HAGEMAN-AGUIAR, INC.
Environmental & Water Resources Engineering
Groundwater Consultants

#191

April 13, 2000

Barney M. Chan
Alameda County Environmental Health Services
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Quarterly Groundwater Monitoring
Golden Gate Petroleum
421 23rd Avenue
Oakland, California

Dear Mr. Chan:

The enclosed report documents the results of the most recent quarterly groundwater monitoring at the site performed on March 28, 2000 (First Quarter 2000).

If you have any questions, please call me at 510/620-0891.

Sincerely,

Hageman-Aguiar, Inc.

K. B. Alex

Kenneth B. Alexander, RG, CH
Principal Hydrogeologist

cc: Dennis O'Keefe/Golden Gate Petroleum, Concord, California

HAGEMAN-AGUIAR, INC.

Environmental & Water Resources Engineering
Groundwater Consultants

QUARTERLY MONITORING

REPORT

(Sampled March 28, 2000)

GOLDEN GATE PETROLEUM

421 23rd Avenue
Oakland, California

April 13, 2000

11100 SAN PABLO AVE., SUITE 200-A, EL CERRITO, CALIFORNIA 94530 • TEL 510-620-0891 • FAX 510-620-0894

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I. INTRODUCTION

The subject site is the Golden Gate Petroleum Cardlock at 421 23rd Avenue in Oakland, California. The location of the site is shown in Figure 1. The site is located at the northwest corner of the intersection of Kennedy Street and 23rd Avenue. Figure 2 shows a map of the property and surrounding properties.

This report presents the results of water level measurements and groundwater sampling performed on March 28, 2000. In November 1999, Hageman-Aguiar, Inc. installed four monitoring wells at the site. On November 11, 1999, Hageman-Aguiar, Inc. sampled the four monitoring wells and two recovery casings located in the backfill of the existing underground storage tanks. The work described in this report has been conducted in accordance with the Alameda County Environmental Health Services (ACEHS) requirements.

II. FIELD WORK

Monitoring Well Sampling

On March 28, 2000, the four onsite groundwater monitoring wells (MW-1, MW-2, MW-3, and MW-4) and two backfill casings (CASING-1 and CASING-2) were sampled. The locations of the wells are shown in Figure 3. Prior to sampling, several casing volumes of water were removed from each well. Field conductivity, temperature, and pH were monitored during purging. Purging continued until these parameters stabilized. Groundwater samples were subsequently collected using new, disposable sampling bailers. The water samples were placed inside appropriate 40-ml VOA vials free of any headspace. The samples were immediately placed on crushed ice, then transported under chain-of-custody to the laboratory at the end of the workday.

At the time each monitoring well was sampled, the following information was recorded in the field: (1) depth-to-water prior to purging, using an electrical well sounding tape, (2) observation of any floating product, sheen, or odor prior to purging, using a clear Teflon bailer, (3) pH, (4) temperature, and (5) specific conductance. Copies of the well sampling logs are included in Attachment A.

Wastewater Generation

All water and other liquid waste removed from the well during purging was drummed and stored onsite. The water and liquid waste is periodically picked up by a licensed waste hauler and transported under manifest to an appropriate recycling and disposal facility.

III. RESULTS OF WATER LEVEL MEASUREMENTS

Groundwater Flow Direction and Hydraulic Gradient

Water level measurements were measured on March 28, 2000 (Table 1). Figure 3 presents a contour map for the groundwater beneath the site. As shown in Figure 3, the water level data indicate that the direction of groundwater flow in March 2000 was generally toward the southwest.

The calculated hydraulic gradient for March 2000 was approximately 0.0026 feet/feet (14 feet per mile).

IV. ANALYTICAL RESULTS

Laboratory Analysis

All analyses were performed by Entech Analytical Labs, Inc., of Sunnyvale, California, a California State Department of Health Services-certified laboratory. All samples were analyzed in accordance with U.S. EPA recommended procedures.

All groundwater samples were analyzed for:

- Total Petroleum Hydrocarbons as Gasoline (modified EPA Method 8015)
- Benzene, Toluene, Ethylbenzene, and Total Xylenes (EPA Method 8020)
- Methyl Tertiary Buytl Ether (MTBE) (EPA Method 8020)
- Total Petroleum Hydrocarbons as Diesel (modified EPA Method 8015)

Analytical Results: Groundwater

Table 2 presents the analytical results for the groundwater samples collected from monitoring wells MW-1, MW-2, MW-3, and MW-4 and backfill casings CASING-1 and CASING-2. Copies of the laboratory reports and chain-of-custody records are provided in Attachment B.

As shown in Table 2, gasoline was detected at a maximum concentration of 2,500 µg/L (ppb) in the groundwater sample from well MW-2. MTBE was detected at a maximum concentration of 1,800 µg/L (ppb) in the groundwater sample from well MW-2. Diesel was detected at a maximum concentration of 1,800 µg/L in the groundwater sample from well MW-2.

V. DATA ANALYSIS

Figures 4, 5, and 6 show lines of equal concentration for gasoline, MTBE, and diesel, respectively, using analytical data from the March 28, 2000 groundwater sampling event. As shown by these plots, the plumes appear to extend southward under Kennedy Street. Currently, Hageman-Aguiar, Inc. is in the process of obtaining encroachment permits for installing three downgradient monitoring wells along the south side of Kennedy Street.

QUARTERLY MONITORING REPORT

Golden Gate Petroleum

421 23rd Avenue, Oakland, California

April 13, 2000

K.B. Alexander

Kenneth B. Alexander, RG, CH **#HG 512**
Principal Hydrogeologist
Hageman-Aguiar, Inc.

TABLES

TABLE 1.

Groundwater Elevation Measurements
Golden Gate Petroleum
421 23rd Avenue, Oakland, California

	MW-1		MW-2		MW-3		MW-4		Casing-1		Casing-2	
	MP Elev = 9.81 feet		MP Elev = 9.22 feet		MP Elev = 9.39 feet		MP Elev = 9.72 feet		MP Elev = 10.77 feet		MP Elev = 9.98 feet	
Date	**Depth**	**Elev**	**Depth**	**Elev**	**Depth**	**Elev**	**Depth**	**Elev**	**Depth**	**Elev**	**Depth**	**Elev**
November 11, 1999	8.61	1.20	8.25	0.97	8.48	0.91	8.86	0.86	9.65	1.12	8.87	1.11
March 28, 2000	8.36	1.45	8.00	1.22	8.31	1.08	8.75	0.97	9.37	1.40	8.58	1.40

General Notes

(a) Depth measurements cited in units of feet below measuring point (MP). MP is top of well box.

(b) Elevation measurements cited in units of feet above Mean Sea Level and referenced to City of Oakland benchmark at 333 23rd Avenue. Benchmark elevation is 7.91 feet above Mean Sea Level.

TABLE 2.

