



December 19, 1988

Ms. A. Robin Orden
45th Street Artists Cooperative
1420 45th Street
Emeryville, CA 94608

Subject: Evaluation of the Status of Two 55 Gallon
Drums Containing Liquid and One Empty Drum

Dear Ms. Orden:

Aqua Terra Technologies, Inc. (ATT) is pleased to submit this evaluation of the subject drums to the 45th Street Artists Cooperative for work performed at property located at 45th Street and Horton Streets, Emeryville, CA. The scope of work performed herein was defined as Tasks 1 and 2 of ATT's September 8, 1988 proposal.

Aqua Terra Technologies
Consulting Engineers
& Scientists

2950 Buskirk Avenue
Suite 120
Walnut Creek, CA
94596
415 934-4884

The contents of two 55-gallon drums and the soil adjacent to a third drum located behind the railroad spur track loading dock at the northeast side of the 1401 45th Street warehouse were characterized. The soil surrounding the empty drum was visually examined. There was no visible staining or obvious lack of vegetation in the vicinity of this drum. Because there is no history of hazardous materials usage at this site and no visual evidence, justification for sampling the soil surrounding the drums does not exist.

The liquid in the two drums was sampled by ATT field personnel by inserting a pre-cleaned teflon bailer into the open bung hole, mixing the contents, and removing liquid from the drum. Sample collection records are included in Attachment A. The appropriate number of sample containers and type were used for each sample collected in accordance with the analytical laboratory requirements and EPA protocol. All sample bottles were pre-cleaned by the supplier according to EPA protocols.

The samples were placed in an ice cooler immediately following collection, and remained there until refrigerated in the analytical laboratory. Appropriate chain of custody forms used for the samples are included in Attachment A.

To prevent cross contamination of water samples by the sampling equipment, all equipment used in sampling was washed with a trisodium phosphate solution, triple rinsed with distilled water, and allowed to air dry.

Ms. A. Robin Orden
45th Street Artists Cooperative
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The sample was composited and analyzed by a California Department of Health Services (DHS) certified analytical laboratory for volatile organic compounds by gas chromatography/mass spectroscopy (GC/MS) according to EPA Method 624, for semivolatile organic compounds by GC/MS according to EPA Method 625, and for priority pollutant metals according to the California Code of Regulations (CCR), Title 22, Section 66699.


The analytical results provided in Attachment B indicate that neither volatile nor semivolatile priority pollutant organic compounds are present above laboratory detection limits. Zinc was the only priority pollutant metal present, at 0.2 mg/L. There is no EPA primary drinking water quality criterion for zinc. However, the secondary drinking water criterion, which is based on consumer acceptance, is 5.0 mg/L. The level of zinc in the drum water is well below this level.

Based on the laboratory analysis, the water may be disposed of on the ground or into a nearby storm or sanitary sewer.

If you have any questions regarding the results presented herein, please do not hesitate to call me.

Sincerely,

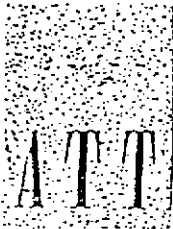
AQUA TERRA TECHNOLOGIES, INC.


Julie S. Menack, M.S.
Project Manager

JSM:pd
Attachments

ATTACHMENT A

**Chain of Custody Form
and Sample Collection Records**



8-8695 ✓ Composite of 40 ml VOA's 624
 8-8696 ✓ Composite of Amber Containers 625
 8-8697 ✓ Composite of Nalgene Containers Metals

CHAIN OF SAMPLE CUSTODY RECORD

Collector: Brad Bennett Date Sampled: 10-20-88 Time: 5:00 p
 Location of Sampling: 45th St.

