

January 5, 1993
SCI 554.006

Mr. Ronald W. Doll
Attorney at Law
c/o Mariner Square Associates
2236 Mariner Square
Alameda, California 94501

Quarterly Groundwater Monitoring Report
11/20/92 Sampling Event
Mariner Warehouse
Alameda, California

Dear Mr. Doll:

This letter presents quarterly groundwater monitoring results for the referenced site. Groundwater monitoring has been performed at the site as per Alameda County Health Care Services Agency's (ACHCSA) request letter dated June 10, 1992. Per our conversation with Ms. Juliet Shin on September 21, 1992, testing for polynuclear aromatics has been discontinued from the current sampling plan due to the absence of these compounds in our previous sampling event. A groundwater investigation performed by SCI consisted of the installation and monitoring of five groundwater monitoring wells. The results of the groundwater investigation were recorded in a report dated October 29, 1992.

The latest groundwater monitoring event consisted of (1) measuring groundwater levels, (2) purging five gallons of water from each of the wells, and (3) sampling each well with a pre-cleaned disposable bailer. The samples were retained in glass containers and preserved with hydrochloric acid. The containers were placed in ice filled coolers and remained cooled until delivery to the analytical laboratory. Chain-of-Custody records accompanied the samples to the laboratory.

Analytical testing was performed by Curtis and Tompkins, Ltd., a State of California Department of Health Services (DHS) certified laboratory for hazardous waste and water testing. The analytical tests included:

1. Total volatile hydrocarbons (TVH), EPA method 8015 mod/5030,

■ **Subsurface Consultants, Inc.**

Mr. Ronald W. Doll
Attorney at Law
c/o Mariner Square Associates
SCI 554.006
January 5, 1993
Page 2

■ Subsurface Consultants, Inc.

2. Benzene, toluene, xylene and ethylbenzene (BTXE), EPA method 8020/5030, and
3. Total extractable hydrocarbons (TEH), EPA method 8015 mod/3510.

A summary of the current and previous analytical test results and groundwater elevation data are presented in Tables 1 and 2, respectively. Analytical test reports and Chain-of-Custody documents are attached.

Conclusions

The groundwater level data indicate that the groundwater flow direction is toward the north at a gradient of approximately 1 percent.

The analytical test results indicate that during the latest sampling event, TVH, BTEX and TOG were not encountered in the wells. TEH was encountered in the wells at the concentrations presented on Table 1.

Groundwater monitoring will continue on a quarterly basis. If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.



R. William Rudolph
Geotechnical Engineer 741 (expires 12/31/96)

EBC:RWR:egh

2 copies submitted

Attachments: Table 1 - Contaminant Concentrations in Groundwater
Table 2 - Groundwater Elevations
Plate 1 - Groundwater Contours
Analytical Test Reports
Chain-of-Custody Documents

Mr. Ronald W. Doll
Attorney at Law
c/o Mariner Square Associates
SCI 554.006
January 5, 1993
Page 3

■ Subsurface Consultants, Inc.

cc: Mr. Rich Hiett
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, California 94612

Ms. Juliet Shin
Alameda County Health Care Services Agency
80 Swan Way, Room 350
Oakland, California 94662-0901

