

December 12, 2001

Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: Quarterly Groundwater Monitoring
1450 Fruitvale Avenue
Oakland, California
AEI Project No. 3581

3
6419

DEC 24 2001

12/01/01

Dear Mr. Chan:

Enclosed is a copy of the Quarterly report for most recent episode of sampling at the above referenced property.

Please call me at (925) 283-6000 if you have any questions.

Sincerely,



Peter McIntyre
Project Geologist

December 12, 2001

DEC 24 2001

**QUARTERLY GROUNDWATER
MONITORING REPORT**

1450 Fruitvale Avenue
Oakland, California

AEI Project No. 3581

Prepared For

Fruitvale-Farnam Associates
C/O Jay-Phases Corporation
10700 MacArthur Boulevard, Suite 200
Oakland, CA 94605

Prepared By

AEI Consultants
3210 Old Tunnel Road, Suite B
Lafayette, CA 94549
(925) 283-6000

AEI

December 12, 2001

Fruitvale-Farnam Associates
c/o: The Jay-Phares Corporation
Mr. John Jay
10700 Foothill Boulevard, Suite 200
Oakland, CA 94605

**Subject: Quarterly Groundwater Monitoring and Sampling Report
Fifth Episode**
1450 Fruitvale Avenue
Oakland, California 94601
AEI Project No. 3581

Dear Mr. Jay:

AEI Consultants (AEI) has prepared this report on your behalf to document the continued groundwater investigation at the above referenced property (Figure 1: Site Location Map). This investigation has been performed according to the requirements of the Alameda County Health Care Services Agency (ACHCSA) to monitor the groundwater quality around the former fuel storage and dispensing system. This report presents the findings of the fifth episode of groundwater monitoring and sampling, conducted on November 5, 2001.

Site Description and Background

The property is located on the eastern corner of Fruitvale Avenue and Farnam Street in a residential and commercial area of the City of Oakland. The property is approximately 11,000 square feet in size and is developed with a three-story building that occupies two-thirds of the parcel. The western corner of the parcel is improved with an asphalt parking lot. The property is currently vacant.

The site was reportedly developed as a gas station in 1950 by Atlantic Richfield Oil Company (currently known as ARCO), and operated until at least 1983. There were four underground storage tanks located along the southern property boundary. The fuel dispenser island was located on the northeast corner of the current parking lot. The gas station was demolished, and the existing warehouse was constructed after 1983.

Two soil-boring projects were performed between 1998 and 1999 to determine whether a fuel release had occurred and to what extent soil or groundwater had been impacted. Three groundwater monitoring wells were then installed. Total Petroleum Hydrocarbons (TPH) as gasoline and benzene have been found in the soil up to 360 mg/kg and 0.59 mg/kg respectively.

Corporate Headquarters

Los Angeles
(310) 798-4255

Phoenix
(602) 240-5990

San Francisco
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Seattle
(425) 401-8500

New York
(212) 279-7770

Based on soil analytical data from the borings and the lack of hydrocarbons detected in sidewall samples from an exploratory excavation dug in the former tank location, the release likely occurred along the product piping or in the former dispenser location.

Summary of Activities

AEI measured the depth to groundwater in the three wells on November 5, 2001. Prior to sampling, the depth to water from the top of the well casings was measured with an electric water level indicator. The wells were purged and sampled using disposable Teflon bailers. Temperature, pH, and specific conductivity were measured during the purging of the wells. A minimum of 3 well volumes of water was removed during purging. Once the water parameters had stabilized and water levels had returned to approximately 90% of their original volume, a water sample was collected. The well locations are shown in Figure 2.

Water was poured from the bailers into 40 ml VOA vials and capped so that neither headspace nor air bubbles were visible within the sample containers. Samples were shipped on ice under proper chain of custody protocol to McCampbell Analytical, Inc. of Pacheco, California (State Certification #1644).

The three groundwater samples were analyzed for TPH as gasoline (EPA Method 5030/8015), MTBE (EPA Method 8020/602), and benzene, toluene, ethyl-benzene, and xylenes (BTEX) (EPA Method 8020/602).

