

March 1, 1993
SCI 537.004

537.004 13

Mr. Ignacio Dayrit
City of Emeryville
2200 Powell Street, 12th Floor
Emeryville, California 94608

Groundwater Monitoring Event 3
January 1993
4300 San Pablo Avenue
Emeryville, California

Dear Mr. Dayrit:

This letter records the results of the third groundwater sampling event conducted by Subsurface Consultants, Inc. at the referenced site. For this sampling event wells MW-1, MW-5 and MW-6 were sampled. Prior to sampling, the depth to groundwater in each of the 6 on-site wells was measured with a well sounder. A summary of groundwater depths and elevations is presented on Table 1. The approximate groundwater contours for the current readings are shown on the Site Plan, Plate 1.

After measuring the groundwater depths, Wells MW-1, MW-5 and MW-6 were purged by removing at least four well volumes of water using pre-cleaned bailers. The purged water was placed in drums and left on site for later disposal. Groundwater samples were obtained from each of the three wells after purging. The samples were retained in appropriate pre-cleaned containers, put in an iced cooler, and refrigerated until delivery to the analytical laboratory. The samples were accompanied by Chain-of-Custody Records, copies of which are attached.

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

1. Total Volatile Hydrocarbons TVH (as gasoline) - sample preparation and analysis using EPA Methods 5030 (purge and trap) and 8015 modified (gas chromatograph coupled to a flame ionization detector),

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Mr. Ignacio Dayrit
March 1, 1993
SCI 537.004
Page 2

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2. Benzene, toluene, xylenes and ethylbenzene (BTXE) - sample preparation and analysis using EPA Methods 5030 and 8020 (gas chromatograph coupled to a photo-ionization detector), and
3. Total Extractable Hydrocarbons TEH (as gasoline and diesel) - sample preparation and analysis using EPA Methods 3550 (sonication extraction) and 8015 modified.

Copies of the analytical test reports are attached. The results of all analytical testing events are presented in Table 2.

Conclusions

Groundwater Depth and Gradient

Based on the data presented in Table 1, it appears that groundwater levels have risen 3.5 to 5 feet since the December 1991 event. This rise is likely associated with the recent heavy rains and is similar to what we have encountered at other Oakland sites in 1993. The groundwater flow direction is towards the ~~west~~ ^{west} under a gradient of about 2.5 percent. Previously, the flow direction was found to be toward the northwest.

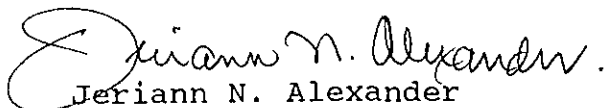
Groundwater Quality

In general, the analytical test data generated to date indicates that groundwater has been impacted by previous releases of gasoline and diesel. It appears that the dissolved product plumes have impacted areas on and downgradient of the previous tank areas.

If you have questions regarding the analytical test results, please call.

Yours very truly,

Subsurface Consultants, Inc.



Jeriann N. Alexander
Civil Engineer 40469 (expires 3/31/95)

JW:JNA:RWR:egh

Mr. Ignacio Dayrit
March 1, 1993
SCI 537.004
Page 3

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2 copies submitted

Attachments: Tables 1 and 2
Site Plan
Chain-of-Custody Records
Analytical Test Report

cc: ✓Ms. Susan L. Hugo
Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, California 94621

Mr. Rich Heitt
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Table 1. Summary of Groundwater Data