Groundwater Analytical Results
Golden Gate Petroleum
421 23rd Avenue, Oakland, California

Well Number	Date	TPH as Diesel (µg/L)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-1	November 11, 1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5
	March 28, 2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5
MW-2	November 11, 1999	**220**	**6,800**	<50	<50	<50	<50	**13,000***
	March 28, 2000	**1,800**	**2,500**	<25	<25	<25	<25	**1,800**
MW-3	November 11, 1999	<50	**1,600**	<12.5	<12.5	<12.5	<12.5	**2,500***
	March 28, 2000	<50	**280**	<2.5	<2.5	<2.5	<2.5	**610**
MW-4	November 11, 1999	<50	**650**	<5	<5	<5	<5	**540***
	March 28, 2000	<50	**430**	<2.5	<2.5	<2.5	<2.5	**800**
CASING-1	October 8, 1999	<50	<50	<0.5	<0.5	<0.5	<0.5	9.2
	November 11, 1999	<50	<250	<2.5	<2.5	<2.5	<2.5	**350**
	March 28, 2000	69	<500	<5	<5	<5	<5	**760**
CASING-2	October 8, 1999	83	**680**	**6.3**	<2.5	5.4	72	**1,200**
	November 11, 1999	<50	**150**	<1	<1	<1	<1	**320***
	March 28, 2000	<50	**270**	<2.5	<2.5	<2.5	<2.5	**520**

TABLE 2. (continued)

Groundwater Analytical Results
Golden Gate Petroleum
421 23rd Avenue, Oakland, California

Drinking Water Criteria	100 (T&O)	5 (T&O)	1 (MCL)	150 (MCL)	700 (MCL)	1,750 (MCL)	13 (proposed MCL)

General Notes

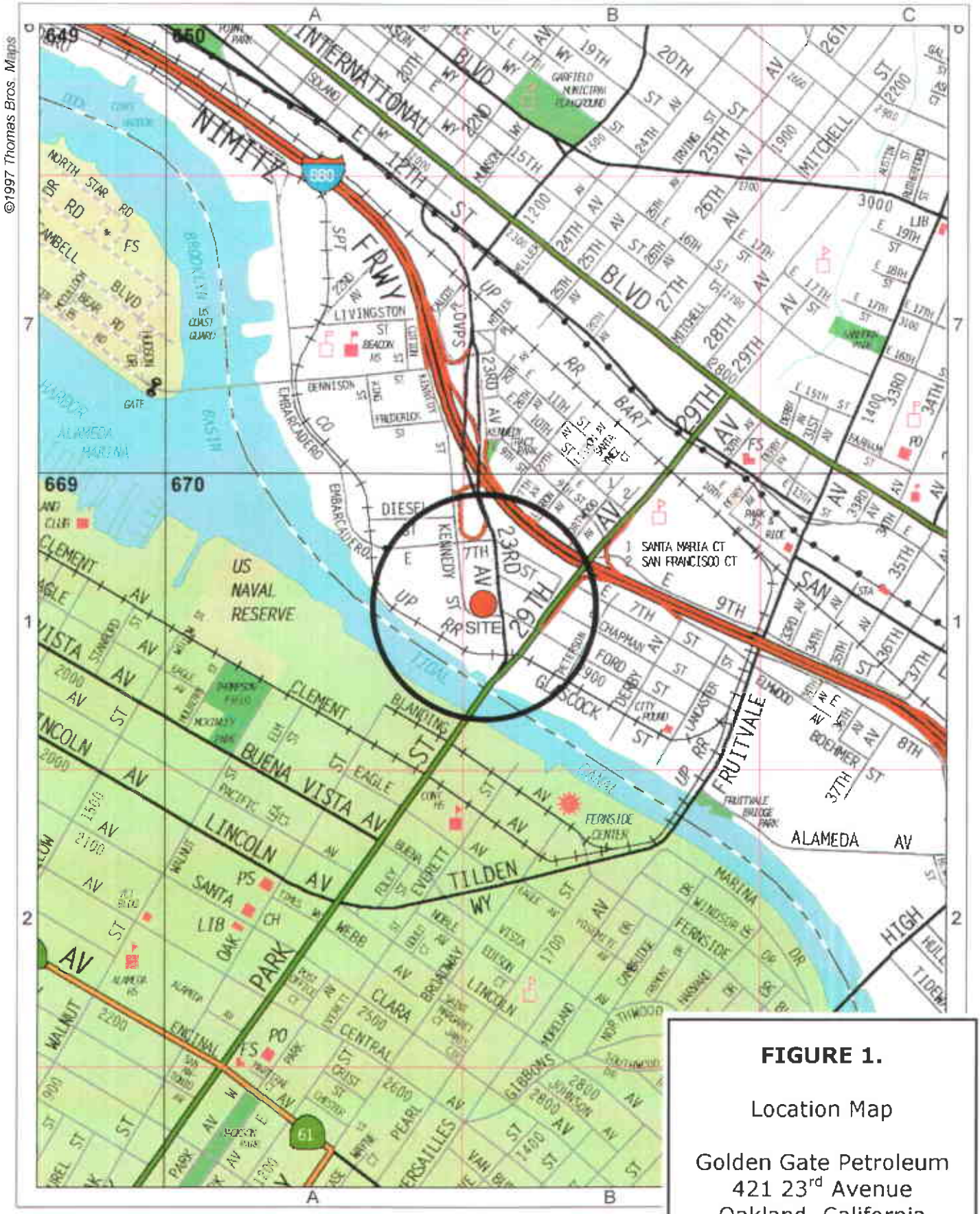
(a) "<" = parameter below laboratory method reporting limit.

(b) * = result confirmed by EPA Method 8260.

(c) Drinking water criteria is for comparison purposes only. Source: Jon B. Marshack, *A Compilation of Water Quality Goals*, Central Valley Regional Water Quality Control Board, Sacramento, CA, March 1998. T&O = Taste and Odor Threshold. MCL = California Primary Maximum Contaminant Level.

(d) Concentrations exceeding the drinking water criteria in **bold**.

FIGURES



SITE: 421-23rd Ave, Oakland, CA, Page & Grid 670 B1

FIGURE 1.

