

**DRAFT
FIRST QUARTER 1998
GROUNDWATER MONITORING
REPORT**

ETTIE STREET MAINTENANCE STATION

Prepared for

CALIFORNIA DEPARTMENT OF TRANSPORTATION

District 4

111 Grand Avenue

Oakland, California 94623-0660

Prepared by

Professional Service Industries

1320 West Winton

Hayward, California 94545

(510) 785-1111

April 24, 1998

575-71022

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STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided for Professional Services Industries, Inc., (PSI) report number 575-71022 is intended exclusively for the California Department of Transportation (Caltrans) for the evaluation of groundwater contamination as it pertains to the subject site. PSI is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the State of California or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted will identify any and/or all sources or locations of contamination.

This report is issued with the understanding that Caltrans is responsible for ensuring that the information contained in this report is brought to the attention of the appropriate regulatory agency. This report has been reviewed by a geologist who is registered in the State of California and whose signature and license number appear below.

DRAFT

Chris Merritt
Staff Environmental Specialist

DRAFT

Frank R. Poss, R.E.A. #05522
Senior Hydrogeologist

DRAFT

Timothy R. O'Brien RG/CEG/CHG
Senior Geologist

1.0 INTRODUCTION

This report summarizes the results of the First Quarter 1998 groundwater monitoring activities conducted on March 13, 1997 at the Ettie Street Maintenance Station (site; Figure 1). The work presented herein was conducted in accordance with Task Order Number 04-911175-46 and Contract 43Y097. The purpose of this project is to continue quarterly groundwater monitoring.

2.0 SITE HISTORY

Information provided by Caltrans in the Task Order, dated May 28, 1997, indicates that one gasoline and one diesel underground storage tanks (UST) were removed from the Ettie Street Maintenance Station on October 19 and 20, 1995. Laboratory analyses of soil and groundwater samples collected from the UST excavation indicated the presence of diesel and oil hydrocarbons.

On February 8, 1996, soil and groundwater samples were collected by Tetra Tech from two borings drilled downgradient from the former USTs and dispensers. The results of the soil analyses indicated that detectable concentrations of total petroleum hydrocarbons as oil (TPH-Oil) were as high as 1,200 milligrams per kilogram (mg/kg). Detectable concentrations of TPH-oil and TPH as diesel (TPH-D) in groundwater samples were as high as 2,300 milligrams per liter (mg/l) and 62.5 mg/l, respectively.

An additional investigation of the site area was completed by PSI in February and March 1996 for seismic retrofitting of the freeway columns and bents. PSI drilled over 100 borings in the general area with four of the borings (BM-29 through BM-32) being adjacent to the bents shown in Figure 2. Soil samples were collected at 0.15, 0.3, 0.6, and 1.5 meters (0.5, 1, 2, and 5 feet) bgs. The soil samples from borings BM-29 and BM-30 were analyzed for selected metals; benzene, toluene, ethylbenzene, and total xylenes (BTEX); and total recoverable petroleum hydrocarbons (TRPH). The soil samples from borings BM-31 and BM-32 were analyzed for selected metals, BTEX, total petroleum hydrocarbons as gasoline (TPH-G), TPH-D, and TRPH. The results of the soil analyses indicated that two soil samples from these four borings had soluble lead concentrations greater than the soluble threshold limit concentration (STLC) for lead (5 milligrams per liter (mg/l)). These samples were collected at 0.6 meters (2 feet) in boring BM-30 and at 0.3 meters (1 foot) in boring BM-32. None of the organic compounds was detected with the exception of TRPH. TRPH concentrations ranged from not detected to 400 milligrams per kilogram (mg/kg). The conclusion of the report

stated that there was no correlation between lead and TRPH concentrations and their spatial distribution (PSI report for Caltrans Distribution Structure April 4, 1996).

3.0 GROUNDWATER MONITORING ACTIVITIES

3.1 GROUNDWATER ELEVATION AND HYDRAULIC GRADIENT

On March 13, 1998, static groundwater elevations were measured in wells MW-2 through MW-4 (Figure 2). Due to construction activities and/or vandalism, groundwater monitoring well MW-1 has been damaged and was not accessible. The groundwater depths were measured in accordance with the field procedures outlined in Section 3.2, using a groundwater interface probe. A summary of the depth-to-groundwater data collected during this monitoring event and previous monitoring events is presented in Table 1. Consistent with previous measurements, the groundwater flow direction beneath the site is to the west with a hydraulic gradient of 0.013 meter per meter (0.013 foot per foot) (Figure 2). Groundwater elevations have risen an average of 0.21 meters (0.7 feet) since the last monitoring event.

3.2 GROUNDWATER SAMPLING

Groundwater samples were collected from monitoring wells MW-2, MW-3, and MW-4. The monitoring wells were not purged due to poor recovery after purging. Sampling without purging is consistent with Alameda County Health Care Services requested sampling methodology at other sites.

The following are procedures for well monitoring, well purging, and water sampling.

1. All equipment was washed prior to entering the well with an Alconox solution, followed by two tap water rinses and a deionized water rinse.
2. Prior to sampling the wells, depth-to-water was measured to an accuracy of approximately 0.01 foot. The measurements were made to the top of the well casing on the north side.
4. Water samples were collected with a single-use Teflon bailer. The water collected was immediately decanted into laboratory-supplied vials and

bottles. The containers were overfilled, capped, labeled, and placed in a chilled cooler for delivery to the laboratory.

5. Chain-of-custody procedures, including chain-of-custody forms, were used to document water sample handling and transport from collection to delivery to the laboratory for analyses.
6. Groundwater samples were delivered to the State-certified hazardous waste laboratory within approximately 48-hours of collection.

3.3 LABORATORY ANALYSIS AND RESULTS

Three groundwater samples were submitted for analyses to Pace Analytical of Petaluma, California, a State of California-certified hazardous waste analytical laboratory. Groundwater samples MW-2, MW-3 and MW-4 were all analyzed for the following:

- EPA Method 8015 modified - Total petroleum hydrocarbons as gasoline (TPH-G);
- EPA Method 8015 modified - Total petroleum hydrocarbons as diesel (TPH-D);
- EPA Method 8020 - Aromatic volatile compounds: benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tertiary butyl ether (MTBE);
- EPA Method 8260 - Volatile Organic Compounds and methyl tertiary butyl ether (MTBE);

Additionally, groundwater samples MW-3 and MW-4 were analyzed for the following:

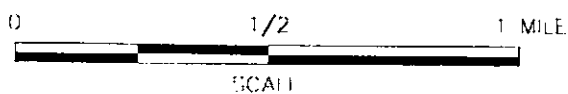
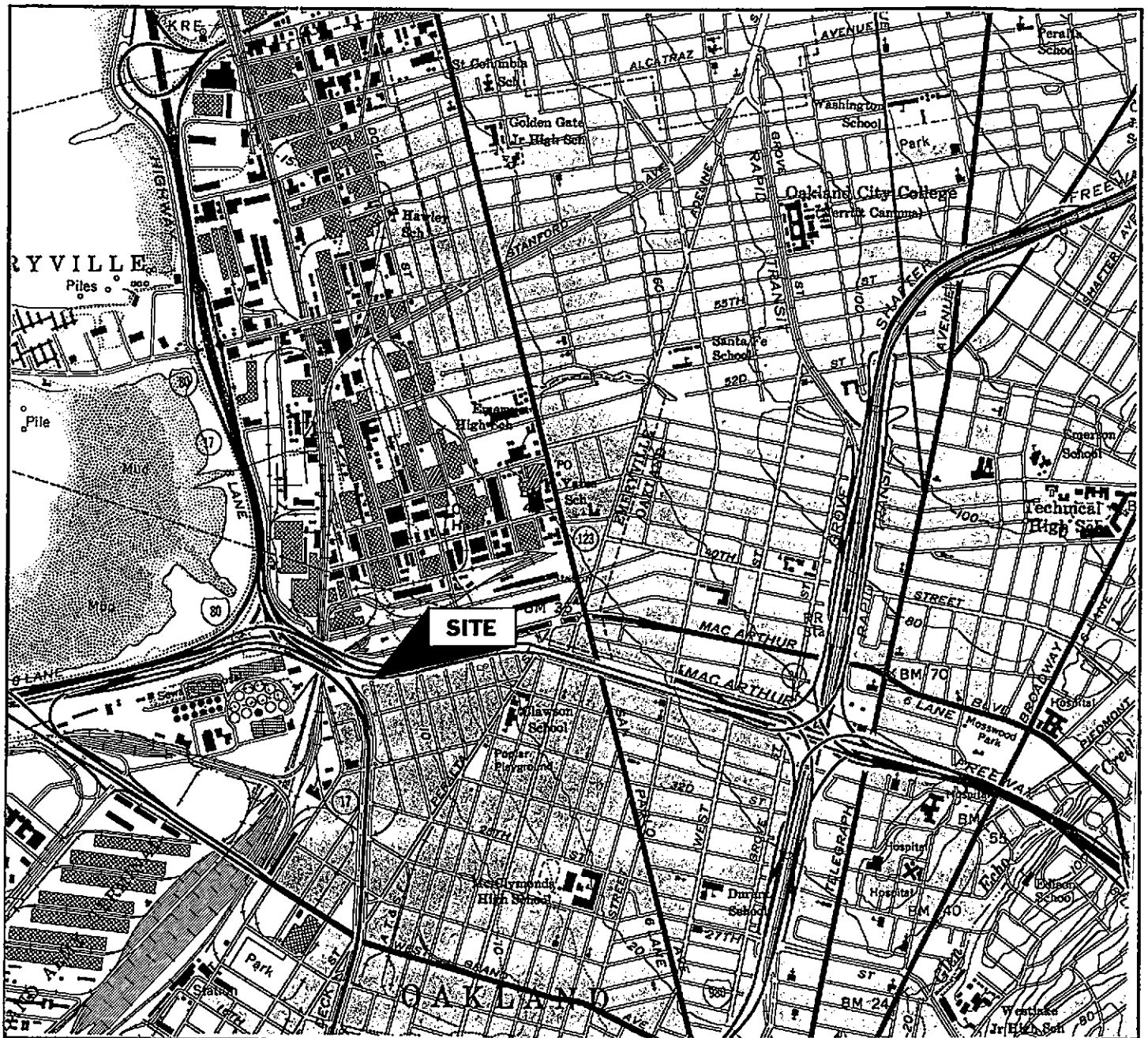
- EPA Method 8270 - Semi-Volatile Organic Compounds (SVOC)

A summary of the laboratory results for groundwater samples is presented in Table 2. A copy of the laboratory reports and chain-of-custody records are presented in Appendix B. The following are the results of the groundwater sampling:

- None of the groundwater samples contained detectable TPH-G, TPH-D, BTEX, or SVOC concentrations. MW-3 and MW-4 contained 95 and 32 µg/l of MTBE respectively.

4.0 SUMMARY AND CONCLUSIONS

- On March 13, 1997, three wells were measured for depth-to-groundwater and sampled.
- Based on the groundwater data, the inferred groundwater flow direction beneath the site is to the west with a hydraulic gradient of 0.013 meter per meter (0.013 foot per foot).
- Groundwater elevations have risen an average of 0.21 meters (0.7 feet) from the previous average elevation measured.
- None of the groundwater samples contained detectable amounts of TPH-G, TPH-D, SVOC's, or BTEX. MW-3 and MW-4 contained 95 and 32 $\mu\text{g/l}$ of MTBE respectively.

