

Ro 2461 (SL)

PORT OF OAKLAND

March 6, 2003

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

**Subject: Annual Groundwater Monitoring Report
Former Seabreeze Yacht Center, Oakland**

Dear Mr. Chan:

Please find enclosed for your review the Annual Groundwater Monitoring Report, dated February 27, 2003 for the former Seabreeze Yacht Center, 280 Sixth Avenue, Oakland.

If you have any questions concerning the enclosed document, please contact me at 510-627-1184.

Sincerely,



Douglas P. Hernan
Associate Port Environmental Scientist

Cc w/encl: Betty Graham, RWQCB
Peter Langtree, Lowney Associates

Cc w/o encl. Barbara Szudy, CRE
Susanne von Rosenberg, GAIA

C:\win\mydocs\projects\seabreeze\annual GW monitoring report Feb 2003

February 27, 2003



consulting, inc.

2101 Webster Street, 12th Floor Oakland, CA 94612
tel (510) 663-4257 fax (510) 663-4141
www.gaiainc.com

Mr. Douglas Herman
Port of Oakland
Environmental Health & Safety Compliance
530 Water Street
Oakland, CA 94607

**Subject: Annual Groundwater Monitoring Report, February 2003
Former Seabreeze Yacht Center, 280 6th Avenue, Oakland, CA.**

Dear Doug:

This report documents the annual groundwater sampling activities performed in February 2003 at the former Seabreeze Yacht Center located at 280 6th Avenue in Oakland, California (Figure 1). Annual groundwater monitoring at the site has been conducted since 1998 during the first quarter of each year. Prior to 1998, groundwater samples were collected quarterly. Baseline Environmental Consulting (Baseline) last sampled the wells (MW-SB2, MW-SB3, MW-SB4, and MW-SB5) in January 2002. Since then, monitoring well MW-SB2 has been destroyed. GAIA Consulting, Inc. sampled monitoring wells MW-SB3, MW-SB4, and MW-SB5 on February 4, 2003. All wells were analyzed for total petroleum hydrocarbons as diesel (TPH-d) with silica gel cleanup. Previously, the monitoring wells were also analyzed for MTBE. MTBE, which was first analyzed in 2000, had never been detected during the previous three rounds of sampling. Because this constituent had never been detected and TPH-g was not of concern on this site, GAIA recommended that MTBE no longer be analyzed in the wells. The Port requested approval from the Alameda County Health Care Service Agency, Department of Environmental Health (County) to cease testing for MTBE at the site. The County gave verbal approval to the Port prior to the 2003 sampling event; therefore, the monitoring wells were only analyzed for TPH-d. Field activities, analytical results, and the measured groundwater flow direction for this site are discussed below.

FIELD ACTIVITIES

On February 3, 2003, monitoring wells MW-SB3 through MW-SB5 were purged of approximately three well casing volumes. Stable parameter readings were obtained from all three wells. Prior to purging each well, the water level in the well was measured and recorded to the nearest one-tenth of a foot. Water levels were measured using an electric sounder. The electric sounder was decontaminated after each use by washing in an Alconox solution and rinsing with deionized water. No sheen or free product was observed in any of the wells.

Monitoring wells MW-SB4 and MW-SB3 were purged using a peristaltic pump. New disposable polyethylene tubing was lowered inside each well. Electrical conductivity, pH, and temperature were monitored and recorded during purging from approximately every half gallon of water removed. The color and odor of the purged water was also noted for each well.

Monitoring well MW-SB5 was purged using a disposal bailer. The power supply for the peristaltic pump became depleted after the second well had been purged, and no alternate power supply was available at the site. Monitoring well MW-SB5 was monitored for the same parameters as were MW-SB3 and MW-SB4 during purging. Color and odor were also recorded. Well development forms for each well documenting sampling activities are included in Appendix A.

After the three monitoring wells were purged, depth to groundwater was measured for each well. The water levels in wells MW-SB3 and MW-SB4 did not recover to 80 percent of their original water levels measured. To give the wells more time to recharge, GAIA collected water samples from all three wells on the following day (February 4, 2003). All samples were collected within 24-hours of the wells being purged. All samples were collected using a disposable bailer for each well. Monitoring wells MW-SB3 and MW-SB5 had still not recovered to 80 percent of its original water level. However, there was enough water in the well for GAIA to collect a sample.

Groundwater samples for each well were decanted into amber bottles, which were then placed on ice. The groundwater samples were refrigerated overnight and submitted to McCampbell Analytical, Inc. to be analyzed for TPH-d using EPA Method 8015M with silica gel clean-up.