<u>Well</u>	<u>Date</u>	<u>TOC Elevation¹ (ft)</u>	<u>Groundwater Depth (ft)</u>	<u>Groundwater Elevation² (ft)</u>
MW-1	06/06/90	101.13	5.33	95.80
	06/11/90		5.52	95.61
	06/18/90		5.50	95.63
	06/22/90		6.18	94.95
	06/29/90		6.50	92.63
	10/30/90		9.10	92.03
	12/11/90		7.18	93.95
	12/26/90		7.90	93.23
	01/02/91		8.27	92.86
	07/10/91		8.00	93.13
	09/13/91		9.16	91.17
	12/24/91		7.29	93.84
	01/27/93		3.60	97.53
	MW-2		06/06/90	101.49
06/11/90		6.98	94.51	
06/18/90		7.04	94.45	
06/22/90		7.60	93.89	
06/29/90		9.96	91.53	
10/30/90		10.66	90.83	
12/11/90		9.88	91.61	
12/26/90		9.19	92.30	
01/02/91		9.65	91.84	
07/10/91		9.40	92.09	
09/13/91		--	--	
12/24/91		9.19	92.30	
01/27/93		4.84	96.65	
MW-3		06/06/90	100.20	
	06/11/90	6.50		93.70
	06/18/90	6.49		93.71
	06/22/90	7.11		93.09
	06/29/90	9.34		90.86
	10/30/90	10.11		90.09
	12/11/90	9.36		90.84
	12/26/90	9.00		91.20
	01/02/91	9.28		90.92
	07/10/91	8.94		91.26
	09/13/91	9.93		90.27
	12/24/91	9.02		91.18
	01/27/93	3.90		96.30

TABLE 1 (Continued)

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<u>Well</u>	<u>Date</u>	<u>TOC Elevation¹ (ft)</u>	<u>Groundwater Depth (ft)</u>	<u>Groundwater Elevation² (ft)</u>
MW-4	12/26/90	100.25	6.93	93.32
	01/02/91		7.31	92.94
	07/10/91		7.12	93.13
	09/13/91		8.53	91.72
	12/24/91		6.70	93.55
	01/27/93		3.29	96.96
MW-5	12/26/90	99.54	7.74	91.80
	01/02/91		7.95	91.59
	07/10/91		6.48	93.06
	09/16/91		7.07	92.47
	12/24/91		9.65	89.89
	01/27/93		4.80	94.74
MW-6	12/26/90	99.26	9.20	90.06
	01/02/91		9.40	89.86
	07/10/91		8.66	90.60
	09/13/91		9.95	89.31
	12/24/91		9.61	89.65
	01/27/93		5.17	94.09

¹ Elevation reference: Top of curb at fire hydrant on 43rd Street
(see Site Plan) assumed at elevation 100.00 feet

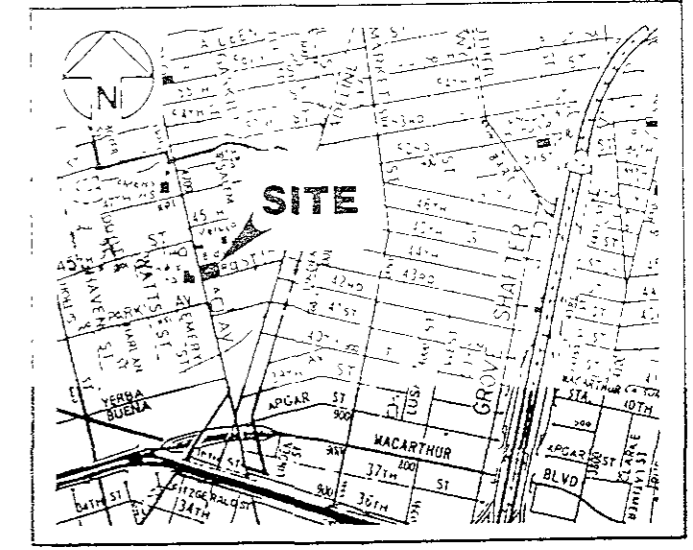
² Measured below top of casing (TOC)