Location Map

Golden Gate Petroleum
421 23rd Avenue
Oakland, California

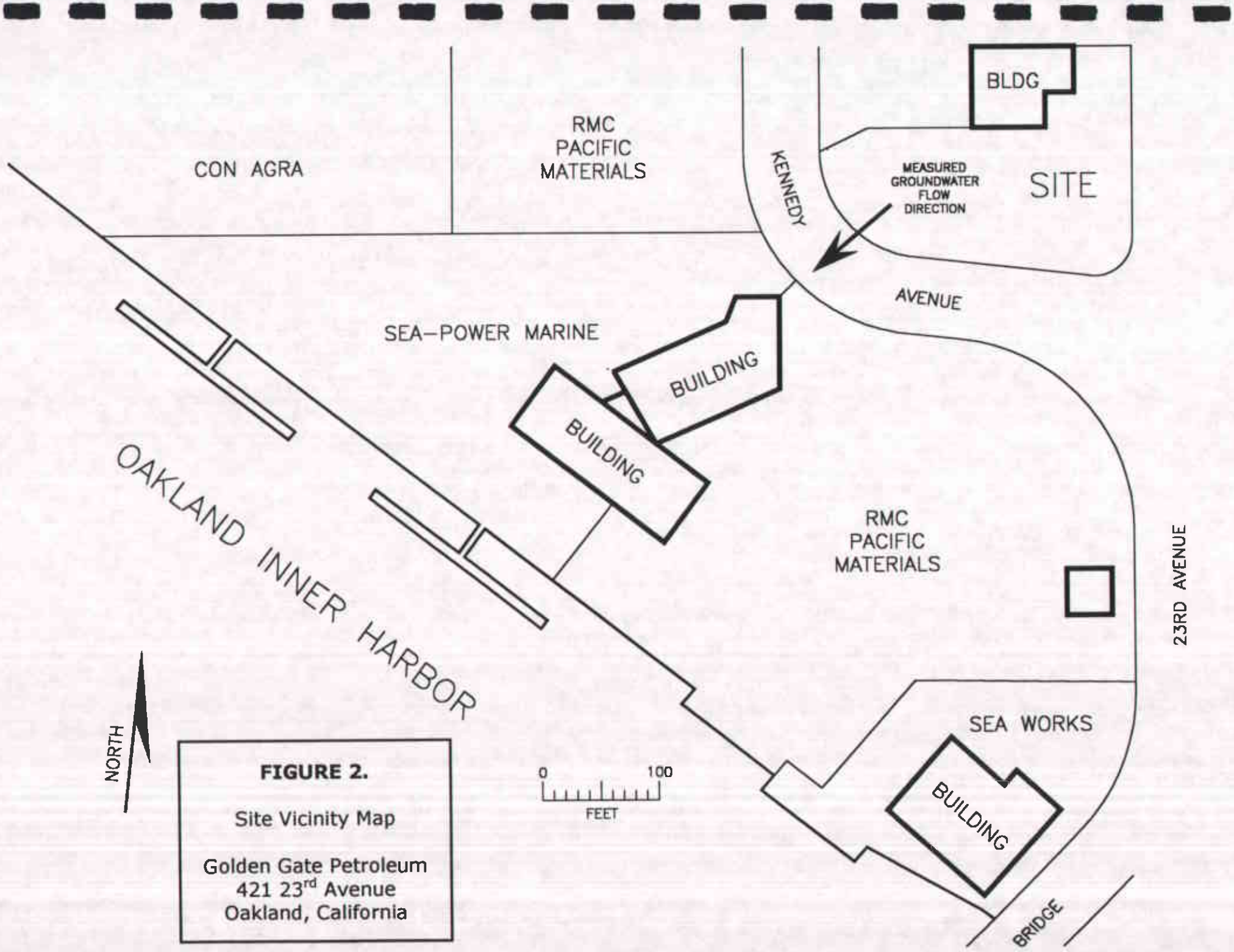
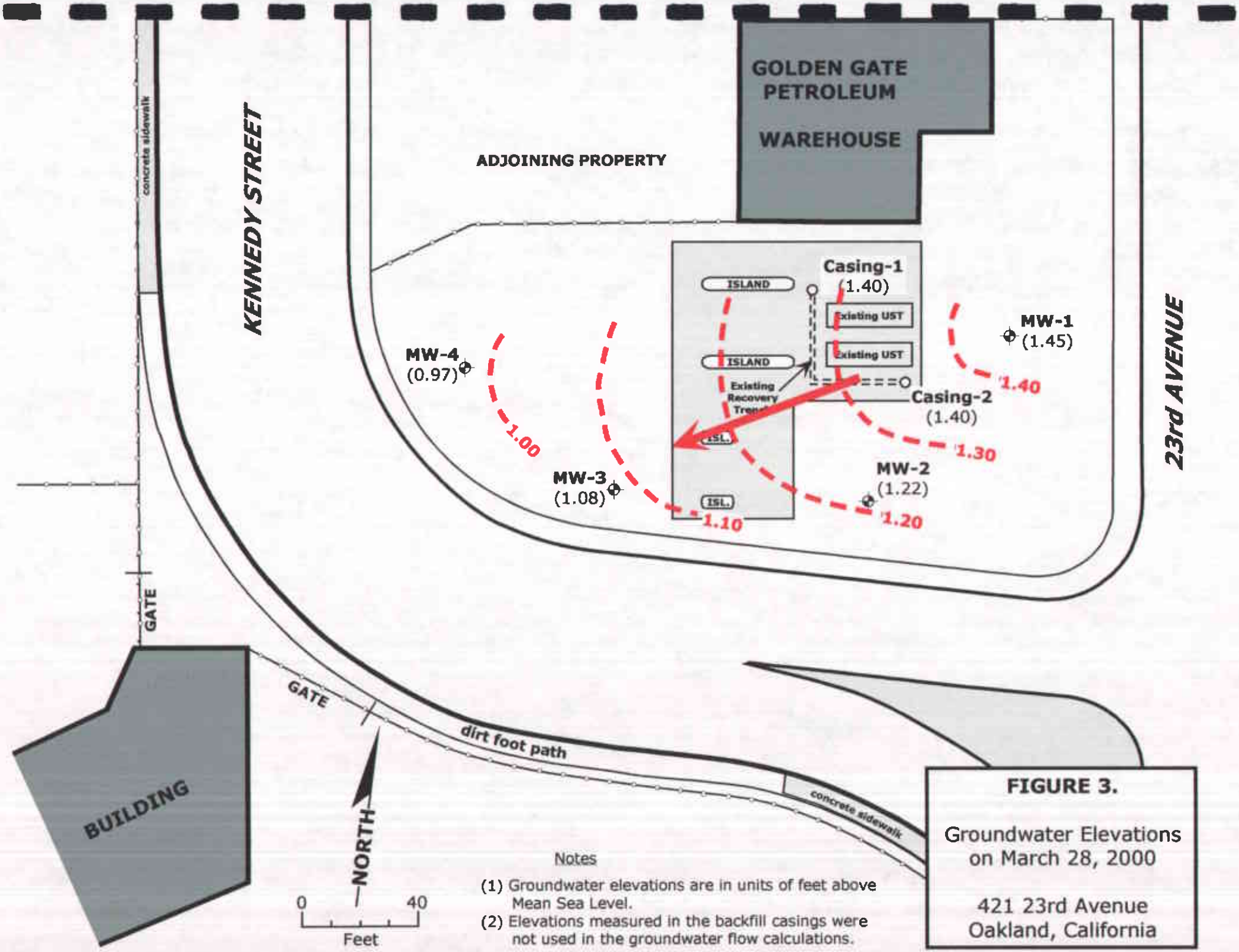


FIGURE 2.