Field Results

A light to strong hydrocarbon odor was observed during the sampling of all wells. No sheen or free product were encountered during sampling activities. Groundwater levels for the current monitoring episode ranged from 25.91 to 27.00 feet above mean sea level (msl). These groundwater elevations were an average of 3.48 feet lower than the previous monitoring episode. The direction of the groundwater flow at the time of measurement was towards the southeast with a calculated gradient of 0.033 ft/ft. This flow direction and gradient are consistent with those measured during previous episodes.

Water table elevation and flow direction data are summarized in Table 1. Water table contours and flow direction are shown in Figure 2. Refer to Appendix A for the Groundwater Monitoring Well Field Sampling Forms.

Groundwater Quality

TPH as gasoline was detected in all three wells, ranging from 1,700 µg/l in MW-1, up to 30,000 µg/l in MW-3. Benzene was also detected in all three wells, ranging from 100 µg/l in MW-1, up to 1,900 µg/l in MW-3. No concentrations of MTBE were detected above laboratory detection

limits in any of the wells. Please refer to Figure 3 for a graphic summary of hydrocarbon concentrations in groundwater from the three wells.

A summary of groundwater quality data is presented in Table 2. Laboratory results and chain of custody documents are included in Appendix B.

Conclusions

Although soil sample analytical data do not reveal a significant volume of grossly impacted soil above the water table, concentrations of fuel hydrocarbons have remained elevated in the three wells since monitoring began. MW-3 continues to exhibit the highest concentrations of hydrocarbons, as would be expected with its down-gradient proximity to former dispenser locations, which is suspected as the release area. A consistent decrease in concentrations has been observed in MW-1 since monitoring began. A decreasing trend may become apparent in MW-2 with future monitoring.

The lateral extent of the dissolved plume is not currently defined. The ACHCSA has requested a formal workplan to further assess the extent of the plume and provide information on possible sensitive receptors. The requested documents have been prepared and are currently under review prior to submittal to the ACHCSA. Quarterly monitoring of the three wells will continue. The next episode is scheduled for February 2002.

References

1. Phase I Environmental Site Assessment - July 1998, prepared by Glenfos, Inc.
2. Subsurface Investigation Report - June 11, 1999, prepared by AEI.
3. Subsurface Investigation Report - August 1999, prepared by AEI.
4. Workplan - July 17, 2000
5. Monitoring Well Installation and Sampling Report - November 22, 2000, prepared by AEI.
6. Quarterly Groundwater Monitoring Report - January 29, 2001, prepared by AEI.
7. Quarterly Groundwater Monitoring Report - May 4, 2001, prepared by AEI.
8. Quarterly Groundwater Monitoring Report - September 10, 2001, prepared by AEI.

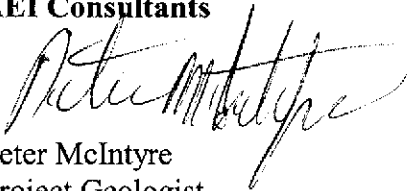
Report Limitations and Signatures

This report presents a summary of work completed by AEI Consultants including observations and descriptions of site conditions. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide required information, but it cannot be assumed that they are entirely representative of all areas not sampled. All conclusions and recommendations are based on these analyses, observations,

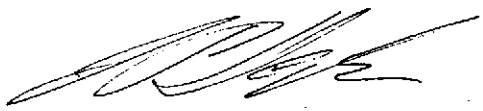
and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

These services were performed in accordance with generally accepted practices in the environmental engineering and construction field which existed at the time and location of the work.

