FINAL

GROUNDWATER MONITORING REPORT

for the May 2001 Sampling Event
at Air Force Plant 59

Prepared for:

Air Force Center for Environmental Excellence
and
Aeronautical Systems Center

Prepared by:

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Contract No. F41624-97-D-8018
Delivery Order No. 0072

August 2001

DISCLAIMER

This *Final Groundwater Monitoring Report for the May 2001 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 2001 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 F41624-97-D-8018, Delivery Order 0072. 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.

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13.ABSTRACT *(Maximum 200 words)*

This document is the *Final Groundwater Monitoring Report for the May 2001 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

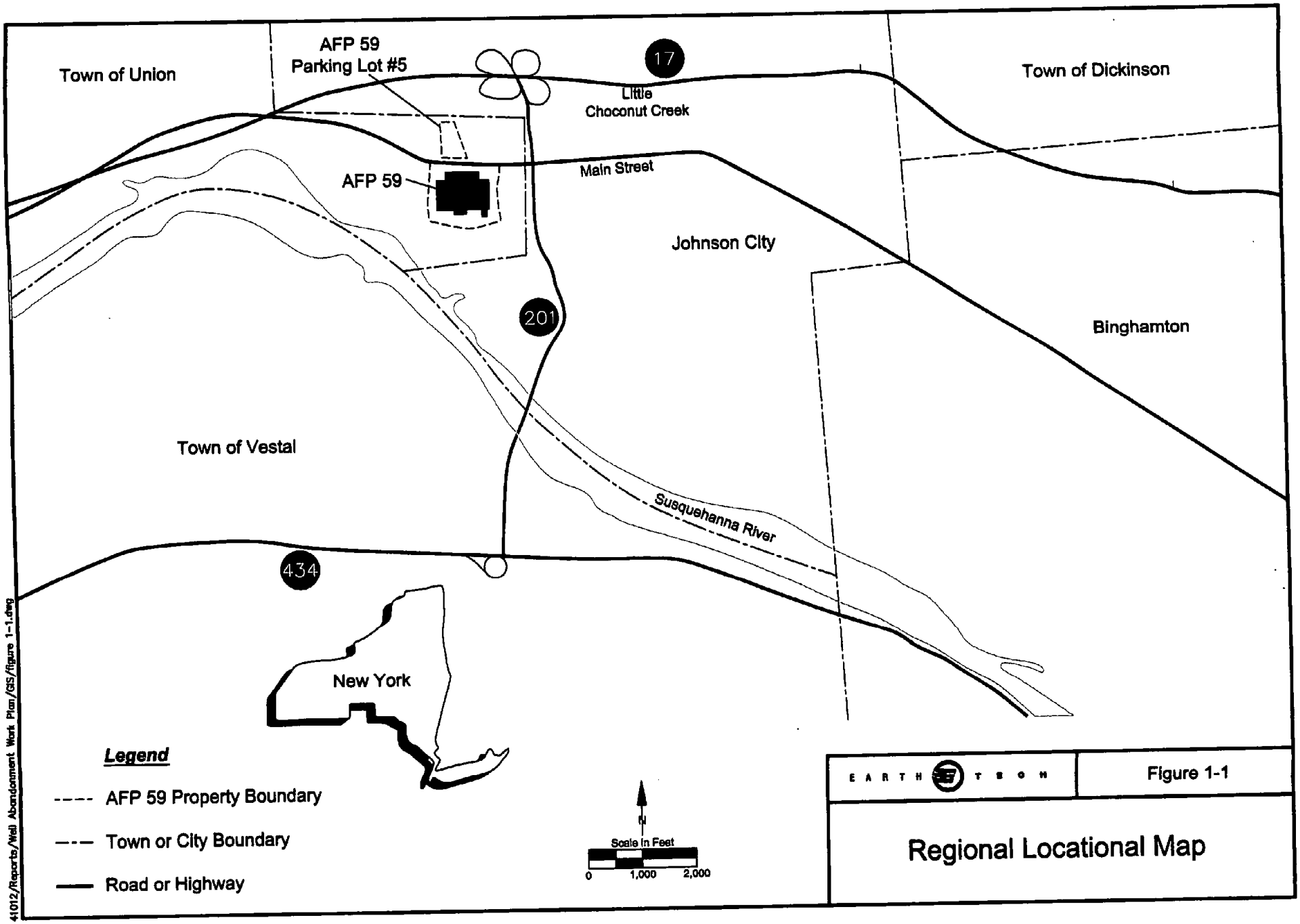
1.0 INTRODUCTION

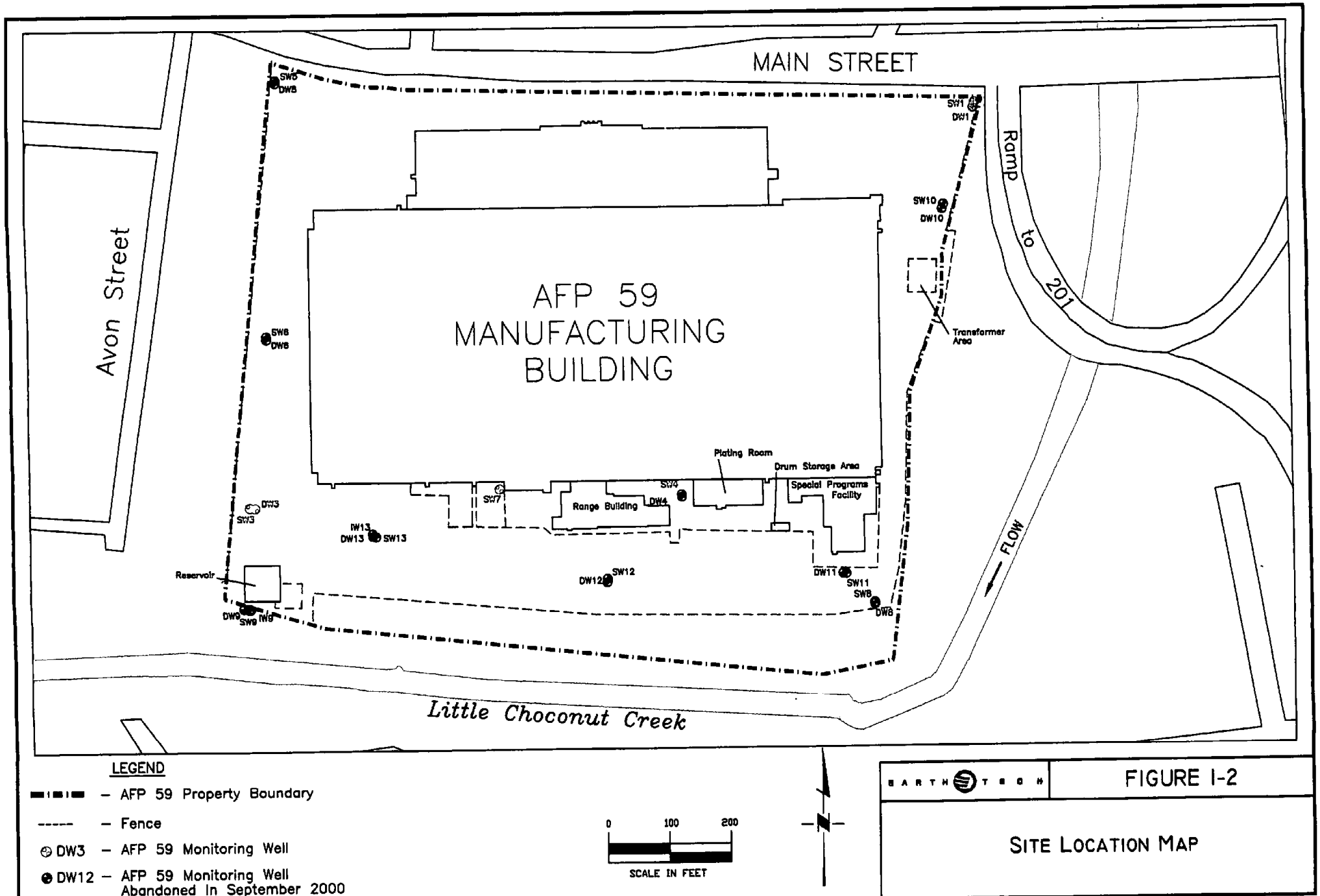
This *Final Groundwater Monitoring Report for the May 2001 Sampling Event* has been prepared by Earth Tech to describe field and laboratory operations during the May 2001 groundwater sampling event. The May 2001 sampling event was conducted as part of the semiannual groundwater monitoring at Air Force 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.

