CHRISTINE O. GREGOIRE
Director

92-e47

Water Body No. WA-28-1020GW
(Segment No. 13-28-GW)

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
7171 Cleanwater Lane, Building 8, LH-14 • Olympia, Washington 98504-6814

March 12, 1992

TO: Megan White

FROM: Pam Marti PM

SUBJECT: Toftdahl Drum Site - Routine Monitoring Round IV

SUMMARY

The Toxics, Compliance, and Ground Water Investigations Section collected samples from four domestic water supply wells located in the area surrounding the former Toftdahl Drum Site on April 23, 1991. This sampling was part of the routine ground water monitoring conducted at the site since 1987. Low concentrations of lead, copper, and zinc were detected in the domestic wells. These concentrations were all well below state and federal drinking water standards and state ground water quality standards. Observed concentrations are consistent with previous sampling results; copper and zinc are the only analytes that are regularly detected in the private wells. These occurrences are probably related to well construction and plumbing materials.

OBJECTIVES

The Toxics, Compliance, and Ground Water Investigations Section was requested by the Toxics Cleanup Program (TCP) to monitor ground water at the Toftdahl Drum Site on a semi-annual basis as required by the federally mandated Record of Decision (ROD). Monitoring objectives are as follows:

1. Provide routine ground water monitoring data semi-annually for five years, ending in April 1991, then annually for ten years. (Annual sampling for priority pollutant metals was completed in October 1990. Annual sampling for all priority pollutants was completed in April 1991.)

2. Sample for all priority pollutants semi-annually to provide TCP with data that would possibly explain past sporadic detection of polyaromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), and semi-volatile organic compounds (BNAs); and

3. Determine future sampling needs at the completion of the semi-annual sampling.

SITE BACKGROUND

In the early 1970s, drums containing unknown quantities and types of waste were cleaned for resale on the Toftdahl property. The drums allegedly contained industrial wastes from a plywood manufacturing facility. It is estimated that between 100 and 200 drums were cleaned on the site. Approximately 50 drums contained residual wastes and could not be sold. These drums were buried on-site (see Figure 1). In 1985, the buried drums and wastes were removed. A Remedial Investigation conducted after drum removal concluded that no significant soil or ground water contamination existed. Low concentrations of PAHs, PCBs, VOCs, and BNAs were detected sporadically in nearby domestic water-supply wells. The ROD for the Toftdahl site requires ground water monitoring semi-annually for five years, then annually for ten years. In 1989, the site was delisted from the National Priorities List.

Geology of the area was defined in the Final Remedial Investigation (1986) as consisting of a complex sequence of discontinuous sediments, sedimentary rocks, and volcanic layers. Extensive weathering and/or hydrothermal alteration of the original rock units and deposits makes stratigraphic correlation uncertain. Generally, ground water occurs in coarser stratified sand, gravel and clayey gravel zones at various depths. Based on on-site well logs, two aquifer systems have been identified beneath the site, designated the shallow and deep aquifers. Both systems consist of several discontinuous water-bearing zones separated by layers of clay and silt. The shallow system ranges in depth from about 7 to 30 feet and the deep system ranges in depth from 69 to 98 feet. Water levels in some deep borings are within 50 feet of the ground surface indicating at least partially confining conditions. The four private wells sampled during the compliance monitoring are all drilled to the deep zone, and range in depth from 72 to 110 feet. Ground water in the deep system is generally thought to flow to the south. The Boone well is considered to be upgradient of the site and the Bedoff, Homala, and Kyle wells downgradient. Figure 2 shows the locations of the domestic wells sampled and the approximate ground water flow direction.

METHODS

Ground Water Sampling

Prior to sample collection, domestic wells were purged by allowing taps to run until pH, temperature, and specific conductance measurements stabilized. Samples were then collected from the tap nearest the well. Wells were sampled from upgradient to downgradient. All wells were sampled for volatile and semi-volatile organics, polychlorinated biphenyls (PCBs), pesticides, cyanide, and total priority pollutant metals. Volatile organic samples were preserved with two drops of 1:1 hydrochloric acid, and metal samples were preserved with 1 mL of nitric acid to a $pH < 2$. Chemical analyses, analytical methods, and detection limits are shown in Table 1.

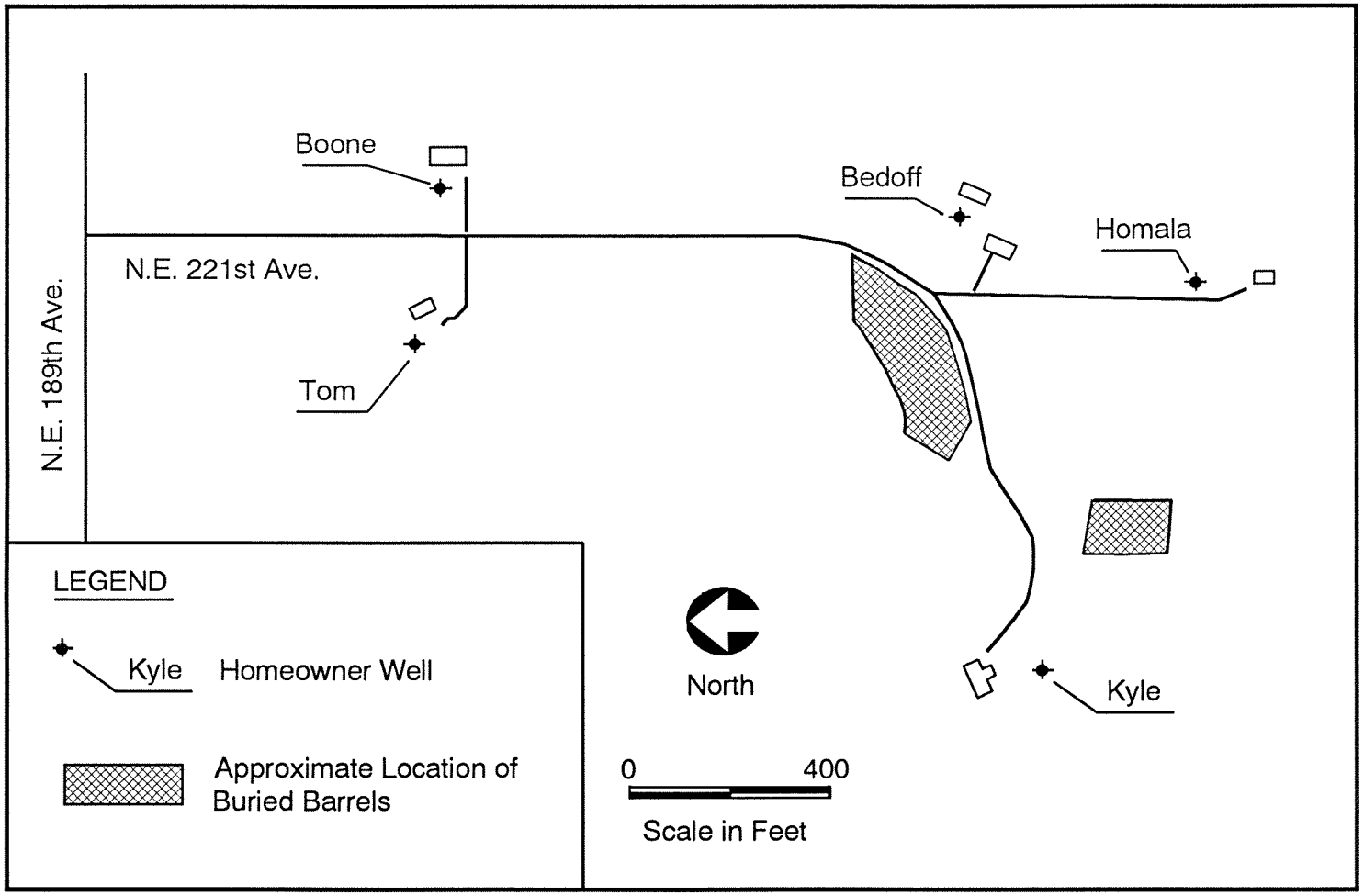

Figure 1: Location Map

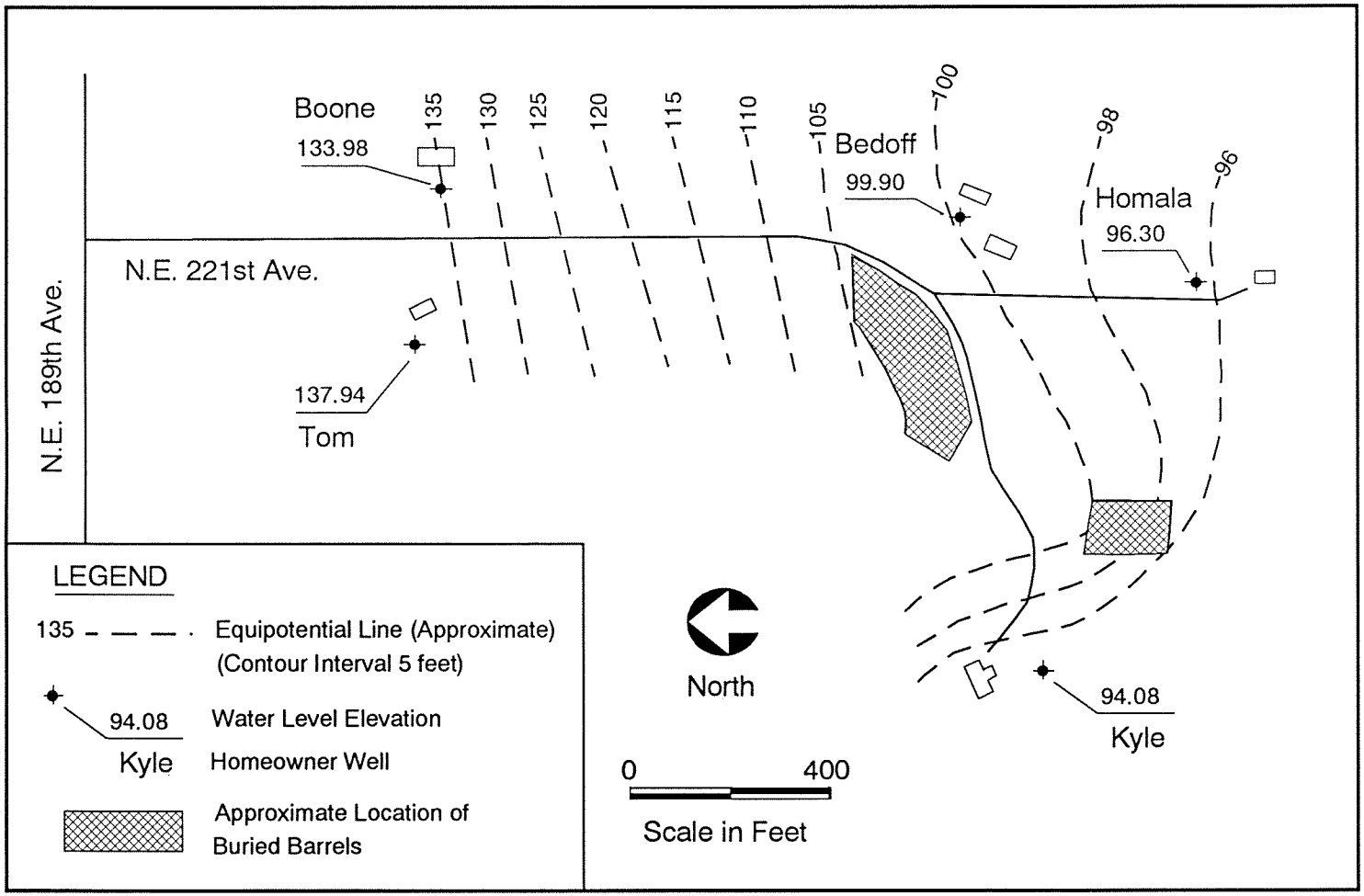

Figure 2: Potentiometric Surface Map for May 2, 1986 (Deep Aquifer)

Table 1: Parameters, Analytical Methods and Detection Limits

Analytical Parameters	Method	Detection Limit
Field Parameters:		
pH	Beckman pH Meter	0.1 Std Units
Specific Conductance	Beckman RC-15C Conductivity Bridge	10 μmhos/cm
Temperature	Precision Thermometer	0.1°C
Volatile Organics	#624	1.0 μg/L
Semivolatiles	#625	1.0 μg/L
Pesticides/PCBs	#608	0.01 μg/L
Metals (Total Recoverable):		
Antimony	#204.2	1.0 μg/L
Arsenic	#206.2	1.5 μg/L
Beryllium	#200.7	1.0 μg/L
Cadmium	#200.7	2.0 μg/L
Chromium	#200.7	5.0 μg/L
Copper	#200.7	2.0 μg/L
Lead	#239.2	1.0 μg/L
Mercury	#245.1	0.04 μg/L
Nickel	#200.7	10.0 μg/L
Selenium	#270.2	2.0 μg/L
Silver	#200.7	2.0 μg/L
Thallium	#279.1	2.5 μg/L
Zinc	#200.7	2.0 μg/L
Cyanide	#335.3	0.001 mg/L

U.S. EPA, 1983. Methods for the Chemical Analysis of Water and Wastes. Environmental Monitoring and Support Laboratory, March 1983.

Quality Assurance Samples

In addition to laboratory calibration standards and method blanks, field quality assurance samples consisted of a blind duplicate and a transport blank. A blind duplicate sample, labeled "Smith", was collected from the Kyle well. Duplicate samples are two sets of samples collected from a well at the same time and submitted to the laboratory with different identification.

Laboratory quality assurance results were evaluated by Stuart Magoon and Randy Knox of the Manchester Laboratory, and are included in Appendix A. In general, the quality of the results are good. Acetone was detected at or near the detection limit in the Boone (4 ppb), Bedoff (4 ppb), and Kyle (2 ppb) wells and is qualified with a "J" indicating an estimated concentration. Although the procedural blanks associated with these samples showed no detectable levels of acetone, acetone is a common laboratory contaminant. Mercury was detected in the transport blank at 0.50 μg/L. All spike recoveries were within acceptable limits of 75-125%. Relative percent difference (%RPD) for a spike and spike duplicate were within $\pm$20%. The relative percent difference of the blind duplicate samples (Kyle and Smith) were within $\pm$20% for duplicate analysis.

ANALYTICAL RESULTS

Analytical results are presented in Appendix A. Data were managed using the ENVIS database software package. Table 2 is a summary of field parameters and test results for sample Round IV conducted on April 23, 1991. Of the organic analytes tested for (volatile and semi-volatile compounds, cyanide, pesticides, and polychlorinated biphenyls) acetone was they only analyte detected at or near the detection limit in three of the four wells sampled and were qualified as estimates. Copper and zinc were detected at low concentrations in both the up- and downgradient wells. Lead was also detected in the Boone well (upgradient) and the Kyle well, but concentrations were near the detection limit and were qualified as estimates.

DISCUSSION AND CONCLUSIONS

As shown in Table 3, all detected concentrations for this round of sampling were well below the maximum contaminant levels (MCLs) established for state and federal drinking water supplies. Table 3 also summarizes results for all sample rounds to date.

Results from routine monitoring for 1987 to the present supports the Remedial Investigation (RI) findings that the degree of contamination at the site is probably small and does not appear to be a threat to public health or the environment via the ground water. Copper and zinc are the only analytes that are consistently detected in the wells, and concentrations are consistently higher in the upgradient Boone well than in the downgradient wells. These occurrences are probably related to well construction and plumbing materials. The presence of acetone at low concentrations during this round of sampling is probably related to laboratory contamination but

Table 2: Summary of Sampling Results from April 23, 1991 (ug/L unless otherwise specified)

Location	pH (s.u.)	Temperature (C)	Specific Conductance (umhos/cm)	Lead	Copper	Zinc	Mercury
Boone	6.91	10.8	109	1.2 J	120	178	0.04 u
Bedoff	7.15	10.5	120	20 u	58.4	5.5 J	0.04 u
Kyle	7.04	10.4	86	2.4 J	64.1	19 J	0.04 u
Smith (duplicate)	--	--	--	NAR	61.9	22	0.04 u
Homala	6.96	9.9	87	NAR	2 u	64.3	0.04 u
Transport	--	--	--	1 u	2 u	4 u	0.5
Maximum Contaminant Level (MCL)	--	--	--	50 *	1000 **	5000 **	2 *

J: Estimated Concentration
NAR: Requested but Not Analyzed
u: The compound was not detected at or above the associated numerical value.
--: Not Analyzed
*: Primary Maximum Contaminant Levels (MCLs) are based on chronic and acute health effects.
**: Secondary Maximum Contaminant Levels (MCL) are based on factors other than health effects.

Table 3: Summary of Sampling Results from September 1988 to April 1991

	Boone	Bedoff	Kyle	Smith	Homala	MCL's
September 12, 1988						
Copper	76	121	42	--	--	1000**
Zinc	389	6	52	--	--	5000**
Mercury	0.08 u	0.08 u	0.08 u	--	--	2.0*
October 17, 1989						
Copper	50	50	30	--	ND	1000**
Zinc	290	ND	20	--	20	5000**
Mercury	0.06 u	0.06 u	0.1 B	--	0.16 B	2.0*
April 11, 1990						
Copper	77.6	37.6	46.1	46.1	3.3 J	1000**
Zinc	160	5.0 u	31 B	22 JB	80.3	5000**
Mercury	0.05 J	0.08 J	0.04 J	0.02 u	0.04 J	2.0*
October 23, 1990						
Copper	83.9	45.9	25.8	28.4	2.0 u	1000**
Zinc	480	6.2 JB	12 JB	15 JB	34.0	5000**
Mercury	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	2.0*
Chromium	6 J	5.0 u	5.0 u	5.0 u	5.0 u	50*
Lead	1.1 J	1.0 u	1.0 u	1.0 u	1.5 J	50*
April 23, 1991						
Copper	120	58.4	64.1	61.9	2.0 u	1000**
Zinc	178	5.5 J	19 J	22	64.3	5000**
Mercury	0.04 u	0.04 u	0.04 u	0.04 u	0.04 u	2.0*
Lead	1.2 J	20 u	2.4 J	NAR	NAR	50*

--: Not analyzed
u: The compound was not detected at or above the associated numerical value.
ND: Not Detected
J: Estimated Value
B: Analyte was also found in an analytical blank.
*: Primary Maximum Contaminant Levels (MCLs) are based on chronic and acute health effects.
**: Secondary Maximum Contaminant Levels (MCLs) are based on factors other than health effect.

should be verified in subsequent sampling events. Other organic contaminants such as volatile and semi-volatile compounds, cyanide, pesticides, and PCBs, which occurred sporadically at very low concentrations during the initial phases of the site investigation have not been detected since the first routine sample round in 1987.

RECOMMENDATIONS

1. Based on past analytical results and the Record of Decision (ROD), routine monitoring should continue annually for the next 10 years. Due to the presence of acetone in Sample Round IV, volatile organics should be analyzed for at least the next two years. Selected metals (chromium, copper, lead and zinc) should be tested for the next ten years.

2. Three downgradient wells (Bedoff, Homala, and Kyle) and one upgradient well (Boone) should continue to be sampled.

3. At the completion of the ten year monitoring period, if no contaminants are observed other than copper and zinc, long-term monitoring should be discontinued.

cc: Bill Yake

Appendix A

WASHINGTON STATE DEPARTMENT OF ECOLOGY
ENVIRONMENTAL INVESTIGATIONS AND LABORATORY SERVICES
MANCHESTER LABORATORY

May 30, 1991

TO: Pamela Marti

FROM: Randy Knox RSK

SUBJECT: QA Summary on Metals Data

SAMPLE RECEIPT:

The samples from the Toftdahl Drum Site project were received by the Manchester Laboratory on 24/04/91 in good condition.

HOLDING TIMES:

All analyses were performed within the specified holding times for metals analysis (28 days for mercury, 180 days for all other metals).

INSTRUMENT CALIBRATION:

Instrument calibration was performed before each analytical run and checked by initial calibration verification standards and blanks. Continuing calibration standards and blanks were analyzed at a frequency of 10% during the run and again at the end of the analytical run. All initial and continuing calibration verification standards were within the control limits of +/- 10%. AA calibration gave correlation coefficients greater than the criteria of 0.995. A correlation coefficient of 0.995 or higher means that the calibration is acceptable.

PROCEDURAL BLANKS:

The procedural blanks associated with these samples showed no detectable levels of analytes.

SPIKED SAMPLE ANALYSIS:

Spiked sample and duplicate spiked sample analysis were performed on sample number(s) 178071. All spike recoveries were within the acceptable limits of +/- 25% for water sample analysis.

PRECISION DATA:

The duplicate results of the spiked and duplicate spiked sample were used to calculate precision related to the analysis of these

samples. The % RPD for all parameters was within the +/- 20% window for duplicate analysis. Most differences were small with the exception of chromium which was 19.6% and nickel which was 18.5 %. There is no need to qualify the data.

ICP SERIAL DILUTION ANALYSIS:

The levels of analytes were low enough that serial dilution was not appropriate.

SUMMARY:

The data generated by the analysis of the above referenced samples can be used without qualification.

If you have any questions about the results or the methods used to obtain these results please call me at SCAN 744-4737.

cc Bill Kammin

Project: DOE-008N TOFTDAHL DRUM SITE Officer: PZM Account: D3P01

Laboratory: Ecology, Manchester

Sample No: 91 178070 Description: BOONE Source: Drinking Water (At tap)

Begin Date: 91/04/23 :

all lab contract data

Metals - PP		Water-Total Result	Units
Arsenic	As-Total	1.5U	ug/l
Lead	Pb-Total	1.2J*	ug/l
Thallium	Tl-Total	2.5U	ug/l
Selenium	Se-Total	2.0U	ug/l
Mercury	Hg-Total	.04U	ug/l

Metals - PP Matrix Spike #1		Water-Total Result	Units
Mercury	Hg-Total	104	% Recov

Metals - PP Matrix Spike #2		Water-Total Result	Units
Mercury	Hg-Total	99	% Recov

Metals - ICP Scan		Water-Total Result	Units
Berylium	Be-Total	1.0U	ug/l
Cadmium	Cd-Total	2.0U	ug/l
Chromium	Cr-Total	5.0U	ug/l
Copper	Cu-Total	120 *	ug/l
Nickel	Ni-Total	10U	ug/l
Silver	Ag-Total	2.0U	ug/l
Zinc	Zn-Total	178 *	ug/l
Antimony	Sb-Total	30U	ug/l

Contract Lab Program		Water-Total Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP
Cyanide		REQ	CLP

(Sample Complete)

13:08:03

Washington State Department of Ecology
Sample/Project Analysis Results

Project: DOE-008N TOFTDAHL DRUM SITE

Officer: PZM Account: D3P01

Laboratory: Ecology, Manchester

Sample No: 91 178071 Description: BEDOFF Source: Drinking Water (At tap)

Begin Date: 91/04/23 :

Metals - PP		Water-Total Result	Units
Arsenic	As-Total	1.5U	ug/l
Lead	Pb-Total	1.0U	ug/l
Thallium	Tl-Total	2.5U	ug/l
Selenium	Se-Total	2.0U	ug/l
Mercury	Hg-Total	.04U	ug/l

Metals - ICP Scan		Water-Total Result	Units
Berylium	Be-Total	1.0U	ug/l
Cadmium	Cd-Total	2.0U	ug/l
Chromium	Cr-Total	5.0U	ug/l
Copper	Cu-Total	58.4 *	ug/l
Lead	Pb-Total	20U	ug/l
Nickel	Ni-Total	10U	ug/l
Silver	Ag-Total	2.0U	ug/l
Zinc	Zn-Total	5.5J*	ug/l
Antimony	Sb-Total	30U	ug/l

Metals - ICP Scan Matrix Spike #1		Water-Total Result	Units
Berylium	Be-Total	98	% Recov
Cadmium	Cd-Total	93	% Recov
Chromium	Cr-Total	79	% Recov
Copper	Cu-Total	102	% Recov
Lead	Pb-Total	NAR	% Recov
Nickel	Ni-Total	82	% Recov
Silver	Ag-Total	95	% Recov
Zinc	Zn-Total	98	% Recov
Antimony	Sb-Total	100	% Recov

Metals - ICP Scan Matrix Spike #2		Water-Total Result	Units
Berylium	Be-Total	98	% Recov
Cadmium	Cd-Total	96	% Recov
Chromium	Cr-Total	96	% Recov
Copper	Cu-Total	102	% Recov
Lead	Pb-Total	NAR	% Recov
Nickel	Ni-Total	98	% Recov
Silver	Ag-Total	100	% Recov

Metals - ICP Scan *** Continued *** Matrix Spike #2		Water-Total Result	Units
Zinc	Zn-Total	97	% Recov
Antimony	Sb-Total	97	% Recov

Contract Lab Program		Water-Total Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP
Cyanide		REQ	CLP

(Sample Complete)

Sample/Project Analysis Results

Project: DOE-008N TOFTDAHL DRUM SITE Officer: PZM Account: D3P01

Laboratory: Ecology, Manchester

Sample No: 91 178072 Description: HOMALA Source: Drinking Water (At tap)

Begin Date: 91/04/23 :

Metals - PP		Water-Total Result	Units
Arsenic	As-Total	1.5U	ug/l
Lead	Pb-Total	1.0U	ug/l
Thallium	Tl-Total	2.5U	ug/l
Selenium	Se-Total	2.0U	ug/l
Mercury	Hg-Total	.04U	ug/l

Metals - ICP Scan		Water-Total Result	Units
Berylium	Be-Total	1.0U	ug/l
Cadmium	Cd-Total	2.0U	ug/l
Chromium	Cr-Total	5.0U	ug/l
Copper	Cu-Total	2.0U	ug/l
Lead	Pb-Total	NAR	ug/l
Nickel	Ni-Total	10U	ug/l
Silver	Ag-Total	2.0U	ug/l
Zinc	Zn-Total	64.3 *	ug/l
Antimony	Sb-Total	30U	ug/l

Contract Lab Program		Water-Total Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP
Cyanide		REQ	CLP

(Sample Complete)

Project: DOE-008N TOFTDAHL DRUM SITE

Officer: PZM Account: D3P01

Laboratory: Ecology, Manchester

Sample No: 91 178073 Description: KKYLE

Source: Drinking Water (At tap)

Begin Date: 91/04/23 :

Metals - PP		Water-Total Result	Units
Arsenic	As-Total	1.5U	ug/l
Lead	Pb-Total	2.4J*	ug/l
Thallium	Tl-Total	2.5U	ug/l
Selenium	Se-Total	2.0U	ug/l
Mercury	Hg-Total	.04U	ug/l

Metals - ICP Scan		Water-Total Result	Units
Berylium	Be-Total	1.0U	ug/l
Cadmium	Cd-Total	2.0U	ug/l
Chromium	Cr-Total	5.0U	ug/l
Copper	Cu-Total	64.1 *	ug/l
Lead	Pb-Total	NAR	ug/l
Nickel	Ni-Total	10U	ug/l
Silver	Ag-Total	2.0U	ug/l
Zinc	Zn-Total	19J*	ug/l
Antimony	Sb-Total	30U	ug/l

Contract Lab Program		Water-Total Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP
Cyanide		REQ	CLP

(Sample Complete)

Project: DOE-008N TOFTDAHL DRUM SITE Officer: PZM Account: D3P01

Laboratory: Ecology, Manchester

Sample No: 91 178074 Description: SMITH Source: Drinking Water (At tap)

Begin Date: 91/04/23 :

Metals - PP		Water-Total Result	Units
Arsenic	As-Total	1.5U	ug/l
Lead	Pb-Total	1.0U	ug/l
Thallium	Tl-Total	2.5U	ug/l
Selenium	Se-Total	2.0U	ug/l
Mercury	Hg-Total	.04U	ug/l

Metals - ICP Scan		Water-Total Result	Units
Berylium	Be-Total	1.0U	ug/l
Cadmium	Cd-Total	2.0U	ug/l
Chromium	Cr-Total	5.0U	ug/l
Copper	Cu-Total	61.9 *	ug/l
Lead	Pb-Total	NAR	ug/l
Nickel	Ni-Total	10U	ug/l
Silver	Ag-Total	2.0U	ug/l
Zinc	Zn-Total	22 *	ug/l
Antimony	Sb-Total	30U	ug/l

Contract Lab Program		Water-Total Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP
Cyanide		REQ	CLP

(Sample Complete)

Project: DOE-008N TOFTDAHL DRUM SITE

Officer: PZM Account: D3P01

Laboratory: Ecology, Manchester

Sample No: 91 178075 Description: TRANSPOR

Source: Water (General)

Begin Date: 91/04/23 :

Metals - PP		Water-Total Result	Units
Arsenic	As-Total	1.5U	ug/l
Lead	Pb-Total	1.0U	ug/l
Thallium	Tl-Total	2.5U	ug/l
Selenium	Se-Total	2.0U	ug/l
Mercury	Hg-Total	.50 *	ug/l

Metals - PP Matrix Spike #1		Water-Total Result	Units
Arsenic	As-Total	103	% Recov
Lead	Pb-Total	99	% Recov
Thallium	Tl-Total	120	% Recov
Selenium	Se-Total	95	% Recov

Metals - PP Matrix Spike #2		Water-Total Result	Units
Arsenic	As-Total	105	% Recov
Lead	Pb-Total	104	% Recov
Thallium	Tl-Total	122	% Recov
Selenium	Se-Total	96	% Recov

Metals - ICP Scan		Water-Total Result	Units
Berylium	Be-Total	1.0U	ug/l
Cadmium	Cd-Total	2.0U	ug/l
Chromium	Cr-Total	5.0U	ug/l
Copper	Cu-Total	2.0U	ug/l
Lead	Pb-Total	NAR	ug/l
Nickel	Ni-Total	10U	ug/l
Silver	Ag-Total	2.0U	ug/l
Zinc	Zn-Total	4.0U	ug/l
Antimony	Sb-Total	30U	ug/l

Contract Lab Program		Water-Total Result	Units
B/N/Acid	GC/MS	REQ	CLP
VOA	GC/MS	REQ	CLP
P/PCBs	GC	REQ	CLP

(Sample Complete)

Project: DOE-008N TOFTDAHL DRUM SITE Officer: PZM Account: D3P01

Blank ID: PB 19.36

Metals - PP Blank #1		Water-Total Result	Units
Arsenic	As-Total	1.5U	ug/l
Lead	Pb-Total	1.0U	ug/l
Thallium	Tl-Total	2.5U	ug/l
Selenium	Se-Total	2.0U	ug/l

Metals - ICP Scan Blank #1		Water-Total Result	Units
Berylium	Be-Total	1.0U	ug/l
Cadmium	Cd-Total	2.0U	ug/l
Chromium	Cr-Total	5.0U	ug/l
Copper	Cu-Total	2.0U	ug/l
Lead	Pb-Total	NAR	ug/l
Nickel	Ni-Total	10U	ug/l
Silver	Ag-Total	2.0U	ug/l
Zinc	Zn-Total	4.0U	ug/l
Antimony	Sb-Total	30U	ug/l

(Sample Complete)

WASHINGTON STATE DEPARTMENT OF ECOLOGY
MANCHESTER ENVIRONMENTAL LABORATORY
Manchester, Washington 98353

DATA REVIEW

By:	Craig Smith, Chemist		
PROJECT:	Toftdahl		
Lab Sample No:	178070 - 178074	**Report Date:**	06-11-91

	Collected	To Manchester	Analyzed
HOLDING TIME:	04-23	04-24	5-8-91 CN

These times are within the U.S. EPA limits for analysis from the date of collection.

SAMPLE DATA:

The QA/QC is acceptable.

The data may be used without qualification.

ANALYTICAL
RESOURCES
INCORPORATED

Analytical
Chemists &
Consultants

333 Ninth Ave. North
Seattle, WA 98109-5187
(206) 621-6490
(206) 621-7523 (FAX)

Final Report
Laboratory Analysis of Selected Parameters

Matrix: WATER

Project No: D3P01/TOFTDAHE
QC Report No: WDOE-8155
Date Received: 4/25/91

Data Release Authorized: [signature]
Report Prepared : May 8, 1991 (mjt)

Sample Data:

Lab ID		Sample Number	Analysis Date 5/3/91 TOT-CN (mg /L)
8155	A	178070	< 0.010
8155	B	178071	< 0.010
8155	C	178072	< 0.010
8155	D	178073	< 0.010
8155	E	178074	< 0.010

Method Blank Analysis:

Sample Number	TOT-CN (mg /L)
Method Blank 1	< 0.010
Detection Limit:	0.010

Check Standard Analysis:

Check Standard	TOT-CN (mg /L)	*Cyanide Standards*	
Measured Value	0.049	0.077	0.833
'True' Value	0.051	0.086	0.858
% Recovery	96.08%	89.74%	97.09%

Duplicate Analysis:

	TOT-CN (mg /L)
Original	< 0.010
Duplicate	< 0.010
RPD	-

Spike Analysis:

Original	< 0.010
Spike	0.865
Spk Level	0.858
% Recovery	100.82%

Comments:

State of Washington Department of Ecology
Manchester Environmental Laboratory
7411 Beach Dr. East Port Orchard WA. 98366

Data Review
June 29, 1991

Project: Toftdahl Drum

Samples: 178070 178071 178072 178073 178074 178075

Laboratory: Laucks Testing Laboratory 4477

By: Stuart Magoon

Case Summary

These analyses were reviewed for qualitative and quantitative accuracy, validity, and usefulness.

There is no need to assimilate the "dilution factor" or "sample wt/vol" into the final values reported; these calculations have already been figured into the reported values.

Note that if this data is transferred into some other format the compounds that have been tentatively identified (TIC) should have an "NJ" qualifier added to the result. The "NJ" qualifier is used to indicate that the compound has been tentatively identified and the reported value is an estimated quantity.

DATA QUALIFIER DEFINITIONS

U - The compound was not detected at or above the associated numerical value.

J - The compound was detected but the value is an estimated quantity.

UJ - The analyte was not detected at or above the reported estimated level.

NR - Not Reported. These compounds are added as part of the Matrix Spike solution.

NJ - There is evidence that the analyte is present. The associated numerical value is an estimate of the amount of this compound present.

Volatiles

Sample	Date Collect	Date Extd	Date Anlz	#Days ext anal	#Days Collect to anal
178070	4/23	NA	4/30	NA	7 of 14
178071	4/23	NA	4/30	NA	7 of 14
178072	4/23	NA	4/30	NA	7 of 14
178073	4/23	NA	4/30	NA	7 of 14
178074	4/23	NA	4/30	NA	7 of 14
178075	4/23	NA	4/30	NA	7 of 14

These samples were analyzed within the SW-846 recommended holding time.

Surrogates:

Surrogate recoveries for these samples, the matrix spikes, and the associated method blank are reasonable, acceptable and within the QC limits.

Matrix Spike/Matrix Spike Duplicate (MS/MSD):

Matrix spike/spike duplicate recovery and precision data are reasonable and acceptable, and within QC limits.

Sample Data:

This data is acceptable for use.

Semivolatiles (BNA)

Sample	Date Collect	Date Extd	Date Anlz	#Days ext anal	#Days Collect to anal
178070	4/23	4/26	5/2	3 of 7	6 of 40
178071	4/23	4/26	5/2	3 of 7	6 of 40
178072	4/23	4/26	5/2	3 of 7	6 of 40
178073	4/23	4/26	5/2	3 of 7	6 of 40
178074	4/23	4/26	5/2	3 of 7	6 of 40

These samples were extracted and analyzed within the SW-846 recommended holding time.

Surrogates:

Surrogate recoveries for these samples, the matrix spikes, and the associated method blank are reasonable, acceptable and within QC limits.

Matrix Spike/Matrix Spike Duplicate (MS/MSD):

Matrix spike/spike duplicate recovery and precision data are acceptable and within QC limits.

Sample Data:

This data is acceptable for use. Note that data qualifiers may modify the usefulness of the individual values.
Sample 178075 was inadvertantly not analyzed. This sample was a Transport Blank. Fortunately samples 178070, 178071, and 178072 did not contain any detectable target analytes and can serve the same purpose as a transport blank.

Pesticides and PCB's

Sample	Date Collect	Date Extd	Date Anlz	#Days ext anal	#Days Collect to anal
178070	4/23	4/29	5/4	6 of 7	5 of 40
178071	4/23	4/29	5/4	6 of 7	5 of 40
178072	4/23	4/29	5/4	6 of 7	5 of 40
178073	4/23	4/29	5/4	6 of 7	5 of 40
178074	4/23	4/29	5/4	6 of 7	5 of 40

These samples were extracted and analyzed within the SW-846 recommended holding time.

Surrogates:

Surrogate recoveries for these samples, the matrix spikes, and the associated method blank are reasonable, acceptable and within QC limits.

Matrix Spike/Matrix Spike Duplicate (MS/MSD):

Matrix spike/spike duplicate recovery and precision data are acceptable and within QC limits.

Sample Data:

This data is acceptable for use. Note that data qualifiers may modify the usefulness of the individual values.
Sample 178075 was inadvertantly not analyzed. This sample was a Transport Blank. Fortunately none of the samples analyzed contained any detectable target analytes.

LAUCKS TESTING LABORATORIES
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Seattle, WA 98108

TO: Washington State Department of Ecology
Project Name: Toftdahl Drum
Laboratory No.: 9104477
Date of this report: June 17, 1991

GENERAL REMARKS:

The following samples were analyzed under the above lab number:

Client Sample I.D.	LTL Sample Number	Analysis Request
178070	9104477-01	VOA/ABN/PEST/PCB
178071	9104477-02	VOA/ABN/PEST/PCB
178072	9104477-03	VOA/ABN/PEST/PCB
178073	9104477-04	VOA/ABN/PEST/PCB
178074	9104477-05	VOA/ABN/PEST/PCB
178075 TB	9104477-06	VOA

When completing forms created through the CLP software, every attempt is made to use both your sample IDs as well as the laboratory sample IDs on the forms. The forms have varied default sizes to their sample identification fields, and are not amenable to alteration or editing. When it is not possible to use your complete sample ID, because of field length limitations, Laucks will use as much of your ID as will fit, beginning from the RIGHT hand side of the sample ID number. In addition, ALL forms will contain our sample IDs, which can be cross referenced from the table above.

Many of the CLP-package forms will include the words "EPA Sample No.," or some variation of this, which again cannot be edited. Where a reference is made to the EPA, you may take this to mean more generally, "the client". These data are not part of an actual EPA case.

GENERAL REMARKS ON ORGANIC ANALYSES:

GC/MS Fractions:

Compounds may be called out as hits on the computerized printout. However, if they are not reported on the OADS (sample results) form, the mass spectral data have been manually searched and the compounds have been eliminated as hits based on this search.

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ABN Fraction:

The data system which is used to perform the searches for ABN Tentatively Identified Compounds (TICs) is set with a threshold of 5% fit for TICs. In some cases less than three compounds in the NBS library pass this threshold setting. When this occurs there will not be spectra and fits for the associated unknown compound. This will be called out on the first page of the data system report and will be reflected in the spectra which are drawn; i.e., there will be less than three best-fit spectra. This generally has one of two meanings. First, that there are no compounds passing the fit criteria; or, second, that one or more compounds pass the fit criteria. It is our opinion that the threshold setting for fit is set low enough that all reasonable and possible hits will be reported (up to a maximum of three).

Two optional ABN surrogates are used for recovery purposes, recoveries for one of which (2-Bromophenol) are listed under "Other" on Form II. The second optional surrogate is d10-Azobenzene. The recoveries for samples in this set are as listed:

Sample	% Recovery
SBLKL1	69
178070	70
178070MS	70
178070MSD	72
178071	70
178072	67
178073	74
178074	69

Volatile Fraction:

All volatile analyses were performed using a DB-624 megabore capillary. The elution order and retention times differ from those stated for packed column analysis in the U.S.E.P.A.'s Statement of Work for organic CLP analyses. Listed below are the correct elution order and the internal standard with which each compound is associated.

Bromochloromethane(IS)	1,4-Difluorobenzene(IS)	d5-Chlorobenzene(IS)
Chloromethane	Benzene	4-Methyl-2-Pentanone
Vinyl Chloride	Trichloroethylene	Toluene
Bromomethane	1,2-Dichloropropane	d8-Toluene(SURR)

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ABN Fraction:

The acid and base-neutral fractions of all samples in this case were combined prior to the solvent reduction step, so that final extract volume for all samples was 1.0 ml, rather than the default 2.0 mls. Thus, CRQLS reported for all samples are lower by a factor of two.

Pesticide/PCB Fraction:

Initial Linearity Verification Standards:

All of the compounds were above the 15% RSD control limit in the confirmation column.

Continuing Calibration Verification Standards:

In the first and second CCV of the quantitation column several of the analytes and the surrogates DBC and DCB had a percent deviation above the 15% control limit.

In the first CCV of the confirmation run all of the analytes and surrogates exceeded the 20% deviation control limit. In the second CCV of the confirmation column all of the analytes and the surrogates DBC, DCB, and Isodrin were above the 20% deviation control limit.

It is noted that there is considerable variance in the CCV standards. Because these standards exceeded the upper control limit and there was no detection of pesticides or PCBs in any of the samples, no further action was required.

Pesticide Breakdown Evaluation:

In the quantitation column the total breakdown exceeded the 15% control limit in all three of the EVAL B standards. The first and third EVAL B standards were above the 20% control limit in the confirmation run.

Sample Results:

No pesticides or PCBs were detected in any of the samples. All surrogate recoveries as well as MS/MSD results were in control.

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Chloroethane
1,1-Dichloroethylene
Acetone
Carbon Disulfide
Methylene Chloride
Trans-1,2-Dichloroethylene
1,1-Dichloroethane
Vinyl Acetate
Cis-1,2-Dichloroethylene
2-Butanone
Chloroform
1,1,1-Trichloroethane
Carbon Tetrachloride
1,2-Dichloroethane
d4-1,2-Dichloroethane(SURR)
Bromodichloromethane
Cis-1,3-Dichloropropene
Trans-1,3-Dichloropropene
1,1,2-Trichloroethane
Tetrachloroethylene
2-Hexanone
Dibromochloromethane
Chlorobenzene
Ethylbenzene
Styrene
M,P-Xylene
O-xylene
Bromoform
1,1,2,2-Tetrachloroethane
Bromofluorobenzene(SURR)

The analytes listed above were assigned to their respective internal standards on the basis of relative retention time (RRT). For all compounds except cis-1,3-dichloropropene, the RRTs fall between 0.8 and 1.2. Cis-1,2-dichloropropene was the only compound to fall outside of this range, and was assigned to the internal standard closest to its retention time.

Separation of cis- and trans- dichloroethylene isomers is achievable on a DB-624 megabore capillary column. These compounds have been found to coelute on the packed column specified in the U.S.E.P.A.'s Statement of Work. When these isomers are found in a sample, they will be reported as total-1,2-dichloroethylene.

A holding blank was analyzed in the same QC period with the samples from this set. The raw data were not submitted with the case. It will be held on file at Laucks should future review be necessary.

Pesticide/PCB Fraction:

The compound isodrin was added as a second, optional surrogate in the pesticide/PCB analyses. Recovery values are reported on the appropriate FORM II - PEST.

SPECIFIC REMARKS ON ORGANIC ANALYSES:

VOA Fraction:

No comments.

2A
WATER VOLATILE SURROGATE RECOVERY

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.: _____ SAS No.: _____ SDG No.: _____

	DOE SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	VBLKJ1	99	98	98		0
02	178070	97	94	94		0
03	178071	100	98	99		0
04	178071MS	99	99	96		0
05	178071MSD	105	103	105		0
06	178072	107	107	105		0
07	178073	105	101	102		0
08	178074	104	101	104		0
09	178075TB	103	101	102		0
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	QC LIMITS
S1 (TOL) = Toluene-d8	(88-110)
S2 (BFB) = Bromofluorobenzene	(86-115)
S3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II VOA-1

1/87 Rev.

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3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Laucks Testing Labs Contract. _____

Lab Code: LAUCKS Case No.:_____ SAS No.: _____ SDG No.:_____

Matrix Spike - DOE Sample No.: 178071

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.000	0.000	43.100	86	61-145
Trichloroethene	50.000	0.000	51.000	102	71-120
Benzene	50.000	0.000	54.600	109	76-127
Toluene	50.000	0.000	54.500	109	76-125
Chlorobenzene	50.000	0.000	48.500	97	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50.000	43.000	86	0	14	61-145
Trichloroethene	50.000	49.500	99	3	14	71-120
Benzene	50.000	52.600	105	4	11	76-127
Toluene	50.000	53.600	107	2	13	76-125
Chlorobenzene	50.000	48.100	96	1	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD:0 out of 5 outside limits
Spike Recovery:0 out of 10 outside limits

Comments: _____

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: Laucks Testing Labs Contract: _____

Lab Code. LAUCKS Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID: B0430MVOWJ1 Lab Sample ID: B0430MVOWJ1

Date Analyzed: 04/30/91 Time Analyzed: 11:29

Matrix: (soil/water) WATER Level:(low/med) LOW

Instrument ID: 1020J

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	DOE SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	178070	04477-01	04477V01	13:18
02	178071	04477-02	04477V02	13:54
03	178071MS	04477-02MS	04477V02MS	14:31
04	178071MSD	04477-02MSD	04477V02MSD	15:09
05	178072	04477-03	04477V03	15:47
06	178073	04477-04	04477V04	16:24
07	178074	04477-05	04477V05	17:20
08	178075TB	04477-06	04477V06	17:57
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COMMENTS: _____

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

DOE SAMPLE NO.
178070

Lab Name: Laucks Testing Labs Contract: _____

Lab Code. LAUCKS Case No.:_____ SAS No. _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: 04477-01

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V01

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	~~5~~	~~U~~
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DOE SAMPLE NO.

178070

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No.: _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: 04477-01

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V01

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

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

DOE SAMPLE NO.

178071

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No. _____ SDG No.._____

Matrix: (soil/water)WATER Lab Sample ID: 04477-02

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V02

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DOE SAMPLE NO.
178071

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No.: _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: 04477-02

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V02

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC 1/87 Rev

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VOLATILE ORGANICS ANALYSIS DATA SHEET

DOE SAMPLE NO.

178072

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.: _____ SAS No. _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 04477-03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 04477V03

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec. __ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DOE SAMPLE NO.

178072

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No.: _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: 04477-03

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V03

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

DOE SAMPLE NO.

178073

Lab Name. Laucks Testing Labs Contract. _____

Lab Code: LAUCKS Case No.._____ SAS No. _____ SDG No.._____

Matrix: (soil/water)WATER Lab Sample ID: 04477-04

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V04

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

000050

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DOE SAMPLE NO.
178073

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No.: _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: 04477-04

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V04

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

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

DOE SAMPLE NO.

178074

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.: _____ SAS No. _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 04477-05

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: 04477V05

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec. __ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DOE SAMPLE NO.

178074

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No.: _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: 04477-05

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V05

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

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

DOE SAMPLE NO.

178075TB

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No. _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: 04477-06

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V06

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DOE SAMPLE NO.

178075TB

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No.: _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: 04477-06

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V06

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

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

DOE SAMPLE NO.
VBLKJ1

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No. _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: B0430MVOWJ1

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: B0430MVOWJ1

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DOE SAMPLE NO.

VBLKJ1

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No.: _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: B0430MVOWJ1

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: B0430MVOWJ1

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

DOE SAMPLE NO.

178071MS

Lab Name. Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No. _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: 04477-02MS

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V02MS

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	3	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	~~5~~	~~U~~ NR
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	~~5~~	~~U~~ NR
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	~~5~~	~~U~~ NR
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	~~5~~	~~U~~ NR
108-90-7	Chlorobenzene	~~5~~	~~U~~ NR
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

NR = Not Reported

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

DOE SAMPLE NO.

178071MSD

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:_____ SAS No. _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: 04477-02MSD

Sample wt/vol: 5.0 (g/ml)ML Lab File ID: 04477V02MSD

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ Date Analyzed: 04/30/91

Column: (pack/cap) CAP Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q	
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	5	U	
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	5	U	
75-35-4	1,1-Dichloroethene	~~5~~	~~U~~ NR	
75-34-3	1,1-Dichloroethane	5	U	
540-59-0	1,2-Dichloroethene (total)	5	U	
67-66-3	Chloroform	5	U	
107-06-2	1,2-Dichloroethane	5	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	5	U	
56-23-5	Carbon Tetrachloride	5	U	
108-05-4	Vinyl Acetate	10	U	
75-27-4	Bromodichloromethane	5	U	
78-87-5	1,2-Dichloropropane	5	U	
10061-01-5	cis-1,3-Dichloropropene	5	U	
79-01-6	Trichloroethene	~~5~~	~~U~~ NR	
124-48-1	Dibromochloromethane	5	U	
79-00-5	1,1,2-Trichloroethane	5	U	
71-43-2	Benzene	~~5~~	~~U~~ NR	
10061-02-6	Trans-1,3-Dichloropropene	5	U	
75-25-2	Bromoform	5	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	5	U	
79-34-5	1,1,2,2-Tetrachloroethane	5	U	
108-88-3	Toluene	~~5~~	~~U~~ NR	
108-90-7	Chlorobenzene	~~5~~	~~U~~ NR	
100-41-4	Ethylbenzene	5	U	
100-42-5	Styrene	5	U	
1330-20-7	Xylene (total)	5	U	

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.: 04477 SAS No.: _____ SDG No.: _____

	SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	OTHER	TOT OUT
01	SBLKL1	65	64	61	33	44	71	57	0
02	178070	69	67	65	34	48	70	60	0
03	178070MS	71	67	61	35	48	70	62	0
04	178070MSD	71	69	63	35	49	73	63	0
05	178071	69	68	64	33	47	70	60	0
06	178072	67	67	62	32	46	65	58	0
07	178073	70	71	64	34	49	73	62	0
08	178074	67	69	64	33	47	69	58	0
09									
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		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(35-114)
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)
S3 (TPH)	= Terphenyl-d14	(33-141)
S4 (PHL)	= Phenol-d5	(10-94)
S5 (2FP)	= 2-Fluorophenol	(21-100)
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II SV-1 1/87 Rev.

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Laucks Testing Labs Contract:_____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.:_____

Matrix Spike - Sample No.: 178070

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
Phenol	200	0	65	32	12- 89
2-Chlorophenol	200	0	127	64	27-123
1,4-Dichlorobenzene	100	0	61	61	36- 97
N-Nitroso-di-n-prop.(1)	100	0	76	76	41-116
1,2,4-Trichlorobenzene	100	0	66	66	39- 98
4-Chloro-3-methylphenol	200	0	118	59	23- 97
Acenaphthene	100	0	65	65	46-118
4-Nitrophenol	200	0	63	32	10- 80
2,4-Dinitrotoluene	100	0	72	72	24- 96
Pentachlorophenol	200	0	134	67	9-103
Pyrene	100	0	73	73	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	200	68	34	5	42	12- 89
2-Chlorophenol	200	133	66	4	40	27-123
1,4-Dichlorobenzene	100	65	65	6	28	36- 97
N-Nitroso-di-n-prop.(1)	100	80	80	6	38	41-116
1,2,4-Trichlorobenzene	100	68	68	4	28	39- 98
4-Chloro-3-methylphenol	200	126	63	6	42	23- 97
Acenaphthene	100	68	68	4	31	46-118
4-Nitrophenol	200	67	34	6	50	10- 80
2,4-Dinitrotoluene	100	76	76	6	38	24- 96
Pentachlorophenol	200	138	69	3	50	9-103
Pyrene	100	77	77	5	31	26-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD:0 out of 11 outside limits
Spike Recovery:0 out of 22 outside limits

Comments: _____
_____

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.: 04477 SAS No.: _____ SDG No.: _____

Lab File ID: >LE025::L8 Lab Sample ID: B0426MSVWLE

Date Extracted: 04/26/91 Extraction:(SepF/Cont/Sonc) SEPF

Date Analyzed: 05/02/91 Time Analyzed: 13:19

Matrix: (soil/water) WATER Level:(low/med) LOW

Instrument ID: 5970L

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	178070	04477-01	>LE026::L8	05/02/91
02	178070MS	04477-01MS	>LE027::L8	05/02/91
03	178070MSD	04477-01MSD	>LE028::L8	05/02/91
04	178071	04477-02	>LE029::L8	05/02/91
05	178072	04477-03	>LE030::L8	05/02/91
06	178073	04477-04	>LE031::L8	05/02/91
07	178074	04477-05	>LE032::L8	05/02/91
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COMMENTS: _____

FORM IV SV 1/87 Rev.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178070-

Lab Name: Laucks Testing Labs Contract:_____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-01

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE026::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	25	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178070

Lab Name: Laucks Testing Labs Contract:_____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-01

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE026::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

17S070

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-01

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE026::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1.0

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178071

Lab Name: Laucks Testing Labs Contract:_____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-02

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE029::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	25	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178071

Lab Name: Laucks Testing Labs Contract:_____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-02

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE029::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

178071

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-02

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE029::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178072

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-03

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE030::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	25	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178072

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-03

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE030::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

178072

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-03

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE030::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178073

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-04

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE031::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	25	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178073

Lab Name: Laucks Testing Labs Contract:_____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-04

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE031::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from diphenylamine

SAMPLE NO.

178073

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.:_____

Matrix: (soil/water)WATER Lab Sample ID: 04477-04

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE031::LB

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1.0

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

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178074

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-05

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE032::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	25	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178074

Lab Name: Laucks Testing Labs Contract:_____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-05

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE032::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	J
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

178074

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-05

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE032::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178070MSD

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-01MSD

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE028::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
108-95-2	Phenol	~~5:U~~ NR	
111-44-4	bis(2-Chloroethyl)ether	5:U	
95-57-8	2-Chlorophenol	~~5:U~~ NR	
541-73-1	1,3-Dichlorobenzene	5:U	
106-46-7	1,4-Dichlorobenzene	~~5:U~~ NR	
100-51-6	Benzyl alcohol	5:U	
95-50-1	1,2-Dichlorobenzene	5:U	
95-48-7	2-Methylphenol	5:U	
108-60-1	bis(2-Chloroisopropyl)ether	5:U	
106-44-5	4-Methylphenol	5:U	
621-64-7	N-Nitroso-di-n-propylamine	~~5:U~~ NR	
67-72-1	Hexachloroethane	5:U	
98-95-3	Nitrobenzene	5:U	
78-59-1	Isophorone	5:U	
88-75-5	2-Nitrophenol	5:U	
105-67-9	2,4-Dimethylphenol	5:U	
65-85-0	Benzoic acid	25:U	
111-91-1	bis(2-Chloroethoxy)methane	5:U	
120-83-2	2,4-Dichlorophenol	5:U	
120-82-1	1,2,4-Trichlorobenzene	~~5:U~~ NR	
91-20-3	Naphthalene	5:U	
106-47-8	4-Chloroaniline	5:U	
87-68-3	Hexachlorobutadiene	5:U	
59-50-7	4-Chloro-3-methylphenol	~~5:U~~ NR	
91-57-6	2-Methylnaphthalene	5:U	
77-47-4	Hexachlorocyclopentadiene	5:U	
88-06-2	2,4,6-Trichlorophenol	5:U	
95-95-4	2,4,5-Trichlorophenol	25:U	
91-58-7	2-Chloronaphthalene	5:U	
88-74-4	2-Nitroaniline	25:U	
131-11-3	Dimethylphthalate	5:U	
208-96-8	Acenaphthylene	5:U	
606-20-2	2,6-Dinitrotoluene	5:U	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178070MSD

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-01MSD

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE028::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	~~5~~	~~U~~ NR
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	~~25~~	~~U~~ NR
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	~~5~~	~~U~~ NR
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	~~25~~	~~U~~ NR
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	~~5~~	~~U~~ NR
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178070MS

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.: 04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 04477-01MS

Sample wt/vol: 1000. (g/ml) ML Lab File ID: >LE027::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted: 04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N) N pH: 0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	~~5 U~~ NR	fm
111-44-4	bis(2-Chloroethyl)ether	5 U	
95-57-8	2-Chlorophenol	~~5 U~~ NR	fm
541-73-1	1,3-Dichlorobenzene	5 U	
106-46-7	1,4-Dichlorobenzene	~~5 U~~ NR	fm
100-51-6	Benzyl alcohol	5 U	
95-50-1	1,2-Dichlorobenzene	5 U	
95-48-7	2-Methylphenol	5 U	
108-60-1	bis(2-Chloroisopropyl)ether	5 U	
106-44-5	4-Methylphenol	5 U	
621-64-7	N-Nitroso-di-n-propylamine	~~5 U~~ NR	fm
67-72-1	Hexachloroethane	5 U	
98-95-3	Nitrobenzene	5 U	
78-59-1	Isophorone	5 U	
88-75-5	2-Nitrophenol	5 U	
105-67-9	2,4-Dimethylphenol	5 U	
65-85-0	Benzoic acid	25 U	
111-91-1	bis(2-Chloroethoxy)methane	5 U	
120-83-2	2,4-Dichlorophenol	5 U	
120-82-1	1,2,4-Trichlorobenzene	~~5 U~~ NR	fm
91-20-3	Naphthalene	5 U	
106-47-8	4-Chloroaniline	5 U	
87-68-3	Hexachlorobutadiene	5 U	
59-50-7	4-Chloro-3-methylphenol	~~5 U~~ NR	fm
91-57-6	2-Methylnaphthalene	5 U	
77-47-4	Hexachlorocyclopentadiene	5 U	
88-06-2	2,4,6-Trichlorophenol	5 U	
95-95-4	2,4,5-Trichlorophenol	25 U	
91-58-7	2-Chloronaphthalene	5 U	
88-74-4	2-Nitroaniline	25 U	
131-11-3	Dimethylphthalate	5 U	
208-96-8	Acenaphthylene	5 U	
606-20-2	2,6-Dinitrotoluene	5 U	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

178070MS

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: 04477-01MS

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE027::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	~~5~~	~~U~~ NR
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	~~25~~	~~U~~ NR
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	~~5~~	~~U~~ NR
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	~~25~~	~~U~~ NR
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	~~5~~	~~U~~ NR
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBLKL1

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: B0426MSVWLE

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE025::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)ether	5	U
95-57-8	2-Chlorophenol	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
100-51-6	Benzyl alcohol	5	U
95-50-1	1,2-Dichlorobenzene	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	bis(2-Chloroisopropyl)ether	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic acid	25	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
120-82-1	1,2,4-Trichlorobenzene	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBLKL1

Lab Name: Laucks Testing Labs Contract:_____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: B0426MSVWLE

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE025::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)UG/L	Q
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

SBLKL1

Lab Name: Laucks Testing Labs Contract: _____

Lab Code: LAUCKS Case No.:04477 SAS No.: _____ SDG No.: _____

Matrix: (soil/water)WATER Lab Sample ID: B0426MSVWLE

Sample wt/vol: 1000.(g/ml)ML Lab File ID: >LE025::L8

Level: (low/med) LOW Date Received: 04/25/91

% Moisture: not dec.__ dec.__ Date Extracted:04/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/02/91

GPC Cleanup: (Y/N)N pH:0.0 Dilution Factor: 1.0

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Laucks Testing Laboratories
Surrogate Recovery Summary Report

Matrix: WATER

Lab Sample ID	Client Sample ID	Surr 1	#	Surr 2	#	Surr 3	#	Surr 4	#	
~~01 B0419GPXWLU~~		~~80~~		~~100~~		~~89~~		~~110~~		~~S~~
02 B0429GPXWLU (method blank)		79		100		93		110		
~~03 9104172-17~~	~~B-13~~	~~75~~		~~110~~		~~95~~		~~120~~		~~S~~
~~04 9104172-18~~	~~B-3~~	~~77~~		~~100~~		~~100~~		~~130~~		~~S~~
~~05 9104172-19~~	~~B-1~~	~~84~~		~~120~~		~~81~~		~~140~~		~~S~~
~~06 9104172-20~~	~~G-7A~~	~~87~~		~~110~~		~~100~~		~~120~~		~~S~~
07 9104477-01	178070 Toftdahl	81		110		94		120		
08 9104477-02	178071 Toftdahl	81		100		99		120		
09 9104477-04	178073 Toftdahl	88		100		100		120		
10 9104477-05	178074 Toftdahl	77		110		97		120		
11 9104477-03	178072 Toftdahl	89		110		98		120		
12 9104477-03MS	178072 ToftdahlMS	85		110		100		110		
13 9104477-03MD	178072 ToftdahlMD	87		100		99		110		

Samples from another project

Surr No.	Compound Name	Rec. Cont Lim LCL	UCL
1	Isodrin	27	123
2	Dibutylchlorendate	25	140
3	Tetrachloro-m-xylene	60	150
4	Decachlorobiphenyl	60	150

* = values outside of recovery limits
D = surrogate diluted out

Form SURR GC

MS/MSD Report

Report on spike sample K051391_GFXW02

Description : Pesticides/PCBs
Spike Sample: 9104477-03
Matrix : WATER

Matrix Spike Data

Analyte	Spike Added	Sample Conc	MS Conc	% MS Rec	Recovery Limits
Lindane	0.200	0	0.100	50	20-102
Heptachlor	0.200	0	0.160	80	30-111
Aldrin	0.200	0	0.160	80	29-106
Dieldrin	0.500	0	0.450	90	45-128
Endrin	0.500	0	0.590	118	44-127
4,4'-DDT	0.500	0	0.520	104	20-160

Matrix Spike Duplicate Data

Analyte	Spike Added	MSD Conc	% MSD Rec	RPD	Control Limits Recov	Control Limits RPD
Lindane	0.200	0.110	55	10	20-102	39
Heptachlor	0.200	0.160	80	0	30-111	43
Aldrin	0.200	0.170	85	6	29-106	50
Dieldrin	0.500	0.470	94	4	45-128	37
Endrin	0.500	0.620	124	5	44-127	50
4,4'-DDT	0.500	0.550	110	6	20-160	40

Work Orders Verified

9104477 1A-5A

Comments

Laucks Testing Laboratories
Organics Analysis Data Sheet

Lab Sample ID : 9104477-01
Client ID : 178070 Toftdahl

Matrix : WATER
Reporting Units: ug/L

Sample Size : 100 ml
Final Ext Vol : 1.0
Percent Moist : 100

Collection Date: 04/23/91
Date Received : 04/25/91
Ext Started : 04/29/91
Ext Completed : 04/29/91
Date Analyzed : 05/04/91
Date Confirmed : 05/04/91
Dil Factor : 1.0

CAS No.	Compound	Result	SDL	MDL	CRQL	Sample Reports
319846	Alpha-BHC	0.050U	0.050	0.050	0.050	
319857	Beta-BHC	0.050U	0.050	0.050	0.050	
58899	Gamma-BHC	0.050U	0.050	0.050	0.050	
319868	Delta-BHC	0.050U	0.050	0.050	0.050	
76448	Heptachlor	0.050U	0.050	0.050	0.050	
309002	Aldrin	0.050U	0.050	0.050	0.050	
1024573	Heptachlor Epoxide	0.050U	0.050	0.050	0.050	
5103742	Gamma-Chlordane	0.500U	0.50	0.50	0.50	
959988	Endosulfan I	0.050U	0.050	0.050	0.050	
5103719	Alpha-Chordane	0.500U	0.50	0.50	0.50	
72559	DDE	0.100U	0.10	0.10	0.10	
60571	Dieldrin	0.100U	0.10	0.10	0.10	
72208	Endrin	0.100U	0.10	0.10	0.10	
33213659	Endosulfan II	0.100U	0.10	0.10	0.10	
72548	DDD	0.100U	0.10	0.10	0.10	
7421363	Endrin Aldehyde	0.100U	0.10	0.10	0.10	
1031078	Endosulfan Sulfate	0.100U	0.10	0.10	0.10	
50293	DDT	0.100U	0.10	0.10	0.10	
53494705	Endrin Ketone	0.100U	0.10	0.10	0.10	
72435	Methoxychlor	0.500U	0.50	0.50	0.50	

Surrogate recovery report for sample 9104477-01

Surrogate	Percent Recovery	Limits: Min.	Max.
Isodrin	81	27	123
Dibutylchlorendate	110	25	140
Tetrachloro-m-xylene	70 ~~94~~	60	150
Decachlorobiphenyl	120	60	150

* = Recovery is outside control limits

Form DADS 6C

Laucks Testing Laboratories
Organics Analysis Data Sheet

Lab Sample ID : 9104477-02
Client ID : 178071 Toftdahl

Matrix : WATER
Reporting Units: ug/L

Sample Size : 100 ml
Final Ext Vol : 1.0
Percent Moist : 100

Collection Date: 04/23/91
Date Received : 04/25/91
Ext Started : 04/29/91
Ext Completed : 04/29/91
Date Analyzed : 05/04/91
Date Confirmed : 05/04/91
Dil Factor : 1.0

CAS No.	Compound	Result	SDL	MDL	CRQL	Sample Reports
319846	Alpha-BHC	0.050U	0.050	0.050	0.050	
319857	Beta-BHC	0.050U	0.050	0.050	0.050	
58899	Gamma-BHC	0.050U	0.050	0.050	0.050	
319868	Delta-BHC	0.050U	0.050	0.050	0.050	
76448	Heptachlor	0.050U	0.050	0.050	0.050	
309002	Aldrin	0.050U	0.050	0.050	0.050	
1024573	Heptachlor Epoxide	0.050U	0.050	0.050	0.050	
5103742	Gamma-Chlordane	0.500U	0.50	0.50	0.50	
959988	Endosulfan I	0.050U	0.050	0.050	0.050	
5103719	Alpha-Chordane	0.500U	0.50	0.50	0.50	
72559	DDE	0.100U	0.10	0.10	0.10	
60571	Dieldrin	0.100U	0.10	0.10	0.10	
72208	Endrin	0.100U	0.10	0.10	0.10	
33213659	Endosulfan II	0.100U	0.10	0.10	0.10	
72548	DDD	0.100U	0.10	0.10	0.10	
7421363	Endrin Aldehyde	0.100U	0.10	0.10	0.10	
1031078	Endosulfan Sulfate	0.100U	0.10	0.10	0.10	
50293	DDT	0.100U	0.10	0.10	0.10	
53494705	Endrin Ketone	0.100U	0.10	0.10	0.10	
72435	Methoxychlor	0.500U	0.50	0.50	0.50	

Surrogate recovery report for sample 9104477-02

Surrogate	Percent Recovery	Limits: Min.	Max.
Isodrin	81	27	123
Dibutylchlorendate	104 ~~100~~	25	140
Tetrachloro-m-xylene	73 ~~99~~	60	150
Decachlorobiphenyl	116 ~~120~~	60	150

* = Recovery is outside control limits

Form OADS 6C

Laucks Testing Laboratories
Organics Analysis Data Sheet

Lab Sample ID : 9104477-03
Client ID : 178072 Toftdahl

Matrix : WATER
Reporting Units: ug/L

Sample Size : 100 ml
Final Ext Vol : 1.0
Percent Moist : 100

Collection Date: 04/23/91
Date Received : 04/25/91
Ext Started : 04/29/91
Ext Completed : 04/29/91
Date Analyzed : 05/04/91
Date Confirmed : 05/04/91
Dil Factor : 1.0

CAS No.	Compound	Result	SDL	MDL	CRQL	Sample Reports
319846	Alpha-BHC	0.050U	0.050	0.050	0.050	
319857	Beta-BHC	0.050U	0.050	0.050	0.050	
58899	Gamma-BHC	0.050U	0.050	0.050	0.050	
319868	Delta-BHC	0.050U	0.050	0.050	0.050	
76448	Heptachlor	0.050U	0.050	0.050	0.050	
309002	Aldrin	0.050U	0.050	0.050	0.050	
1024573	Heptachlor Epoxide	0.050U	0.050	0.050	0.050	
5103742	Gamma-Chlordane	0.500U	0.50	0.50	0.50	
959988	Endosulfan I	0.050U	0.050	0.050	0.050	
5103719	Alpha-Chordane	0.500U	0.50	0.50	0.50	
72559	DDE	0.100U	0.10	0.10	0.10	
60571	Dieldrin	0.100U	0.10	0.10	0.10	
72208	Endrin	0.100U	0.10	0.10	0.10	
33213659	Endosulfan II	0.100U	0.10	0.10	0.10	
72548	DDD	0.100U	0.10	0.10	0.10	
7421363	Endrin Aldehyde	0.100U	0.10	0.10	0.10	
1031078	Endosulfan Sulfate	0.100U	0.10	0.10	0.10	
50293	DDT	0.100U	0.10	0.10	0.10	
53494705	Endrin Ketone	0.100U	0.10	0.10	0.10	
72435	Methoxychlor	0.500U	0.50	0.50	0.50	

Surrogate recovery report for sample 9104477-03

Surrogate		Percent Recovery	Limits: Min.	Max.
Isodrin		89	27	123
Dibutylchlorendate	106	~~110~~	25	140
Tetrachloro-m-xylene	77	~~98~~	60	150
Decachlorobiphenyl	118	~~120~~	60	150

* = Recovery is outside control limits

Form OADS 6C

Laucks Testing Laboratories
Organics Analysis Data Sheet

Lab Sample ID : 9104477-04
Client ID : 179073 Toftdahl

Matrix : WATER
Reporting Units: ug/L

Sample Size : 100 ml
Final Ext Vol : 1.0
Percent Moist : 100

Collection Date: 04/23/91
Date Received : 04/25/91
Ext Started : 04/29/91
Ext Completed : 04/29/91
Date Analyzed : 05/04/91
Date Confirmed : 05/04/91
Dil Factor : 1.0

CAS No.	Compound	Result	SDL	MDL	CRQL	Sample Reports
319846	Alpha-BHC	0.050U	0.050	0.050	0.050	
319857	Beta-BHC	0.050U	0.050	0.050	0.050	
58899	Gamma-BHC	0.050U	0.050	0.050	0.050	
319868	Delta-BHC	0.050U	0.050	0.050	0.050	
76448	Heptachlor	0.050U	0.050	0.050	0.050	
309002	Aldrin	0.050U	0.050	0.050	0.050	
1024573	Heptachlor Epoxide	0.050U	0.050	0.050	0.050	
5103742	Gamma-Chlordane	0.500U	0.50	0.50	0.50	
959988	Endosulfan I	0.050U	0.050	0.050	0.050	
5103719	Alpha-Chordane	0.500U	0.50	0.50	0.50	
72559	DDE	0.100U	0.10	0.10	0.10	
60571	Dieldrin	0.100U	0.10	0.10	0.10	
72208	Endrin	0.100U	0.10	0.10	0.10	
33213659	Endosulfan II	0.100U	0.10	0.10	0.10	
72548	DDD	0.100U	0.10	0.10	0.10	
7421363	Endrin Aldehyde	0.100U	0.10	0.10	0.10	
1031078	Endosulfan Sulfate	0.100U	0.10	0.10	0.10	
50293	DDT	0.100U	0.10	0.10	0.10	
53494705	Endrin Ketone	0.100U	0.10	0.10	0.10	
72435	Methoxychlor	0.500U	0.50	0.50	0.50	

Surrogate recovery report for sample 9104477-04

Surrogate	Percent Recovery	Limits: Min.	Max.
Isodrin	88	27	123
Dibutylchlorendate	105 ~~100~~	25	140
Tetrachloro-m-xylene	79 ~~100~~	60	150
Decachlorobiphenyl	119 ~~120~~	60	150

* = Recovery is outside control limits

Form DADS 8C

Laucks Testing Laboratories
Organics Analysis Data Sheet

Lab Sample ID : 9104477-05
Client ID : 178074 Toftdahl

Matrix : WATER
Reporting Units: ug/L

Sample Size : 100 ml
Final Ext Vol : 1.0
Percent Moist : 100

Collection Date: 04/23/91
Date Received : 04/25/91
Ext Started : 04/29/91
Ext Completed : 04/29/91
Date Analyzed : 05/04/91
Date Confirmed : 05/04/91
Dil Factor : 1.0

CAS No.	Compound	Result	SDL	MDL	Sample CRQL Reports
319846	Alpha-BHC	0.050U	0.050	0.050	0.050
319857	Beta-BHC	0.050U	0.050	0.050	0.050
58899	Gamma-BHC	0.050U	0.050	0.050	0.050
319868	Delta-BHC	0.050U	0.050	0.050	0.050
76448	Heptachlor	0.050U	0.050	0.050	0.050
309002	Aldrin	0.050U	0.050	0.050	0.050
1024573	Heptachlor Epoxide	0.050U	0.050	0.050	0.050
5103742	Gamma-Chlordane	0.500U	0.50	0.50	0.50
959988	Endosulfan I	0.050U	0.050	0.050	0.050
5103719	Alpha-Chordane	0.500U	0.50	0.50	0.50
72559	DDE	0.100U	0.10	0.10	0.10
60571	Dieldrin	0.100U	0.10	0.10	0.10
72208	Endrin	0.100U	0.10	0.10	0.10
33213659	Endosulfan II	0.100U	0.10	0.10	0.10
72548	DDD	0.100U	0.10	0.10	0.10
7421363	Endrin Aldehyde	0.100U	0.10	0.10	0.10
1031078	Endosulfan Sulfate	0.100U	0.10	0.10	0.10
50293	DDT	0.100U	0.10	0.10	0.10
53494705	Endrin Ketone	0.100U	0.10	0.10	0.10
72435	Methoxychlor	0.500U	0.50	0.50	0.50

Surrogate recovery report for sample 9104477-05

Surrogate	Percent Recovery	Limits: Min.	Max.
Isodrin	77	27	123
Dibutylchlorendate	109 ~~110~~	25	140
Tetrachloro-m-xylene	68 ~~97~~	60	150
Decachlorobiphenyl	123 ~~120~~	60	150

* = Recovery is outside control limits

Form OADS SC

Laucks Testing Laboratories
Organics Analysis Data Sheet

Lab Sample ID : B04296PXWLU Method blank
Client ID :

Matrix : WATER
Reporting Units: ug/L

Sample Size : 100 ml
Final Ext Vol : 1.0
Percent Moist : 100

Collection Date:
Date Received :
Ext Started : 04/29/91
Ext Completed : 04/29/91
Date Analyzed : 05/04/91
Date Confirmed : 05/04/91
Dil Factor : 1.0

CAS No.	Compound	Result	SDL	MDL	CRQL	Sample Reports
319846	Alpha-BHC	0.050U	0.050	0.050	0.050	
319857	Beta-BHC	0.050U	0.050	0.050	0.050	
58899	Gamma-BHC	0.050U	0.050	0.050	0.050	
319868	Delta-BHC	0.050U	0.050	0.050	0.050	
76448	Heptachlor	0.050U	0.050	0.050	0.050	
309002	Aldrin	0.050U	0.050	0.050	0.050	
1024573	Heptachlor Epoxide	0.050U	0.050	0.050	0.050	
5103742	Gamma-Chlordane	0.500U	0.50	0.50	0.50	
959988	Endosulfan I	0.050U	0.050	0.050	0.050	
5103719	Alpha-Chordane	0.500U	0.50	0.50	0.50	
72559	DDE	0.100U	0.10	0.10	0.10	
60571	Dieldrin	0.100U	0.10	0.10	0.10	
72208	Endrin	0.100U	0.10	0.10	0.10	
33213659	Endosulfan II	0.100U	0.10	0.10	0.10	
72548	DDD	0.100U	0.10	0.10	0.10	
7421363	Endrin Aldehyde	0.100U	0.10	0.10	0.10	
1031078	Endosulfan Sulfate	0.100U	0.10	0.10	0.10	
50293	DDT	0.100U	0.10	0.10	0.10	
53494705	Endrin Ketone	0.100U	0.10	0.10	0.10	
72435	Methoxychlor	0.500U	0.50	0.50	0.50	

Surrogate recovery report for sample B04296PXWLU

Surrogate	Percent Recovery	Limits: Min.	Max.
Isodrin	79	27	123
Dibutylchlorendate	100	25	140
Tetrachloro-m-xylene	93	60	150
Decachlorobiphenyl	110	60	150

* = Recovery is outside control limits

Form 9ADS GC

Laucks Testing Laboratories
Organics Analysis Data Sheet

Lab Sample ID : 9104477-03MS
Client ID : 178072 ToftdahlMS

Matrix : WATER
Reporting Units: ug/L

Sample Size : 100 ml
Final Ext Vol : 1.0
Percent Moist : 100

Collection Date: 04/23/91
Date Received : 04/25/91
Ext Started : 04/29/91
Ext Completed : 04/29/91
Date Analyzed : 05/04/91
Date Confirmed : 05/04/91
Dil Factor : 1.0

CAS No.	Compound	Result	SDL	MDL	CRQL	Sample Reports
319846	Alpha-BHC	0.050U	0.050	0.050	0.050	
319857	Beta-BHC	0.050U	0.050	0.050	0.050	
58899	Gamma-BHC	0.170	0.050	0.050	0.050	
319868	Delta-BHC	0.050U	0.050	0.050	0.050	
76448	Heptachlor	0.230	0.050	0.050	0.050	
309002	Aldrin	0.160	0.050	0.050	0.050	
1024573	Heptachlor Epoxide	0.050U	0.050	0.050	0.050	
5103742	Gamma-Chlordane	0.500U	0.50	0.50	0.50	
959988	Endosulfan I	0.050U	0.050	0.050	0.050	
5103719	Alpha-Chordane	0.500U	0.50	0.50	0.50	
72559	DDE	0.100U	0.10	0.10	0.10	
60571	Dieldrin	0.450	0.10	0.10	0.10	
72208	Endrin	0.590	0.10	0.10	0.10	
33213659	Endosulfan II	0.100U	0.10	0.10	0.10	
72548	DDD	0.100U	0.10	0.10	0.10	
7421363	Endrin Aldehyde	0.100U	0.10	0.10	0.10	
1031078	Endosulfan Sulfate	0.100U	0.10	0.10	0.10	
50293	DDT	0.520	0.10	0.10	0.10	
53494705	Endrin Ketone	0.100U	0.10	0.10	0.10	
72435	Methoxychlor	0.500U	0.50	0.50	0.50	

Surrogate recovery report for sample 9104477-03M

Surrogate	Percent Recovery	Limits: Min.	Max.
Isodrin	85	27	123
Dibutylchlorendate	110	25	140
Tetrachloro-m-xylene	100	60	150
Decachlorobiphenyl	110	60	150

* = Recovery is outside control limits

Form OADS GC

Laucks Testing Laboratories
Organics Analysis Data Sheet

Lab Sample ID : 9104477-03MD
Client ID : 178072 ToftdahlMD

Matrix : WATER
Reporting Units: ug/L

Sample Size : 100 ml
Final Ext Vol : 1.0
Percent Moist : 100

Collection Date:
Date Received : 04/25/91
Ext Started : 04/29/91
Ext Completed : 04/29/91
Date Analyzed : 05/04/91
Date Confirmed : 05/04/91
Dil Factor : 1.0

CAS No.	Compound	Result	SDL	MDL	CRQL	Sample Reports
319846	Alpha-BHC	0.050U	0.050	0.050	0.050	
319857	Beta-BHC	0.050U	0.050	0.050	0.050	
58899	Gamma-BHC	0.180	0.050	0.050	0.050	
319868	Delta-BHC	0.050U	0.050	0.050	0.050	
76448	Heptachlor	0.230	0.050	0.050	0.050	
309002	Aldrin	0.170	0.050	0.050	0.050	
1024573	Heptachlor Epoxide	0.050U	0.050	0.050	0.050	
5103742	Gamma-Chlordane	0.500U	0.50	0.50	0.50	
959988	Endosulfan I	0.050U	0.050	0.050	0.050	
5103719	Alpha-Chordane	0.500U	0.50	0.50	0.50	
72559	DDE	0.100U	0.10	0.10	0.10	
60571	Dieldrin	0.470	0.10	0.10	0.10	
72208	Endrin	0.620	0.10	0.10	0.10	
33213659	Endosulfan II	0.100U	0.10	0.10	0.10	
72548	DDD	0.100U	0.10	0.10	0.10	
7421363	Endrin Aldehyde	0.100U	0.10	0.10	0.10	
1031078	Endosulfan Sulfate	0.100U	0.10	0.10	0.10	
50293	DDT	0.550	0.10	0.10	0.10	
53494705	Endrin Ketone	0.100U	0.10	0.10	0.10	
72435	Methoxychlor	0.500U	0.50	0.50	0.50	

Surrogate recovery report for sample 9104477-03M

Surrogate	Percent Recovery	Limits: Min.	Max.
Isodrin	87	27	123
Dibutylchlorendate	100	25	140
Tetrachloro-m-xylene	99	60	150
Decachlorobiphenyl	110	60	150

* = Recovery is outside control limits

Form OADS 6C