



LS

STUD 3341

March 23, 1998

Ms. Amy Leech
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: Quarterly Groundwater Monitoring Report
1075 40th Street
Oakland, CA 94608
Project No. 1540

Dear Ms. Leech:

Enclosed is a copy of the Quarterly Groundwater Monitoring Report for the property at the above referenced address.

If you have any questions or comments regarding the findings presented in this report, please contact me at (510) 283-6000.

Sincerely,
ALL ENVIRONMENTAL, INC.

Nick Walchuk
Project Manager

Corporate Headquarters:

901 Moraga Road, Suite C
Lafayette, CA 94549
Phone : (510) 283-6000
Fax: (510) 283-6121

(800) 801-3224
www.all-environmental.com

Los Angeles Office:

2200 Pacific Coast Hwy, Suite 217
Hermosa Beach, CA 90254
Phone: (310) 798-4255
Fax: (310) 798-2841

STED
3341

March 23, 1998

**QUARTERLY GROUNDWATER MONITORING
REPORT**
First Quarter, 1998

1075 40th Street
Oakland, CA 94608

STED 3341

Project No. 1540

Prepared For

Fidelity Roof Co.
1075 40th Street
Oakland, CA 94608

Prepared By

All Environmental, Inc.
901 Moraga Road, Suite C
Lafayette, CA 94549
(800) 801-3224

AEI



ALL ENVIRONMENTAL, INC.

Environmental Engineering & Construction

March 23, 1998

Mr. Monte Upshaw
Fidelity Roof Co.
1075 40th Street
Oakland, CA 94608

**Re: Quarterly Groundwater Monitoring and Sampling Report
First Quarter, 1998**
1075 40th Street
Oakland, CA 94608
Project No. 1540

Dear Mr. Upshaw:

All Environmental, Inc. (AEI) has prepared this report on behalf of Mr. Monty Upshaw, in response to his request for a groundwater investigation at the above referenced site (Figure 1: Site Location Map). The investigation was initiated by the property owner in accordance with the requirements of the Alameda County Health Care Services Agency (ACHCSA). The purpose of this activity is to monitor groundwater quality in the vicinity of previous underground storage tanks. This report presents the findings of the fourth episode of quarterly groundwater monitoring and sampling conducted on January 16, 1998.

Site Description and Background

The site is located in a commercial zone at 1075 40th Street in Oakland, California, and currently supports the operation of Fidelity Roof Company, a roofing company (refer to Figure 1: Site Location Map). The topography of the site slopes gently to the south.

On December 19, 1995, Tank Protect Engineering removed one (1) 1,000 gallon underground storage tank (UST) and one (1) 500 gallon gasoline UST from the southeast corner of the property. The removal of the tanks produced a single excavation. The excavated soil was stockpiled north of the excavation. Three discrete soil samples were collected from beneath the USTs. Analysis of the samples indicated a maximum concentration of 100 mg/kg TPH as gasoline, 2.0 mg/kg benzene, and 96 mg/kg TPH as diesel beneath the 500 gallon UST.

Four discrete soil samples were collected from the excavated soil. The samples were analyzed as one composite sample. TPH as gasoline and TPH as diesel were present within the representative sample at concentrations of 580 mg/kg and 120 mg/kg, respectively. Benzene was detected at a concentration of 2.3 mg/kg.

Corporate Headquarters:

901 Moraga Road, Suite C
Lafayette, CA 94549
Phone : (925) 283-6000
Fax: (925) 283-6121

(800) 801-3224
www.all-environmental.com

Los Angeles Office:

2200 Pacific Coast Hwy, Suite 217
Hermosa Beach, CA 90254
Phone: (310) 798-4255
Fax: (310) 798-2841

AEI issued a workplan on August 28, 1996 to the Alameda County Health Care Services Agency (ACHCSA) designed to define the extent and magnitude of petroleum hydrocarbon contamination in the vicinity of the former USTs. On September 11, 1996, Ms. Susan Hugo of the ACHCSA approved the workplan.