This report has been prepared in accordance with the United States Environmental Protection Agency (USEPA) document *Guidance for Conducting Remedial Investigations and Feasibility Studies Under Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA)* (USEPA, 1988). The report also follows the format and content requirements of the United States Air Force (USAF) document *Handbook for the Installation Restoration Program (IRP), Remedial Investigations and Feasibility Studies (RI/FS)* (USAF, 1993). 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 2001 sampling event, Section 3 summarizes the analytical results, and Section 4 presents conclusions from the investigation.


AFP 59
Parking Lot #5
Town of Union
17
Little
Choconut Creek
Town of Dickinson
Main Street
AFP 59
Johnson City
201
Binghamton
Town of Vestal
Susquehanna River
434
New York
Legend
AFP 59 Property Boundary
Town or City Boundary
Road or Highway
N
Scale In Feet
0
1,000
2,000
EARTH TECH
Figure 1-1
Regional Locational Map
41012/Reports/Well Abandonment Work Plan/GIS/figure 1-1.dwg



41012/Rep/Nov 2000 GW Monitoring Rep/GIS/371381OC.dwg

2.0 PROJECT ACTIVITIES

This section summarizes activities conducted during the May 2001 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

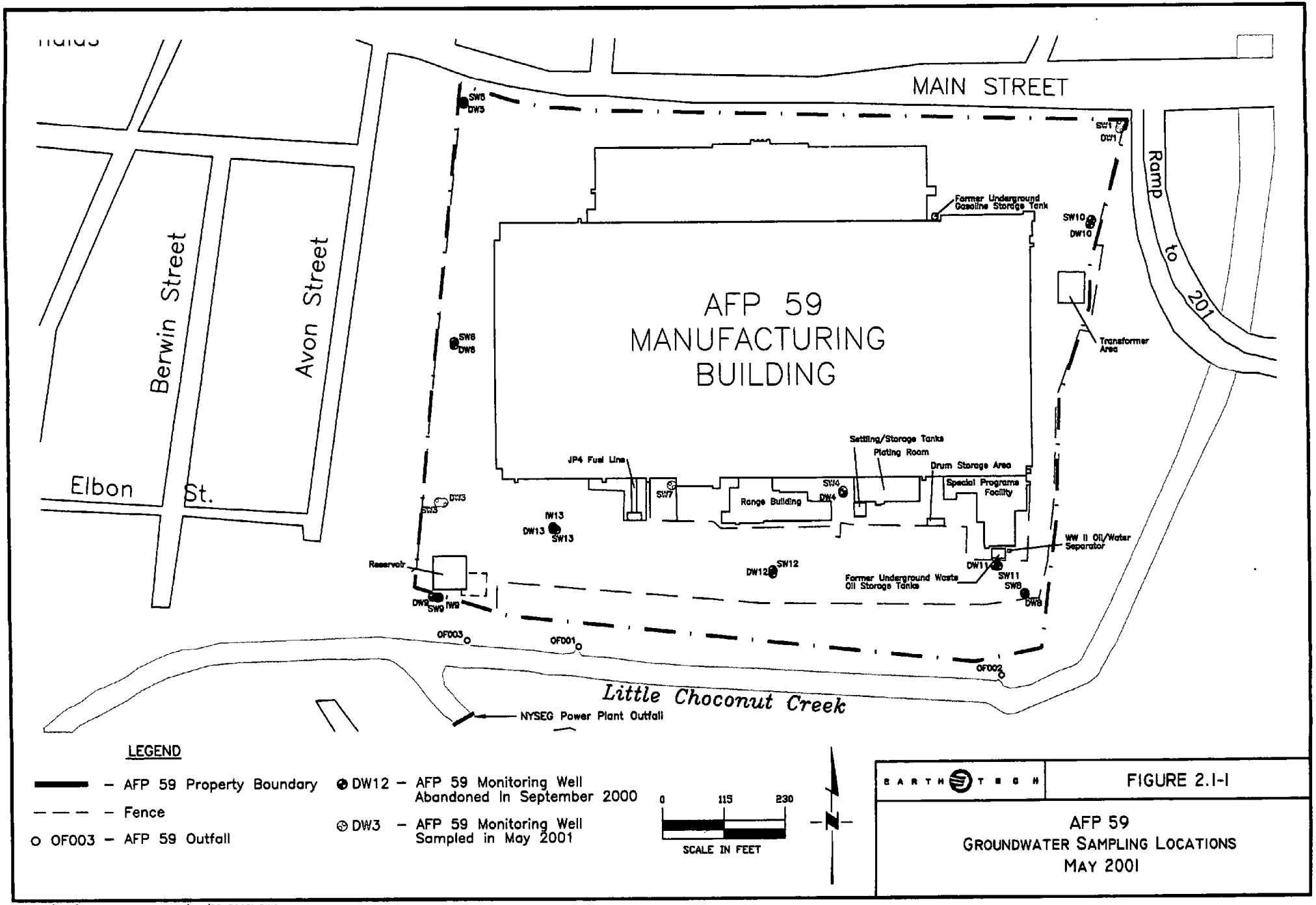
On the basis of conclusions presented in the *Final Remedial Investigation Report* (Earth Tech, 1996) and recommendations made by the NYSDEC, it was determined that VOCs represent the only chemicals of potential concern in groundwater at AFP 59. As a result, the *Record of Decision* (Earth Tech, 1999b) 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 2001 sampling event, which represents the fourth 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 2001 sampling event, and Figure 2.1-1 shows the locations of the on-site monitoring wells sampled during May 2001 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	Ground-water	6	0(1)	1	1	1	9

