September 10, 2001

#6419 9-10-01

QUARTERLY GROUNDWATER MONITORING REPORT

1450 Fruitvale Avenue
Oakland, California

AEI Project No. 3581

Prepared For

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

Prepared By

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AEI CONSULTANTS
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September 10, 2001

Mr. Ken Phares
Jay-Phares Corporation
10700 Foothill Boulevard, Suite 200
Oakland, CA 94605

Subject: **Quarterly Groundwater Monitoring and Sampling Report**
Second Quarter 2001
1450 Fruitvale Avenue
Oakland, California 94601
AEI Project No. 3581

Dear Mr. Phares:

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 fourth episode of groundwater monitoring and sampling, conducted on August 8, 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 had reportedly been 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. Concentrations of TPH as gasoline and benzene have been found in the soil up to 360 mg/kg and 0.59 mg/kg respectively. 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 appears to have 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 August 8, 2001. Prior to sampling, the depth 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 (total dissolved solids) 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 Total Petroleum Hydrocarbons (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 29.75 to 30.38 feet above Mean Sea Level (MSL). These groundwater elevations were an average of 3.27 feet lower than the previous monitoring episode. The direction of the groundwater flow at the time of measurement was towards the east / southeast with a calculated gradient of 0.0024 ft/ft. This flow direction and gradient are consistent with those measured during the previous episode.

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 2,900 µg/l in MW-2, up to 23,000 µg/l in MW-3. Benzene was also detected in all three wells, ranging from 360 µg/l in MW-2, up to 2,300 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 hydrocarbon concentrations in 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 does 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. The extent of the dissolved plume is not currently defined. This will be necessary prior to consideration of the site for closure based on low risk or prior to preparation of a corrective action plan.

Quarterly monitoring of the three wells will continue. The next episode is scheduled for November 2001. Detailed recommendations for additional site characterization may be presented under separate cover.

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, 20001, 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 Hydraulic Gradient
Figure 3	Petroleum Hydrocarbon Concentrations