Site Vicinity Map

Golden Gate Petroleum
421 23rd Avenue
Oakland, California



Notes

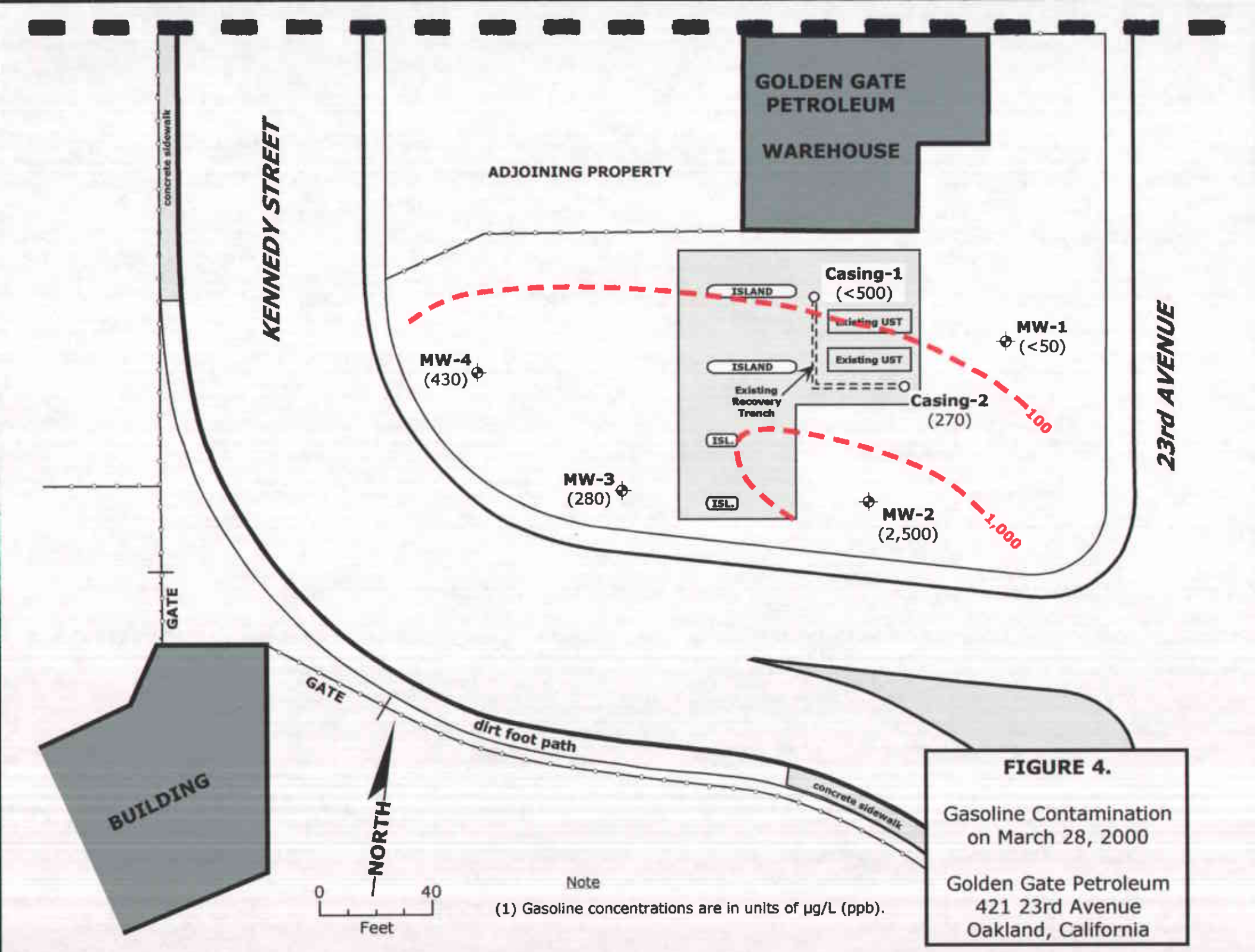
(1) Groundwater elevations are in units of feet above Mean Sea Level.

(2) Elevations measured in the backfill casings were not used in the groundwater flow calculations.

FIGURE 3.

Groundwater Elevations on March 28, 2000

421 23rd Avenue
Oakland, California



Note

(1) Gasoline concentrations are in units of µg/L (ppb).

FIGURE 4.