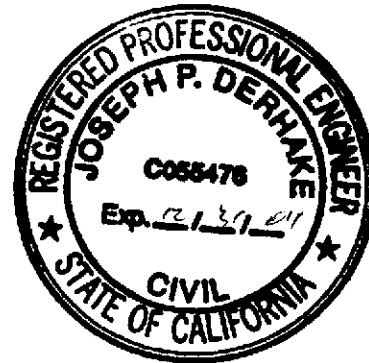
Sincerely,
AEI Consultants



Peter McIntyre
Project Geologist



Joseph P. Derhake, PE
Principal



Figures

- Figure 1 Site Location Map
- Figure 2 Well Locations with Water Table Contours
- Figure 3 Contaminant Concentrations

Tables

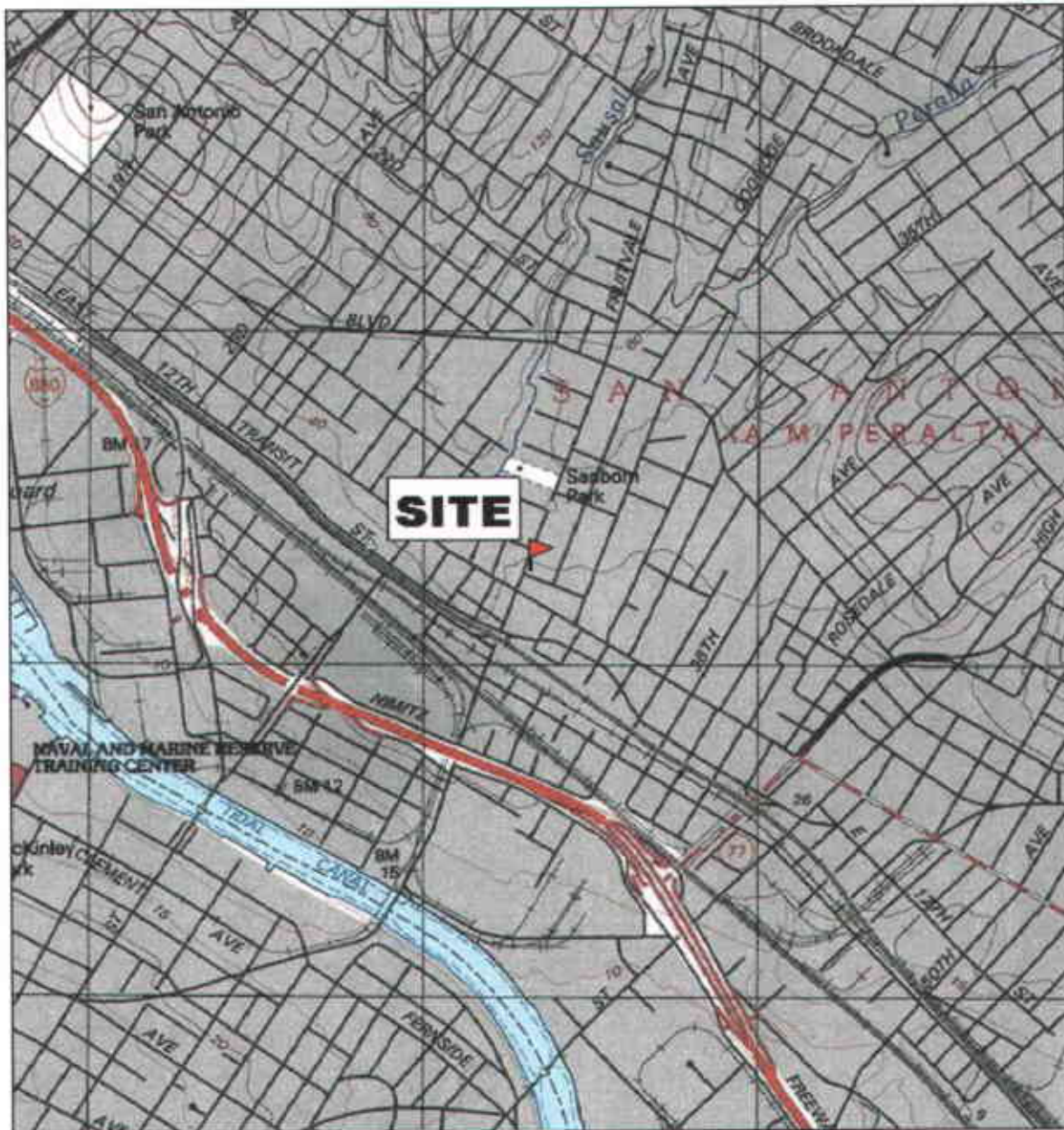
- Table 1 Water Table Data
- Table 2 Groundwater Sample Analytical Data