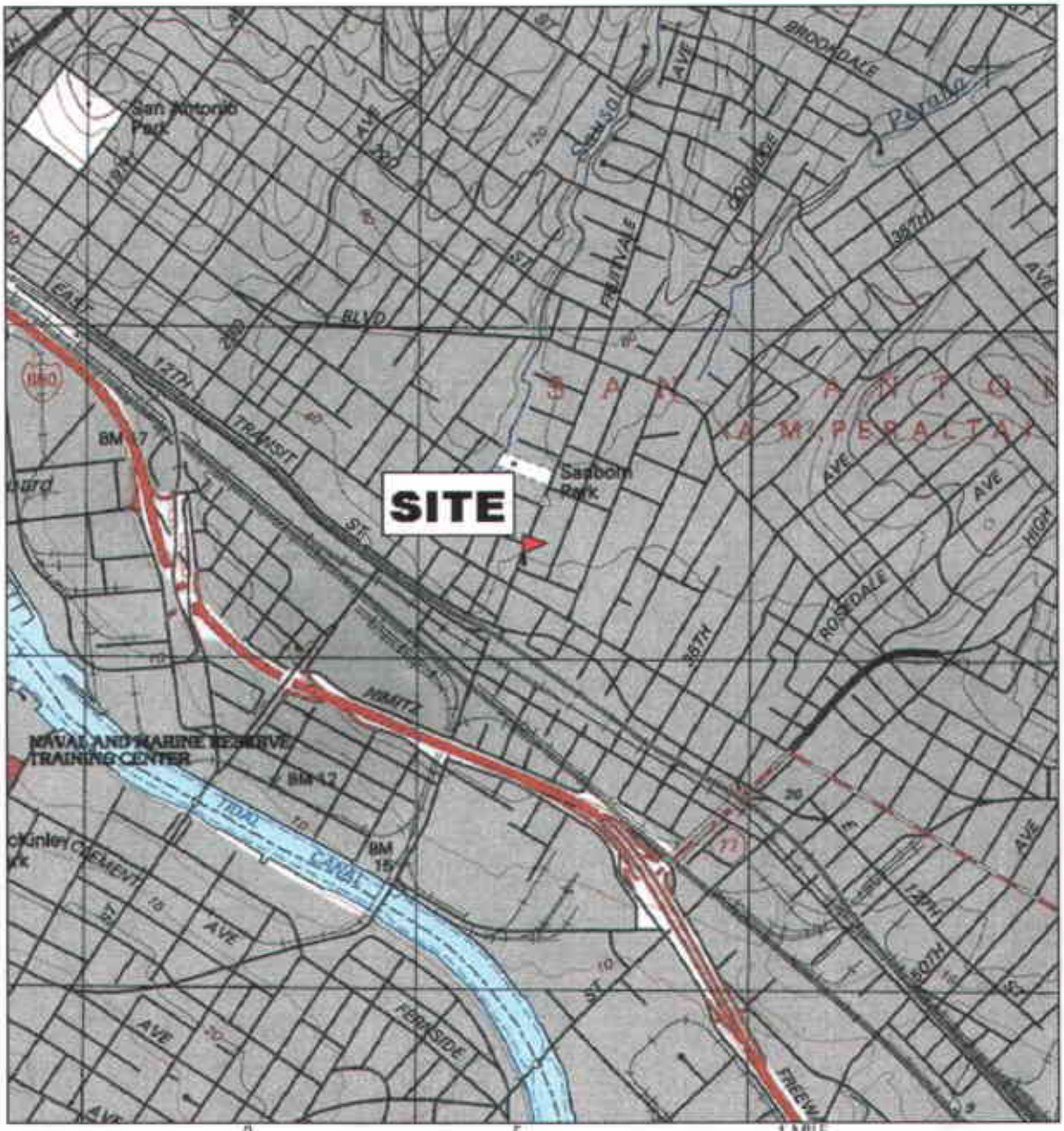
Tables

Table 1	Water Table Data
Table 2	Groundwater Sample Analytical Data

Appendices

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

cc: Mr. Barney Chan, Alameda County Health Care Services Agency, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-6577



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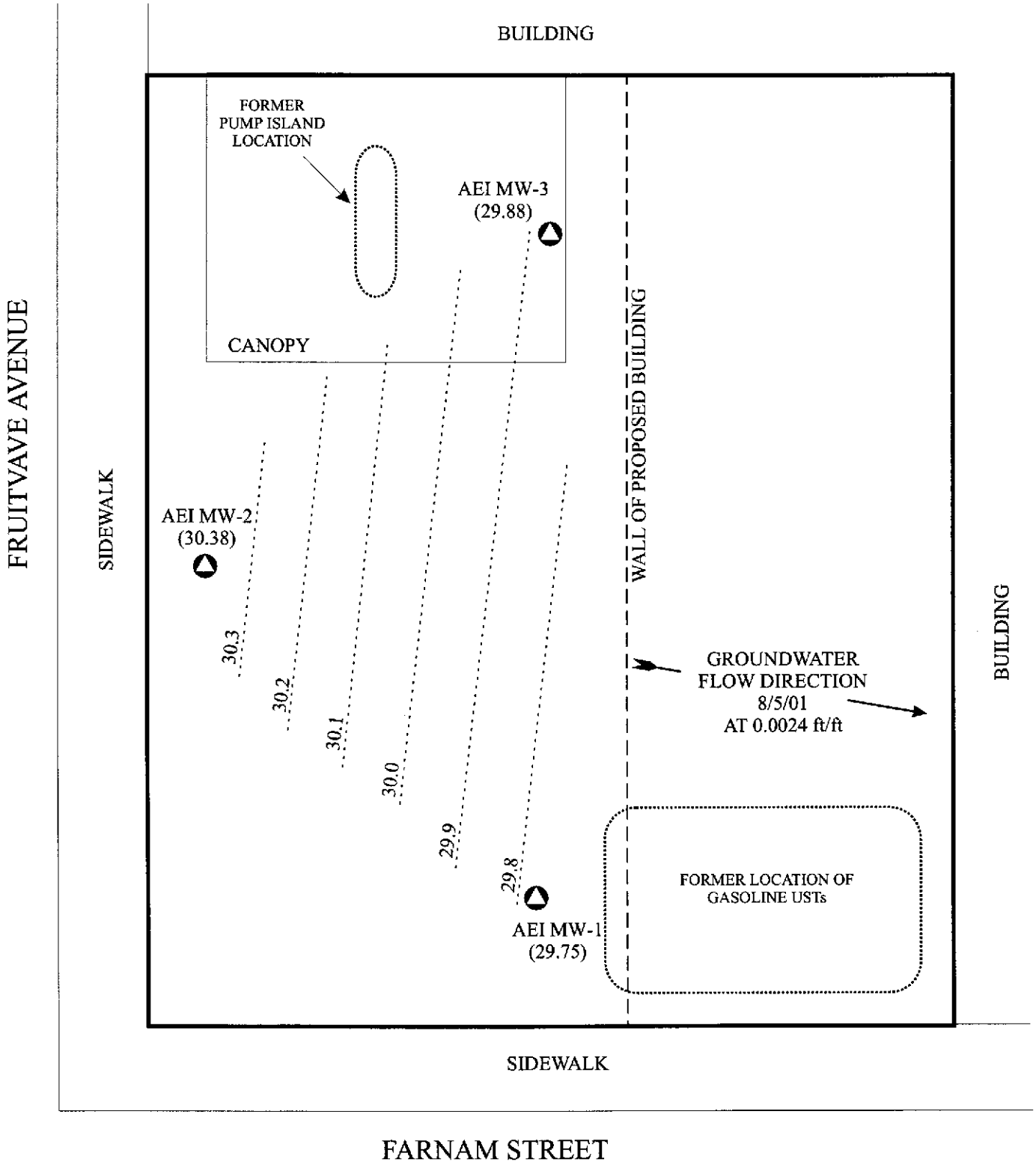
3210 OLD TUNNEL RD, STE B, LAFAYETTE, CA