Table 1.
Contaminant Concentrations in Groundwater

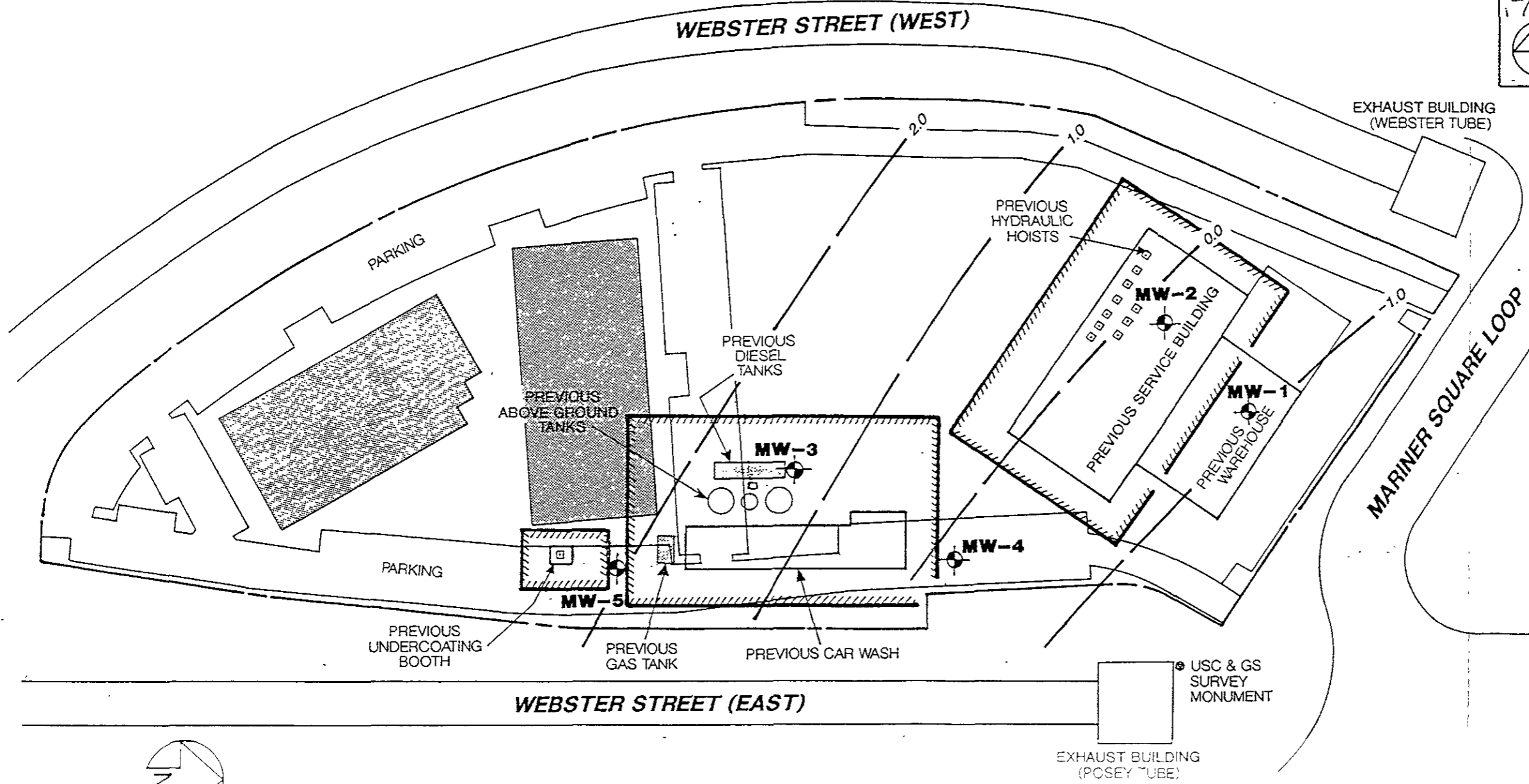
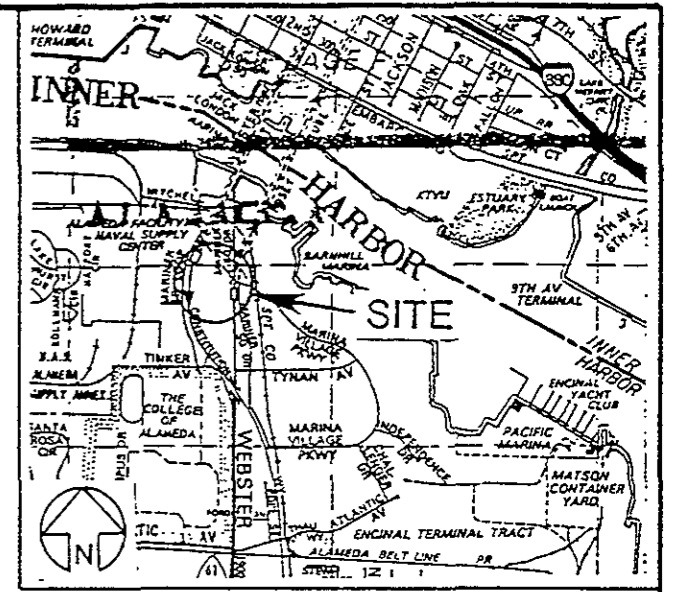
<u>Well</u>	<u>Date</u>	<u>TEH</u> <u>ug/l</u>	<u>TVH</u> <u>ug/l</u>	<u>Benzene</u> <u>ug/l</u>	<u>Toluene</u> <u>ug/l</u>	<u>Ethyl-</u> <u>Benzene</u> <u>ug/l</u>	<u>Total</u> <u>Xylenes</u> <u>ug/l</u>	<u>Polynuclear</u> <u>Aromatics</u> <u>ug/L</u>
MW-1	09/02/92	260	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)
	11/20/92	270	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	--
MW-2	09/02/92	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)
	11/20/92	370	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	--
MW-3	09/02/92	300	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)
	11/20/92	190	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	--
MW-4	09/02/92	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)
	11/20/92	80	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	--
MW-5	09/02/92	200	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(5)
	11/20/92	80	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	--