Table 2. Analytical Test Results
in Groundwater

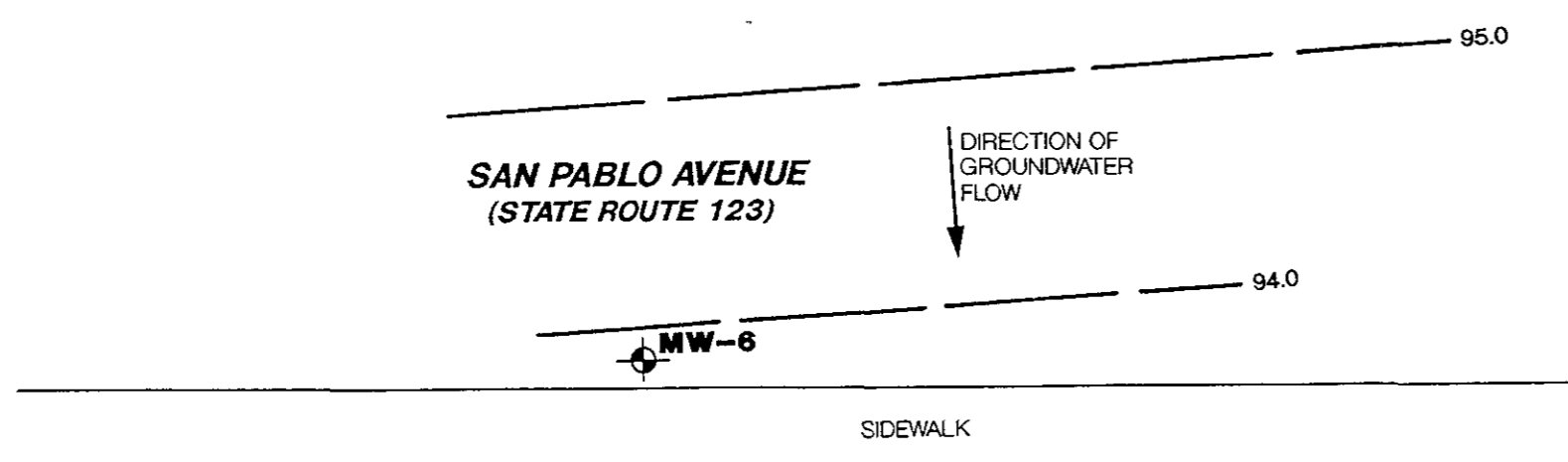
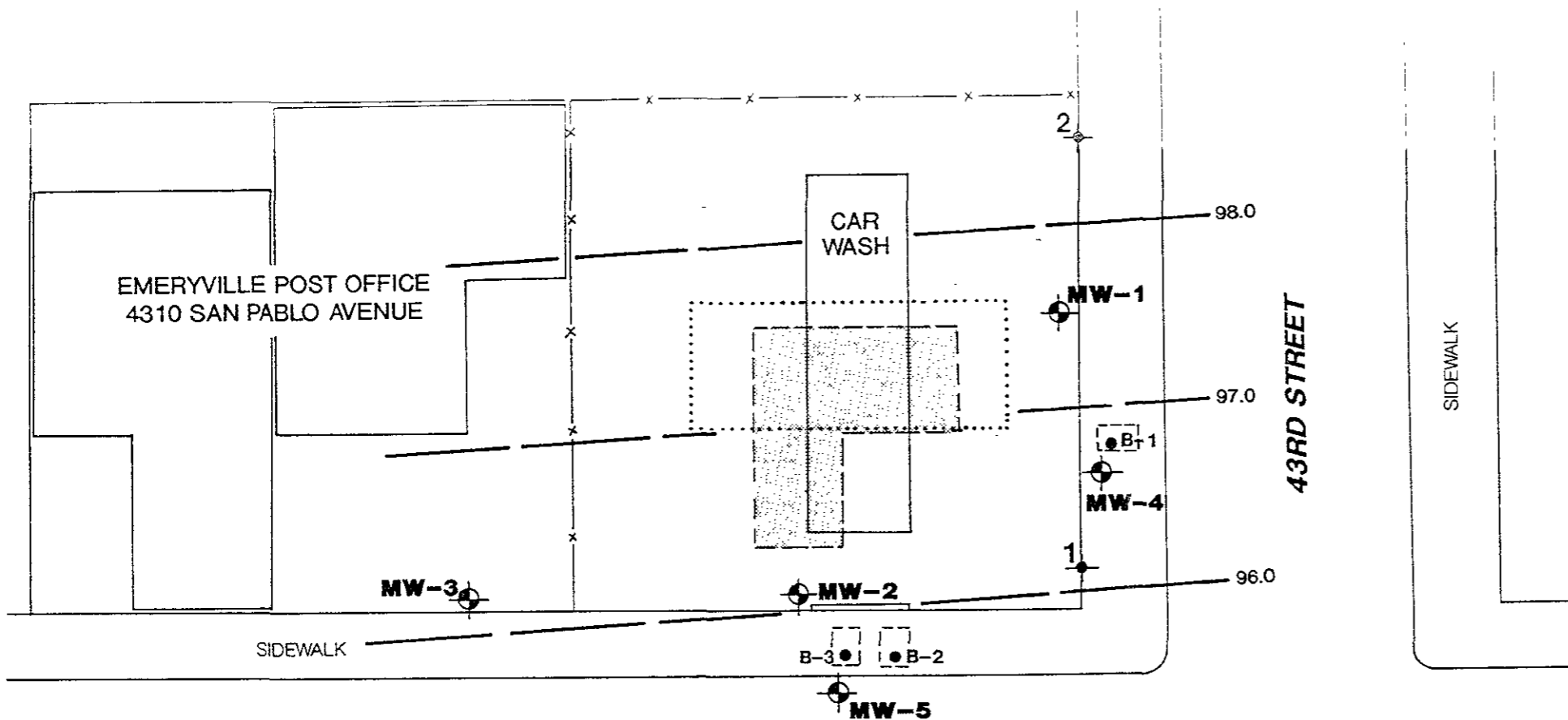
Sample	Sample Date	TVH ³ (mg/L)	TEH (mg/L)	Purgeable Aromatics ²			
				B (ug/L)	T (ug/L)	X (ug/L)	E (ug/L)
MW-1	06/11/90	0.94	1.90	5.3	1.8	1.9	1.8
MW-1	12/11/90	0.26	--	0.5	0.8	0.7	<0.5 ⁵
MW-1	09/13/91	0.33	0.38	<0.5	1.8	2.2	0.5
MW-1	12/24/91	0.15	0.41	<0.5	<0.5	<0.5	<0.5
MW-1	01/27/93	0.94	0.40	3.0	3.9	6.9	2.1
MW-2	06/11/90	1.80	2.80	<0.5	<0.5	<0.5	0.5
MW-2	12/11/90	1.60	--	3.0	2.5	3.8	2.1
MW-3	06/11/90	<0.05	<0.5	<0.5	<0.5	<0.5	0.5
MW-3	12/11/90	<0.05	--	<0.5	<0.5	<0.5	<0.5
MW-4	12/10/90	0.30		<0.5	1.1	1.3	0.6
MW-4	09/13/90	<0.05	0.18	<0.5	<0.5	<0.5	<0.5
MW-4	12/24/91	<0.05	0.065	<0.5	<0.5	<0.5	<0.5
MW-5	12/10/90	0.420	--	<0.5	<0.5	2.8	1.5
MW-5	09/16/91	1.20	0.20	0.6	3.3	5.1	2.3
MW-5	12/24/91	0.66	0.82	<0.5	1.0	3.2	1.5
MW-5	01/27/93	0.77	0.49	1.2	1.8	6.5	3.2
MW-6	12/11/90	<0.05	--	<0.5	<0.5	<0.5	<0.5
MW-6	09/13/91	<0.05	0.11	<0.5	<0.5	<0.5	<0.5
MW-6	12/24/91	<0.05	<0.05	<0.5	<0.5	<0.5	<0.5
MW-6	01/27/93	<0.05	0.06	0.7	1.9	3.1	0.7

