PORT OF OAKLAND

R02445

March 17, 2003

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

Dear Mr. Chan:

Please find enclosed for your review the "Groundwater Monitoring and Sampling Report, Gray & Reynolds Development Site, 1275 Embarcadero, Oakland." This report represents the 3rd Quarter of sampling at the subject site. As provided in Table 1 and 2 of the report, TPH-G, D, MO, BTEX, and PAHs show stabilized or decreasing concentrations in MW-4A and MW-5. The next groundwater sampling event is scheduled for May 2003.

As discussed previously, if after the May event contaminants of concern continue to show stabilized or decreasing concentrations in site groundwater, the Port will request formal site closure and abandon wells MW-4a and MW-5. If you have any questions, please do not hesitate to contact me at (510) 627-1184.

Sincerely,

Douglas P. Herman
Associate Port Environmental Scientist

Encl.: Groundwater Monitoring and Sampling Report

Cc w/encl: Tom Bender
Barbara Szudy
Betty Graham, RWQCB

Cc w/o encl: Chris Alger

C:\mydocs\projects\grey&reynolds\transmittal of 3rd quarter GW monitoring

Iris - Cambria
Environmental, JV

GROUNDWATER MONITORING AND SAMPLING REPORT

Gray & Reynolds Development Site
Embarcadero Cove
1275 Embarcadero
Oakland, California

February 28, 2003

Prepared for:

Port of Oakland
EH&SC Department
530 Water Street
Oakland, California 94607

Prepared by:

Iris-Cambria Environmental, J.V.

1615 Broadway, Suite 1003
Oakland, California 94612

5900 Hollis Street, Suite A
Emeryville, California 94608

Robert Marinai, R.G.
Senior Project Geologist

Christopher S. Alger, C.E.G., C.Hg
Principal Engineering Geologist

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INTRODUCTION

Iris–Cambria Environmental, J.V. (Iris–Cambria), has prepared this *Groundwater Monitoring and Sampling Report* for the property located at 1275 Embarcadero, Oakland, California (Site) on behalf of the Port of Oakland (Port) to facilitate redevelopment of the property by Gray & Reynolds Properties, Inc. (Gray & Reynolds) for commercial use. This document describes the groundwater monitoring activities and presents results of groundwater sampling that occurred during February 2003.

SITE DESCRIPTION

The Site is located at 1275 Embarcadero, Oakland, California (Figure 1). Current Site surface features include a parking lot and a vacant former restaurant (Figure 2). The Port owns the Site, and Gray & Reynolds is proposing it for commercial redevelopment.

Past investigations at the Site are described in the following documents: *Draft Review of Existing Site Conditions and Environmental Risk Evaluation* (Henshaw Associates, Inc., 2001 a), *Soil and Groundwater Sampling and Analysis Workplan* (Henshaw Associates, Inc., 2001 b), *Soil and Groundwater Investigation and Workplan* (Baseline Environmental Consulting, August 13, 2001), *Site Investigation and Screening-Level Risk Assessment Report* (Iris-Cambria, 2002a), and *Monitoring Well Installation, Groundwater Monitoring, and Soil Excavation Report* (Iris-Cambria, 2002b).

GROUNDWATER MONITORING

Groundwater monitoring of monitoring wells MW-4a and MW-5 was conducted on February 20 and 26, 2003. Cambria's *Standard Field Procedures for Monitoring Wells* is included in Appendix A. Well sampling forms are presented in Appendix B. The results of the field investigation are presented below.

Groundwater Analytical Results

Groundwater was sampled from wells MW-4a and MW-5 on February 20 and 26, 2003. Samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline (TPHg), as diesel (TPHd), and as motor oil (TPHmo); benzene, toluene, ethylbenzene, and total xylenes (BTEX); methyl tertiary butyl ether (MTBE); and polynuclear aromatic hydrocarbons (PAHs). Analytical results are presented in Figure 3 and summarized in Tables 1 and 2. The laboratory analytical reports are presented in Appendix C.

Benzene was the only analyte detected in the groundwater sample collected from well MW-4a at a concentration of 1.6 micrograms per liter (µg/L). No analytes were detected in the groundwater sample collected from well MW-5.

Site Hydrogeology

During the February 20, 2003 monitoring event, groundwater at the Site was encountered at depths ranging from 4.44 to 4.60 ft bgs. Due to the limited number of monitoring points (two), a groundwater gradient could not be calculated from the data.

CONCLUSIONS AND RECOMMENDATIONS

Iris-Cambria offers the following conclusions and recommendations in summary of activities conducted at the Site:

- MW-4a showed a significant decrease in benzene concentration from 5.7 µg/L to 1.6 µg/L since the previous quarter.
- No other compounds of concern were detected in Site monitoring wells.