Appendices

- Appendix A Groundwater Monitoring Well Field Sampling Forms
- Appendix B Laboratory Analyses With Chain of Custody Documentation

cc: Mr. Barney Chan, ACHCSA
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Mr. Bill Phua
141 Woodland Way
Piedmont, CA 94611



TN MN
15°

0 5 1 MILE
0 1000 FEET 0 500 1000 METERS

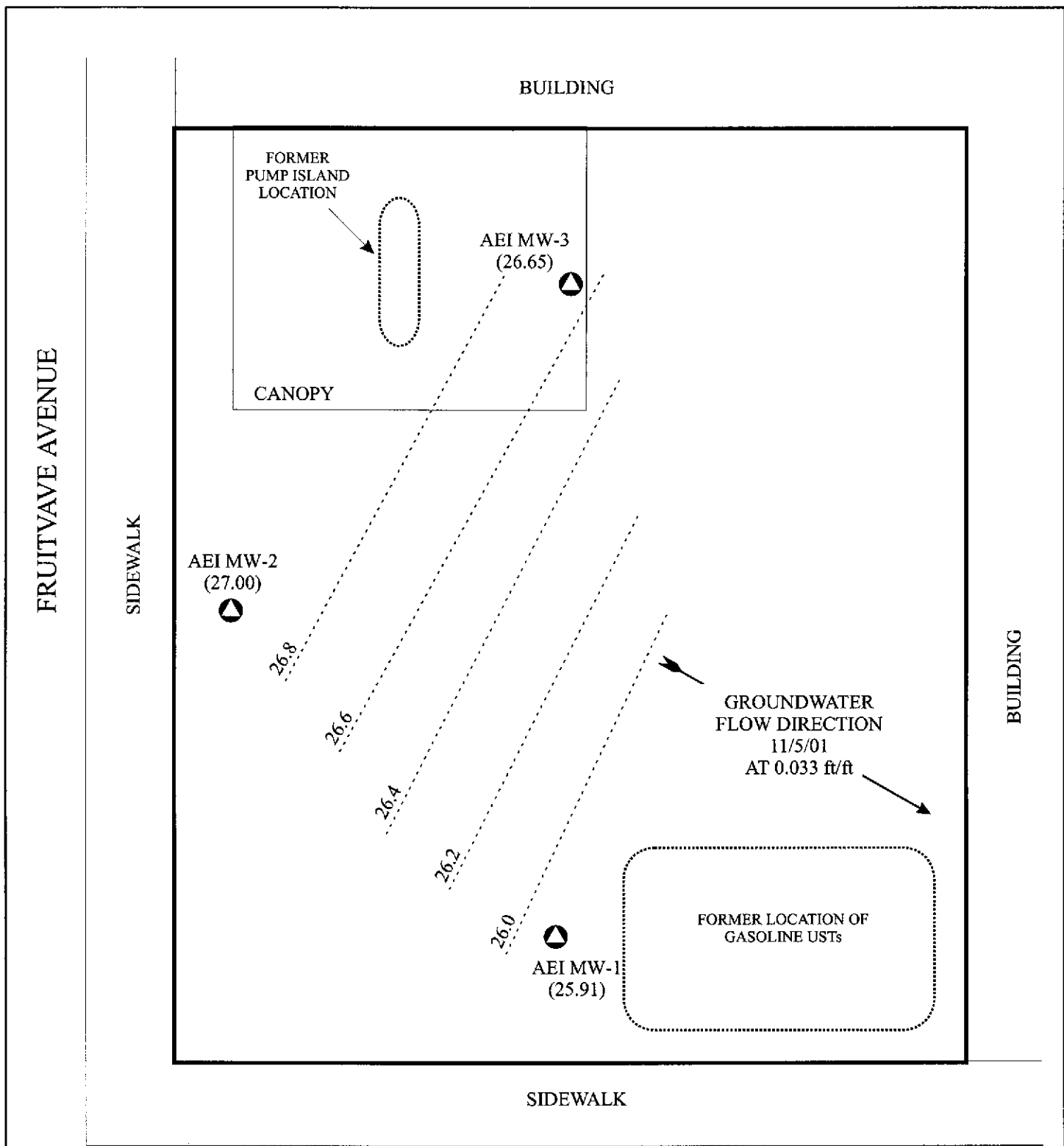
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AEI CONSULTANTS
3210 OLD TUNNEL RD, STE B, LAFAYETTE, CA