Project Number: 883 Survey Number:
 Sample Type: Water
 Container Type and Condition: 40 ml VOAs, 1 Amber, 1 Nalgene
 Contract Laboratory Record/Name: Multi-Tech

Sample ID	Field Information
D-A	2-40 ml VOA, 2-1 Amber, 1-1 Nalgene
D-B	" " " "
	Composites: 8-8695 8-8696
	8-8697 8-8698
	8-8699

Analysis Requested: EPA 624, EPA 625, CCR-~~22~~ Metals (preserved w/ H₂O₂) - (Priority Pollutant Title 22 Sec 66699)

Please Composite all like containers to form one sample.
 Example D-A + D-B = one sample. Call if any questions.

Results Needed By: Normal Turnaround

Contact and results to be sent to: Julie Menack

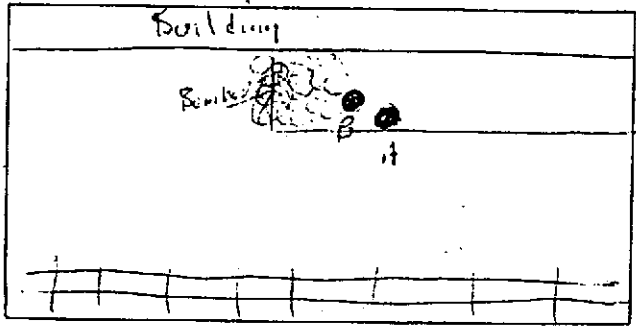
Travel Blank: Yes No Travel Blank to be Analyzed Separately: Yes No
 Duplicate Samples: Yes No Duplicates to be Analyzed Separately: Yes No
 Cleaning Blank: Yes No Cleaning Blank to be Analyzed Separately: Yes No
 Background Soil Sample: Yes No Background Soil Sample to be Analyzed Separately: Yes No

Chain of Custody:

1. Brad Bennett Date 10-20-88
 Field Personnel
 2. Robalyn Jones Date 10/21/88 5:35 pm
 Courier
 3. _____ Date _____
 Lab _____ Date _____



ENVIRONMENTAL SAMPLE COLLECTION RECORD



Site Plan:

Date: 10-20-88 Time: 4:30 p Job No: 883

Sample ID: D-A Location: 45th St. Emergency

Sampling Procedure: Collected water samples from 55 gallon drum.

Water Level: _____ pH: _____

Depth to bottom of well: _____ Salinity: _____

Well Purge Volume: _____ Turbidity: _____

Purge Water Fate: _____ Organic Vapor: _____

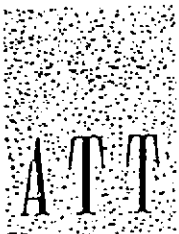
Sampling Equipment: Teflon beaker, RED

Equipment Cleaning Procedures: TSP wash, distilled water rinse x 2

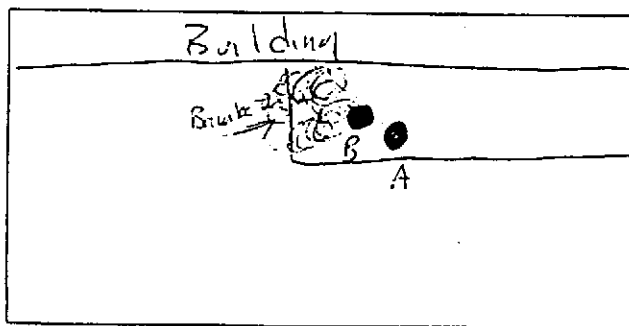
Sampling Handling/Storage: Packed on ice

Sample Collected By: Brod Bennett

Signature: [Signature] Title: Staff Scientist



ENVIRONMENTAL SAMPLE COLLECTION RECORD



Site Plan:

Date: 10-20-88 Time: 4:45 p Job No: 883

Sample ID: D-B Location: 45th St. Emeryville

Sampling Procedure: Collected water samples from 55 gallon drum

Water Level: _____ pH: _____

Depth to bottom of well: _____ Salinity: _____

Well Purge Volume: _____ Turbidity: _____

Purge Water Fate: _____ Organic Vapor: _____

Sampling Equipment: FSP wash pots Teflon bailer, BCD

Equipment Cleaning Procedures: FSP wash, distilled water rinse x 2

Sampling Handling/Storage: Packed on ice

Sample Collected By: Brad Bennett

Signature: [Signature] Title: Staff Scientist

ATTACHMENT B
Analytical Results



ETC - MULTI-TECH

November 4, 1988

CLIENT: Aqua Terra Technologies
2950 Buskirk Ave., Ste. 120
Walnut Creek, CA 94596

ATTN: Julie Menack

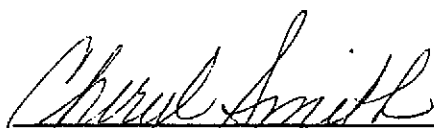
ANALYSIS: EPA METHOD 624: PURGEABLES
QC BATCH NUMBER: 88-624-1028
PROJECT: 45TH STREET, PROJECT #883
SAMPLE TYPE: LIQUID
COLLECTED BY: CLIENT (BRAD BENNETT)

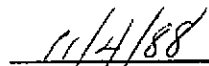
<u>SAMPLE NO.</u>	<u>SAMPLE POINT</u>	<u>SAMPLE DATE</u>	<u>DATE IN LAB</u>
8-8695	COMPOSITE D-A & D-B	10-20-88	10-21-88

This report is "PROPRIETARY AND CONFIDENTIAL" and delivered to, and intended for the exclusive use of the above named client only. Environmental Testing and Certification Corp. assumes no responsibility or liability for the reliance hereon or use hereof by anyone other than the above named client.

The analyses and data interpretation that form the basis of this report were prepared under the direct supervision and control of the undersigned who is solely responsible for the contents and conclusions therein.

Reviewed and
Approved by:


Cheryl Smith, Analytical Director
ETC/Multi-Tech Laboratories, Inc.


Date

Page 1 of 4

SAMPLE #8-8695, COMP D-A & D-B, 45TH STREET PROJECT #883

EPA METHOD 624 PURGEABLE ORGANICS

QC Batch Number: 88-624-1028
Date analyzed: 10-21-88

	<u>Result (ug/L)</u>	<u>Detection Limit (ug/L)</u>
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone	ND	10
Carbon disulfide	ND	5
Carbon tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethylvinyl ether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethyl benzene	ND	5
2-Hexanone	ND	10
Methylene chloride	ND	5
4-Methyl-2-Pentanone	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl acetate	ND	10
Vinyl chloride	ND	10
Total Xylenes	ND	5

SURROGATE RECOVERIES:

Bromofluorobenzene	104%
1,2-Dichloroethane-D4	124%
Toluene-D8	104%

ND = None Detected

SAMPLE #8-8695, COMP D-A & D-B, 45TH STREET PROJECT #883

QUALITY ASSURANCE REPORT
EPA METHOD 624: PURGEABLE ORGANICS

QC BATCH NUMBER: 88-624-1028

BLANK SUMMARY

Date:	10-28-88	10-30-88	Detection
	Result (ug/L)	Result (ug/L)	Limit (ug/L)
Acetone	ND	ND	10
Benzene	ND	ND	5
Bromodichloromethane	ND	ND	5
Bromoform	ND	ND	5
Bromomethane	ND	ND	10
2-Butanone	ND	ND	10
Carbon disulfide	ND	ND	5
Carbon tetrachloride	ND	ND	5
Chlorobenzene	ND	ND	5
Chloroethane	ND	ND	10
2-Chloroethylvinyl ether	ND	ND	10
Chloroform	ND	ND	5
Chloromethane	ND	ND	10
Dibromochloromethane	ND	ND	5
1,1-Dichloroethane	ND	ND	5
1,2-Dichloroethane	ND	ND	5
1,1-Dichloroethene	ND	ND	5
trans-1,2-Dichloroethene	ND	ND	5
1,2-Dichloropropane	ND	ND	5
cis-1,3-Dichloropropene	ND	ND	5
trans-1,3-Dichloropropene	ND	ND	5
Ethyl benzene	ND	ND	5
2-Hexanone	ND	ND	10
Methylene chloride	ND	ND	5
4-Methyl-2-Pentanone	ND	ND	10
Styrene	ND	ND	5
1,1,2,2-Tetrachloroethane	ND	ND	5
Tetrachloroethene	ND	ND	5
Toluene	ND	ND	5
1,1,1-Trichloroethane	ND	ND	5
1,1,2-Trichloroethane	ND	ND	5
Trichloroethene	ND	ND	5
Trichlorofluoromethane	ND	ND	5
Vinyl acetate	ND	ND	10
Vinyl chloride	ND	ND	10
Total Xylenes	ND	ND	5