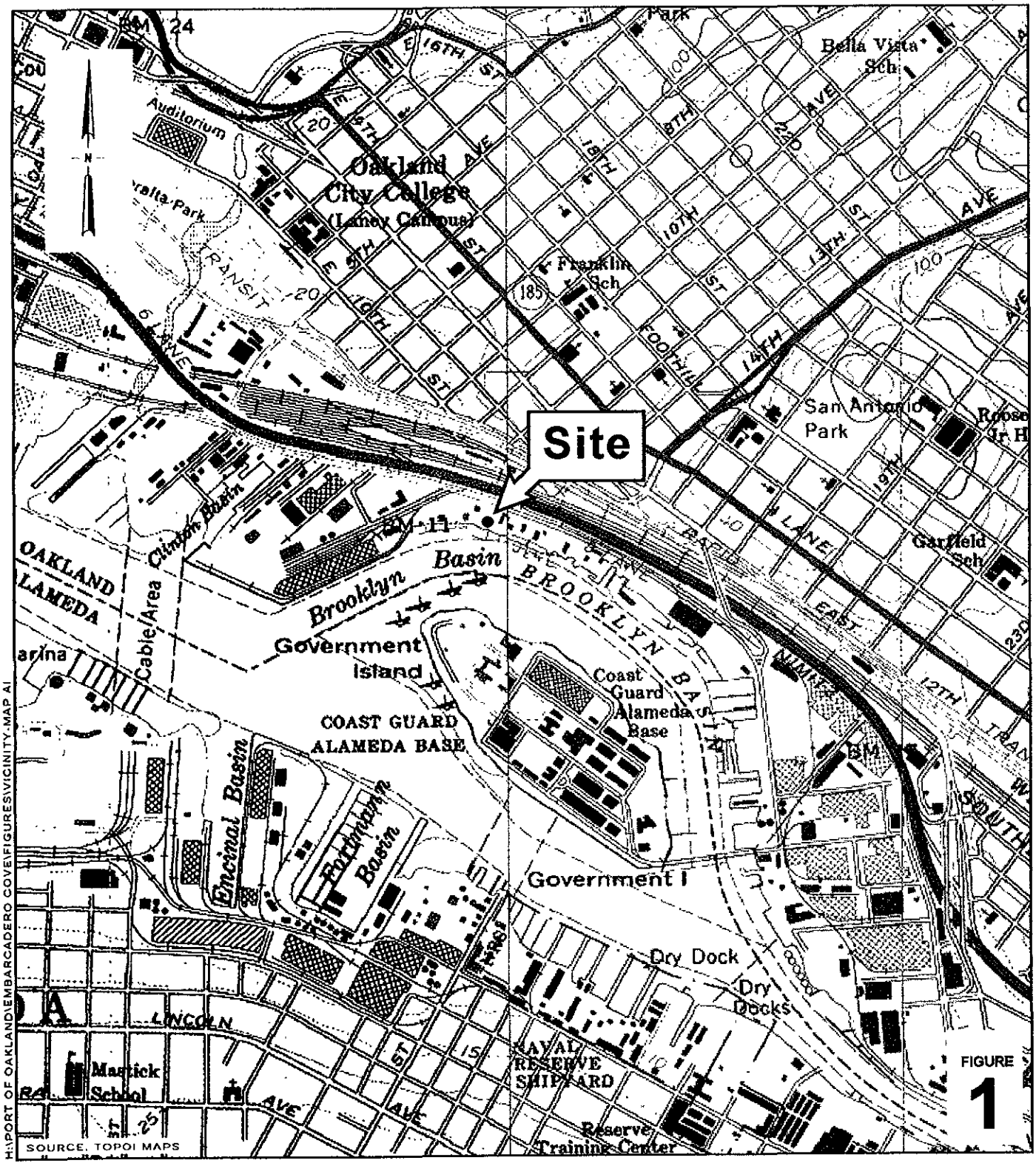
After two rounds of sampling, the benzene concentrations observed in offsite well MW-4a have remained below the San Francisco Bay Regional Water Quality Control Board's (SFRWQCB) Risk Based Screening Levels (RBSLs) of 46 µg/L for non-drinking water resources.

We believe it is appropriate to consider the shallow groundwater emanating from the Site to be classified as a non-drinking water resource since the water likely has a high total dissolved solids content due to the Site proximity to the Bay. In addition, the Site is located in a commercial area with major sewer and storm water conveyance piping buried within a few feet of the monitoring wells. The likelihood is very low that shallow groundwater in this area will ever be used as a drinking water source.

