,800*	1,600*
118450-010	MW-SB4A	11,000*	55,000	49,000
118450-012	BD-4:0-0.4	ND(10)	1,900*	1,600*
	METHOD BLANK	ND(1)	ND(30)	ND(30)

ND = Not detected at or above reporting limit; reporting limit applies to all analytes.

* Sample chromatogram does not resemble hydrocarbon standard pattern.

QA/QC SUMMARY

RPD,%	9
RECOVERY, %	77

CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze Yacht Oakland
MATRIX: Soil

DATE REPORTED: 12/14/94

Metals Analytical Report

				Copper				
Sample ID	Lab ID	Sample Date	Receive Date	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
BD-1:2.0-2.5	118450-001	11/10/94	11/10/94	7.6	0.50	17514	EPA 6010	11/14/94
BD-1:6.0-6.5	118450-002	11/10/94	11/10/94	15	0.49	17514	EPA 6010	11/14/94
MW-SB-3:2.0-2.5	118450-003	11/10/94	11/10/94	50	0.50	17514	EPA 6010	11/14/94
MW-SB-3:4.5-5.0	118450-004	11/10/94	11/10/94	53	0.49	17514	EPA 6010	11/14/94
BD-2:4.0-4.5	118450-007	11/10/94	11/10/94	20	0.50	17514	EPA 6010	11/14/94
BD-2:2.0-2.5	118450-008	11/10/94	11/10/94	18	0.50	17514	EPA 6010	11/14/94

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze Yacht Oakland
MATRIX: Soil

DATE REPORTED: 12/14/94

Metals Analytical Report

				Lead				
Sample ID	Lab ID	Sample Date	Receive Date	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
BD-1:2.0-2.5	118450-001	11/10/94	11/10/94	ND	5.0	17514	EPA 7420	11/14/94
BD-1:6.0-6.5	118450-002	11/10/94	11/10/94	190	4.9	17514	EPA 7420	11/14/94
MW-SB-3:2.0-2.5	118450-003	11/10/94	11/10/94	190	5.0	17514	EPA 7420	11/14/94
MW-SB-3:4.5-5.0	118450-004	11/10/94	11/10/94	310	4.9	17514	EPA 7420	11/14/94
BD-2:4.0-4.5	118450-007	11/10/94	11/10/94	130	5.0	17514	EPA 7420	11/14/94
BD-2:2.0-2.5	118450-008	11/10/94	11/10/94	230	5.0	17514	EPA 7420	11/14/94

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

SAMPLE ID: MW-SB4A
LAB ID: 118450-010
CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze Yacht Oakland
MATRIX: Soil

DATE SAMPLED: 11/10/94
DATE RECEIVED: 11/10/94
DATE REPORTED: 12/14/94

California TITLE 26 Metals

Compound	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
Antimony	ND	6.0	17533	EPA 6010	11/15/94
Arsenic	13	2.5	17534	EPA 7060	11/15/94
Barium	440	0.50	17533	EPA 6010	11/15/94
Beryllium	1.0	0.10	17533	EPA 6010	11/15/94
Cadmium	ND	0.50	17533	EPA 6010	11/15/94
Chromium (total)	29	1.0	17533	EPA 6010	11/15/94
Cobalt	8.1	2.0	17533	EPA 6010	11/15/94
Copper	13	1.0	17533	EPA 6010	11/15/94
Lead	6.2	1.5	17534	EPA 7421	11/15/94
Mercury	ND	0.091	17532	EPA 7471	11/14/94
Molybdenum	ND	2.0	17533	EPA 6010	11/15/94
Nickel	34	1.0	17533	EPA 6010	11/15/94
Selenium	ND	2.5	17534	EPA 7740	11/15/94
Silver	ND	1.0	17533	EPA 6010	11/15/94
Thallium	ND	2.5	17534	EPA 7841	11/15/94
Vanadium	30	1.0	17533	EPA 6010	11/15/94
Zinc	30	2.0	17533	EPA 6010	11/15/94

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

SAMPLE ID: BD-4:0-0.4
LAB ID: 118450-012
CLIENT: Deputy Port Attorney,Port of Oakland
LOCATION: Seabreeze Yacht Oakland
MATRIX: Soil