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



41012/Rep/Well Aband Work Plan/GIS/37136GSL.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 2001 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 2001 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 2001 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 3.0* (USAF, 1998). Laboratory analyses were performed by O'Brien & Gere Laboratories located in Syracuse, New York. Analytical methods and O'Brien & Gere Laboratories' associated method detection limits (MDLs) and reporting limits (RLs) are listed in Table 3.1-1. No 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 3.0* (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. Analyze 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 O'Brien & Gere Laboratories

Parameter/Method	Analyte	Water			
		MDL	Unit	RL	Unit
VOCs SW8260B	1,1,1,2-Tetrachloroethane	0.051	µg/L	0.5	µg/L
	1,1,1-TCA	0.049	µg/L	0.8	µg/L
	1,1,2,2-Tetrachloroethane	0.052	µg/L	0.5	µg/L
	1,1,2-TCA	0.08	µg/L	1.0	µg/L
	1,1-DCA	0.054	µg/L	0.4	µg/L
	1,1-DCE	0.144	µg/L	1.2	µg/L
	1,1-Dichloropropene	0.07	µg/L	1.0	µg/L
	1,2,3-Trichlorobenzene	0.063	µg/L	0.3	µg/L
	1,2,3-Trichloropropane	0.075	µg/L	3.2	µg/L
	1,2,4-Trichlorobenzene	0.062	µg/L	0.4	µg/L
	1,2,4-Trimethylbenzene	0.014	µg/L	1.3	µg/L
	1,2-DCA	0.067	µg/L	0.6	µg/L
	1,2-DCB	0.028	µg/L	0.3	µg/L
	trans-1,2-Dichloroethene	0.14	µg/L	0.6	µg/L
	1,2-Dibromo-3-chloropropane	0.33	µg/L	2.6	µg/L
	1,2-Dibromoethane	0.068	µg/L	0.6	µg/L
	1,2-Dichloropropane	0.067	µg/L	0.4	µg/L
	1,3,5-Trimethylbenzene	0.018	µg/L	0.5	µg/L
	1,3-DCB	0.048	µg/L	1.2	µg/L
	1,3-Dichloropropane	0.05	µg/L	0.4	µg/L
	1,4-DCB	0.023	µg/L	0.3	µg/L
	2,2-Dichloropropane	0.026	µg/L	3.5	µg/L
	2-Chlorotoluene	0.019	µg/L	0.4	µg/L
	4-Chlorotoluene	0.015	µg/L	0.6	µg/L
	Benzene	0.032	µg/L	0.4	µg/L
	Bromobenzene	0.091	µg/L	0.3	µg/L
	Bromochloromethane	0.114	µg/L	0.4	µg/L
	Bromodichloromethane	0.025	µg/L	0.8	µg/L
	Bromoform	0.108	µg/L	1.2	µg/L
	Bromomethane	0.059	µg/L	1.1	µg/L
	n-Butylbenzene	0.037	µg/L	1.1	µg/L
	sec-Butylbenzene	0.026	µg/L	1.3	µg/L
	tert-Butylbenzene	0.024	µg/L	1.4	µg/L
	Carbon tetrachloride	0.06	µg/L	2.1	µg/L
	Chlorobenzene	0.014	µg/L	0.4	µg/L
	Chloroethane	0.07	µg/L	1.0	µg/L
	Chloroform	0.061	µg/L	0.3	µg/L
	Chloromethane	0.073	µg/L	1.3	µg/L
	cis-1,2-DCE	0.145	µg/L	1.2	µg/L
	cis-1,3-Dichloropropene	0.05	µg/L	1.0	µg/L
	Dibromochloromethane	0.049	µg/L	0.5	µg/L
	Dibromomethane	0.036	µg/L	2.4	µg/L
	Dichlorodifluoromethane	0.06	µg/L	1.0	µg/L