SITE LOCATION MAP

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 1
PROJECT NO. 3581



KEY

▲ WELL LOCATIONS

30.1 WATER TABLE CONTOUR (FEET AMSL) AS OF 11/5/01

SCALE: 1" = 10'

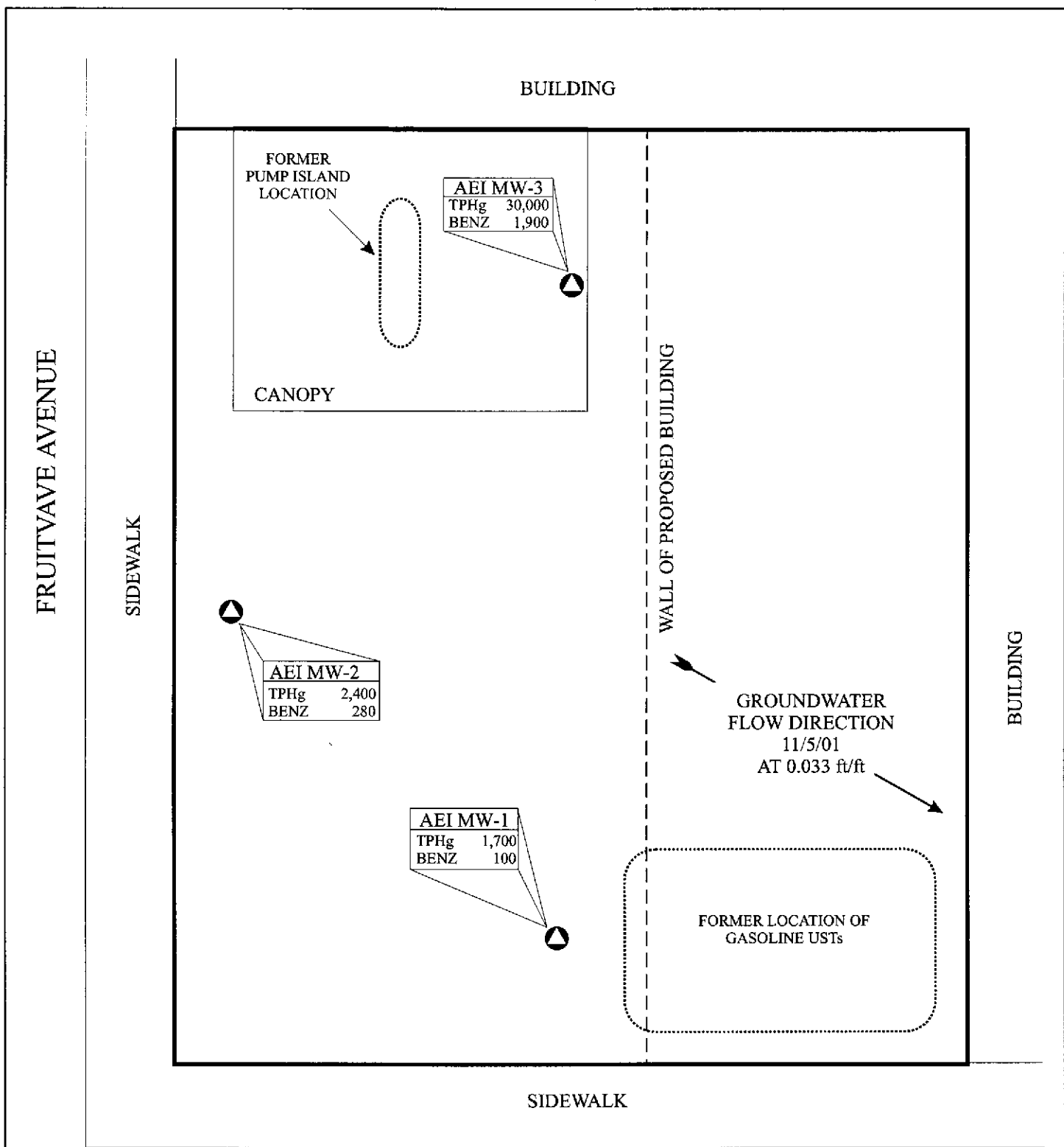


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WATER TABLE CONTOURS

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 2
AEI Project # 3581



KEY

WELL LOCATIONS
 TPHg = Total Petroleum Hydrocarbons as gasoline
 Benz = Benzene
 All samples measured in ug/L
 (micrograms per Liter)

SCALE: 1" = 10'



AEI CONSULTANTS 3210 OLD TUNNEL RD, SUITE B, LAFAYETTE, CA	
CONTAMINANT CONCENTRATIONS AS OF 11/5/01	
1450 FRUITVALE AVENUE OAKLAND, CALIFORNIA	FIGURE 3 AEI Project # 3581

Table 1
Water Table Data

Well ID	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1	10/16/2000	42.13	17.72	24.41
	1/19/2001	42.13	9.15	32.98
	4/26/2001	42.13	9.40	32.73
	8/3/2001	42.13	12.38	29.75
	11/5/2001	42.13	16.22	25.91
MW-2	10/16/2000	42.08	14.98	27.10
	1/19/2001	42.08	9.00	33.08
	4/26/2001	42.08	8.34	33.74
	8/3/2001	42.08	11.70	30.38
	11/5/2001	42.08	15.08	27.00
MW-3	10/16/2000	42.55	17.98	24.57
	1/19/2001	42.55	10.90	31.65
	4/26/2001	42.55	9.21	33.34
	8/3/2001	42.55	12.67	29.88
	11/5/2001	42.55	15.90	26.65

Episode #	Date	Average Water Table (ft msl)	Change from Previous Episode	Flow direction (gradient)