Site groundwater chemical concentrations are also below the RBSL for protection of the Aquatic Life set at 46 µg/L for benzene. Considering that shallow groundwater in the vicinity of the Site flows in a direction away from the Bay, the application of the Aquatic Life RBSL is likely not appropriate.

Based on these conditions, and the developing trend of decreasing and low concentrations of benzene in groundwater at the Site boundary, we respectfully request that the County now consider issuance of a no-further-action letter for the Site.

01/07/02



H:\PORT OF OAKLAND\EMBARCADERO COVE\FIGURES\VICINITY-MAP AI

FIGURE 1

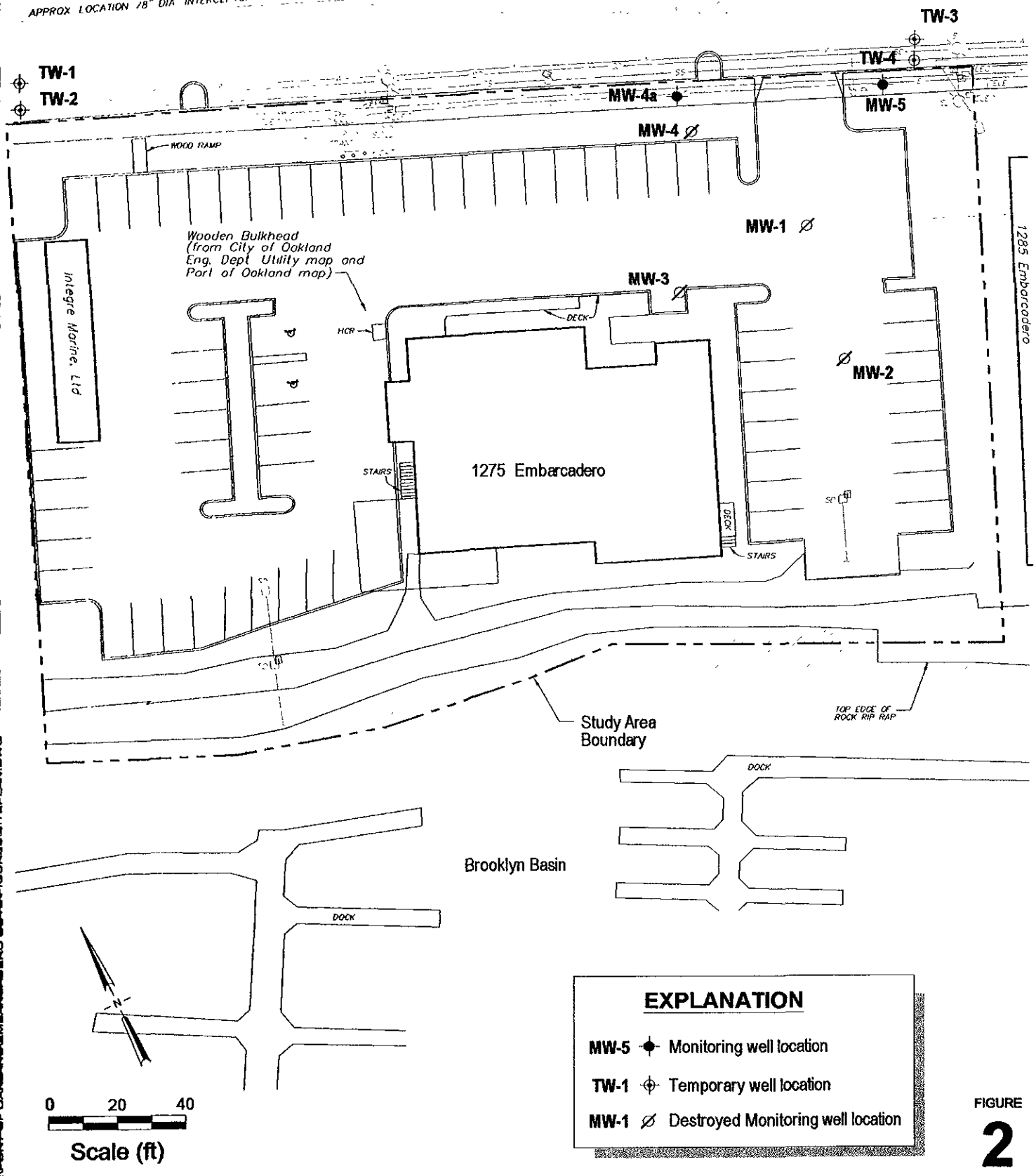
0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