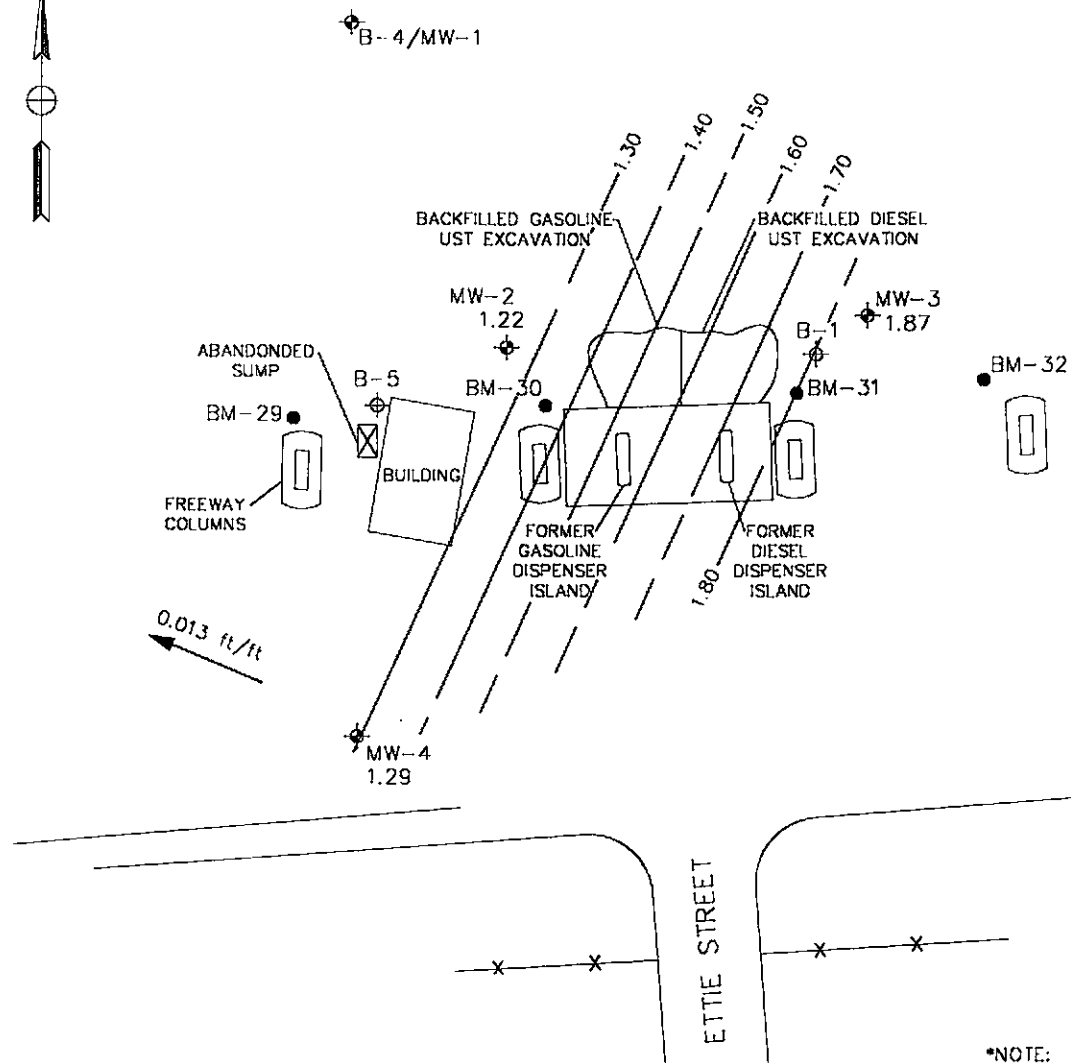
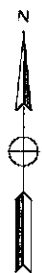


REFERENCE
U.S.G.S. OAKLAND, CALIFORNIA, 1959
PHOTOREVIS 1980

PSI ENVIRONMENTAL
GEOTECHNICAL
CONSTRUCTION
CONSULTING-ENGINEERING-TESTING

LOCATION
FORMER CALTRANS MAINTENANCE FACILITY
3406 11TH STREET
OAKLAND, CALIFORNIA
PROJECT NUMBER: 675 / 7022

DATE: 6/13/97	CHKD BY: [signature]	FIGURE NO: 1
FILE NO: 7022-1		DRAWN BY: S.BOWLING



*NOTE: ASSUMED ELEVATION OF 10.0' AT FINISH FLOOR, BLDG. NO. 3

LEGEND

- BORING LOCATION AND DESIGNATION
- GROUNDWATER MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION
- PSI BORING (APRIL 4, 1996)
- GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION AND GRADIENT

0 15 30 60
SCALE IN FEET

psi ENVIRONMENTAL
GEOTECHNICAL
CONSTRUCTION
CONSULTING • ENGINEERING • TESTING

GROUNDWATER ELEVATION AND GRADIENT MAP
CALTRANS MAINTENANCE STATION
3456 ETIE STREET
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-71022

DATE: 4/20/98

CKD BY:

FIGURE NO.: 2

FILE NO: 71022-3

DRAWN BY: L.KOCHIAN

TABLE 1
GROUNDWATER ELEVATIONS

Ettie Street Maintenance Station
Oakland, California

Monitoring Well I.D.	Top of Casing Elevation (feet, MSL)	Date	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-1	10.26	9/5/97	-82.17	92.43
	Not Accessible	12/4/97	---	---
	Not Accessible	3/13/98	---	---
MW-2	9.45	9/5/97	7.58	1.87
	9.45	12/4/97	7.43	2.02
	9.45	3/13/98	8.23	1.22
MW-3	9.78	9/5/97	7.35	2.43
	9.78	12/4/97	7.18	2.60
	9.78	3/13/98	7.91	1.87
MW-4	9.14	9/5/97	---	---
	9.14	12/4/97	7.13	2.01
	9.14	3/13/98	7.85	1.29

NOTES:

TOC = top of casing. Assumed elevation of 10 feet at finish floor of building number 3.

MSL = mean sea level

TABLE 2
LABORATORY RESULTS FOR WATER SAMPLES
CALTRANS MAINTENANCE STATION
ETTIE STREET, CALIFORNIA

SAMPLE ID	DATE	TPH-G	TPH-D	TOG	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE	SVOC	VOCs
MW-1	9/5/97	<500	<500	<500	1.1	0.5	1.2	1.4	<0.6	---	ND
MW-2	9/5/97	<500	<500	---	<0.3	<0.3	<0.3	<0.6	<0.6	---	ND
MW-2	12/4/97	<50	---	---	<0.5	<0.5	<0.5	<1.0	<5.0	ND	---
MW-2	3/13/98	<50	<5.0	---	<0.5	<0.5	<0.5	<1.0	<5.0	ND	ND
MW-3	9/5/97	<500	<500	<500	<0.3	<0.3	<0.3	<0.6	<0.6	---	ND
MW-3	12/4/97	<50	---	---	<0.5	<0.5	<0.5	<1.0	<5.0	ND	---
MW-3	3/13/98	<50	<5.0	---	<0.5	<0.5	<0.5	<1.0	<5.0	ND	95 -MTBE
MW-4	9/5/97	---	---	---	---	---	---	---	---	---	---
MW-4	12/4/97	---	---	---	---	---	---	---	---	---	---
MW-4	3/13/98	<50	<5.0	---	<0.5	<0.5	<0.5	<1.0	<5.0	ND	32 -MTBE

Notes:

All analyses are reported in micrograms per liter (ug/l).

TPH-G = total petroleum hydrocarbons as gasoline.

TPH-D = total petroleum hydrocarbons as diesel.

TOG = total oil and grease

VOCs = volatile organic compounds, reported as total concentration of all constituents.

SVOCs = semi-volatile organic compounds, reported as total concentration of all constituents.

MTBE = Methyl Tertiary Butyl Ether

--- = Not Analyzed

ND = Not Detected at a concentration presented on laboratory reports

APPENDIX A

LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS

Pace Analytical

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954

Tel: 707-792-1865
Fax: 707-792-0342

March 31, 1998

Mr. Frank Poss
PSI, Inc.
1320 W. Winton Ave
Hayward, CA 94545

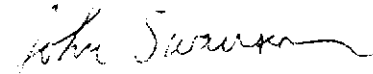
RE: Pace Project Number: 7010889
Client Project ID: Ettie St.

Dear Mr. Poss:

71022

Enclosed are the results of analyses for sample(s) received by the laboratory on March 17, 1998. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



John Swanson
Project Manager

CA ELAP Certificate Number 2245

Enclosures

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954

Tel: 707-792-1865

Fax: 707-792-0342

DATE: 03/31/98

PAGE: 1

PSI, Inc.
320 W. Winton Ave
Hayward, CA 94545

Pace Project Number: 7010889
Client Project ID: Ettie St.
SDG Number: 7010889

Attn: Mr. Frank Poss
Phone: (510)785-1111

Solid results are reported on a wet weight basis

Trace Sample No: 701293425 Date Collected: 03/13/98 Matrix: Water
Client Sample ID: MW-2 Date Received: 03/17/98

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
------------	---------	-------	-----	----------	---------	------	-----------

GC -- Volatiles

GAS/BTEX, Water		Method: EPA 8015M/8020M		Prep Method: EPA 8015M/8020M			
Gasoline	ND	ug/L	50	03/23/98	ADS		
Benzene	ND	ug/L	0.5	03/23/98	ADS	71-43-2	
Toluene	ND	ug/L	0.5	03/23/98	ADS	108-88-3	
Ethylbenzene	ND	ug/L	0.5	03/23/98	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	03/23/98	ADS	1330-20-7	
Methyl-tert-butyl Ether	ND	ug/L	5	03/23/98	ADS	1634-04-4	
a,a,a-Trifluorotoluene (S)	107	%		03/23/98	ADS	2164-17-2	
4-Bromofluorobenzene (S)	72	%		03/23/98	ADS	460-00-4	

C/MS -- VOA

GC/MS VOCs by 8260		Method: EPA 8260		Prep Method: EPA 8260			
Dichlorodifluoromethane	ND	ug/L	5	03/25/98	AXM	75-71-8	
Chloromethane	ND	ug/L	5	03/25/98	AXM	74-87-3	
Vinyl Chloride	ND	ug/L	5	03/25/98	AXM	75-01-4	
Bromomethane	ND	ug/L	5	03/25/98	AXM	74-83-9	
Chloroethane	ND	ug/L	5	03/25/98	AXM	75-00-3	
Trichlorofluoromethane	ND	ug/L	5	03/25/98	AXM	75-69-4	
Methylene Chloride	ND	ug/L	5	03/25/98	AXM	75-09-2	
1,1-Dichloroethene	ND	ug/L	5	03/25/98	AXM	75-35-4	
trans-1,2-Dichloroethene	ND	ug/L	5	03/25/98	AXM	156-60-5	
1,1-Dichloroethane	ND	ug/L	5	03/25/98	AXM	75-34-3	
2,2-Dichloropropane	ND	ug/L	5	03/25/98	AXM	594-20-7	
cis-1,2-Dichloroethene	ND	ug/L	5	03/25/98	AXM	156-59-2	
Chloroform	ND	ug/L	5	03/25/98	AXM	67-66-3	
Bromochloromethane	ND	ug/L	5	03/25/98	AXM	74-97-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

Pace Analytical Services, Inc.
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Petaluma, CA 94954

Tel: 707-792-1865

Fax: 707-792-0342

DATE: 03/31/98

PAGE: 2

Pace Project Number: 7010889

Client Project ID: Ettie St.