ND = None Detected

(QC con't)

SAMPLE #8-8695, COMP D-A & D-B, 45TH STREET PROJECT #883

QUALITY ASSURANCE SUMMARY:
EPA METHOD 624 PURGEABLE ORGANICS

QC BATCH NUMBER: 88-624-1028 (con't)

SPIKING SUMMARY

	Blank Spike Rec. %	Blank Spike Dup. %	RPD %	Matrix Spike Rec. %	Matrix Spike Dup %	RPD %
1,1,-Dichloroethene	82	110	29	77	90	15
Trichloroethene	102	98	4	88	93	5
Chlorobenzene	98	98	0	93	95	2
Toluene	100	98	2	89	90	1
Benzene	100	98	2	120	124	3

jmt



ETC - MULTI-TECH

December 1, 1988

CLIENT: Aqua Terra Technologies
2950 Buskirk Ave., Ste. 120
Walnut Creek, CA 94596

ATTN: Wane Schneiter

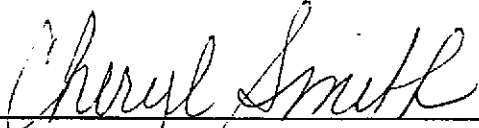
PROJECT: #883 - 45TH STREET
SAMPLE TYPE: LIQUID
COLLECTED BY: CLIENT (BRAD BENNETT)

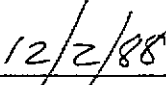
<u>SAMPLE NO.</u>	<u>SAMPLE POINT</u>	<u>SAMPLE DATE</u>	<u>DATE IN LAB</u>	<u>ANALYSIS</u>
8-8696	COMPOSITE D-A & D-B	10-20-88	10-21-88	EPA Method 625
8-8697	COMPOSITE D-A & D-B	10-20-88	10-21-88	CAC METALS

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Reviewed and
Approved by:


Cheryl Smith, Analytical Director
ETC/Multi-Tech Laboratories, Inc.


Date

SAMPLE NUMBER 8-8696, COMPOSITE D-A & D-B

EPA METHOD 625: BASE/NEUTRALS AND ACIDS

QC Batch Number: 88-350/364
Date extracted: 11-01-88
Date analyzed: 11-08-88

	<u>Results (ug/L)</u>	<u>Detection Limits (ug/L)</u>
Acenaphthene	ND	10
Acenaphthylene	ND	10
Anthracene	ND	10
Benzo(a)anthracene	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(g,h,i)perylene	ND	10
Benzo(a)pyrene	ND	10
Benzoic acid	ND	50
Benzyl alcohol	ND	10
4-Bromophenyl phenyl ether	ND	10
Butyl benzyl phthalate	ND	10
Di-n-butyl phthalate	ND	10
4-Chloroaniline	ND	10
bis(2-Chloroethoxy)methane	ND	10
bis(2-Chloroethyl)ether	ND	10
bis(2-Chloroisopropyl)ether	ND	10
4-Chloro-3-methylphenol	ND	10
2-Chloronaphthalene	ND	10
2-Chlorophenol	ND	10
4-Chlorophenyl phenyl ether	ND	10
Chrysene	ND	10
Dibenzo(a,h)anthracene	ND	10
Dibenzofuran	ND	10
1,2-Dichlorobenzene	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
3,3'-Dichlorobenzidine	ND	20
2,4-Dichlorophenol	ND	10
diethylphthalate	ND	10
2,4-dimethylphenol	ND	10
Dimethyl phthalate	ND	10
4,6-Dinitro-2-methylphenol	ND	50
2,4-Dinitrophenol	ND	50
2,4-Dinitrotoluene	ND	10
2,6-Dinitrotoluene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Fluoranthene	ND	10
Fluorene	ND	10