Port of Oakland
1275 Embarcadero
Embarcadero Cove Project
Oakland, California

Iris - Cambria Environmental, JV

Vicinity Map



FIGURE

2

Port of Oakland

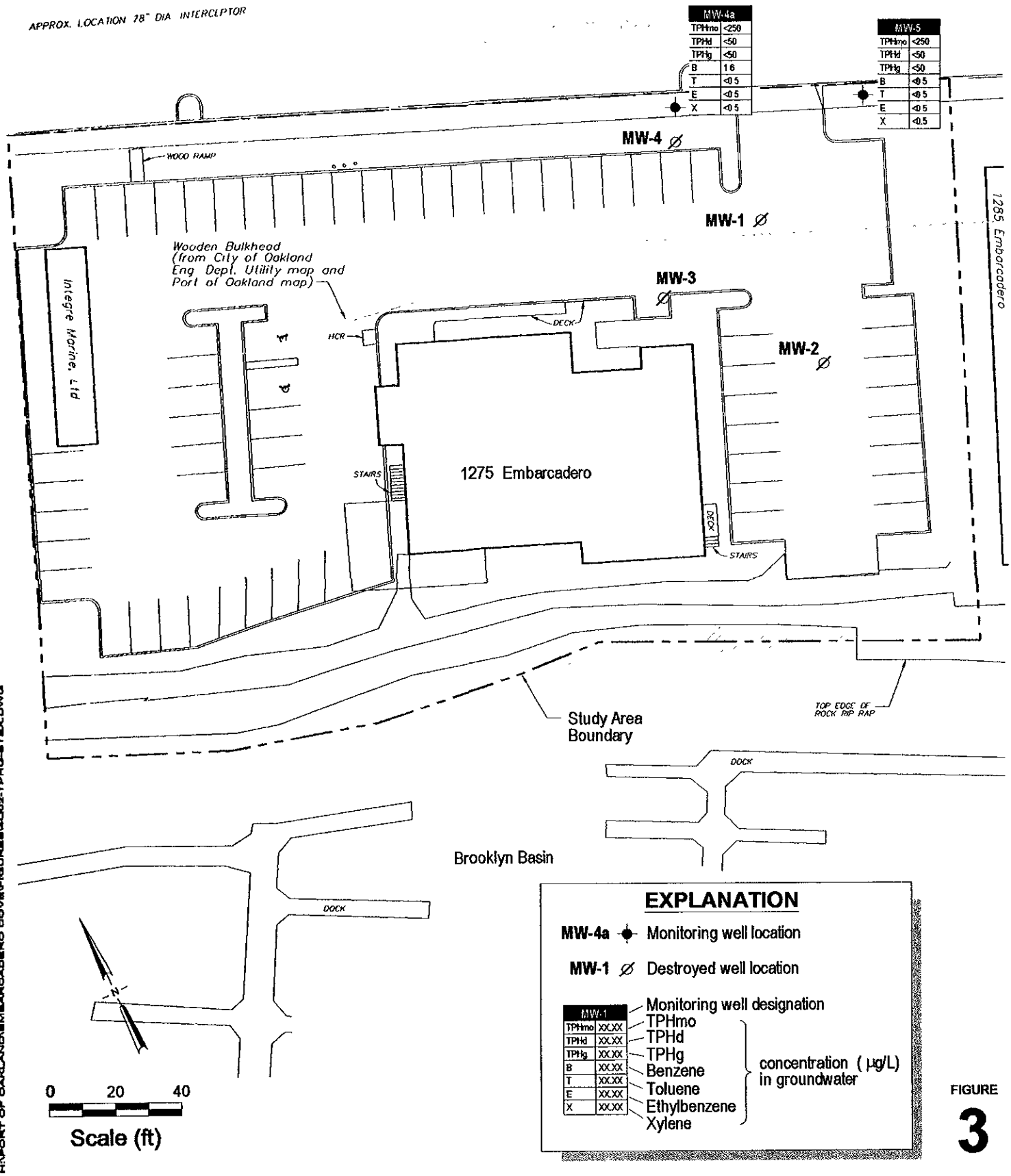
1275 Embarcadero

Embarcadero Cove Project

Oakland, California

Iris - Cambria Environmental, JV

Site Plan



FIGURE

3

Port of Oakland
1275 Embarcadero
Embarcadero Cove Project
Oakland, California

Iris - Cambria
Environmental, JV

Hydrocarbon Concentrations in Groundwater

February 20, 2003

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CAMBRIA

Table 1: Groundwater Analytical Data - Light-Range Petroleum Hydrocarbons and MTBE - 1275 Embarcadero, Oakland, CA