1	10/16/2000	25.36	-	E/SE (0.116)
2	1/19/2001	32.57	+7.21	E/NE (0.041)
3	4/26/2001	33.27	+0.70	SE (0.034)
4	8/3/2001	30.00	-3.27	ESE (0.024)
5	11/5/2001	26.52	-3.48	SE (0.033)

Notes:

All well elevations are measured from the top of the casings

ft msl = feet above mean sea level

Table 2
Groundwater Sample Analytical Data

Well/Sample ID	Date Collected	Consultant/ Lab	TPHg µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L
MW-1	10/16/2000	AEI/MAI	4,500	<20	560	14	53	62
	1/19/2001	AEI/MAI	13,000	<100	790	46	1,100	210
	4/26/2001	AEI/MAI	7,500	<30	470	23	720	120
	8/3/2001	AEI/MAI	4,500	<10	440	11	55	6.6
	11/5/2001	AEI/MAI	1,700	<10	100	6.0	4.6	2.1
MW-2	10/16/2000	AEI/MAI	4,600	<300	380	3.8	95	33
	1/19/2001	AEI/MAI	4,200	<10	450	4.7	120	50
	4/26/2001	AEI/MAI	5,600	<20	810	12	210	65
	8/3/2001	AEI/MAI	2,900	<20	360	3	97	46
	11/5/2001	AEI/MAI	2,400	<85	280	3.2	76	25
MW-3	10/16/2000	AEI/MAI	12,000	<10	570	32	680	1,200
	1/19/2001	AEI/MAI	27,000	<200	3,400	110	2,200	2,700
	4/26/2001	AEI/MAI	33,000	<200	3,300	190	2,800	3,400
	8/3/2001	AEI/MAI	23,000	<50	2,300	52	1,800	1,400
	11/5/2001	AEI/MAI	30,000	<200	1,900	58	2,000	1,600
MRL			50.0	5.0	0.5	0.5	0.5	0.5

MRL = Method Reporting Limit, unless otherwise shown

µg/L = micrograms per liter

AEI = AEI Consultants

MAI = McCampbell Analytical, Inc.