On September 12, 1996, AEI advanced four soil borings in the vicinity of the former UST excavation (Ref. - Phase II Soil and Groundwater Investigation, dated October 7, 1996). Soil samples were collected from all of the borings and groundwater samples were collected from two of the borings. Analytical results from the subsurface investigation revealed significant levels of gasoline and diesel present in soil to the south and west of the open excavation. The soil contamination was believed to extend beneath the existing pump island. Moderate concentrations of petroleum hydrocarbons remain present in the soil to the east of the excavation, however the removal of additional soil could potentially undermine the existing building. Concentrations present in the soil north of the excavation did not warrant the removal of additional soil.

On October 25, 1996, AEI extended the excavation to the south and west (Ref. - Excavation and Disposal of Contaminated Soil Report, dated January 7, 1997). The contaminated soil was stockpiled on-site and profiled for disposal into a Class III Landfill. The original excavation was extended laterally 7 feet to the south and 12 feet to west. Soil was removed to a depth of 9 feet below ground surface (bgs). The dispenser island and associated piping were removed. Groundwater was not encountered during the excavation activities. Four confirmation soil samples were collected from the excavation sidewalls. Analyses of the soil samples collected from the excavation sidewalls indicated that up to 150 mg/kg TPH as gasoline, 16 mg/kg benzene, and 300 mg/kg TPH as diesel remained within the western sidewall of the excavation.

Results of the Phase II Subsurface Investigation indicated groundwater impacted with maximum concentrations of 5,500 µg/l TPH as gasoline, 340 µg/l benzene, and 2,100 µg/l TPH as diesel. Upon review of the Phase II Subsurface Investigation report and the Excavation and Disposal of Contaminated Soil Report, the ACHCSA issued a letter, dated February 18, 1997 which called for further investigation into the extent and magnitude of the groundwater contaminant plume. AEI issued a workplan, dated February 24, 1997, which called for the installation of three groundwater monitoring wells on-site. In a letter, dated February 28, 1997, the ACHCSA approved the workplan.

On March 6, 1997, AEI drilled three soil borings and converted them to groundwater monitoring wells. The wells were developed on March 10, 1997 and first sampled on March 19, 1997.

Summary of Activities

AEI measured the depth to groundwater and collected water samples from the wells on January 16, 1998. The well locations are shown in Figure 2. The depth from the top of the well casings

were measured prior to sampling with an electric water level indicator. The wells were purged using a battery powered submersible pump and a groundwater sample was collected using a clean disposable Teflon bailer.

Temperature, pH, and turbidity were measured during the purging of the wells. AEI removed at least 3 well volumes. Once the temperature, pH, and turbidity stabilized, a water sample was collected.

Water was poured from the bailers into 1 liter amber bottles and 40 ml VOA vials and capped so that there was no head space or visible air bubbles 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).

Groundwater samples were submitted for chemical analyses for Total Petroleum Hydrocarbons (TPH) as gasoline (EPA Method 5030/8015), methyl tertiary butyl ether (MTBE) (EPA Method 8020/602), benzene, toluene, ethylbenzene, and xylenes (BTEX) (EPA Method 8020/602), TPH as diesel (EPA Method 3510/8015).

Field Results

No free product was encountered during monitoring activities. A petroleum odor was noted in MW-3. Groundwater levels for the current monitoring episode ranged from 35.14 to 39.66 feet above Mean Sea Level (MSL). These groundwater elevations were an average of 2.6 feet lower than the previous monitoring episode. The direction of the groundwater flow at the time of measurement was toward the southwest. Due to the close proximity of San Francisco Bay, the fluctuations of groundwater direction and gradient over time may be a result of tidal influences. The latest estimated groundwater gradient is approximately 0.13 feet per foot.

Groundwater elevation data is summarized in Table 1. The groundwater elevation contours and the groundwater flow direction are shown in Figure 2. Refer to Appendix B for the Groundwater Monitoring Well Field Sampling Form.

Groundwater Quality

Concentrations of petroleum hydrocarbons increased in MW-1 and MW-3 during the most recent monitoring episode. MW-3, the down-gradient well, continues to have high concentrations of petroleum hydrocarbons. No concentrations of benzene or TPH as gasoline or diesel were detected in MW-2. The gradient shifted slightly to a more southwesterly direction during the most recent sampling episode.

A summary of groundwater quality data, including historic data, is presented in Table 3. Laboratory results and chain of custody documents are included in Appendix B. Previous laboratory results and chain of custody documents are included in Appendix C.