Sample ID (ft)	Date Sampled	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
		←			µg/L		→
TW-1	11/22/02	< 50	< 0.5	< 0.5	< 0 5	< 0.5	< 5.0
TW-2	11/22/02	< 50	< 0.5	< 0.5	< 0 5	< 0.5	< 5.0
TW-3	11/22/02	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
TW-4	11/22/02	< 50	< 0 5	< 0.5	< 0.5	< 0.5	< 5.0
MW-2	06/10/02	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
MW-3	06/10/02	220	< 0 5	1	< 0.5	< 0.5	< 5.0
MW-4	06/10/02	28,000	1,700	230	930	2,100	<500
MW-4a	12/03/02	< 50	5.7	< 1.0	< 0.5	0.58	< 0.5
	02/20/03	**< 50**	**1.6**	**<0.5**	**< 0.5**	**< 0.5**	**< 5.0**
MW-5	06/10/02	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
	12/03/02	< 50	< 0.5	< 1.0	< 0.5	< 0.5	< 0.5
	02/20/03	**< 50**	**< 0.5**	**< 0.5**	**< 0.5**	**< 0.5**	**< 5.0**

Abbreviations and Methods:

ft = feet

µg/L = micrograms per liter

Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020

MTBE = methyl tert-butyl ether by EPA Method 8020

TPHg = total petroleum hydrocarbons as gasoline by EPA Methods modified 8015, 5030, and 8020 or 602

CAMBRIA

Table 2: Groundwater Analytical Data - Heavy-Range Petroleum Hydrocarbons and PAHs
1275 Embarcadero, Oakland, CA

Sample ID (ft)	Date Sampled	TPHd (µg/L)	TPHmo (µg/L)	Acenaphthalene (µg/L)	Fluoranthene (µg/L)	1 - methyl-naphthalene (µg/L)	2 - methyl naphthalene (µg/L)	Naphthalene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)
TW-1	11/22/02	78	470	--	--	--	--	--	--	--
TW-2	11/22/02	< 50	< 250	--	--	--	--	--	--	--
TW-3	11/22/02	120	350	--	--	--	--	--	--	--
TW-4	11/22/02	< 50	< 250	--	--	--	--	--	--	--
MW-2	06/10/02	220	370	<10*	<10*	--	--	<10*	<50*	<10*
MW-3	06/10/02	390	470	<10*	<10*	--	--	<10*	<50*	<10*
MW-4	06/10/02	4,500	<250	<50*	<50*	--	--	250*	<250*	0.12*
MW-4a	12/03/02	<50	<250	<0 5*	<0.062*	<1 0*	<1.0*	<0.2*	<0 05*	<50*
	02/20/03	**<50**	**<250**	**<10***	**<10***	**<10***	**<10***	**<10***	**<10***	**<10***
MW-5	06/10/02	110	330	<10*	<10*	--	--	<10*	<50*	<10*
	12/03/02	<50	<250	<0.5*	0.24*	<1.0*	<1.0*	<0.2*	<0.05*	1.0*
	02/20/03	**<50**	**<250**	**<10***	**<10***	**<10***	**<10***	**<10***	**<10***	**<10***

Abbreviations and Methods:

ft = feet

µg/L = micrograms per liter

-- = not available, not analyzed, or does not apply

TPHd = total petroleum hydrocarbons as diesel by EPA method 8015, and 3550 or 3510

TPHmo = total petroleum hydrocarbons as motor oil by EPA method 8015

PAH = polynuclear aromatic hydrocarbon analyses performed by EPA Method 8270D

Notes:

* PAH analysis

ATTACHMENT A

Standard Field Procedures for Monitoring Wells

CAMBRIA

STANDARD FIELD PROCEDURES FOR MONITORING WELLS

This document describes Cambria Environmental Technology's standard field methods for drilling, installing, developing and sampling groundwater monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Well Construction and Surveying

Groundwater monitoring wells are installed in soil borings to monitor groundwater quality and determine the groundwater elevation, flow direction and gradient. Well depths and screen lengths are based on groundwater depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 feet below and 5 feet above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three feet thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two ft above the well screen. A two feet thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I,II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security. The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates the groundwater and dislodges fine sediments from the sand pack. After about ten minutes of surging, groundwater is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Groundwater Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of groundwater are purged prior to sampling. Purging continues until groundwater pH, conductivity, and temperature have stabilized. Groundwater samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

ATTACHMENT B

Well Sampling Forms

CAMBRIA

Well Gauging Sheet

Well ID	Order	DTP	DTW	~~DOP~~ DTB	Comment	Time
5	1	—	4.44	12.03		1:20
4a	2	—	4.60	12.40		1:22

