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MCAS EL TORO
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HADLEY INDUSTRIES
environmental technologies

MCAS EL TORO

AQUASORB[tm] TREATMENT SYSTEM

MONITORING REPORT

JANUARY 1992

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CONTRACT #N68711-91-D-0309
CONTRACT AMOUNT: $55,224.00
CONTRACT COMPETITIVELY AWARDED

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MCAS EL TORO
AQUASORB[tm] GROUNDWATER TREATMENT SYSTEM
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BACKGROUND

Hadley Industries Environmental Technologies has been contracted by the Department of Navy to operate and maintain the groundwater remediation system at the MCAS El Toro Base in Santa Ana, California. This is the January 1992 monthly monitoring report.

The system consists of three purge wells (PS#1, PS#3, and PS#4) which pump groundwater from along the southwestern perimeter of the Base. The purged groundwater is directed to a central area for treatment through the Aquasorb[tm] two-stage granular activated carbon (GAC) system. Treated water is pumped to a holding tank and utilized for the irrigation system at the Base golf course. The system has been operated and maintained by Hadley Industries since July 11, 1991.

SAMPLE COLLECTION AND ANALYSIS

Three samples were collected on January 7, 1992 for analysis. Samples collected included: one INFLUENT sample, one BETWEEN STAGE sample, and one EFFLUENT sample. Analytical results are compiled in Appendix A. A comparison chart of analytical results for the INFLUENT, BETWEEN STAGE, and EFFLUENT is shown in Table 1. A comparison chart of analytical results for PS#1, PS#3, and PS#4 is shown in Table 2.

OPERATIONAL DATA

<u>January 7, 1992</u>

System inspection by Richard Sidlin. Monthly and quarterely samples were collected and sent to Pacific Laboratories.

<u>January 28, 1992</u>

Richard Sidlin performed routine rounds and readings.

TABLE 1

EL TORO INTERIM GROUNDWATER TREATMENT SYSTEM

SUMMARY OF ANALYTICAL RESULTS

	Sample Date, Concentration, ppb (ug/L)					
Location/Compound	19-Aug-91	10-Sep-91	09-Oct-91	26-Nov-91	10-Dec-91	07-Jan-92
GAC INFLUENT						
PCE	19	42	41	37	40	35
TCE	36	47	53	85	79	69
1, 2 Dichloroethene (total)	2	3	4	3	ND	ND
Acetone	22	ND	ND	ND	20	ND
Methylene Chloride	10	ND	3	8	7	ND
Chloroform	ND	1	1	2	ND	ND
Chloromethane	ND	ND	ND	ND	23	ND
GAC BETWEEN						
Methylene Chloride	A	2	5	22	8	74
Acetone	ND	ND	ND	ND	7	16
Chloromethane	ND	ND	ND	ND	5	ND
GAC EFFLUENT						
Methylene Chloride	7	4	4	25	8	7
Acetone	12	ND	ND	ND	5	ND
Chloroform	2	ND	ND	ND	ND	ND

LEGEND:
NA - No analysis
ND - Not detected
(A) - No between stage in place

TABLE 2

EL TORO INTERIM GROUNDWATER TREATMENT SYSTEM

Location/compound	Sample Date, Concentration, ppb (ug/L) 8/19/91	11/26/91
PS-1		
Acetone	8	ND
TCE	17	8
Methylene Chloride	15	21
PS-3		
Methylene Chloride	5	15
Acetone	9	ND
1,2-Dichloroethene (total)	3	3
Chloroform	2	2
TCE	50	90
1,1,2-Trichloroethane	2	3
PCE	34	41
PS-4		
Methylene Chloride	3	8
Acetone	13	ND
1,2-Dichloroethene (total)	4	5
Chloroform	1	ND
TCE	40	41
PCE	25	43

LEGEND
ND = NOT DETECTED

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environmental technologies

MAINTENANCE DATA

Conducted general housekeeping and maintenance for the site.

DISCUSSION OF RESULTS

During the period of December 27, 1991 through January 28, 1992, the Aquasorb^{tm} GAC system treated 58,953 cubic feet (440,968 gallons) of groundwater. Average total flow rate from the three purge wells for this 32 day period is 9.6 gpm.

Table 3 provides a summary of flow rates from each of the three purge wells, gallons treated at the GAC system, and meter readings taken at the golf course storage tank. Figure 1 is a flow schematic of the Aquasorb^{tm} system.

Analytical results indicate a total of 104 micrograms per liter (ug/L) of contaminants entering the treatment system (INFLUENT), 74 ug/L Methylene Chloride, and 16 ug/L Acetone at the BETWEEN STAGE, and 7 ug/L Methylene Chloride at the EFFLUENT.

ACTIVITIES PLANNED FOR NEXT MONTH

The next monthly monitoring and sampling of the GAC treatment system will be performed on Tuesday, February 7. Quarterely sampling of PW #1, #2, and #3 will also be performed on February 7. The end of the month inspection and data collection will be performed on February 25, 1992.

TALK ABOUT BREAK THROUGH

TABLE 3

EL TORO GROUND WATER TREATMENT SYSTEM

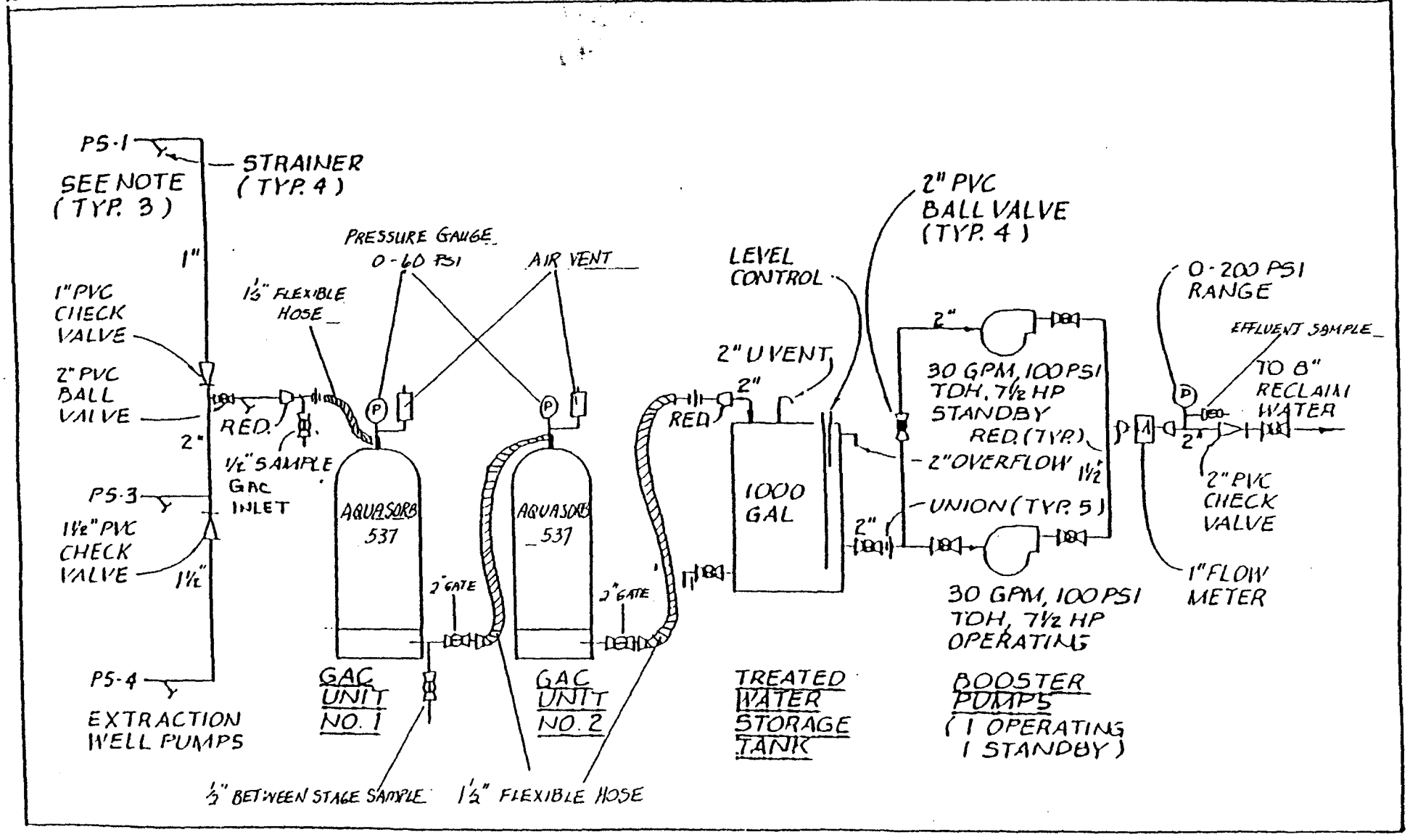
SUMMARY OF FLOW RATES

	7/11/91	8/19/91	8/27/91	9/10/91	9/24/91	10/01/91	10/8/91	10/29/91	11/07/91	11/14/91	11/22/91	11/26/91	12/10/91	12/27/91	01/07/92	01/28/92
PS#1																
Meter reading (gal)	13120	165670	*	*	*	165720	170950	184410	NR	193720	NR	202010	211130	222380	230077	244720
Gallons pumped	NA	152550	NA	NA	NA	NA	5230	13460	NR	9310	NR	8290	9120	11250	7697	14643
# of days	NA	39	8	14	14	7	7	21	NR	16	NR	12	14	17	11	21
Average flow (gpm)	NA	2.7	NA	NA	NA	NA	0.52	0.45	NR	0.4	NR	0.5	0.5	0.5	0.5	0.5
PS#3																
Meter reading (gal)	2953050	3227320	3280920	3389840	3431790	3497750	3556980	3704880	NR	3809200	NR	3897180	3992540	4109860	4190710	4337670
Gallons pumped	NA	274270	53600	108920	41950	65960	59230	147900	NR	104320	NR	87980	95360	117320	80850	146960
# of days	NA	39	8	14	14	7	7	21	NR	16	NR	12	14	17	11	21
Average flow (gpm)	NA	4.88	4.65	5.4	2	6.5	5.8	4.9	NR	4.5	NR	5.1	4.7	4.8	5.1	4.9
PS#4																
Meter reading (gal)	2457900	2570560	2624350	2726230	2759660	2813460	2859700	2984330	NR	3030140	NR	3030180	3121680	3229860	3295600	3419860
Gallons pumped	NA	112660	53790	101880	33430	53800	46240	124630	NR	45810	NR	40	91500	108180	65740	124260
# of days	NA	39	8	14	14	7	7	21	NR	16	NR	12	14	17	11	21
Average flow (gpm)	NA	2	4.66	5.1	1.7	5.3	4.6	4.1	NR	2	NR	0	4.5	4.4	4.2	4.1
GAC EFFLUENT																
Meter reading (cu ft)	761668	816674	831100	859411	868150	878186	893109	929748	NR	945046	NR	957878	983941	1015379	1036010	1074332
Gallons pumped	NA	411445	107906	211766	65367	75069	111624	274060	NR	114429	NR	95983	194951	235156	154320	286649
# of days	NA	39	8	14	14	7	7	21	NR	16	NR	12	14	17	11	21
Average flow (gpm)	NA	7.32	9.36	10.5	3.2	7.4	11.1	9.1	NR	5	NR	5.6	9.7	9.6	9.7	9.6
GOLF COURSE TANK																
Meter reading (cu ft)	NR	NR	NR	NR	NR	NR	9825000	11286900	NR	NA	NR	13087240	NR	13087240	NA	NA
Gallons pumped	NR	NR	NR	NR	NR	NR	NR	10935012	NR	NA	NR	13466543	NR	0	NA	NA
# of days	NR	NR	NR	NR	NR	NR	NR	21	NR	NA	NR	28	NR	17	NA	NA
Average flow	NR	NR	NR	NR	NR	NR	NR	362	NR	NA	NR	334	NR	0	NA	NA
Treated GW as % of Irrigation Water	NR	NR	NR	NR	NR	NR	NR	5.1	NA	NA	NA	3.4	NA	NA	NA	NA