not sampled?
→

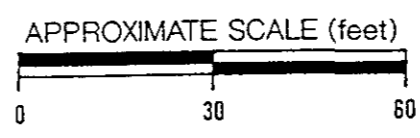
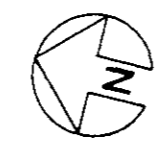
1 Total Extractable Hydrocarbons as Diesel (EPA 8015 modified)
 2 Benzene, toluene, total xylenes and ethylbenzene (EPA 8020)
 3 Total Volatile Hydrocarbons as Gasoline (EPA 8015 modified)
 4 Test not requested
 5 Less than detection limit shown



VICINITY MAP



- MONITORING WELL
- GROUNDWATER CONTOUR ELEVATION (feet)
- TEST BORING
- APPROXIMATE FORMER TANK LOCATION
- FORMER FUEL STATION PRIOR TO 1950 (APPROXIMATE LOCATION)
- FORMER FUEL STATION AFTER 1959 (APPROXIMATE LOCATION)



EMERYVILLE FIRE STATION #1

RETAIL BUILDING

ESTIMATED GROUNDWATER CONTOURS 1/27/93		
EMERYVILLE SENIOR HOUSING		PLATE
JOB NUMBER 537.004	DATE 3/1/93	APPROVED
		1

Subsurface Consultants



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

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

DATE RECEIVED: 01/27/93

DATE REPORTED: 02/02/93


LABORATORY NUMBER: 109878

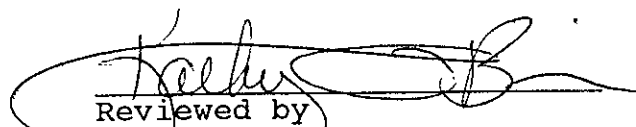
CLIENT: SUBSURFACE CONSULTANTS

PROJECT ID: 537.004

LOCATION: 4300 SAN PABLO AVENUE

RESULTS: SEE ATTACHED


Reviewed by


Reviewed by

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LABORATORY NUMBER: 109878
 CLIENT: SUBSURFACE CONSULTANTS
 PROJECT ID: 537.004
 LOCATION: 4300 SAN PABLO AVENUE

DATE SAMPLED: 01/27/93
 DATE RECEIVED: 01/27/93
 DATE ANALYZED: 01/30/93
 DATE REPORTED: 02/02/93

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)
109878-1	MW-1	940	3.0	3.9	2.1	6.9
109878-2	MW-5	770	1.2	1.8	3.2	6.5
109878-3	MW-6	ND(50)	0.7	1.9	0.7	3.1

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

QA/QC SUMMARY

RPD, % <1
 RECOVERY, % 97



LABORATORY NUMBER: 109878
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 537.004
LOCATION: 4300 SAN PABLO AVENUE

DATE SAMPLED: 01/27/93
DATE RECEIVED: 01/27/93
DATE EXTRACTED: 01/28/93
DATE ANALYZED: 01/30/93
DATE REPORTED: 02/02/93

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

Table with 5 columns: LAB ID, SAMPLE ID, KEROSENE RANGE (ug/L), DIESEL RANGE (ug/L), REPORTING LIMIT* (ug/L). Rows include samples 109878-1, 109878-2, and 109878-3.

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

QA/QC Summary table with 2 columns: Metric (RPD, %, RECOVERY, %) and Value (2, 83).

CHAIN OF CUSTODY FORM

PROJECT NAME: 4300 San Pablo AvenueJOB NUMBER: 537.004 LAB: Curtis & TompkinsPROJECT CONTACT: John Wolfe TURNAROUND: NormalSAMPLED BY: Jose Bermudez REQUESTED BY: John Wolfe

ANALYSIS REQUESTED	
TEH EPA 8015 mod	TVH G/BTEX EPA 8015 mod + EPA 8020

LABORATORY I.D. 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				
109878-1	MW-1	X				2	2							X					X	X		
	-2	X				2	2							X					X	X		
	-3	X				2	2							X					X	X		

COMMENTS & NOTES:

Sampling date 1/27/93.
taken from sample containers, labels
numbers 1/27/93

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature) <u>John Wolfe</u>	DATE/TIME 1/27/93 1509	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 1/29/93 1509

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