Project Name: **Port of Oakland – Embarcadero Cove**

Project Number: **458-1808**

Measured By: JO

Date: 2/20/03

CAMBRIA

WELL SAMPLING FORM

Project Name: **Port of Oak – Embarcadero Cove**	Cambria Mgr: **Ron Maranai**	Well ID: MW-4a
Project Number: **458-1808**	Date: 2/20/03	Well Yield:
Site Address: **1275 Embarcadero Oakland, CA**	Sampling Method: **Disposable bailer**	Well Diameter: **2** " **pvc**
		Technician(s): JO
Initial Depth to Water: 4.60	Total Well Depth: 12.40	Water Column Height: 7.80
Volume/ft: 0.16	1 Casing Volume: 1.26	3 Casing Volumes: 3.78
Purge/No Purge: Purge		
Purging Device: **Bailer**	Did Well Dewater?:	Total Gallons Purged:
Start Purge Time:	Stop Purge Time:	Total Time:

1 Casing Volume = Water column height x Volume

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4a	2/20/03	2:30	**4 VOA**	**HCL**	**TPHg, BTEX, MTBE**	**8021B**
MW-4a	2/20/03	2:30	**1 Amber**	**None**	**TPHD, TPHmo (w/ Silica Gel Cleanup)**	**8015M**

CAMBRIA

WELL SAMPLING FORM

Project Name: **Port of Oak – Embarcadero Cove**	Cambria Mgr: **Ron Maranai**	Well ID: MW-5
Project Number: **458-1808**	Date: 2/20/03	Well Yield:
Site Address: **1275 Embarcadero Oakland, CA**	Sampling Method: **Disposable bailer**	Well Diameter: **2** " **pvc** Technician(s): ~~SE~~ JO
Initial Depth to Water: 4.44	Total Well Depth: 12.03	Water Column Height: 7.59
Volume/ft: 0.16	1 Casing Volume: 1.20	3 Casing Volumes: 3.60
Purge/No Purge:		
Purging Device: **Bailer**	Did Well Dewater?:	Total Gallons Purged:
Start Purge Time: 1:30	Stop Purge Time:	Total Time:

1 Casing Volume = Water column height x Volume

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments ORP	Comments DO mg/L
1:30	1	19.3	6.29	28	242	10.10
1:33	2	19.5	6.35	18	201.9	2.92
	Meter	Not	functioning			

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-5	2/20	2:00	**4 VOA**	**HCL**	**TPHg, BTEX, MTBE**	**8021B**
MW-5	2/20	2:00	**1 Amber**	**None**	**TPHD, TPHmo (w/ Silica Gel Cleanup)**	**8015M**

8:45am

CAMBRIA

WELL SAMPLING FORM

Project Name: **Port of Oak – Embarcadero Cove**	Cambria Mgr: **Ron Maranai**	Well ID: MW-4a
Project Number: **458-1808**	Date: 2/26/03	Well Yield:
Site Address: **1275 Embarcadero Oakland, CA**	Sampling Method: **Disposable bailer**	Well Diameter: **2** " **pvc**
		Technician(s): ~~SG~~ MAM
Initial Depth to Water: 4.69	Total Well Depth: 12.40	Water Column Height: 7.71
Volume/ft: 0.16	1 Casing Volume: 1.23	3 Casing Volumes: 3.69
Purge/No Purge: Purge		
Purging Device: **Bailer**	Did Well Dewater?: No	Total Gallons Purged: 4 gal
Start Purge Time: 8:45	Stop Purge Time: 9 10	Total Time: 20 min

1 Casing Volume = Water column height x Volume

4
7.71
.16
46 26
77.1 0
123.36

Well Diam.	Volume/ft (gallons)
2"	0 16
4"	0 65
6"	1.47

Time	Casing Volume	Temp. C	ORP	pH	DO	Cond. uS	Comments
8:50	1	16.2	214	6.15	1.64		LT GREEN GREY / CLOUDY
8:57	2	16.1	338	5.66	2.10		SL. CLOUDY
9:07	3	16.4	366	5.58	1.96		"

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
			4 VOA	**HCL**	**TPHg, BTEX, MTBE**	**8021B**
			1 Amber	**None**	**TPHD, TPHmo (w/ Silica Gel Cleanup)**	**8015M**
MW-4a	2/26/03	9:10am	1L Amber	None	PAHs	