Recommendations

All Environmental, Inc. recommends the continued quarterly groundwater monitoring and sampling of the wells. The next monitoring and sampling episode is scheduled for April, 1998.

Report Limitations and Signatures


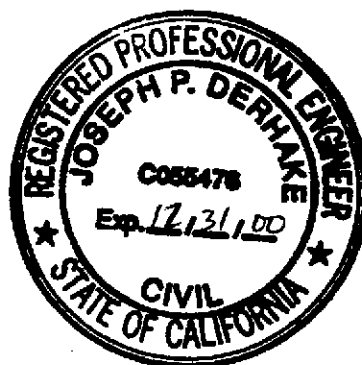
This report presents a summary of work completed by All Environmental, Inc., including observations and descriptions of site conditions. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide required 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 that existed at the time and location of the work.

Sincerely,
All Environmental, Inc.



Nick Walchuk
Project Manager



Joseph P. Derhake, PE, CAC
Principal

Figures

Tables

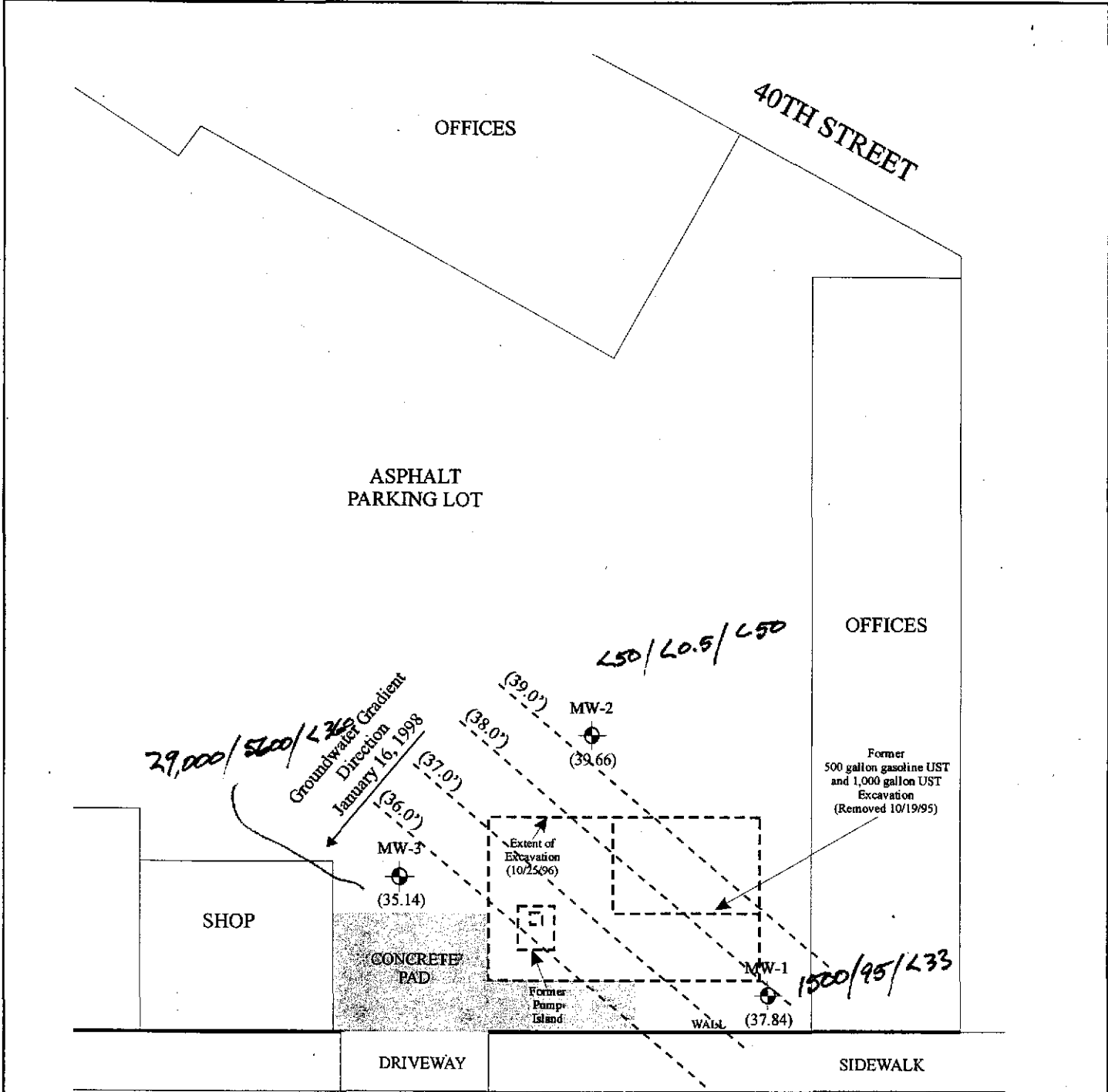
- Appendix A Groundwater Monitoring Well Field Sampling Forms
- Appendix B Current Laboratory Analyses With Chain of Custody Documentation
- Appendix C Previous Laboratory Analyses With Chain of Custody Documentation