Pace Sample No: 701293425
Client Sample ID: MW-2

Date Collected: 03/13/98
Date Received: 03/17/98

Matrix: Water

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
1,1,1-Trichloroethane	ND	ug/L	5	03/25/98	AXM	71-55-6	
Carbon Tetrachloride	ND	ug/L	5	03/25/98	AXM	56-23-5	
1,1-Dichloropropene	ND	ug/L	5	03/25/98	AXM	563-58-6	
Benzene	ND	ug/L	5	03/25/98	AXM	71-43-2	
1,2-Dichloroethane	ND	ug/L	5	03/25/98	AXM	107-06-2	
Trichloroethene	ND	ug/L	5	03/25/98	AXM	79-01-6	
1,2-Dichloropropane	ND	ug/L	5	03/25/98	AXM	78-87-5	
Bromodichloromethane	ND	ug/L	5	03/25/98	AXM	75-27-4	
Dibromomethane	ND	ug/L	5	03/25/98	AXM	74-95-3	
Toluene	ND	ug/L	5	03/25/98	AXM	108-88-3	
1,1,2-Trichloroethane	ND	ug/L	5	03/25/98	AXM	79-00-5	
Tetrachloroethene	ND	ug/L	5	03/25/98	AXM	127-18-4	
1,3-Dichloropropane	ND	ug/L	5	03/25/98	AXM	142-28-9	
Dibromochloromethane	ND	ug/L	5	03/25/98	AXM	124-48-1	
1,2-Dibromoethane	ND	ug/L	5	03/25/98	AXM	106-93-4	
Chlorobenzene	ND	ug/L	5	03/25/98	AXM	108-90-7	
1,1,1,2-Tetrachloroethane	ND	ug/L	5	03/25/98	AXM	630-20-6	
Ethylbenzene	ND	ug/L	5	03/25/98	AXM	100-41-4	
m,p-Xylene	ND	ug/L	5	03/25/98	AXM	7816-60-0	
o-Xylene (1,2-Dimethylbenzene)	ND	ug/L	5	03/25/98	AXM	95-47-6	
Styrene	ND	ug/L	5	03/25/98	AXM	100-42-5	
Bromoform	ND	ug/L	5	03/25/98	AXM	75-25-2	
Isopropylbenzene (Cumene)	ND	ug/L	5	03/25/98	AXM	98-82-8	
1,1,2,2-Tetrachloroethane	ND	ug/L	5	03/25/98	AXM	79-34-5	
Bromobenzene	ND	ug/L	5	03/25/98	AXM	108-86-1	
1,2,3-Trichloropropane	ND	ug/L	5	03/25/98	AXM	96-18-4	
n-Propylbenzene	ND	ug/L	5	03/25/98	AXM	103-65-1	
2-Chlorotoluene	ND	ug/L	5	03/25/98	AXM	95-49-8	
1,3,5-Trimethylbenzene	ND	ug/L	5	03/25/98	AXM	108-67-8	
4-Chlorotoluene	ND	ug/L	5	03/25/98	AXM	106-43-4	
1,2,4-Trimethylbenzene	ND	ug/L	5	03/25/98	AXM	95-63-6	
sec-Butylbenzene	ND	ug/L	5	03/25/98	AXM	135-98-8	
tert-Butylbenzene	ND	ug/L	5	03/25/98	AXM	98-06-6	
p-Isopropyltoluene	ND	ug/L	5	03/25/98	AXM	99-87-6	
1,3-Dichlorobenzene	ND	ug/L	5	03/25/98	AXM	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5	03/25/98	AXM	106-46-7	
n-Butylbenzene	ND	ug/L	5	03/25/98	AXM	104-51-8	
1,2-Dichlorobenzene	ND	ug/L	5	03/25/98	AXM	95-50-1	
1,2-Dibromo-3-Chloropropane	ND	ug/L	5	03/25/98	AXM	96-12-8	
1,2,4-Trichlorobenzene	ND	ug/L	5	03/25/98	AXM	120-82-1	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

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Petaluma, CA 94954

Tel: 707-792-1865

Fax: 707-792-0342

DATE: 03/31/98

PAGE: 3

Pace Project Number: 7010889

Client Project ID: Ettie St.

Pace Sample No: 701293425
Client Sample ID: MW-2

Date Collected: 03/13/98

Matrix: Water

Date Received: 03/17/98

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Hexachlorobutadiene	ND	ug/L	5	03/25/98	AXM	87-68-3	
Naphthalene	ND	ug/L	5	03/25/98	AXM	91-20-3	
1,2,3-Trichlorobenzene	ND	ug/L	5	03/25/98	AXM	87-61-6	
2-Chloroethyl Vinyl Ether	ND	ug/L	5	03/25/98	AXM	110-75-8	
Acetone	ND	ug/L	20	03/25/98	AXM	67-64-1	
2-Butanone	ND	ug/L	10	03/25/98	AXM	78-93-3	
4-Methyl-2-Pentanone	ND	ug/L	10	03/25/98	AXM	108-10-1	
2-Hexanone	ND	ug/L	10	03/25/98	AXM	591-78-6	
Vinyl Acetate	ND	ug/L	10	03/25/98	AXM	108-05-4	
Methyl-tert-butyl Ether	ND	ug/L	5	03/25/98	AXM	1634-04-4	
Carbon Disulfide	ND	ug/L	5	03/25/98	AXM	75-15-0	
Ethanol	ND	ug/L	100	03/25/98	AXM	64-17-5	
tert-Butyl Alcohol(TBA)	ND	ug/L	100	03/25/98	AXM	75-65-0	
Diisopropyl ether (DIPE)	ND	ug/L	5	03/25/98	AXM	108-20-3	
Ethyl-tert-butyl ether(ETBE)	ND	ug/L	5	03/25/98	AXM	637-92-3	
tert-Amyl Methyl ether(TAME)	ND	ug/L	5	03/25/98	AXM	994-05-8	
Dibromofluoromethane (S)	98	%		03/25/98	AXM	1868-53-7	
Toluene-d8 (S)	99	%		03/25/98	AXM	2037-26-5	
4-Bromofluorobenzene (S)	103	%		03/25/98	AXM	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%		03/25/98	AXM	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954

Tel: 707-792-1865

Fax: 707-792-0342

DATE: 03/31/98

PAGE: 4

Pace Project Number: 7010889

Client Project ID: Ettie St.

Pace Sample No: 701293433 Date Collected: 03/13/98 Matrix: Water
Client Sample ID: MW-3 Date Received: 03/17/98

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
------------	---------	-------	-----	----------	---------	------	-----------

GC -- Volatiles

GAS/BTEX, Water

Method: EPA 8015M/8020M

Prep Method: EPA 8015M/8020M

Gasoline	ND	ug/L	50	03/23/98	ADS		
Benzene	ND	ug/L	0.5	03/23/98	ADS	71-43-2	
Toluene	ND	ug/L	0.5	03/23/98	ADS	108-88-3	
Ethylbenzene	ND	ug/L	0.5	03/23/98	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	03/23/98	ADS	1330-20-7	
Methyl-tert-butyl Ether	64	ug/L	5	03/23/98	ADS	1634-04-4	
a,a,a-Trifluorotoluene (S)	112	%		03/23/98	ADS	2164-17-2	
4-Bromofluorobenzene (S)	90	%		03/23/98	ADS	460-00-4	

GC/MS -- VOA

GC/MS VOCs by 8260

Method: EPA 8260

Prep Method: EPA 8260

Dichlorodifluoromethane	ND	ug/L	5	03/26/98	AXM	75-71-8	
Chloromethane	ND	ug/L	5	03/26/98	AXM	74-87-3	
Vinyl Chloride	ND	ug/L	5	03/26/98	AXM	75-01-4	
Bromomethane	ND	ug/L	5	03/26/98	AXM	74-83-9	
Chloroethane	ND	ug/L	5	03/26/98	AXM	75-00-3	
Trichlorofluoromethane	ND	ug/L	5	03/26/98	AXM	75-69-4	
Methylene Chloride	ND	ug/L	5	03/26/98	AXM	75-09-2	
1,1-Dichloroethene	ND	ug/L	5	03/26/98	AXM	75-35-4	
trans-1,2-Dichloroethene	ND	ug/L	5	03/26/98	AXM	156-60-5	
1,1-Dichloroethane	ND	ug/L	5	03/26/98	AXM	75-34-3	
2,2-Dichloropropane	ND	ug/L	5	03/26/98	AXM	594-20-7	
cis-1,2-Dichloroethene	ND	ug/L	5	03/26/98	AXM	156-59-2	
Chloroform	ND	ug/L	5	03/26/98	AXM	67-66-3	
Bromochloromethane	ND	ug/L	5	03/26/98	AXM	74-97-5	
1,1,1-Trichloroethane	ND	ug/L	5	03/26/98	AXM	71-55-6	
Carbon Tetrachloride	ND	ug/L	5	03/26/98	AXM	56-23-5	
1,1-Dichloropropene	ND	ug/L	5	03/26/98	AXM	563-58-6	
Benzene	ND	ug/L	5	03/26/98	AXM	71-43-2	
1,2-Dichloroethane	ND	ug/L	5	03/26/98	AXM	107-06-2	
Trichloroethene	ND	ug/L	5	03/26/98	AXM	79-01-6	
1,2-Dichloropropane	ND	ug/L	5	03/26/98	AXM	78-87-5	
Bromodichloromethane	ND	ug/L	5	03/26/98	AXM	75-27-4	
Dibromomethane	ND	ug/L	5	03/26/98	AXM	74-95-3	
Toluene	ND	ug/L	5	03/26/98	AXM	108-88-3	

REPORT OF LABORATORY ANALYSIS

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Pace Project Number: 7010889
Client Project ID: Ettie St.

Pace Sample No: 701293433 Date Collected: 03/13/98 Matrix: Water
Client Sample ID: MW-3 Date Received: 03/17/98

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
1,1,2-Trichloroethane	ND	ug/L	5	03/26/98	AXM	79-00-5	
Tetrachloroethene	ND	ug/L	5	03/26/98	AXM	127-18-4	
1,3-Dichloropropane	ND	ug/L	5	03/26/98	AXM	142-28-9	
Dibromochloromethane	ND	ug/L	5	03/26/98	AXM	124-48-1	
1,2-Dibromoethane	ND	ug/L	5	03/26/98	AXM	106-93-4	
Chlorobenzene	ND	ug/L	5	03/26/98	AXM	108-90-7	
1,1,1,2-Tetrachloroethane	ND	ug/L	5	03/26/98	AXM	630-20-6	
Ethylbenzene	ND	ug/L	5	03/26/98	AXM	100-41-4	
M&P-Xylene	ND	ug/L	5	03/26/98	AXM	7816-60-0	
O-Xylene (1,2-Dimethylbenzene)	ND	ug/L	5	03/26/98	AXM	95-47-6	
Styrene	ND	ug/L	5	03/26/98	AXM	100-42-5	
Bromoform	ND	ug/L	5	03/26/98	AXM	75-25-2	
Isopropylbenzene (Cumene)	ND	ug/L	5	03/26/98	AXM	98-82-8	
1,1,2,2-Tetrachloroethane	ND	ug/L	5	03/26/98	AXM	79-34-5	
Bromobenzene	ND	ug/L	5	03/26/98	AXM	108-86-1	
1,2,3-Trichloropropane	ND	ug/L	5	03/26/98	AXM	96-18-4	
n-Propylbenzene	ND	ug/L	5	03/26/98	AXM	103-65-1	
2-Chlorotoluene	ND	ug/L	5	03/26/98	AXM	95-49-8	
1,3,5-Trimethylbenzene	ND	ug/L	5	03/26/98	AXM	108-67-8	
4-Chlorotoluene	ND	ug/L	5	03/26/98	AXM	106-43-4	
1,2,4-Trimethylbenzene	ND	ug/L	5	03/26/98	AXM	95-63-6	
sec-Butylbenzene	ND	ug/L	5	03/26/98	AXM	135-98-8	
tert-Butylbenzene	ND	ug/L	5	03/26/98	AXM	98-06-6	
p-Isopropyltoluene	ND	ug/L	5	03/26/98	AXM	99-87-6	
1,3-Dichlorobenzene	ND	ug/L	5	03/26/98	AXM	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5	03/26/98	AXM	106-46-7	
n-Butylbenzene	ND	ug/L	5	03/26/98	AXM	104-51-8	
1,2-Dichlorobenzene	ND	ug/L	5	03/26/98	AXM	95-50-1	
1,2-Dibromo-3-Chloropropane	ND	ug/L	5	03/26/98	AXM	96-12-8	
1,2,4-Trichlorobenzene	ND	ug/L	5	03/26/98	AXM	120-82-1	
Hexachlorobutadiene	ND	ug/L	5	03/26/98	AXM	87-68-3	
Naphthalene	ND	ug/L	5	03/26/98	AXM	91-20-3	
1,2,3-Trichlorobenzene	ND	ug/L	5	03/26/98	AXM	87-61-6	
2-Chloroethyl Vinyl Ether	ND	ug/L	5	03/26/98	AXM	110-75-8	
Acetone	ND	ug/L	20	03/26/98	AXM	67-64-1	
2-Butanone	ND	ug/L	10	03/26/98	AXM	78-93-3	
4-Methyl-2-Pentanone	ND	ug/L	10	03/26/98	AXM	108-10-1	
2-Hexanone	ND	ug/L	10	03/26/98	AXM	591-78-6	
Vinyl Acetate	ND	ug/L	10	03/26/98	AXM	108-05-4	
Methyl-tert-butyl Ether	95	ug/L	5	03/26/98	AXM	1634-04-4	

REPORT OF LABORATORY ANALYSIS

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Pace Project Number: 7010889

Client Project ID: Ettie St.