CAMBRIA

WELL SAMPLING FORM

Project Name: **Port of Oak – Embarcadero Cove**	Cambria Mgr: **Ron Maranai**	Well ID: MW-5
Project Number: **458-1808**	Date: 2/26/03	Well Yield:
Site Address: **1275 Embarcadero Oakland, CA**	Sampling Method: **Disposable bailer**	Well Diameter: **2** " **pvc** Technician(s): ~~SG~~ MAM
Initial Depth to Water: 4.51	Total Well Depth: 12.03	Water Column Height: 7.52
Volume/ft: 0.16	1 Casing Volume: 1.20	3 Casing Volumes: ~~3~~ 3.60
Purge/No Purge: Purge		
Purging Device: **Bailer**	Did Well Dewater?: No	Total Gallons Purged: 4
Start Purge Time: 9.45	Stop Purge Time: 10.00	Total Time: 20 min

1 Casing Volume = Water column height x Volume

7.52
.16
4512
7520
1.2032

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	ORP	pH	DO	Cond. uS	Comments
9:50	1	15.2	408	5.82	1.93		GREEN CLOUDY
9.55	2	15.2	400	5.~~97~~	2.07		"
10:00	3	15.7	393	5.80	1.99		DK GRAY GREEN CLOUDY

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
			4 VOA	**HCL**	**TPHg, BTEX, MTBE**	**8021B**
			1 Amber	**None**	**TPHD, TPHmo (w/ Silica Gel Cleanup)**	**8015M**
MW-~~4~~5	2/26/03	10:00 ~~AM~~ am	1L Amber	None	PAH's	

CHAIN OF CUSTODY RECORD

McCAMPBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☒ 48 HOUR ☐ 5 DAY

EDF Required? ☒ Yes ☐ No

Report To: ROB MARINAI Bill To: CAMBRIA

Company: Cambria Environmental Technology Inc.

6262 Hollis Street

Emeryville, CA 94608 E-mail: mmeyers@cambria-env.com

Tele: 510-420-3310 Fax: ~~510-450-8295~~ 510-420-9170

Project #: 458-1808-007 Project Name: Embarcadero Cove

Project Location: 1275 Embarcadero, Oakland

Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's/ PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
MW-4		2/26/03	9:10	1	Amber	X					X														X						
MW-5		2/26/03	10:00	1	Amber	X					X														X						

Relinquished By:	Date:	Time:	Received By:
	2/26/03	10:50	'SECURED LOCATION'
	2/26	11:02	

Remarks: 48 hr RUSH

ATTACHMENT C

Laboratory Analytical Reports

McCampbell 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

Cambria Env. Technology	Client Project ID: #458-1808; Embarcadero Cove	Date Sampled: 02/20/03
		Date Received: 02/21/03
5900 Hollis Street, Suite A	Client Contact: Rob Maranai	Date Extracted: 02/21/03-02/22/03
Emeryville, CA 94608	Client P.O.:	Date Analyzed: 02/21/03-02/22/03

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0302290

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-5	W	ND	ND	ND	ND	ND	ND	1	87.4
002A	MW-4a	W	ND	ND	1.6	ND	ND	ND	1	88.8
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
		S	NA	NA	NA	NA	NA	NA	1	mg/Kg

*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present, g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell 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

Cambria Env. Technology	Client Project ID: #458-1808; Embarcadero Cove	Date Sampled: 02/20/03
5900 Hollis Street, Suite A		Date Received: 02/21/03
Emeryville, CA 94608	Client Contact: Rob Maranai	Date Extracted: 02/21/03
	Client P.O.:	Date Analyzed: 02/21/03

Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons with Silica Gel Clean-Up*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0302290

Lab ID	Client ID	Matrix	TPH(d)	TPH(mo)	DF	% SS
0302290-001B	MW-5	W	ND	ND	1	88.2
0302290-002B	MW-4a	W	ND	ND	1	85.9

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	250	µg/L
	S	NA	NA	mg/Kg

* water and vapor samples are reported in µg/L, wipe samples in ug/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all TCLP / STLC / SPLP extracts in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present, g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent / mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

RUSH

Rush 48 hour 0302240

McCAMPBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☒ 48 HOUR ☐ 5 DAY

EDF Required? ☒ Yes ☐ No

Report To: Rob Maranai Bill To: CAMBRIA

Company: Cambria Environmental Technology Inc.