Gasoline Contamination on March 28, 2000

Golden Gate Petroleum
421 23rd Avenue
Oakland, California

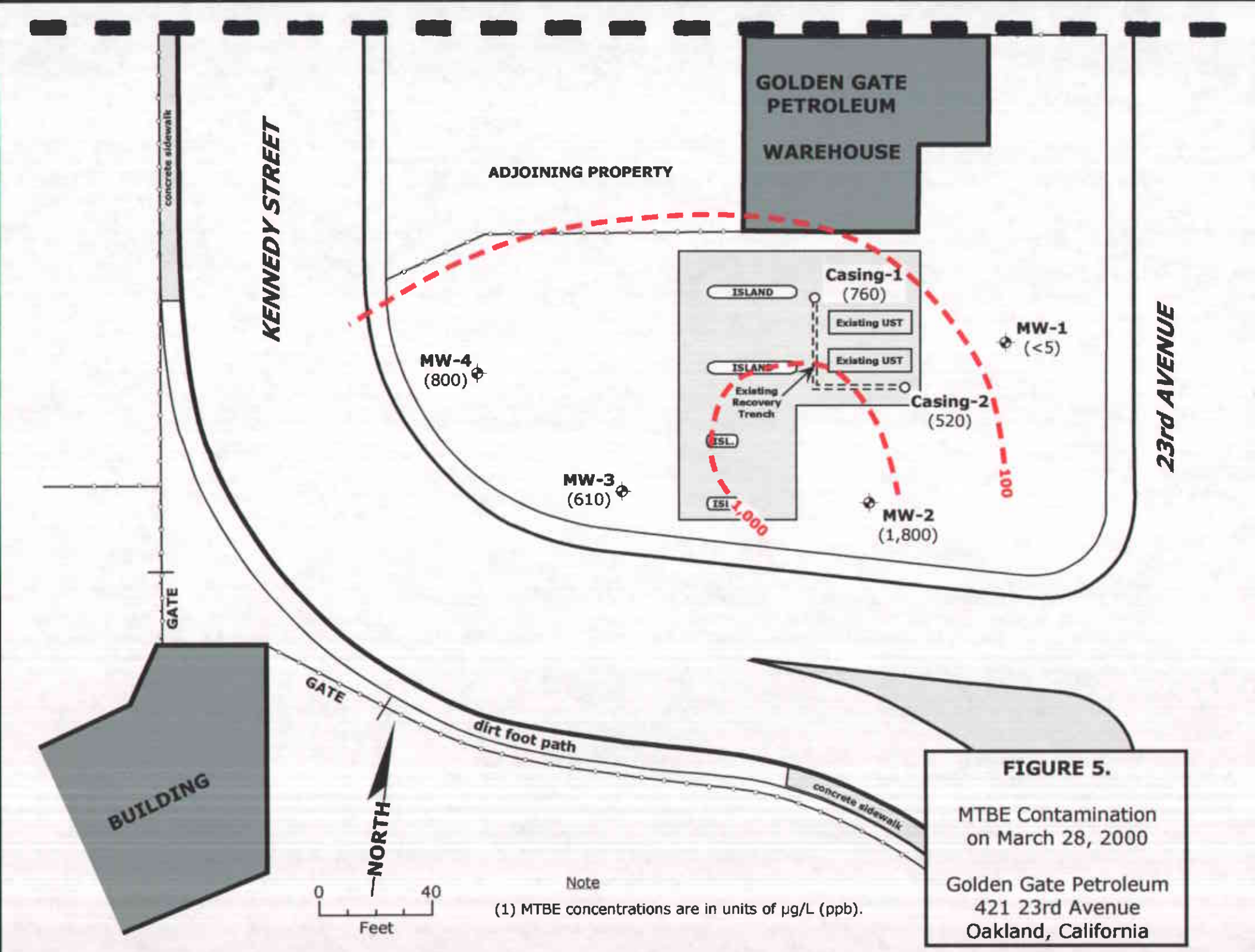
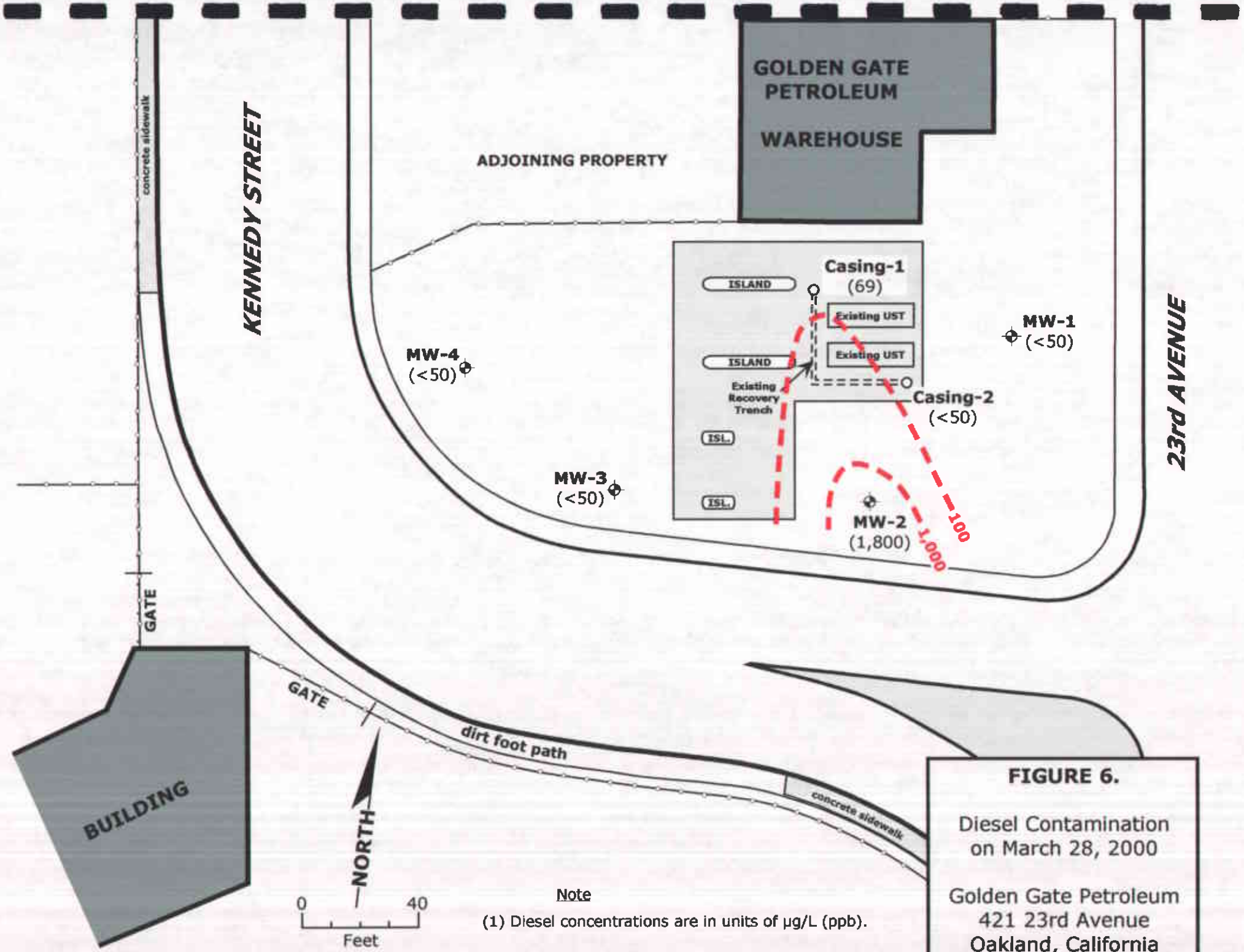


FIGURE 5.

MTBE Contamination
on March 28, 2000

Golden Gate Petroleum
421 23rd Avenue
Oakland, California



Note

(1) Diesel concentrations are in units of µg/L (ppb).

FIGURE 6.

Diesel Contamination
on March 28, 2000

Golden Gate Petroleum
421 23rd Avenue
Oakland, California

ATTACHMENT A

Well Sampling Logs

Hageman-Aguiar, Inc.

11100 San Pablo Ave. Suite 200A
El Cerrito, CA 94530
(510) 620-0891 Fax (510) 620-0894

Project: Golden Gate Petroleum Date: 03/29/2000

WELL #	DEPTH TO WATER	PRODUCT	WELL DEPTH	PRODUCT REMOVED	WATER REMOVED	COMMENTS
MW-1	8.36'	none	19.31'	-	6 gal	
MW-2	8.00'	none	20.36'	-	26 gal	
MW-3	8.31'	none	20.52'	-	16 gal	
MW-4	8.75'	none	19.44'	-	7.5 gal	
Casing 1	9.37'	none	13.56'	-	10 gal	
Casing 2	8.58'	none	14.96'	-	14 gal	

WELL SAMPLING LOG

Site Location: Golden Gate Pet. - 23rd Ave Page: 1 of 6

Well Number: MW-4 Date: 03/28/2000

Weather: Sunny, 55°-65° Time Began: 13:16

Sampling Personnel: R Wilson Completed: 13:26

EVACUATION DATA

Description of Measuring Point (MP): WBOG

Total Sounded Depth of Well Below MP	19.17' ± 0.27'		Sample Collected
- Depth to Water Below MP	8.75'	Volatile Organics (VOA's)	3
= Water Column in Well	10.69'	1 Liter Amber Glass	2
x Casing Diameter Multiplier	0.169 2"	Polyethylene (plastic)	
= Gallons in Casing	1.81	Other	
Gallons Pumped Prior to Sampling	7.5	Samples Filtered	no