cc: Ms. Amy Leech
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

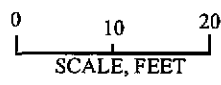


FROM:
ALAMEDA/CONTRA
COSTA COUNTIES
THOMAS BROS. MAPS
1997 EDITION

ALL ENVIRONMENTAL, INC. 3364 MT. DIABLO BOULEVARD, LAFAYETTE, CA	
SCALE: 1"=2400'	DATE:
SITE LOCATION MAP	
1075 40TH STREET OAKLAND, CALIFORNIA	DRAWING NUMBER: FIGURE 1



TPH-G / benzene / M&BE (ug/L)



- (36.00) LINE OF EQUAL GROUNDWATER ELEVATION (feet)
- MW-1 GROUNDWATER MONITORING WELL (Installed 3/6/96)
- (36.31) GROUNDWATER ELEVATION (feet)
- UST: UNDERGROUND STORAGE TANK

ALL ENVIRONMENTAL, INC.	
901 MORAGA ROAD, SUITE C, LAFAYETTE, CA	
SCALE: 1"=20'	DATE:
GROUNDWATER GRADIENT MAP	
1075 40TH STREET OAKLAND, CALIFORNIA	DRAWING NUMBER: FIGURE 2

**Table 1
Groundwater Levels**

Well ID	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1	3/19/97	45.41	8.25	37.16
	6/20/97	45.41	9.10	36.31
	10/8/97	45.41	9.95	35.46
	1/16/98	45.41	7.57	37.84
MW-2	3/19/97	44.94	8.40	36.54
	6/20/97	44.94	8.85	36.09
	10/8/97	44.94	9.80	35.14
	1/16/98	44.94	5.28	39.66
MW-3	3/19/97	44.32	7.59	36.73
	10/8/97	44.32	9.98	34.34
	6/20/97	44.32	8.36	35.96
	1/16/98	44.32	9.18	35.14

Notes: All well elevations are measured from the top of casing not from the ground surface.
ft msl = feet above mean sea level

Table 2
Groundwater Sample Analytical Data

Well ID	Date	Consultant/ Lab	TPHg (ug/l)	MTBE (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl- Benzene (ug/l)	Xylenes (ug/l)	TPHd (ug/l)
MW - 1	3/19/97	AEI/MAI	<50	23	<0.5	<0.5	<0.5	<0.5	<50
	6/23/97	AEI/MAI	1,300	14	150	2.1	12	19	420
	10/8/97	AEI/MAI	56	5.8	2.8	<0.5	<0.5	<0.5	66
	1/16/98	AEI/MAI	1,500	<33	95	0.72	69	8.4	910
MW - 2	3/19/97	AEI/MAI	<50	65	<0.5	<0.5	<0.5	<0.5	<50
	6/23/97	AEI/MAI	<50	70	3.4	<0.5	<0.5	<0.5	<50
	10/8/97	AEI/MAI	<50	90	<0.5	<0.5	<0.5	<0.5	<50
	1/16/98	AEI/MAI	<50	65	<0.5	<0.5	<0.5	<0.5	<50
MW - 3	3/19/97	AEI/MAI	26,000	230	3,000	530	340	2,300	5,000
	6/23/97	AEI/MAI	25,000	270	4,400	120	540	1,500	7,000
	10/8/97	AEI/MAI	17,000	ND<280	4,400	47	280	410	5,100
	1/16/98	AEI/MAI	29,000	ND<360	5,600	740	950	3,500	7,300