SITE LOCATION MAP

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 1
PROJECT NO. 3581



KEY

- WELL LOCATIONS
- 30.1 WATER TABLE CONTOUR (FEET AMSL) 8/5/01

SCALE: 1" = 10'

N

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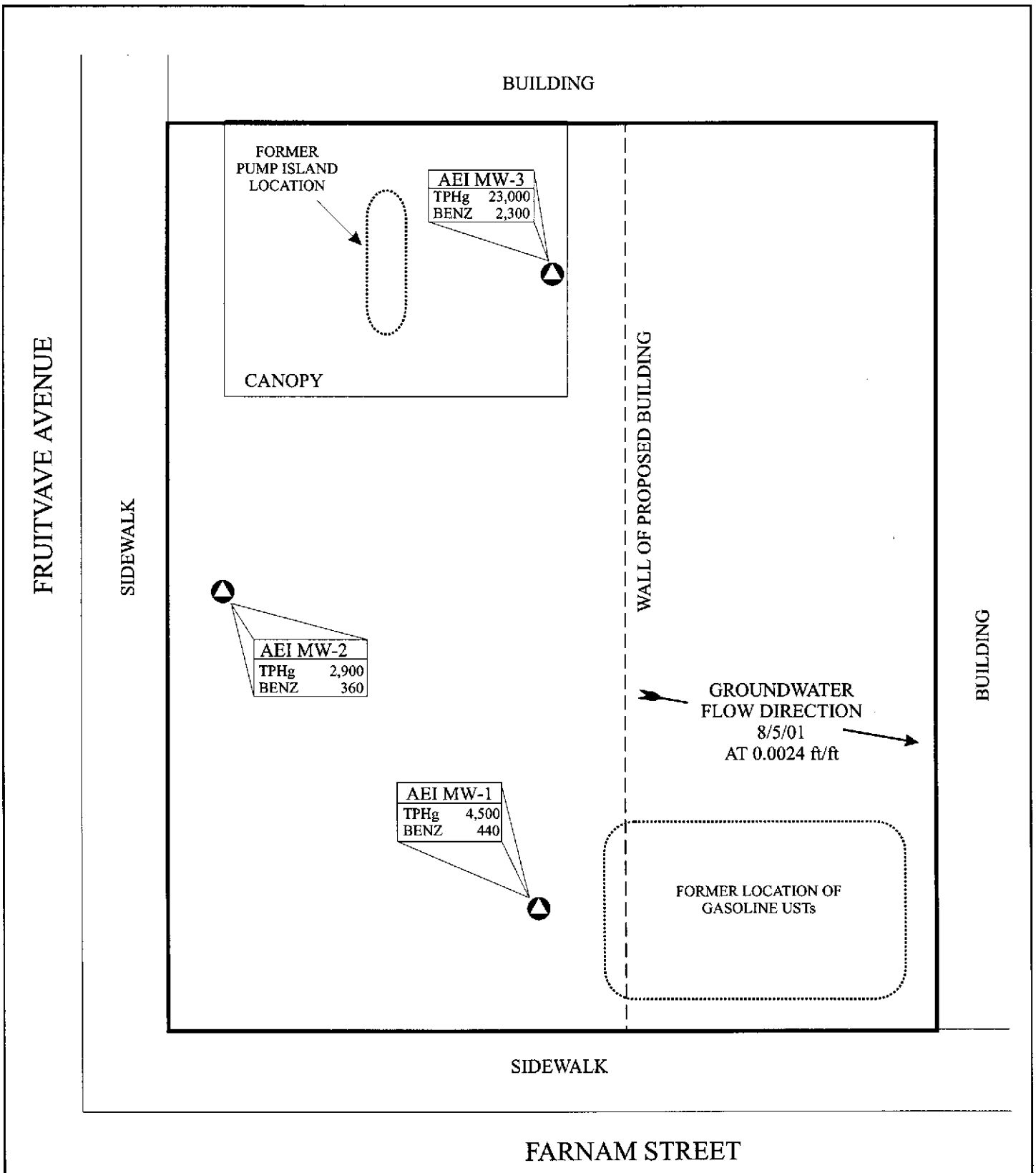
3210 OLD TUNNEL RD, SUITE B, LAFAYETTE, CA