Pace Sample No: 701293433
Client Sample ID: MW-3

Date Collected: 03/13/98
Date Received: 03/17/98

Matrix: Water

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Carbon Disulfide	ND	ug/L	5	03/26/98	AXM	75-15-0	
Ethanol	ND	ug/L	100	03/26/98	AXM	64-17-5	
tert-Butyl Alcohol(TBA)	ND	ug/L	100	03/26/98	AXM	75-65-0	
Diisopropyl ether (DIPE)	ND	ug/L	5	03/26/98	AXM	108-20-3	
Ethyl-tert-butyl ether(ETBE)	ND	ug/L	5	03/26/98	AXM	637-92-3	
tert-Amyl Methyl ether(TAME)	ND	ug/L	5	03/26/98	AXM	994-05-8	
Dibromofluoromethane (S)	93	x		03/26/98	AXM	1868-53-7	
Toluene-d8 (S)	96	x		03/26/98	AXM	2037-26-5	
4-Bromofluorobenzene (S)	98	x		03/26/98	AXM	460-00-4	
1,2-Dichloroethane-d4 (S)	96	x		03/26/98	AXM	17060-07-0	

GC/MS -- Semi-VOA

Semivolatile Organics

Method: EPA 8270

Prep Method: EPA 3520

Phenol	ND	ug/L	10	03/26/98	JMH	108-95-2	
bis(2-Chloroethyl)ether	ND	ug/L	10	03/26/98	JMH	111-44-4	
2-Chlorophenol	ND	ug/L	10	03/26/98	JMH	95-57-8	
1,3-Dichlorobenzene	ND	ug/L	10	03/26/98	JMH	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	10	03/26/98	JMH	106-46-7	
Benzyl Alcohol	ND	ug/L	20	03/26/98	JMH	100-51-6	
1,2-Dichlorobenzene	ND	ug/L	10	03/26/98	JMH	95-50-1	
2-Methylphenol	ND	ug/L	10	03/26/98	JMH	95-48-7	
bis(2-Chloroisopropyl)ether	ND	ug/L	10	03/26/98	JMH	39638-32-9	
4-Methylphenol	ND	ug/L	10	03/26/98	JMH	106-44-5	
N-Nitroso-di-n-propylamine	ND	ug/L	10	03/26/98	JMH	621-64-7	
Hexachloroethane	ND	ug/L	10	03/26/98	JMH	67-72-1	
Nitrobenzene	ND	ug/L	10	03/26/98	JMH	98-95-3	
Isophorone	ND	ug/L	10	03/26/98	JMH	78-59-1	
2-Nitrophenol	ND	ug/L	10	03/26/98	JMH	88-75-5	
2,4-Dimethylphenol	ND	ug/L	10	03/26/98	JMH	105-67-9	
Benzoic Acid	ND	ug/L	50	03/26/98	JMH	65-85-0	
bis(2-Chloroethoxy)methane	ND	ug/L	10	03/26/98	JMH	111-91-1	
2,4-Dichlorophenol	ND	ug/L	10	03/26/98	JMH	120-83-2	
1,2,4-Trichlorobenzene	ND	ug/L	10	03/26/98	JMH	120-82-1	
Naphthalene	ND	ug/L	10	03/26/98	JMH	91-20-3	
4-Chloroaniline	ND	ug/L	20	03/26/98	JMH	106-47-8	
Hexachlorobutadiene	ND	ug/L	10	03/26/98	JMH	87-68-3	
4-Chloro-3-methylphenol	ND	ug/L	20	03/26/98	JMH	59-50-7	
2-Methylnaphthalene	ND	ug/L	10	03/26/98	JMH	91-57-6	
Hexachlorocyclopentadiene	ND	ug/L	10	03/26/98	JMH	77-47-4	

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DATE: 03/31/98

PAGE: 7

Pace Project Number: 7010889

Client Project ID: Ettie St.

Pace Sample No: 701293433

Date Collected: 03/13/98

Matrix: Water

Client Sample ID: MW-3

Date Received: 03/17/98

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
2,4,6-Trichlorophenol	ND	ug/L	10	03/26/98	JMH	88-06-2	
2,4,5-Trichlorophenol	ND	ug/L	50	03/26/98	JMH	95-95-4	
2-Chloronaphthalene	ND	ug/L	10	03/26/98	JMH	91-58-7	
2-Nitroaniline	ND	ug/L	50	03/26/98	JMH	88-74-4	
Dimethylphthalate	ND	ug/L	10	03/26/98	JMH	131-11-3	
Acenaphthylene	ND	ug/L	10	03/26/98	JMH	208-96-8	
2,6-Dinitrotoluene	ND	ug/L	10	03/26/98	JMH	606-20-2	
3-Nitroaniline	ND	ug/L	50	03/26/98	JMH	99-09-2	
Acenaphthene	ND	ug/L	10	03/26/98	JMH	83-32-9	
2,4-Dinitrophenol	ND	ug/L	50	03/26/98	JMH	51-28-5	
4-Nitrophenol	ND	ug/L	50	03/26/98	JMH	100-02-7	
Dibenzofuran	ND	ug/L	10	03/26/98	JMH	132-64-9	
2,4-Dinitrotoluene	ND	ug/L	10	03/26/98	JMH	121-14-2	
Diethylphthalate	ND	ug/L	10	03/26/98	JMH	84-66-2	
4-Chlorophenyl-phenylether	ND	ug/L	10	03/26/98	JMH	7005-72-3	
Fluorene	ND	ug/L	10	03/26/98	JMH	86-73-7	
4-Nitroaniline	ND	ug/L	50	03/26/98	JMH	100-01-6	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	03/26/98	JMH	534-52-1	
N-Nitrosodiphenylamine	ND	ug/L	10	03/26/98	JMH	86-30-6	
4-Bromophenyl-phenylether	ND	ug/L	10	03/26/98	JMH	101-55-3	
Hexachlorobenzene	ND	ug/L	10	03/26/98	JMH	118-74-1	
Pentachlorophenol	ND	ug/L	50	03/26/98	JMH	87-86-5	
Phenanthrene	ND	ug/L	10	03/26/98	JMH	85-01-8	
Anthracene	ND	ug/L	10	03/26/98	JMH	120-12-7	
Di-n-butylphthalate	ND	ug/L	10	03/26/98	JMH	84-74-2	
Fluoranthene	ND	ug/L	10	03/26/98	JMH	206-44-0	
Pyrene	ND	ug/L	10	03/26/98	JMH	129-00-0	
Butylbenzylphthalate	ND	ug/L	10	03/26/98	JMH	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/L	20	03/26/98	JMH	91-94-1	
Benzo(a)anthracene	ND	ug/L	10	03/26/98	JMH	56-55-3	
Chrysene	ND	ug/L	10	03/26/98	JMH	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/L	10	03/26/98	JMH	117-81-7	
Di-n-octylphthalate	ND	ug/L	10	03/26/98	JMH	117-84-0	
Benzo(b)fluoranthene	ND	ug/L	10	03/26/98	JMH	205-99-2	
Benzo(k)fluoranthene	ND	ug/L	10	03/26/98	JMH	207-08-9	
Benzo(a)pyrene	ND	ug/L	10	03/26/98	JMH	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	03/26/98	JMH	193-39-5	
Dibenz(a,h)anthracene	ND	ug/L	10	03/26/98	JMH	53-70-3	
Benzo(g,h,i)perylene	ND	ug/L	10	03/26/98	JMH	191-24-2	
Nitrobenzene-d5 (S)	71	x		03/26/98	JMH	4165-60-0	

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DATE: 03/31/98

PAGE: 8

Pace Project Number: 7010889

Client Project ID: Ettie St.

Pace Sample No: 701293433
Client Sample ID: MW-3

Date Collected: 03/13/98
Date Received: 03/17/98

Matrix: Water

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
2-Fluorobiphenyl (S)	70	µ		03/26/98	JMH	321-60-8	
Terphenyl-d14 (S)	20	µ		03/26/98	JMH	1718-51-0	1
Phenol-d6 (S)	65	µ		03/26/98	JMH	13127-88-3	
2-Fluorophenol (S)	69	µ		03/26/98	JMH	367-12-4	
2,4,6-Tribromophenol (S)	69	µ		03/26/98	JMH	118-79-6	
Date Extracted				03/19/98			

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Pace Project Number: 7010889

Client Project ID: Ettie St.

Pace Sample No: 701293441
Client Sample ID: MW-4

Date Collected: 03/16/98
Date Received: 03/17/98

Matrix: Water

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
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GC -- Volatiles

GAS/BTEX, Water

Method: EPA 8015M/8020M

Prep Method: EPA 8015M/8020M

Gasoline	ND	ug/L	50	03/23/98	ADS		
Benzene	ND	ug/L	0.5	03/23/98	ADS	71-43-2	
Toluene	ND	ug/L	0.5	03/23/98	ADS	108-88-3	
Ethylbenzene	ND	ug/L	0.5	03/23/98	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	03/23/98	ADS	1330-20-7	
Methyl-tert-butyl Ether	29	ug/L	5	03/23/98	ADS	1634-04-4	
a,a,a-Trifluorotoluene (S)	108	%		03/23/98	ADS	2164-17-2	
4-Bromofluorobenzene (S)	90	%		03/23/98	ADS	460-00-4	

GC/MS -- VOA

GC/MS VOCs by 8260

Method: EPA 8260

Prep Method: EPA 8260

Dichlorodifluoromethane	ND	ug/L	5	03/26/98	AXM	75-71-8	
Chloromethane	ND	ug/L	5	03/26/98	AXM	74-87-3	
Vinyl Chloride	ND	ug/L	5	03/26/98	AXM	75-01-4	
Bromomethane	ND	ug/L	5	03/26/98	AXM	74-83-9	
Chloroethane	ND	ug/L	5	03/26/98	AXM	75-00-3	
Trichlorofluoromethane	ND	ug/L	5	03/26/98	AXM	75-69-4	
Methylene Chloride	ND	ug/L	5	03/26/98	AXM	75-09-2	
1,1-Dichloroethene	ND	ug/L	5	03/26/98	AXM	75-35-4	
trans-1,2-Dichloroethene	ND	ug/L	5	03/26/98	AXM	156-60-5	
1,1-Dichloroethane	ND	ug/L	5	03/26/98	AXM	75-34-3	
2,2-Dichloropropane	ND	ug/L	5	03/26/98	AXM	594-20-7	
cis-1,2-Dichloroethene	ND	ug/L	5	03/26/98	AXM	156-59-2	
Chloroform	ND	ug/L	5	03/26/98	AXM	67-66-3	
Bromochloromethane	ND	ug/L	5	03/26/98	AXM	74-97-5	
1,1,1-Trichloroethane	ND	ug/L	5	03/26/98	AXM	71-55-6	
Carbon Tetrachloride	ND	ug/L	5	03/26/98	AXM	56-23-5	
1,1-Dichloropropene	ND	ug/L	5	03/26/98	AXM	563-58-6	
Benzene	ND	ug/L	5	03/26/98	AXM	71-43-2	
1,2-Dichloroethane	ND	ug/L	5	03/26/98	AXM	107-06-2	
Trichloroethene	ND	ug/L	5	03/26/98	AXM	79-01-6	
1,2-Dichloropropane	ND	ug/L	5	03/26/98	AXM	78-87-5	
Bromodichloromethane	ND	ug/L	5	03/26/98	AXM	75-27-4	
Dibromomethane	ND	ug/L	5	03/26/98	AXM	74-95-3	
Toluene	ND	ug/L	5	03/26/98	AXM	108-88-3	

REPORT OF LABORATORY ANALYSIS

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Pace Project Number: 7010889
Client Project ID: Ettie St.