Decontamination water and purged water from monitoring wells MW-SB3, MW-SB4 and MW-SB5 were placed in a 55-gallon drum. The drum was labeled and stored on-site for future off-site disposal by the Port.

ANALYTICAL RESULTS

TPH-d was detected in the groundwater sample collected from monitoring well MW-SB3, at a concentration 0.077mg/L. The amount detected is considered insignificant. TPH-d was not detected in groundwater samples from monitoring wells MW-SB4 and MW-SB5. The most current analytical results, as well as previous analytical results are summarized in Table 1. The laboratory report is presented in Appendix B.

GROUNDWATER FLOW DIRECTION

Recently collected and historical groundwater data are summarized in Table 2. The groundwater elevation data collected on February 3, 2003 were used to develop a groundwater flow direction. The groundwater flow direction is approximately toward the west-southwest at a gradient of 0.014 ft/ft. The recent groundwater flow direction is shown on Figure 2.

CONCLUSION

Based on the recent and previous groundwater monitoring results, GAIA recommends abandoning these monitoring wells. With the exception of the most recent detection of TPH-d at MW-SB3 (0.077mg/L), concentrations of TPH-d have been non-detect in all three wells during the last six rounds of sampling at the site.

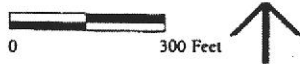
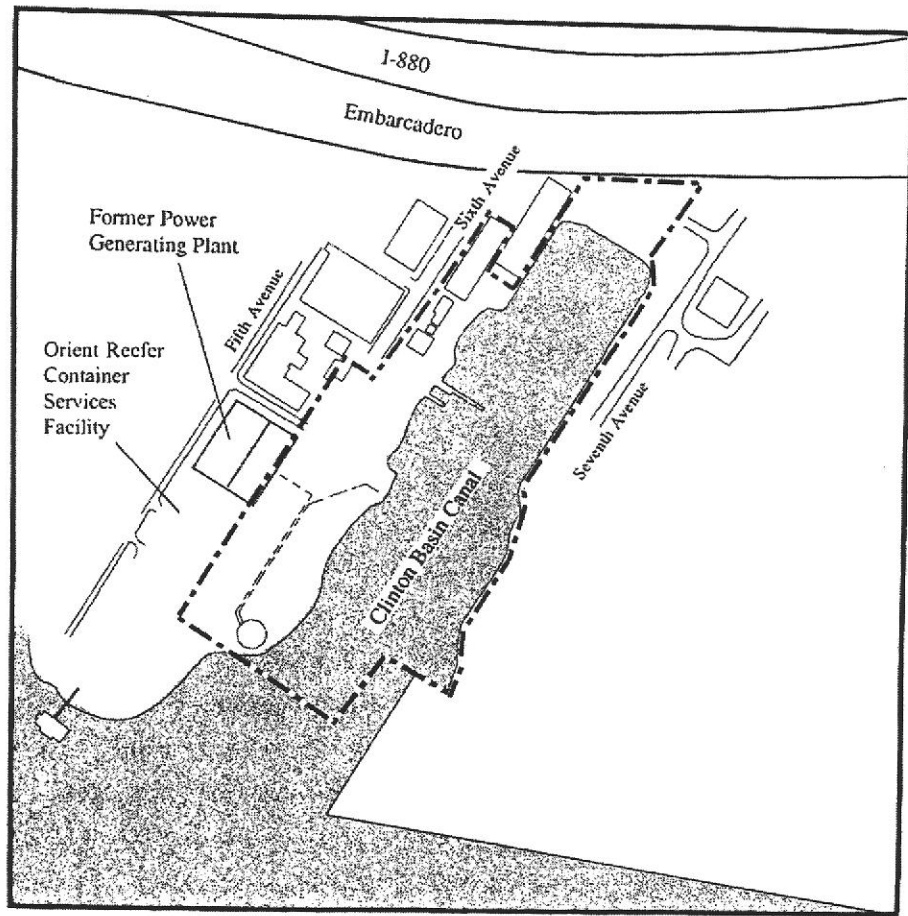
Please contact me if you have any questions or require further information.