Evacuation Method:		Sample Method:	
PVC Bailer	X	Evacuation Bailer	X
Acrillyc Bailer		Disposable Bailer	
Pump		Pump	
Other		Direct	

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: None, clear
(thickness to 0.01 foot, if any)

Time	13:18	13:20	13:22	13:24	13:26
Gals Removed	1.5	3	4.5	6	7.5
Temperature	19.6	19.6	19.7	19.5	19.5
Conductivity	331	408	435	459	468
pH	6.74	6.80	6.87	6.87	6.85
Color / Odor	Tan	Tan	Tan	Tan	Tan
Turbidity	med	med	high	high	high
Other					

Comments:

WELL SAMPLING LOG

Site Location: Golden Gate Pet. - 23rd Ave. Page 2 of 6

Well Number: MW-3 Date: 03/28/2000

Weather: Sunny, 55°-65° Time Began: 13:50

Sampling Personnel: R Wilson Completed: 14:12

EVACUATION DATA

Description of Measuring Point (MP): WB @ G

Total Sounded Depth of Well Below MP: 20.25' + 0.27'

- Depth to Water Below MP: 8.31'

= Water Column in Well: 12.21'

x Casing Diameter Multiplier: 0.653 4"

= Gallons in Casing: 7.97

Gallons Pumped Prior to Sampling: 16

Sample Collected

Volatile Organics (VOA's)	3
1 Liter Amber Glass	2
Polyethylene (plastic)	
Other	
Samples Filtered	no

Evacuation Method:

PVC Bailer	X
Acrillyc Bailer	
Pump	
Other	

Sample Method:

Evacuation Bailer	X
Disposable Bailer	
Pump	
Direct	

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: (thickness to 0.01 foot, if any) None, clear

				sample	
Time	13:52	13:54	13:56	14:12	
Gals Removed	6	12	16	16	
Temperature	19.4	19.8	20.2	19.5	
Conductivity	631	659	661	654	
pH	7.04	7.17	7.19	7.35	
Color / Odor	Tan	Tan	Tan	Tan	
Turbidity	med	med	med	low	
Other					

Comments:

WELL SAMPLING LOG

Site Location: Golden Gate Pet. - 23rd Ave. | Page: 3 of 6

Well Number: MW-1 | Date: 03/28/2000

Weather: Sunny, 55°-65° | Time Began: 14:52

Sampling Personnel: R Wilson | Completed: 15:01

EVACUATION DATA

Description of Measuring Point (MP): WB@G

Total Sounded Depth of Well Below MP	19.04'±0.27'	Sample Collected	
- Depth to Water Below MP	8.36'	Volatile Organics (VOA's)	3
= Water Column in Well	10.95'	1 Liter Amber Glass	2
x Casing Diameter Multiplier	0.169 2"	Polyethylene (plastic)	
= Gallons in Casing	1.85	Other	
Gallons Pumped Prior to Sampling	6	Samples Filtered	no

Evacuation Method:		Sample Method:	
PVC Bailer	x	Evacuation Bailer	x
Acrillyc Bailer		Disposable Bailer	
Pump		Pump	
Other		Direct	

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: (thickness to 0.01 foot, if any) None, clear

Time	14:55	14:57	14:59	15:01	
Gals Removed	1.5	3	4.5	6	
Temperature	19.8	19.9	20.0	20.1	
Conductivity	608	588	581	553	
pH	7.28	7.23	7.24	7.29	
Color / Odor	Tan	Tan	Tan	Tan	
Turbidity	med	high	high	high	
Other					

Comments:

WELL SAMPLING LOG

Site Location: Golden Gate Pet. - 23rd Ave. | Page: 4 of 6

Well Number: MW-2 | Date: 03/28/2000

Weather: Sunny, 55°-65° | Time Began: 15:02

Sampling Personnel: R Wilson | Completed: 15:16

EVACUATION DATA

Description of Measuring Point (MP): WBOG

Total Sounded Depth of Well Below MP	20.09'+0.27	Sample Collected	
- Depth to Water Below MP	8.00'	Volatile Organics (VOA's)	3
= Water Column in Well	12.36	1 Liter Amber Glass	2
x Casing Diameter Multiplier	0.653 4"	Polyethylene (plastic)	
= Gallons in Casing	8.07	Other	
Gallons Pumped Prior to Sampling	26	Samples Filtered	no

Evacuation Method:		Sample Method:	
PVC Bailer	X	Evacuation Bailer	X
Acrillyc Bailer		Disposable Bailer	
Pump		Pump	
Other		Direct	

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: (thickness to 0.01 foot, if any) None, clear

Time	15:06	15:10	15:13	15:16	
Gals Removed	6.5	13	19.5	26	
Temperature	19.5	19.8	20.0	20.1	
Conductivity	558	618	665	674	
pH	7.07	7.09	7.17	7.17	
Color / Odor	Tan	Tan	Tan	Tan	
Turbidity	high	high	high	high	
Other					

Comments:

WELL SAMPLING LOG

Site Location: Golden Gate Pet. - 23rd Ave. Page: 5 of 6

Well Number: Casing 1 Date: 03/28/2000

Weather: Sunny, 55°-65° Time Began: 16:33

Sampling Personnel: R Wilson Completed: 16:47

EVACUATION DATA

Description of Measuring Point (MP): WB@G

Total Sounded Depth of Well Below MP	13.29' + 0.27'		Sample Collected	
- Depth to Water Below MP	9.37'		Volatile Organics (VOA's)	3
= Water Column in Well	4.19'		1 Liter Amber Glass	2
x Casing Diameter Multiplier	0.653	4"	Polyethylene (plastic)	
= Gallons in Casing	2.74		Other	
Gallons Pumped Prior to Sampling	10		Samples Filtered	no

Evacuation Method:		Sample Method:	
PVC Bailer	x	Evacuation Bailer	x
Acrillyc Bailer		Disposable Bailer	
Pump		Pump	
Other		Direct	

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: (thickness to 0.01 foot, if any) None, clear

Time	16:37	16:40	16:43	16:47	
Gals Removed	2.5	5	7.5	10	
Temperature	18.4	18.4	18.3	18.2	
Conductivity	595	570	567	564	
pH	7.26	7.28	7.26	7.25	
Color / Odor	clear	clear	clear	clear	
Turbidity	low	low	low	low	
Other					

Comments:

WELL SAMPLING LOG

Site Location: Golden Gate Pet. - 23rd Ave. Page: 6 of 6

Well Number: Casing 2 Date: 03/28/2000

Weather: Sunny, 55°-65° Time Began: 17:24

Sampling Personnel: R Wilson Completed: 17:42

EVACUATION DATA

Description of Measuring Point (MP): WB @ G

Total Sounded Depth of Well Below MP	14.69' + 0.27'	Sample Collected	
- Depth to Water Below MP	8.58'	Volatile Organics (VOA's)	3
= Water Column in Well	6.38'	1 Liter Amber Glass	2
x Casing Diameter Multiplier	0.653 4"	Polyethylene (plastic)	
= Gallons in Casing	4.17	Other	
Gallons Pumped Prior to Sampling	14	Samples Filtered	no