Pace Sample No: 701293441
Client Sample ID: MW-4

Date Collected: 03/16/98 Matrix: Water
Date Received: 03/17/98

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
1,1,2-Trichloroethane	ND	ug/L	5	03/26/98	AXM	79-00-5	
Tetrachloroethene	ND	ug/L	5	03/26/98	AXM	127-18-4	
1,3-Dichloropropane	ND	ug/L	5	03/26/98	AXM	142-28-9	
Dibromochloromethane	ND	ug/L	5	03/26/98	AXM	124-48-1	
1,2-Dibromoethane	ND	ug/L	5	03/26/98	AXM	106-93-4	
Chlorobenzene	ND	ug/L	5	03/26/98	AXM	108-90-7	
1,1,1,2-Tetrachloroethane	ND	ug/L	5	03/26/98	AXM	630-20-6	
Ethylbenzene	ND	ug/L	5	03/26/98	AXM	100-41-4	
M&P-Xylene	ND	ug/L	5	03/26/98	AXM	7816-60-0	
O-Xylene (1,2-Dimethylbenzene)	ND	ug/L	5	03/26/98	AXM	95-47-6	
Styrene	ND	ug/L	5	03/26/98	AXM	100-42-5	
Bromoform	ND	ug/L	5	03/26/98	AXM	75-25-2	
Isopropylbenzene (Cumene)	ND	ug/L	5	03/26/98	AXM	98-82-8	
1,1,2,2-Tetrachloroethane	ND	ug/L	5	03/26/98	AXM	79-34-5	
Bromobenzene	ND	ug/L	5	03/26/98	AXM	108-86-1	
1,2,3-Trichloropropane	ND	ug/L	5	03/26/98	AXM	96-18-4	
n-Propylbenzene	ND	ug/L	5	03/26/98	AXM	103-65-1	
2-Chlorotoluene	ND	ug/L	5	03/26/98	AXM	95-49-8	
1,3,5-Trimethylbenzene	ND	ug/L	5	03/26/98	AXM	108-67-8	
4-Chlorotoluene	ND	ug/L	5	03/26/98	AXM	106-43-4	
1,2,4-Trimethylbenzene	ND	ug/L	5	03/26/98	AXM	95-63-6	
sec-Butylbenzene	ND	ug/L	5	03/26/98	AXM	135-98-8	
tert-Butylbenzene	ND	ug/L	5	03/26/98	AXM	98-06-6	
p-Isopropyltoluene	ND	ug/L	5	03/26/98	AXM	99-87-6	
1,3-Dichlorobenzene	ND	ug/L	5	03/26/98	AXM	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5	03/26/98	AXM	106-46-7	
n-Butylbenzene	ND	ug/L	5	03/26/98	AXM	104-51-8	
1,2-Dichlorobenzene	ND	ug/L	5	03/26/98	AXM	95-50-1	
1,2-Dibromo-3-Chloropropane	ND	ug/L	5	03/26/98	AXM	96-12-8	
1,2,4-Trichlorobenzene	ND	ug/L	5	03/26/98	AXM	120-82-1	
Hexachlorobutadiene	ND	ug/L	5	03/26/98	AXM	87-68-3	
Naphthalene	ND	ug/L	5	03/26/98	AXM	91-20-3	
1,2,3-Trichlorobenzene	ND	ug/L	5	03/26/98	AXM	87-61-6	
2-Chloroethyl Vinyl Ether	ND	ug/L	5	03/26/98	AXM	110-75-8	
Acetone	ND	ug/L	20	03/26/98	AXM	67-64-1	
2-Butanone	ND	ug/L	10	03/26/98	AXM	78-93-3	
4-Methyl-2-Pentanone	ND	ug/L	10	03/26/98	AXM	108-10-1	
2-Hexanone	ND	ug/L	10	03/26/98	AXM	591-78-6	
Vinyl Acetate	ND	ug/L	10	03/26/98	AXM	108-05-4	
Methyl-tert-butyl Ether	32	ug/L	5	03/26/98	AXM	1634-04-4	

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Pace Project Number: 7010889

Client Project ID: Ettie St.

Pace Sample No: 701293441 Date Collected: 03/16/98 Matrix: Water
Client Sample ID: MW-4 Date Received: 03/17/98

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Carbon Disulfide	ND	ug/L	5	03/26/98	AXM	75-15-0	
Ethanol	ND	ug/L	100	03/26/98	AXM	64-17-5	
tert-Butyl Alcohol(TBA)	ND	ug/L	100	03/26/98	AXM	75-65-0	
Diisopropyl ether (DIPE)	ND	ug/L	5	03/26/98	AXM	108-20-3	
Ethyl-tert-butyl ether(ETBE)	ND	ug/L	5	03/26/98	AXM	637-92-3	
tert-Amyl Methyl ether(TAME)	ND	ug/L	5	03/26/98	AXM	994-05-8	
Dibromofluoromethane (S)	99	%		03/26/98	AXM	1868-53-7	
Toluene-d8 (S)	101	%		03/26/98	AXM	2037-26-5	
4-Bromofluorobenzene (S)	105	%		03/26/98	AXM	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%		03/26/98	AXM	17060-07-0	

GC/MS -- Semi-VOA

Semivolatile Organics

Method: EPA 8270

Prep Method: EPA 3520

Phenol	ND	ug/L	10	03/27/98	JMH	108-95-2	
bis(2-Chloroethyl)ether	ND	ug/L	10	03/27/98	JMH	111-44-4	
2-Chlorophenol	ND	ug/L	10	03/27/98	JMH	95-57-8	
1,3-Dichlorobenzene	ND	ug/L	10	03/27/98	JMH	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	10	03/27/98	JMH	106-46-7	
Benzyl Alcohol	ND	ug/L	20	03/27/98	JMH	100-51-6	
1,2-Dichlorobenzene	ND	ug/L	10	03/27/98	JMH	95-50-1	
2-Methylphenol	ND	ug/L	10	03/27/98	JMH	95-48-7	
bis(2-Chloroisopropyl)ether	ND	ug/L	10	03/27/98	JMH	39638-32-9	
4-Methylphenol	ND	ug/L	10	03/27/98	JMH	106-44-5	
N-Nitroso-di-n-propylamine	ND	ug/L	10	03/27/98	JMH	621-64-7	
Hexachloroethane	ND	ug/L	10	03/27/98	JMH	67-72-1	
Nitrobenzene	ND	ug/L	10	03/27/98	JMH	98-95-3	
Isophorone	ND	ug/L	10	03/27/98	JMH	78-59-1	
2-Nitrophenol	ND	ug/L	10	03/27/98	JMH	88-75-5	
2,4-Dimethylphenol	ND	ug/L	10	03/27/98	JMH	105-67-9	
Benzoic Acid	ND	ug/L	50	03/27/98	JMH	65-85-0	
bis(2-Chloroethoxy)methane	ND	ug/L	10	03/27/98	JMH	111-91-1	
2,4-Dichlorophenol	ND	ug/L	10	03/27/98	JMH	120-83-2	
1,2,4-Trichlorobenzene	ND	ug/L	10	03/27/98	JMH	120-82-1	
Naphthalene	ND	ug/L	10	03/27/98	JMH	91-20-3	
4-Chloroaniline	ND	ug/L	20	03/27/98	JMH	106-47-8	
Hexachlorobutadiene	ND	ug/L	10	03/27/98	JMH	87-68-3	
4-Chloro-3-methylphenol	ND	ug/L	20	03/27/98	JMH	59-50-7	
2-Methylnaphthalene	ND	ug/L	10	03/27/98	JMH	91-57-6	
Hexachlorocyclopentadiene	ND	ug/L	10	03/27/98	JMH	77-47-4	

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DATE: 03/31/98

PAGE: 12

Pace Project Number: 7010889

Client Project ID: Ettie St.

Pace Sample No: 701293441
Client Sample ID: MW-4

Date Collected: 03/16/98
Date Received: 03/17/98

Matrix: Water

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
2,4,6-Trichlorophenol	ND	ug/L	10	03/27/98	JMH	88-06-2	
2,4,5-Trichlorophenol	ND	ug/L	50	03/27/98	JMH	95-95-4	
2-Chloronaphthalene	ND	ug/L	10	03/27/98	JMH	91-58-7	
2-Nitroaniline	ND	ug/L	50	03/27/98	JMH	88-74-4	
Dimethylphthalate	ND	ug/L	10	03/27/98	JMH	131-11-3	
Acenaphthylene	ND	ug/L	10	03/27/98	JMH	208-96-8	
2,6-Dinitrotoluene	ND	ug/L	10	03/27/98	JMH	606-20-2	
3-Nitroaniline	ND	ug/L	50	03/27/98	JMH	99-09-2	
Acenaphthene	ND	ug/L	10	03/27/98	JMH	83-32-9	
2,4-Dinitrophenol	ND	ug/L	50	03/27/98	JMH	51-28-5	
4-Nitrophenol	ND	ug/L	50	03/27/98	JMH	100-02-7	
Dibenzofuran	ND	ug/L	10	03/27/98	JMH	132-64-9	
2,4-Dinitrotoluene	ND	ug/L	10	03/27/98	JMH	121-14-2	
Diethylphthalate	ND	ug/L	10	03/27/98	JMH	84-66-2	
4-Chlorophenyl-phenylether	ND	ug/L	10	03/27/98	JMH	7005-72-3	
Fluorene	ND	ug/L	10	03/27/98	JMH	86-73-7	
4-Nitroaniline	ND	ug/L	50	03/27/98	JMH	100-01-6	
4,6-Dinitro-2-methylphenol	ND	ug/L	50	03/27/98	JMH	534-52-1	
N-Nitrosodiphenylamine	ND	ug/L	10	03/27/98	JMH	86-30-6	
4-Bromophenyl-phenylether	ND	ug/L	10	03/27/98	JMH	101-55-3	
Hexachlorobenzene	ND	ug/L	10	03/27/98	JMH	118-74-1	
Pentachlorophenol	ND	ug/L	50	03/27/98	JMH	87-86-5	
Phenanthrene	ND	ug/L	10	03/27/98	JMH	85-01-8	
Anthracene	ND	ug/L	10	03/27/98	JMH	120-12-7	
Di-n-butylphthalate	ND	ug/L	10	03/27/98	JMH	84-74-2	
Fluoranthene	ND	ug/L	10	03/27/98	JMH	206-44-0	
Pyrene	ND	ug/L	10	03/27/98	JMH	129-00-0	
Butylbenzylphthalate	ND	ug/L	10	03/27/98	JMH	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/L	20	03/27/98	JMH	91-94-1	
Benzo(a)anthracene	ND	ug/L	10	03/27/98	JMH	56-55-3	
Chrysene	ND	ug/L	10	03/27/98	JMH	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/L	10	03/27/98	JMH	117-81-7	
Di-n-octylphthalate	ND	ug/L	10	03/27/98	JMH	117-84-0	
Benzo(b)fluoranthene	ND	ug/L	10	03/27/98	JMH	205-99-2	
Benzo(k)fluoranthene	ND	ug/L	10	03/27/98	JMH	207-08-9	
Benzo(a)pyrene	ND	ug/L	10	03/27/98	JMH	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10	03/27/98	JMH	193-39-5	
Dibenz(a,h)anthracene	ND	ug/L	10	03/27/98	JMH	53-70-3	
Benzo(g,h,i)perylene	ND	ug/L	10	03/27/98	JMH	191-24-2	
Nitrobenzene-d5 (S)	75	%		03/27/98	JMH	4165-60-0	

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DATE: 03/31/98

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Pace Project Number: 7010889

Client Project ID: Ettie St.

Pace Sample No: 701293441
Client Sample ID: MW-4

Date Collected: 03/16/98
Date Received: 03/17/98

Matrix: Water

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
2-Fluorobiphenyl (S)	73	%		03/27/98	JMH	321-60-8	
Terphenyl-d14 (S)	37	%		03/27/98	JMH	1718-51-0	
Phenol-d6 (S)	80	%		03/27/98	JMH	13127-88-3	
2-Fluorophenol (S)	81	%		03/27/98	JMH	367-12-4	
2,4,6-Tribromophenol (S)	73	%		03/27/98	JMH	118-79-6	
Date Extracted				03/23/98			

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Pace Project Number: 7010889
Client Project ID: Ettie St.

PARAMETER FOOTNOTES

ND

Not Detected

NC

Not Calculable

RL

Pace Reporting Limit

(S)

Surrogate

[1]

Base/neutral surrogate recovery outside of control limits. The data was accepted based on valid recovery of remaining two base/neutral surrogates.

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DATE: 03/31/98

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PSI, Inc.
320 W. Winton Ave
Hayward, CA 94545

Pace Project Number: 7010889
Client Project ID: Ettie St.
SDG Number: 7010889

Attn: Mr. Frank Poss
Phone: (510)785-1111

QC Batch ID: 32144
Analysis Method: EPA 8270
Associated Pace Samples:

701293433

QC Batch Method: EPA 3520
Analysis Description: Semivolatile Organics

METHOD BLANK: 701294654
Associated Pace Samples:

701293433

Parameter	Units	Method Blank Result	PRL	Footnotes
3-Dichlorobenzene	ug/L	ND	10	
4-Dichlorobenzene	ug/L	ND	10	
1,2-Dichlorobenzene	ug/L	ND	10	
Benzoic Acid	ug/L	ND	50	
Phenol	ug/L	ND	10	
bis(2-Chloroethyl)ether	ug/L	ND	10	
2-Chlorophenol	ug/L	ND	10	
Benzyl Alcohol	ug/L	ND	20	
Methylphenol	ug/L	ND	10	
bis(2-Chloroisopropyl)ether	ug/L	ND	10	
Methylphenol	ug/L	ND	10	
Nitroso-di-n-propylamine	ug/L	ND	10	
Hexachloroethane	ug/L	ND	10	
Nitrobenzene	ug/L	ND	10	
Phosphorane	ug/L	ND	10	
2-Nitrophenol	ug/L	ND	10	
2,4-Dimethylphenol	ug/L	ND	10	
bis(2-Chloroethoxy)methane	ug/L	ND	10	
4-Dichlorophenol	ug/L	ND	10	
1,2,4-Trichlorobenzene	ug/L	ND	10	
Naphthalene	ug/L	ND	10	
Chloroaniline	ug/L	ND	20	
Hexachlorobutadiene	ug/L	ND	10	
4-Chloro-3-methylphenol	ug/L	ND	20	
Methylnaphthalene	ug/L	ND	10	

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DATE: 03/31/98

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Pace Project Number: 7010889

Client Project ID: Ettie St.