5900 Hollis Street STE-A

Emeryville, CA 94608 E-mail: rmaranai@cambria-env.com

Tele: 510-420-3308 Fax: 510-420-9170

Project #: 458-1808 Project Name: Embarcadero Cove

Project Location: 1275 Embarcadero, Oakland

Sampler Signature: [signature]

SAMPLE ID (Field Point Name)	LOCATION	Sampling Date	Sampling Time	# Containers	Type Containers	Matrix: Water	Soil	Air	Sludge	Other	Method Preserved: Ice	HCl	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other: TPH-d + TPH-mo w/ silica gel cleanup	Comments
MW-5		2/20/03	2:00	5	4 VOA 1 Amber	X					X	X			X															X	
MW-4a		2/20/03	2:30	5	4 VOA 1 Amber	X					X	X			X															X	

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ____
DECHLORINATED IN LAB ____

PRESERVATION ✓ (VOAS | O&G | METALS | OTHER)
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB ____

Relinquished By:	Date:	Time:	Received By:
[signature]	2-21-03	915	[signature] 234
[signature] 234	2/21	1135	[signature]

Remarks: Rush 48 hour

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0302290

Client:
Cambria Env. Technology
5900 Hollis Street, Suite A
Emeryville, CA 94608

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo. #458-1808; Embarcadero Cove
PO:

Date Received: 2/21/03
Date Printed: 2/21/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	<>	Requested Tests SW8015C	8021B/8015
0302290-001	MW-5	Water	2/20/03 2:00:00 PM		A	B	A
0302290-002	MW-4a	Water	2/20/03 2:30:00 PM			B	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.

McCampbell 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

Cambria Env. Technology	Client Project ID: #458-1808-007; Embarcadero Cove	Date Sampled: 02/26/03
		Date Received: 02/26/03
5900 Hollis Street, Suite A	Client Contact: Rob Marinai	Date Extracted: 02/26/03
Emeryville, CA 94608	Client P.O.:	Date Analyzed: 02/26/03-02/27/03

Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) by GC/MS*

Extraction Method: SW3550C | Analytical Method: SW8270D | Work Order: 0302351

			Reporting Limit for DF =1	
Lab ID	0302351-001A	0302351-002A		
Client ID	MW-4a	MW-5		
Matrix	W	W	S	W
DF	1	1	ug/kg	µg/L
Compound	**Concentration**			
Acenaphthene	ND	ND	NA	10
Acenaphthylene	ND	ND	NA	10
Anthracene	ND	ND	NA	10
Benz(a)anthracene	ND	ND	NA	10
Benzo(b)fluoranthene	ND	ND	NA	10
Benzo(k)fluoranthene	ND	ND	NA	10
Benzo(g,h,i)perylene	ND	ND	NA	10
Benzo(a)pyrene	ND	ND	NA	10
Chrysene	ND	ND	NA	10
Dibenzo(a,h)anthracene	ND	ND	NA	10
Fluoranthene	ND	ND	NA	10
Fluorene	ND	ND	NA	10
Indeno (1,2,3-cd) pyrene	ND	ND	NA	10
2-Methylnaphthalene	ND	ND	NA	10
Naphthalene	ND	ND	NA	10
Phenanthrene	ND	ND	NA	10
Pyrene	ND	ND	NA	10
Surrogate Recoveries (%)				
%SS1	97.1	102		
%SS2	102	108		
Comments				

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

CHAIN OF CUSTODY RECORD

McCAMPBELL ANALYTICAL INC.
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PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☒ 48 HOUR ☐ 5 DAY

EDF Required? ☒ Yes ☐ No

Report To: ROB MARINAI Bill To: CAMBRIA

Company: Cambria Environmental Technology Inc.

6262 Hollis Street

Emeryville, CA 94608 E-mail: mmeyers@cambria-env.com

Tele: 510-420-3310 Fax: ~~510-450-8295~~ 510-420-9170

Project #: 458-1808-007 Project Name: Embarcadero Cove

Project Location: 1275 Embarcadero, Oakland

Sampler Signature:

	SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
1	MW-4		2/26/03	9:10	1	Amber	X					X														X					
2	MW-5		2/26/03	10:00	1	Amber	X					X														X					

Relinquished By:	Date:	Time	Received By:
	2/26/03	10:56	'SECURED LOCATION'
	2/26	11:00	
	2/26	12:40	

Remarks: 48 hr RUSH

ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
DECHLORINATED IN LAB
PRESERVATION APPROPRIATE ✓
CONTAINERS ✓
PRESERVED IN LAB

VOAS	O&G	METALS	OTHER

McCampbell Analytical Inc.
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Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0302351

Client:
Cambria Env. Technology
5900 Hollis Street, Suite A
Emeryville, CA 94608

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo: #458-1808-007; Embarcadero Cove
PO:

Date Received: 2/26/03
Date Printed: 2/26/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests SW8270D
0302351-001	MW-4a	Water	2/26/03 9:10:00 AM		A
0302351-002	MW-5	Water	2/26/03 10:00:00 AM		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.

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

Date: 02/24/03

ATTN: Rob Macanai

Message: Rush results for # 458-1808

FYI -
The benzene hit in "MW-4a" was confirmed by re-analysis

-Angela

FROM: Angela

Number of pages faxed including this one: 6