Cordially,



Melba E. Policicchio
Environmental Scientist

Former Seabreeze Yacht Center Oakland, CA



Legend

--- Seabreeze Yacht Center

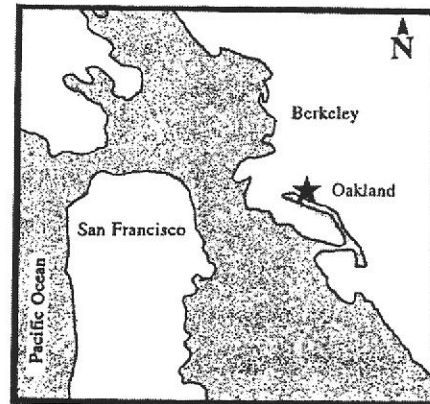
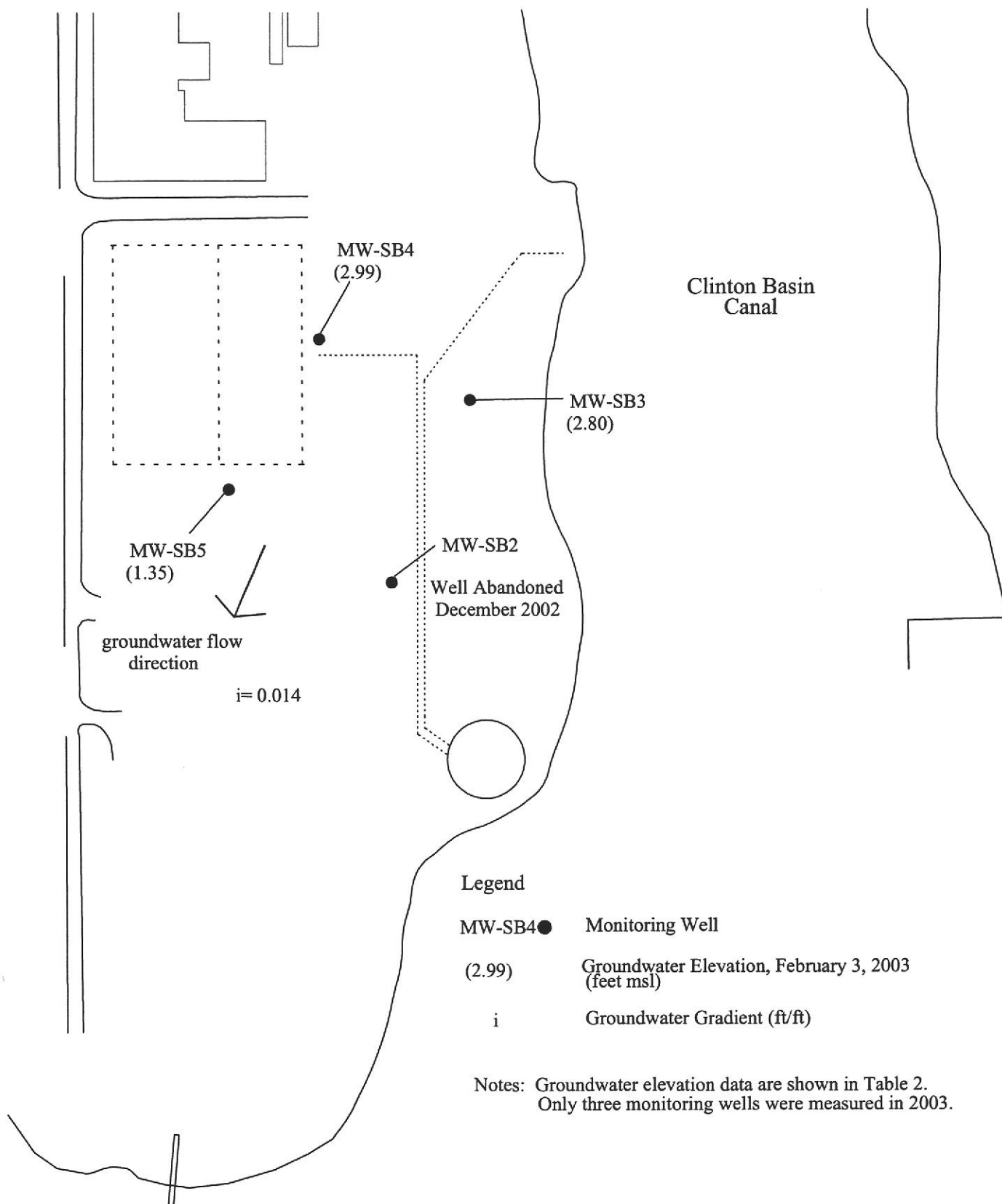