Notes: MTBE Methyl Tertiary Butyl Ether
 TPHg Total Petroleum Hydrocarbons as gasoline
 TPHd Total Petroleum Hydrocarbons as diesel
 AEI All Environmental, Inc.
 MAI McCampbell Analytical Inc., Pacheco, California
 ug/l Micrograms per liter

APPENDIX A

**GROUNDWATER MONITORING
WELL FIELD SAMPLING FORMS**

**ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL
FIELD SAMPLING FORM**

Monitoring Well Number: MW-1

Project Name: Fidelity Roof Co.	Date of Sampling: 1/16/98
Job Number: 1540	Name of Sampler: Dusty Roy
Project Address: 1075 40th Street, Oakland, CA 94608	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	45.41
Depth of Well	21.00
Depth to Water	7.57
Water Elevation	37.84

Three Well Volumes (gallons)*

2" casing: (TD - DTW)(0.16)(3)	6.45
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	7
Appearance of Purge Water	Clear

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 - 40 ml VOAs, 1 - 1 liter bottle
----------------------------------	------------------------------------

Time	Vol Remvd (gal)	Temp (deg F)	pH	Cond (mS)	Comments
	1	63.0	6.55	1753	
	3	63.3	6.49	1760	
	5	63.3	6.50	1761	
	7	63.3	6.50	1760	

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

TD - Total Depth of Well
DTW - Depth To Water

**ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL
FIELD SAMPLING FORM**

Monitoring Well Number: MW-2

Project Name: Fidelity Roof Co.	Date of Sampling: 1/16/98
Job Number: 1540	Name of Sampler: Dusty Roy
Project Address: 1075 40th Street, Oakland, CA 94608	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	44.94
Depth of Well	21.00
Depth to Water	5.28
Water Elevation	39.66

Three Well Volumes (gallons)*

2" casing: (TD - DTW)(0.16)(3)	7.55
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	7
Appearance of Purge Water	Clear

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 - 40 ml VOAs, 1 - 1 liter bottle
----------------------------------	------------------------------------

Time	Vol Remvd (gal)	Temp (deg F)	pH	Cond (mS)	Comments
	1	65.1	6.98	1011	
	3	64.7	7.02	999	
	5	64.6	7.00	990	
	7	64.7	6.98	994	

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

Full of water and not air tight

TD - Total Depth of Well

DTW - Depth To Water

**ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL
FIELD SAMPLING FORM**

Monitoring Well Number: MW-3

Project Name: Fidelity Roof Co.	Date of Sampling: 1/16/98
Job Number: 1540	Name of Sampler: Dusty Roy
Project Address: 1075 40th Street, Oakland, CA 94608	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	44.32
Depth of Well	21.00
Depth to Water	9.18
Water Elevation	35.14

Three Well Volumes (gallons)*

2" casing: (TD - DTW)(0.16)(3)	5.67
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	7
Appearance of Purge Water	Clear w/ sheen

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 - 40 ml VOAs, 1 - 1 liter bottle
----------------------------------	------------------------------------

Time	Vol Remvd (gal)	Temp (deg F)	pH	Cond (mS)	Comments
	1	63.8	7.10	888	
	3	63.8	7.01	879	
	5	64.1	7.00	870	
	7	63.9	7.01	868	

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

Full of water but was air tight

Petroleum odor noted

TD - Total Depth of Well

DTW - Depth To Water



McCAMPBELL ANALYTICAL INC.

110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: #1540; Fidelity Roof	Date Sampled: 01/16/98
		Date Received: 01/16/98
	Client Contact: Jennifer Pucci	Date Extracted: 01/16/98
	Client P.O:	Date Analyzed: 01/16/98

01/23/98

Dear Jennifer:

Enclosed are:

- 1). the results of 3 samples from your #1540; Fidelity Roof 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 Second Avenue South, #D7, Pacheco, CA 94553
 Telephone : 510-798-1620 Fax : 510-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: #1540; Fidelity Roof	Date Sampled: 01/16/98
		Date Received: 01/16/98
	Client Contact: Jennifer Pucci	Date Extracted: 01/16/98
	Client P.O:	Date Analyzed: 01/16/98

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	Ethylbenzene	Xylenes	% Recovery Surrogate
84978	MW-1	W	1500,a	ND<33	95	0.72	69	8.4	121 [#]
84979	MW-2	W	ND	65	ND	ND	ND	ND	106
48980	MW-3	W	29,000,a	ND<360	5600	740	950	3500	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.

QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/16/98

Matrix: WATER

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		
	Sample (#84949)	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	96.3	95.6	100.0	96.3	95.6	0.7
Benzene	0.0	9.8	10.0	10.0	98.0	100.0	2.0
Toluene	0.0	10.1	10.1	10.0	101.0	101.0	0.0
Ethyl Benzene	0.0	10.1	10.1	10.0	101.0	101.0	0.0
Xylenes	0.0	30.5	30.5	30.0	101.7	101.7	0.0
TPH (diesel)	0	142	140	150	95	93	1.8
TRPH (oil & grease)	0	23100	25300	23700	97	107	9.1

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$



McCAMPBELL ANALYTICAL INC.

110 Second Avenue South, #D7, Pacheco, CA 94553
 Telephone : 510-798-1620 Fax : 510-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: #1540; Fidelity Roof	Date Sampled: 10/08/97
		Date Received: 10/08/97
	Client Contact: Bryan Campbell	Date Extracted: 10/08-10/09/97
	Client P.O:	Date Analyzed: 10/08-10/09/97

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	Ethylbenzene	Xylenes	% Recovery Surrogate
81669	MW-3	W	17,000,a	ND<280	4400	47	280	410	104
81670	MW-2	W	ND	90	ND	ND	ND	ND	105
81671	MW-1	W	56,c	5.8	2.8	ND	ND	ND	100
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.

QC REPORT FOR HYDROCARBON ANALYSES

Date: 10/08/97

Matrix: WATER

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		RPD
	Sample # (81560)	MS	MSD		MS	MSD	
TPH (gas)	0.0	103.0	104.2	100.0	103.0	104.2	1.2
Benzene	0.0	10.3	10.4	10.0	103.0	104.0	1.0
Toluene	0.0	10.4	10.5	10.0	104.0	105.0	1.0
Ethyl Benzene	0.0	10.2	10.7	10.0	102.0	107.0	4.8
Xylenes	0.0	30.7	31.9	30.0	102.3	106.3	3.8
TPH (diesel)	0	162	163	150	108	109	1.0
TRPH (oil & grease)	0	29300	26900	27300	107	99	8.5

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

QC REPORT FOR HYDROCARBON ANALYSES

Date: 10/10/97

Matrix: WATER

Analyte	Concentration (mg/L) Sample			Amount Spiked	% Recovery		RPD
	#(81643)	MS	MSD		MS	MSD	
TPH (gas)	0.0	104.2	103.0	100.0	104.2	103.0	1.2
Benzene	0.0	10.5	10.6	10.0	105.0	106.0	0.9
Toluene	0.0	10.5	10.6	10.0	105.0	106.0	0.9
Ethyl Benzene	0.0	10.7	10.8	10.0	107.0	108.0	0.9
Xylenes	0.0	32.2	32.4	30.0	107.3	108.0	0.6
TPH(diesel)	0	162	163	150	108	109	1.0
TRPH (oil & grease)	0	23200	22900	23700	98	97	1.3

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

QC REPORT FOR HYDROCARBON ANALYSES

Date: 10/13/97

Matrix: WATER

Analyte	Concentration (mg/L) Sample			Amount Spiked	% Recovery		RPD
	#(81750)	MS	MSD		MS	MSD	
TPH (gas)	0.0	98.9	98.2	100.0	98.9	98.2	0.7
Benzene	0.0	10.1	10.1	10.0	101.0	101.0	0.0
Toluene	0.0	10.1	10.2	10.0	101.0	102.0	1.0
Ethyl Benzene	0.0	10.2	10.3	10.0	102.0	103.0	1.0
Xylenes	0.0	30.7	31.0	30.0	102.3	103.3	1.0
TPH(diesel)	0	165	164	150	110	109	0.9
TRPH (oil & grease)	0	23100	22400	23700	97	95	3.1

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$



McCAMPBELL ANALYTICAL INC.