DATE SAMPLED: 11/10/94
DATE RECEIVED: 11/10/94
DATE REPORTED: 12/14/94

California TITLE 26 Metals

Compound	Result (mg/Kg)	Reporting Limit (mg/Kg)	QC Batch	Method	Analysis Date
Antimony	ND	5.9	17533	EPA 6010	11/15/94
Arsenic	11	2.5	17534	EPA 7060	11/15/94
Barium	360	0.49	17533	EPA 6010	11/15/94
Beryllium	0.63	0.099	17533	EPA 6010	11/15/94
Cadmium	0.77	0.49	17533	EPA 6010	11/15/94
Chromium (total)	31	0.99	17533	EPA 6010	11/15/94
Cobalt	8.2	2.0	17533	EPA 6010	11/15/94
Copper	53	0.99	17533	EPA 6010	11/15/94
Lead	150	4.9	17533	EPA 7420	11/15/94
Mercury	0.29	0.087	17532	EPA 7471	11/14/94
Molybdenum	ND	2.0	17533	EPA 6010	11/15/94
Nickel	39	0.99	17533	EPA 6010	11/15/94
Selenium	ND	2.5	17534	EPA 7740	11/15/94
Silver	ND	0.99	17533	EPA 6010	11/15/94
Thallium	ND	2.5	17534	EPA 7841	11/15/94
Vanadium	40	0.99	17533	EPA 6010	11/15/94
Zinc	300	2.0	17533	EPA 6010	11/15/94

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland DATE REPORTED: 12/14/94
JOB NUMBER: 118450

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS % Recovery	BSD % Recovery	Average Recovery	RPD	QC Batch	Method	Analysis Date
Antimony	500	443.7	512.8	ug/L	89	103	96	14	17533	EPA 6010	11/14/94
Arsenic	40	444.6	434.2	ug/L	111	109	110	2	17534	EPA 7060	11/15/94
Barium	2000	1915	1903	ug/L	96	95	96	1	17533	EPA 6010	11/14/94
Beryllium	50	46.7	47	ug/L	93	94	94	1	17533	EPA 6010	11/14/94
Cadmium	50	48.2	48.8	ug/L	96	98	97	1	17533	EPA 6010	11/14/94
Chromium (total)	200	201.4	199.6	ug/L	101	100	101	1	17533	EPA 6010	11/14/94
Cobalt	500	492.4	483.7	ug/L	99	97	98	2	17533	EPA 6010	11/14/94
Copper	250	218.6	225	ug/L	87	90	89	3	17514	EPA 6010	11/14/94
Copper	250	239.6	238.3	ug/L	96	95	96	1	17533	EPA 6010	11/14/94
Lead	500	540	540	ug/L	108	108	108	0	17514	EPA 7420	11/14/94
Lead	500	440	440	ug/L	88	88	88	0	17533	EPA 7420	11/15/94
Lead	30	306.4	298.5	ug/L	102	100	101	3	17534	EPA 7421	11/15/94
Mercury	4	3.904	3.862	ug/L	98	97	98	1	17532	EPA 7470	11/14/94
Molybdenum	400	380.7	384.3	ug/L	95	96	96	1	17533	EPA 6010	11/14/94
Nickel	500	488.1	482.3	ug/L	98	97	98	1	17533	EPA 6010	11/14/94
Selenium	30	316.8	298	ug/L	106	99	103	6	17534	EPA 7740	11/15/94
Silver	50	47.2	45.8	ug/L	94	92	93	3	17533	EPA 6010	11/14/94
Thallium	40	391	392.9	ug/L	98	98	98	1	17534	EPA 7841	11/15/94
Vanadium	500	475.4	473	ug/L	95	95	95	1	17533	EPA 6010	11/14/94
Zinc	500	473.8	473	ug/L	95	95	95	0	17533	EPA 6010	11/14/94

Curtis & Tompkins, Ltd.