FIGURE 1
Site Location

MONITORING WELL LOCATIONS AND GROUNDWATER FLOW DIRECTION, FEBRUARY 2003



**Seabreeze Yacht Center
Sixth Avenue
Oakland, California**

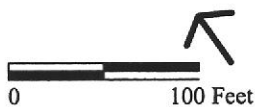


FIGURE 2

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Former Seabreeze Yacht Center, Oakland, CA

Sample ID	Sample Date	Metals (mg/L) ¹		Total Petroleum Hydrocarbons (mg/L) ²			
		Lead	Copper	Diesel	Bunker C	Motor Oil	MTBE
MW-SB2	4/19/1991	<0.07	0.0481	--	--	--	--
	7/9/1991	<0.06 ⁸	<0.02 ⁹	--	--	--	--
	1/10/1994	<0.10 ⁸	<0.02 ⁹	--	--	--	--
	1/26/1994	0.00489	<0.014 ⁹	--	--	--	--
	3/6/1995	--	--	16.0 ^{4,5}	28.0 ^{4,5}	4.9 ^{4,5}	--
	7/1/1996	<0.003	0.055	<0.05	<0.3	--	--
	9/16/9610	<0.003 ¹¹	<0.005 ¹²	<0.05	<0.5	<0.25	--
	12/11/1996	0.00855 ¹¹	0.00354 ¹²	0.16 ¹⁴	<0.5	<0.25	--
	3/14/1997	0.00314 ¹¹	<0.003 ¹²	0.061	<0.5	<0.25	--
	6/20/1997	--	--	0.15	--	--	--
	1/28/1998	--	--	<0.05 ¹⁶	--	--	--
	1/6/1999	--	--	<0.048	--	--	--
	02/04/00 ¹⁹	--	--	--	--	--	--
	1/19/2001	--	--	<0.05	--	--	<0.005
	1/24/2002	--	--	<0.05	--	--	<0.005
2/4/2003	Well Abandoned (December 2002)						
MW-SB2A	3/6/1995	--	--	18.0 ^{4,5,6}	33.0 ^{4,5,6}	<25.0 ^{4,5,6}	--
(MW-SB2 duplicate)	7/1/1996	<0.003	0.065	0.17 ⁷	<0.3 ⁵	--	--
	9/16/1996	<0.003 ¹¹	<0.005 ¹²	0.17	<0.3 ⁵	<0.25	--
MW-SB3	3/6/1995	--	--	2.3 ^{4,5}	5.8 ^{4,5}	1.5 ^{4,5}	--
	7/1/1996	0.0036	<0.01	<0.049	<0.3	--	--
	9/16/1996	<0.003 ¹¹	<0.005 ¹²	<0.05 ⁴	<0.5	0.28 ⁴	--
	12/11/1996	<0.003 ¹¹	<0.003 ¹²	0.19 ¹⁴	<0.5	<0.25	--
	3/14/1997	<0.003 ¹¹	0.00529 ¹²	0.085 ¹⁵	<0.5	<0.25	--
	6/20/1997	--	--	0.15	--	--	--
	1/28/1998	--	--	<0.05 ¹⁶	--	--	--
	1/6/1999	--	--	<0.049 ¹⁷	--	--	--
	2/4/2000	--	--	<0.05	--	--	<0.002
	1/19/2001	--	--	<0.05	--	--	<0.005
	1/24/2002	--	--	<0.05	--	--	<0.005
	2/4/2003	--	--	0.077 ^b	--	--	--
MW-SB3A	6/20/1997	--	--	0.11	--	--	--
(MW-SB3 duplicate)	1/28/1998	--	--	<0.05 ¹⁶	--	--	--
	1/6/1999	--	--	0.13 ^{7,18}	--	--	--
	2/4/2000	--	--	<0.05	--	--	<0.002

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Former Seabreeze Yacht Center, Oakland, CA