Evacuation Method:		Sample Method:	
PVC Bailer	X	Evacuation Bailer	X
Acrillyc Bailer		Disposable Bailer	
Pump		Pump	
Other		Direct	

SAMPLING DATA / FIELD PARAMETERS

Inspection for Free Product: (thickness to 0.01 foot, if any) None, clear

Time	17:28	17:32	17:38	17:42	
Gals Removed	3.5	7	10.5	14	
Temperature	18.3	18.4	18.5	18.4	
Conductivity	529	540	536	536	
pH	7.38	7.35	7.30	7.33	
Color / Odor	clear	clear	clear	clear	
Turbidity	low	low	low	low	
Other					

Comments:

ATTACHMENT B

Analytical Results: Groundwater

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

April 05, 2000

Randal Wilson
Hageman-Aguiar, Inc.
11100 San Pablo Avenue, Suite 200-A
El Cerrito, CA 94530

Order: 19794
Project Name: Golden Gate Petroleum
Project Number:
Project Notes:

Date Collected: 3/28/00
Date Received: 3/29/00
P.O. Number:

On March 29, 2000, samples were received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Liquid	Gas/BTEX/MTBE	EPA 8015 MOD.
		EPA 8020
	TPH as Diesel	EPA 8015 MOD. (Extractable)

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Hageman-Aguiar, Inc.
11100 San Pablo Avenue, Suite 200-A
El Cerrito, CA 94530
Attn: Randal Wilson

Date: 4/5/00
Date Received: 3/29/00
Project Name: Golden Gate Petroleum
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 19794 **Lab Sample ID:** 19794-001 **Client Sample ID:** MW-1
Sample Time: 3:01 PM **Sample Date:** 3/28/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	3/31/00	4/1/00	DW000319	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	120	65 - 135

Order ID: 19794 **Lab Sample ID:** 19794-002 **Client Sample ID:** MW-2
Sample Time: 3:56 PM **Sample Date:** 3/28/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	1800		1	50	50	µg/L	3/31/00	4/1/00	DW000319	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	115	65 - 135

Order ID: 19794 **Lab Sample ID:** 19794-003 **Client Sample ID:** MW-3
Sample Time: 2:12 PM **Sample Date:** 3/28/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	3/31/00	4/1/00	DW000319	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	103	65 - 135

DF – Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Hageman-Aguiar, Inc.
11100 San Pablo Avenue, Suite 200-A
El Cerrito, CA 94530
Attn: Randal Wilson

Date: 4/5/00
Date Received: 3/29/00
Project Name: Golden Gate Petroleum
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 19794 **Lab Sample ID:** 19794-004 **Client Sample ID:** MW-4
Sample Time: 1:26 PM **Sample Date:** 3/28/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	3/31/00	4/1/00	DW000319	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	95	65 - 135

Order ID: 19794 **Lab Sample ID:** 19794-005 **Client Sample ID:** Casing-1
Sample Time: 4:47 PM **Sample Date:** 3/28/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	69		1	50	50	µg/L	3/31/00	4/1/00	DW000319	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	116	65 - 135

Order ID: 19794 **Lab Sample ID:** 19794-006 **Client Sample ID:** Casing-2
Sample Time: 5:42 PM **Sample Date:** 3/28/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Diesel	ND		1	50	50	µg/L	3/31/00	4/1/00	DW000319	EPA 8015 MOD. (Extractable)

Surrogate	Surrogate Recovery	Control Limits (%)
Hexacosane	85	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle E. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Hageman-Aguiar, Inc.
11100 San Pablo Avenue, Suite 200-A
El Cerrito, CA 94530
Attn: Randal Wilson

Date: 4/5/00
Date Received: 3/29/00
Project Name: Golden Gate Petroleum
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 19794 **Lab Sample ID:** 19794-001 **Client Sample ID:** MW-1

Sample Time: 3:01 PM **Sample Date:** 3/29/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.5	0.5	µg/L		3/30/00	WGC4000330B	EPA 8020
Toluene	ND		1	0.5	0.5	µg/L		3/30/00	WGC4000330B	EPA 8020
Ethyl Benzene	ND		1	0.5	0.5	µg/L		3/30/00	WGC4000330B	EPA 8020
Xylenes, Total	ND		1	0.5	0.5	µg/L		3/30/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	104	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	5	5	µg/L		3/30/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	104	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	50	50	µg/L		3/30/00	WGC4000330B	EPA 8015 MOD.

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	112	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

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11100 San Pablo Avenue, Suite 200-A
El Cerrito, CA 94530
Attn: Randal Wilson

Date: 4/5/00
Date Received: 3/29/00
Project Name: Golden Gate Petroleum
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 19794 **Lab Sample ID:** 19794-002 **Client Sample ID:** MW-2

Sample Time: 3:56 PM **Sample Date:** 3/29/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		50	0.5	25	µg/L		3/30/00	WGC4000330B	EPA 8020
Toluene	ND		50	0.5	25	µg/L		3/30/00	WGC4000330B	EPA 8020
Ethyl Benzene	ND		50	0.5	25	µg/L		3/30/00	WGC4000330B	EPA 8020
Xylenes, Total	ND		50	0.5	25	µg/L		3/30/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	97	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	1800		50	5	250	µg/L		3/30/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	97	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	2500	x	50	50	2500	µg/L		3/30/00	WGC4000330B	EPA 8015 MOD.

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	104	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

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Hageman-Aguiar, Inc.
11100 San Pablo Avenue, Suite 200-A
El Cerrito, CA 94530
Attn: Randal Wilson

Date: 4/5/00
Date Received: 3/29/00
Project Name: Golden Gate Petroleum
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 19794 **Lab Sample ID:** 19794-003 **Client Sample ID:** MW-3

Sample Time: 2:12 PM **Sample Date:** 3/28/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		5	0.5	2.5	µg/L		3/31/00	WGC4000330B	EPA 8020
Toluene	ND		5	0.5	2.5	µg/L		3/31/00	WGC4000330B	EPA 8020
Ethyl Benzene	ND		5	0.5	2.5	µg/L		3/31/00	WGC4000330B	EPA 8020
Xylenes, Total	ND		5	0.5	2.5	µg/L		3/31/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	98	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	610		5	5	25	µg/L		3/31/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	98	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	280		5	50	250	µg/L		3/31/00	WGC4000330B	EPA 8015 MOD.