CLIENT: Deputy Port Attorney,Port of Oakland DATE REPORTED: 12/14/94
JOB NUMBER: 118450

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	QC Batch	Method	Analysis Date
Antimony	ND	3	mg/Kg	17533	EPA 6010	11/14/94
Arsenic	ND	2.5	mg/Kg	17534	EPA 7060	11/15/94
Barium	ND	0.5	mg/Kg	17533	EPA 6010	11/14/94
Beryllium	ND	0.1	mg/Kg	17533	EPA 6010	11/14/94
Cadmium	ND	0.25	mg/Kg	17533	EPA 6010	11/14/94
Chromium (total)	ND	0.5	mg/Kg	17533	EPA 6010	11/14/94
Cobalt	ND	1	mg/Kg	17533	EPA 6010	11/14/94
Copper	ND	0.5	mg/Kg	17514	EPA 6010	11/14/94
Copper	ND	0.5	mg/Kg	17533	EPA 6010	11/14/94
Lead	ND	5	mg/Kg	17514	EPA 7420	11/14/94
Lead	ND	5	mg/Kg	17533	EPA 7420	11/15/94
Lead	ND	1.5	mg/Kg	17534	EPA 7421	11/15/94
Mercury	ND	0.1	mg/Kg	17532	EPA 7471	11/14/94
Molybdenum	ND	1	mg/Kg	17533	EPA 6010	11/14/94
Nickel	ND	1	mg/Kg	17533	EPA 6010	11/14/94
Selenium	ND	2.5	mg/Kg	17534	EPA 7740	11/15/94
Silver	ND	0.5	mg/Kg	17533	EPA 6010	11/14/94
Thallium	ND	2.5	mg/Kg	17534	EPA 7841	11/15/94
Vanadium	ND	0.5	mg/Kg	17533	EPA 6010	11/14/94
Zinc	ND	1	mg/Kg	17533	EPA 6010	11/14/94

ND = Not Detected at or above reporting limit

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118450
CLIENT: DEPUTY PORT ATTORNEY, PORT OF OAKLAND
PROJECT ID: S9171
LOCATION: Seabreeze Yacht Oakland

DATE SAMPLED: 11/10/94
DATE RECEIVED: 11/10/94
DATE ANALYZED: 11/16/94
DATE REPORTED: 11/22/94

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ANALYSIS: CRESOTE
ANALYSIS METHOD: EPA 8270

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LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
118450-001	BD-1:2.0-2.5	ND	ug/Kg	2,000
118450-002	BD-1:6.0-6.5	ND	ug/Kg	2,000
	METHOD BLANK	ND	ug/Kg	2,000

ND = Not detected at or above reporting limit.

Curtis & Tompkins, Ltd

8270 Laboratory Control Sample Report

Curtis & Tompkins, Ltd.

Lab No: QC78040
Date Analyzed: 16-NOV-94
Matrix: SOIL
Batch No: 17540 514320115005
Dilution Factor : 1

LCS Datafile: 05_LCS_17540.d

Extraction Chemist: KEG
MS Operator: CW
Prep Final Vol : 1

Compound	Instrdg	SpikeAmt	% Rec	Limits
Phenol	95	150	63 %	26-90%
2-Chlorophenol	89	150	59 %	25-102%
4-Chloro-3-methylphenol	116	150	78 %	26-103%
4-Nitrophenol	108	150	72 %	11-114%
Pentachlorophenol	81	150	54 %	17-109%
1,4-Dichlorobenzene	49	100	49 %	28-104%
N-Nitroso-di-n-propylamine	70	100	70 %	41-126%
1,2,4-Trichlorobenzene	55	100	55 %	38-107%
Acenaphthene	49	100	49 %	31-137%
2,4-Dinitrotoluene	56	100	56 %	28-89%
Pyrene	66	100	66 %	35-142%
Surrogate Recoveries				
2-Fluorophenol	98	150	66 %	25-121%
Phenol-d5	117	150	78 %	24-113%
2,4,6-Tribromophenol	103	150	69 %	19-122%
Nitrobenzene-d5	76	100	76 %	23-120%
2-Fluorobiphenyl	60	100	60 %	30-115%
Terphenyl-d14	77	100	77 %	18-137%
2-Chlorophenol-d4	100	150	67 %	20-130%
1,2-Dichlorobenzene-d4	60	100	60 %	20-130%