Sample ID	Sample Date	Metals (mg/L) ¹		Total Petroleum Hydrocarbons (mg/L) ²			
		Lead	Copper	Diesel	Bunker C	Motor Oil	MTBE
MW-SB4	3/3/1995	--	--	1.4 ^{4,5}	3.0 ⁴	0.66 ⁴	--
	7/1/1996	0.014	0.013	<0.049	<0.3	--	--
	9/16/1996	<0.003 ¹¹	<0.005 ¹²	<0.05	<0.5	<0.25	--
	12/11/1996	0.00465 ¹¹	0.00674 ¹²	0.12 ¹⁴	<0.5	<0.25	--
	3/14/1997	0.00519 ¹¹	<0.003 ¹²	<0.05	<0.5	<0.25	--
	6/20/1997	--	--	0.11	--	--	--
	1/28/1998	--	--	<0.05 ¹⁶	--	--	--
	1/6/1999	--	--	<0.049	--	--	--
	2/4/2000	--	--	<0.05	--	--	<0.002
	1/19/2001	--	--	<0.05	--	--	<0.005
	1/24/2002	--	--	<0.05	--	--	<0.005
	2/4/2003	--	--	<0.05	--	--	--
MW-SB5	3/6/1995	--	--	15.0 ^{4,5}	34.0 ^{4,5}	8.1 ^{4,5}	--
	7/1/1996	0.0031	0.012	<0.049	<0.3	--	--
	9/16/1996	<0.003 ¹¹	<0.005 ¹²	0.14 ^{4,13}	<0.5	<0.25	--
	12/11/1996	<0.00344 ¹¹	<0.003 ¹²	0.16 ¹⁴	<0.5	<0.25	--
	3/14/1997	<0.003 ¹¹	0.00318 ¹²	0.29	<0.5	<0.25	--
	6/20/1997	--	--	0.27	--	--	--
	1/28/1998	--	--	<0.05 ¹⁶	--	--	--
	1/6/1999	--	--	<0.05	--	--	--
	2/4/2000	--	--	<0.05	--	--	<0.002
	1/19/2001	--	--	<0.05	--	--	<0.005
	1/24/2002	--	--	<0.05	--	--	<0.005
	2/4/2003	--	--	<0.05	--	--	--
MW-SB5A	3/6/1995	--	--	15.0 ^{4,5,6}	31.0 ^{4,5,6}	6.9 ^{4,5,6}	--
(MW-SB5 duplicate)	12/11/1996	<0.003 ¹¹	<0.003 ¹²	0.081 ¹⁴	<0.5	<0.25	--
	3/14/1997	<0.003 ¹¹	<0.003 ¹²	0.22	<0.5	<0.25	--
	1/24/2002	--	--	<0.05	--	--	<0.005

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
Former Seabreeze Yacht Center, Oakland, CA

Sample ID	Sample Date	Metals (mg/L) ¹		Total Petroleum Hydrocarbons (mg/L) ²			
		Lead	Copper	Diesel	Bunker C	Motor Oil	MTBE

Notes:

<0.05 = analyte not identified above the given laboratory reporting limit

-- = not analyzed

b. Diesel range compounds are significant, no recognizable pattern

1. Analytical Method EPA 6010A, unless otherwise noted.

2. Analytical Method California DOHS, LUFT Manual (EPA 8015M).

Samples were subjected to silica gel cleanup (EPA Method 3630) prior to analysis, unless otherwise noted.

3. Analytical Method EPA 8020 or 8021B.

4. Sample chromatogram does not resemble hydrocarbon standard.

5. Samples were not subjected to silica gel cleanup prior to analysis.

6. Duplicate sample centrifuged prior to TEPH analyses.

7. Sample exhibited fuel pattern which did not resemble standard.

8. Analyzed using EPA Method 7420.

9. Analyzed using EPA Method 7210.

10. Sample also analyzed for mercury, arsenic, cadmium, chromium, iron, nickel, silver, and zinc. All metals were reported below the corresponding laboratory reporting limits except for iron, which was identified at 0.13 mg/L.

11. Analyzed using EPA method 7421. Sample filtered by the laboratory prior to analysis.

12. Analyzed using EPA Method 7211. Sample filtered by the laboratory prior to analysis.

13. Laboratory indicated that miscellaneous peaks were present in the diesel range.

14. The laboratory indicated that the analyte was also found in the corresponding method blank at a concentration of 0.063 mg/L as well as in the sample, verifying laboratory contamination. The sample chromatographic pattern matched that of the laboratory contaminant reported in the method blank. Therefore, the reported concentration is a false positive concentration.

15. The laboratory indicated that the chromatographic pattern of the sample matches a known laboratory contaminant. Based on telephone correspondence with Mr. Ron Chu of PACE, the laboratory contaminant may be due to contamination of the silica gel used to clean up the sample prior to analysis.

16. The corresponding method blank sample (laboratory sample) contained 0.067 mg/L of a hydrocarbon reported to be heavier than diesel. The laboratory indicated that the method blank sample result should not affect the data quality since the collected samples did not contain diesel above the laboratory reporting limit.