110 Second Avenue South, #D7, Pacheco, CA 94553
 Telephone : 510-798-1620 Fax : 510-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: #1540; Fidelity Roof	Date Sampled: 06/23/97
		Date Received: 06/23/97
	Client Contact: Bryan Campbell	Date Extracted: 06/28/97
	Client P.O:	Date Analyzed: 06/28/97

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	Ethylbenzene	Xylenes	% Recovery Surrogate
77872	MW-1	W	1300,a	14	150	2.1	12	19	94
77873	MW-2	W	ND	70	3.4	ND	ND	ND	105
77874	MW-3	W	25,000,a	270	4400	120	540	1500	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.



McCAMPBELL ANALYTICAL INC.

110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
<http://www.mccampbell.com> E-mail: main@mccampbell.com

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: #1540; Fidelity Roof	Date Sampled: 06/23/97
		Date Received: 06/23/97
	Client Contact: Bryan Campbell	Date Extracted: 06/25/97
	Client P.O:	Date Analyzed: 06/25/97

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d) ⁺	% Recovery Surrogate
77872	MW-1	W	420,d,b	103
77873	MW-2	W	ND	101
77874	MW-3	W	7000,d,b	102
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W	50 ug/L		
	S	1.0 mg/kg		

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

⁺ cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

[†]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 diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/28/97

Matrix: Water

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		RPD
	Sample # (77919)	MS	MSD		MS	MSD	
TPH (gas)	0.0	110.4	109.7	100.0	110.4	109.7	0.6
Benzene	0.0	10.0	9.8	10.0	100.0	98.0	2.0
Toluene	0.0	10.3	10.1	10.0	103.0	101.0	2.0
Ethyl Benzene	0.0	9.7	9.8	10.0	97.0	98.0	1.0
Xylenes	0.0	29.2	29.8	30.0	97.3	99.3	2.0
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/25/97

Matrix: Water

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		
	Sample # (77720)	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	90.5	98.7	100.0	90.5	98.7	8.7
Benzene	0.0	9.1	9.7	10.0	91.0	97.0	6.4
Toluene	0.0	9.6	10.2	10.0	96.0	102.0	6.1
Ethyl Benzene	0.0	9.8	10.5	10.0	98.0	105.0	6.9
Xylenes	0.0	29.4	31.6	30.0	98.0	105.3	7.2
TPH (diesel)	0	149	151	150	100	101	1.2
TRPH (oil & grease)	0	28300	28400	28000	101	101	0.4

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: # 1540; Fidelity Roof	Date Sampled: 03/19/97
		Date Received: 03/21/97
	Client Contact: Bryan Campbell	Date Extracted: 03/24/97
	Client P.O:	Date Analyzed: 03/24/97

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	Ethylbenzene	Xylenes	% Rec. Surrogate
74590	MW-1	W	ND	23	ND	ND	ND	ND	105
74591	MW-2	W	ND	65	ND	ND	ND	ND	105
74592	MW-3	W	26,000,a	230	3000	530	340	2300	100
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	0.5	
	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, soil and sludge samples in mg/kg, and all TCLP extracts in mg/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.

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: # 1540; Fidelity Roof	Date Sampled: 03/19/97
		Date Received: 03/21/97
	Client Contact: Bryan Campbell	Date Extracted: 03/21/97
	Client P.O:	Date Analyzed: 03/21/97

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d) ⁺	% Recovery Surrogate
74590	MW-1	W	ND	101
74591	MW-2	W	ND	110
74592	MW-3	W	5000,d	100
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W		50 ug/L	
	S		1.0 mg/kg	

* water samples are reported in ug/L, soil and sludge samples in mg/kg, and all TCLP and STLC extracts in mg/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+ 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 diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment.

