R. William Rudolph, Jr., PE
Thomas E. Cundey, PE
Jeriann N. Alexander, PE

December 6, 1994
SCI 609.001

Ms. Marianne Robison
Buttner Properties
600 West Grand Avenue
Oakland, California 94612

Quarterly Groundwater Monitoring
November 1994 Event
4055 Hubbard Street
Oakland, California

Dear Ms. Robison:

This letter presents the results of the November 1994 sampling event for the groundwater monitoring program for the referenced site. The groundwater monitoring program has been performed at the request of the Alameda County Health Care Services Agency. The program was modified beginning with this event to consist of quarterly monitoring of wells MW-1 and MW-3, and semiannual monitoring of well MW-2. The location of the site is presented on Plate 1.

Groundwater Sampling

On November 11, 1994, Wells MW-1, MW-2 and MW-3 were sampled. In general, the groundwater monitoring event consisted of (1) measuring groundwater levels using an electric well sounder, (2) checking for free product, (3) purging water from each well until pH, conductivity and temperature had stabilized (approximately 3 well volumes), and (4) after the wells had recovered to at least 80 percent of their initial level, sampling the wells with new disposable bailers. The samples were retained in glass containers pre-cleaned by the supplier in accordance with EPA protocol. The containers were placed in an ice filled cooler and remained iced until delivery to the analytical laboratory. Chain-of-Custody documents accompanied the samples to the laboratory.

Analytical Testing

Analytical testing was performed by Curtis and Tompkins, Ltd., a laboratory certified by the State of California Department of Health Services for hazardous waste and water testing. For this event samples from wells MW-1, and MW-3 were analyzed for the following:

1. Total volatile hydrocarbons (TVH), sample preparation and analysis using EPA Methods 5030 (purge and trap) and 8015 modified (gas chromatograph coupled to a flame ionization detector),

2. Total extractable hydrocarbons (TEH), sample preparation and analysis using EPA Methods 3550 (solvent extraction) and 8015 modified (gas chromatograph coupled to a flame ionization detector).

In addition, samples from all three wells were analyzed for lead. A summary of the current and previous analytical test results are presented in Table 1. The groundwater level data are presented in Table 2. Well sampling forms, analytical test reports, and Chain-of-Custody documents are attached.

Conclusions

The groundwater data presented in Table 1 indicates that the groundwater gradient remains generally consistent with previous measurements. The gradient is relatively flat and tends toward the west. The groundwater gradient and flow contours for this event are shown on Plate 1.

Concentrations of total extractable hydrocarbons were detected in wells MW-1 and MW-3 at concentrations similar to those previously detected. No total volatile hydrocarbons were detected in these wells. In addition, lead was not detected in any of the wells during this event.

In accordance with the monitoring program, the next sampling event will be conducted during the month of February 1995. During that event all three wells will be monitored for TEH and TVH.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

Jeriann N. Alexander, P.E.
Principal Engineer

JNA:RWR:sld

Attachments: Table 1 - Contaminant Concentrations in Groundwater
Table 2 - Groundwater Elevation Data
Plate 1 - Site Plan
Analytical Test Report
Chain-of-Custody Form

Distribution:

1 copy: Ms. Marianne Robison
Buttner Properties
600 West Grand Avenue
Oakland, California 94612

1 copy: Ms. Susan Hugo
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94501