(EPA 625 ANALYSIS CONTINUED)

SAMPLE NUMBER 8-8696, COMPOSITE D-A & D-B (CON'T)EPA METHOD 625: BASE/NEUTRALS AND ACIDS (con't)

	<u>Results (ug/L)</u>	<u>Detection Limits (ug/L)</u>
Hexchlorobutadiene	ND	10
Hexachlorobenzene	ND	10
Hexachlorocyclopentadiene	ND	10
Hexachloroethane	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2-Methylnaphthalene	ND	10
2-Methylphenol	ND	10
4-Methylphenol	ND	10
Naphthalene	ND	10
2-Nitroaniline	ND	50
3-Nitroaniline	ND	50
4-Nitroaniline	ND	50
Nitrobenzene	ND	10
2-Nitrophenol	ND	10
4-Nitrophenol	ND	50
N-Nitrosodiphenylamine	ND	10
N-Nitrosodi-n-propylamine	ND	10
di-n-Octyl phthalate	ND	10
Pentachlorophenol	ND	50
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	10
1,2,4-Trichlorobenzene	ND	10
2,4,5-Trichlorophenol	ND	10
2,4,6-Trichlorophenol	ND	10

SURROGATE RECOVERIES

2-Fluorophenol	30%
Phenol d5	9%
2,4,6-Tribromophenol	47%
Nitrobenzene d5	42%
2-Fluorobiphenyl	62%
4-Terphenyl d14	40%

ND = None Detected

SAMPLE NUMBER 8-8697, COMPOSITE D-A & D-BCAC METALS

<u>Analyte</u>	<u>EPA Prep Method</u>	<u>Prep Date</u>	<u>EPA Test Method</u>	<u>Analysis Date</u>	<u>Result (mg/L)</u>	<u>Detection Limit (mg/L)</u>
Total Antimony	*	11-01-88	200.7	11-04-88	ND	1
Total Arsenic	206.3	11-02-88	206.3	11-03-88	ND	0.005
Total Barium	*	11-01-88	200.7	11-04-88	ND	0.1
Total Beryllium	*	11-01-88	200.7	11-04-88	ND	0.01
Total Cadmium	*	11-01-88	200.7	11-04-88	ND	0.1
Total Chromium	*	11-01-88	200.7	11-04-88	ND	0.1
Total Cobalt	*	11-01-88	200.7	11-04-88	ND	0.1
Total Copper	*	11-01-88	200.7	11-04-88	ND	0.1
Total Lead	*	11-01-88	239.1	11-08-88	ND	0.1
Total Mercury	245.1	11-11-88	245.1	11-11-88	ND	0.001
Total Molybdenum	*	11-01-88	200.7	11-04-88	ND	0.1
Total Nickel	*	11-01-88	200.7	11-04-88	ND	0.1
Total Selenium	270.3	11-02-88	270.3	11-09-88	ND	0.001
Total Silver	*	11-01-88	272.1	11-08-88	ND	0.05
Total Thallium	*	11-01-88	279.1	11-15-88	ND	0.5
Total Vanadium	*	11-01-88	200.7	11-04-88	ND	0.1
Total Zinc	*	11-01-88	200.7	11-04-88	0.2	0.1

*PREP - Metals; Section 4.1.3 of EPA 600/4-79-020 Methods for Chemical Analysis of Water and Waste, March 1983.