QC REPORT FOR HYDROCARBON ANALYSES

Date: 03/21/97

Matrix: Water

Analyte	Concentration (mg/L) Sample (#74543)			Amount Spiked	% Recovery		RPD
	MS	MSD			MS	MSD	
TPH (gas)	0.0	97.3	99.5	100.0	97.3	99.5	2.2
Benzene	0.0	9.6	9.8	10.0	96.0	98.0	2.1
Toluene	0.0	9.9	10.2	10.0	99.0	102.0	3.0
Ethyl Benzene	0.0	10.2	10.5	10.0	102.0	105.0	2.9
Xylenes	0.0	30.4	31.3	30.0	101.3	104.3	2.9
TPH (diesel)	0	139	143	150	93	95	2.6
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

QC REPORT FOR HYDROCARBON ANALYSES

Date: 03/24/97

Matrix: Water

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		RPD
	Sample (#74563)	MS	MSD		MS	MSD	
TPH (gas)	0.0	101.4	100.8	100.0	101.4	100.8	0.6
Benzene	0.0	9.9	9.8	10.0	99.0	98.0	1.0
Toluene	0.0	10.3	10.2	10.0	103.0	102.0	1.0
Ethyl Benzene	0.0	10.4	10.4	10.0	104.0	104.0	0.0
Xylenes	0.0	31.1	31.3	30.0	103.7	104.3	0.6
TPH (diesel)	0	139	139	150	93	92	0.2
TRPH (oil & grease)	0	24800	24900	23700	105	105	0.4

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

ALL ENVIRONMENTAL, INC.

3364 Mt. Diablo Boulevard

Lafayette, CA 94549

(510) 283-6000 FAX: (510) 283-6121

Chain of Custody

DATE: 3/6/97 PAGE: 1 OF: 1

8211AAE131

AEI PROJECT MANAGER: <u>Jennifer Anderson</u>				ANALYSIS REQUEST										NUMBER OF CONTAINERS
PROJECT NAME: <u>Fidelity Roof Co.</u>				TPH-Gasoline (EPA 5090,8015)	TPH-Gasoline (EPA 5090,8015) w/ BTEX and MTBE (EPA 602,8020)	TPH-Diesel (EPA 3510/3550,8015)	PURCEABLE AROMATICS BTEX and MTBE (EPA 602,8020)	TOTAL OIL & GREASE (EPA 3520 E&F)	TOTAL LEAD (AA) (EPA 7420)	VOLATILE ORGANIC COMPOUNDS (EPA 8240)	LOFT Metals (EPA 7190,7190,7420,7530,7050)	STLC CAM 17 (EPA 1310)	74149	
PROJECT NUMBER: <u>1540</u>														74150
SIGNATURE: <u>[Signature]</u>														74151
TOTAL # OF CONTAINERS: <u>12</u>														74152
RECD. GOOD COND./COLD:														74153
SAMPLE I.D.	DATE	TIME	MATRIX										74154	
BH-3, 5'	3/6/97	10:12am	Soil		Hold								74155	
BH-3, 10'		10:25am		X	X								74156	
BH-3, 15'		10:32am		} Hold									74157	
BH-3, 20'		10:44am											74158	
BH-1, 5'		12:00											74159	
BH-1, 10'		12:08		X	X								74160	
BH-1, 15'		12:25		} Hold										
BH-1, 20'		12:56												
BH-2, 5'		1:55												
BH-2, 10'		2:10		X	X									
BH-2, 15'		2:17		} Hold										
BH-2, 20'		2:40												
				ICE/	VOAS	O&G	METALS	OTHER						
GOOD CONDITION				✓	PROSERVATIVE	✓								
HEAD SPACE ABSENT				✓	APPROPRIATE	✓								
ANALYTICAL LAB: <u>McCampbell</u>				RELINQUISHED BY: <u>[Signature]</u>	CONTAINERSED BY: <u>[Signature]</u>	RELINQUISHED BY: <u>[Signature]</u>	RECEIVED BY: <u>[Signature]</u>							
ADDRESS:				Signature	Signature	Signature	Signature							
PHONE: () FAX: ()				Printed Name	Printed Name	Printed Name	Printed Name							
INSTRUCTIONS/COMMENTS:				Company	Company	Company	Company							
				Time <u>1130</u> Date <u>3/7/97</u>	Time <u>1130</u> Date <u>3/7/97</u>	Time <u>1230</u> Date <u>3/7/97</u>	Time <u>1230</u> Date <u>3/1/97</u>							