METHOD BLANK: 701294654

Associated Pace Samples:

701293433

Parameter	Units	Method Blank Result	PRL	Footnotes
Hexachlorocyclopentadiene	ug/L	ND	10	
2,4,6-Trichlorophenol	ug/L	ND	10	
2,4,5-Trichlorophenol	ug/L	ND	50	
2-Chloronaphthalene	ug/L	ND	10	
2-Nitroaniline	ug/L	ND	50	
Dimethylphthalate	ug/L	ND	10	
Acenaphthylene	ug/L	ND	10	
2,6-Dinitrotoluene	ug/L	ND	10	
3-Nitroaniline	ug/L	ND	50	
Acenaphthene	ug/L	ND	10	
2,4-Dinitrophenol	ug/L	ND	50	
4-Nitrophenol	ug/L	ND	50	
Dibenzofuran	ug/L	ND	10	
2,4-Dinitrotoluene	ug/L	ND	10	
Diethylphthalate	ug/L	ND	10	
4-Chlorophenyl-phenylether	ug/L	ND	10	
Fluorene	ug/L	ND	10	
2-Nitroaniline	ug/L	ND	50	
4,6-Dinitro-2-methylphenol	ug/L	ND	50	
N-Nitrosodiphenylamine	ug/L	ND	10	
2-Bromophenyl-phenylether	ug/L	ND	10	
Hexachlorobenzene	ug/L	ND	10	
Pentachlorophenol	ug/L	ND	50	
Benanthrene	ug/L	ND	10	
Anthracene	ug/L	ND	10	
Di-n-butylphthalate	ug/L	ND	10	
Fluoranthene	ug/L	ND	10	
Pyrene	ug/L	ND	10	
Butylbenzylphthalate	ug/L	ND	10	
3,3'-Dichlorobenzidine	ug/L	ND	20	
Benzo(a)anthracene	ug/L	ND	10	
Chrysene	ug/L	ND	10	
bis(2-Ethylhexyl)phthalate	ug/L	ND	10	
Di-n-octylphthalate	ug/L	ND	10	
Benzo(b)fluoranthene	ug/L	ND	10	
Benzo(k)fluoranthene	ug/L	ND	10	
Benzo(a)pyrene	ug/L	ND	10	
Indeno(1,2,3-cd)pyrene	ug/L	ND	10	

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DATE: 03/31/98

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Pace Project Number: 7010889

Client Project ID: Ettie St.

METHOD BLANK: 701294654

Associated Pace Samples:

701293433

Parameter	Units	Method Blank Result	PRL	Footnotes
benz(a,h)anthracene	ug/L	ND	10	
benzo(g,h,i)perylene	ug/L	ND	10	
2-Fluorophenol (S)	%	77		
Phenol-d6 (S)	%	71		
Nitrobenzene-d5 (S)	%	75		
2-Fluorobiphenyl (S)	%	67		
2,4,6-Tribromophenol (S)	%	71		
Terphenyl-d14 (S)	%	107		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 701294670 701294688									
Parameter	Units	701292351	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
4-Dichlorobenzene	ug/L	0	100	57.44	57.4	48.34	48.3	17	
Phenol	ug/L	8472	150	12680	2808	10490	1348	70	1
2-Chlorophenol	ug/L	0	150	117.4	78.3	99.37	66.2	17	
Nitroso-di-n-propylamine	ug/L	0	100	230.1	230	264.7	265	14	2
2,4-Trichlorobenzene	ug/L	0	100	73.51	73.5	66.55	66.6	10	
4-Chloro-3-methylphenol	ug/L	0	150	154.4	103	144.7	96.5	6	2
Benaphthene	ug/L	20.37	100	105.5	85.1	94.51	74.1	14	
Nitrophenol	ug/L	0	150	163.1	109	177.4	118	8	
2,4-Dinitrotoluene	ug/L	0	100	123.1	123	113.2	113	8	2
Pentachlorophenol	ug/L	0	150	144.2	96.1	140.7	93.8	2	
Pyrene	ug/L	35.11	100	107.9	72.8	117.7	82.6	13	
2-Fluorophenol (S)					94		77		
Phenol-d6 (S)					95		85		
Nitrobenzene-d5 (S)					117		115		3
Fluorobiphenyl (S)					86		75		
2,4,6-Tribromophenol (S)					90		84		
Terphenyl-d14 (S)					100		106		

LABORATORY CONTROL SAMPLE: 701294662

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
4-Dichlorobenzene	ug/L	100	68.93	68.9	

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QUALITY CONTROL DATA

DATE: 03/31/98

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Pace Project Number: 7010889

Client Project ID: Ettie St.

LABORATORY CONTROL SAMPLE: 701294662

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
Phenol	ug/L	150	101.8	67.8	
2-Chlorophenol	ug/L	150	109.4	73.0	
N-Nitroso-di-n-propylamine	ug/L	100	76.66	76.7	
1,2,4-Trichlorobenzene	ug/L	100	64.75	64.8	
4-Chloro-3-methylphenol	ug/L	150	124.0	82.7	
Acenaphthene	ug/L	100	81.10	81.1	
4-Nitrophenol	ug/L	150	129.1	86.1	
2,4-Dinitrotoluene	ug/L	100	101.9	102	
Pentachlorophenol	ug/L	150	128.5	85.7	
Pyrene	ug/L	100	77.60	77.6	
2-Fluorophenol (S)				78	
Phenol-d6 (S)				71	
Nitrobenzene-d5 (S)				76	
2-Fluorobiphenyl (S)				78	
2,4,6-Tribromophenol (S)				74	
Terphenyl-d14 (S)				108	

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QUALITY CONTROL DATA

DATE: 03/31/98

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PSI, Inc.
320 W. Winton Ave
Hayward, CA 94545

Pace Project Number: 7010889
Client Project ID: Ettie St.
SDG Number: 7010889

Attn: Mr. Frank Poss
Phone: (510)785-1111

QC Batch ID: 32154 QC Batch Method: EPA 8015M/8020M
Analysis Method: EPA 8015M/8020M Analysis Description: GAS/BTEX, Water
Associated Pace Samples: 701293433 701293441

METHOD BLANK: 701296899
Associated Pace Samples:

701293433 701293441

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/L	ND	50	
Benzene	ug/L	ND	0.5	
Toluene	ug/L	ND	0.5	
Ethylbenzene	ug/L	ND	0.5	
Xylene (Total)	ug/L	ND	1	
Methyl-tert-butyl Ether	ug/L	ND	5	
1,1,1-Trifluorotoluene (S)	%	109		
4-Bromofluorobenzene (S)	%	91		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 701294985 701294993									
Parameter	Units	701290538	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/L	22.25	1000	886.5	86.4	817.4	79.5	8	
4-Bromofluorobenzene (S)					90		83		

LABORATORY CONTROL SAMPLE: 701295008

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
Gasoline	ug/L	1000	928.9	92.9	
4-Bromofluorobenzene (S)				94	

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QUALITY CONTROL DATA

DATE: 03/31/98
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PSI, Inc.
1320 W. Winton Ave
Hayward, CA 94545

Pace Project Number: 7010889
Client Project ID: Ettie St.
SDG Number: 7010889

Attn: Mr. Frank Poss
Phone: (510)785-1111

QC Batch ID: 32155
Analysis Method: EPA 8015M/8020M
Associated Pace Samples: 701293425

QC Batch Method: EPA 8015M/8020M
Analysis Description: GAS/BTEX, Water

METHOD BLANK: 701296881
Associated Pace Samples:

701293425

Parameter	Units	Method	PRL	Footnotes
		Blank Result		
Gasoline	ug/L	ND	50	
Benzene	ug/L	ND	0.5	
Toluene	ug/L	ND	0.5	
Ethylbenzene	ug/L	ND	0.5	
Xylene (Total)	ug/L	ND	1	
Ethyl-tert-butyl Ether	ug/L	ND	5	
1,2,4-Trifluorobenzene (S)	%	99		
Bromofluorobenzene (S)	%	79		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 701295024 701295032									
Parameter	Units	701292237		Matrix	Spike	Sp. Dup.	Spike	RPD	Footnotes
		701292237	Conc.	Result					
Benzene	ug/L	0.7828	100	117.8	117	114.5	114	3	
Toluene	ug/L	2.752	100	115.4	113	113.1	110	2	
Ethylbenzene	ug/L	1.026	100	109.6	109	107.6	107	2	
Xylene (Total)	ug/L	7.365	300	335.2	109	328.5	107	2	
1,2,4-Trifluorobenzene (S)					114		110		

REPORT OF LABORATORY ANALYSIS

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Fax: 707-792-0342

QUALITY CONTROL DATA

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Pace Project Number: 7010889

Client Project ID: Ettie St.

LABORATORY CONTROL SAMPLE: 701295040

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
Benzene	ug/L	100	112.3	112	
Toluene	ug/L	100	109.3	109	
Ethylbenzene	ug/L	100	105.6	106	
Xylene (Total)	ug/L	300	318.2	106	
p,p,p-Trifluorotoluene (S)				109	

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QUALITY CONTROL DATA

DATE: 03/31/98

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PSI, Inc.
320 W. Winton Ave
Hayward, CA 94545

Pace Project Number: 7010889
Client Project ID: Ettie St.
SDG Number: 7010889

Attn: Mr. Frank Poss
Phone: (510)785-1111

QC Batch ID: 32209
Analysis Method: EPA 8270
Associated Pace Samples:

701293441

QC Batch Method: EPA 3520
Analysis Description: Semivolatile Organics

METHOD BLANK: 701297160
Associated Pace Samples:

701293441

Parameter	Units	Method Blank Result	PRL	Footnotes
1,3-Dichlorobenzene	ug/L	ND	10	
1,4-Dichlorobenzene	ug/L	ND	10	
1,2-Dichlorobenzene	ug/L	ND	10	
Benzoic Acid	ug/L	ND	50	
Phenol	ug/L	ND	10	
Bis(2-Chloroethyl)ether	ug/L	ND	10	
2-Chlorophenol	ug/L	ND	10	
Benzyl Alcohol	ug/L	ND	20	
Methylphenol	ug/L	ND	10	
Bis(2-Chloroisopropyl)ether	ug/L	ND	10	
4-Methylphenol	ug/L	ND	10	
Nitroso-di-n-propylamine	ug/L	ND	10	
Hexachloroethane	ug/L	ND	10	
Nitrobenzene	ug/L	ND	10	
Diphosphorone	ug/L	ND	10	
Nitrophenol	ug/L	ND	10	
2,4-Dimethylphenol	ug/L	ND	10	
Bis(2-Chloroethoxy)methane	ug/L	ND	10	
2,4-Dichlorophenol	ug/L	ND	10	
1,2,4-Trichlorobenzene	ug/L	ND	10	
Naphthalene	ug/L	ND	10	
Chloroaniline	ug/L	ND	20	
Hexachlorobutadiene	ug/L	ND	10	
4-Chloro-3-methylphenol	ug/L	ND	20	
Methylnaphthalene	ug/L	ND	10	

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QUALITY CONTROL DATA

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Pace Project Number: 7010889

Client Project ID: Ettie St.