Table 3.1-1. Analytical Parameters, Method Detection Limits, and Reporting Limits for O'Brien & Gere Laboratories (Continued)

Parameter/Method	Analyte	Water			
		MDL	Unit	RL	Unit
VOCs SW8260B	trans-1,3-Dichloropropene	0.06	µg/L	1.0	µg/L
	Ethylbenzene	0.015	µg/L	0.6	µg/L
	Hexachlorobutadiene	0.102	µg/L	1.1	µg/L
	Isopropylbenzene	0.014	µg/L	0.5	µg/L
	p-Isopropyltoluene	0.029	µg/L	1.2	µg/L
	Methylene Chloride	0.06	µg/L	2.0	µg/L
	Naphthalene	0.05	µg/L	1.0	µg/L
	n-Propylbenzene	0.018	µg/L	0.4	µg/L
	Styrene	0.011	µg/L	0.5	µg/L
	Tetrachloroethene	0.087	µg/L	1.4	µg/L
	Trichloroethene	0.06	µg/L	1.0	µg/L
	Trichlorofluoromethane	0.018	µg/L	0.8	µg/L
	Toluene	0.017	µg/L	1.1	µg/L
	Vinyl Chloride	0.019	µg/L	1.1	µg/L
	(m&p)-Xylene	0.024	µg/L	0.6	µg/L
	o-Xylene	0.013	µg/L	1.1	µg/L
	Xylene (total)	0.024	µg/L	1.1	µg/L

3.1.2 Data Summary

The number and locations of groundwater samples are outlined below. Figure 3.1-1 shows the locations of the monitoring wells sampled during the May 2001 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