17. The corresponding duplicate sample, MW-SB3A, was reported to contain diesel above the laboratory reporting limit.

18. The laboratory indicated that the sample chromatogram contained heavier hydrocarbons than the diesel standard.

TABLE 2
GROUNDWATER ELEVATIONS
Former Seabreeze Yacht Center, Oakland, CA

Well	Date	Time	Surface Elevation (msl)	TOC Elevation (msl)	Depth to Groundwater (feet)	Groundwater Elevation (msl)
MW-SB2 ³	4/19/1991	11:09	6.2	7.18	5.38	1.8
	7/9/1991	11:04			3.7	3.48
	1/10/1994	12:31			3.08	4.1
	1/26/1994	13:40			1.63	5.5
	11/14/1994	7:30			4.8	2.38
	11/14/1994	11:05			4.76	2.42
	11/14/1994	14:14			4.73	2.45
	11/28/1994	9:00			2.85	4.33
	3/3/1995	8:50			2.84	4.34
	6/28/1996	7:40			3.76	3.42
	9/16/1996	9:01			4.3	2.88
	12/11/1996	11:15			2	5.18
	3/12/1997	9:02			3.48	3.7
	6/18/1997	9:10			3.94	3.24
	1/26/1998	10:02			1.65	5.53
	1/4/1999	8:11			3.3	3.88 ⁵
	2/1/2000	10:20			-- ⁶	-- ⁶
	1/17/2001	9:20		8.93 ⁷	3.91	5.02
	1/22/2002	9:30			4.67	4.26
Well Abandoned in January 2003						
MW-SB3 ³	11/14/1994	7:25	6.0	8.10	8.23	-0.13
	11/14/1994	11:00			8.14	-0.04
	11/14/1994	14:12			8.07	0.03
	11/28/1994	8:53			6.32	1.78
	12/6/1994	8:37			6.15	1.95
	3/3/1995	8:40			6.78	1.32
	6/28/1996	7:35			5.46	2.64
	9/16/1996	8:55			5.78	2.32
	12/11/1996	10:32			5.31	2.79
	3/12/1997	9:05			6.03	2.07
	6/18/1997	9:12			5.5	2.6
	1/26/1998	9:20			5.12	2.98
	1/4/1999	8:20			5.97	2.13
	2/1/2000	9:50			5.81	2.29
	1/17/2001	9:15			6.04	2.06
	1/22/2002	9:00			5.33	2.77
2/3/2003	12:55			5.3	2.80	

TABLE 2
GROUNDWATER ELEVATIONS
Former Seabreeze Yacht Center, Oakland, CA

Well	Date	Time	Surface Elevation (msl)	TOC Elevation (msl)	Depth to Groundwater (feet)	Groundwater Elevation (msl)
------	------	------	-------------------------------	---------------------------	-----------------------------------	--------------------------------

-- = No data

msl = feet above mean sea level

TOC = top of casing

1. Well survey conducted by Bates & Bailey 2/8/95.
2. Groundwater elevation measured by SOMA; all other elevations measured by BASELINE.
3. Well survey conducted by Bates & Bailey 11/18/94.
4. Well survey conducted by Bates & Bailey 11/28/94.
5. During groundwater sampling activities on 1/4/99, the aboveground well head protection steel outer casing and inner polyvinyl chloride casing of this monitoring well appeared to have been damaged (outer and inner casings were in a slightly slanted position); therefore, groundwater elevation measurements may be skewed.
6. During groundwater sampling activities on 1 February 2000, monitoring well MW-SB2 was not found.
7. New top of casing elevation establishing in April 2000 after the well was repaired; the well survey is included in Attachment A of the January 2001 annual groundwater monitoring report.

Appendix A
Well Development Forms

START TIME: Feb 3, 2003
12:55 PM

WELL DEVELOPMENT FORM

Project Name: Seabreeze

Well Number: MW-SB3

Job No.: _____

Well Casing Diameter: 2 inches

Developed By: Craig

Date: 2-2-03

TOC Elevation: 8.10

Weather: Sunny

Depth to Casing Bottom (below TOC) 10.96 feet

Depth to Groundwater (below TOC) 5.3 feet

Feet of Water in Well 5.66 feet

Casing Volume (feet of water x Casing DIA² x 0.0408) 0.92 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Development Method Micro-pulsing peristaltic pump