ND = None Detected

QUALITY ASSURANCE REPORT

EPA METHOD 625: GC/MS SEMI VOLATILE ORGANICS

QC BATCH NUMBER: 88-350
DATE OF ANALYSIS: 11-08-88

METHOD BLANK SUMMARY

<u>Method Blank</u> (ug/L)		<u>Method Blank</u> (ug/L)	
Acenaphthene	ND	Di-n-octylphthalate	ND
Acenaphthylene	ND	Fluoranthene	ND
Anthracene	ND	Fluorene	ND
Benzo(a)anthracene	ND	Hexachlorobenzene	ND
Benzo(b)fluoranthene	ND	Hexachlorobutadiene	ND
Benzo(k)fluoranthene	ND	Hexachlorethane	ND
Benzo(a)pyrene	ND	Hexachlorocyclopentadiene	ND
Benzo(g,h,i)Perylene	ND	Indeno(1,2,3-cd)pyrene	ND
Benzidine	ND	Isophorone	ND
Bis(2-chloroethyl)ether	ND	Naphthalene	ND
Bis(2-chloroethoxy)methane	ND	Nitrobenzene	ND
Bis(2-ethylhexyl)phthalate	ND	N-Nitrosodimethylamine	ND
Bis(2-chloroisopropyl)ether	ND	N-Nitrosodi-n-Propylamine	ND
4-Bromophenyl phenyl ether	ND	N-Nitrosodiphenylamine	ND
Butyl benzyl phthalate	ND	Phenanthrene	ND
2-Chloronaphthalene	ND	Pyrene	ND
4-Chlorophenyl phenyl ether	ND	1,2,4-Trichlorobenzene	ND
Chrysene	ND	4-Chloro-3-methylphenol	ND
Dibenzo(a,h)anthracene	ND	2-Chlorophenol	ND
Di-n-butylphthalate	ND	2,4-Chlorophenol	ND
1,3-Dichlorobenzene	ND	2,4-Dimethylpheno	ND
1,4-Dichlorobenzene	ND	2-Methyl-4,6-Dinitrophenol	ND
1,2-Dichlorobenzene	ND	2-Nitrophenol	ND
3,3'-Dichlorobenzidine	ND	4-Nitrophenol	ND
Diethylphthalate	ND	Pentachlorophenol	ND
Dimethylphthalate	ND	Phenol	ND
2,4-Dinitrotoluene	ND	2,4,6-Trichlorophenol	ND
2,6-Dinitrotoluene	ND	2,4,5-Trichlorophenol	ND

(625 QC CONTINUED)

QC BATCH NUMBER 88-350, EPA METHOD 625: GC/MS SEMI VOLATILE ORGANICS (CON'T)SPIKING SUMMARY

	QC Check Sample-1 <u>Recovery</u> (%)	QC Check Sample-2 <u>Recovery</u> (%)	<u>RPD</u> (%)	Matrix Spike <u>Recovery</u> (%)	Spike Duplicate <u>Recovery</u> (%)	<u>RPD</u> (%)
1,2,4-Trichlorobenzene	28	30	7	46	46	0
Acenaphthene	40	42	5	56	62	10
2,4-Dinitrotoluene	64	68	6	52	62	18
Di-n-butylphthalate	36	26	32	86	88	2
Pyrene	38	42	10	52	52	0
n-Nitroso-Di-n-propylamine	90	94	4	44	52	17
1,4-Dichlorobenzene	26	30	14	46	44	4
Pentachlorophenol	21	17	21	34	14	83
Phenol	10	7	33	39	35	11
2-Chlorophenol	30	23	26	60	52	14
4-Chloro-3-Methylphenol	17	15	13	66	54	20
4-Nitrophenol*	0	0	NA	47	42	11

*Although the QC check sample recoveries for 4-nitrophenol were poor, the batch was accepted based on the matrix spike replicate recoveries

NA = Not Applicable

jmt