LEGEND:
- NR - NOT RECORDED
- NA - NOT AVAILIBLE
- * - PUMP OFF LINE

EL TORO MCAS
INTERIM GROUNDWATER
TREATMENT SYSTEM
SCHEMATIC FLOW DIAGRAM

FIGURE 1



APPENDIX A

ANALYTICAL RESULTS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

INFLU-1

Lab Name: PACIFIC ANALYTICAL Contract:

Lab Code: PACIF Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 06213

Sample wt/vol: 5.0(g/mL) ML Lab File ID: TT2011

Level: (low/med) LOW Date Received: 01/09/92

% Moisture: not dec. 0 Date Analyzed: 01/14/92

GC Column: 1%SP1000 ID: 2 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-35-3	1,1-Dichloroethane	10	U
156-60-5	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	69	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-dichloropropene	10	U
75-25-2	Bromoform	10	U
591-78-6	4-Methyl-2-Pentanone	10	U
108-10-1	2-Hexanone	10	U
127-18-4	Tetrachloroethene	35	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

INFLU-1

Lab Name: PACIFIC ANALYTICAL Contract:

Lab Code: PACIF Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 06213

Sample wt/vol: 5.0(g/mL) ML Lab File ID: TT2011

Level: (low/med) LOW Date Received: 01/09/92

% Moisture: not dec. 0 Date Analyzed: 01/14/92

GC Column: 1%SP1000 ID: 2(mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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FORM I VOA-TIC 3/90

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BETWEEN-3

Lab Name: PACIFIC ANALYTICAL Contract:

Lab Code: PACIF Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 06215

Sample wt/vol: 5.0(g/mL) ML Lab File ID: TT2041

Level: (low/med) LOW Date Received: 01/09/92

% Moisture: not dec. 0 Date Analyzed: 01/14/92

GC Column: 1%SP1000 ID: 2 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	74	
67-64-1	Acetone	16	
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-35-3	1,1-Dichloroethane	10	U
156-60-5	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-dichloropropene	10	U
75-25-2	Bromoform	10	U
591-78-6	4-Methyl-2-Pentanone	10	U
108-10-1	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BETWEEN-3

Lab Name: PACIFIC ANALYTICAL Contract:

Lab Code: PACIF Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 06215

Sample wt/vol: 5.0(g/mL) ML Lab File ID: TT2041

Level: (low/med) LOW Date Received: 01/09/92

% Moisture: not dec. 0 Date Analyzed: 01/14/92

GC Column: 1%SP1000 ID: 2(mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg)ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFFLU-5

Lab Name: PACIFIC ANALYTICAL Contract:

Lab Code: PACIF Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 06217

Sample wt/vol: 5.0(g/mL) ML Lab File ID: TT2051

Level: (low/med) LOW Date Received: 01/09/92

% Moisture: not dec. 0 Date Analyzed: 01/14/92

GC Column: 1%SP1000 ID: 2 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)ug/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	7	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-35-3	1,1-Dichloroethane	10	U
156-60-5	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-dichloropropene	10	U
75-25-2	Bromoform	10	U
591-78-6	4-Methyl-2-Pentanone	10	U
108-10-1	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFFLU-5

Lab Name: PACIFIC ANALYTICAL Contract:

Lab Code: PACIF Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 06217

Sample wt/vol: 5.0(g/mL) ML Lab File ID: TT2051

Level: (low/med) LOW Date Received: 01/09/92

% Moisture: not dec. 0 Date Analyzed: 01/14/92

GC Column: 1%SP1000 ID: 2(mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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2.					
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