TPHg = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary butyl ether

APPENDIX A

WELL FIELD SAMPLING FORMS

**AEI CONSULTANTS - GROUNDWATER MONITORING WELL FIELD
SAMPLING FORM**

Monitoring Well Number: MW-1

Project Name: Jay Phares	Date of Sampling: 11/5/01
Job Number: 3581	Name of Sampler: JO
Project Address: 1450 Fruitvale Avenue	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Cement, good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	42.13
Depth of Well	28.00
Depth to Water	16.22
Water Elevation	25.91
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	5.65
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	6
Appearance of Purge Water	Clear

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 VOAs
----------------------------------	--------

Time	Vol Remvd (gal)	Temp (deg c)	PH	TDS Ppm	Comments
	2	19.8	6.18	556	
	4	20.0	6.17	445	
	6	19.7	6.13	436	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Strong gasoline odor

TD - Total Depth of Well
DTW - Depth To Water

**AEI CONSULTANTS - GROUNDWATER MONITORING WELL FIELD
SAMPLING FORM**

Monitoring Well Number: MW-2

Project Name: Jay Phares	Date of Sampling: 11/5/01
Job Number: 3581	Name of Sampler: JO
Project Address: 1450 Fruitvale Avenue	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Cement, good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	42.08
Depth of Well	28.00
Depth to Water	15.08
Water Elevation	27.00
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	6.20
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	6.5
Appearance of Purge Water	Turbid, clears

GROUNDWATER SAMPLES

Number of Samples/Container Size		2 VOAs			
Time	Vol Remvd (gal)	Temp (deg C)	PH	TDS ppm	Comments
	2	20.9	6.12	633	
	4	21.1	6.05	574	
	6	20.7	6.00	563	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Strong HC odor

TD - Total Depth of Well
DTW - Depth To Water

**AEI CONSULTANTS - GROUNDWATER MONITORING WELL FIELD
SAMPLING FORM**

Monitoring Well Number: MW-3

Project Name: Jay Phares	Date of Sampling: 11/5/01
Job Number: 3581	Name of Sampler: JO
Project Address: 1450 Fruitvale Avenue	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Cement, good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	42.55
Depth of Well	28.00
Depth to Water	15.90
Water Elevation	26.65
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	5.81
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	6
Appearance of Purge Water	Clear

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 VOAs
----------------------------------	--------

Time	Vol Remvd (gal)	Temp (deg C)	PH	Cond (mS)	Comments
	2	20.7	7.19	1212	
	4	20.4	6.05	1203	
	6	20.0	5.99	1138	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

Strong HC odor

TD - Total Depth of Well
DTW - Depth To Water

APPENDIX B

**LABORATORY ANALYTICAL AND
CHAIN OF CUSTODY DOCUMENTATION**



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

All Environmental, Inc. 3210 Old Tunnel Road, Suite B Lafayette, CA 94549-4157	Client Project ID: #3581; Jay Phares	Date Sampled: 11/05/01
		Date Received: 11/05/01
	Client Contact: Peter McIntyre	Date Extracted: 11/05/01
	Client P.O:	Date Analyzed: 11/05/01

11/12/01

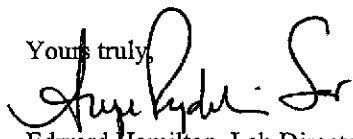
Dear Peter:

Enclosed are:

- 1). the results of 3 samples from your #3581; Jay Phares project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,