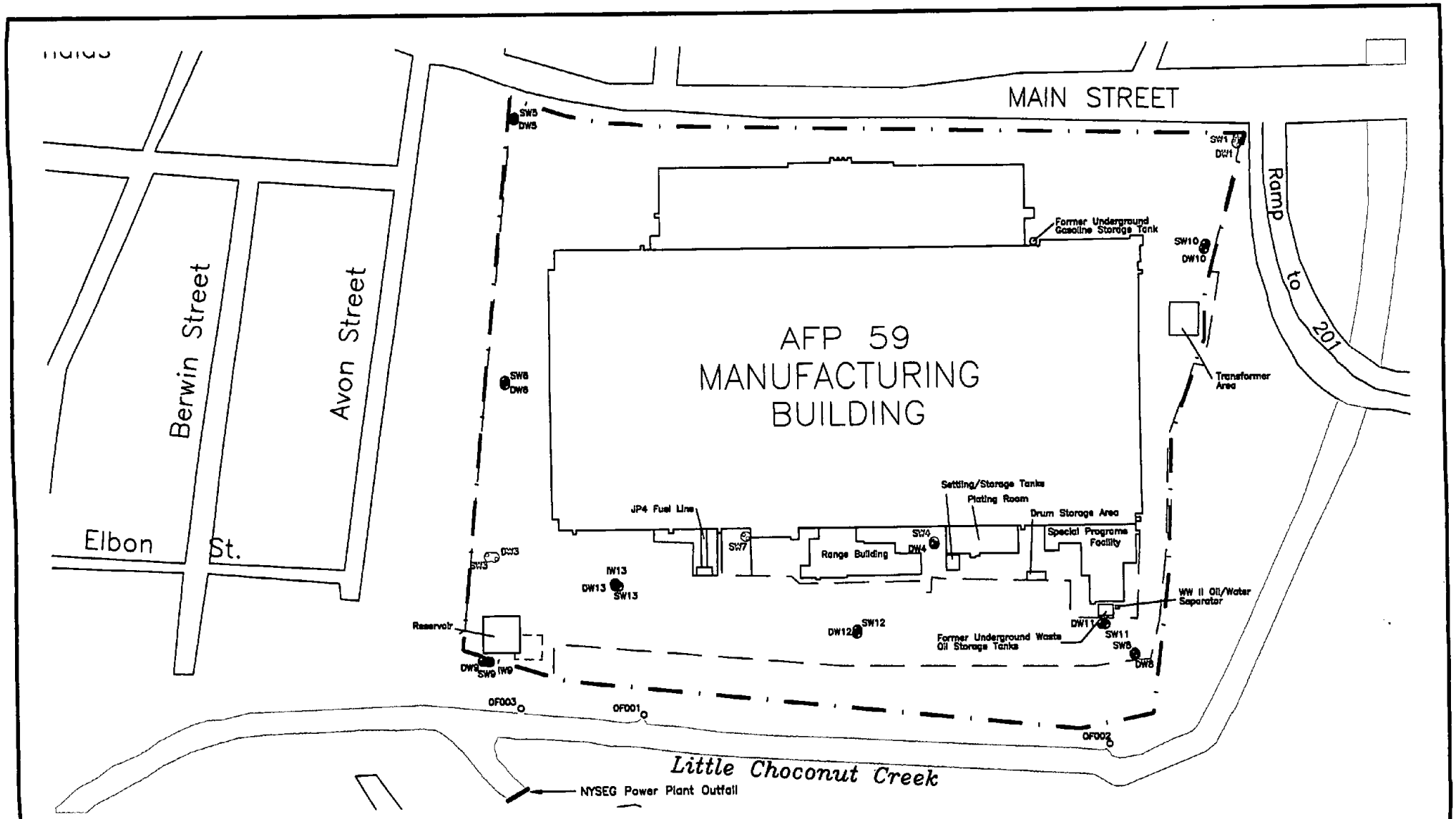
This section discusses the VOCs that were detected in the groundwater samples, including those samples collected from both site and background monitoring wells. The analytical results for groundwater samples collected from monitoring wells installed in the shallow and deep zones of the aquifer are discussed separately below. The analytical results for all groundwater samples collected during the May 2001 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 3.1-2. 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; no VOCs were detected in groundwater sample collected from well SW1 (see Figure 3.1-2). Chlorinated hydrocarbons were the only detected VOCs in the samples collected from the shallow zone of the aquifer.

The following maximum concentrations were detected in the groundwater sample collected from monitoring well SW4: trichloroethene (TCE) at 34 micrograms per liter (µg/L); 1,1,1-trichloroethane (1,1,1-TCA) at 3.35 µg/L; cis-1,2-dichloroethene (cis-1,2-DCE) at 3.19 µg/L; 1,1-dichloroethene (1,1-DCE) at 0.36 J µg/L; 1,1-dichloroethane (1,1-DCA) at 1.3 µg/L; tetrachloroethene at 0.64 J µg/L; trans-1,2-dichloroethene at 0.38 J µg/L; and trichlorofluoromethane at 1.66 µg/L. Methylene Chloride, a common laboratory contaminant, was detected at 0.1 B µg/L in the groundwater sample collected from monitoring well SW7.

Deep Zone of the Aquifer. Fewer VOCs were detected in groundwater samples collected from the deep monitoring wells than in groundwater samples collected from the shallow monitoring wells (see Figure 3.1-2). Table 3.1-4 summarizes all VOCs detected in groundwater samples