2.76 = 3x well casing

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0.5 gal</u>	<u>7.50</u>	<u>18.5</u>	<u><3,999</u>		<u>clear/slight yellow</u>
<u>1 gal</u>	<u>7.08</u>	<u>18.6</u>	<u><3,999</u>		<u>clear/light yellow</u>
<u>1.5 gal</u>	<u>7.03</u>	<u>18.1</u>	<u><3,999</u>		<u>yellowish</u>
<u>2.0 gal</u>	<u>6.99</u>	<u>18.2</u>	<u><3,999</u>		<u>yellowish</u>
<u>2.5 gal</u>	<u>6.91</u>	<u>19.2</u>	<u><3,999</u>		
<u>3.0 gal</u>	<u>6.94</u>	<u>18.3</u>	<u><3,999</u>		
<u>3.2 gal</u>	<u>6.83</u>	<u>18.5</u>	<u><3,999</u>		

Total Gallons Removed 3.3 gal gallons

Depth to Groundwater After Development (below TOC) 8.8 @ 1:55 PM feet
7.4 ft. @ 1:19 PM prior to sampling
Feb 4, 2003 date

		PLATE
JOB NUMBER	DATE	APPROVED

Feb 3, 2003

11:30

WELL DEVELOPMENT FORM

Project Name: Seabrook MW Monitoring

Well Number: MW-SB4

Job No.: _____

Well Casing Diameter: 2" inches

Developed By: CRAIG

Date: 2-2-03

TOC Elevation: 6.39

Weather: Sunny

Depth to Casing Bottom (below TOC) 11.55 feet

Depth to Groundwater (below TOC) 3.4 feet

Feet of Water in Well 8.15 feet

Casing Volume (feet of water x Casing DIA² x 0.0408) 1.33 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Development Method micro purger w/ peristaltic pump

3x casing = 3.99

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Salinity S%	Comments
<u>0.5 gal</u>	<u>6.63</u>	<u>18.0</u>	<u><3,999</u>		<u>clear</u>
<u>1 gal</u>	<u>6.94</u>	<u>17.4</u>	<u><3,999</u>		<u>yellowish</u>
<u>1.5 gal</u>	<u>7.13</u>	<u>16.6</u>	<u><3,999</u>		<u>yellowish color</u>
<u>2.0 gal</u>	<u>7.32</u>	<u>15.7</u>	<u><3,999</u>		<u>yellowish</u>
<u>2.5 gal</u>	<u>7.32</u>	<u>16.3</u>	<u><3,999</u>		<u>yellowish</u>
<u>3.0 gal</u>	<u>7.23</u>	<u>18.1</u>	<u><3,999</u>		<u>clear/yellowish</u>
<u>3.5 gal</u>	<u>7.25</u>	<u>18.2</u>	<u><3,999</u>		<u>clear, slight yellow</u>
<u>4.0 gal</u>	<u>7.15</u>	<u>17.4</u>	<u><3,999</u>		<u>clear</u>

Total Gallons Removed 4.2 gallons

Depth to Groundwater After Development (below TOC) 8.02 feet

Depth to GW prior to sampling 3:05 ft 12:30 PM 3.5' @ 3:30 PM
1:05 time 24-03 date

		PLATE
JOB NUMBER	DATE	APPROVED

Feb 3, 2003

WELL DEVELOPMENT FORM

Start Time: 3:40

Project Name: Seabreeze

Well Number: MW-5B5

Job No.:

Well Casing Diameter: 2 inches

Developed By: Craig

Date: 2-2-03

TOC Elevation: 6.30

Weather: sunny

Depth to Casing Bottom (below TOC) 14.05 feet

Depth to Groundwater (below TOC) 4.95 feet

Feet of Water in Well 9.7 feet

Casing Volume (feet of water x Casing DIA² x 0.0408) 1.58 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Development Method disposable filter

~ 4.75 gallons = 3x casing

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C)	Conductivity (micromhos/cm)	Salinity S%	Comments
1 gal	7.06	16.9	<3,999		yellow
2 gal	6.97	16.9	<3,999		yellow, murky
2.5 gal	6.96	16.9	<3,999		yellow
3.0 gal	6.95	17.5	<3,999		yellow
4.0 gal	6.88	17.9	<3,999		yellow slight odor
4.5 gal	6.92	17.7	<3,999		yellow, slight odor
5.0 gal	6.97	17.7	<3,999		

Total Gallons Removed 5.2 @ 4:00 PM gallons

Depth to Groundwater After Development (below TOC) 13.5 @ 4:05 PM feet

Depth to Groundwater Prior to Sampling 10.25 ft. 1:30 time (data) 2-4-03

JOB NUMBER		DATE	APPROVED	PLATE

Appendix B
Laboratory Reports



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

INVOICE for ANALYTICAL SERVICES

COPY

Invoice N°: 0302039

Project Name: #180.040; Seabreeze Monitoring
PO Number: N/A
Date Sampled: 2/4/03
Date Received: 2/5/03