Table 1.
Contaminant Concentrations in Water

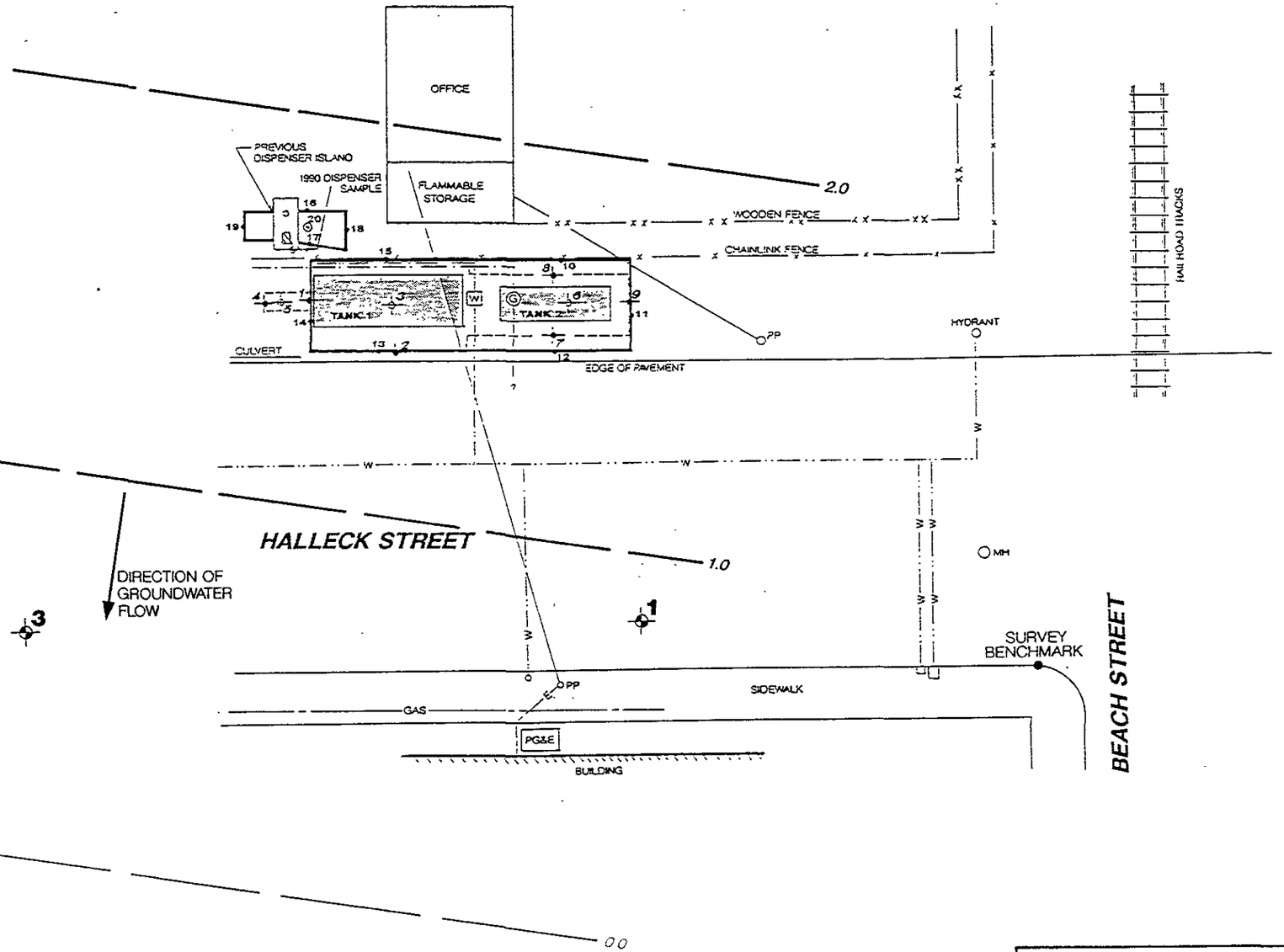
Sample Designation	Date	TVH (ug/l)	TEH (ug/l)	TOG (mg/l)	Benzene (ug/l)	Toluene (ug/l)	Xylene (ug/l)	Ethyl-benzene (ug/l)	Lead (ug/l)
MW-1	06/02/93	160	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	09/15/93	120	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	12/23/93	120	310	<5	<1.5	<0.5	<0.5	<0.5	--
	04/05/94	130	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	08/26/94	74	560	<5	<0.5	<0.5	<0.5	<0.5	--
	08/26/94	140	<50	--	--	--	--	--	<3.0
MW-2	06/02/93	210	150	<5	<0.5	<0.5	<0.5	<0.5	--
	09/15/93	150	50	<5	<0.5	<0.5	<0.5	<0.5	--
	12/23/93	140	220	<5	<0.5	<0.5	<0.5	<0.5	--
	04/05/94	150	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	08/26/94	71	590	<5	<0.5	<0.5	<0.5	<0.5	--
	11/11/94	--	--	--	--	--	--	--	<3.0
MW-3	06/02/93	280	170	<5	<0.5	<0.5	<0.5	<0.5	--
	09/15/93	180	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	12/23/93	190	250	<5	<0.5	<0.5	<0.5	<0.5	--
	04/05/94	240	280	<5	<0.5	<0.5	<0.5	<0.5	--
	08/26/94	130	520	<5	<0.5	<0.5	<0.5	<0.5	--
	11/11/94	170	<50	--	--	--	--	--	<3.0