METHOD BLANK: 701297160

Associated Pace Samples:

701293441

Parameter	Units	Method Blank Result	PRL	Footnotes
hexachlorocyclopentadiene	ug/L	ND	10	
2,4,6-Trichlorophenol	ug/L	ND	10	
2,4,5-Trichlorophenol	ug/L	ND	50	
1-Chloronaphthalene	ug/L	ND	10	
1-Nitroaniline	ug/L	ND	50	
Dimethylphthalate	ug/L	ND	10	
Acenaphthylene	ug/L	ND	10	
2,6-Dinitrotoluene	ug/L	ND	10	
3-Nitroaniline	ug/L	ND	50	
Acenaphthene	ug/L	ND	10	
2,4-Dinitrophenol	ug/L	ND	50	
1-Nitrophenol	ug/L	ND	50	
Dibenzofuran	ug/L	ND	10	
2,4-Dinitrotoluene	ug/L	ND	10	
Diethylphthalate	ug/L	ND	10	
4-Chlorophenyl-phenylether	ug/L	ND	10	
Fluorene	ug/L	ND	10	
1-Nitroaniline	ug/L	ND	50	
2,6-Dinitro-2-methylphenol	ug/L	ND	50	
N-Nitrosodiphenylamine	ug/L	ND	10	
1-Bromophenyl-phenylether	ug/L	ND	10	
hexachlorobenzene	ug/L	ND	10	
Pentachlorophenol	ug/L	ND	50	
Phenanthrene	ug/L	ND	10	
Anthracene	ug/L	ND	10	
Di-n-butylphthalate	ug/L	ND	10	
Fluoranthene	ug/L	ND	10	
Pyrene	ug/L	ND	10	
n-Butylbenzylphthalate	ug/L	ND	10	
3,3'-Dichlorobenzidine	ug/L	ND	20	
Benzo(a)anthracene	ug/L	ND	10	
Chrysene	ug/L	ND	10	
bis(2-Ethylhexyl)phthalate	ug/L	ND	10	
Di-n-octylphthalate	ug/L	ND	10	
Benzo(b)fluoranthene	ug/L	ND	10	
Benzo(k)fluoranthene	ug/L	ND	10	
Benzo(a)pyrene	ug/L	ND	10	
Indeno(1,2,3-cd)pyrene	ug/L	ND	10	

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DATE: 03/31/98

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Pace Project Number: 7010889

Client Project ID: Ettie St.

METHOD BLANK: 701297160

Associated Pace Samples:

701293441

Parameter	Units	Method	PRL	Footnotes
		Blank Result		
benz(a,h)anthracene	ug/L	ND	10	
benzo(g,h,i)perylene	ug/L	ND	10	
2-Fluorophenol (S)	%	73		
Phenol-d6 (S)	%	64		
Nitrobenzene-d5 (S)	%	70		
2-Fluorobiphenyl (S)	%	72		
2,4,6-Tribromophenol (S)	%	71		
terphenyl-d14 (S)	%	106		

LABORATORY CONTROL SAMPLE & LCSD: 701297178 701297186

Parameter	Units	Spike	LCS	Spike	LCSD	Spike	RPD	Footnotes
		Conc.	Result	% Rec	Result	Dup % Rec		
4-Dichlorobenzene	ug/L	100	70.77	70.8	64.61	64.6	9	
Phenol	ug/L	150	100.5	67.0	96.77	64.5	4	
2-Chlorophenol	ug/L	150	113.9	75.9	105.0	70.0	8	
Nitroso-di-n-propylamine	ug/L	100	80.37	80.4	75.18	75.2	7	
2,4-Trichlorobenzene	ug/L	100	65.36	65.4	59.32	59.3	10	
4-Chloro-3-methylphenol	ug/L	150	121.2	80.8	118.8	79.2	2	
Benaphthene	ug/L	100	74.79	74.8	72.47	72.5	3	
Nitrophenol	ug/L	150	120.3	80.2	120.2	80.2	0	
2,4-Dinitrotoluene	ug/L	100	97.99	98.0	98.67	98.7	1	
Pentachlorophenol	ug/L	150	128.9	85.9	127.7	85.2	1	
rene	ug/L	100	82.82	82.8	86.54	86.5	4	
2-Fluorophenol (S)				83		78		
Phenol-d6 (S)				73		69		
Nitrobenzene-d5 (S)				78		72		
Fluorobiphenyl (S)				79		75		
2,4,6-Tribromophenol (S)				72		76		
terphenyl-d14 (S)				106		106		

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QUALITY CONTROL DATA

DATE: 03/31/98

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PSI, Inc.
320 W. Winton Ave
Hayward, CA 94545

Pace Project Number: 7010889
Client Project ID: Ettie St.
SDG Number: 7010889

Attn: Mr. Frank Poss
Phone: (510)785-1111

QC Batch ID: 32269
Analysis Method: EPA 8260
Associated Pace Samples:

QC Batch Method: EPA 8260
Analysis Description: GC/MS VOCs by 8260
701293425 701293433 701293441

METHOD BLANK: 701298812

Associated Pace Samples:

701293425

Parameter	Units	Method Blank Result	PRL	Footnotes
Dichlorodifluoromethane	ug/L	ND	5	
Chloromethane	ug/L	ND	5	
Vinyl Chloride	ug/L	ND	5	
Bromomethane	ug/L	ND	5	
Chloroethane	ug/L	ND	5	
Trichlorofluoromethane	ug/L	ND	5	
Methylene Chloride	ug/L	ND	5	
1,1-Dichloroethene	ug/L	ND	5	
trans-1,2-Dichloroethene	ug/L	ND	5	
1,1-Dichloroethane	ug/L	ND	5	
2,2-Dichloropropane	ug/L	ND	5	
cis-1,2-Dichloroethene	ug/L	ND	5	
Chloroform	ug/L	ND	5	
Bromochloromethane	ug/L	ND	5	
1,1,1-Trichloroethane	ug/L	ND	5	
Carbon Tetrachloride	ug/L	ND	5	
1,1-Dichloropropene	ug/L	ND	5	
Benzene	ug/L	ND	5	
1,2-Dichloroethane	ug/L	ND	5	
Trichloroethene	ug/L	ND	5	
1,2-Dichloropropane	ug/L	ND	5	
Bromodichloromethane	ug/L	ND	5	
Dibromomethane	ug/L	ND	5	
Toluene	ug/L	ND	5	
1,1,2-Trichloroethane	ug/L	ND	5	

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QUALITY CONTROL DATA

DATE: 03/31/98

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Pace Project Number: 7010889

Client Project ID: Ettie St.

METHOD BLANK: 701298812

Associated Pace Samples:

701293425

Parameter	Units	Method Blank Result	PRL	Footnotes
Tetrachloroethene	ug/L	ND	5	
1,3-Dichloropropane	ug/L	ND	5	
Dibromochloromethane	ug/L	ND	5	
1,2-Dibromoethane	ug/L	ND	5	
Chlorobenzene	ug/L	ND	5	
1,1,1,2-Tetrachloroethane	ug/L	ND	5	
Ethylbenzene	ug/L	ND	5	
m,p-Xylene	ug/L	ND	5	
o-Xylene (1,2-Dimethylbenzene)	ug/L	ND	5	
Styrene	ug/L	ND	5	
Bromoform	ug/L	ND	5	
Isopropylbenzene (Cumene)	ug/L	ND	5	
1,1,2,2-Tetrachloroethane	ug/L	ND	5	
Bromobenzene	ug/L	ND	5	
1,2,3-Trichloropropane	ug/L	ND	5	
n-Propylbenzene	ug/L	ND	5	
2-Chlorotoluene	ug/L	ND	5	
1,3,5-Trimethylbenzene	ug/L	ND	5	
1-Chlorotoluene	ug/L	ND	5	
1,2,4-Trimethylbenzene	ug/L	ND	5	
sec-Butylbenzene	ug/L	ND	5	
tert-Butylbenzene	ug/L	ND	5	
p-Isopropyltoluene	ug/L	ND	5	
1,3-Dichlorobenzene	ug/L	ND	5	
1,4-Dichlorobenzene	ug/L	ND	5	
n-Butylbenzene	ug/L	ND	5	
1,2-Dichlorobenzene	ug/L	ND	5	
1,2-Dibromo-3-Chloropropane	ug/L	ND	5	
1,2,4-Trichlorobenzene	ug/L	ND	5	
Hexachlorobutadiene	ug/L	ND	5	
Naphthalene	ug/L	ND	5	
1,2,3-Trichlorobenzene	ug/L	ND	5	
2-Chloroethyl Vinyl Ether	ug/L	ND	5	
Acetone	ug/L	ND	20	
2-Butanone	ug/L	ND	10	
4-Methyl-2-Pentanone	ug/L	ND	10	
2-Hexanone	ug/L	ND	10	
Vinyl Acetate	ug/L	ND	10	

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QUALITY CONTROL DATA

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Pace Project Number: 7010889

Client Project ID: Ettie St.

METHOD BLANK: 701298812

Associated Pace Samples:

701293425

Parameter	Units	Method Blank Result	PRL	Footnotes
Ethyl-tert-butyl Ether	ug/L	ND	5	
Carbon Disulfide	ug/L	ND	5	
Ethanol	ug/L	ND	100	
tert-Butyl Alcohol (TBA)	ug/L	ND	100	
Diisopropyl ether (DIPE)	ug/L	ND	5	
Ethyl-tert-butyl ether (ETBE)	ug/L	ND	5	
tert-Amyl Methyl ether (TAME)	ug/L	ND	5	
Bromofluoromethane (S)	%	96		
Toluene-d8 (S)	%	99		
4-Bromofluorobenzene (S)	%	101		
1,2-Dichloroethane-d4 (S)	%	98		

METHOD BLANK: 701300089

Associated Pace Samples:

701293433

701293441

Parameter	Units	Method Blank Result	PRL	Footnotes
Dichlorodifluoromethane	ug/L	ND	5	
Bromomethane	ug/L	ND	5	
Vinyl Chloride	ug/L	ND	5	
Bromomethane	ug/L	ND	5	
1,2-Dichloroethane	ug/L	ND	5	
Trichlorofluoromethane	ug/L	ND	5	
Methylene Chloride	ug/L	ND	5	
1,1-Dichloroethene	ug/L	ND	5	
trans-1,2-Dichloroethene	ug/L	ND	5	
1,1-Dichloroethane	ug/L	ND	5	
2-Dichloropropane	ug/L	ND	5	
cis-1,2-Dichloroethene	ug/L	ND	5	
Chloroform	ug/L	ND	5	
Bromochloromethane	ug/L	ND	5	
1,1-Trichloroethane	ug/L	ND	5	
Carbon Tetrachloride	ug/L	ND	5	
1,1-Dichloropropene	ug/L	ND	5	
Benzene	ug/L	ND	5	

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QUALITY CONTROL DATA

DATE: 03/31/98

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Pace Project Number: 7010889

Client Project ID: Ettie St.

METHOD BLANK: 701300089

Associated Pace Samples:

701293433

701293441

Parameter	Units	Method	PRL	Footnotes
		Blank Result		
1,2-Dichloroethane	ug/L	ND	5	
Trichloroethene	ug/L	ND	5	
1,2-Dichloropropane	ug/L	ND	5	
Bromodichloromethane	ug/L	ND	5	
Dibromomethane	ug/L	ND	5	
Toluene	ug/L	ND	5	
1,1,2-Trichloroethane	ug/L	ND	5	
Tetrachloroethene	ug/L	ND	5	
1,3-Dichloropropane	ug/L	ND	5	
Dibromochloromethane	ug/L	ND	5	
1,2-Dibromoethane	ug/L	ND	5	
Chlorobenzene	ug/L	ND	5	
1,1,1,2-Tetrachloroethane	ug/L	ND	5	
Ethylbenzene	ug/L	ND	5	
m-P-Xylene	ug/L	ND	5	
o-Xylene (1,2-Dimethylbenzene)	ug/L	ND	5	
Styrene	ug/L	ND	5	
Bromoform	ug/L	ND	5	
Isopropylbenzene (Cumene)	ug/L	ND	5	
1,1,2,2-Tetrachloroethane	ug/L	ND	5	
Bromobenzene	ug/L	ND	5	
1,2,3-Trichloropropane	ug/L	ND	5	
n-Propylbenzene	ug/L	ND	5	
Chlorotoluene	ug/L	ND	5	
1,3,5-Trimethylbenzene	ug/L	ND	5	
4-Chlorotoluene	ug/L	ND	5	
1,2,4-Trimethylbenzene	ug/L	ND	5	
sec-Butylbenzene	ug/L	ND	5	
tert-Butylbenzene	ug/L	ND	5	
p-Isopropyltoluene	ug/L	ND	5	
1,3-Dichlorobenzene	ug/L	ND	5	
1,4-Dichlorobenzene	ug/L	ND	5	
n-Butylbenzene	ug/L	ND	5	
1,2-Dichlorobenzene	ug/L	ND	5	
1,2-Dibromo-3-Chloropropane	ug/L	ND	5	
1,2,4-Trichlorobenzene	ug/L	ND	5	
Hexachlorobutadiene	ug/L	ND	5	
Naphthalene	ug/L	ND	5	

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QUALITY CONTROL DATA

DATE: 03/31/98

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Pace Project Number: 7010889

Client Project ID: Ettie St.