TEH = total extractable hydrocarbons, EPA 8015/3550
 TVH = total volatile hydrocarbons, EPA 8015 mod/5030
 mg/l = milligrams per liter or parts per billion (ppb)
 ug/l = micrograms per liter or parts per billion (ppb)
 ND = None detected above reporting limits indicated in parentheses

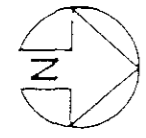
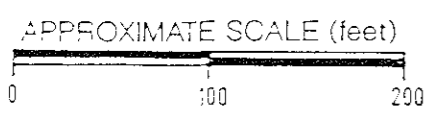
Table 2.
Groundwater Elevation Data

<u>Well</u>	<u>TOC Elev (ft)</u>	<u>Date</u>	<u>Groundwater Depth (ft)</u>	<u>Groundwater Elev (ft)</u>
MW-1	6.76	9/4/92	8.06	-1.30
		9/8/92	8.02	-1.26
		9/11/92	8.11	-1.35
		11/20/92	7.52	-0.76
MW-2	6.32	9/4/92	8.72	-2.40
		9/8/92	6.33	-0.01
		9/11/92	8.65	-2.33
		11/20/92	6.37	-0.05
MW-3	7.19	9/4/92	5.60	1.59
		9/8/92	5.45	1.74
		9/11/92	5.50	1.69
		11/20/92	5.40	1.79
MW-4	7.27	9/4/92	7.86	-0.59
		9/8/92	7.84	-0.57
		9/11/92	7.91	-0.64
		11/20/92	7.56	-0.29
MW-5	7.22	9/4/92	3.26	3.96
		9/8/92	5.10	2.12
		9/11/92	5.12	2.10
		11/20/92	5.13	2.09

TOC = Top of Casing
Elevation with respect to Mean Sea Level



- MONITORING WELL LOCATIONS
- PREVIOUS TANK LOCATION
- EXTENT OF SOIL REMEDIATION
- EXISTING BUILDINGS
- PROPERTY LINE
- APPROXIMATE GROUNDWATER CONTOUR (FEET), (MSL)



GROUNDWATER CONTOURS 11/20/92			PLATE 1
MARINER WAREHOUSE - ALAMEDA, CA			
JOB NUMBER 554 006	DATE 1/4/93	APPROVED <i>Joe</i>	

Subsurface Consultants



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

DATE RECEIVED: 11/23/92

DATE REPORTED: 12/03/92

LABORATORY NUMBER: 109344

CLIENT: SUBSURFACE CONSULTANTS

PROJECT ID: 554.006

LOCATION: MARINER WAREHOUSE

RESULTS: SEE ATTACHED

Reviewed by

Reviewed by

This report may be reproduced only in its entirety.