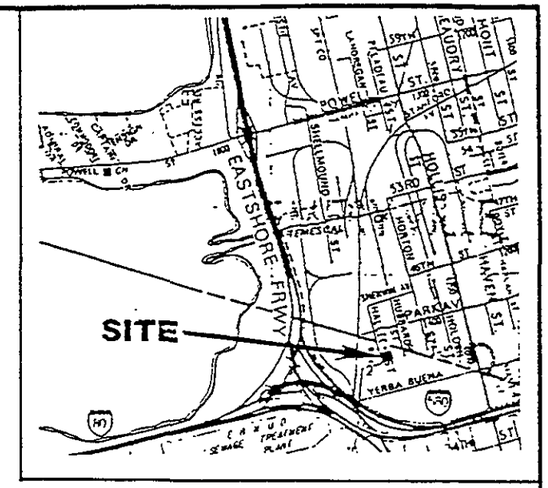
TVH = Total volatile hydrocarbons
TEH = Total extractable hydrocarbons
TOG = Total oil and grease
mg/l = Milligrams per liter = parts per million
ug/l = Micrograms per liter = parts per billion
<0.5 = Chemical not present at a concentration greater than the detection limit stated
-- = Not requested

Table 2. GROUNDWATER ELEVATION DATA

Well Number	TOC Elev[1] (feet)	Date	Groundwater Depth[2] (feet)	Groundwater Elevation (feet)
MW-1	3.64	06/01/93	3.63	0.01
		09/15/93	4.47	-0.83
		12/23/93	3.47	0.17
		04/05/94	3.85	-0.21
		08/26/94	4.29	-0.65
		11/11/94	2.83	0.81
MW-2	4.95	06/01/93	3.65	1.30
		09/15/93	4.90	0.05
		12/23/93	3.45	1.50
		04/05/94	4.01	0.94
		08/26/94	4.72	0.23
		11/11/94	2.34	2.61
MW-3	3.61	06/01/93	3.29	0.32
		09/15/93	4.32	-0.71
		12/23/93	3.32	0.29
		04/05/94	3.74	-0.13
		08/26/94	4.30	-0.69
		11/11/94	3.05	0.56

[1] City of Oakland datum
[2] Measured below TOC.





VICINITY MAP

- 1990 SIDEWALL SAMPLE
- 1990 BOTTOM SAMPLE
- PREVIOUS TANK
- LIMIT OF 1990 EXCAVATION
- W WATER VALVE
- G GAS VALVE
- G GAS LINE
- W WATER LINE
- MH MANHOLE
- PP POWER POLE
- 1992 SIDEWALL SAMPLE
- 1992 BOTTOM SAMPLE
- PREVIOUS DISPENSER
- LIMIT OF 1992 EXCAVATION
- WELL LOCATION
- GROUNDWATER ELEVATION CONTOURS (feet)

APPROXIMATE SCALE (feet)

0 15 30

N

SITE PLAN

Subsurface Consultants

4055 HUBBARD STREET – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
609.001	12/7/94	

PLATE 1

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

ANALYTICAL REPORT

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 18-NOV-94
Lab Job Number: 118451
Project ID: 609.001
Location: Hubbard Tank

Reviewed by:

Reviewed by:

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118451
CLIENT: Subsurface Consultants, Inc.
PROJECT ID: 609.001
LOCATION: Hubbard Tank

DATE SAMPLED: 11/11/94
DATE RECEIVED: 11/11/94
DATE EXTRACTED: 11/14/94
DATE ANALYZED: 11/15/94
DATE REPORTED: 11/18/94

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)
118451-1	MW-1	ND	ND	50
118451-3	MW-3	ND	ND	50
	METHOD BLANK	ND	ND	50