INV DATE: *February 10, 2003*
Print DATE: *February 10, 2003*

Report To: Melba Policicchio
GAIA Consulting, Inc.
2101 Webster St., 12th Floor
Oakland, CA 94612

Invoice To: Doug Herman
Port Of Oakland
P.O. Box 28413
Oakland, CA 94604

Description	TAT	Matrix	Qty	Mult	Unit Price	Test Total
Tests:						
TPH(d/k/mo) with Silica Gel Clean-Up	5 days	Water	3	1	\$45.00	\$135.00
SubTotal:						\$135.00

Invoice Total: \$135.00

Please include the invoice number with your check and remit to Accounts Receivable at the letter head address.

Terms are net 30 days from the invoice date. After this period 1.5% interest per month will be charged. Overdue accounts are responsible for all legal and collection fees. If you have any questions about billing, please contact Accounts Receivable at McC Campbell Analytical.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

GAIA Consulting, Inc. 2101 Webster St., 12th Floor Oakland, CA 94612	Client Project ID: #180.040; Seabreeze Monitoring	Date Sampled: 02/04/03
		Date Received: 02/05/03
	Client Contact: Melba Policicchio	Date Reported: 02/10/03
	Client P.O.:	Date Completed: 02/10/03

WorkOrder: 0302039

February 10, 2003

Dear Melba:

Enclosed are:

- 1). the results of 3 analyzed samples from your #180.040; Seabreeze Monitoring project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions please contact me. McC Campbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager



QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0302039

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 5806		Spiked Sample ID: N/A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	103	106	3.21	70	130
%SS:	N/A	100	N/A	N/A	N/A	99.8	101	0.970	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

McCannella Lab
 110 2nd Ave. South #D7
 PACHECO, CA 94553

CHAIN OF CUSTODY FORM

Curtis & Tompkins, Ltd.
 Analytical Laboratory Since 1878
 2923 Firth Street
 Berkeley, CA 94710
 (510) 486-0900 Phone
 (510) 486-0532 Fax

Bill To: Port of Oakland
 (Doug Herman)

C&T
 LOGIN # _____

Analyses

Project No: 180.040
 Project Name: Seabreeze Monitoring
 Project P.O.:
 Turnaround Time: Standard

Sampler: Craig Zeff
 Report To: Melba Policiocchio
 Company: GAIA Consulting Inc
 Telephone: 510-463-4257
 Fax: 510-463-4141

TPH-diesel w/ silical Polcleaning (8015)

Laboratory Number	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative					Field Notes
			Soil	Water	Waste		HCL	H ₂ SO ₄	HNO ₃	ICE	Refr. (Indicate)	
+ MW-SB3	2-4-03			✓		1 Amber					/	14:00
+ MW-SB4	2-4-03			✓		1 Amber					/	13:45
+ MW-SB5	2-4-03			✓		1 Amber					/	14:10
All samples were kept refrigerated												
ICPC: <input checked="" type="checkbox"/> GOOD CONDITION <input checked="" type="checkbox"/> HEAD SPACE ABSENT <input checked="" type="checkbox"/> DECONTAMINATED IN LAB												
PRESERVATION: <input checked="" type="checkbox"/> APPROPRIATE <input checked="" type="checkbox"/> CONTAINERS <input checked="" type="checkbox"/> PERFORMED IN LAB												

Notes:
 email for melba
 melba@gaiainc.com

RELINQUISHED BY:		RECEIVED BY:	
<i>[Signature]</i>	2-5-03 12:15	<i>[Signature]</i>	2-5-03 12:15
<i>[Signature]</i>	2-5-03 14:50	<i>[Signature]</i>	2-5-03 14:50

Signature

McC Campbell Analytical Inc.

CHAIN-OF-CUSTODY RECORD



110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

WorkOrder: 0302039

Client:

GAIA Consulting, Inc.
2101 Webster St., 12th Floor
Oakland, CA 94612

TEL:
FAX:
ProjectNo: #180.040; Seabreeze Monitoring
PO:

Date Received: 2/5/03
Date Printed: 2/5/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests				
					SW8015C				
0302039-001	MW-sb3	Water	2/4/03 2:00:00 PM		A				
0302039-002	MW-SB4	Water	2/4/03 1:45:00 PM		A				
0302039-003	MW-SB5	Water	2/4/03 2:10:00 PM		A				

Prepared by: Melissa Valles

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.