Client: Subsurface Consultants

Laboratory Login Number: 109344

Project Name: Mariner Warehouse

Report Date: 03 December 92

Project Number: 554.006

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

METHOD: SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
109344-001	MW-1	Water	20-NOV-92	23-NOV-92	02-DEC-92	ND	mg/L	5	TR	7605
109344-002	MW-2	Water	20-NOV-92	23-NOV-92	02-DEC-92	ND	mg/L	7	TR	7605
109344-003	MW-3	Water	20-NOV-92	23-NOV-92	02-DEC-92	ND	mg/L	5	TR	7605
109344-004	MW-4	Water	20-NOV-92	23-NOV-92	02-DEC-92	ND	mg/L	5	TR	7605
109344-005	MW-5	Water	20-NOV-92	23-NOV-92	02-DEC-92	ND	mg/L	5	TR	7605

ND = Not Detected at or above Reporting Limit (RL).



Q C B a t c h R e p o r t

Client: Subsurface Consultants
Project Name: Mariner Warehouse
Project Number: 554.006

Laboratory Login Number: 109344
Report Date: 03 December 92

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

QC Batch Number: 7605

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	02-DEC-92

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	87%	SMWW 17:5520BF	02-DEC-92
BSD	86%	SMWW 17:5520BF	02-DEC-92

		Control Limits
Average Spike Recovery	86%	80% - 120%
Relative Percent Difference	1.2%	< 20%

LABORATORY NUMBER: 109344
 CLIENT: SUBSURFACE CONSULTANTS
 PROJECT ID: 554.006
 LOCATION: MARINER WAREHOUSE

DATE SAMPLED: 11/20/92
 DATE RECEIVED: 11/23/92
 DATE EXTRACTED: 12/01/92
 DATE ANALYZED: 12/02/92
 DATE REPORTED: 12/03/92

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

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT* (ug/L)
109344-1	MW-1	**	270	50
109344-2	MW-2	**	370	50
109344-3	MW-3	ND	190	50
109344-4	MW-4	ND	80	50
109344-5	MW-5	ND	80	50

ND = Not detected at or above reporting limit.

* Reporting limit applies to all analytes.

**Kerosene range not reported. Quantitated as diesel range.

QA/QC SUMMARY

```

=====
RPD, %                               8
RECOVERY, %                           70
=====
  
```

LABORATORY NUMBER: 109344
 CLIENT: SUBSURFACE CONSULTANTS
 PROJECT ID: 554.006
 LOCATION: MARINER WAREHOUSE

DATE SAMPLED: 11/20/92
 DATE RECEIVED: 11/23/92
 DATE ANALYZED: 12/01/92
 DATE REPORTED: 12/02/92

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

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
109344-1	MW-1	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
109344-2	MW-2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
109344-3	MW-3	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
109344-4	MW-4	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
109344-5	MW-5	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

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

QA/QC SUMMARY

=====
 RPD, % 2
 RECOVERY, % 110
 =====

CHAIN OF CUSTODY FORM

PROJECT NAME: Mariner Warehouse
 JOB NUMBER: 554.006 LAB: Curtis + Tompkins
 PROJECT CONTACT: Sean Carson TURNAROUND: Normal
 SAMPLED BY: E CHANG REQUESTED BY: _____

ANALYSIS REQUESTED											

LABORATORY ID. NUMBER	SCI SAMPLE NUMBER	MATRIX					CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES
		WATER	SOIL	WASTE	AIR		VOA	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME	
MW-2	X					4	2				X			X		11	20	92	11:40	X
MW-3	X					4	2				X			X		11	20	92	13:00	Y
MW-4	X					4	2				X			X		11	20	92	13:30	
MW-5	X					4	2				X			X		11	20	92	09:50	

COMMENTS & NOTES:

MW-1 FOAMED - SMALL BUBBLES IN 40ML
 MW-2 " "
 MW-3 " "

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
<i>[Signature]</i>	11/23/92 12:00		
RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELEASED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
		<i>Teerat. Morrison</i>	12:00 11/23/92

Subsurface Consultants, Inc.