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

QA/QC SUMMARY:

RPD, %	2
RECOVERY, %	106

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 118451
CLIENT: Subsurface Consultants, Inc.
PROJECT ID: 609.001
LOCATION: Hubbard Tank

DATE SAMPLED: 11/11/94
DATE RECEIVED: 11/11/94
DATE ANALYZED: 11/17/94
DATE REPORTED: 11/18/94

Total Volatile Hydrocarbons as Gasoline in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	TVH AS GASOLINE (ug/L)	REPORTING LIMIT (ug/L)
118451-1	MW-1	140 *	50
118451-3	MW-3	170 *	50
	METHOD BLANK	ND	50

* Sample chromatogram does not resemble gasoline standard.

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	11
RECOVERY, %	88

CLIENT: Subsurface Consultants
PROJECT ID: 609.001
LOCATION: Hubbard Tank
MATRIX: Water

DATE REPORTED: 11/18/94

Metals Analytical Report

Lead								
Sample ID	Lab ID	Sample Date	Receive Date	Result (ug/L)	Reporting Limit (ug/L)	QC Batch	Method	Analysis Date
MW-1	118451-001	11/11/94	11/11/94	ND	3.0	17569	EPA 7421	11/16/94
MW-2	118451-002	11/11/94	11/11/94	ND	3.0	17569	EPA 7421	11/16/94
MW-3	118451-003	11/11/94	11/11/94	ND	3.0	17569	EPA 7421	11/16/94

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 118451

DATE REPORTED: 11/18/94

BATCH QC REPORT
PREP BLANK

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

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 118451

DATE REPORTED: 11/18/94

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS % Recovery	BSD % Recovery	Average Recovery	RPD	QC Batch	Method	Analysis Date
Lead	30	24.99	25.03	ug/L	83	83	83	0	17569	EPA 7421	11/16/94

REVISED

CHAIN OF CUSTODY FORM

PROJECT NAME: Hubbard Tank

JOB NUMBER: 609.001 LAB: CURTIS & TOMPKINS

PROJECT CONTACT: Jeri Alexander TURNAROUND: NORMAL

SAMPLED BY: Dennis Alexander REQUESTED BY: Jeri Alexander

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX						CONTAINERS						METHOD PRESERVED						SAMPLING DATE										NOTES	ANALYSIS REQUESTED									
		WATER	SOIL	WASTE	AIR			VOA	LITER	PINT	TUBE			HCL	H_2SO_4	HNO_3	ICE	NONE		MONTH		DAY		YEAR		TIME					TEH	TVH	LEAD							
118451-1	MW1	X						3	2					X						1	1	1	1	9	4	0	8	3	0		X	X	X							
-2	MW2	X						3	2					X						1	1	1	1	9	4	1	0	1	5				X							
-3	MW3	X						3	2					X						1	1	1	1	9	4	0	9	1	5		X	X	X							

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
	11/14/94 10:00 AM		
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Subsurface Consultants, Inc.
171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
(510) 268-0461 • FAX: 510-268-0137

HAIN OF CUSTODY FORM

11845/

PAGE OF

OJECT NAME: Hubbard Tank

B NUMBER: 609-001 LAB: Curtis & Tompkins

OJECT CONTACT: Leri Alexander TURNAROUND: Normal

MPLED BY: Dennis Alexander REQUESTED BY: Leri Alexander

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR			CONTAINERS: VOA	LITER	PINT	TUBE			METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME				NOTES	ANALYSIS REQUESTED: TEH	8015	TVH/BTXE							
-1	MW-1	X						3	2					X			X		11	11	94	0	8	3	0		X	X	X							
-2	MW-2	X						3	2					X			X		11	11	94	1	0	1	5		X	X	X							
-3	MW-3	X						3	2					X			X		11	11	94	0	9	1	5		X	X	X							

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
Dennis Alexander	11/11/94 10:25 a.m.		
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
		Susan K Morrison	11/11/94 10:25

COMMENTS & NOTES:

Subsurface Consultants, Inc.
171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
(510) 268-0461 • FAX: 510-268-0137