EARTH TECH

FIGURE 3.1-1

AFP 59
GROUNDWATER SAMPLING LOCATIONS
MAY 2001

41012/Rep/Well Aband Work Plan/GIS/37136GSL.DWG

Table 3.1-2. Groundwater Data Summary for VOCs

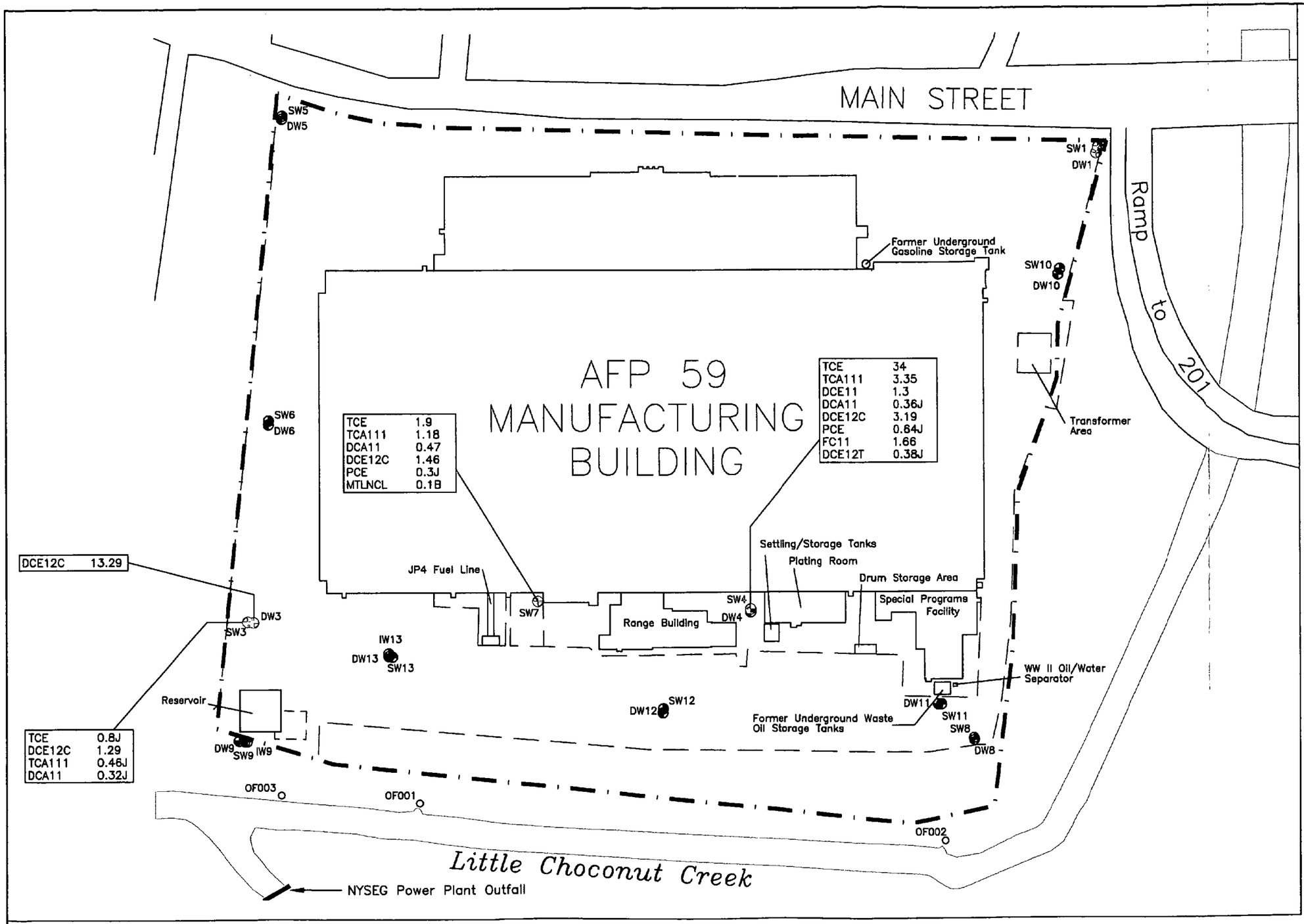
Parameters	Action Levels*	59SW1WG1	59DW1WG1	59SW3WG1	59SW3WG9 (Duplicate Sample)
1,1,1-Trichloroethane	5	--	--	0.43 J	0.46 J
Trichloroethene	5	--	--	0.8 J	0.7 J
1,1-Dichloroethene	5	--	--	--	--
Cis-1,2-Dichloroethene	5	--	--	1.24	1.29
Trans-1,2-Dichloroethene	5	--	--	--	--
1,1-Dichloroethane	5	--	--	0.3 J	0.32 J
Trichlorofluoromethane	5	--	--	--	--
Tetrachloroethene	5	--	--	--	--
Methylene Chloride	--	--	--	--	--

Parameters	Action Levels*	59DW3WG1	59SW4WG1	59SW7WG1
1,1,1-Trichloroethane	5	--	3.35	1.18
Trichloroethene	5	--	**34**	1.9
1,1-Dichloroethene	5	--	0.36 J	--
Cis-1,2-Dichloroethene	5	**13.29**	3.19	1.46
Trans-1,2-Dichloroethene	5	--	0.38 J	--
1,1-Dichloroethane	5	--	1.3	0.47
Trichlorofluoromethane	5	--	1.66	--
Tetrachloroethene	5	--	0.64 J	0.3 J
Methylene Chloride	--	--	--	0.1 B

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

Qualifiers: J = The analyte was positively identified, but the quantitation is an estimation.
B = The analyte was found in an associated blank, as well as in the sample.