WELL LOCATIONS WITH HYDRAULIC GRADIENT

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 2



KEY

WELL LOCATIONS

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

SCALE: 1" = 10'

N

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3210 OLD TUNNEL RD, SUITE B, LAFAYETTE, CA

PETROLEUM HYDROCARBON CONCENTRATIONS

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 3

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**
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**
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**

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 (0.043)
3	4/26/2001	33.27	+0.70	SE (0.034)
4	**8/3/2001**	**30.00**	**-3.27**	**ESE (0.024)**

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**
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**
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**
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: 8/3/01
Job Number: 3581	Name of Sampler: OA
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	12.38
Water Elevation	29.75
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	7.3
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	8.0
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
12:12 pm	2	20.1	6.77	701	
	4	19.9	6.65	670	
	6	19.6	6.79	634	
	8	19.4	6.58	754	

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: 8/3/01
Job Number: 3581	Name of Sampler: OA
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	11.70
Water Elevation	30.38
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	7.8
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	8
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
11:59	2	20.6	6.56	1211	
	4	20.6	6.50	1188	
	6	20.2	6.51	1142	
	8	20.0	6.48	1145	

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: 8/3/01
Job Number: 3581	Name of Sampler: OA
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	12.67
Water Elevation	29.88
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	7.4
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	8
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
10:46 am	2	19.5	6.41	1243	
	4	19.9	6.40	1194	
	6	19.5	6.41	1172	
	8	19.2	6.37	1177	

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

Slight 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.	Client Project ID: #3581; Joy Phares	Date Sampled: 08/03/2001
3210 Old Tunnel Road, Suite B		Date Received: 08/03/2001
Lafayette, CA 94549-4157	Client Contact: Orion Alcalay	Date Extracted: 08/06-08/07/2001
	Client P.O:	Date Analyzed: 08/06-08/07/2001

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
74163	MW-1	W	4500,a	ND<10	440	11	55	6.6	109
74164	MW-2	W	2900,a	ND<20	360	3.0	97	46	102
74165	MW-3	W	23,000,a	ND<50	2300	52	1800	1400	103
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.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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: 08/07/01 **Extraction:** EPA 5030 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 80301					Instrument:	GC-7	
Surrogate1	ND	88.0	89.0	100.00	88	89	1.1
Xylenes	ND	27.3	27.8	30.00	91	93	1.8
Ethylbenzene	ND	8.4	8.6	10.00	84	86	2.4
Toluene	ND	8.6	8.8	10.00	86	88	2.3
Benzene	ND	8.3	8.5	10.00	83	85	2.4
MTBE	ND	9.2	9.8	10.00	92	98	6.3
TPH (gas)	ND	96.2	94.3	100.00	96	94	2.0

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

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

RPD means Relative Percent Deviation

2712 Jale 408.doc

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Orion Alcalay Bill To:
Company: All Environmental
3210 Old Tunnel Road, Suite B
Lafayette, CA 94549-4157
Tele: (925) 283-6000 Fax: (925) 283-6121
Project #: 3581 Project Name: Joy Theresa
Project Location: 1450 Fruitvale Ave, Oakland
Sampler Signature:

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other
+ MW-1		8-3-01		2		X					X			
+ MW-2		↓		↓		↓					↓			
+ MW-3		↓		↓		↓					↓			

Analysis Request

BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	FT 5 Metals	Lead (7240/7421/239.2/6010)	
X														
X														
X														

Other: 74163 / 74164 / 74165

Comments:

Relinquished By:	Date:	Time:	Received By:
	8-3-01	1:17	8/3/01
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks:

ICE/T° ____ PRESERVATION ✓
GOOD CONDITION ✓ APPROPRIATE
HEAD SPACE ABSENT ____ CONTAINERS ✓

VOA VIALS OTHER

9