METHOD BLANK: 701300089

Associated Pace Samples:

701293433

701293441

Parameter	Units	Method	PRL	Footnotes
		Blank Result		
1,2,3-Trichlorobenzene	ug/L	ND	5	
1-Chloroethyl Vinyl Ether	ug/L	ND	5	
Acetone	ug/L	ND	20	
2-Butanone	ug/L	ND	10	
2-Methyl-2-Pentanone	ug/L	ND	10	
2-Hexanone	ug/L	ND	10	
Vinyl Acetate	ug/L	ND	10	
Ethyl-tert-butyl Ether	ug/L	ND	5	
Carbon Disulfide	ug/L	ND	5	
Ethanol	ug/L	ND	100	
tert-Butyl Alcohol(TBA)	ug/L	ND	100	
Diisopropyl ether (DIPE)	ug/L	ND	5	
Ethyl-tert-butyl ether(ETBE)	ug/L	ND	5	
tert-Amyl Methyl ether(TAME)	ug/L	ND	5	
Dibromofluoromethane (S)	%	97		
Toluene-d8 (S)	%	99		
4-Bromofluorobenzene (S)	%	102		
1,2-Dichloroethane-d4 (S)	%	99		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 701298838 701298846		Matrix		Matrix		Spike		RPD	Footnotes
Parameter	Units	701293409	Spike Conc.	Spike Result	Spike % Rec	Sp. Dup. Result	Dup % Rec		
1,1-Dichloroethene	ug/L	0	50	57.28	115	57.86	116	1	
Benzene	ug/L	0	50	52.08	104	51.82	104	1	
Trichloroethene	ug/L	0	50	49.28	98.6	48.63	97.3	1	
Toluene	ug/L	0	50	52.09	104	51.25	102	2	
Chlorobenzene	ug/L	0	50	52.45	105	51.86	104	1	
Dibromofluoromethane (S)					98		100		
Toluene-d8 (S)					99		98		
4-Bromofluorobenzene (S)					101		101		
1,2-Dichloroethane-d4 (S)					99		101		

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QUALITY CONTROL DATA

DATE: 03/31/98

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Pace Project Number: 7010889

Client Project ID: Ettie St.

LABORATORY CONTROL SAMPLE: 701298820

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
1,1-Dichloroethene	ug/L	20	23.67	118	
Benzene	ug/L	20	21.75	109	
Trichloroethene	ug/L	20	20.59	103	
o-Xylene	ug/L	20	21.73	109	
Chlorobenzene	ug/L	20	21.68	108	
Dibromofluoromethane (S)				99	
p-Xylene-d8 (S)				101	
Bromofluorobenzene (S)				102	
1,2-Dichloroethane-d4 (S)				102	

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DATE: 03/31/98

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Pace Project Number: 7010889

Client Project ID: Ettie St.

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND Not Detected

C Not Calculable

PRL Pace Reporting Limit

RPD Relative Percent Difference

(S) Surrogate

[1] Due to high analyte concentration the matrix spike and/or matrix spike duplicate do not provide reliable % Recovery and RPD values. Sample results for this QC batch were accepted based on LCS/LCSD % Recovery and/or RPD values.

[2] Due to matrix interference the matrix spike and/or matrix spike duplicate do not provide reliable values. Sample results for this QC batch accepted based on LCS and/or LCSD % Recovery and/or RPD values.

[3] Base/neutral surrogate recovery outside of control limits. The data was accepted based on valid recovery of remaining two base/neutral surrogates.

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Long Beach, CA 90815
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Page 1 of 4

Client Name: PACE ANALYTICAL SERVICES, INC.
1455 McDOWELL BLVD NORTH - SUITE "D"
PETALUMA, CA 94954

Report To: JOHN SWANSON

Project Name: ETTIE
Site Location:

PACE ANALYTICAL Project #: 980320-05
PACE ANALYTICAL WO #: 12723A
Client ID #: 7070889

Date: 3/27/98

PACE ANALYTICAL, INC. is pleased to provide you with analytical data for your above referenced project. Samples were collected on 03/13-16/98 and received on 03/19/98. Please refer to the chain of custody included at the end of this report for conditions of the samples upon receipt. In accordance with the chain of custody, the samples were analyzed for the following analytical parameters:

ANALYTICAL TEST

PAGE

TPH-D (Water)
List of Abbreviations and Definitions

2-3
4


Reviewed by:
Richard Villafania, Project Manager

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. All samples are analyzed on an as received (wet weight) basis. Sampling, handling and analytical methods must be in accordance with EPA established protocols. Deviations from these protocols may compromise analytical results. All method numbers referenced are EPA method numbers except where otherwise noted. This report is submitted for the exclusive use of the client to whom it is addressed and is only valid in its entirety. ELAP certification #1225.

REPORT OF LABORATORY ANALYSIS

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Long Beach, CA 90815Tel: 562-498-9515
Fax: 562-597-0786Page 2 of 4
PACE ANALYTICAL Project#: 980320-05
PACE ANALYTICAL WO#: 12723A
Client ID#: 7010880Analyst: RV
Preparation Analyst: RV

Matrix: Water

ANALYSIS OF TOTAL PETROLEUM HYDROCARBONS - DIESEL
EPA 8015 Modified

Units			TPH Diesel mg/L	MDL mg/L	DF
Sample ID	Preparation Date	Analysis Date			
Method Blank	03/20/98	03/26/98	<5.0	5.0	1
MW2	03/20/98	03/26/98	<5.0	5.0	1
MW3	03/20/98	03/26/98	<5.0	5.0	1
MW4	03/20/98	03/26/98	<5.0	5.0	1

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Page 3 of 4

PACE ANALYTICAL Project#: 980320-05

PACE ANALYTICAL WO#: 12723A

Client ID#: 7010889

QUALITY ASSURANCE/QUALITY CONTROL REPORT

Analyst: RV

Preparation Analyst: RV

Matrix: Water

ANALYSIS OF TOTAL PETROLEUM HYDROCARBONS - DIESEL
EPA 8015 Modified

	LCS % REC	Acceptable Range	Matrix Spike % REC	Matrix Spike Dup. % REC	Acceptable Range	RPD %	Acceptable Range
Analysis Date:	03/26/98		03/26/98	03/26/98			
TPH-Diesel	75	75-125	80	74	70-130	7.8	0-25

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Page 4 of 4
PACE ANALYTICAL Project#: 980320-05
PACE ANALYTICAL WO#: 12723A
Client ID#: 7010889

List of Abbreviations and Definitions

SM	=	Standard Methods for the examination of water and waste water
EPA	=	EPA approved methodology, 40 CFR Part 136
SW	=	EPA SW 846, Test Methods for Evaluating Solid Wastes
TCLP	=	Toxicity Characteristic Leaching Procedure
STLC	=	Soluble Threshold Limit Concentration
mg/L	=	milligrams per liter, parts per million (ppm), unit of measurement for a liquid
mg/Kg	=	milligrams per kilogram, parts per million (ppm), unit of measurement for a solid
µg/L	=	micrograms per liter, parts per billion (ppb), unit of measurement for a liquid
µg/Kg	=	micrograms per kilogram, parts per billion (ppb), unit of measurement for a solid
MCL	=	Laboratory Method Detection Limit, minimum level of detection derived from actual laboratory data
DF	=	Dilution Factor, the magnitude in which a sample must be diluted to eliminate matrix interference and/or to bring the sample concentration within the linear calibration range
RPD	=	Relative Percent Difference, measure of precision
% REC	=	Percent Recovery, measure of accuracy
<	=	less than, analyte of interest below stated numerical value
NA	=	Not Applicable
LCS	=	Laboratory Control Sample
DOHS	=	Department of Health Services
ELAP	=	Environmental Laboratory Accreditation Program
CCS	=	Calibration Check Standard
ICV	=	Initial Calibration Verification
PQL	=	Practical Quantitation Limit

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

12723A
980320-05

399616 S/315

CHAIN-OF-CUSTODY RECORD Analytical Request

Client PACE	Report To: JOHN SWANSON	Turn around Time ☐ 24 Hours ☐ 48 Hours ☐ 3-5 Days ☐ 1 Week ☒ 2 Weeks ☐ Normal 14 Days	Pace Client No.
Address 1455 McDowell Blvd N, SUITE D PETALUMA, CA 94954	Bill To:		Pace Project Manager ES
Phone 707 792 2515	P.O. # / Billing Reference		Pace Project No. 7010881
Sampled By (PRINT) SCOTT BOWERS	Project Name / No. ETTIE		*Requested Due Date: 3-27-98

Sampler Signature **SCOTT BOWERS**
Date Sampled **3-13-98 & 3-16-98**

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA (HCL)	NaOH	ANALYSES REQUEST	REMARKS
1	MW-2	3-13-98 1530	W	701293425	2	X					X	
2	MW-3	3-13-98 1600	W	701293433	2	X					X	
3	MW-4	3-16-98 1630	W	701293441	X	X			2		X	
4												
5												
6												
7												
8												

SHIPMENT METHOD	AIRBILL NO.	SHIPPING DATE	NUMBER OF COOLERS	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
				Yael Dornmann	3/16/98	17:00	CON	
Temp: _____ °C Received on Ice Y/N Sealed Cooler: Y/N Samples Intact: Y/N								

Additional Comments

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

897

MR 27 '98 13:33 FR PACE LONG BEACH CA 310 597 0786 TO PACE PETALUMA P.02/12

Pace Analytical

377274

CHAIN-OF-CUSTODY RECORD Analytical Request

Client PSI
Address 1320 W. Winton Ave
Hayward, CA 94545
Phone (510) 785-1111

Report To: Frank Poss
Bill To: ←
P.O. # / Billing Reference Caltrans: EHC ST.
Project Name / No. 575-71022

Pace Client No. _____
Pace Project Manager JES
Pace Project No. 700889
*Requested Due Date: Normal T.A.

Sampled By (PRINT):

Scott Bowers

Sampler Signature

Date Sampled

5-13-98

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES					ANALYSES REQUEST					REMARKS
						UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA	HCl						
1	MW-2	1530		70293425	8 2					6	TPH-C	TPH-D	TPH-E	TPH-F	TPH-G	
2	MW-3	1600		70293433	9 3					6	TPH-C	TPH-D	TPH-E	TPH-F	TPH-G	
3																
4																
5																
6																
7																
8																

COOLER NOS.	BAILERS	SHIPMENT METHOD	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
		OUT/DATE	RETURNED/DATE				
Additional Comments				<u>PSI</u> <u>M. Rando</u>	<u>Michael Rando</u> <u>Caltrans (P&E)</u>	<u>3/17/98</u>	<u>1545</u>
MW-2 + MW-3 will need to be micro extracted for diesel						<u>3/17/98</u>	<u>1750</u>
COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐ NP							
COOLER TEMPERATURE <u>5</u> °C							

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

Pace Analytical

377276

CHAIN-OF-CUSTODY RECORD Analytical Request

Client P.S.I
Address 1320 W. Winton Ave
Hayward, CA 94545
Phone (510) 785-1111

Report To: Frank Poss
Bill To: C
P.O. # / Billing Reference 575-71022
Project Name / No. Caltrans: Elsie St.

Pace Client No. _____
Pace Project Manager JES
Pace Project No. 7010885
*Requested Due Date: Normal T.A.

Sampled By (PRINT):

Scott Bowers
Sampler Signature Date Sampled

3-16-98

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES					ANALYSES REQUEST	REMARKS
						UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA	HCl		
1	MW-4	1630		701293441	82					6	XXXXXX	
2												
3												
4												
5												
6												
7												
8												

COOLER NOS.	BAILERS	SHIPMENT METHOD		ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
		OUT/DATE	RETURNED/DATE		<u>Michael O'Rowe</u> <u>PSI</u>	<u>G. Blum</u> <u>PSI</u>	<u>3/17/98</u>	<u>1545</u>
Additional Comments					<u>M. Rowe</u>		<u>3/17/98</u>	<u>1750</u>

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐ ND
COOLER TEMPERATURE 5 °C
B

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS