FINAL

GROUNDWATER MONITORING REPORT

for the May 2003 Sampling Event
at Air Force Plant 59

Prepared for:

Air Force Center for Environmental Excellence
and
Aeronautical Systems Center

Prepared by:

Earth Tech, Inc.
675 Washington Street, Suite 300
Alexandria, Virginia 22314

Contract No. F41624-01-D-9008
Task Order No. 2008

August 2003

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DISCLAIMER

This *Final Groundwater Monitoring Report for the May 2003 Sampling Event* has been prepared for the United States Air Force (USAF) by Earth Tech for the purpose of satisfying the groundwater monitoring requirements defined in the April 27, 1999 letter to the New York State Department of Environmental Conservation (Earth Tech, 1999a) and *the Record of Decision* (Earth Tech, 1999b) for Air Force Plant 59. Acceptance of this report in performance of the contract under which it is prepared does not mean that the USAF adopts the conclusions, recommendations, or other views expressed herein, which are those of Earth Tech only and do not necessarily reflect the official position of the USAF.

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PREFACE

This *Final Groundwater Monitoring Report for the May 2003 Sampling Event* has been prepared by Earth Tech to describe field and laboratory operations conducted as part of the semiannual groundwater monitoring at Air Force Plant 59 (AFP 59), Johnson City, New York. Fieldwork followed guidelines set forth in the *Final Work Plan for Groundwater Monitoring at AFP 59* (Earth Tech, 1998), the Air Force Center for Environmental Excellence (AFCEE) *Model Work Plan* (United States Air Force [USAF], 1996), and the AFCEE *Model Field Sampling Plan, Version 1.1* (USAF, 1997). All work was completed under AFCEE Contract Number F41624-01-D-9008, Task Order 2008. The groundwater monitoring is being conducted to accomplish the following objective:

- To satisfy the groundwater monitoring requirements defined in the April 27, 1999 letter to the New York State Department of Environmental Conservation (Earth Tech, 1999a) and the *Record of Decision* (Earth Tech, 1999b) for Air Force Plant 59.

The AFCEE Restoration Team Chief is John McCown. The Air Force Aeronautical Systems Center Integrated Product Team Chief is John Doepker. The Earth Tech Project Manager is Dave Parse.

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13.ABSTRACT *(Maximum 200 words)*

This document is the *Final Groundwater Monitoring Report for the May 2003 Sampling Event at Air Force Plant 59 (AFP 59)*, Johnson City, New York. It summarizes the fieldwork completed during the semiannual groundwater monitoring. The monitoring was conducted to accomplish the following objective: to satisfy the groundwater monitoring requirements defined in the April 27, 1999 letter to the New York State Department of Environmental Conservation and the *Record of Decision* for Air Force Plant 59.

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LIST OF ACRONYMS AND ABBREVIATIONS

AFCEE	Air Force Center for Environmental Excellence
AFP 59	Air Force Plant 59
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
cis-1,2-DCE	cis-1,2-Dichloroethene
trans-1,2-DCE	trans-1,2-Dichloroethene
IRP	Installation Restoration Program
µg/L	Micrograms per Liter
MDL	Method Detection Limit
N/A	Not Applicable
NYSDEC	New York State Department of Environmental Conservation
QAPP	Quality Assurance Project Plan
RI/FS	Remedial Investigation/Feasibility Study
RL	Reporting Limit
1,1,1-TCA	1,1,1-Trichloroethane
TCE	Trichloroethene
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

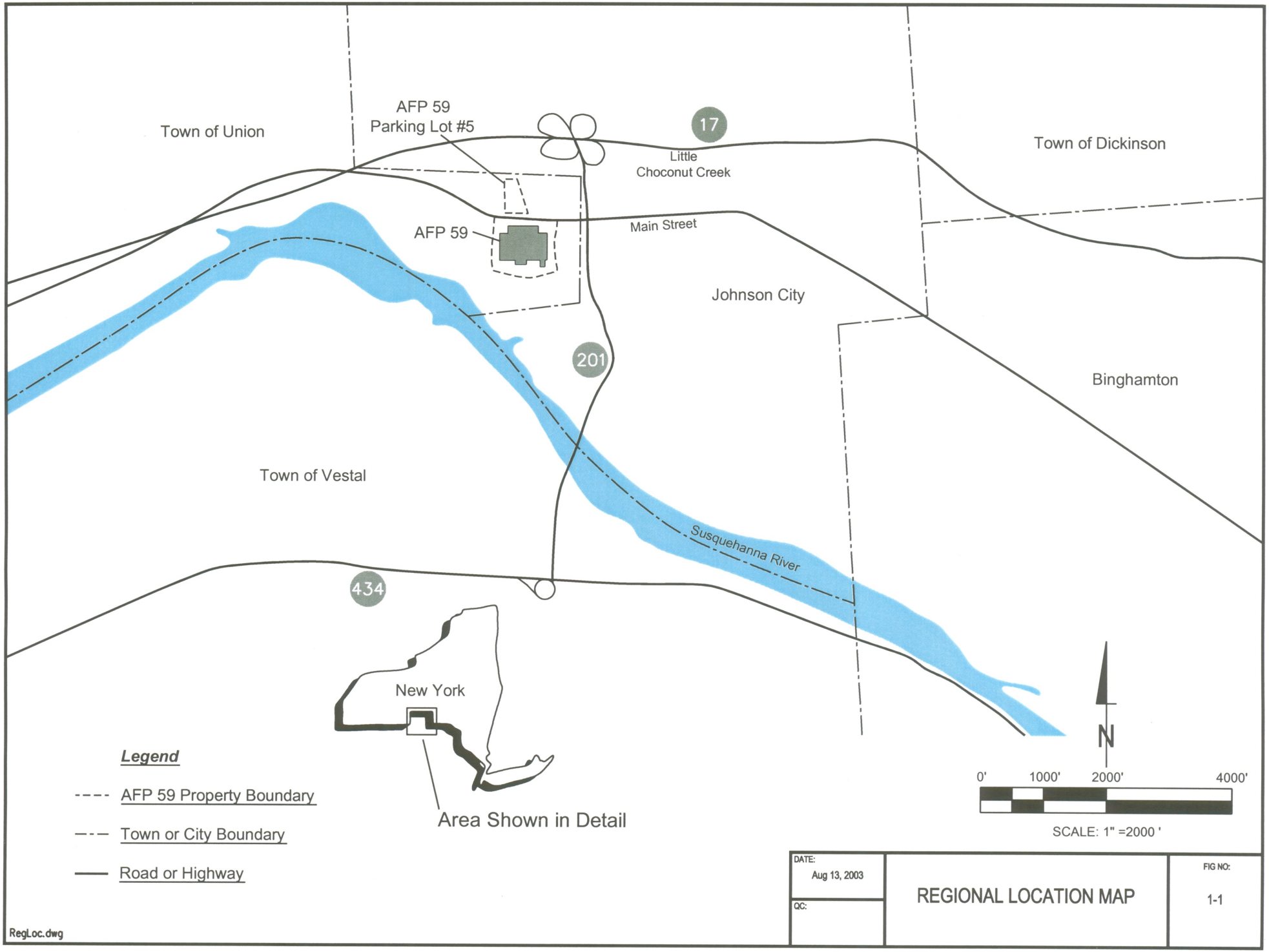
1.0 INTRODUCTION

This *Final Groundwater Monitoring Report for the May 2003 Sampling Event* has been prepared by Earth Tech to describe field and laboratory operations during the May 2003 groundwater sampling event. The May 2003 sampling event was conducted as part of the semiannual groundwater monitoring at Air Force Plant 59 (AFP 59), Johnson City, New York. Earth Tech was contracted by the Air Force Center for Environmental Excellence (AFCEE) to perform two rounds of groundwater sampling (semiannual sampling) at AFP 59. Figure 1-1 shows the general location of AFP 59. Figure 1-2 shows the locations of buildings and monitoring wells at AFP 59. The groundwater monitoring is being conducted to accomplish the following objective:

- To satisfy the groundwater monitoring requirements defined in the April 27, 1999 letter to the New York State Department of Environmental Conservation (NYSDEC) (Earth Tech, 1999a) and the *Record of Decision* (Earth Tech, 1999b) for Air Force Plant 59.

All sampling activities followed protocols presented in the *Final Work Plan for Groundwater Monitoring at AFP 59* (Earth Tech, 1998), the *Final Sampling and Analysis Plan* (Earth Tech, 1994), the AFCEE *Model Work Plan* (USAF, 1996), and the AFCEE *Model Field Sampling Plan, Version 1.1* (USAF, 1997).

This report contains the following four sections: Section 1 provides the objectives of the semiannual sampling events, Section 2 provides a summary of the activities conducted during the May 2003 sampling event, Section 3 summarizes the analytical results, and Section 4 presents conclusions from the investigation.


Town of Union
AFP 59
Parking Lot #5
17
Little
Choconut Creek
Town of Dickinson
AFP 59
Main Street
Johnson City
201
Binghamton
Town of Vestal
Susquehanna River
434
New York
Area Shown in Detail
Legend
AFP 59 Property Boundary
Town or City Boundary
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N
0'
1000'
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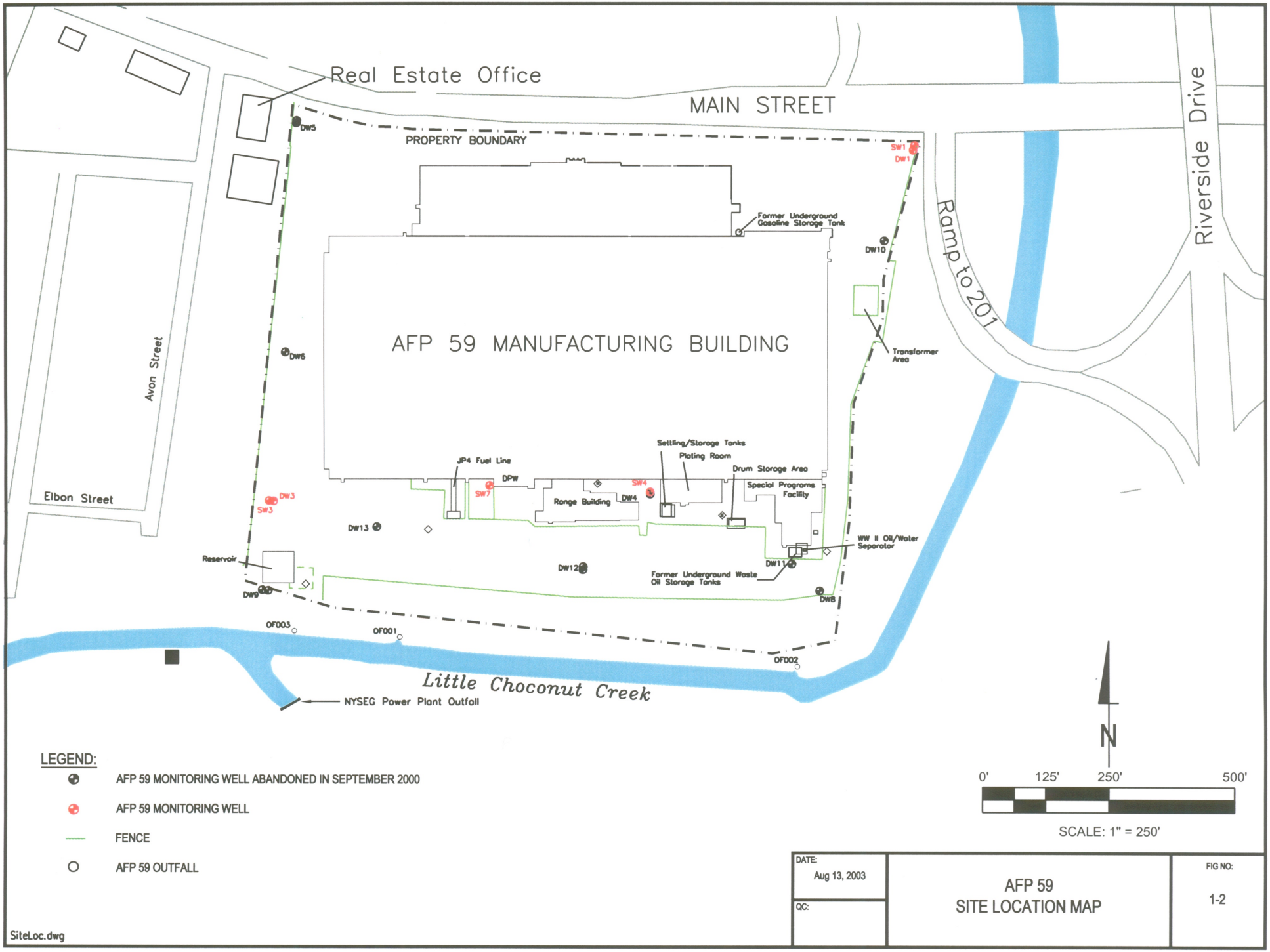
4000'
SCALE: 1" =2000 '
DATE:
Aug 13, 2003
QC:
REGIONAL LOCATION MAP
FIG NO:
1-1
RegLoc.dwg



LEGEND:

- AFP 59 MONITORING WELL ABANDONED IN SEPTEMBER 2000
- AFP 59 MONITORING WELL
- FENCE
- AFP 59 OUTFALL

DATE: Aug 13, 2003 QC:	AFP 59 SITE LOCATION MAP	FIG NO: 1-2

SiteLoc.dwg

2.0 PROJECT ACTIVITIES

This section summarizes activities conducted during the May 2003 sampling event. Section 2.1 summarizes the rationale for selecting the analyses performed on samples collected during the investigation. Section 2.2 outlines the groundwater sampling procedures.

2.1 SAMPLE ANALYSIS SUMMARY

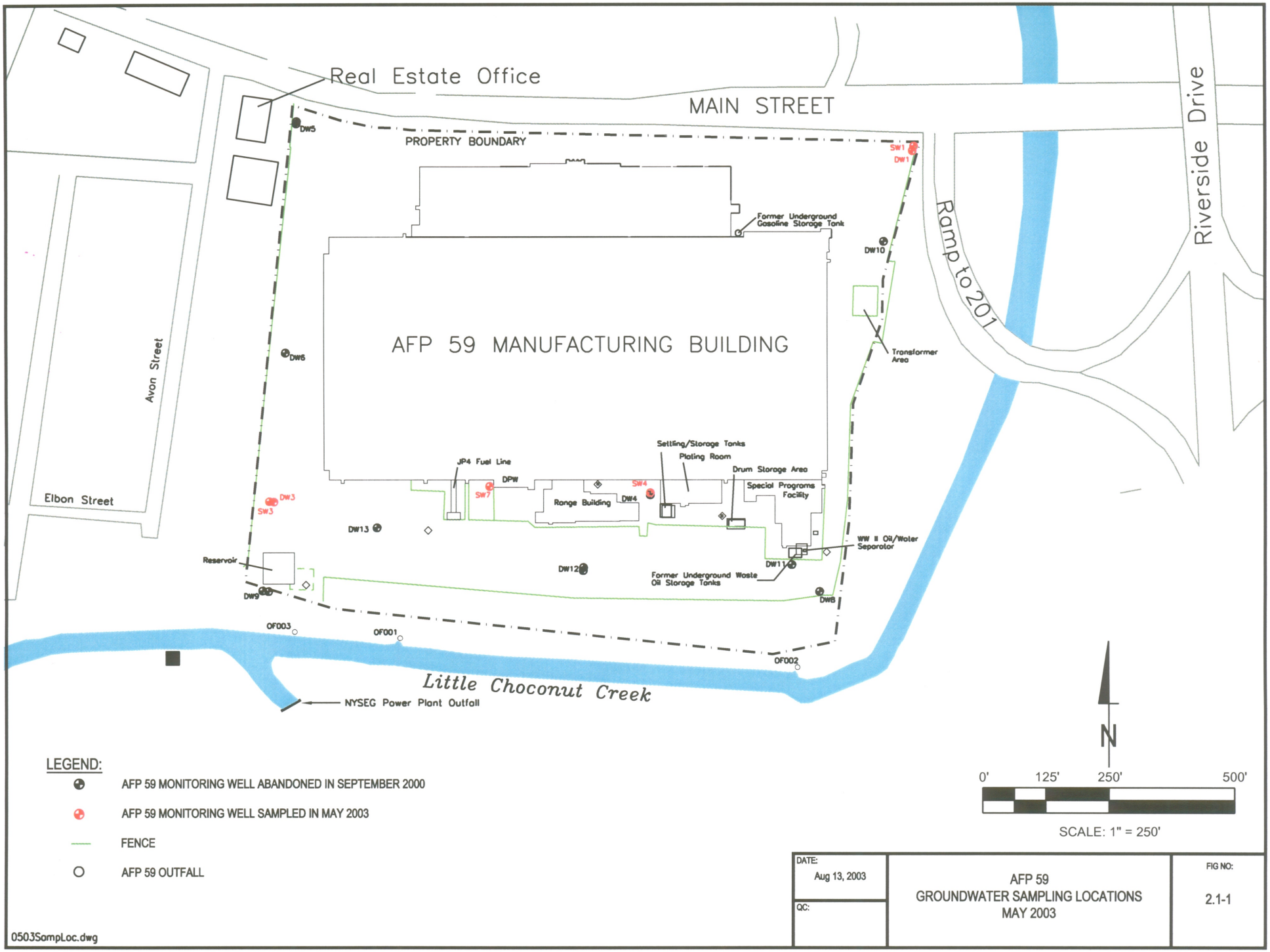
On the basis of conclusions presented in the *Final Remedial Investigation Report* (Earth Tech, 1996) and recommendations made by the NYSDEC, it was determined that VOCs represent the only chemicals of potential concern in groundwater at AFP 59. As a result, the *Record of Decision* (Earth Tech, 1999b) for AFP 59 describes the remedial alternative (i.e., the upgrade of the Camden Street Well Field groundwater treatment system) chosen as most appropriate for treating the VOCs in groundwater at AFP 59. As part of the requirements defined in the *Record of Decision* (Earth Tech, 1999b), a long-term groundwater monitoring program was established for AFP 59. The monitoring program, which is defined in the April 27, 1999 letter to the NYSDEC (Earth Tech, 1999a), is being conducted on a semiannual basis and includes sampling the following monitoring wells: SW1, DW1, SW3, DW3, SW4, and SW7. Monitoring wells SW1 and DW1 represent upgradient (background) wells; monitoring wells SW3 and DW3 represent downgradient wells; monitoring wells SW4 and SW7 have historically had the highest concentrations of VOCs.

The groundwater samples collected during the May 2003 sampling event, which represents the seventh sampling event of the long-term groundwater monitoring program, were analyzed for VOCs by USEPA Method SW8260. Table 2.1-1 lists the total number of groundwater samples collected for each sample type (e.g., environmental sample, duplicate sample) during the May 2003 sampling event, and Figure 2.1-1 shows the locations of the on-site monitoring wells sampled during May 2003 sampling event.

Table 2.1-1
Sample Analysis Summary

Method	Matrix	# Samples	# Equipment Blanks	# Ambient Blanks	# Trip Blanks	# Field Duplicates	Total # Samples
SW8260B Volatile Organics	Groundwater	6	0(1)	1	1	1	9

(1) No equipment blanks were collected because disposable bailers were used during groundwater sampling.



LEGEND:

- AFP 59 MONITORING WELL ABANDONED IN SEPTEMBER 2000
- AFP 59 MONITORING WELL SAMPLED IN MAY 2003
- FENCE
- AFP 59 OUTFALL

DATE: Aug 13, 2003	AFP 59 GROUNDWATER SAMPLING LOCATIONS MAY 2003	FIG NO: 2.1-1
QC:		

0503SampLoc.dwg

2.2 FIELD ACTIVITIES

The primary field activity was sampling of the monitoring wells shown in Figure 2.1-1. A summary of the field activities is provided in Table 2.2-1.

Table 2.2-1
Field Activities Summary

Activity
Measure the groundwater level in all on-site monitoring wells.
Collect groundwater samples from six on-site monitoring wells.

Groundwater sampling methods followed protocols presented in the *Final Work Plan for Groundwater Monitoring at AFP 59* (Earth Tech, 1998) and in the *Final Sampling and Analysis Plan* (Earth Tech, 1994) that was prepared for the remedial investigation conducted at AFP 59. The primary objective of the groundwater sampling event was to satisfy groundwater monitoring requirements defined in the April 27, 1999 letter to the NYSDEC (Earth Tech, 1999a) and the *Record of Decision* (Earth Tech, 1999b) for Air Force Plant 59.

Groundwater sampling procedures included:

1. Measuring groundwater levels in all on-site monitoring wells;
2. Purging select on-site monitoring wells prior to sampling;
3. Measuring field-derived parameters (including temperature, pH, specific conductance, and turbidity) during monitoring well purging; and
4. Collecting groundwater samples from the purged monitoring wells.

Refer to the *Final Work Plan for Groundwater Monitoring at AFP 59* (Earth Tech, 1998) and the *Final Sampling and Analysis Plan* (Earth Tech, 1994) for a detailed description of all sampling activities and protocols.

Water level measurements were taken in all monitoring wells to determine the elevation of the water table (in the shallow zone of the aquifer) or piezometric surface (in the deep zone of the aquifer) once within a single 24-hour period. Any conditions that affected water levels were recorded in the field log. Water level measurements were taken with an electric sounder and were measured to the nearest 0.01-foot. All measuring equipment was decontaminated according to the specifications in the *Final Sampling and Analysis Plan* (Earth Tech, 1994).

Static water levels were measured each time a monitoring well was sampled and before any equipment entered the monitoring well. If the casing cap was airtight, the air pressure within the monitoring well was allowed to equilibrate after the cap was removed and prior to measurement of the water level.

3.0 INVESTIGATION RESULTS

The results of the May 2003 sampling event at AFP 59 are summarized in this section. Section 3.1 summarizes the analytical results, and Section 3.2 provides conclusions concerning the analytical and hydrogeological data. Field data are provided in Appendix B, chain-of-custody forms are provided in Appendix C, and analytical data are provided in Appendix D.

3.1 SAMPLING AND ANALYSIS RESULTS

This section summarizes the data collection activities completed during the May 2003 sampling event, presents the laboratory analytical results, and provides a trend analysis of identified VOCs.

3.1.1 REVIEW OF FIELD AND LABORATORY DATA

All field procedures, sample handling documentation, and laboratory procedures followed protocols presented in the *Final Work Plan for Groundwater Monitoring at AFP 59* (Earth Tech, 1998) and the *Final Sampling and Analysis Plan* (Earth Tech, 1994). All analytical data generated as a result of the May 2003 sampling event were reported as AFCEE definitive data. Analytical protocols utilized in sample preparation, analysis, and reporting were in accordance with the specific analytical method and the guidelines given in the AFCEE *Quality Assurance Project Plan (QAPP), Version 3.1* (USAF, 1998). Laboratory analyses were performed by Kemron Environmental Services, Marietta, Ohio. Analytical methods and Kemron's associated method detection limits (MDLs) and reporting limits (RLs) are listed in Table 3.1-1. Data validation was performed by Earth Tech.

Data flags were applied to the analytical data by the laboratory. During the data review process, Earth Tech reviewed the analytical data and associated data flags and assigned data qualifiers as per the guidelines given in the AFCEE *QAPP, Version 3.1* (USAF, 1998); the data quality review summary is provided in Appendix D. The following data qualifiers were assigned to the data as a result of the data review process and are defined below.

- **R** Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
- **B** Not detected substantially above the level reported in the laboratory or field blanks.
- **J** This is an estimated value.
- **UJ** Not detected, quantitation limit may be inaccurate or imprecise.
- **U** The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

Table 3.1-1
Analytical Parameters, Method Detection Limits, and Reporting Limits for Kemron Environmental Services

Parameter/Method	Analyte	Water			
		MDL	Unit	RL	Unit
VOCs	1,1,1,2-Tetrachloroethane	0.250	µg/L	0.5	µg/L
SW8260B	1,1,1-TCA	0.250	µg/L	0.8	µg/L
	1,1,2,2-Tetrachloroethane	0.125	µg/L	0.4	µg/L
	1,1,2-TCA	0.250	µg/L	1.0	µg/L
	1,1-DCA	0.125	µg/L	0.4	µg/L
	1,1-DCE	0.500	µg/L	1.2	µg/L
	1,1-Dichloropropene	0.250	µg/L	1.0	µg/L
	1,2,3-Trichlorobenzene	0.125	µg/L	0.3	µg/L
	1,2,3-Trichloropropane	0.750	µg/L	3.2	µg/L
	1,2,4-Trichlorobenzene	0.200	µg/L	0.4	µg/L
	1,2,4-Trimethylbenzene	0.250	µg/L	1.3	µg/L
	1,2-DCB	0.125	µg/L	0.3	µg/L
	1,2-DCA	0.250	µg/L	0.6	µg/L
	trans-1,2-Dichloroethene	0.250	µg/L	0.6	µg/L
	1,2-Dichloropropane	0.125	µg/L	0.4	µg/L
	1,3,5-Trimethylbenzene	0.250	µg/L	0.5	µg/L
	1,3-DCB	0.250	µg/L	1.2	µg/L
	1,3-Dichloropropane	0.200	µg/L	0.4	µg/L
	1,4-DCB	0.125	µg/L	0.3	µg/L
	1-Chlorohexane	0.125	µg/L	0.5	µg/L
	2,2-Dichloropropane	0.250	µg/L	3.5	µg/L
	2-Chlorotoluene	0.125	µg/L	0.4	µg/L
	4-Chlorotoluene	0.250	µg/L	0.6	µg/L
	Benzene	0.125	µg/L	0.4	µg/L
	n-Butylbenzene	0.250	µg/L	1.1	µg/L
	sec-Butylbenzene	0.250	µg/L	1.3	µg/L
	tert-Butylbenzene	0.250	µg/L	1.4	µg/L
	Carbon tetrachloride	0.250	µg/L	2.1	µg/L
	Chlorobenzene	0.125	µg/L	0.4	µg/L
	Chloroethane	0.500	µg/L	1.0	µg/L
	Chloroform	0.125	µg/L	0.3	µg/L
	Chloromethane	0.250	µg/L	1.3	µg/L
	cis-1,2-DCE	0.250	µg/L	1.2	µg/L

Table 3.1-1
Analytical Parameters, Method Detection Limits, and Reporting Limits for Kemron Environmental Services (Continued)

Parameter/Method	Analyte	Water			
		MDL	Unit	RL	Unit
VOCs	cis-1,3-Dichloropropene	0.250	µg/L	1.0	µg/L
SW8260B	Dichlorodifluoromethane	0.250	µg/L	1.0	µg/L
	trans-1,3-Dichloropropene	0.500	µg/L	1.0	µg/L
	Ethylbenzene	0.250	µg/L	0.6	µg/L
	Hexachlorobutadiene	0.250	µg/L	1.1	µg/L
	Isopropylbenzene	0.250	µg/L	0.5	µg/L
	p-Isopropyltoluene	0.250	µg/L	1.2	µg/L
	Methylene Chloride	0.250	µg/L	2.0	µg/L
	Naphthalene	0.200	µg/L	0.4	µg/L
	n-Propylbenzene	0.125	µg/L	0.4	µg/L
	Styrene	0.125	µg/L	0.4	µg/L
	Tetrachloroethene	0.250	µg/L	1.4	µg/L
	Trichloroethene	0.250	µg/L	1.0	µg/L
	Trichlorofluoromethane	0.250	µg/L	0.8	µg/L
	Toluene	0.250	µg/L	1.1	µg/L
	Vinyl Chloride	0.250	µg/L	1.1	µg/L
	(m&p)-Xylene	0.500	µg/L	1.0	µg/L
	o-Xylene	0.250	µg/L	1.1	µg/L

3.1.2 DATA SUMMARY

The number and locations of groundwater samples are outlined below. Figure 2.1-1 shows the locations of the monitoring wells sampled during the May 2003 sampling event.

The following monitoring wells were sampled:

- Shallow monitoring wells SW1, SW3, SW4, and SW7; and
- Deep monitoring wells DW1 and DW3.

3.1.3 VOCs DETECTED IN GROUNDWATER SAMPLES

This section discusses the VOCs that were detected in the groundwater samples, including those samples collected from both site and background monitoring wells. The analytical results for groundwater samples collected from monitoring wells installed in the shallow and deep zones of the aquifer are discussed separately below. The analytical results for all groundwater samples collected during the May 2003 sampling event are summarized in Table 3.1-2. Appendix D provides a complete listing of all groundwater analytical results.

Shallow Zone of the Aquifer. VOCs detected in groundwater samples are shown in Figure 3.1-1. Table 3.1-3 summarizes all VOCs detected in groundwater samples collected from monitoring wells screened in the shallow zone, the number of samples above the laboratory MDL, the minimum and maximum concentrations detected, and the location of the maximum concentration.

VOCs were detected in the groundwater samples collected from monitoring wells SW3, SW4, and SW7 (see Figure 3.1-1). Chlorinated hydrocarbons were the only detected VOCs in the samples collected from the shallow zone of the aquifer.

No VOCs were detected in the groundwater sample collected from monitoring well SW1. The following maximum concentrations were detected in the groundwater sample collected from monitoring well SW4: 1,1,1-trichloroethane at 3.05 J µg/L; 1,1-dichloroethane (1,1-DCA) at 1.44 J µg/L; cis-1,2-dichloroethene (cis-1,2-DCE) at 3.36 J µg/L; tetrachloroethene (PCE) at 0.683 J µg/L and trichloroethene (TCE) at 9.09 J µg/L. The maximum concentration of chloroform in the shallow zone of the aquifer was detected in the sample from monitoring well SW3 at 0.155 J µg/L.

Deep Zone of the Aquifer. No VOCs were detected in groundwater samples collected from the deep monitoring wells (see Figure 2.1-1, AFP 59 Groundwater Sampling Locations, May 2003).

Table 3.1-2
Groundwater Data Summary for VOCs

Parameters	Action Levels*	59SW1WG1	59DW1WG1	59SW3WG1	59DW3WG1
1,1,1-Trichloroethane	5	--	--	0.584 J	--
Trichloroethene	5	--	--	0.893 J	--
Chloroform	100[1]	--	--	0.155 J	--
Cis-1,2-Dichloroethene	5	--	--	1.37 J	--
1,1-Dichloroethane	5	--	--	0.302 J	--
Methylene chloride	5	--	--	--	--
Tetrachloroethene	5	--	--	--	--

Parameters	Action Levels*	59SW4WG1	59SW7WG1	59SW7WG9 (Duplicate Sample)
1,1,1-Trichloroethane	5	3.05 J	1.5 J	1.33 J
Trichloroethene	5	**9.09 J**	1.44 J	1.44 J
Chloroform	100[1]	--	--	--
Cis-1,2-Dichloroethene	5	3.36 J	1.08 J	1.43 J
1,1-Dichloroethane	5	1.44 J	0.409 J	0.409 J
Methylene chloride	5	--	--	--
Tetrachloroethene	5	0.683 J	0.279 J	--

Key: * = New York State Drinking Water Standard.
-- = Analyte was analyzed for but not detected.
[1] = Federal Drinking Water Standard

Qualifiers: J = The analyte was positively identified, but the quantitation is an estimation.

Note: Concentrations in bold font and shaded cells exceed the New York State Drinking Water Standard for the associated compound.

MAIN STREET

BOUNDARY

DW5

SW1
DW1

Former Underground Gasoline Storage Tank

DW10

Ramp to 201

SW7 SHALLOW MONITORING WELL

Analyte	Conc.	Units	Q
1,1,1-Trichloroethane	0.674	UG/L	J
1,1-Dichloroethane	0.568	UG/L	
cis-1,2-Dichloroethene	2.79	UG/L	
Trichloroethene	1.64	UG/L	

SW4 SHALLOW MONITORING WELL

Analyte	Conc.	Units	Q
1,1,1-Trichloroethane	2.03	UG/L	
1,1-Dichloroethane	0.93	UG/L	
cis-1,2-Dichloroethene	1.93	UG/L	
Tetrachloroethene	0.582	UG/L	J
Trichloroethene	4.63	UG/L	

AFP 59 MANUFACTURING BUILDING

DW6

Transformer Area

SW3 SHALLOW MONITORING WELL

Analyte	Conc.	Units	Q
1,1,1-Trichloroethane	0.398	UG/L	J
cis-1,2-Dichloroethene	0.511	UG/L	J
Trichloroethene	0.856	UG/L	J

JP4 Fuel Line

DPW

SW7

SW4

Settling/Storage Tanks

Plating Room

Drum Storage Area

Special Programs Facility

Range Building

DW4

DW3
SW3

DW13

DW3 DEEP MONITORING WELL

Analyte	Conc.	Units	Q
cis-1,2-Dichloroethene	1.18	UG/L	J

Reservoir

DW12

WW II Oil/Water Separator

DW11

Former Underground Waste Oil Storage Tanks

DW9

DW8

OF003

OF001

OF002

Little Choconut Creek

NYSEG Power Plant Outfall

Notes:

1. If no data is present at a monitoring well location, no VOCs were detected in Groundwater
2. At locations where duplicates were collected, the maximum concentration is presented
3. Concentrations shown in bold and shaded exceed the New York State Drinking Water Standard for the associated compound

N

0' 125' 250'

SCALE: 1" = 125'

LEGEND:

- FENCE
- MONITORING WELL ABANDONED SEPTEMBER 2000
- MONITORING WELL SAMPLED NOVEMBER 2003
- AFP 59 OUTFALL
- J ANALYTE WAS POSITIVELY IDENTIFIED BUT THE QUANITATION IS ESTIMATED

DATE: Jan 27, 2004	AFP 59 VOC'S DETECTED IN GROUNDWATER NOVEMBER 2003 AFP 59	FIG NO: 3.1-1
QC:		

GWVOC1103.dwg

Table 3.1-3
VOCs Detected in Shallow Zone Groundwater Samples

Analyte	Number of Samples Above MDL	Range (µg/L)		Location of Maximum Detection
		Minimum Detected	Maximum Detected	
1,1,1-Trichloroethane[1]	4 of 5	0.584 J	3.05 J	SW4
Trichloroethene[1]	4 of 5	0.893 J	9.09 J	SW4
Chloroform	1 of 5	0.155 J	0.155 J	SW3
Cis-1,2-Dichloroethene[1]	4 of 5	1.08 J	3.36 J	SW4
1,1-Dichloroethane[1]	4 of 5	0.302 J	1.44 J	SW4
Tetrachloroethene	2 of 5	0.279 J	0.683 J	SW4

Key: µg/L = Micrograms per liter
MDL = *Method detection limit*

Qualifiers: J = The analyte was positively identified, but the quantitation is an estimation.

[1] Trichloroethene, 1,1,1-trichloroethane, cis-1,2-dichloroethene, and 1,1-Dichloroethane were only detected at monitoring wells SW3, SW4, and SW7 (normal and duplicate samples).

Note: Only analytes detected in one or more of the groundwater samples are included in this summary table.

3.1.4 TREND ANALYSIS

Table 3.1-4 presents concentrations of the most commonly detected chlorinated hydrocarbons in groundwater at AFP 59 over time. Only monitoring wells that were sampled as part of the groundwater monitoring program are included in the table.

In the groundwater samples collected from the shallow monitoring wells during the May 2003 sampling event, concentrations of the chlorinated hydrocarbons in monitoring well SW3 remained relatively constant compared to the previous sampling event. 1,1-DCA was detected (0.302 J) in SW3 and was non-detect in the previous sampling event. The concentration of TCE (21.63 µg/L to 9.09 µg/L), detected at monitoring well SW4 decreased compared to the May 2002 sampling event. In the groundwater sample collected from deep monitoring well DW3 during the May 2003 sampling event, the concentration of cis-1,2-DCE decreased (21.08 µg/L to non-detect) relative to the previous sampling event. No VOCs were detected in the groundwater sample collected from deep monitoring well DW1. This is consistent with previous sampling events.

Table 3.1-4
Trend Analysis of VOCs in Groundwater

Well ID	Date Sampled	Concentration of Analyte in Groundwater (µg/L)					
		TCA	TCE	VC	1,1-DCE	1,2-DCE	1,1-DCA
SW1	Sept. 1986[1]	--	--	--	--	--	--
	Jan. 1992[2]	0.5	--	--	--	--	--
	Dec. 1994[3]	--	--	--	--	--	--
	Nov. 1999[3]	--	--	--	--	--	--
	May 2000[3]	--	--	--	--	--	--
	Nov. 2000[3]	--	--	--	--	--	--
	May 2001[3]	--	--	--	--	--	--
	Nov. 2001[3]	0.11 J	--	--	--	--	--
	May 2002[3]	--	--	--	--	--	--
	May 2003[3]	--	--	--	--	--	--
DW1	Jan. 1992[2]	0.6	--	--	--	--	--
	Dec. 1994[3]	--	--	--	--	1.8 (c)	--
	Nov. 1999[3]	--	--	--	--	--	--
	May 2000[3]	--	--	--	--	--	--
	Nov. 2000[3]	--	--	--	--	--	--
	May 2001[3]	--	--	--	--	--	--
	Nov. 2001[3]	--	--	--	--	--	--
	May 2002[3]	--	--	--	--	--	--
	May 2003[3]	--	--	--	--	--	--
SW3	Sept. 1986[1]	--	6	--	--	--	--
	Jan. 1992[2]	12	9	--	--	--	5
	Dec. 1994[3]	0.50	1.8	--	--	--	--
	Dec. 1995[3]	0.86	2.8	--	--	0.44 (c)	--
	July 1997[4]	--	1	--	--	--	--
	Nov. 1998[3]	0.22	0.81	--	--	0.10 (c)	--
	Apr. 1999[3]	0.51	0.71	--	--	0.17 (c)	--
	Nov. 1999[3]	0.29	0.9	--	--	0.39 (c)	--
	May 2000[3]	0.69	1	--	--	1.29 (c)	0.55
	Nov. 2000[3]	0.43	0.9	--	--	0.22 (c)	--
	May 2001[3]	0.46	0.8	--	--	1.29 (c)	0.32

Table 3.1-4
Trend Analysis of VOCs in Groundwater (Continued)

Well ID	Date Sampled	Concentration of Analyte in Groundwater (µg/L)					
		TCA	TCE	VC	1,1-DCE	1,2-DCE	1,1-DCA
SW3	Nov. 2001[3]	0.32 J	0.5 J	--	--	--	--
	May 2002[3]	0.42 J	0.8 J	--	--	0.46 J	--
	May 2003[3]	0.584 J	0.893 J	--	--	1.37 J (c)	0.302 J
DW3	Jan. 1992[2]	0.3	--	--	--	--	0.3
	Dec. 1994[3]	--	--	0.28	--	36 (c)	0.26
	Dec. 1995[3]	--	--	--	--	5.2 (c)	--
	April 1997[4]	--	--	--	--	41 (c)	--
	July 1997[4]	--	--	--	--	49 (c)	--
	Nov. 1998[3]	--	--	0.35	--	66 (c)	0.34
	Apr. 1999[3]	--	--	0.28	0.11	67.00 (c)	0.35
	Nov 1999[3]	--	--	--	--	--	0.11
	May 2000[3]	--	--	--	--	0.25 (t) 24.98 (c)	0.16
	Nov. 2000[3]	--	--	--	--	16.85	--
	May 2001[3]	--	--	--	--	13.29	--
	Nov. 2001[3]	--	--	--	--	13.58	--
	May 2002[3]	--	--	--	--	21.08	0.1 J
	May 2003[3]	--	--	--	--	--	--
SW4	Jan. 1992[2]	2	97	--	0.3	--	0.6
	Dec. 1994[3]	20	370	--	2.1	19 (c)	8.5
	Dec. 1995[3]	34	1200	--	4.9	2.1 (t) 34 (c)	6.9
	April 1997[4]	--	--	--	--	71 (c)	7.1
	July 1997[4]	23	290	--	--	15 (c)	--
	Nov. 1998[3]	8.0	46	0.42	0.82	10 (c)	9.0
	Apr. 1999[3]	1.9	9.53	--	--	1.85 (c)	0.87
	Nov. 1999[3]	2.13	9.5	--	0.18	7.15 (c)	7.7
	May 2000[3]	2.88	8	0.11	0.21	0.49 (t) 4.3 (c)	1.67

Table 3.1-4
Trend Analysis of VOCs in Groundwater (Continued)

Well ID	Date Sampled	Concentration of Analyte in Groundwater (µg/L)					
		TCA	TCE	VC	1,1-DCE	1,2-DCE	1,1-DCA
SW4	Nov. 2000[3]	1.14	15.2	1.49	0.29	11.18 (c)	15.25
	May 2001[3]	3.35	34	--	0.36	0.38 (t) 3.19 (c)	1.3
	Nov. 2001[3]	0.88	5.7	0.43 J	0.12 J	5.27 (c)	7.18
	May 2002[3]	2.54	21.63	--	0.34 J	2.07 (c)	0.79 J
	May 2003[3]	3.05 J	9.09 J	--	--	3.36 J (c)	1.44 J
SW7	Jan. 1992[2]	0.2	0.4	--	--	--	--
	Dec. 1994[3]	4.6	15	6.2	1	0.3(t) 150(c)	33
	Dec. 1995[3]	2.2	7.9	6.8	0.80	130 (c)	20
	July 1997[4]	--	4	--	--	2 (c)	--
	Nov. 1998[3]	2.5	11	3.4	0.65	0.28 (t) 82 (c)	12
	Apr. 1999[3]	1.23	3.95	--	--	5.25 (c)	1.46
	Nov. 1999[3]	1.01	5.7	--	0.19	18.8 (c)	3.38
	May 2000[3]	0.67	1.5	--	--	0.12 (t) 2.43 (c)	0.71
	Nov. 2000[3]	0.91	3.8	0.52	0.15	16.06 (c)	3.48
	May 2001[3]	1.18	1.9	--	--	1.46 (c)	0.47
	Nov. 2001[3]	0.8 J	4.7	0.85 J	0.19 J	0.13 J (t) 25.89 (c)	3.02
	May 2002[3]	0.87 J	1.65	--	--	2.79 (c)	0.47 J
	May 2003[3]	1.5 J	1.44 J	--	--	1.43 J (c)	0.409 J

Key:

µg/L =	Micrograms per liter	VC =	Vinyl chloride
(c) =	cis-1,2-Dichloroethene	11DCE =	1,1-Dichloroethene
(t) =	trans-1,2-Dichloroethene	12DCE =	1,2-Dichloroethene
TCA =	1,1,1-Trichloroethane	11DCA =	1,1-Dichloroethane
TCE =	Trichloroethene	DPW =	Deep production well
(1) =	Fred C. Hart Associates	(3) =	Earth Tech
(2) =	Argonne National Laboratories	(4) =	United States Geological Services

Notes:
1. At monitoring well locations where a duplicate groundwater sample was collected, the higher analytical value between the normal and duplicate samples is reported in this table.
2. For 1992 data, the maximum value of either round A or B of sampling was used.
3. A double dash (--) indicates the analyte was not detected during the sampling event.

4.0 CONCLUSIONS

This section provides conclusions from analytical data generated as a result of the May 2003 sampling event. As defined in Section 1.0, the objective of the groundwater sampling event was to satisfy groundwater monitoring requirements defined in the April 27, 1999 letter to the NYSDEC (Earth Tech, 1999a) and the *Record of Decision* (Earth Tech, 1999b) for Air Force Plant 59.

The VOCs detected in groundwater samples collected from monitoring wells screened in the shallow and deep zones of the aquifer during the May 2003 sampling event are similar to the VOCs that have been detected during previous investigations. Chlorinated hydrocarbons were the only VOCs detected in site groundwater, with TCE, 1,1,1-TCA, 1,1-DCA, tetrachloroethene, and cis-1,2-DCE being the most commonly detected. No VOCs were detected in background monitoring wells SW1 and DW1.

Historically, the highest concentrations of VOCs in the shallow zone of the aquifer at AFP 59 have been detected in groundwater samples collected from monitoring wells SW4 and SW7, which are located immediately downgradient of the Plating Room (the suspected source of VOCs in groundwater). In May 2003, the concentration of TCE detected at monitoring well SW4 decreased relative to the May 2002 sampling event, and the highest concentrations of VOCs were detected at SW4. There was only one VOC detection that exceeded New York State drinking water standards: TCE (9.09 µg/L) in SW4. The New York State drinking water standard for TCE is 5 µg/L.

Five VOCs were detected in the groundwater sample collected from monitoring well SW3, which was the only shallow monitoring well sampled along the western (downgradient) boundary of the site during this event. None of these detections exceeded New York State drinking water standards. Therefore, groundwater in the shallow zone of the aquifer that migrates off site toward the Camden Street Well Field complies with New York State drinking water standards.

There were no VOCs detected in the groundwater samples collected from deep monitoring wells DW1 and DW3.

A trend analysis of chlorinated hydrocarbon levels over time at AFP 59 is presented in Section 3.1.4. This sampling event was consistent with previous events and indicates that levels of chlorinated hydrocarbons have remained constant or decreased through time (see Table 3.1-5).

Appendix A. References

APPENDIX A. REFERENCES

Earth Tech, 1994. *Installation Restoration Program Investigation - Final Sampling and Analysis Plan.*

Earth Tech, 1996. *Installation Restoration Program Remedial Investigation - Final Remedial Investigation Report.*

Earth Tech, 1998. *Final Work Plan for Groundwater Monitoring at Air Force Plant 59.*

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United States Air Force (USAF), 1993. *Handbook for the Installation Restoration Program (IRP), Remedial Investigations and Feasibility Studies (RI/FS).*

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United States Environmental Protection Agency (USEPA), 1988. *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, EPA/540/6-89/004.* Office of Emergency and Remedial Response, Washington, D.C.

APPENDIX B. FIELD DATA

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 05/05/03 | Well ID: ~~SW4~~ SW7 | Sample Number: ~~595W7W61~~ / Recorded By: BW

Project Name: AFP 59 | Well Location: | Duplicate Number: 595W7W61, 595W7W69 | Checked By:

Project Number: 6614

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10 | Purging Equipment: Grundfos Ready Flo

PID #: NA | Sampling Equipment: Disposable Bailer

Electric Sounder #:

WELL DATA

Elevation:	Water Column in Well:	Total Vol. Extr.:
Well Diameter: 2"	Borehole Diameter: 8"	Ambient PID:
Well Depth: 29.9	Water Column in Borehole:	Well Mouth PID:
Depth to Well Water: 16.76	Standing Water Vol.:	

Ground Condition of Well:

Remarks:

	PURGING				SAMPLING	
	1	2	3	4	1	2
Time 1335	1338	1423				
Rate (gal/min)	2.0	2.0				
Temperature (°C)	14.0	13				
pH	7.21					
Conductivity (mS/cm)	1.93					
Vol. Purged (gal)	6					
~~Remarks~~ Turb. (NTU)	226					

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	1630					
Analytical Param	VOCs (8260B)					
Volume Required	3, 40mL vials					
Preservation	HCl, 4°C					
Field Filtered	No					
Time						

461.FIG

GROUNDWATER PURGING AND SAMPLING RECORD

Date:	Well ID: SW7	Sample Number:	Recorded By:
Project Name:	Well Location:	Duplicate Number:	Checked By:
Project Number:			

EQUIPMENT

pH/Conductivity/Temperature Meter #:	Purging Equipment:
PID #:	Sampling Equipment:
Electric Sounder #:	

WELL DATA

Elevation:	Water Column in Well:	Total Vol. Extr.:
Well Diameter:	Borehole Diameter:	Ambient PID:
Well Depth:	Water Column in Borehole:	Well Mouth PID:
Depth to Well Water:	Standing Water Vol.:	

Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1	2	3	4	1	2
Time		1543	1548	1553	1558	1603
Rate		2.5	2.6	2.0	2.0	2.0
Temperature		13.75	14.3	11.2	13.5	13.2
pH		7.15	7.14	7.25	7.21	7.25
Conductivity		1.73	1.74	1.87	1.79	1.84
Vol. Purged		16	26	36	46	56
Remarks		45	-3	-10	-10	-10

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time						
Analytical Param						
Volume Required						
Preservation						
Field Filtered						
Time						

0461.FIG

GROUNDWATER PURGING AND SAMPLING RECORD

Date:	Well ID: SW7	Sample Number:	Recorded By:
Project Name:	Well Location:	Duplicate Number:	Checked By:
Project Number:			

EQUIPMENT

pH/Conductivity/Temperature Meter #:	Purging Equipment:
PID #:	Sampling Equipment:
Electric Sounder #:	

WELL DATA

Elevation:	Water Column in Well:	Total Vol. Extr.:
Well Diameter:	Borehole Diameter:	Ambient PID:
Well Depth:	Water Column in Borehole:	Well Mouth PID:
Depth to Well Water:	Standing Water Vol.:	

Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1	2	3	4	1	2
Time	1608	1673	1618	1623		
Rate	2.0	2.0	2.0	2.0		
Temperature	13.1	13.0	13.0	13.1		
pH	7.22	7.21	7.23	7.10		
Conductivity	1.81	1.80	1.81	1.80		
Vol. Purged	66	76	86	96		
Remarks	-10	-10	-10	-10		

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time						
Analytical Param						
Volume Required						
Preservation						
Field Filtered						
Time						

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 05/05/03 Well ID: ~~SW75~~ SW4 Sample Number: 59SW7WG1 Recorded By:
Project Name: AFP 59 Well Location: Duplicate Number: Checked By:
Project Number: 66014

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10 Purging Equipment: Grundfos Ready Flo
PID #: Sampling Equipment: Disposable Bailer
Electric Sounder #:

WELL DATA

Elevation: Water Column in Well: 15.99 Total Vol. Extr.: 125
Well Diameter: 2" Borehole Diameter: 8" Ambient PID: NA
Well Depth: 27.69 Water Column in Borehole: 15.99 Well Mouth PID: NA
Depth to Well Water: 11.70 Standing Water Vol.: 41.6
Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1	2	3	4	1	2
Time 1715	~~1725~~ 1725	1735	1745	1755	1805	1815
Rate (gal/min)	1.5	1.5	1.5	1.5	1.5	1.5
Temperature (°C)	13.7	13.5	13.7	13.7	13.6	13.6
pH	6.60	7.04	6.98	6.99	6.98	6.97
Conductivity (mS/cm)	9.8	8.7	8.9	9.1	9.1	8.9
Vol. Purged (gal)	15	30	45	60	75	90
~~Remarks~~ Turb (NTU)	390	127	90	28	25	24

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	1825					
Analytical Param	VOCs (8260B)					
Volume Required	3, 40mL vials					
Preservation	HCL, 4°C					
Field Filtered	NO					
Time						

*-parameters stabilized on 3 consecutive read
No sample was collected

0441.FIG

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 05/05/03 Well ID: SW1 Sample Number: 595W1WG1 Recorded By: BW, PG
Project Name: AFP59 Well Location: Duplicate Number: Checked By:
Project Number: 66614

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10 Purging Equipment: Grundfos Ready Flo
PID #: N/A Sampling Equipment: Disposable Bailer
Electric Sounder #:

WELL DATA

Elevation: Water Column in Well: 12.07 Total Vol. Extr.: 94 gal
Well Diameter: 2" Borehole Diameter: 8" Ambient PID: NA
Well Depth: ~~64.12'~~ 28.38' Water Column in Borehole: 12.07 Well Mouth PID: N/A
Depth to Well Water: ~~16.31'~~ 16.31 Standing Water Vol.: 31.44 gal
Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1	2	3	4	1	2
Time	~~0820~~ BGL 0823	0830	0837	0844	0851	0859
Rate (gal/min)	2.1	2.0	2.0	1.9	2.1	2.0
Temperature (°C)	11.3	11.1	11.2	11.6	11.6	11.6
pH	6.64	7.10	7.12	7.12	7.13	7.12
Conductivity (µS/cm)	2.45	2.46	2.48	2.48	2.48	2.48
Vol. Purged (gal)	6 gallons	20	34	48	62	76
Turb. (NTU)	110	-10	-10	-10	-10	-10
~~Remarks~~						

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	0920					
Analytical Param	VOCs (8260B)					
Volume Required	3, 40mL vials					
Preservation	HCL, 4°C					
Field Filtered	No					
Time						

0461.FIG

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 05/05/03	Well ID: SW1	Sample Number: 595W1W61	Recorded By: BCW
Project Name: AFP 59	Well Location:	Duplicate Number:	Checked By:
Project Number: 66014			

EQUIPMENT

pH/Conductivity/Temperature Meter #:	Purging Equipment:
PID #:	Sampling Equipment:
Electric Sounder #:	

WELL DATA

Elevation:	Water Column in Well:	Total Vol. Extr.:
Well Diameter:	Borehole Diameter:	Ambient PID:
Well Depth:	Water Column in Borehole:	Well Mouth PID:
Depth to Well Water:	Standing Water Vol.:	

Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1	2	3	4	1	2
Time	0906	0908				
Rate (gal/min)	2.0	2.0				
Temperature (°C)	11.7	11.7				
pH	7.12	7.13				
Conductivity (mS/cm)	2.48	2.48				
Vol. Purged (gal)	90	94				
Turb (NTU)	-10	-10				
Remarks						

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	0920					
Analytical Param	VOCs (8260B)					
Volume Required	3, 40ml vials					
Preservation	HCl, 4°C					
Field Filtered	No					
Time						

0461.FIG

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 05/05/03 Well ID: DW1 Sample Number: 59DW1W61 Recorded By: BW, PG
Project Name: AFP59 Well Location: Duplicate Number: Checked By:
Project Number: 66014

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10 Purging Equipment: Grundfos Ready Flo
PID #: NA Sampling Equipment: Disposable Bailer
Electric Sounder #:

WELL DATA

Elevation: Water Column in Well: 47.81 Total Vol. Extr.: 210 gal
Well Diameter: 4" Borehole Diameter: 6" Ambient PID: NA
Well Depth: 64.12' Water Column in Borehole: 47.81 Well Mouth PID: NA
Depth to Well Water: 16.31 Standing Water Vol.: 70.04 gal
Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1	2	3	4	1	2
Time 0935	0935	0943	0958	1008	1018	1028
Rate (gal/min)	3.0	3.0	3.0	3.0	3.0	3.0
Temperature (°C)	12.1	12.4	12.3	12.2	12.3	12.3
pH	7.21	7.27	7.21	7.32	7.20	7.21
Conductivity (mS/cm)	1.55	1.55	1.55	1.56	1.55	1.55
Vol. Purged (gal)	9	39	69	99	129	159
~~Remarks~~ Turb (NTU)	261	10	-10	-10	-10	-10

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	11.00					
Analytical Param	VOCs (8260B)					
Volume Required	3-40mL vials					
Preservation	HCL, 4°C					
Field Filtered	No					
Time						

0461.FIG

GROUNDWATER PURGING AND SAMPLING RECORD

Date:	Well ID: DW1	Sample Number: 59DW1W61	Recorded By:
Project Name:	Well Location:	Duplicate Number:	Checked By:
Project Number:			

EQUIPMENT

pH/Conductivity/Temperature Meter #:	Purging Equipment:
PID #:	Sampling Equipment:
Electric Sounder #:	

WELL DATA

Elevation:	Water Column in Well:	Total Vol. Extr.:
Well Diameter:	Borehole Diameter:	Ambient PID:
Well Depth:	Water Column in Borehole:	Well Mouth PID:
Depth to Well Water:	Standing Water Vol.:	

Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1	2	3	4	1	2
Time	1038	1041	1044	1047		
Rate (gal/min)	3.0	3.0	3.0	3.0		
Temperature (°C)	12.2	12.2	12.2	12.2		
pH	7.20	7.21	7.21	7.20		
Conductivity (mS/cm)	1.56	1.55	1.56	1.56		
Vol. Purged (gal)	189	198	207	216		
~~Remarks~~ Turb	-10	-10	-10	-10		

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	11:00					
Analytical Param						
Volume Required						
Preservation						
Field Filtered						
Time						

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 05/05/03 | Well ID: SW3 | Sample Number: 595W3W61 | Recorded By: RL, PC
Project Name: AFP59 | Well Location: | Duplicate Number: 595W3W61MS, 595W3W61MSD | Checked By:
Project Number: 66014

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10 | Purging Equipment: Grundfos Ready Flo
PID #: NA | Sampling Equipment:
Electric Sounder #:

WELL DATA

Elevation: | Water Column in Well: 13.71' | Total Vol. Extr.: 107
Well Diameter: 2" | Borehole Diameter: 8" | Ambient PID: NA
Well Depth: 29.62' | Water Column in Borehole: 13.71' | Well Mouth PID: NA
Depth to Well Water: 15.91 | Standing Water Vol.: 35.71 gal.

Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1	2	3	4	1	2
Time 1222	1225	1232	1239	1246	1253	1300
Rate (gal/min)	2.5	2.5	2.5	2.5	2.5	2.5
Temperature °C	10.8	10.3	10.1	10.1	10.1	10.1
pH	7.16	7.29	7.31	7.31	7.34	7.33
Conductivity (mS/cm)	1.37	1.38	1.40	1.40	1.41	1.41
Vol. Purged (gal)	7.5	25	42.5	60	77.5	95
~~Remarks~~ Turb. (NTU)	17	25	-10	-10	-10	-10

COLLECTED SAMPLES

	1	2 MS	3 MSD	4	5	6
Sample Time	1312	1314	1316			
Analytical Param	VOCs (8260B)					
Volume Required	3 40mL vials					
Preservation	HCL, 4°C					
Field Filtered	No					
Time						

0461.FIO

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 05/05/03	Well ID: 595W3W61	Sample Number:	Recorded By:
Project Name: AFP 59	Well Location:	Duplicate Number:	Checked By:
Project Number: 60014			

EQUIPMENT

pH/Conductivity/Temperature Meter #:	Purging Equipment:
PID #:	Sampling Equipment:
Electric Sounder #:	

WELL DATA

Elevation:	Water Column in Well:	Total Vol. Extr.:
Well Diameter:	Borehole Diameter:	Ambient PID:
Well Depth:	Water Column in Borehole:	Well Mouth PID:
Depth to Well Water:	Standing Water Vol.:	

Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1	2	3	4	1	2
Time	1303	1306				
Rate (gal/min)	2.5	2.5				
Temperature (°C)	10.1	10.1				
pH	7.33	7.33				
Conductivity (mS/cm)	1.40	1.41				
Vol. Purged (gal)	102.5	110				
Turb. (NTU)	-10	-10				
~~Remarks~~						

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time						
Analytical Param						
Volume Required						
Preservation						
Field Filtered						
Time						

0461.FIG

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 05/05/03	Well ID: DW3	Sample Number: 59DW3WG1	Recorded By:
Project Name: AFP 59	Well Location:	Duplicate Number:	Checked By:
Project Number: 66014			

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10	Purging Equipment: Grundfos Ready Flo
PID #: NA	Sampling Equipment: Disposable Bailer
Electric Sounder #:	

WELL DATA

Elevation:	Water Column in Well: 72.89	Total Vol. Extr.: 320
Well Diameter: 4"	Borehole Diameter: 6"	Ambient PID: NA
Well Depth: 86.67	Water Column in Borehole: 72.89	Well Mouth PID: NA
Depth to Well Water: 13.78	Standing Water Vol.: 106.8 gal	

Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1 (starting pump no readings)	2	3	4	1	2
Time	1335	1340	1350	1400	1410	1420
Rate (gal/min)	4.0	4.0	4.0	4.0	4.0	4.0
Temperature (°C)	NA	12.8	13.0	13.1	13.0	13.0
pH	NA	7.31	7.34	7.35	7.34	7.34
Conductivity (mS/cm)	NA	1.31	1.30	1.31	1.31	1.31
Vol. Purged (gal)	0	20	60	100	140	180
Turb (NTU) Remarks	NA	999	213	185	195	142

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	1500					
Analytical Param	VOCs (8260B)					
Volume Required	3, 40mL vials					
Preservation	HCL, 4°C					
Field Filtered	No					
Time						

0461.F10

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 05/05/03 | Well ID: DW3 | Sample Number: 59DW3W61 | Recorded By: BW, PG

Project Name: AFP 59 | Well Location: | Duplicate Number: | Checked By:

Project Number: 66014

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10 | Purging Equipment: Grundfos ReadyFlo

PID #: | *Sampling Equipment:*

Electric Sounder #:

WELL DATA

Elevation:	Water Column in Well:	Total Vol. Extr.:
Well Diameter:	Borehole Diameter:	Ambient PID:
Well Depth:	Water Column in Borehole:	Well Mouth PID:
Depth to Well Water:	Standing Water Vol.:	

Ground Condition of Well:
Remarks:

PURGING / SAMPLING

	PURGING 1	2	3	4	SAMPLING 1	2
Time	1430	1446	1450	1500		
Rate (gal/min)	4.0	4.0	4.0	4.0		
Temperature (°C)	13.0	13.0	12.9	13.0		
pH	7.33	7.33	7.34	7.33		
Conductivity (mS/cm)	1.31	1.31	1.31	1.31		
Vol. Purged (gal)	220	260	300	340		
~~Remarks~~ Turb (NTU)	65	13	12	11		

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time						
Analytical Param						
Volume Required						
Preservation						
Field Filtered						
Time						

0461.FIG

APPENDIX C. CHAIN-OF-CUSTODY FORMS

Earth Tech
1420 King Street, Suite 600
Alexandria, Virginia 22314
Phone No. (703) 549-8728; Fax No. (703) 549-9134

Chain of Custody

EARTH TECH
A TYCO INTERNATIONAL LTD. COMPANY

PAGE ___ OF ___

Laboratory	Project Name	Chain of Custody No.
Kemron Environmental Services	AFP59	№ 0087
Address	**Point of Contact / Phone No.**	
109 Starlite Park	Tim Hoeflich	
City	**State**	**Zip Code**
Marietta	OH	45750
Site Contact / Phone No.		
Brandon Watts 703 716 7401		

Analysis

ERPIMS Information					Other Sample Information						
LOCID	SBD	SED	SACODE	SAMPNO	Sample I.D.	Date	Time	Matrix	No. of Con.	Cooler No.	VOCs (8260B)
SW1	0	0	N	1	59SW1WG1	05/06/03	0920	WG	3	1	X
DW1	0	0	N	1	59DW1WG1		1100	WG	3	1	X
Field QC	0	0	AB	1	ABLSC503		1130	WG	3	1	X
SW2	0	0	N	1	~~SW2~~ 59SW2WG1		1312	WG	3	1	X
SW3	0	0	MS	1	59SW3WG1MS		1314	WG	3	1	X
SW3	0	0	MD	1	59SW3WG1MSD		1316	WG	3	1	X
DW3	0	0	N	1	59DW3WG1		1500	WG	3	1	X
SW7	0	0	N	1	59SW7WG1		1630	WG	3	1	X
SW7	0	0	FD	1	59SW7WG1		1630	WG	3	1	X
SW4	0	0	N	1	59SW4WG1		1825	WG	3	1	X
Field QC	0	0	TB	1	TBSC0503	↓	1825	WG	3	1	X

BGW 05/07/03

		Date	Time		Date	Time
1. Relinquished By / Company	Brandon Watts / Earth Tech	5/06/03	0140	1. Received By / Company		
2. Relinquished By / Company				2. Received By / Company		
3. Relinquished By / Company				3. Received By / Company		
4. Relinquished By / Company				4. Received By / Company		
5. Relinquished By / Company				5. Received By / Company		

Comments

Shipment Method/Airbill No

DISTRIBUTION: WHITE - Stays with sample; CANARY - Returned to Client with Report; PINK - Field Copy

APPENDIX D. DATA QUALITY REVIEW SUMMARY AND GROUNDWATER ANALYTICAL DATA

Table DQR-4
Summary of Detected Chemicals at Former Air Force Plant 59
Ground Water Sampling - May 2003 Event

Location ID Date Sampled	DW1 05/05/2003	DW3 05/05/2003	SW1 05/05/2003	SW3 05/05/2003	SW4 05/05/2003	SW7 05/05/2003	SW7 (DUP) 05/05/2003
Analyte	**Volatiles by EPA SW-846 Method 8260 (ug/L)**						
1,1,1-Trichloroethane	0.8 R	0.8 R	0.8 R	**0.584 J**	**3.05 J**	**1.5 J**	**1.33 J**
1,1-Dichloroethane	0.4 R	0.4 R	0.4 R	**0.302 J**	**1.44 J**	**0.409 J**	**0.409 J**
Chloroform	0.3 R	0.3 R	0.3 R	**0.155 J**	0.3 R	0.3 R	0.3 R
cis-1,2-Dichloroethene	1.2 R	1.2 R	1.2 R	**1.37 J**	**3.36 J**	**1.08 J**	**1.43 J**
Methylene chloride	2 R	2 R	2 R	0.276 B	2 R	2 R	0.26 B
Tetrachloroethene	1.4 R	1.4 R	1.4 R	1.4 R	**0.683 J**	**0.279 J**	1.4 R
Trichloroethene	1 R	1 R	1 R	**0.893 J**	**9.09 J**	**1.44 J**	**1.44 J**

Key: R = *Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.*
B = The analyte was found in an associated blank, as well as in the sample.
J = The analyte was positively identified, but the quantitation is an estimation.
(DUP) = Duplicate sample taken in the field.

Notes: Bolded values indicate the analyte was detected above the associated MDL.

Data Quality Review

Air Force Plant 59, Johnson City, NY
F41624-01-D-9008/2008

Volatile Organic Analysis by Method SW8260B - Aqueous Samples
Data Package

This data quality review pertains to groundwater samples collected on May 5, 2003 at Air Force Plant 59 (AFP 59). The samples were analyzed following EPA Test Methods for Evaluating Solid Waste (SW-846) Method 8260B for volatile organic compounds at Kemron Environmental Services (Kemron), Marietta, Ohio. All samples were analyzed for the full list of volatile constituents included in the method.

Recommendations for quality control limits and data flagging criteria were taken from the Air Force Center for Environmental Excellence (AFCEE) *Quality Assurance Project Plan, Version 3.1* (USAF, 2001)

DQR-1 provides a cross-reference list for field sample IDs and lab sample IDs from Kemron.

Table DQR-1
Field Sample ID/Lab Sample ID Cross Reference

Field Sample ID	Lab Sample ID	Field Sample ID	Lab Sample ID
59SW1WG1	L0305193-01	59SW7WG1	L0305193-08
59DW1WG1	L0305193-02	59SW7WG9	L0305193-09
59SW3WG1	L0305193-04	59SW4WG1	L0305193-10
59SW3WG1MS	L0305193-05	AB050503	L0305193-03
59SW3WG1MSD	L0305193-06	TB050503	L0305193-11
59DW3WG1	L0305193-07		

Note: Please note the cooler temperature was at 8° C. The lab followed AFCEE flagging criteria for out of temp samples in the result reporting and for this reason all the non detects were **R** flagged and all the detects were **J** flagged. Unless noted herein, the validator leaves these flags in place.

During the data quality review process, laboratory qualified and unqualified data are verified against all available supporting documentation. Based on this review, qualifier codes may be added, deleted, or modified by the validator. Final results are therefore either qualified or unqualified. A summary of the data quality review flags is presented in Table DQR-2, listed in order of most severe to least severe. The data quality review process includes a review of sample holding times, calibrations, blanks (preparation, ambient, and trip blanks), matrix spike/matrix spike duplicates, surrogate recoveries, and field duplicates. Changes to the data are reflected on the Form I's in Appendix A.

Table DQR-2
Data Qualifiers

Qualifier	Description
R	Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.
B	The analyte was found in an associated blank, as well as in the sample.
J	This is an estimated value.

Holding Times

All of the groundwater samples were analyzed for volatile organic compounds within the recommended holding time of 14 days. No qualification is necessary.

Calibration Criteria

The percent relative standard deviation (%RSD) associated with the initial calibration (IC) was less than 30% for the compounds. In addition, the percent recovery (%R) values associated with the Second Source calibration were within control limits.

Continuing calibration verifications were performed at the required frequency and reporting factors (RFs) for target analytes were within 20%. None of the samples required dilution for analysis.

Laboratory Control Samples

In laboratory control sample (LCS) WG140126-02, all constituent recoveries were within the corresponding control ranges, with the exception of 1,3,5-trimethylbenzene, which exhibited a recovery above the upper control limit. Since this constituent was not detected in any of the environmental samples, no qualification is necessary.

Blanks

No constituents were detected in the single Preparation Blank (PB) WG140126-01 associated with these samples.

One trip blank and one ambient blank were collected and analyzed for volatile organic compounds. Chloroform and methylene chloride were detected above the method detection limit (MDL) in the ambient blank. Detected concentrations were below associated reporting limits and no qualification of associated sample data was required. Methylene chloride was detected in the trip blank at a concentration of 2.83 µg/L. The validator qualified **B** those positive values for methylene chloride which are less than or equal to 28.3 µg/L.

Matrix Spike/Matrix Spike Duplicate

Sample 59SW3WG1 served as the MS/MSD sample for this sample delivery group. Constituent recoveries were within quality control limits, with the exception of dichlorodifluoromethane, which exhibited recoveries below the lower control limit in the MS and 1,3,5-trimethylbenzene, which exhibited recoveries from the MSD above the corresponding upper control limits. RPD values all were less than 20%. Since this constituent was not detected in any of the environmental samples, no qualification is necessary.

Surrogate Recovery

Four surrogates were used for the monitoring of volatiles in all samples. All surrogate recoveries met the corresponding QC criteria. No qualification is necessary.

Field Duplicates

Field duplicate was collected for sample 59SW7WG1. One of two criteria was followed when evaluating field duplicates, depending on the amount detected. If the amount detected was greater than five times the reporting limit (RL), then the relative percent difference (RPD) should have been less than 25 percent. If the amount detected was less than five times the RL, then the difference between the duplicate and the sample concentrations should have been less than the RL. No qualification was necessary. Field duplicate results (in µg/L units) are summarized below.

Table DQR-3: Kemron Field Duplicate Comparison (µg/L)

Analyte	Reporting Limit (RL)	59SW7WG1	59SW7WG9	Relative Percent Difference (RPD)
1,1,1-Tichloroethane	0.8	1.5	1.33	12.0%
1,1-Dichloroethane	0.4	0.409	0.409	0.0%
cis 1,2-Dichloroethene	1.2	1.08	1.43	13.9%
Tetrachloroethene	1.4	0.279	Non Detect	Not calculated
Trichloroethene	1.0	1.44	1.44	0.0%

Summary

The data completeness is 6%. There was not 100% completeness as a result of rejected analytes due to the cooler temperature out-of-range. All other data points for the volatile analysis of groundwater samples are useable with the appropriate qualifiers. A summary of all detected compounds appears in Table DQR-4.

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAE # : MG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59DW1MG1 Lab Sample ID: L0305193-02 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8_09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 19:24:00

Concentration Units: ug/L File ID: 8M307008

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1,1,1,2-Tetrachloroethane	0.250	0.500	0.250	1	R
1,1,1-Trichloroethane	0.250	0.800	0.250	1	R
1,1,2,2-Tetrachloroethane	0.125	0.400	0.125	1	R
1,1,2-Trichloroethane	0.250	1.00	0.250	1	R
1,1-Dichloroethane	0.125	0.400	0.125	1	R
1,1-Dichloroethene	0.500	1.20	0.500	1	R
1,1-Dichloropropene	0.250	1.00	0.250	1	R
1,2,3-Trichlorobenzene	0.125	0.300	0.125	1	R
1,2,3-Trichloropropane	0.750	3.20	0.750	1	R
1,2,4-Trichlorobenzene	0.200	0.400	0.200	1	R
1,2,4-Trimethylbenzene	0.250	1.30	0.250	1	R
1,2-Dichlorobenzene	0.125	0.300	0.125	1	R
1,2-Dichloroethane	0.250	0.600	0.250	1	R
1,2-Dichloropropane	0.125	0.400	0.125	1	R
1,3,5-Trimethylbenzene	0.250	0.500	0.250	1	R
1,3-Dichlorobenzene	0.250	1.20	0.250	1	R
1,3-Dichloropropane	0.200	0.400	0.200	1	R
1,4-Dichlorobenzene	0.125	0.300	0.125	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

6/9/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : WG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: S9DW1WG1 Lab Sample ID: L0305193-02 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 19:24:00

Concentration Units: ug/L File ID: 8M307008

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1-Chlorohexane	0.125	0.500	0.125	1	R
2,2-Dichloropropane	0.250	3.50	0.250	1	R
2-Chlorotoluene	0.125	0.400	0.125	1	R
4-Chlorotoluene	0.250	0.600	0.250	1	R
Benzene	0.125	0.400	0.125	1	R
Carbon tetrachloride	0.250	2.10	0.250	1	R
Chlorobenzene	0.125	0.400	0.125	1	R
Chloroethane	0.500	1.00	0.500	1	R
Chloroform	0.125	0.300	0.125	1	R
Chloromethane	0.250	1.30	0.250	1	R
cis-1,2-Dichloroethene	0.250	1.20	0.250	1	R
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	R
Dichlorodifluoromethane	0.250	1.00	0.250	1	R
Ethylbenzene	0.250	0.600	0.250	1	R
Hexachlorobutadiene	0.250	1.10	0.250	1	R
Isopropylbenzene	0.250	0.500	0.250	1	R
m-,p-Xylene	0.500	1.00	0.500	1	R
Methylene chloride	0.250	2.00	0.250	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

5/12/03
DS

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : WG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59DW1WG1 Lab Sample ID: L0305193-02 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 19:24:00

Concentration Units: ug/L File ID: 8M307008

Analyte	MDL	RL	Concentration	Dilution	Qualifier
n-Butylbenzene	0.250	1.10	0.250	1	R
n-Propylbenzene	0.125	0.400	0.125	1	R
Naphthalene	0.200	0.400	0.200	1	R
o-Xylene	0.250	1.10	0.250	1	R
p-Isopropyltoluene	0.250	1.20	0.250	1	R
sec-Butylbenzene	0.250	1.30	0.250	1	R
Styrene	0.125	0.400	0.125	1	R
tert-Butylbenzene	0.250	1.40	0.250	1	R
Tetrachloroethene	0.250	1.40	0.250	1	R
Toluene	0.250	1.10	0.250	1	R
trans-1,2-Dichloroethene	0.250	0.600	0.250	1	R
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	R
Trichloroethene	0.250	1.00	0.250	1	R
Trichlorofluoromethane	0.250	0.800	0.250	1	R
Vinyl chloride	0.250	1.10	0.250	1	R

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	106	62 - 139	
Dibromofluoromethane	102	75 - 125	
4-Bromofluorobenzene	99.4	75 - 125	
Toluene-d8	103	75 - 125	

Internal Std	Qualifier

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

6/14/03

KEMRON ENVIRONMENTAL SERVICES
ANALYSES DATA SHEET 2
RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : MG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59DW3WG1 Lab Sample ID: L0305193-07 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 19:53:00

Concentration Units: ug/L File ID: 8M307009

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1,1,1,2-Tetrachloroethane	0.250	0.500	0.250	1	R
1,1,1-Trichloroethane	0.250	0.800	0.250	1	R
1,1,2,2-Tetrachloroethane	0.125	0.400	0.125	1	R
1,1,2-Trichloroethane	0.250	1.00	0.250	1	R
1,1-Dichloroethane	0.125	0.400	0.125	1	R
1,1-Dichloroethene	0.500	1.20	0.500	1	R
1,1-Dichloropropene	0.250	1.00	0.250	1	R
1,2,3-Trichlorobenzene	0.125	0.300	0.125	1	R
1,2,3-Trichloropropane	0.750	3.20	0.750	1	R
1,2,4-Trichlorobenzene	0.200	0.400	0.200	1	R
1,2,4-Trimethylbenzene	0.250	1.30	0.250	1	R
1,2-Dichlorobenzene	0.125	0.300	0.125	1	R
1,2-Dichloroethane	0.250	0.600	0.250	1	R
1,2-Dichloropropane	0.125	0.400	0.125	1	R
1,3,5-Trimethylbenzene	0.250	0.500	0.250	1	R
1,3-Dichlorobenzene	0.250	1.20	0.250	1	R
1,3-Dichloropropane	0.200	0.400	0.200	1	R
1,4-Dichlorobenzene	0.125	0.300	0.125	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DS 6/19/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAS # : WG140135

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59DW3WG1 Lab Sample ID: L0305193-07 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 19:53:00

Concentration Units: ug/L File ID: 8M307009

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1-Chlorohexane	0.125	0.500	0.125	1	R
2,2-Dichloropropane	0.250	3.50	0.250	1	R
2-Chlorotoluene	0.125	0.400	0.125	1	R
4-Chlorotoluene	0.250	0.600	0.250	1	R
Benzene	0.125	0.400	0.125	1	R
Carbon tetrachloride	0.250	2.10	0.250	1	R
Chlorobenzene	0.125	0.400	0.125	1	R
Chloroethane	0.500	1.00	0.500	1	R
Chloroform	0.125	0.300	0.125	1	R
Chloromethane	0.250	1.30	0.250	1	R
cis-1,2-Dichloroethene	0.250	1.20	0.250	1	R
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	R
Dichlorodifluoromethane	0.250	1.00	0.250	1	R
Ethylbenzene	0.250	0.600	0.250	1	R
Hexachlorobutadiene	0.250	1.10	0.250	1	R
Isopropylbenzene	0.250	0.500	0.250	1	R
m-,p-Xylene	0.500	1.00	0.500	1	R
Methylene chloride	0.250	2.00	0.250	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

05/19/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAS # : WG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59DW3WG1 Lab Sample ID: L0305193-07 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8_09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 19:53:00

Concentration Units: ug/L File ID: 8M307009

Analyte	MDL	RL	Concentration	Dilution	Qualifier
n-Butylbenzene	0.250	1.10	0.250	1	R
n-Propylbenzene	0.125	0.400	0.125	1	R
Naphthalene	0.200	0.400	0.200	1	R
o-Xylene	0.250	1.10	0.250	1	R
p-Isopropyltoluene	0.250	1.20	0.250	1	R
sec-Butylbenzene	0.250	1.30	0.250	1	R
Styrene	0.125	0.400	0.125	1	R
tert-Butylbenzene	0.250	1.40	0.250	1	R
Tetrachloroethene	0.250	1.40	0.250	1	R
Toluene	0.250	1.10	0.250	1	R
trans-1,2-Dichloroethene	0.250	0.600	0.250	1	R
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	R
Trichloroethene	0.250	1.00	0.250	1	R
Trichlorofluoromethane	0.250	0.800	0.250	1	R
Vinyl chloride	0.250	1.10	0.250	1	R

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	106	62 - 139	
Dibromofluoromethane	103	75 - 125	
4-Bromofluorobenzene	98.9	75 - 125	
Toluene-d8	102	75 - 125	

Internal Std	Qualifier

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DS 6/19/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAS # : MG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW1MG1 Lab Sample ID: L0305193-01 Matrix: Water

% Solids: NA Initial Calibration ID: HPMSA 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 18:54:00

Concentration Units: ug/L File ID: 8M307007

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1,1,1,2-Tetrachloroethane	0.250	0.500	0.250	1	R
1,1,1-Trichloroethane	0.250	0.800	0.250	1	R
1,1,2,2-Tetrachloroethane	0.125	0.400	0.125	1	R
1,1,2-Trichloroethane	0.250	1.00	0.250	1	R
1,1-Dichloroethane	0.125	0.400	0.125	1	R
1,1-Dichloroethene	0.500	1.20	0.500	1	R
1,1-Dichloropropene	0.250	1.00	0.250	1	R
1,2,3-Trichlorobenzene	0.125	0.300	0.125	1	R
1,2,3-Trichloropropane	0.750	3.20	0.750	1	R
1,2,4-Trichlorobenzene	0.200	0.400	0.200	1	R
1,2,4-Trimethylbenzene	0.250	1.30	0.250	1	R
1,2-Dichlorobenzene	0.125	0.300	0.125	1	R
1,2-Dichloroethane	0.250	0.600	0.250	1	R
1,2-Dichloropropane	0.125	0.400	0.125	1	R
1,3,5-Trimethylbenzene	0.250	0.500	0.250	1	R
1,3-Dichlorobenzene	0.250	1.20	0.250	1	R
1,3-Dichloropropane	0.200	0.400	0.200	1	R
1,4-Dichlorobenzene	0.125	0.300	0.125	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DB 5/14/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB = : WG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW1WG1 Lab Sample ID: L0305193-01 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 18:54:00

Concentration Units: ug/L File ID: 8M307007

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1-Chlorohexane	0.125	0.500	0.125	1	R
2,2-Dichloropropane	0.250	3.50	0.250	1	R
2-Chlorotoluene	0.125	0.400	0.125	1	R
4-Chlorotoluene	0.250	0.600	0.250	1	R
Benzene	0.125	0.400	0.125	1	R
Carbon tetrachloride	0.250	2.10	0.250	1	R
Chlorobenzene	0.125	0.400	0.125	1	R
Chloroethane	0.500	1.00	0.500	1	R
Chloroform	0.125	0.300	0.125	1	R
Chloromethane	0.250	1.30	0.250	1	R
cis-1,2-Dichloroethene	0.250	1.20	0.250	1	R
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	R
Dichlorodifluoromethane	0.250	1.00	0.250	1	R
Ethylbenzene	0.250	0.600	0.250	1	R
Hexachlorobutadiene	0.250	1.10	0.250	1	R
Isopropylbenzene	0.250	0.500	0.250	1	R
m-,p-Xylene	0.500	1.00	0.500	1	R
Methylene chloride	0.250	2.00	0.250	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DB 05/14/03

KEMRON ENVIRONMENTAL SERVICES
ANALYSES DATA SHEET 2
RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : KG1401126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 595W1MG1 Lab Sample ID: L0305193-01 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 18:54:00

Concentration Units: ug/L File ID: RM307007

Analyte	MDL	RL	Concentration	Dilution	Qualifier
n-Butylbenzene	0.250	1.10	0.250	1	R
n-Propylbenzene	0.125	0.400	0.125	1	R
Naphthalene	0.200	0.400	0.200	1	R
o-Xylene	0.250	1.10	0.250	1	R
p-Isopropyltoluene	0.250	1.20	0.250	1	R
sec-Butylbenzene	0.250	1.30	0.250	1	R
Styrene	0.125	0.400	0.125	1	R
tert-Butylbenzene	0.250	1.40	0.250	1	R
Tetrachloroethene	0.250	1.40	0.250	1	R
Toluene	0.250	1.10	0.250	1	R
trans-1,2-Dichloroethene	0.250	0.600	0.250	1	R
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	R
Trichloroethene	0.250	1.00	0.250	1	R
Trichlorofluoromethane	0.250	0.800	0.250	1	R
Vinyl chloride	0.250	1.10	0.250	1	R

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	103	62 - 139	
Dibromofluoromethane	101	75 - 125	
4-Bromofluorobenzene	98.8	75 - 125	
Toluene-d8	101	75 - 125	

Internal Std	Qualifier

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DB 6/19/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : KG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW3WG1 Lab Sample ID: L0305193-04 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 16:56:00

Concentration Units: ug/L File ID: 8M307003

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1,1,1,2-Tetrachloroethane	0.250	0.500	0.250	1	R
1,1,1-Trichloroethane	0.250	0.800	0.584	1	J
1,1,2,2-Tetrachloroethane	0.125	0.400	0.125	1	R
1,1,2-Trichloroethane	0.250	1.00	0.250	1	R
1,1-Dichloroethane	0.125	0.400	0.302	1	J
1,1-Dichloroethene	0.500	1.20	0.500	1	R
1,1-Dichloropropene	0.250	1.00	0.250	1	R
1,2,3-Trichlorobenzene	0.125	0.300	0.125	1	R
1,2,3-Trichloropropane	0.750	3.20	0.750	1	R
1,2,4-Trichlorobenzene	0.200	0.400	0.200	1	R
1,2,4-Trimethylbenzene	0.250	1.30	0.250	1	R
1,2-Dichlorobenzene	0.125	0.300	0.125	1	R
1,2-Dichloroethane	0.250	0.600	0.250	1	R
1,2-Dichloropropane	0.125	0.400	0.125	1	R
1,3,5-Trimethylbenzene	0.250	0.500	0.250	1	R
1,3-Dichlorobenzene	0.250	1.20	0.250	1	R
1,3-Dichloropropane	0.200	0.400	0.200	1	R
1,4-Dichlorobenzene	0.125	0.300	0.125	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DS 6/19/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAS # : NG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW3WG1 Lab Sample ID: L0305193-04 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 16:56:00

Concentration Units: ug/L File ID: 8M307003

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1-Chlorohexane	0.125	0.500	0.125	1	R
2,2-Dichloropropane	0.250	3.50	0.250	1	R
2-Chlorotoluene	0.125	0.400	0.125	1	R
4-Chlorotoluene	0.250	0.600	0.250	1	R
Benzene	0.125	0.400	0.125	1	R
Carbon tetrachloride	0.250	2.10	0.250	1	R
Chlorobenzene	0.125	0.400	0.125	1	R
Chloroethane	0.500	1.00	0.500	1	R
Chloroform	0.125	0.300	0.155	1	J
Chloromethane	0.250	1.30	0.250	1	R
cis-1,2-Dichloroethene	0.250	1.20	1.37	1	J
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	R
Dichlorodifluoromethane	0.250	1.00	0.250	1	R
Ethylbenzene	0.250	0.600	0.250	1	R
Hexachlorobutadiene	0.250	1.10	0.250	1	R
Isopropylbenzene	0.250	0.500	0.250	1	R
m-,p-Xylene	0.500	1.00	0.500	1	R
Methylene chloride	0.250	2.00	0.276	1	J B

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DB 6/11/03

KEMRON ENVIRONMENTAL SERVICES
ANALYSES DATA SHEET 2
RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : HG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW3WG1 Lab Sample ID: L0305193-04 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 16:56:00

Concentration Units: ug/L File ID: 8M307003

Analyte	MDL	RL	Concentration	Dilution	Qualifier
n-Butylbenzene	0.250	1.10	0.250	1	R
n-Propylbenzene	0.125	0.400	0.125	1	R
Naphthalene	0.200	0.400	0.200	1	R
o-Xylene	0.250	1.10	0.250	1	R
p-Isopropyltoluene	0.250	1.20	0.250	1	R
sec-Butylbenzene	0.250	1.30	0.250	1	R
Styrene	0.125	0.400	0.125	1	R
tert-Butylbenzene	0.250	1.40	0.250	1	R
Tetrachloroethene	0.250	1.40	0.250	1	R
Toluene	0.250	1.10	0.250	1	R
trans-1,2-Dichloroethene	0.250	0.600	0.250	1	R
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	R
Trichloroethene	0.250	1.00	0.893	1	J
Trichlorofluoromethane	0.250	0.800	0.250	1	R
Vinyl chloride	0.250	1.10	0.250	1	R

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	104	62 - 139	
Dibromofluoromethane	101	75 - 125	
4-Bromofluorobenzene	99.2	75 - 125	
Toluene-d8	102	75 - 125	

Internal Std	Qualifier

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : WG148126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW4MG1 Lab Sample ID: L0305193-10 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8_09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 21:22:00

Concentration Units: ug/L File ID: 8M307012

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1,1,1,2-Tetrachloroethane	0.250	0.500	0.250	1	R
1,1,1-Trichloroethane	0.250	0.800	3.05	1	J
1,1,2,2-Tetrachloroethane	0.125	0.400	0.125	1	R
1,1,2-Trichloroethane	0.250	1.00	0.250	1	R
1,1-Dichloroethane	0.125	0.400	1.44	1	J
1,1-Dichloroethene	0.500	1.20	0.500	1	R
1,1-Dichloropropene	0.250	1.00	0.250	1	R
1,2,3-Trichlorobenzene	0.125	0.300	0.125	1	R
1,2,3-Trichloropropane	0.750	3.20	0.750	1	R
1,2,4-Trichlorobenzene	0.200	0.400	0.200	1	R
1,2,4-Trimethylbenzene	0.250	1.30	0.250	1	R
1,2-Dichlorobenzene	0.125	0.300	0.125	1	R
1,2-Dichloroethane	0.250	0.600	0.250	1	R
1,2-Dichloropropane	0.125	0.400	0.125	1	R
1,3,5-Trimethylbenzene	0.250	0.500	0.250	1	R
1,3-Dichlorobenzene	0.250	1.20	0.250	1	R
1,3-Dichloropropane	0.200	0.400	0.200	1	R
1,4-Dichlorobenzene	0.125	0.300	0.125	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DB
5/19/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : WG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW4WG1 Lab Sample ID: L0305193-10 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 21:22:00

Concentration Units: ug/L File ID: 8M307012

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1-Chlorohexane	0.125	0.500	0.125	1	R
2,2-Dichloropropane	0.250	3.50	0.250	1	R
2-Chlorotoluene	0.125	0.400	0.125	1	R
4-Chlorotoluene	0.250	0.600	0.250	1	R
Benzene	0.125	0.400	0.125	1	R
Carbon tetrachloride	0.250	2.10	0.250	1	R
Chlorobenzene	0.125	0.400	0.125	1	R
Chloroethane	0.500	1.00	0.500	1	R
Chloroform	0.125	0.300	0.125	1	R
Chloromethane	0.250	1.30	0.250	1	R
cis-1,2-Dichloroethene	0.250	1.20	3.36	1	J
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	R
Dichlorodifluoromethane	0.250	1.00	0.250	1	R
Ethylbenzene	0.250	0.600	0.250	1	R
Hexachlorobutadiene	0.250	1.10	0.250	1	R
Isopropylbenzene	0.250	0.500	0.250	1	R
m-,p-Xylene	0.500	1.00	0.500	1	R
Methylene chloride	0.250	2.00	0.250	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DS 6/19/03

KEMRON ENVIRONMENTAL SERVICES
ANALYSES DATA SHEET 2
RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : HG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW4WG1 Lab Sample ID: L0305193-10 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 21:22:00

Concentration Units: ug/L File ID: 8M307012

Analyte	MDL	RL	Concentration	Dilution	Qualifier
n-Butylbenzene	0.250	1.10	0.250	1	R
n-Propylbenzene	0.125	0.400	0.125	1	R
Naphthalene	0.200	0.400	0.200	1	R
o-Xylene	0.250	1.10	0.250	1	R
p-Isopropyltoluene	0.250	1.20	0.250	1	R
sec-Butylbenzene	0.250	1.30	0.250	1	R
Styrene	0.125	0.400	0.125	1	R
tert-Butylbenzene	0.250	1.40	0.250	1	R
Tetrachloroethene	0.250	1.40	0.683	1	J
Toluene	0.250	1.10	0.250	1	R
trans-1,2-Dichloroethene	0.250	0.600	0.250	1	R
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	R
Trichloroethene	0.250	1.00	9.09	1	J
Trichlorofluoromethane	0.250	0.800	0.250	1	R
Vinyl chloride	0.250	1.10	0.250	1	R

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	112	62 - 139	
Dibromofluoromethane	105	75 - 125	
4-Bromofluorobenzene	101	75 - 125	
Toluene-d8	104	75 - 125	

Internal Std	Qualifier

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DS 6/4/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : HG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW7WG1 Lab Sample ID: L0305193-08 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 20:23:00

Concentration Units: ug/L File ID: BM307010

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1,1,1,2-Tetrachloroethane	0.250	0.500	0.250	1	R
1,1,1-Trichloroethane	0.250	0.800	1.50	1	J
1,1,2,2-Tetrachloroethane	0.125	0.400	0.125	1	R
1,1,2-Trichloroethane	0.250	1.00	0.250	1	R
1,1-Dichloroethane	0.125	0.400	0.409	1	J
1,1-Dichloroethene	0.500	1.20	0.500	1	R
1,1-Dichloropropene	0.250	1.00	0.250	1	R
1,2,3-Trichlorobenzene	0.125	0.300	0.125	1	R
1,2,3-Trichloropropane	0.750	3.20	0.750	1	R
1,2,4-Trichlorobenzene	0.200	0.400	0.200	1	R
1,2,4-Trimethylbenzene	0.250	1.30	0.250	1	R
1,2-Dichlorobenzene	0.125	0.300	0.125	1	R
1,2-Dichloroethane	0.250	0.600	0.250	1	R
1,2-Dichloropropane	0.125	0.400	0.125	1	R
1,3,5-Trimethylbenzene	0.250	0.500	0.250	1	R
1,3-Dichlorobenzene	0.250	1.20	0.250	1	R
1,3-Dichloropropane	0.200	0.400	0.200	1	R
1,4-Dichlorobenzene	0.125	0.300	0.125	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

6/19/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : KG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW7WG1 Lab Sample ID: L0305193-08 Matrix: Water

% Solids: NA Initial Calibration ID: HPMSB 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 20:23:00

Concentration Units: ug/L File ID: BM307010

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1-Chlorohexane	0.125	0.500	0.125	1	R
2.2-Dichloropropane	0.250	3.50	0.250	1	R
2-Chlorotoluene	0.125	0.400	0.125	1	R
4-Chlorotoluene	0.250	0.600	0.250	1	R
Benzene	0.125	0.400	0.125	1	R
Carbon tetrachloride	0.250	2.10	0.250	1	R
Chlorobenzene	0.125	0.400	0.125	1	R
Chloroethane	0.500	1.00	0.500	1	R
Chloroform	0.125	0.300	0.125	1	R
Chloromethane	0.250	1.30	0.250	1	R
cis-1.2-Dichloroethene	0.250	1.20	1.08	1	J
cis-1.3-Dichloropropene	0.250	1.00	0.250	1	R
Dichlorodifluoromethane	0.250	1.00	0.250	1	R
Ethylbenzene	0.250	0.600	0.250	1	R
Hexachlorobutadiene	0.250	1.10	0.250	1	R
Isopropylbenzene	0.250	0.500	0.250	1	R
m-.p-Xylene	0.500	1.00	0.500	1	R
Methylene chloride	0.250	2.00	0.250	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DF 5/19/03

KEMRON ENVIRONMENTAL SERVICES
ANALYSES DATA SHEET 2
RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : WG142126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW7WG1 Lab Sample ID: L0305193-08 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 20:23:00

Concentration Units: ug/L File ID: 8M307010

Analyte	MDL	RL	Concentration	Dilution	Qualifier
n-Butylbenzene	0.250	1.10	0.250	1	R
n-Propylbenzene	0.125	0.400	0.125	1	R
Naphthalene	0.200	0.400	0.200	1	R
o-Xylene	0.250	1.10	0.250	1	R
p-Isopropyltoluene	0.250	1.20	0.250	1	R
sec-Butylbenzene	0.250	1.30	0.250	1	R
Styrene	0.125	0.400	0.125	1	R
tert-Butylbenzene	0.250	1.40	0.250	1	R
Tetrachloroethene	0.250	1.40	0.279	1	J
Toluene	0.250	1.10	0.250	1	R
trans-1,2-Dichloroethene	0.250	0.600	0.250	1	R
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	R
Trichloroethene	0.250	1.00	1.44	1	J
Trichlorofluoromethane	0.250	0.800	0.250	1	R
Vinyl chloride	0.250	1.10	0.250	1	R

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	106	62 - 139	
Dibromofluoromethane	103	75 - 125	
4-Bromofluorobenzene	98.2	75 - 125	
Toluene-d8	103	75 - 125	

Internal Std	Qualifier

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

05 5/19/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAR # : WG142126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW7WG9 Lab Sample ID: L0305191-09 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 20:52:00

Concentration Units: ug/L File ID: 8M307011

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1,1,1,2-Tetrachloroethane	0.250	0.500	0.250	1	R
1,1,1-Trichloroethane	0.250	0.800	1.33	1	J
1,1,2,2-Tetrachloroethane	0.125	0.400	0.125	1	R
1,1,2-Trichloroethane	0.250	1.00	0.250	1	R
1,1-Dichloroethane	0.125	0.400	0.409	1	J
1,1-Dichloroethene	0.500	1.20	0.500	1	R
1,1-Dichloropropene	0.250	1.00	0.250	1	R
1,2,3-Trichlorobenzene	0.125	0.300	0.125	1	R
1,2,3-Trichloropropane	0.750	3.20	0.750	1	R
1,2,4-Trichlorobenzene	0.200	0.400	0.200	1	R
1,2,4-Trimethylbenzene	0.250	1.30	0.250	1	R
1,2-Dichlorobenzene	0.125	0.300	0.125	1	R
1,2-Dichloroethane	0.250	0.600	0.250	1	R
1,2-Dichloropropane	0.125	0.400	0.125	1	R
1,3,5-Trimethylbenzene	0.250	0.500	0.250	1	R
1,3-Dichlorobenzene	0.250	1.20	0.250	1	R
1,3-Dichloropropane	0.200	0.400	0.200	1	R
1,4-Dichlorobenzene	0.125	0.300	0.125	1	R

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DS 5/19/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAB # : MG140126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW7WG9 Lab Sample ID: L0305191-29 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 20:52:00

Concentration Units: ug/L File ID: 8M307011

Analyte	MDL	RL	Concentration	Dilution	Qualifier
1-Chlorohexane	0.125	0.500	0.125	1	R
2,2-Dichloropropane	0.250	3.50	0.250	1	R
2-Chlorotoluene	0.125	0.400	0.125	1	R
4-Chlorotoluene	0.250	0.600	0.250	1	R
Benzene	0.125	0.400	0.125	1	R
Carbon tetrachloride	0.250	2.10	0.250	1	R
Chlorobenzene	0.125	0.400	0.125	1	R
Chloroethane	0.500	1.00	0.500	1	R
Chloroform	0.125	0.300	0.125	1	R
Chloromethane	0.250	1.30	0.250	1	R
cis-1,2-Dichloroethene	0.250	1.20	1.43	1	J
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	R
Dichlorodifluoromethane	0.250	1.00	0.250	1	R
Ethylbenzene	0.250	0.600	0.250	1	R
Hexachlorobutadiene	0.250	1.10	0.250	1	R
Isopropylbenzene	0.250	0.500	0.250	1	R
m-,p-Xylene	0.500	1.00	0.500	1	R
Methylene chloride	0.250	2.00	0.260	1	J B

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DB 6/19/03

KEMRON ENVIRONMENTAL SERVICES

ANALYSES DATA SHEET 2

RESULTS

Analytical Method : 8260B Preparatory Method: 5030B AAS # : MG14C126

Lab Name : Kemron Environmental Services Contract#:

Field Sample ID: 59SW7WG9 Lab Sample ID: L0305191-09 Matrix: Water

% Solids: NA Initial Calibration ID: HPMS8 09-APR-03

Date Received: 07-MAY-03 Date Extracted: 08-MAY-03 Date Analyzed: 08-MAY-03 20:52:00

Concentration Units: ug/L File ID: RM307011

Analyte	MDL	RL	Concentration	Dilution	Qualifier
n-Butylbenzene	0.250	1.10	0.250	1	R
n-Propylbenzene	0.125	0.400	0.125	1	R
Naphthalene	0.200	0.400	0.200	1	R
o-Xylene	0.250	1.10	0.250	1	R
p-Isopropyltoluene	0.250	1.20	0.250	1	R
sec-Butylbenzene	0.250	1.30	0.250	1	R
Styrene	0.125	0.400	0.125	1	R
tert-Butylbenzene	0.250	1.40	0.250	1	R
Tetrachloroethene	0.250	1.40	0.250	1	R
Toluene	0.250	1.10	0.250	1	R
trans-1,2-Dichloroethene	0.250	0.600	0.250	1	R
trans-1,3-Dichloropropene	0.500	1.00	0.500	1	R
Trichloroethene	0.250	1.00	1.44	1	J
Trichlorofluoromethane	0.250	0.800	0.250	1	R
Vinyl chloride	0.250	1.10	0.250	1	R

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4	107	62 - 139	
Dibromofluoromethane	103	75 - 125	
4-Bromofluorobenzene	101	75 - 125	
Toluene-d8	102	75 - 125	

Internal Std	Qualifier

Comments:

All results, MDLs, and RLs have been corrected to dry weight, where applicable.

DS 5/14/03