Results within Specifications - PASS
Calculations based on On-Column amounts(ngs)

Curtis & Tompkins, Ltd

8240 Laboratory Control Sample Report

Curtis & Tompkins, Ltd

Lab No: QC77865 LCS Datafile: CKB04
Date Analyzed: 11-NOV-94
Matrix: SOIL Operator: JON
Batch No: 17506 424315140004

Compound	Instrdg	SpikeAmt	% Rec	Limits
1,1-Dichloroethene	46.7658	50	94 %	59-172%
Trichloroethene	43.2371	50	86 %	62-137%
Benzene	44.1796	50	88 %	66-142%
Toluene	45.0365	50	90 %	59-139%
Chlorobenzene	42.6967	50	85 %	60-133%
Surrogate Recoveries				
1,2-Dichloroethane-d4	50.5923	50	101 %	70-121%
Toluene-d8	50.6603	50	101 %	84-138%
Bromofluorobenzene	49.3068	50	99 %	59-113%

Results within Specifications - PASS

Note: Instrument C and D surrogates based on LCS data

11/15

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118450-012
CLIENT: DEPUTY PORT ATTORNEY, PORT OF OAK
PROJECT ID: S9171
LOCATION: Seebreeze Yacht Oakland
SAMPLE ID: BD-4:0-0.4

DATE SAMPLED: 11/10/94
DATE RECEIVED: 11/10/94
DATE ANALYZED: 11/12/94
DATE REPORTED: 11/21/94

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES

COMPOUND	Result (ug/Kg)	Reporting Limit (ug/Kg)
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Acetone	ND	20
Carbon disulfide	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Vinyl acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
trans-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethyl benzene	ND	5
Styrene	ND	5
Total xylenes	ND	5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	105 %
Toluene-d8	120 %
Bromofluorobenzene	73 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118450-METHOD BLANK DATE ANALYZED: 11/12/94
CLIENT: DEPUTY PORT ATTORNEY, PORT OF OAK DATE REPORTED: 11/21/94
PROJECT ID: S9171
LOCATION: Seebreeze Yacht Oakland
SAMPLE ID: MB

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES

COMPOUND	Result (ug/Kg)	Reporting Limit (ug/Kg)
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	20
Acetone	ND	20
Carbon disulfide	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
Chloroform	ND	5
Freon 113	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
Vinyl acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
trans-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethyl benzene	ND	5
Styrene	ND	5
Total xylenes	ND	5

ND = Not detected at or above reporting limit.
QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	100 %
Toluene-d8	96 %
Bromofluorobenzene	93 %

P.19 4301707 TO PORT OF OAKLAND (LEGAL) FROM 18:14 ...-1994

SELINE
00 Hollis Street, Suite D
eryville, CA 94608
(0) 420-8686

118150

CHAIN OF CUSTODY RECORD

Turn-around Time: Normal
Lab: Curtis & Tompkins
BASELINE Contact Person:

Project No.	Project Name and Location
S9171	Seabreeze, Port of Oakland

Samplers: (Signature) William K Scott / Julie C. Pettijohn

Sample ID No. Station	Date	Time	Media	Depth	No. of Containers	TEH	(TPH with BTX&E)	Oil & Grease	Motor Oil	PNAs	Title 26 Metals	Total Lead (TTLC)	TPH as Bunker C	Creosote (8270)	Total Copper (TTLC)	Solvents (8240)			Remarks/ Composite	Detection Limits
BD-1; 2.0-2.5	11-10-94	9:51	soil	2.0-2.5	1							X	X	X	X					
BD-1; 6.0-6.5	11-10-94	10:00	soil	6.0-6.5	1							X	X	X	X					
MW-SB-3; 2.0-2.5	11-10-94	11:05	soil	2.0-2.5	1							X	X		X					
MW-SB-3; 4.5-5.0	11-10-94	11:10	soil	4.0-4.5	1							X	X		X					
BD-2A; 2.0-2.5	11-10-94	12:10	soil	2.0-2.5	1							X	X		X				Hold	
BD-2A; 4.5-5.0	11-10-94	12:15	soil	4.5-5.0	1							X	X		X				Hold	
BD-2; 4.0-4.5	11-10-94	13:30	soil	4.0-4.5	1							X	X		X					
BD-2; 2.0-2.5	11-10-94	13:10	soil	2.0-2.5	1							X	X		X					
BD-1A; 4.0-4.5	11-10-94	16:00	soil	4.0-4.5	1							X	X	X	X				Hold	
MW-SB4A	11-10-94	14:56	soil	5.0-5.5	1	X					X		X							
BD-1A; 2.0-2.5	11-10-94	15:55	soil	2.0-2.5	1							X	X	X	X				Hold	
BD-4; 0-0.4	11-10-94	16:25	soil	0.1-0.4	1	X					X					X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Conditions of Samples Upon Arrival at Laboratory:
Julie C. Pettijohn	11/10/94 5:20 pm	[signature]	11/10/94 5:20 pm	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks:
				Please Send results To Michelle Heffes Deputy Port Attorney Port of Oakland 530 Water Street P.O Box 2064 Oakland CA 94604-2064
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	
				Do not Send To Baseline

CIRCUIT-M2 ~~After analysis of BD-1A + BD-2A hold samples.~~ W

* For Bunker C use laboratory Bunker C + Bunker C sample previously collected by Baseline.

ADMIN/ADM-5/27/92

BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(510) 420-8686

CHAIN OF CUSTODY RECORD

Turn-around Time: Normal
Lab: Curtis & Tompkins
BASELINE Contact Person:

Project No.: S9171

Project Name and Location: Seabreeze, Port of Oakland

Samplers: (Signature) William K Scott / Julie C. Pettijohn

Sample ID No. Station	Date	Time	Media	Depth	No. of Containers	TEH	(TPH with BTX&E)	Oil & Grease	Motor Oil	PNAs	Title 26 Metals	Total Lead (TTLC)	TPH as Bunker C	Creosote (8270)	Total Copper (TTLC)	Solvents			Remarks/ Composite	Detection Limits
BD-1; 2.0-2.5	11-10-94	9:51	soil	2.0-2.5	1							X	X	X	X					
BD-1; 6.0-6.5	11-10-94	10:00	soil	6.0-6.5	1							X	X	X	X					
MW-SB-3; 2.0-2.5	11-10-94	11:05	soil	2.0-2.5	1							X	X		X					
MW-SB-3; 4.5-5.0	11-10-94	11:10	soil	4.0-4.5	1							X	X		X					
BD-2A; 2.0-2.5	11-10-94	12:10	soil	2.0-2.5	1							X	X		X					
BD-2A; 4.5-5.0	11-10-94	12:15	soil	4.5-5.0	1							X	X		X					
BD-2; 4.0-4.5	11-10-94	13:30	soil	4.0-4.5	1							X	X		X					
BD-2; 2.0-2.5	11-10-94	13:10	soil	2.0-2.5	1							X	X		X					
BD-1A; 4.0-4.5	11-10-94	16:00	soil	4.0-4.5	1							X	X		X					
MW-SB4A	11-10-94	14:56	soil	5.0-5.5	1							X	X	X	X					
													X							
BD-1A; 2.0-2.5	11-10-94	15:55	soil	2.0-2.5	1							X	X	X	X					
BD-4; 0-0.4	11-10-94	16:25	soil	0.0-0.4	1	X					X					X				

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Conditions of Samples Upon Arrival at Laboratory:
Julie C. Pettijohn	11/10/94 5:20 pm	[signature]	11/10/94 5:20 pm	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks: Please send results to Michelle Heffes, Deputy Port Attorney, Port of Oakland, 530 Water Street, P.O. Box 2064, Oakland CA 94604-2064
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Do not send to Baseline

ASNiCOC-FM2

After analysis of BD-1A + BD-2A hold samples.
* For Bunker C, use laboratory Bunker C + Bunker C sample previously collected by BASELINE.

ADMIN(AD4):5/27/93