Edward Hamilton, Lab Director



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

All Environmental, Inc. 3210 Old Tunnel Road, Suite B Lafayette, CA 94549-4157	Client Project ID: #3581; Jay Phares	Date Sampled: 11/05/01
		Date Received: 11/05/01
	Client Contact: Peter McIntyre	Date Extracted: 11/05-11/06/01
	Client P.O:	Date Analyzed: 11/05-11/06/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*
 EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g) ⁺	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	% Recovery Surrogate
82670	MW-1	W	1700,a	ND<10	100	6.0	4.6	2.1	___#
82671	MW-2	W	2400,a	ND<85	280	3.2	76	25	___#
82672	MW-3	W	30,000,a	ND<200	1900	58	2000	1600	105
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W		50 ug/L	5.0	0.5	0.5	0.5	0.5	
	S		1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



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

QC REPORT

EPA 8015m + 8020

Date: 11/05/01

Extraction: EPA 5030

Matrix: Water

Compound	Concentration: ug/L			%Recovery		RPD
	Sample	MS	MSD	MS	MSD	

SampleID: 110101

Instrument: GC-7

Surrogate1	ND	112.0	110.0	100.00	112	110	1.8
Xylenes	ND	33.7	32.2	30.00	112	107	4.6
Ethylbenzene	ND	11.5	10.9	10.00	115	109	5.4
Toluene	ND	11.6	10.9	10.00	116	109	6.2
Benzene	ND	10.6	10.1	10.00	106	101	4.8
MTBE	ND	10.4	9.6	10.00	104	96	8.0
TPH (gas)	ND	101.7	104.1	100.00	102	104	2.3

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation



AEI CONSULTANTS

Environmental Engineering & Construction

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Lafayette, CA 94549
(925) 283-6000 Fax: (925) 283-6121

28583 Zale 46a

CHAIN OF CUSTODY

PAGE / OF /

TAT: RUSH / 24 hr / 48 hr 5 day / other

AEI PROJECT MANAGER: Peter McIntyre
PROJECT NAME: Jay Phases
PROJECT NUMBER: 3581
TOTAL # OF CONTAINERS: 9
RCVD. GOOD CONDITION / COLD Y N

TPH(g), ETEX, MIBB
SOIL: EPA 8080/8015M, 8080
WATER: EPA 8080/8015, 802
TPH(g)
SOIL: EPA 8080/8015M
WATER: EPA 8080/8015M
ETEX, MIBB
SOIL: EPA 8080
WATER: EPA 8080
TOTAL OIL & GREASE
SOIL: EPA 415.1 or STD. 5520 D/ENF
WATER: STD. 5520 D/ENF
VOLATILE HALOCARBONS
SOIL: EPA 8010
WATER: EPA 801
VOC's
SOIL: EPA 8270
WATER: EPA 824
SEMI-VOLATILE ORGANICS
SOIL: EPA 8270/8550
WATER: EPA 825/8510
TOTAL LEAD (TLC)
SOIL: 8010 (ICP)
WATER: 230.5 (AA)
LUFT 5 METALS
SOIL: EPA 7130, 7130, 7130, 7130, 7520, 7020
WATER: 230.5 (AA)

SAMPLE ID	DATE	TIME	MATRIX	TPH(g), ETEX, MIBB	TPH(g)	ETEX, MIBB	TOTAL OIL & GREASE	VOLATILE HALOCARBONS	VOC's	SEMI-VOLATILE ORGANICS	TOTAL LEAD (TLC)	LUFT 5 METALS	HOLD	# OF CONTAINERS
X MW-1	11/5/01		Water	X										3
X MW-2				X										3
X MW-3				X										3

82670
82671
82672

ICE / GOOD CONDITION / HEAD SPACE ABSENT / PRESERVATION APPROPRIATE CONTAINERS / VOAs / O&G / METALS / OTHER

COMMENTS / INSTRUCTIONS
ANALYTICAL LABORATORY ADDRESS: McC Campbell Analytical

RELINQUISHED BY
John Ormrod
SIGNATURE
PRINTED NAME
COMPANY
DATE 11/5/01 TIME 2:20 PM

RECEIVED BY
Maureen Vivas
SIGNATURE
PRINTED NAME
COMPANY
DATE 11/5 TIME 2:20

RELINQUISHED BY
SIGNATURE
PRINTED NAME
COMPANY
DATE
TIME

RECEIVED BY
SIGNATURE
PRINTED NAME
COMPANY
DATE
TIME