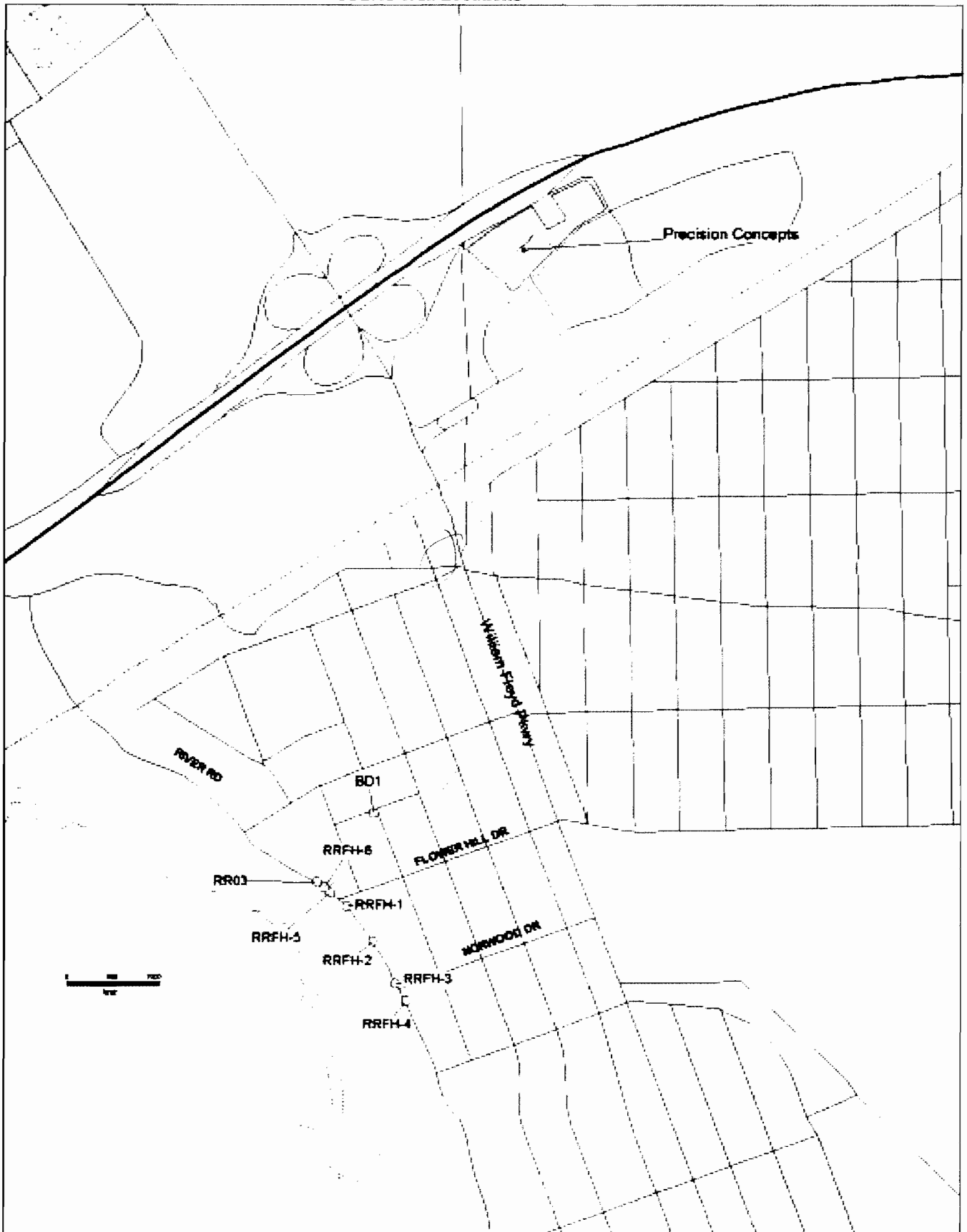


Well ID (Depth Below Land Surface)	Sample Date	dichlorodifluoro methane	1,1-dichloroethane	Chloroform	1,1,1-trichloroethane	trichloroethene	tetrachloroethene	1,1-dichloroethene	tert-butyl-ethyl-ether	tert-amyl-methyl-ether	Benzene	MTBE
BD1 75-80	10-Jan-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BD1 85-90	10-Jan-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
BD1 95-100	10-Jan-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BD1 105-110	10-Jan-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BD1 115-120	10-Jan-02	ND	4	1	1	ND	ND	ND	ND	ND	ND	ND
BD1 125-130	10-Jan-02	0.7	1	1	1	ND	ND	ND	ND	ND	ND	ND
BD1 135-140	10-Jan-02	1	2	1	2	ND	ND	0.8	ND	ND	ND	ND
RRFH-1 25-30	23-Oct-01	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-1 35-40	23-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	3
RRFH-1 45-50	23-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	14	ND	8
RRFH-1 55-60	23-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	4
RRFH-1 65-70	23-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7
RRFH-2 25-30	29-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-2 35-40	29-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-2 45-50	29-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-2 55-60	29-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-2 65-70	29-Oct-01	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-2 75-80	29-Oct-01	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-3 25-30	31-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
RRFH-3 35-40	31-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7
RRFH-3 45-50	31-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-3 55-60	31-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
RRFH-3 65-70	31-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
RRFH-3 75-80	31-Oct-01	ND	ND	1	1	ND	ND	ND	ND	ND	ND	ND
RRFH-4 25-30	5-Nov-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
RRFH-4 35-40	5-Nov-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
RRFH-4 45-50	5-Nov-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
RRFH-4 55-60	5-Nov-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-4 65-70	5-Nov-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-4 75-80	5-Nov-01	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-5 15-25	3-Dec-01	ND	ND	ND	ND	ND	ND	ND	ND	24	ND	190
RRFH-5 25-30	19-Nov-01	ND	ND	ND	1	ND	ND	ND	ND	2700	15	17000
RRFH-5 35-40	19-Nov-01	ND	ND	ND	5	ND	0.6	ND	0.5	4000	150	20000
RRFH-5 45-50	19-Nov-01	ND	0.6	ND	43	ND	0.9	6	ND	ND	ND	5
RRFH-5 55-60	19-Nov-01	ND	2	ND	130	ND	11	16	ND	ND	ND	0.8
RRFH-5 65-70	19-Nov-01	ND	4	1	270	ND	9	31	ND	ND	ND	ND
RRFH-5 75-80	19-Nov-01	ND	ND	1	3	ND	ND	0.5	ND	ND	ND	0.8
RRFH-5 85-90	19-Nov-01	ND	ND	1	1	2	ND	0.7	ND	ND	ND	1
RRFH-5 95-100	19-Nov-01	ND	ND	1	2	3	ND	1	ND	ND	ND	1
RRFH-6 25-30	4-Feb-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.9
RRFH-6 35-40	4-Feb-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.8
RRFH-6 45-50	4-Feb-02	ND	ND	ND	0.6	ND	ND	ND	ND	ND	ND	ND
RRFH-6 55-60	30-Jan-01	ND	12	ND	3	ND	ND	ND	ND	ND	ND	ND
RRFH-6 65-70	30-Jan-01	ND	1	ND	2	ND	ND	ND	ND	ND	ND	ND
RRFH-6 75-80	30-Jan-01	ND	ND	1	2	2	ND	0.6	ND	ND	ND	ND
RRFH-6 85-90	30-Jan-01	ND	ND	2	3	6	ND	2	ND	ND	ND	ND
RRFH-6 95-100	29-Jan-01	ND	ND	2	2	4	ND	1	ND	ND	ND	ND

# SCDHS Well Locations





## Precision Concepts / Carmans River Groundwater Investigation

### BACKGROUND

The Carmans River is a protected trout stream in the Town of Brookhaven on Long Island. See Figure 1. The River is a gaining stream and receives groundwater discharge from the upper glacial aquifer. Contaminated groundwater reaching the River would result in detrimental impacts to the trout eggs that develop in the sediment in the areas of upwelling groundwater. There are two listed hazardous waste sites, Precision Concepts and Brookhaven National Laboratory (BNL), upgradient from the Carmans River.

### PAST INVESTIGATIONS

Based upon the presence of the contamination detected in a southern BNL groundwater monitoring well, in 1990, Suffolk County Department of Health Services (SCDHS) performed a sampling survey of homes located south of the Long Island Expressway and the Precision site. Approximately ninety private drinking water wells were sampled and analyzed for volatile organic compounds in the investigation. Of the ninety private wells tested, five wells were found to be contaminated with 1,1,1-trichloroethane (TCA) and dichloroethane (DCA). From May to October of 1990, the SCDHS Bureau of Groundwater Resources installed twenty temporary groundwater monitoring wells in order to determine groundwater flow and the origin of the contamination. The testing of temporary well points located along the northern boundary of the Precision site along the south service road of the Long Island Expressway indicated low levels of contamination (less than 15 parts per billion (ppb)) at 30 to 110 feet below the water table. Testing of temporary well points located south and down gradient from the Precision Concepts Site indicated levels of TCA contamination (from 3 ppb to 9300 ppb) at 10 to 40 feet below the water table. The SCDHS determined through additional monitoring wells that there was a plume of contamination originating from the Precision Site.

Groundwater modeling conducted on behalf of the SCDHS indicated that the contamination plumes originating from BNL and migrating in the direction of the River are deeper than the plume originating from the Precision Site. The SCDHS groundwater models indicated that the Precision plume was migrating directly toward the River and is shallow enough to impact the River while the BNL plume will pass below the River.

### INVESTIGATION OBJECTIVES

The purpose of this investigation was to monitor groundwater conditions immediately upgradient from the Carmans River and identify any contamination that may impact the River sediments and subsequently the trout eggs. These objectives were to be met through the placement of 12 Geoprobe borings in a transect across the anticipated plume.

## **GROUNDWATER INVESTIGATION**

On December 18 and 19, 2000 groundwater samples were collected from ten sampling points running north to south along a dirt road that parallels River Road and the eastern boundary of Southaven County Park. See Figure 2. Mechanical problems permitted sampling of only ten of the twelve planned sampling points. The first sampling point was placed on the dirt road across from Flower Hill Road. Each following sampling point was located 200 feet south from the previous point. Each point was sampled at the watertable interface and at 10 and 20 feet below the watertable. All thirty groundwater samples were analyzed for volatile organic compounds (VOCs) using USEPA analytical method 524.2.

## **INVESTIGATION RESULTS**

The analytical results showed no contamination in the groundwater that could be associated with Precision Concepts Site or Brookhaven National Laboratory. No TCA, DCA or any related compounds were detected in any of the samples analyzed. The method detection limit is 0.5 µg/Kg or 0.5 parts per billion (ppb) for all of the VOCs that were analyzed for. A copy of the analytical results is available upon request.

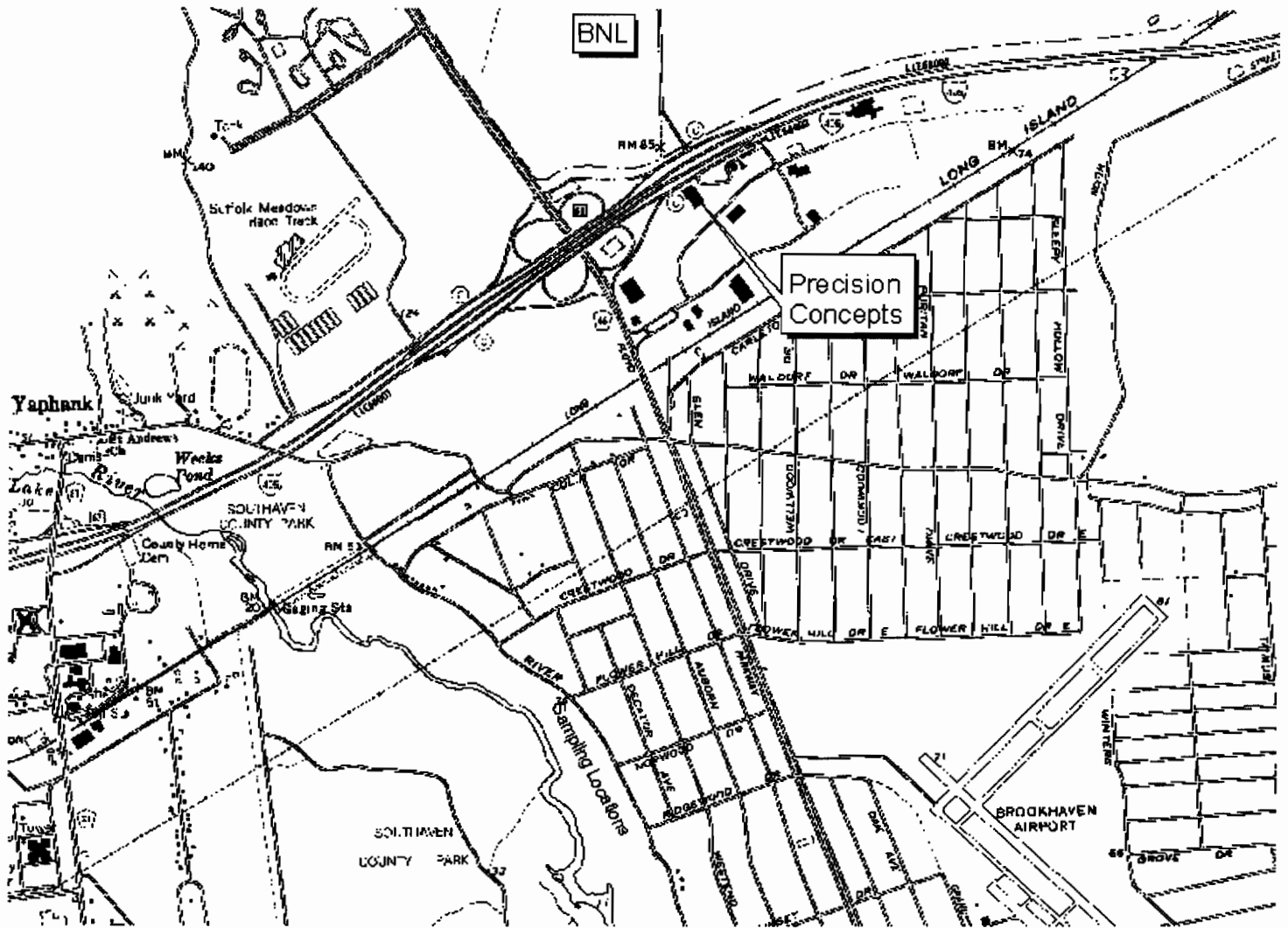
Chloroform was detected in twelve of the samples at a maximum concentration of 2.0 ppb. This is below the NYSDEC groundwater standard which is 7.0 ppb for chloroform.

A variety of hydrocarbons identified as tentatively identified compounds (TICs) were detected in all of the groundwater samples collected in this investigation. All of the hydrocarbons were found at estimated concentrations below the analytical method detection limit and below groundwater standards. These hydrocarbons are components of gasoline, diesel fuel and other fossil fuels. The samples were taken from directly beneath a dirt road along the east border of the Park and along River Road. These hydrocarbons are likely indicative of background conditions in that area and not suggestive of significant groundwater contamination.

## **CONCLUSION**

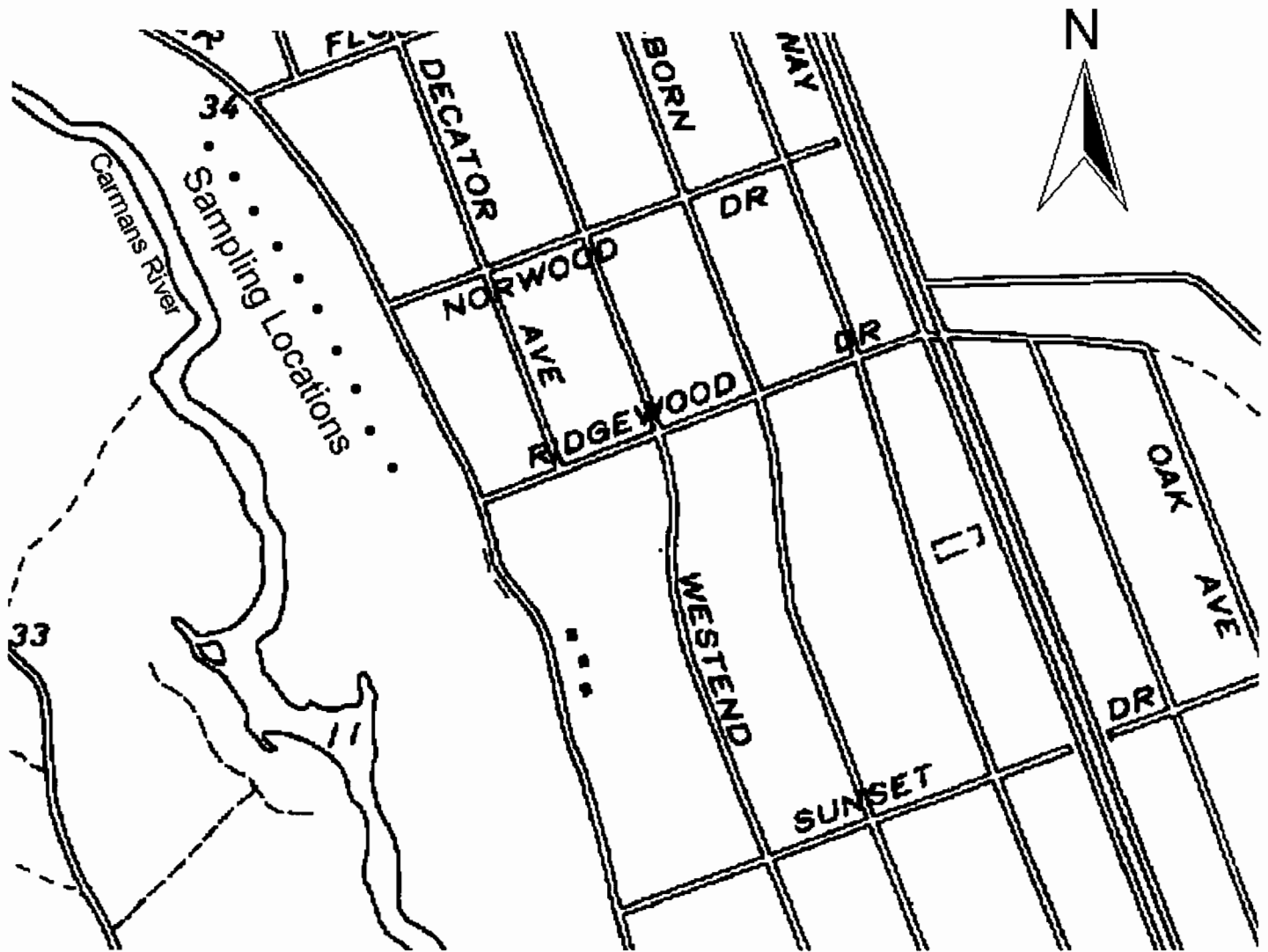
The results of this groundwater investigation showed no evidence of VOC contamination impacting the River via groundwater. However, this investigation simply presents a snapshot of groundwater conditions immediately upgradient from the River. Since reliable groundwater models indicate a plume of contamination originating from the Precision Concepts Site would discharge to the Carmans River, the plume may not have yet reached the River or natural attenuation may have reduced contaminant concentrations to undetectable levels prior to reaching the sampling locations along the River.

# Figure 1 Area Map



# Figure 2

## Carmans River Groundwater Sampling Locations



300 0 300 600 900 1200 1500 1800 2100 2400 2700 3000 Feet

- Groundwater sampling locations

**New York State Department of Environmental Conservation  
Division of Environmental Remediation**

**Bureau of Program Management, Room 260A**

50 Wolf Road, Albany, New York 12233-7010

**Phone:** (518) 457-2582 • **FAX:** (518) 457-9639

**Website:** www.dec.state.ny.us



**MEMORANDUM**

**To:** Michael MacCabe  
**From:** Tim LeBarron, Technology Section (QA), BPM, DER  
**Subject:** Precision Concepts Site #1-52-158/Carmans River Data Package Review  
**Date:** March 19, 2001

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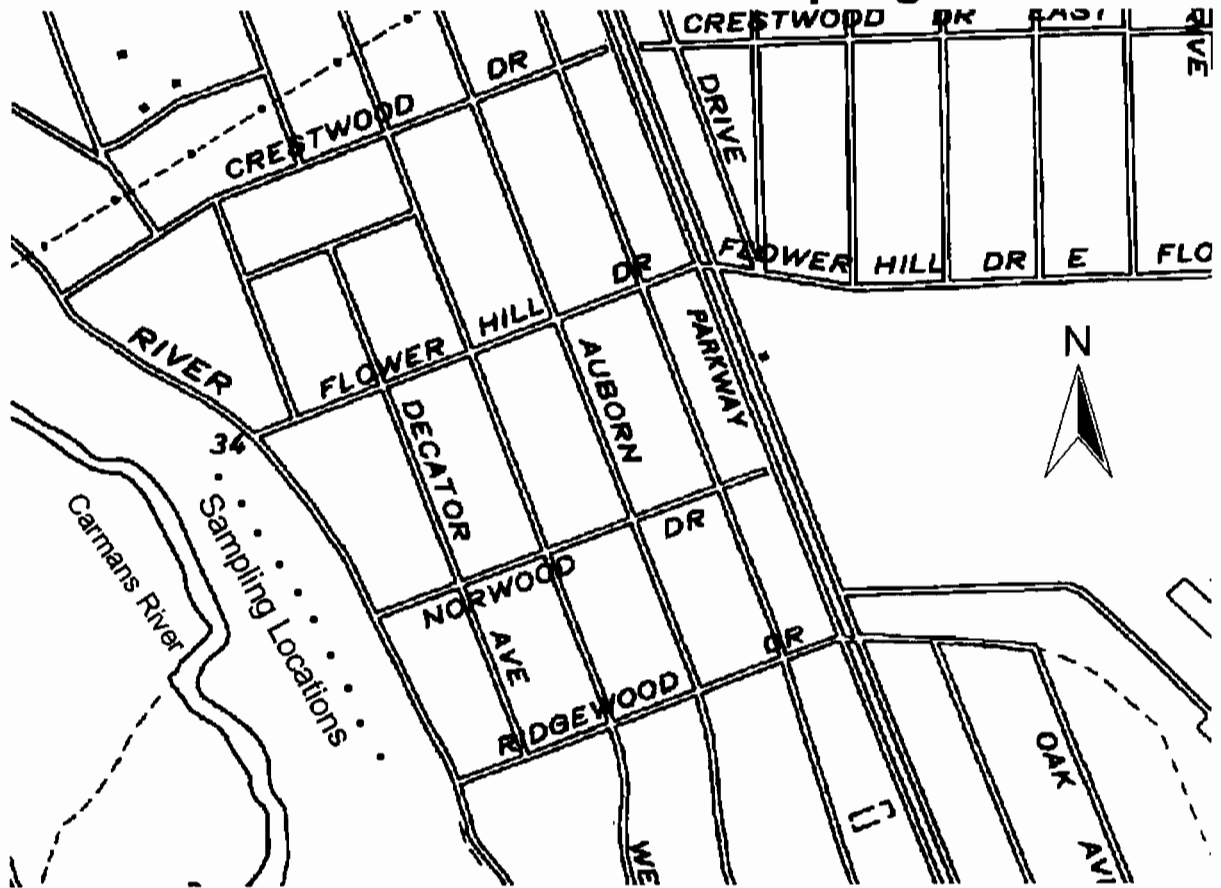
A data package for samples collected down gradient from the Precision Concepts Site on December 18 and December 19, 2000 was received for review. These samples were analyzed via Method 524.2 for Volatiles by H2M Labs, Melville, New York.

The data as reported is appropriately qualified and useable. The volatiles blanks and the lab fortified sample demonstrate that the lab had some contamination with methylene chloride at a level that does not impact the quality of the data.

cc: J. Harrington

bcc: T. LeBarron

# Carmans River Groundwater Sampling Locations





1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B808016P1-17

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-115--Sample wt/vol: 25.0 (g/mL ML)Level: (low/med) LOW% Moisture: not dec. 100GC Column: RTX502.2 ID: 0.53 (mm)

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Alic \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/L</u>	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

Preliminary  
Results  
Pending QC Review

FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

1-17	B80801
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Lab Name: H2M LABS, INC Contract: C003786Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218Matrix: (soil/water) WATER Lab Sample ID: --20001219-115--Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7879.DLevel: (low/med) LOW Date Received: 12/18/2000% Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 13:02GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

## Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

<b>Preliminary Results Pending QC Review</b>
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2

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80802 1-27

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218

Matrix: (soil/water) WATER Lab Sample ID: --20001219-116--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7880.D

Level: (low/med) LOW Date Received: 12/18/2000

% Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 13:37

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

Concentration Units:

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

**Preliminary  
Results  
Pending QC Review**

FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

1-27 B80802

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-116--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7880.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 13:37GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/L</u>	Q
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423 m	p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2,4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

Preliminary  
Results  
Pending QC Review

4

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80803

1-37

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: -20001219-117-Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7881.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 14:11GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
75-71-8	dichlorodifluoromethane		0.5	U
74-87-3	chloromethane		0.5	U
75-01-4	vinyl chloride		0.5	U
74-83-9	bromomethane		0.5	U
75-00-3	chloroethane		0.5	U
75-69-4	trichlorofluoromethane		0.5	U
75-35-4	1,1-dichloroethene		0.5	U
75-09-2	methylene chloride		0.5	U
156-60-5	trans-1,2-dichloroethene		0.5	U
75-34-3	1,1-dichloroethane		0.5	U
590-20-7	2,2-dichloropropane		0.5	U
156-59-4	cis-1,2-dichloroethene		0.5	U
74-97-5	bromochloromethane		0.5	U
67-66-3	chloroform		0.5	U
71-55-6	1,1,1-trichloroethane		0.5	U
56-23-5	carbon tetrachloride		0.5	U
563-58-6	1,1-dichloropropene		0.5	U
71-43-2	benzene		0.5	U
107-06-2	1,2-dichloroethane		0.5	U
79-01-6	trichloroethene		0.5	U
78-87-5	1,2-dichloropropane		0.5	U
74-95-3	dibromomethane		0.5	U
75-27-4	bromodichloromethane		0.5	U
10061-01-5	cis-1,3-dichloropropene		0.5	U
108-88-3	toluene		0.5	U
10061-02-6	trans-1,3-dichloropropene		0.5	U
79-00-5	1,1,2-trichloroethane		0.5	U
127-18-4	tetrachloroethene		0.5	U
142-28-9	1,3-dichloropropane		0.5	U
124-48-1	dibromochloromethane		0.5	U
106-93-4	1,2-dibromomethane		0.5	U

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EPA SAMPLE NO.

1-37 B80803

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-117--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7881.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 14:11GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/L</u>	Q
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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EPA SAMPLE NO.

B80804

2-18

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-118--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7882.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 14:46GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

2-18 B80804

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218

Matrix: (soil/water) WATER Lab Sample ID: --20001219-118--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7882.D

Level: (low/med) LOW Date Received: 12/18/2000

% Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 14:46

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

## Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

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EPA SAMPLE NO.

Lab Name: H2M LABS, INC Contract: C003786 B80805 *2-28*

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218

Matrix: (soil/water) WATER Lab Sample ID: --20001219-119--

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: V7883.D

Level: (low/med) LOW Date Received: 12/18/2000

% Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 15:22

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	1.0		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

2-28 B80805

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218

Matrix: (soil/water) WATER Lab Sample ID: --20001219-119--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7883.D

Level: (low/med) LOW Date Received: 12/18/2000

% Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 15:22

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

## Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/L</u>	Q
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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EPA SAMPLE NO.

B80806

2-38

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-120--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7884.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 15:59GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
75-71-8	dichlorodifluoromethane		0.5	U
74-87-3	chloromethane		0.5	U
75-01-4	vinyl chloride		0.5	U
74-83-9	bromomethane		0.5	U
75-00-3	chloroethane		0.5	U
75-69-4	trichlorofluoromethane		0.5	U
75-35-4	1,1-dichloroethene		0.5	U
75-09-2	methylene chloride		0.5	U
156-60-5	trans-1,2-dichloroethene		0.5	U
75-34-3	1,1-dichloroethane		0.5	U
590-20-7	2,2-dichloropropane		0.5	U
156-59-4	cis-1,2-dichloroethene		0.5	U
74-97-5	bromochloromethane		0.5	U
67-66-3	chloroform		0.5	U
71-55-6	1,1,1-trichloroethane		0.5	U
56-23-5	carbon tetrachloride		0.5	U
563-58-6	1,1-dichloropropene		0.5	U
71-43-2	benzene		0.5	U
107-06-2	1,2-dichloroethane		0.5	U
79-01-6	trichloroethene		0.5	U
78-87-5	1,2-dichloropropane		0.5	U
74-95-3	dibromomethane		0.5	U
75-27-4	bromodichloromethane		0.5	U
10061-01-5	cis-1,3-dichloropropene		0.5	U
108-88-3	toluene		0.5	U
10061-02-6	trans-1,3-dichloropropene		0.5	U
79-00-5	1,1,2-trichloroethane		0.5	U
127-18-4	tetrachloroethene		0.5	U
142-28-9	1,3-dichloropropane		0.5	U
124-48-1	dibromochloromethane		0.5	U
106-93-4	1,2-dibromomethane		0.5	U

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EPA SAMPLE NO.

238 B80806

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-120--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7884.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 15:59GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/L</u>	Q
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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EPA SAMPLE NO.

Lab Name: H2M LABS, INC Contract: C003786

B80807 3-18

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218

Matrix: (soil/water) WATER Lab Sample ID: --20001219-121--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7885.D

Level: (low/med) LOW Date Received: 12/18/2000

% Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 16:34

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	1.5		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

3-18 B80807

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218

Matrix: (soil/water) WATER Lab Sample ID: --20001219-121--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7885.D

Level: (low/med) LOW Date Received: 12/18/2000

% Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 16:34

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

## Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

Preliminary  
Results  
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80808

3-28

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-122--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7886.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 17:09GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
75-71-8	dichlorodifluoromethane		0.5	U
74-87-3	chloromethane		0.5	U
75-01-4	vinyl chloride		0.5	U
74-83-9	bromomethane		0.5	U
75-00-3	chloroethane		0.5	U
75-69-4	trichlorofluoromethane		0.5	U
75-35-4	1,1-dichloroethene		0.5	U
75-09-2	methylene chloride		0.5	U
156-60-5	trans-1,2-dichloroethene		0.5	U
75-34-3	1,1-dichloroethane		0.5	U
590-20-7	2,2-dichloropropane		0.5	U
156-59-4	cis-1,2-dichloroethene		0.5	U
74-97-5	bromochloromethane		0.5	U
67-66-3	chloroform		0.5	U
71-55-6	1,1,1-trichloroethane		0.5	U
56-23-5	carbon tetrachloride		0.5	U
563-58-6	1,1-dichloropropene		0.5	U
71-43-2	benzene		0.5	U
107-06-2	1,2-dichloroethane		0.5	U
79-01-6	trichloroethene		0.5	U
78-87-5	1,2-dichloropropane		0.5	U
74-95-3	dibromomethane		0.5	U
75-27-4	bromodichloromethane		0.5	U
10061-01-5	cis-1,3-dichloropropene		0.5	U
108-88-3	toluene		0.5	U
10061-02-6	trans-1,3-dichloropropene		0.5	U
79-00-5	1,1,2-trichloroethane		0.5	U
127-18-4	tetrachloroethene		0.5	U
142-28-9	1,3-dichloropropane		0.5	U
124-48-1	dibromochloromethane		0.5	U
106-93-4	1,2-dibromomethane		0.5	U

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EPA SAMPLE NO.

3-28 B80808

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218

Matrix: (soil/water) WATER Lab Sample ID: --20001219-122--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7886.D

Level: (low/med) LOW Date Received: 12/18/2000

% Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 17:09

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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Results  
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1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80809 3-3E

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218

Matrix: (soil/water) WATER Lab Sample ID: --20001219-123--

Sample wt/ vol: 25.0 (g/mL ML) Lab File ID: V7887.D

Level: (low/med) LOW Date Received: 12/18/2000

% Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 17:44

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/L</u>	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

3-38 B80809

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218

Matrix: (soil/water) WATER Lab Sample ID: --20001219-123--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7887.D

Level: (low/med) LOW Date Received: 12/18/2000

% Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 17:44

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80810

4-19

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-124--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7888.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 18:19GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

4-19 B80810

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-124--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7888.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 18:19GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

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1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80811

4-29

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-125--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7889.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 18:55GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.6		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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3/90

EPA SAMPLE NO.

4-29 B80811

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-125--Sample wt/vol: 25.0 (g/mL) MLLab File ID: V7889.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 18:55GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80812 4-39

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-126--Sample wt/vol: 25.0 (g/mL) MLLab File ID: V7890.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 19:31GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/L</u>	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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FORM I VOA  
1A  
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3/90

EPA SAMPLE NO.

4-39 B80812

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-126--Sample wt/vol: 25.0 (g/mL) MLLab File ID: V7890.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 19:31GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,2,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80813 5-20

Lab Name: H2M LABS, INC

Contract: C003786

Lab Code: 10478

Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218

Matrix: (soil/water) WATER

Lab Sample ID: --20001219-127--

Sample wt/vol: 25.0 (g/mL ML)

Lab File ID: V7891.D

Level: (low/med) LOW

Date Received: 12/18/2000

% Moisture: not dec. 100

Date Analyzed: 20 Dec 20 0 20:09

GC Column: RTX502.2 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
75-71-8	dichlorodifluoromethane		0.5	U
74-87-3	chloromethane		0.5	U
75-01-4	vinyl chloride		0.5	U
74-83-9	bromomethane		0.5	U
75-00-3	chloroethane		0.5	U
75-69-4	trichlorofluoromethane		0.5	U
75-35-4	1,1-dichloroethene		0.5	U
75-09-2	methylene chloride		0.5	U
156-60-5	trans-1,2-dichloroethene		0.5	U
75-34-3	1,1-dichloroethane		0.5	U
590-20-7	2,2-dichloropropane		0.5	U
156-59-4	cis-1,2-dichloroethene		0.5	U
74-97-5	bromochloromethane		0.5	U
67-66-3	chloroform		0.5	U
71-55-6	1,1,1-trichloroethane		0.5	U
56-23-5	carbon tetrachloride		0.5	U
563-58-6	1,1-dichloropropene		0.5	U
71-43-2	benzene		0.5	U
107-06-2	1,2-dichloroethane		0.5	U
79-01-6	trichloroethene		0.5	U
78-87-5	1,2-dichloropropane		0.5	U
74-95-3	dibromomethane		0.5	U
75-27-4	bromodichloromethane		0.5	U
10061-01-5	cis-1,3-dichloropropene		0.5	U
108-88-3	toluene		0.5	U
10061-02-6	trans-1,3-dichloropropene		0.5	U
79-00-5	1,1,2-trichloroethane		0.5	U
127-18-4	tetrachloroethene		0.5	U
142-28-9	1,3-dichloropropane		0.5	U
124-48-1	dibromochloromethane		0.5	U
106-93-4	1,2-dibromomethane		0.5	U

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EPA SAMPLE NO.

5-20 B80813

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218

Matrix: (soil/water) WATER Lab Sample ID: --20001219-127--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7891.D

Level: (low/med) LOW Date Received: 12/18/2000

% Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 20:09

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene	0.5	U	
630-20-6	1,1,1,2-tetrachloroethane	0.5	U	
100-41-4	ethylbenzene	0.5	U	
108383/106423	m\p-xylene	0.5	U	
95-47-6	o-xylene	0.5	U	
100-42-5	styrene	0.5	U	
75-25-2	bromoform	0.5	U	
98-82-8	isopropylbenzene	0.5	U	
108-86-1	bromobenzene	0.5	U	
79-34-5	1,1,2,2-tetrachloroethane	0.5	U	
96-18-4	1,2,3-trichloropropane	0.5	U	
103-65-1	n-propylbenzene	0.5	U	
95498/74873	2\4-chlorotoluene	0.5	U	
108-67-8	1,3,5-trimethylbenzene	0.5	U	
98-06-6	tert-butylbenzene	0.5	U	
95-63-6	1,2,4-trimethylbenzene	0.5	U	
135-98-8	sec-butylbenzene	0.5	U	
541-73-1	1,3-dichlorobenzene	0.5	U	
99-87-6	4-isopropyltoluene	0.5	U	
106-46-7	1,4-dichlorobenzene	0.5	U	
95-50-1	1,2-dichlorobenzene	0.5	U	
104-51-8	n-butylbenzene	0.5	U	
96-12-8	1,2-dibromo-3-chloropropane	0.5	U	
120-82-1	1,2,4-trichlorobenzene	0.5	U	
87-68-3	hexachlorobutadiene	0.5	U	
91-20-3	naphthalene	0.5	U	
87-61-6	1,2,3-trichlorobenzene	0.5	U	

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1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80814

5-30

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-128--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7892.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 20 Dec 20 0 20:44GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.8		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.9		
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

5-30 B80814

Lab Name: H2M LABS, INC Contract: C003786  
 Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218  
 Matrix: (soil/water) WATER Lab Sample ID: --20001219-128--  
 Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7892.D  
 Level: (low/med) LOW Date Received: 12/18/2000  
 % Moisture: not dec. 100 Date Analyzed: 20 Dec 20 0 20:44  
 GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80815

5-40

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-129--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7898.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 21 Dec 20 0 15:57GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	1.3		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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FORM I VOA  
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VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

5-40 B80815

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-129--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7898.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 21 Dec 20 0 15:57GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80816

G-21

Lab Name: H2M LABS, INCContract: 003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: -20001219-158-Sample wt/vol: 25.0 (g/mL) MLLab File ID: V7900.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 21 Dec 20 0 17:07GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
75-71-8	dichlorodifluoromethane		0.5	U
74-87-3	chloromethane		0.5	U
75-01-4	vinyl chloride		0.5	U
74-83-9	bromomethane		0.5	U
75-00-3	chloroethane		0.5	U
75-69-4	trichlorofluoromethane		0.5	U
75-35-4	1,1-dichloroethene		0.5	U
75-09-2	methylene chloride		0.5	U
156-60-5	trans-1,2-dichloroethene		0.5	U
75-34-3	1,1-dichloroethane		0.5	U
590-20-7	2,2-dichloropropane		0.5	U
156-59-4	cis-1,2-dichloroethene		0.5	U
74-97-5	bromochloromethane		0.5	U
67-66-3	chloroform		0.5	U
71-55-6	1,1,1-trichloroethane		0.5	U
56-23-5	carbon tetrachloride		0.5	U
563-58-6	1,1-dichloropropene		0.5	U
71-43-2	benzene		0.5	U
107-06-2	1,2-dichloroethane		0.5	U
79-01-6	trichloroethene		0.5	U
78-87-5	1,2-dichloropropane		0.5	U
74-95-3	dibromomethane		0.5	U
75-27-4	bromodichloromethane		0.5	U
10061-01-5	cis-1,3-dichloropropene		0.5	U
108-88-3	toluene		0.5	U
10061-02-6	trans-1,3-dichloropropene		0.5	U
79-00-5	1,1,2-trichloroethane		0.5	U
127-18-4	tetrachloroethene		0.5	U
142-28-9	1,3-dichloropropane		0.5	U
124-48-1	dibromochloromethane		0.5	U
106-93-4	1,2-dibromomethane		0.5	U

FORM I VOA  
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3/90

EPA SAMPLE NO.

6-21 B80816

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-158--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7900.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 21 Dec 20 0 17:07

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U



1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**B80816**

*C-21*

Lab Name: H2M LABS INC. Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-158

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: V7900.D

Level: (low/med) LOW Date Received: 12/19/00

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/21/00

GC Column: RTX502 ID: 0.53 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 8

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000115-07-1	Propene	1.35	7	JN
2. 000075-28-5	Isobutane	1.61	0.4	JN
3.	unknown hydrocarbon	1.87	5	J
4. 000078-78-4	Butane, 2-methyl-	2.74	1	JN
5.	unknown hydrocarbon	3.15	3	J
6.	unknown hydrocarbon	4.43	0.8	J
7.	unknown	4.88	0.4	J
8. 000592-41-6	1-Hexene	5.21	1	JN

*CKB  
1/8/01*

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80817 6-31

Lab Name: H2M LABS, INC Contract: C003786  
 Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A  
 Matrix: (soil/water) WATER Lab Sample ID: --20001219-159--  
 Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7903.D  
 Level: (low/med) LOW Date Received: 12/19/2000  
 % Moisture: not dec. 100 Date Analyzed: 21 Dec 20 0 18:54  
 GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

6-31 B80817

Lab Name: H2M LABS, INC Contract: C003786  
 Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A  
 Matrix: (soil/water) WATER Lab Sample ID: --20001219-159--  
 Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7903.D  
 Level: (low/med) LOW Date Received: 12/19/2000  
 % Moisture: not dec. 100 Date Analyzed: 21 Dec 20 0 18:54  
 GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B80817
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G-31

Lab Name: H2M LABS INC. Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-159

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: V7903.D

Level: (low/med) LOW Date Received: 12/19/00

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/21/00

GC Column: RTX502 ID: 0.53 (mm) Dilution Factor: 1.0

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

## CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/LNumber TICs found: 9

CAS NO	COMPOUND	RT	EST. CONC.	Q
1. 000115-07-1	Propene	1.35	6	JN
2.	Isobutane	1.61	0.7	J
3.	unknown hydrocarbon	1.89	4	J
4. 000078-78-4	Butane, 2-methyl-	2.75	1	JN
5.	unknown hydrocarbon	3.17	3	J
6.	unknown hydrocarbon	4.44	0.8	J
7.	unknown	4.88	0.4	J
8. 000592-41-6	1-Hexene	5.25	1	JN
9. 000592-76-7	1-Heptene	7.85	0.5	JN

GKB  
1/8/01

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80818

G-41

Lab Name: H2M LABS, INC Contract: C003786  
 Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A  
 Matrix: (soil/water) WATER Lab Sample ID: --20001219-160--  
 Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7904.D  
 Level: (low/med) LOW Date Received: 12/19/2000  
 % Moisture: not dec. 100 Date Analyzed: 21 Dec 20 0 19:29  
 GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

## Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

6-41 B80818

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-160--Sample wt/vol: 25.0 (g/mL MLLab File ID: V7904.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 21 Dec 20 0 19:29GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**B80818**

G-41

Lab Name: H2M LABS INC. Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-160

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: V7904.D

Level: (low/med) LOW Date Received: 12/19/00

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/21/00

GC Column: RTX502 ID: 0.53 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 2

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown hydrocarbon	1.79	1	J
2.	unknown hydrocarbon	3.09	0.8	J

BKB  
1/8/01

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80819

7-21

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-161--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7905.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 21 Dec 20 0 20:04GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/L</u>	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	1.0		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U



FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

7-21 B80819

Lab Name: H2M LABS, INC Contract: C003786  
 Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A  
 Matrix: (soil/water) WATER Lab Sample ID: --20001219-161--  
 Sample wt/ vol: 25.0 (g/mL ML) Lab File ID: V7905.D  
 Level: (low/med) LOW Date Received: 12/19/2000  
 % Moisture: not dec. 100 Date Analyzed: 21 Dec 20 0 20:04  
 GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**B80819**

7-21

Lab Name: H2M LABS INC. Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: -20001219-16/

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: V7905.D

Level: (low/med) LOW Date Received: 12/19/00

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/21/00

GC Column: RTX502 ID: 0.53 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q
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1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80820

7-31

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-162--Sample wt/ vol: 25.0 (g/mL) MLLab File ID: V7906.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 21 Dec 20 0 20:39GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	2.0		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

7-31 B80820

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-162--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7906.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 21 Dec 20 0 20:39

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene	0.5	U	
630-20-6	1,1,1,2-tetrachloroethane	0.5	U	
100-41-4	ethylbenzene	0.5	U	
108383/106423	m\p-xylene	0.5	U	
95-47-6	o-xylene	0.5	U	
100-42-5	styrene	0.5	U	
75-25-2	bromoform	0.5	U	
98-82-8	isopropylbenzene	0.5	U	
108-86-1	bromobenzene	0.5	U	
79-34-5	1,1,2,2-tetrachloroethane	0.5	U	
96-18-4	1,2,3-trichloropropane	0.5	U	
103-65-1	n-propylbenzene	0.5	U	
95498/74873	2\4-chlorotoluene	0.5	U	
108-67-8	1,3,5-trimethylbenzene	0.5	U	
98-06-6	tert-butylbenzene	0.5	U	
95-63-6	1,2,4-trimethylbenzene	0.5	U	
135-98-8	sec-butylbenzene	0.5	U	
541-73-1	1,3-dichlorobenzene	0.5	U	
99-87-6	4-isopropyltoluene	0.5	U	
106-46-7	1,4-dichlorobenzene	0.5	U	
95-50-1	1,2-dichlorobenzene	0.5	U	
104-51-8	n-butylbenzene	0.5	U	
96-12-8	1,2-dibromo-3-chloropropane	0.5	U	
120-82-1	1,2,4-trichlorobenzene	0.5	U	
87-68-3	hexachlorobutadiene	0.5	U	
91-20-3	naphthalene	0.5	U	
87-61-6	1,2,3-trichlorobenzene	0.5	U	

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B80820

7-31

Lab Name: H2M LABS INC. Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: -20001219-162

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: V7906.D

Level: (low/med) LOW Date Received: 12/19/00

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/21/00

GC Column: RTX502 ID: 0.53 (mm) Dilution Factor: 1.0

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

## CONCENTRATION UNITS:

Number TICs found: 6 (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000115-07-1	Propene	1.33	2	JN
2. 000075-28-5	Isobutane	1.57	0.5	JN
3.	unknown hydrocarbon	1.85	2	J
4. 000078-78-4	Butane, 2-methyl-	2.71	0.5	JN
5.	unknown hydrocarbon	3.14	0.9	J
6. 001634-04-4	Propane, 2-methoxy-2-methyl-	4.98	2	JN

*GRB*  
*1/8/01*

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80821

7-41

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-163--Sample wt/vol: 25.0 (g/mL) MLLab File ID: V7912.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 22 Dec 20 0 14:08GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No. Compound (ug/L or ug/Kg) ug/L Q

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/L</u>	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

7-41 B80821

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: -20001219-163-

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7912.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 14:08

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**B80821**

7-41

Lab Name: H2M LABS INC. Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-163

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: V7912.D

Level: (low/med) LOW Date Received: 12/19/00

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/22/00

GC Column: RTX502 ID: 0.53 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

Number TICs found: 5 (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000115-07-1	Propene	1.35	1	JN
2.	unknown hydrocarbon	1.88	1	J
3.	2-Methyl-butane	2.73	0.4	J
4.	unknown hydrocarbon	3.16	0.7	J
5. 001634-04-4	Propane, 2-methoxy-2-methyl-	5.00	2	JN

EXB  
1/8/01



FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

7-31 B80820

Lab Name: H2M LABS, INC Contract: C003786  
 Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A  
 Matrix: (soil/water) WATER Lab Sample ID: --20001219-162--  
 Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7906.D  
 Level: (low/med) LOW Date Received: 12/19/2000  
 % Moisture: not dec. 100 Date Analyzed: 21 Dec 20 0 20:39  
 GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

Preliminary  
Results  
Pending QC Review

RESULTS  
Pending QC Review

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80822

8-21

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-164--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7913.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 22 Dec 20 0 14:44GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
75-71-8	dichlorodifluoromethane		0.5	U
74-87-3	chloromethane		0.5	U
75-01-4	vinyl chloride		0.5	U
74-83-9	bromomethane		0.5	U
75-00-3	chloroethane		0.5	U
75-69-4	trichlorofluoromethane		0.5	U
75-35-4	1,1-dichloroethene		0.5	U
75-09-2	methylene chloride		0.5	U
156-60-5	trans-1,2-dichloroethene		0.5	U
75-34-3	1,1-dichloroethane		0.5	U
590-20-7	2,2-dichloropropane		0.5	U
156-59-4	cis-1,2-dichloroethene		0.5	U
74-97-5	bromochloromethane		0.5	U
67-66-3	chloroform		0.5	U
71-55-6	1,1,1-trichloroethane		0.5	U
56-23-5	carbon tetrachloride		0.5	U
563-58-6	1,1-dichloropropene		0.5	U
71-43-2	benzene		0.5	U
107-06-2	1,2-dichloroethane		0.5	U
79-01-6	trichloroethene		0.5	U
78-87-5	1,2-dichloropropane		0.5	U
74-95-3	dibromomethane		0.5	U
75-27-4	bromodichloromethane		0.5	U
10061-01-5	cis-1,3-dichloropropene		0.5	U
108-88-3	toluene		0.5	U
10061-02-6	trans-1,3-dichloropropene		0.5	U
79-00-5	1,1,2-trichloroethane		0.5	U
127-18-4	tetrachloroethene		0.5	U
142-28-9	1,3-dichloropropane		0.5	U
124-48-1	dibromochloromethane		0.5	U
106-93-4	1,2-dibromomethane		0.5	U

FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

8-21 B80822

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-164--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7913.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 14:44

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**B80822**

8-21

Lab Name: H2M LABS INC. Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-16/4

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: V7913.D

Level: (low/med) LOW Date Received: 12/19/00

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/22/00

GC Column: RTX502 ID: 0.53 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000115-07-1	Propene	1.34	0.6	JN

GKB  
1/9/01

FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

8-21  
B80822

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-164--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7913.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 14:44

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

## Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/L</u>	Q
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

**Preliminary  
Results  
Pending QC Review**

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80823

8-31

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-165--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7914.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 22 Dec 20 0 15:20GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

8-31 B80823

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-165--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7914.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 15:20

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

## Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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EPA SAMPLE NO.

B80824

8-41

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-166--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7915.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 22 Dec 20 0 15:55GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.6		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

Lab Name: H2M LABS, INC Contract: C003786 8-41 B80824

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-166--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7915.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 15:55

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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EPA SAMPLE NO.

B80825

9-20

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-167--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7916.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 22 Dec 20 0 16:30GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

B80825 <i>9.79</i>
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Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-167--

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: V7916.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 16:30

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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EPA SAMPLE NO.

Lab Name: H2M LABS, INC Contract: C003786

B80826

9-30

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-168--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7917.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 22 Dec 2000 17:07GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	<u>ug/L</u>	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	1.0		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

Lab Name: H2M LABS, INC Contract: C003786 B80826 **9-30**

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-168--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7917.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 17:07

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

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EPA SAMPLE NO.

Lab Name: H2M LABS, INC Contract: C003786 EPA SAMPLE NO. B80827 9-40

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-169--

Sample wt/ vol: 25.0 (g/mL ML) Lab File ID: V7918.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 17:44

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	1.1		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

9-40 B80827

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-169--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7918.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 17:44

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\ p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\ 4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

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EPA SAMPLE NO.

B80827

9-49

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-169--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7918.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 22 Dec 20 0 17:44GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	1.1		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

B80827 **9-40**

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-169--

Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7918.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 17:44

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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EPA SAMPLE NO.

B80828 10-16

Lab Name: H2M LABS, INC Contract: C003786

Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A

Matrix: (soil/water) WATER Lab Sample ID: --20001219-170--

Sample wt/ vol: 25.0 (g/mL ML) Lab File ID: V7919.D

Level: (low/med) LOW Date Received: 12/19/2000

% Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 18:20

GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0

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

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

10-16 B80828

Lab Name: H2M LABS, INC Contract: C003786  
 Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A  
 Matrix: (soil/water) WATER Lab Sample ID: --20001219-170--  
 Sample wt/vol: 25.0 (g/mL ML) Lab File ID: V7919.D  
 Level: (low/med) LOW Date Received: 12/19/2000  
 % Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 18:20  
 GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene		0.5	U
630-20-6	1,1,1,2-tetrachloroethane		0.5	U
100-41-4	ethylbenzene		0.5	U
108383/106423	m\p-xylene		0.5	U
95-47-6	o-xylene		0.5	U
100-42-5	styrene		0.5	U
75-25-2	bromoform		0.5	U
98-82-8	isopropylbenzene		0.5	U
108-86-1	bromobenzene		0.5	U
79-34-5	1,1,2,2-tetrachloroethane		0.5	U
96-18-4	1,2,3-trichloropropane		0.5	U
103-65-1	n-propylbenzene		0.5	U
95498/74873	2\4-chlorotoluene		0.5	U
108-67-8	1,3,5-trimethylbenzene		0.5	U
98-06-6	tert-butylbenzene		0.5	U
95-63-6	1,2,4-trimethylbenzene		0.5	U
135-98-8	sec-butylbenzene		0.5	U
541-73-1	1,3-dichlorobenzene		0.5	U
99-87-6	4-isopropyltoluene		0.5	U
106-46-7	1,4-dichlorobenzene		0.5	U
95-50-1	1,2-dichlorobenzene		0.5	U
104-51-8	n-butylbenzene		0.5	U
96-12-8	1,2-dibromo-3-chloropropane		0.5	U
120-82-1	1,2,4-trichlorobenzene		0.5	U
87-68-3	hexachlorobutadiene		0.5	U
91-20-3	naphthalene		0.5	U
87-61-6	1,2,3-trichlorobenzene		0.5	U

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EPA SAMPLE NO.

B80829 *10-26*

Lab Name: H2M LABS, INC

Contract: C003786

Lab Code: 10478

Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218A

Matrix: (soil/water) WATER

Lab Sample ID: --20001219-171--

Sample wt/vol: 25.0 (g/mL ML)

Lab File ID: V7920.D

Level: (low/med) LOW

Date Received: 12/19/2000

% Moisture: not dec. 100

Date Analyzed: 22 Dec 200 18:56

GC Column: RTX502.2 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No. Compound (ug/L or ug/Kg) ug/L Q

75-71-8	dichlorodifluoromethane	0.5	U
74-87-3	chloromethane	0.5	U
75-01-4	vinyl chloride	0.5	U
74-83-9	bromomethane	0.5	U
75-00-3	chloroethane	0.5	U
75-69-4	trichlorofluoromethane	0.5	U
75-35-4	1,1-dichloroethene	0.5	U
75-09-2	methylene chloride	0.5	U
156-60-5	trans-1,2-dichloroethene	0.5	U
75-34-3	1,1-dichloroethane	0.5	U
590-20-7	2,2-dichloropropane	0.5	U
156-59-4	cis-1,2-dichloroethene	0.5	U
74-97-5	bromochloromethane	0.5	U
67-66-3	chloroform	0.7	
71-55-6	1,1,1-trichloroethane	0.5	U
56-23-5	carbon tetrachloride	0.5	U
563-58-6	1,1-dichloropropene	0.5	U
71-43-2	benzene	0.5	U
107-06-2	1,4-dichloroethane	0.5	U
79-01-6	trichloroethene	0.5	U
78-87-5	1,2-dichloropropane	0.5	U
74-95-3	dibromomethane	0.5	U
75-27-4	bromodichloromethane	0.5	U
10061-01-5	cis-1,3-dichloropropene	0.5	U
108-88-3	toluene	0.5	U
10061-02-6	trans-1,3-dichloropropene	0.5	U
79-00-5	1,1,2-trichloroethane	0.5	U
127-18-4	tetrachloroethene	0.5	U
142-28-9	1,3-dichloropropane	0.5	U
124-48-1	dibromochloromethane	0.5	U
106-93-4	1,2-dibromomethane	0.5	U

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EPA SAMPLE NO.

1026 B80829

Lab Name: H2M LABS, INC Contract: C003786  
 Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A  
 Matrix: (soil/water) WATER Lab Sample ID: --20001219-171--  
 Sample wt/ vol: 25.0 (g/mL ML) Lab File ID: V7920.D  
 Level: (low/med) LOW Date Received: 12/19/2000  
 % Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 18:56  
 GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

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EPA SAMPLE NO.

B80830 10-36

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-172--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7921.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 22 Dec 20 0 19:31GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

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EPA SAMPLE NO.

10-36 B80830

Lab Name: H2M LABS, INC Contract: C003786  
 Lab Code: 10478 Case No.: RA000 SAS No.: \_\_\_\_\_ SDG No.: 1218A  
 Matrix: (soil/water) WATER Lab Sample ID: --20001219-172--  
 Sample wt/ vol: 25.0 (g/mL ML) Lab File ID: V7921.D  
 Level: (low/med) LOW Date Received: 12/19/2000  
 % Moisture: not dec. 100 Date Analyzed: 22 Dec 20 0 19:31  
 GC Column: RTX502.2 ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

Preliminary  
Results  
Pending QC Review

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80831

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-130--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7899.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 21 Dec 20 0 16:31GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	ug/L	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

Preliminary  
Results  
Pending QC Review

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FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

B80831

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218Matrix: (soil/water) WATERLab Sample ID: --20001219-130--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7899.DLevel: (low/med) LOWDate Received: 12/18/2000% Moisture: not dec. 100Date Analyzed: 21 Dec 20 0 16:31GC Column: RTX502.2ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

Concentration Units:

CAS No. Compound (ug/L or ug/Kg) ug/L Q

CAS No.	Compound	(ug/L or ug/Kg)	ug/L	Q
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

Preliminary  
Results  
Pending QC Review

32

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B80832

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-173--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7922.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 22 Dec 20 0 20:09GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
75-71-8	dichlorodifluoromethane	0.5		U
74-87-3	chloromethane	0.5		U
75-01-4	vinyl chloride	0.5		U
74-83-9	bromomethane	0.5		U
75-00-3	chloroethane	0.5		U
75-69-4	trichlorofluoromethane	0.5		U
75-35-4	1,1-dichloroethene	0.5		U
75-09-2	methylene chloride	0.5		U
156-60-5	trans-1,2-dichloroethene	0.5		U
75-34-3	1,1-dichloroethane	0.5		U
590-20-7	2,2-dichloropropane	0.5		U
156-59-4	cis-1,2-dichloroethene	0.5		U
74-97-5	bromochloromethane	0.5		U
67-66-3	chloroform	0.5		U
71-55-6	1,1,1-trichloroethane	0.5		U
56-23-5	carbon tetrachloride	0.5		U
563-58-6	1,1-dichloropropene	0.5		U
71-43-2	benzene	0.5		U
107-06-2	1,2-dichloroethane	0.5		U
79-01-6	trichloroethene	0.5		U
78-87-5	1,2-dichloropropane	0.5		U
74-95-3	dibromomethane	0.5		U
75-27-4	bromodichloromethane	0.5		U
10061-01-5	cis-1,3-dichloropropene	0.5		U
108-88-3	toluene	0.5		U
10061-02-6	trans-1,3-dichloropropene	0.5		U
79-00-5	1,1,2-trichloroethane	0.5		U
127-18-4	tetrachloroethene	0.5		U
142-28-9	1,3-dichloropropane	0.5		U
124-48-1	dibromochloromethane	0.5		U
106-93-4	1,2-dibromomethane	0.5		U

**Preliminary  
Results  
Pending QC Review**

FORM I VOA  
1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

3/90

EPA SAMPLE NO.

B80832

Lab Name: H2M LABS, INCContract: C003786Lab Code: 10478Case No.: RA000

SAS No.: \_\_\_\_\_

SDG No.: 1218AMatrix: (soil/water) WATERLab Sample ID: --20001219-173--Sample wt/vol: 25.0 (g/mL ML)Lab File ID: V7922.DLevel: (low/med) LOWDate Received: 12/19/2000% Moisture: not dec. 100Date Analyzed: 22 Dec 20 0 20:09GC Column: RTX502.2 ID: 0.53 (mm)Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS No.	Compound	Concentration Units:		Q
		(ug/L or ug/Kg)	<u>ug/L</u>	
108-90-7	chlorobenzene	0.5		U
630-20-6	1,1,1,2-tetrachloroethane	0.5		U
100-41-4	ethylbenzene	0.5		U
108383/106423	m\p-xylene	0.5		U
95-47-6	o-xylene	0.5		U
100-42-5	styrene	0.5		U
75-25-2	bromoform	0.5		U
98-82-8	isopropylbenzene	0.5		U
108-86-1	bromobenzene	0.5		U
79-34-5	1,1,2,2-tetrachloroethane	0.5		U
96-18-4	1,2,3-trichloropropane	0.5		U
103-65-1	n-propylbenzene	0.5		U
95498/74873	2\4-chlorotoluene	0.5		U
108-67-8	1,3,5-trimethylbenzene	0.5		U
98-06-6	tert-butylbenzene	0.5		U
95-63-6	1,2,4-trimethylbenzene	0.5		U
135-98-8	sec-butylbenzene	0.5		U
541-73-1	1,3-dichlorobenzene	0.5		U
99-87-6	4-isopropyltoluene	0.5		U
106-46-7	1,4-dichlorobenzene	0.5		U
95-50-1	1,2-dichlorobenzene	0.5		U
104-51-8	n-butylbenzene	0.5		U
96-12-8	1,2-dibromo-3-chloropropane	0.5		U
120-82-1	1,2,4-trichlorobenzene	0.5		U
87-68-3	hexachlorobutadiene	0.5		U
91-20-3	naphthalene	0.5		U
87-61-6	1,2,3-trichlorobenzene	0.5		U

Preliminary  
Results  
Pending QC Review

# H2M LABS, INC.

575 Broad Hollow Rd, Melville, NY 11747-5076

Tel: (516) 694-3040 Fax: (516) 420-8436

1863

EXTERNAL CHAIN OF CUSTODY

CLIENT: *NYSDEC*

H2M SDG NO:

PROJECT NAME/NUMBER

*Project: ... River*

*152151*

SAMPLERS: (signature)/Client

*NYSDER*

DELIVERABLES:

*Concentrations*

TURNAROUND TIME: *7 days*

DATE	TIME	MATRIX	FIELD I.D.	Total No. of Containers	ORGANIC			INORG.		LAB I.D. NO.	REMARKS:
					VOA	BNA	Post/PCB	Metal	CN		
<i>12/11</i>	<i>9:00</i>	<i>GW</i>	<i>GP-1-11</i>	<i>2</i>	<i>2</i>						
<i>9:25</i>			<i>GP-1-1-27</i>								
<i>9:25</i>			<i>GP-1-37</i>								
<i>10:35</i>			<i>GP-2-16</i>								
<i>10:45</i>			<i>GP-2-23</i>								
<i>10:50</i>			<i>GP-2-38</i>								
<i>11:20</i>			<i>GP-3-19</i>								
<i>11:24</i>			<i>GP-3-26</i>								
<i>11:47</i>			<i>GP-3-36</i>								
<i>12:05</i>			<i>GP-4-19</i>								
<i>12:14</i>			<i>GP-4-21</i>								

*Received by*

NOTES:

Project Contact:

Phone Number:

**LABORATORY USE ONLY**

Discrepancies Between Sample Labels and COC Record? Y or N Explain:

- Samples were:
1. Shipped \_\_\_ or Hand Delivered \_\_\_ Airbill# \_\_\_\_\_
  2. Ambient or chilled
  3. Received in good condition: Y or N
  4. Properly preserved: Y or N
  5. Samples returned to lab \_\_\_ Hrs from collection.
- COC Tape was:
1. Present on outer package: Y or N
  2. Unbroken on outer package: Y or N
  3. COC record present & complete upon sample receipt: Y or N

WHITE COPY - ORIGINAL

YELLOW COPY - CLIENT

PINK COPY - LABORATORY

# H2M LABS, INC.

1862

EXTERNAL CHAIN OF CUSTODY

575 Broad Hollow Rd, Melville, NY 11747-5076

Tel: (516) 694-3040 Fax: (516) 420-8436

CLIENT: NYSD&C

H2M SDG NO:

PROJECT NAME/NUMBER

Precision Concepts / Camanus River

NOTES:

Project Contact:

SAMPLERS: (signature)/Client

Michael MacCabe NYSD&C

Phone Number:

DELIVERABLES:

Chlorophyll D

Sample Container Description

40 ml Mael HCl

Inductively Coupled Plasma

TURNAROUND TIME:

7 days

Total No. of Containers

ANALYSIS REQUESTED		
ORGANIC	INORG.	Metal
VOA	BNA	PCB
2	2	2
2	2	2
2	2	2
2	2	2

LAB I.D. NO.

REMARKS:

DATE TIME MATRIX

FIELD I.D.

12/18 13:25 GB

GP-4-34

2

2

14:00

GP-5-28

2

2

14:00

GP-5-30

2

2

14:15

GP-5-4

2

2

GP-5-6  
GP-5-6  
GP-6

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

### LABORATORY USE ONLY

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Discrepancies Between Sample Labels and COC Record? Y or N Explain:

- Samples were:
- Shipped \_\_\_ or Hand Delivered \_\_\_ Atch/ID# \_\_\_\_\_
  - Ambient or chilled
  - Received in good condition: Y or N
  - Properly preserved: Y or N
  - Samples returned to lab \_\_\_ Hrs from collection.
- COC Tape was:
- Present on outer package: Y or N
  - Unbroken on outer package: Y or N
  - COC record present & complete upon sample receipt: Y or N

WHITE COPY - ORIGINAL

YELLOW COPY - CLIENT

PINK COPY - LABORATORY

# H2M LABS, INC.

# FAX

575 Broad Hollow Road  
Melville, New York 11747

31  
PHONE: (516) 694-3040 Ext. 1211  
FAX: (516) 420-8436  
E-Mail: ARACRI@H2M.COM

TO MIKE MACCABE

FROM: JENNIFER ARACRI

COMPANY DEC

RE: RESULTS

DATE 12/22/00

# OF PAGES (incl. cover sheet): 1

TIME: 3:34

NOTE: PLEASE CALL IMMEDIATELY IF YOU  
DO NOT RECEIVE ALL PAGES

FAX: 516-457-4198

### COMMENTS:

FOR OFFICE USE ONLY:

Time Faxed: \_\_\_\_\_

Sender (initial): \_\_\_\_\_

\*\*\*\*\*  
 \*\*\* ACTIVITY MANAGEMENT REPORT TX \*\*\*  
 \*\*\*\*\*

ST. TIME	CONNECTION TEL	CONNECTION ID	NO.	MODE	PGS.	RESULT
12/20 12:17	9p16314440248		0616	TRANSMIT ECM	9	OK 04'45
12/20 12:28	8p5926874027859	BUR ENV EXP INVE	0617	TRANSMIT ECM	10	OK 03'40
12/20 12:33	9p16314440248		0618	TRANSMIT ECM	10	OK 03'38
12/20 12:37	9p15165713828		0619	TRANSMIT ECM	10	OK 04'20
12/20 14:17	9p15165711475		0620	TRANSMIT	0	NG 00'00 0 #001
12/20 14:26	9p15165711475		0621	TRANSMIT	0	NG 00'00 0 #018
12/20 14:36	9p15165711475		0622	TRANSMIT	0	NG 00'00 0 #018
12/20 14:50	9p15165711475		0623	TRANSMIT	0	NG 00'00 0 #018
12/20 15:30	9p16315711475		0624	TRANSMIT	0	NG 00'00 0 STOP
12/20 15:37	9p15165711210		0625	TRANSMIT ECM	32	NG 15'44 33 #001
12/21 08:38	9p15165711210		0627	TRANSMIT	0	NG 00'00 0 STOP
12/21 08:40	9p15165711210		0628	TRANSMIT ECM	23	OK 10'51
12/21 08:55	9p15165711210		0629	TRANSMIT ECM	11	NG 05'58 12
12/21 09:04	9p15165711210		0629	TRANSMIT ECM	12	OK 05'59
12/21 09:14	9p15165711210		0630	TRANSMIT ECM	6	NG 02'44 7
12/21 09:20	9p15165711210		0630	TRANSMIT G3	3	NG 02'45 4
12/21 09:26	9p15165711210		0630	TRANSMIT	0	NG 00'00 0 #018
12/21 13:14	p592687p5167464432		0631	TRANSMIT G3	0	NG 00'08 0 #001
12/22 09:22	p592687p5167464432		0632	TRANSMIT ECM	6	OK 02'20
12/22 10:03	518 4027859	BUR ENV EXP INVE	0633	MANUAL TX ECM	3	OK 00'57
12/22 10:18	9p4582472	RUST	0634	TRANSMIT ECM	2	OK 00'56
12/22 14:45	p592687p7184824026		0635	TRANSMIT ECM	7	OK 02'43

\*\*\*\*\*  
 \*\*\* ACTIVITY MANAGEMENT REPORT RX \*\*\*  
 \*\*\*\*\*

ST. TIME	CONNECTION TEL	CONNECTION ID	NO.	MODE	PGS.	RESULT
12/20 14:13	6313447061		9868	AUTO FAX RX ECM	8	OK 02'39
12/20 15:23	5184778195		9869	AUTO FAX RX ECM	1	OK 00'38
12/20 16:02	7322695067		9870	AUTO FAX RX ECM	1	OK 00'38
12/21 10:50			9871	MEMORY RX ECM	5	OK 01'38
12/21 10:53			9872	MEMORY RX ECM	5	OK 01'37
12/21 16:24	4065637318		9873	AUTO FAX RX ECM	5	OK 02'17
12/22 09:25			9874	AUTO FAX RX ECM	2	OK 00'43
12/22 10:36	718 482 4043	NYSDEC SPILLS	9875	AUTO FAX RX ECM	3	OK 01'10
12/22 10:39			9876	AUTO FAX RX ECM	9	OK 05'12
12/22 10:50	631 269 1599		9877	AUTO FAX RX ECM	2	OK 00'55
12/22 11:42	718 482 4043	NYSDEC SPILLS	9878	AUTO FAX RX ECM	3	OK 01'08
12/22 11:44	718 482 4043	NYSDEC SPILLS	9879	AUTO FAX RX ECM	8	OK 02'52
12/22 12:01			9880	AUTO FAX RX ECM	3	OK 00'49
12/22 13:05	6313447061		9881	AUTO FAX RX ECM	3	OK 01'02

12/22 13:51	201 794 0366	LANGAN ENG & ENV	9882	AUTO FAX RX ECM	4	OK	01'48
12/22 14:19	718 482 4043	NYSDEC SPILLS	9883	AUTO FAX RX ECM	4	OK	01'06
12/22 15:25	5164208436		9884	AUTO FAX RX ECM	17	OK	04'42
12/22 15:31	5164208436		9885	AUTO FAX RX ECM	17	OK	04'49



(631) 853-2255

**From:** "Rapiejko, Andrew" <Andrew.Rapiejko@CO.SUFFOLK.NY.US>  
**To:** Michael MacCabe <mdmaccab@gw.dec.state.ny.us>  
**Date:** 10/11/02 1:12PM  
**Subject:** Precision Concepts

SY  
Precision Concepts  
VOC Data

Mike,  
As we discussed attached is a pdf file containing maps that indicate the locations of the wells the SCDHS installed and sampled downgradient of the Precision Concepts site. I also attached an MsExcel spreadsheet that contains the data from detectable VOCs.

Please note that all sampling depths indicated are below land surface. The well BD-1 (located on Belmont Drive) is situated on a much higher land surface elevation than those on River Road. The depth to the water table on Belmont Dr is approx. 70 feet where the depth to water on River Rd is approx. 15 feet. Please consider this when reviewing this data.

Should you have any questions, please give me a call.

Andy

<<River Road.pdf>>

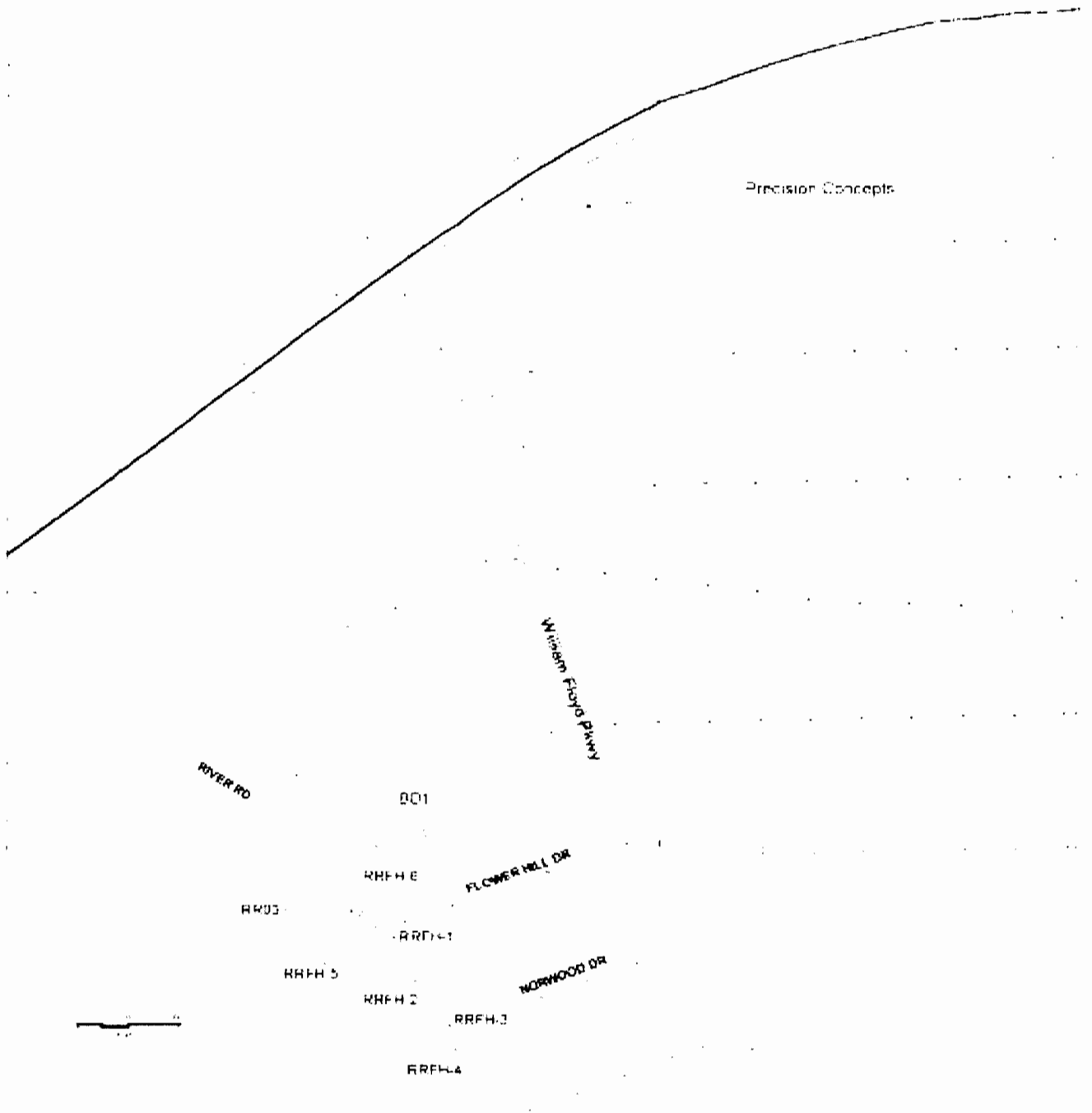
<<Geoprobes.xls>>

Andrew Rapiejko  
Suffolk County Department of Health Services  
220 Rabro Dr East  
Hauppauge, NY 11788  
(631) 853-2255  
e-mail: andrew.rapiejko@co.suffolk.ny.us

**CC:** "Robbins, Sy" <Sy.Robbins@CO.SUFFOLK.NY.US>, "Trent, Martin" <Martin.Trent@CO.SUFFOLK.NY.US>, "Paulsen, Ronald" <Ronald.Paulsen@CO.SUFFOLK.NY.US>, Charlie Guthrie <caguthri@gw.dec.state.ny.us>

631 694 2117

# SCDHS Well Locations



Suffolk County Department of Health Services Groundwater Investigation  
Results of Select Volatile Organic Compounds



**BD-1**

Depth	PCE	DCA	TCA	TCE	DCE
115-120	ND	4	1	ND	ND
125-130	ND	1	1	ND	0.5
135-140	ND	2	2	ND	0.8

**RRFH-6**

Depth	PCE	DCA	TCA	TCE	DCE
45-50	ND	ND	0.6	ND	ND
55-60	ND	12	3	ND	ND
65-70	ND	1	2	ND	ND
75-80	ND	ND	2	2	0.6
85-90	ND	ND	3	6	2
95-100	ND	ND	2	4	1

**RRFH-5**

Depth	PCE	DCA	TCA	TCE	DCE
25-30	ND	ND	1	ND	ND
35-40	0.6	ND	5	ND	ND
45-50	0.9	0.6	43	ND	6
55-60	11	2	130	ND	16
65-70	9	4	270	ND	31
75-80	ND	ND	3	ND	0.5
85-90	ND	ND	1	2	0.7
95-100	ND	ND	2	3	1

**RR03**

Depth	PCE	DCA	TCA	TCE	DCE
60-65	ND	0.7	0.5	ND	ND
70-75	ND	3	4	ND	0.5
80-85	ND	ND	3	6	1
90-95	ND	ND	ND	1	ND

**RRFH-1**

Depth	PCE	DCA	TCA	TCE	DCE
All	ND	ND	ND	ND	ND

**RRFH-2**

Depth	PCE	DCA	TCA	TCE	DCE
All	ND	ND	ND	ND	ND



**RRFH-3**

Depth	PCE	DCA	TCA	TCE	DCE
75-80	ND	ND	1	ND	ND

**RRFH-4**

Depth	PCE	DCA	TCA	TCE	DCE
All	ND	ND	ND	ND	ND

Depths are below ground level. Only levels with detections are shown.  
 Concentrations are in parts per billion (ppb)  
 Results are a summary of the following select volatile organic compounds: tetrachloroethene (PCE),  
 1,1-dichloroethane (DCA), 1,1,1-trichloroethane (TCA), trichloroethene (TCE), 1,1-dichloroethene (DCE).  
 Detects of other VOCs are not indicated.

 SCDHS Well  
 NYSDEC Geoprobe

Detectable Volatile Organic Compounds  
River Road Investigation

Well ID (Depth Below Land Surface)	Sample Date	dichlorodifluoromethane	1,1-dichloroethane	Chloroform	1,1,1-trichloroethane	trichloroethene	tetrachloroethene	1,1-dichloroethene	tert-butyl-ethyl-ether	tert-amyl-methyl-ether	Benzene	MTBE
BD1 75-80	10-Jan-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BD1 85-90	10-Jan-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
BD1 95-100	10-Jan-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BD1 105-110	10-Jan-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BD1 115-120	10-Jan-02	ND	4	1	1	ND	ND	ND	ND	ND	ND	ND
BD1 125-130	10-Jan-02	0.7	1	1	1	ND	ND	ND	ND	ND	ND	ND
BD1 135-140	10-Jan-02	1	2	1	2	ND	ND	0.8	ND	ND	ND	ND
RRFH-1 25-30	23-Oct-01	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-1 35-40	23-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	3
RRFH-1 45-50	23-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	14	ND	8
RRFH-1 55-60	23-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	4
RRFH-1 65-70	23-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7
RRFH-2 25-30	29-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-2 35-40	29-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-2 45-50	29-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-2 55-60	29-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-2 65-70	29-Oct-01	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-2 75-80	29-Oct-01	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-3 25-30	31-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
RRFH-3 35-40	31-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7
RRFH-3 45-50	31-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-3 55-60	31-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
RRFH-3 65-70	31-Oct-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
RRFH-3 75-80	31-Oct-01	ND	ND	1	1	ND	ND	ND	ND	ND	ND	ND
RRFH-4 25-30	5-Nov-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3
RRFH-4 35-40	5-Nov-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
RRFH-4 45-50	5-Nov-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
RRFH-4 55-60	5-Nov-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-4 65-70	5-Nov-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-4 75-80	5-Nov-01	ND	ND	1	ND	ND	ND	ND	ND	ND	ND	ND
RRFH-5 15-25	3-Dec-01	ND	ND	ND	ND	ND	ND	ND	ND	24	ND	190
RRFH-5 25-30	19-Nov-01	ND	ND	ND	1	ND	ND	ND	ND	2700	15	17000
RRFH-5 35-40	19-Nov-01	ND	ND	ND	5	ND	0.6	ND	0.5	4000	150	20000
RRFH-5 45-50	19-Nov-01	ND	0.6	ND	43	ND	0.9	6	ND	ND	ND	5
RRFH-5 55-60	19-Nov-01	ND	2	ND	130	ND	11	16	ND	ND	ND	0.8
RRFH-5 65-70	19-Nov-01	ND	4	1	270	ND	9	31	ND	ND	ND	ND
RRFH-5 75-80	19-Nov-01	ND	ND	1	3	ND	ND	0.5	ND	ND	ND	0.8
RRFH-5 85-90	19-Nov-01	ND	ND	1	1	2	ND	0.7	ND	ND	ND	1
RRFH-5 95-100	19-Nov-01	ND	ND	1	2	3	ND	1	ND	ND	ND	1
RRFH-6 25-30	4-Feb-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.9
RRFH-6 35-40	4-Feb-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.8
RRFH-6 45-50	4-Feb-02	ND	ND	ND	0.6	ND	ND	ND	ND	ND	ND	ND
RRFH-6 55-60	30-Jan-01	ND	12	ND	3	ND	ND	ND	ND	ND	ND	ND
RRFH-6 65-70	30-Jan-01	ND	1	ND	2	ND	ND	ND	ND	ND	ND	ND
RRFH-6 75-80	30-Jan-01	ND	ND	1	2	2	ND	0.6	ND	ND	ND	ND
RRFH-6 85-90	30-Jan-01	ND	ND	2	3	6	ND	2	ND	ND	ND	ND
RRFH-6 95-100	29-Jan-01	ND	ND	2	2	4	ND	1	ND	ND	ND	ND
RR03 20-25	14-Mar-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
RR03 30-35	14-Mar-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RR03 40-45	14-Mar-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RR03 50-55	14-Mar-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RR03 60-65	14-Mar-02	ND	0.7	ND	0.5	ND	ND	ND	ND	ND	ND	ND
RR03 70-75	14-Mar-02	ND	3	ND	4	ND	ND	0.5	ND	ND	ND	ND
RR03 80-85	14-Mar-02	0.7	ND	2	3	6	ND	1	ND	ND	ND	ND
RR03 90-95	14-Mar-02	0.6	ND	ND	ND	1	ND	ND	ND	ND	ND	ND

Concentrations in parts per billion (ppb)  
ND indicated no detection (<0.5 ppb)

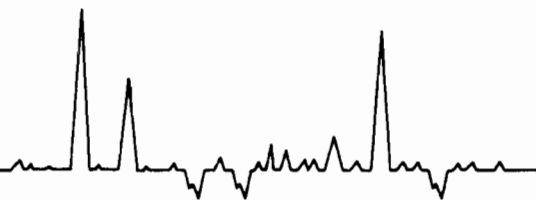


RR03 30-35	14-Mar-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RR03 40-45	14-Mar-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RR03 50-55	14-Mar-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RR03 60-65	14-Mar-02	ND	0.7	ND	0.5	ND	ND	ND	ND	ND	ND	ND	ND
RR03 70-75	14-Mar-02	ND	3	ND	4	ND	ND	0.5	ND	ND	ND	ND	ND
RR03 80-85	14-Mar-02	0.7	ND	2	3	6	ND	1	ND	ND	ND	ND	ND
RR03 90-95	14-Mar-02	0.6	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND

# H2M LABS, INC.

*An Employee-Owned Company*

575 Broad Hollow Road, Melville, NY 11747-5076  
(516) 694-3040 • FAX: 516-420-8436



January 19, 2001

Mr. Michael MacCabe  
NYS DEC  
Room 242  
50 Wolf Road  
Albany, NY 12233-7010

Re: Contract: C003786  
Case No. RA000  
SDG No. 1218 & 1218A

Dear Mr. MacCabe:

Enclosed please find one copy each of the analytical and summary data packages for the groundwater samples received at our laboratory on December 18, 2000 (SDG No.: 1218) and December 19, 2000 for (SDG No.: 1218A). The samples were analyzed for volatile organics in accordance with the NYSDEC ASP (10/95 revision) with category B deliverables.

If you have any questions regarding this material, please contact us at any time.

Very truly yours,

H2M Labs, Inc.

Noranne T. Saager  
Project Coordinator

Enclosures

o:\qcinth\letters\00reg0.doc

Ed Also - Carmans River - Assessment (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z)

## Suffolk County Department of Health Services Draft Workplan for Carmans River Study

### Technical Services/Methodology

#### a. Carmans River Assessment (Task I)

##### (1) Historical Data Quality Evaluation

- (a) Record search for historical Carmans River data (i.e., water quality, sediment quality, stream gauging measurements, sedimentation rates, etc.)
  - i. Suffolk County Department of Health Services data
  - ii. U.S. Geological Survey data (including their NASQAN Study)
  - iii. Any other pertinent available data (i.e., NYSDEC, USEPA, Town of Brookhaven, etc.)
- (b) Compilation of the historical data into a Microsoft Access database.  
Fields to include minimum of the following:
  - i. Sample site description
  - ii. Sample location coordinates (X,Y in N.Y. State plane feet, NAD 27)
  - iii. Sampling agency
  - iv. Sample date
  - v. Sample results (including appropriate detection limits)
  - vi. Sample Type (Water, Soil, Sediment)
  - vii. Sediment sample depth
- (c) Evaluation of the compiled data in the following ways:
  - i. Determination of data trends
  - ii. Evaluation of data gaps

##### (2) Potential Contamination Source Assessment of the Carmans River

- (a) Identify all of the following that are either within 1.5 miles of the river, or within the drainage basin of the river, whichever is further.
  - i. USEPA and NYSDEC superfund sites
  - ii. All point and non-point contamination sources (surface and/or subsurface) including but not limited to the following:
    - storm drain inputs and associated drainage areas
    - leaking underground storage tanks
    - known spills
    - potential agricultural sources
    - known contaminant plumes emanating from Brookhaven National Laboratory



- (b) Determine X and Y (NAD 27 State Plane Feet) locations of i. and ii. above. Enter information into database created in Task I (cross reference 2.a.(1)(b)).

**b. Development of a Sampling and Analysis Plan (Task II)**

- (1) Develop a sampling and analysis plan (SAP) for the Carmans River based on the information generated in Task I. Such SAP shall include a Quality Assurance Project Plan (QAPP) for this study. A draft SAP shall be submitted for review and approval by the Department, and shall include all the information obtained in Task I.
- (2) At a minimum, the SAP should include both stream sediment and surface water samples. The sample locations and the rationale for sample location selection must be included. The Consultant must use the information obtained in the Task I to determine the collection depth of the stream sediment samples, and determine if core sample collection is necessary.
- (3) The following table indicates the sample categories and analytical methods to be used:

**Sediment and Surface Water Samples**

<b>Category</b>	<b>EPA Method</b>
VOC	624 and 8260
Gross Alpha	900
Gross Beta	900
Ethylenedibromide (EDB)	504and 8011
Pesticides	*
Heavy Metals	*
PCBs	*

\* Note: Specific analytes and methods for these categories should be determined by evaluation of the information obtained in TASK I.

Note: Fish/shellfish tissue sampling and radionuclide analyses other than those mentioned above are not within the scope of this study.

**c. Sample Collection and Laboratory Analysis (Task III)**

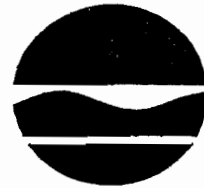
Upon approval by the Department of the final SAP, the Consultant shall contract with a New York State ELAP Certified environmental testing laboratory to perform the analysis of the samples specified in the plan. All analytical costs should be included in the Cost Proposal. Upon completion of the analysis, the Consultant shall enter the associated information from these samples into the Microsoft Access database established in the Task I (cross reference 2.a.(1)(b)).

**d. Final Report (Task IV)**

Prepare a draft final report which will include all the results of the analysis from the samples collected in Task III. Such draft final report shall include an overall assessment of the present environmental condition of the river and recommendations of further work if necessary. Submit fifteen (15) copies of the draft final report to the Department for review. The Consultant shall be responsible for changes to the draft as the County determines to be appropriate. Upon approval by the Department, the Consultant shall then submit to the Department twenty-five (25) copies of the final report, as well as the Microsoft Access database created in Task I (cross reference 2. a. (1) (b)) and updated in Task III.

Note: To keep the Department current on the progress of the study, the Consultant shall update the Department's Project Manager via monthly conference calls. In addition, the Consultant shall provide the Department with written bi-monthly progress reports on the study. The Consultant will be required to attend meetings as the County determines to be necessary (minimum of six); some of these may be public meetings.

New York State Department of Environmental Conservation  
50 Wolf Road, Albany, New York 12233-7010



John P. Cahill  
Commissioner

TO: H2M LAB - SAMPLE CUSTODIAN

FROM: BURTON PINÉ FOR MICHAEL MAC CABÉ

DATE: 12-19-00

NUMBER OF PAGES: 40

FOR VERIFICATION OR PROBLEMS CALL \_\_\_\_\_

AT: (518) \_\_\_\_\_

OUR RECEIVING TELECOPIER NUMBER IS (518) 457-8989

attached are copies of the sample information sheets for 18 groundwater samples michael dropped off yesterday.

also attached are partially filled out sheets for 21 additional samples he will be dropping off today. please give these to him to finish filling out.

-Burt

Burton Pine

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B80809

3-38

Lab Name: H2M LABS INC. Contract: C003786  
 Lab Code: 10478 Case No.: RA000 SAS No.: SDG No.: 1218  
 Matrix: (soil/water) WATER Lab Sample ID: --20001219-123  
 Sample wt/vol: 25.0 (g/ml) ML Lab File ID: V7887.D  
 Level: (low/med) LOW Date Received: 12/18/00  
 % Moisture: not dec. Date Analyzed: 12/20/00  
 GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

Number TICs found: 17 (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000115-07-1	Propene <i>olefin</i>	1.35	8	JN
2. 000075-28-5	Isobutane <i>iso paraff</i>	1.62	0.4	JN
3.	unknown hydrocarbon	1.88	8	J
4.	unknown hydrocarbon	2.25	0.4	J
5. 000078-78-4	Butane, 2-methyl- <i>iso paraff</i>	2.75	2	JN
6.	unknown hydrocarbon	3.17	5	J
7.	unknown hydrocarbon	3.67	1.0	J
8.	unknown hydrocarbon	4.50	2	J
9. 000096-14-0	Pentane, 3-methyl- <i>iso paraff</i>	4.88	0.6	JN
10. 000592-41-6	1-Hexene	5.25	2	JN
11. 007642-09-3	3-Hexene, (Z)- <i>olefin</i>	5.59	0.7	JN
12. 000592-43-8	2-Hexene <i>olefin</i>	5.90	0.6	JN
13.	unknown hydrocarbon	6.95	0.5	J
14.	unknown hydrocarbon	7.19	0.7	J
15. 000592-76-7	1-Heptene <i>olefin</i>	7.83	1	JN
16. 000111-66-0	1-Octene <i>olefin</i>	10.56	0.5	JN
17.	unknown	17.47	0.7	J

*methylbutane*

*N's = olef  
iso*

*GKB i/s/01*



## Latest Paper

# Petroleum Hydrocarbon Fingerprinting Quantitative Interpretation: Development and Case Study for Use in Environmental Forensic Investigations

John W. Wigger, P.E., Environmental Liability Management, Inc., Tulsa, Oklahoma

Dennis D. Beckmann, P.E. DEE, Amoco Corporation, Tulsa, Oklahoma

Bruce E. Torkelson, Torkelson Geochemistry, Inc., Tulsa, Oklahoma

Atul X. Narang, Ph.D., Amoco Corporation, Naperville, Illinois

## ABSTRACT

Hydrocarbon Characterization (fingerprinting) is a technique that uses gas chromatograms to identify petroleum hydrocarbons as to type of product based on boiling range and other definitive characteristics. Identifying and comparing samples is not straightforward: the composition of a single product type can vary, the composition of samples can change after release into the environment (weathering), and multiple releases can form complex mixtures. Hydrocarbon characterization is typically done by visual examination and comparison of chromatograms, and the outcome is dependent on the expertise and experience of the interpreter(s). This paper reports on work to establish a more quantitative and less subjective process. First, a database was created of over 60 known hydrocarbon samples representing streams such as gasoline, kerosene, naphtha, reformat, jet fuel, diesel, fuel oil, hydraulic oil, lubricating oil, crude oil and other refinery intermediates. Each sample has been analyzed by capillary column gas chromatography, and a specific set of 89 compounds (peaks) has been captured to characterize each sample. Second, a statistical correlation algorithm has been developed to evaluate and compare these characteristic peaks numerically. This algorithm provides a quantifiable, repeatable, and user independent, degree-of-fit parameter for comparing samples to each other or to library spectra of known products from the database.

The numerical techniques were used effectively in a case study involving an investigation of released hydrocarbon products at a process unit at a refinery. The techniques were instrumental in helping differentiate multiple sources and characterize the subsurface extent of the hydrocarbons.

## Introduction

Hydrocarbon fuels and intermediate products encountered in soils and groundwater at environmental release sites are often characterized by use of capillary column gas chromatography. Hydrocarbon characterization (fingerprinting) is an extremely useful tool in

the investigation of subsurface contamination of soil and groundwater (Bruce and Schmidt, 1994). Hydrocarbon chromatography is used to obtain information from liquid hydrocarbon samples (free product) by determining the type and proportion of the hydrocarbons present. The identification and interpretation of chromatography information, however, has historically been a mostly qualitative, visual process, dependent upon the skill and experience of the individuals(s) involved. Recently, numerical interpretation techniques and chemometrics have been gaining popularity (Wigger and Torkelson, 1997), (Stout et al., 1998). This paper presents the development of a database of known products and streams, along with a numerical technique to compare environmental samples to these known standards. A case study is presented in which use of the numerical techniques and the database provided significant benefit in the characterization and interpretation of the chromatograms.

## Background

### Petroleum Hydrocarbon Chemistry

Petroleum hydrocarbons include a very large number of compounds that, by definition, are found in crude oil, as well as other sources of petroleum such as natural gas, coal, and peat. Petroleum hydrocarbons consist of three major groups of compounds: alkanes, alkenes (olefins), and aromatics.

Alkanes, one of the major constituents of crude oil, are found in refined petroleum products such as gasoline, kerosene, diesel fuel, heating oil, etc. There are three major classes of alkanes: linear alkanes, branched alkanes, and naphthenes. The linear alkanes have carbon atoms arranged in a line, and there are only two ends to these molecules. Linear alkanes are also called normal or n-alkanes. Branched alkanes, or isoparaffins, have the carbon atoms branching off the main carbon chain, thus creating many differing configurations. Naphthenes are molecules in which the carbon atoms are arranged in one or more rings.

Alkenes, for which the common term is olefins, are molecules in which there are one or more carbon-carbon double bonds. The presence of the double bond makes the molecules more reactive than alkanes.

Aromatics contain one or more six carbon rings, with three of the carbons containing double bonds. Examples of one ring, or mononuclear, aromatics are benzene, toluene, ethylbenzene, and xylene (BTEX). Multiple-ring aromatics, or polynuclear, are aromatic compounds with multiple six carbon ring molecules. Examples of these are naphthalene, anthracene, and pyrene.

Hydrocarbon products such as gasoline, diesel fuel, and asphalts are all created from crude oil by a variety of refining and distillation processes. Each product is produced by the combination of multiple individual hydrocarbon compounds, all of which have slightly different vaporization and boiling temperatures. For example, gasoline is the combination of many lower boiling range compounds, including C4 to C12 alkanes, C4 to C7 alkenes, and aromatics BTEX. The middle boiling range compounds are used in differing proportions to create products such as kerosene, diesel, and heating oil. These products predominantly contain C10 to C24 alkanes and polynuclear aromatics with few to no olefins (Zemo, Graff, and Bruya, 1993).

## Gas Chromatography

To identify the different hydrocarbon compounds gas chromatograms are created by injecting a small amount of the sample into a gas chromatograph. Once injected, the product is heated, vaporized, and carried into a column by a flow of inert gas. After injection the temperature of the column is slowly increased. A flame ionization detector connected to the end of the column detects the components of the product as they elute from the column. The intensity of the response of the flame ionization detector to each of the individual compounds is a linear function of concentration (within a certain range). The time required for individual components to go through the column depends on the temperature program, length of

column, column characteristics, and character of the compound itself.

#### Table 1. Hydrocarbon Products & Refinery

Intermediates Included in Database

Products Descriptions

Gasoline 22 gasoline of different grades and manufactures and aviation fuel

Distillates 5 different diesel products and jet fuel

Refinery Intermediates 17 different refinery intermediate streams

Miscellaneous 2 lubricating oils, mineral spirits, and non-chlorinated solvents

Crudes and Gas Condensates 4 different crude oils and gas condensates

Sixty chromatograms have been created of various hydrocarbon products and refinery intermediates. Table 1 presents the products and brief descriptions. (Note this list continues to grow as additional known materials are analyzed.) Figure 1 shows an example of a crude oil chromatogram. Figure 2 presents a subset of four of the sixty chromatograms to illustrate graphically the differing proportions of compounds in common products.

### Materials and Methods

Hydrocarbon samples were analyzed on a Hewlett Packard 5890 instrument equipped with a split/splitless injector, a J&W 30 meter DB-1 column, and a flame ionization detector (FID). All gas flow rates were set to manufacturer specifications. Injections were made in split mode with a split ratio of 1:100. The temperature program of the column oven was set for a sub-ambient initial temperature of -10o C increasing to 350 o C at 10 o C/minute with a 4-minute hold at 350o C. The injector temperature was set at 350o C, and the detector temperature was 360o C. Data was acquired and processed with an EZChrom Chromatography data system.

Figure 2 Hydrocarbon Chromatogram Examples from Library of Sixty (60) Standards

### Correlation Coefficient

The correlation coefficient, denoted by  $r$ , measures the relationship between two data sets that are scaled to be independent of the unit of measure. It is given in the formula:

#### Where $r$ and $r^2$ are values in each corresponding data set.

The value of the correlation coefficient is always between -1 and +1. A value of equal to -1 indicates a perfect inverse linear relationship between the sample values of  $x$  and  $y$ , with the value of  $y$  decreasing as the value of  $x$  increases. A value of equal to +1 also indicates a perfect linear relationship between the sample values, but one in which the value of  $y$  increases as  $x$  increases. Larger values of  $y$  are associated with larger values of  $x$ ; smaller values of  $y$  are associated with smaller values of  $x$ . If there is no linear relationship between the sample values of  $x$  and  $y$ , then will have a value near or equal to zero (Hayslett, 1986).

The correlation coefficient determines whether two data sets move together; that is, whether

large values of one set are associated with large values of the other (positive correlation), whether small values of one set are associated with large values of the other (negative correlation), or whether the values in the two sets are unrelated.

### **Database of Sample Standards**

In this study, 89 hydrocarbon chromatogram peaks were used. The compounds were chosen to include many important compounds and families of compounds. Represented on the list are n-alkanes, olefins, iso-alkanes, naphthenes, isoprenoids, aromatics, polynuclear aromatics, and oxygenates. Integrated peak areas were measured and tabulated for each of the 60 known hydrocarbon samples presented in Table 1. Once the peak area data were collected and tabulated for all hydrocarbon samples, the data were electronically stored in a database for easy retrieval and rapid numerical comparison to other unknown products that arrive.

### **Case Study**

This case study involves an investigation at a refinery process unit. The refinery has an extensive remediation program combined with an extensive network of monitoring wells. One objective of this program is to monitor the perimeter of the refinery to ascertain no adverse impact beyond the facility fence line. All other areas of the refinery are also monitored. However, process areas are monitored less intensely than tank farms and the perimeter. It is difficult and dangerous to install monitoring wells within the battery limits of the process units. The conventional wisdom is that since the vessels and most of the piping at the process units are typically above grade, the probability of on-going releases is unlikely.

The control room at the reforming unit experienced odor problems from the floor drains. On inspection, the floor drain was found to contain free product, a sample of which was collected for hydrocarbon characterization by capillary column gas chromatography. The sample was characterized as a mixture of two major components, reformate and virgin naphtha.

### **Background on Refinery Streams and Processes**

A typical reforming unit at a refinery uses an input stream of naphtha and converts it to a much higher octane stream that is rich in aromatics. The aromatics are formed from the conversion, or reforming, of the molecular structure. For example, methylcyclohexane, a C7 naphthene, is converted to a C7 aromatic, toluene, through the extraction of hydrogen and the creation of the alternating double bond ring structure that defines aromatics. The distinguishing features of the output stream, which is known as a reformate, are the presence of the aromatics, particularly benzene, toluene, ethylbenzene, xylenes, and trimethylbenzenes, and the absence or reduced concentrations of normal alkanes and naphthenes (Leffler, 1985).

Reformate streams can be split into lighter and heavier fractions, as well as a combined or total reformate stream. Each stream has its own characteristics. A light reformate stream contains significant amounts of benzene and toluene (toluene frequently the more dominant component due to the amount of methylcyclohexane and nC7 in the feed) and little of the trimethylbenzenes. A heavy reformate stream contains more of the xylenes and trimethylbenzenes. A total reformate stream contains a broad distribution of the aromatics from benzene through the trimethylbenzenes. A chromatogram of total reformate is presented in Figure 3.

Virgin naphtha, on the other hand, is a refinery stream that has not been subjected to high temperature processes. A chromatogram of a virgin naphtha is presented in Figure 4. Virgin naphtha is distilled from crude oil. Crude oil has essentially no olefins in it, having had



substantial amounts of time in the reservoir for the less stable olefinic materials to react and be converted to hydrogen saturated compounds in the reaction. High temperature processes at a refinery will recreate olefinic compounds by a process of thermal cracking. However, distillation is not a severe enough thermal process to cause cracking. Thus, one of the diagnostic characteristics of virgin naphtha is the lack of olefins. Two places to look for olefins, if they were present, are immediately following the normal alkanes of C6 and C7, as shown on Figure 4. Naphthas can be lighter or heavier, depending on how the crude oil is cut. The naphtha shown in Figure 4 is called a heavy virgin naphtha.

For comparative purposes, also refer to the chromatogram of a catalytic naphtha, Figure 5. In refineries, catalytic naphtha is produced from heavier (larger), less valuable streams, such as gas oil. The feed stream is converted or cracked under high temperature conditions in the presence of a catalyst to form lighter (smaller), more valuable higher octane compounds. The presence of the olefinic compounds created in the cracking process is clearly evident in Figure 5, where the peaks for the olefins can be seen immediately after their associated nearby normal alkanes. Contrast these peaks against the same area of the chromatogram of the virgin naphtha shown in Figure 4, where no peaks are evident.

### Evaluation of Chromatograms

The chromatogram from the first sample (control room) collected during this project is shown in Figure 6. This chromatogram exhibits higher amounts of methylcyclohexane and light normal alkanes than are typical for a reformate. However, the amounts of aromatics present are substantially greater than those present in virgin naphtha. Hence, the initial characterization of the material was a mixture of mostly reformate and a smaller amount of virgin naphtha.

In order to help validate this characterization, the correlation coefficients for the control room sample against reformate and virgin naphtha were calculated. The correlation coefficient for the control room sample against reformate was 0.93, and the correlation coefficient for the control room sample against virgin naphtha was 0.39. This provided an early confirmation of reformate as the primary component.

Another approach to confirming the characterization was to utilize features of the chromatography software to enhance the visual characterization of the samples. These features include the option of adding two (or more) chromatograms together to create a synthetic chromatogram and "stacking" the chromatograms together for easier visual comparison. This technique was used to confirm the interpretation that the control room sample is a mixture of reformate and virgin naphtha by creating synthetic chromatograms with varying proportions of total reformate and virgin naphtha chromatograms. Figure 7 shows the results of one of these exercises. This stack of chromatograms shows a total reformate at original size on top and a virgin naphtha reduced to one-half of its original size second. The third chromatogram from the top is the sum of the full size total reformate and the one-half size virgin naphtha chromatograms approximating a mixture of 2:1. The bottom chromatogram is the sample taken from the control room. Visual comparison indicates the control room chromatogram is most similar to the synthetic chromatogram (about two-thirds total reformate and one-third virgin naphtha). The smaller peaks on the left side of the control room sample are most likely due to weathering (evaporation) after release.

Additional samples were collected and analyzed to determine the extent of the plume. These additional samples varied in composition. As more samples were collected and analyzed, visual characterization, differentiation, and quantification of the degree of difference or similarity of the chromatograms became difficult. The correlation coefficient data was calculated and used extensively to elucidate subtle differences and similarities in the chromatograms, providing a repeatable, quantifiable measure. The identification of spatial trends of the correlation coefficient with respect to the suspected release of total reformate in the plume highlighted areas to investigate for possible sources.

## Caveats to Using the Correlation Coefficient

Although the correlation coefficient proved extremely helpful in quantifying similarities and differences among samples, there were several indications that the technique must be used in conjunction with experienced visual interpretation. For example, the synthetic chromatogram of reformate and naphtha produced a very high correlation coefficient, 0.92. However, visual interpretation observed several significant differences between the synthetic chromatogram and the control room sample. The chromatogram still includes interpretive information that has not been captured in the numerical processes presented in this paper. This interpretive information includes assessment of the degree of weathering of the samples (evaporation, water washing, biodegradation, etc.). In this particular case, the synthetic chromatogram clearly indicates more light material than the control room sample. Samples of reformate and naphtha were evaporated in a controlled setting to 33% and 67% less material on a weight basis to investigate whether a higher degree of fit would ensue. The evaporation process reduces the concentrations of the lighter, "more volatile" compounds progressively from left to right on the chromatogram. (For detailed investigation of gasoline evaporation processes, see Wigger and Torkelson, 1997) The 33% evaporated reformate produced a correlation coefficient of 0.98, confirming the visual interpretation.

At this stage, numerical techniques have addressed only evaporation phenomena. In the future, it is hoped that more extensive weathering patterns caused by volatilization, water washing, and biodegradation may be quantified and used to help determine age, and manufacturer.

Though it is very useful to use the entire data set of 89 compounds for determining correlation coefficients, one can also use a subset of the full data set. This allows the user to focus on a narrower range of compounds specific to a certain type of product or refinery stream. By using a narrower range of compounds, one can better evaluate the presence of a certain product in a broader range of compounds such as found in cases of releases of more than one product or refinery intermediate.

## Conclusions

The evaluation of the chromatographic data in this case study suggests several conclusions:

1. The standard approach is to use all 89 peaks in evaluating the data through the correlation coefficient. This worked acceptably, even for samples with few peaks in the heavy end range.
2. Choosing a focused data set, including peaks only in the range of interest, is easily accomplished and should prove to be a valuable consideration.
3. In this study, it was observed that correlation coefficients greater than 0.9 indicated a very high degree of fit between two samples. Conversely, correlation coefficients less than 0.9 seemed to indicate the need for additional effort in locating a better fitting standard. The caveat on this observation is that individual interpretation of what constitutes a good visual fit may vary.
4. The numerical techniques provided significant assistance in comparing chromatograms to identify trends in composition as well as identifying probable sources.

The correlation coefficient data was calculated and used extensively to elucidate subtle differences and similarities in the chromatograms, providing a repeatable, user independent, quantifiable measure. The identification of spatial trends of the correlation coefficient with respect to the suspected release of total reformate in the plume highlighted areas to investigate for possible sources. The use of the correlation coefficient is highly recommended as a tool in characterizing and interpreting chromatograms. The techniques presented within will undoubtedly serve as tools to help provide better and more consistent hydrocarbon characterizations.

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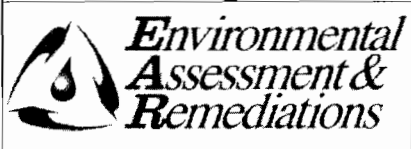
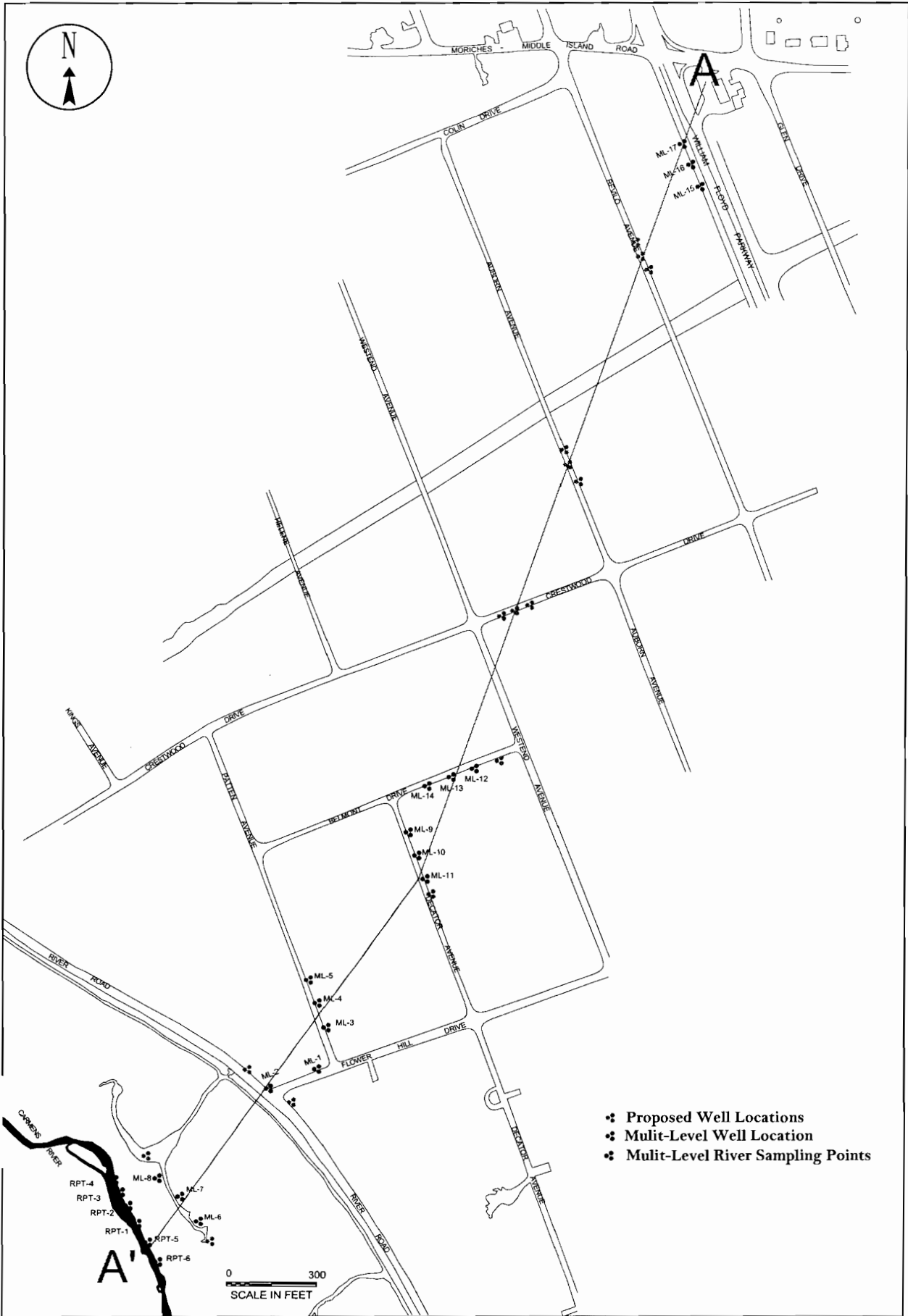
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**Area Map**  
with  
Proposed Multi-Level Well Locations

**DEC-YAPHANK**  
River Rd. & Flower Hill Dr.  
NYSDEC Spill # 01-25275

River Road & Flower Hill Drive  
 Yaphank, NY  
 Spill # 01-25275



Groundwater Analytical Results (ug/L)  
 Ecotest Laboratories, Inc.  
 EPA Method 8260  
 ROUND 3 (January 2003)

Location	Depth (Feet)	Date Collected	MTBE	benzene	toluene	ethylbenzene	m + p xylene	o-xylene	tert-amyl-methyl-ether	Total BTEX
ML-1A	15 - 25'	1/17/2003	4	<1	<1	<1	<2	<1	2	<6
ML-1B	30'	1/17/2003	62	<1	<1	<1	<2	<1	49	<6
ML-1C	35'	1/17/2003	2,900	<1	<1	<1	<2	<1	4,000	<6
ML-1D	40'	1/17/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-2A	20'	1/17/2003	20	<1	<1	<1	<2	<1	4	<6
ML-2B	25'	1/17/2003	80	<1	<1	<1	<2	<1	60	<6
ML-2C	30'	1/17/2003	5,400	210	2	<1	<2	<1	1,700	212
ML-2D	35'	1/17/2003	120,000	1,600	<500	<500	<1000	<500	36,000	1,600
ML-2E	40'	1/17/2003	31,000	180	<50	<50	<100	<50	9,000	180
ML-2F	45'	1/17/2003	12,000	180	3	<1	<2	1	5,400	184
ML-2G	50'	1/17/2003	2,400	<1	<1	<1	<2	<1	700	<6
ML-2H	55'	1/17/2003	21	<1	<1	<1	<2	<1	4	<6
ML-2I	60'	1/17/2003	350	<1	<1	<1	<2	<1	100	<6
ML-3A	25'	1/17/2003	16	<1	<1	<1	<2	<1	6	<6
ML-3B	30'	1/17/2003	16	<1	<1	<1	<2	<1	3	<6
ML-3C	35'	1/17/2003	4,000	<1	<1	<1	<2	<1	1,200	<6
ML-3D	40'	1/17/2003	86,000	880	3	<1	<2	3	44,000	886
ML-3E	45'	1/17/2003	12,000	37	<1	<1	<2	<1	6,100	37
ML-3F	50'	1/17/2003	1,900	<1	<1	<1	<2	<1	740	<6
ML-3G	55'	1/17/2003	3	<1	<1	<1	<2	<1	<1	<6
ML-3I	60'	1/17/2003	7,000	<1	<1	<1	<2	<1	2,300	<6
ML-4A	25'	1/17/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-4B	30'	1/17/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-4C	35'	1/17/2003	5	<1	<1	<1	<2	<1	2	<6
ML-4E	45'	1/17/2003	57	<1	<1	<1	<2	<1	25	<6
ML-4F	50'	1/17/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-4G	55'	1/17/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-4H	60'	1/17/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-5A	25'	1/16/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-5B	30'	1/16/2003	6	<1	<1	<1	<2	<1	<1	<6
ML-5C	35'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6

River Road & Flower Hill Drive  
 Yaphank, NY  
 Spill # 01-25275

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**ROUND 3 (January 2003)**



Location	Depth (Feet)	Date Collected	MTBE	benzene	toluene	ethylbenzene	m + p xylene	o-xylene	tert-amyl-methyl-ether	Total BTEX
ML-5D	40'	1/16/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-5E	45'	1/16/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-5F	50'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-5G	55'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-5I	60'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-6A	10'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-6B	15'	1/16/2003	9	<1	<1	<1	<2	<1	2	<6
ML-6C	20'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-6D	25'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-6E	30'	1/16/2003	1,200	<1	<1	<1	<2	<1	550	<6
ML-6F	35'	1/16/2003	5	<1	<1	<1	<2	<1	1	<6
ML-6G	40'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-6H	45'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-6I	50'	1/16/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-6J	55'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-6K	60'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-6L	65'	1/16/2003	3	<1	<1	<1	<2	<1	<1	<6
ML-6M	70'	1/16/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-6N	75'	1/16/2003	11	<1	<1	<1	<2	<1	3	<6
ML-6O	80'	1/16/2003	4	<1	<1	<1	<2	<1	<1	<6
ML-6P	85'	1/16/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-6Q	90'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-7A	10'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-7B	15'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-7C	20'	1/16/2003	260	<1	<1	<1	<2	<1	1,100	<6
ML-7D	25'	1/16/2003	52,000	210	2	<1	<2	1	16,000	213
ML-7E	30'	1/16/2003	29,000	80	<1	<1	<2	<1	98	80
ML-7F	35'	1/16/2003	1,200	<1	<1	<1	<2	<1	420	<6
ML-7G	40'	1/16/2003	34,000	330	2	<1	<2	<1	15,000	332
ML-7H	45'	1/16/2003	3,100	<1	<1	<1	<2	<1	460	<6
ML-7I	50'	1/16/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-7J	55'	1/16/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-7K	60'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-7L	65'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6

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 Yaphank, NY  
 Spill # 01-25275



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Location	Depth (Feet)	Date Collected	MTBE	Benzene	Toluene	ethylbenzene	m + p xylene	o-xylene	tert-amyl-methyl-ether	Total BTEX
ML-7M	70'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-7N	75'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-7O	80'	1/16/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-7P	85'	1/16/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-7Q	90'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8A	10'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8B	15'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8C	20'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8D	25'	1/16/2003	6,000	<1	<1	<1	<2	<1	<1	<6
ML-8E	30'	1/16/2003	17,000	500	6	<1	<2	12	13,000	518
ML-8F	35'	1/16/2003	40	<1	<1	<1	<2	<1	35	<6
ML-8G	40'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8H	45'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8I	50'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8J	55'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8K	60'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8L	65'	1/16/2003	12	<1	<1	<1	<2	<1	5	<6
ML-8M	70'	1/16/2003	7	<1	<1	<1	<2	<1	5	<6
ML-8N	75'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8O	80'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8P	85'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-8Q	90'	1/16/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-9B	75'	1/15/2003	3	<1	<1	<1	<2	<1	1	<6
ML-9C	80'	1/15/2003	3	<1	<1	<1	<2	<1	1	<6
ML-9D	85'	1/15/2003	9	<1	<1	<1	<2	<1	2	<6
ML-9E	90'	1/15/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-9F	95'	1/15/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-9G	100'	1/15/2003	3	<1	<1	<1	<2	<1	<1	<6
ML-9H	105'	1/15/2003	320	<1	<1	<1	<2	<1	130	<6
ML-9I	110'	1/15/2003	5	<1	<1	<1	<2	<1	2	<6
ML-9J	115'	1/15/2003	40	<1	<1	<1	<2	<1	17	<6
ML-9K	120'	1/15/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-9L	125'	1/15/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-9M	130'	1/15/2003	<1	<1	<1	<1	<2	<1	<1	<6

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Location	Depth (Feet)	Date Collected	MTBE	benzene	toluene	ethylbenzene	m + p xylene	o-xylene	tert-amyl-methyl-ether	Total BTEX
ML-9N	135'	1/15/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-9O	140'	1/15/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-9P	145'	1/15/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-9Q	150'	1/15/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-10B	75'	1/15/2003	140	<1	<1	<1	<2	<1	53	<6
ML-10C	80'	1/15/2003	150	<1	<1	<1	<2	<1	45	<6
ML-10D	85'	1/15/2003	9	<1	<1	<1	<2	<1	1	<6
ML-10E	90'	1/15/2003	280	<1	<1	<1	<2	<1	61	<6
ML-10F	95'	1/15/2003	42	<1	<1	<1	<2	<1	13	<6
ML-10G	100'	1/15/2003	35	<1	<1	<1	<2	<1	7	<6
ML-10H	105'	1/15/2003	87	<1	<1	<1	<2	<1	21	<6
ML-10I	110'	1/15/2003	68	<1	<1	<1	<2	<1	9	<6
ML-10J	115'	1/15/2003	25	<1	<1	<1	<2	<1	6	<6
ML-10K	120'	1/15/2003	52	<1	<1	<1	<2	<1	13	<6
ML-10L	125'	1/15/2003	37	<1	<1	<1	<2	<1	9	<6
ML-10M	130'	1/15/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-10N	135'	1/15/2003	4	<1	<1	<1	<2	<1	<1	<6
ML-10O	140'	1/15/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-10P	145'	1/15/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-10Q	150'	1/15/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-11B	75'	1/14/2003	15	<1	<1	<1	<2	<1	3	<6
ML-11C	80'	1/14/2003	17	<1	<1	<1	<2	<1	3	<6
ML-11D	85'	1/14/2003	500	2	<1	<1	<2	<1	160	2
ML-11E	90'	1/14/2003	1,200	<1	<1	<1	<2	<1	300	<6
ML-11F	95'	1/14/2003	2,800	<1	<1	<1	<2	<1	650	<6
ML-11G	100'	1/14/2003	380	<1	<1	<1	<2	<1	85	<6
ML-11H	105'	1/14/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-11I	110'	1/14/2003	280	<1	<1	<1	<2	<1	95	<6
ML-11J	115'	1/14/2003	1,400	<1	<1	<1	<2	<1	220	<6
ML-11K	120'	1/14/2003	48	<1	<1	<1	<2	<1	12	<6
ML-11L	125'	1/14/2003	15	<1	<1	<1	<2	<1	4	<6
ML-11M	130'	1/14/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-11N	135'	1/14/2003	76	<1	<1	<1	<2	<1	24	<6
ML-11O	140'	1/14/2003	26	<1	<1	<1	<2	<1	7	<6



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 EPA Method 8260  
**ROUND 3 (January 2003)**

Location	Depth (Feet)	Date Collected	MTBE	benzene	toluene	ethylbenzene	m + p xylene	o-xylene	tert-amyl-methyl-ether	Total BTEX
ML-11P	145'	1/14/2003	23	<1	<1	<1	<2	<1	7	<6
ML-11Q	150'	1/14/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-12B	75'	1/14/2003	4	<1	<1	<1	<2	<1	<1	<6
ML-12C	80'	1/14/2003	9	<1	<1	<1	<2	<1	2	<6
ML-12D	85'	1/14/2003	1,400	<1	<1	<1	<2	<1	170	<6
ML-12E	90'	1/14/2003	5,200	<1	<1	<1	<2	<1	840	<6
ML-12F	95'	1/14/2003	2,200	<1	<1	<1	<2	<1	430	<6
ML-12G	100'	1/14/2003	140	<1	<1	<1	<2	<1	87	<6
ML-12H	105'	1/14/2003	18	<1	<1	<1	<2	<1	3	<6
ML-12I	110'	1/14/2003	13	<1	<1	<1	<2	<1	3	<6
ML-12J	115'	1/14/2003	23	<1	<1	<1	<2	<1	11	<6
ML-12K	120'	1/14/2003	22	<1	<1	<1	<2	<1	8	<6
ML-12L	125'	1/14/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-12M	130'	1/14/2003	180	<1	<1	<1	<2	<1	29	<6
ML-12N	135'	1/14/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-12O	140'	1/14/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-12P	145'	1/14/2003	3	<1	<1	<1	<2	<1	<1	<6
ML-12Q	150'	1/14/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-13C	80'	1/13/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-13D	85'	1/13/2003	16	<1	<1	<1	<2	<1	3	<6
ML-13E	90'	1/13/2003	7,200	<1	<1	<1	<2	<1	1,400	<6
ML-13F	95'	1/13/2003	10,000	<1	<1	<1	<2	<1	1,800	<6
ML-13G	100'	1/13/2003	390	<1	<1	<1	<2	<1	95	<6
ML-13H	105'	1/13/2003	24	<1	<1	<1	<2	<1	6	<6
ML-13J	115'	1/13/2003	270	<1	<1	<1	<2	<1	56	<6
ML-13K	120'	1/13/2003	240	<1	<1	<1	<2	<1	44	<6
ML-13L	125'	1/13/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-13M	130'	1/13/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-13N	135'	1/13/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-13O	140'	1/13/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-13P	145'	1/13/2003	4	<1	<1	<1	<2	<1	<1	<6
ML-13Q	150'	1/13/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-14B	75'	1/13/2003	3	<1	<1	<1	<2	<1	<1	<6
ML-14C	80'	1/13/2003	3	<1	<1	<1	<2	<1	<1	<6

River Road & Flower Hill Drive  
 Yaphank, NY  
 Spill # 01-25275

Groundwater Analytical Results (ug/L)  
 Ecotest Laboratories, Inc.  
 EPA Method 8260  
**ROUND 3 (January 2003)**



Location	Depth (Feet)	Date Collected	MTBE	benzene	toluene	ethylbenzene	m + p xylene	o-xylene	tert-amyl-methyl-ether	Total BTEX
ML-14D	85'	1/13/2003	13	<1	<1	<1	<2	<1	3	<6
ML-14E	90'	1/13/2003	10	<1	<1	<1	<2	<1	2	<6
ML-14F	95'	1/13/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-14G	100'	1/13/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-14H	105'	1/13/2003	13	<1	<1	<1	<2	<1	3	<6
ML-14I	110'	1/13/2003	22	<1	<1	<1	<2	<1	5	<6
ML-14J	115'	1/13/2003	73	<1	<1	<1	<2	<1	22	<6
ML-14K	120'	1/13/2003	75	<1	<1	<1	<2	<1	23	<6
ML-14L	125'	1/13/2003	78	<1	<1	<1	<2	<1	24	<6
ML-14M	130'	1/13/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-14N	135'	1/13/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-14O	140'	1/13/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-14P	145'	1/13/2003	5	<1	<1	<1	<2	<1	1	<6
ML-14Q	150'	1/13/2003	5	<1	<1	<1	<2	<1	1	<6
ML-15A	65'	1/20/2003	7	<1	<1	<1	<2	<1	26	<6
ML-15B	70'	1/20/2003	8	<1	<1	<1	<2	<1	31	<6
ML-15C	75'	1/20/2003	11	<1	<1	<1	<2	<1	56	<6
ML-15D	80'	1/20/2003	4	<1	<1	<1	<2	<1	<1	<6
ML-15E	85'	1/20/2003	2	<1	<1	<1	<2	<1	<1	<6

River Road & Flower Hill Drive  
 Yaphank, NY  
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Groundwater Analytical Results (ug/L)  
 Ecotest Laboratories, Inc.  
 EPA Method 8260  
 ROUND 3 (January 2003)

Location	Depth (Feet)	Date Collected	MTBE	benzene	toluene	ethylbenzene	m + p xylene	o-xylene	tert-amyl-methyl-ether	Total BTEX
ML-15F	90'	1/20/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-15G	95'	1/20/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-15H	100'	1/20/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-15I	105'	1/20/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-15J	110'	1/20/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-15K	115'	1/20/2003	3	<1	<1	<1	<2	<1	17	<6
ML-15L	120'	1/20/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-15M	125'	1/20/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-16A	65'	1/20/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-16B	70'	1/20/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-16C	75'	1/20/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-16D	80'	1/20/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-16E	85'	1/20/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-16F	90'	1/20/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-16G	95'	1/20/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-16H	100'	1/20/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-16I	105'	1/20/2003	4	<1	<1	<1	<2	<1	4	<6
ML-16J	110'	1/20/2003	1	<1	<1	<1	<2	<1	<1	<6
ML-16K	115'	1/20/2003	3	<1	<1	<1	<2	<1	3	<6
ML-16L	120'	1/20/2003	13	<1	<1	<1	<2	<1	16	<6
ML-16M	125'	1/20/2003	3	<1	<1	<1	<2	<1	3	<6
ML-17A	65'	1/21/2003	40	<1	<1	<1	<2	<1	28	<6
ML-17B	70'	1/21/2003	38	<1	<1	<1	<2	<1	<1	<6
ML-17C	75'	1/21/2003	<1	<1	<1	<1	<2	<1	26	<6
ML-17D	80'	1/21/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-17E	85'	1/21/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-17F	90'	1/21/2003	2	<1	<1	<1	<2	<1	<1	<6
ML-17G	95'	1/21/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-17H	100'	1/21/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-17I	105'	1/21/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-17J	110'	1/21/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-17K	115'	1/21/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-17L	120'	1/21/2003	<1	<1	<1	<1	<2	<1	<1	<6
ML-17M	125'	1/21/2003	<1	<1	<1	<1	<2	<1	<1	<6















Office Road & Power Transmission  
 Yamunanagar  
 April 2013-2015

Government Analytical Institute  
 Government Laboratory, Mohi  
 171001, Bathinda District  
 ROM (IND) 2 (Separation) October

Year	Month	Day	Time	Location	Activity	Remarks	Signature
2013	10	01	08:00	Yamunanagar	At Work		
2013	10	02	08:00	Yamunanagar	At Work		
2013	10	03	08:00	Yamunanagar	At Work		
2013	10	04	08:00	Yamunanagar	At Work		
2013	10	05	08:00	Yamunanagar	At Work		
2013	10	06	08:00	Yamunanagar	At Work		
2013	10	07	08:00	Yamunanagar	At Work		
2013	10	08	08:00	Yamunanagar	At Work		
2013	10	09	08:00	Yamunanagar	At Work		
2013	10	10	08:00	Yamunanagar	At Work		
2013	10	11	08:00	Yamunanagar	At Work		
2013	10	12	08:00	Yamunanagar	At Work		
2013	10	13	08:00	Yamunanagar	At Work		
2013	10	14	08:00	Yamunanagar	At Work		
2013	10	15	08:00	Yamunanagar	At Work		
2013	10	16	08:00	Yamunanagar	At Work		
2013	10	17	08:00	Yamunanagar	At Work		
2013	10	18	08:00	Yamunanagar	At Work		
2013	10	19	08:00	Yamunanagar	At Work		
2013	10	20	08:00	Yamunanagar	At Work		
2013	10	21	08:00	Yamunanagar	At Work		
2013	10	22	08:00	Yamunanagar	At Work		
2013	10	23	08:00	Yamunanagar	At Work		
2013	10	24	08:00	Yamunanagar	At Work		
2013	10	25	08:00	Yamunanagar	At Work		
2013	10	26	08:00	Yamunanagar	At Work		
2013	10	27	08:00	Yamunanagar	At Work		
2013	10	28	08:00	Yamunanagar	At Work		
2013	10	29	08:00	Yamunanagar	At Work		
2013	10	30	08:00	Yamunanagar	At Work		
2013	10	31	08:00	Yamunanagar	At Work		

[Redacted Signature]