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	109	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

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Hageman-Aguiar, Inc.
11100 San Pablo Avenue, Suite 200-A
El Cerrito, CA 94530
Attn: Randal Wilson

Date: 4/5/00
Date Received: 3/29/00
Project Name: Golden Gate Petroleum
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 19794 **Lab Sample ID:** 19794-004 **Client Sample ID:** MW-4

Sample Time: 1:26 PM **Sample Date:** 3/28/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		5	0.5	2.5	µg/L		3/30/00	WGC4000330B	EPA 8020
Toluene	ND		5	0.5	2.5	µg/L		3/30/00	WGC4000330B	EPA 8020
Ethyl Benzene	ND		5	0.5	2.5	µg/L		3/30/00	WGC4000330B	EPA 8020
Xylenes, Total	ND		5	0.5	2.5	µg/L		3/30/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	77	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	800		5	5	25	µg/L		3/30/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	77	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	430	x	5	50	250	µg/L		3/30/00	WGC4000330B	EPA 8015 MOD.

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	83	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

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Hageman-Aguiar, Inc.
11100 San Pablo Avenue, Suite 200-A
El Cerrito, CA 94530
Attn: Randal Wilson

Date: 4/5/00
Date Received: 3/29/00
Project Name: Golden Gate Petroleum
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 19794 **Lab Sample ID:** 19794-005 **Client Sample ID:** Casing-1

Sample Time: 4:47 PM **Sample Date:** 3/28/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		10	0.5	5	µg/L		3/31/00	WGC4000330B	EPA 8020
Toluene	ND		10	0.5	5	µg/L		3/31/00	WGC4000330B	EPA 8020
Ethyl Benzene	ND		10	0.5	5	µg/L		3/31/00	WGC4000330B	EPA 8020
Xylenes, Total	ND		10	0.5	5	µg/L		3/31/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	104	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	760		10	5	50	µg/L		3/31/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	104	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		10	50	500	µg/L		3/31/00	WGC4000330B	EPA 8015 MOD.

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	113	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

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Hageman-Aguiar, Inc.
11100 San Pablo Avenue, Suite 200-A
El Cerrito, CA 94530
Attn: Randal Wilson

Date: 4/5/00
Date Received: 3/29/00
Project Name: Golden Gate Petroleum
Project Number:
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 19794 **Lab Sample ID:** 19794-006 **Client Sample ID:** Casing-2

Sample Time: 5:42 PM **Sample Date:** 3/28/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		5	0.5	2.5	µg/L		3/31/00	WGC4000330B	EPA 8020
Toluene	ND		5	0.5	2.5	µg/L		3/31/00	WGC4000330B	EPA 8020
Ethyl Benzene	ND		5	0.5	2.5	µg/L		3/31/00	WGC4000330B	EPA 8020
Xylenes, Total	ND		5	0.5	2.5	µg/L		3/31/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	108	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	520		5	5	25	µg/L		3/31/00	WGC4000330B	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	108	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	270		5	50	250	µg/L		3/31/00	WGC4000330B	EPA 8015 MOD.

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	114	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

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STANDARD LAB QUALIFIERS (FLAGS)

All Entech lab reports now reference standard lab qualifiers. These qualifiers are noted in the adjacent column to the analytical result and are adapted from the U.S. EPA CLP program. The current qualifier list is as follows:

Qualifier (Flag)	Description
U	Compound was analyzed for but not detected
J	Estimated value for tentatively identified compounds or if result is below PQL but above MDL
N	Presumptive evidence of a compound (for Tentatively Identified Compounds)
B	Analyte is found in the associated Method Blank
E	Compounds whose concentrations exceed the upper level of the calibration range
D	Multiple dilutions reported for analysis; discrepancies between analytes may be due to dilution
X	Results within quantitation range; chromatographic pattern not typical of fuel

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Spikes

QC Batch #: DW000319
Matrix: Liquid
Units: µg/L

Date analyzed: 03/30/00
Date extracted: 03/29/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	**SP %R**	SPD µg/L	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Diesel	8015M	<50.0	1000	ND	1077	**108**	1081	**108**	0.4	25	58-121
Hexocosane(S.S.)				98%	112%		112%				65-135

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R) Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R) Spike Duplicate % Recovery
- NC: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Sample

QC Batch #: WGC4000330
Matrix: Liquid
Units: µg/Liter

Date Analyzed: 03/30/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/Liter	SA µg/Liter	SR µg/Liter	SP µg/Liter	**SP % R**	SPD µg/Liter	**SPD %R**	% RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	4.7	ND	4.5	**96**	4.7	**101**	4.4	25	70-130
Toluene	8020	<0.50	29	ND	29	**99**	28	**97**	1.4	25	70-130
Ethyl Benzene	8020	<0.50	5.5	ND	5.6	**101**	5.4	**99**	2.6	25	70-130
Xylenes	8020	<0.50	32	ND	32	**100**	32	**100**	0.1	25	70-130
Gasoline	8015	<50.0	467	ND	450	**96**	463	**99**	3.0	25	70-130
aaa-TFT(S.S.)-FID	8020			107%	114%		118%				65-135
aaa-TFT(S.S.)-PID	8015			99%	102%		105%				65-135

Definition of Terms:

na: Not Analyzed in QC batch
MB: Method Blank
SA: Spike Added
SR: Sample Result
RPD(%): Duplicate Analysis - Relative Percent Difference
SP: Spike Result
SP (%R): Spike % Recovery
SPD: Spike Duplicate Result
SPD (%R): Spike % Recovery
nc: Not Calculated

CHAIN OF CUSTODY RECORD

PROJECT NAME AND ADDRESS:

Golden Gate Petroleum - 23rd
23rd Ave
Oakland

SAMPLER: (Signature) Randal Wilson

HAGEMAN - AGUIAR, INC.
11100 San Pablo Ave., Suite 200-A
El Cerrito, CA 94530
(510)620-0891 (510)620-0894 (FAX)

ANALYSIS REQUESTED: TPH-Gas, BTEX, MTBE by 8020/8015; TPH Diesel

CROSS REFERENCE NUMBER	DATE 3/28/00	TIME	SOIL	WATER	SAMPLE LOCATION	TPH-Gas, BTEX, MTBE by 8020/8015	TPH Diesel	REMARKS
MW-1	03/29/00	15:01		X	Moniter Well # MW-1	X	X	19794-001
MW-2	03/29/00	15:56		X	" " # MW-2	X	X	-002
MW-3	03/29/00	14:12		X	" " # MW-3	X	X	-003
MW-4	03/29/00	13:26		X	" " # MW-4	X	X	-004
Casing-1	03/29/00	16:47		X	Extraction Casing 1	X	X	-005
Casing-2	03/29/00	17:42		X	Extraction Casing 2	X	X	-006

00 MAR 29 15:57

RELINQUISHED BY: (Signature) R.B. Wilson	DATE 3/29/00 TIME 2 PM	RECEIVED BY: (Signature) ISCM # 375	DATE 3/29/00 TIME 1401
RELINQUISHED BY: (Signature) ISCM # 375	DATE 3/29 TIME 660	RECEIVED BY: (Signature)	DATE TIME
RELINQUISHED BY: (Signature)	DATE TIME	RECEIVED BY: (Signature)	DATE TIME
RELINQUISHED BY: (Signature)	DATE TIME	RECEIVED FOR LABORATORY BY: (Signature) J. McKenna	DATE 3/29/00 TIME 3:57