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



Boundary

Fence

Monitoring Well Abandoned September 2000

Monitoring Well Sampled May 2001

AFP 59 Outfall

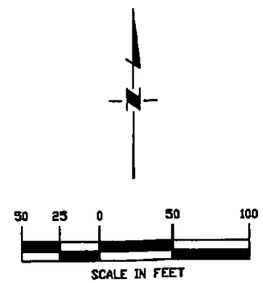
DCA11	=	1,1–dichloroethane
DCE11	=	1,1–dichloroethene
DCE12C	=	cis–1,2–dichloroethene
FC11	=	Trichlorofluoromethane
PCE	=	Tetrachloroethane
TCA111	=	1,1,1–trichloroethane
TCE	=	Trichloroethene
DCE12T	=	trans–1,2–dichloroethene
MTLNCL	=	Methylene Chloride

J = Analyte was positively identified, but the quantitation is estimated.

B = The analyte was found in an associated blank, as well as in the sample.

Notes:

1. Concentrarions are reported in ug/L.
2. If no data is present at a monitoring well location, no VOCs were detected in the groundwater sample
3. At locations where duplicates were collected, the maximum concentration is presented



EARTH TECH

FIGURE 3.1-2

AFP 59
VOC'S DETECTED IN GROUNDWATER
MAY 2001

41012/Rep/Well Aband Work Plan/GIS/37136GSL.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	4 of 5	0.43 J	3.35	SW4
Trichloroethene	4 of 5	0.7 J	34	SW4
1,1-Dichloroethene	1 of 5	0.36 J	0.36 J	SW4
Cis-1,2-Dichloroethene	4 of 5	1.24	3.19	SW4
1,1-Dichloroethane	4 of 5	0.3 J	1.3	SW4
Trichlorofluoromethane	1 of 5	1.66	1.66	SW4
Tetrachloroethene	2 of 5	0.3 J	0.64 J	SW4
Trans-1,2-Dichloroethene	1 of 5	0.38 J	0.38 J	SW4
Methylene Chloride	1 of 5	0.1 B	0.1 B	SW7

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

Qualifiers: J = The analyte was positively identified, but the quantitation is an estimation.
B = The analyte was found in an associated blank, as well as in the sample.

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

Table 3.1-4. VOCs Detected in Deep Zone Groundwater Samples

Analyte	Number of Samples Above MDL	Range (µg/L)		Location of Maximum Detection
		Minimum Detected	Maximum Detected	
cis-1,2-Dichloroethene	1 of 2	13.29	13.29	DW3

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

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

collected from monitoring wells screened in the deep zone of the aquifer, the number of samples above the laboratory MDL, the minimum and maximum concentrations detected, and the location of the maximum concentration.

One VOC, cis-1,2-DCE (13.29 µg), was detected in the groundwater sample collected from monitoring well DW3. This was the only VOC detected in the samples collected from the deep zone of the aquifer. No VOCs were detected in groundwater sample collected from well DW1 (see Figure 3.1-2).

3.1.4 Trend Analysis

Table 3.1-5 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 2001 sampling event, concentrations of the chlorinated hydrocarbons in monitoring wells SW1 (no VOCs were detected) and SW3 remained relatively constant compared to the previous sampling event. Collectively, the concentration of VOCs detected at SW4 remained relatively constant compared to the November 2000 sampling event, but the concentration of TCE increased (15.2 µg/L to 34 µg/L) and the concentration of cis-1,2-DCE decreased (11.18 µg/L to 1.46 µg/L). Concentrations of chlorinated hydrocarbons decreased slightly in the groundwater sample collected from SW7. In the groundwater samples collected from the deep monitoring wells during the May 2001 sampling event, concentrations of chlorinated hydrocarbons remained relatively constant compared to the previous sampling event.

Table 3.1-5. Trend Analysis of VOCs in Groundwater

Well ID	Date Sampled	Concentration of Analyte in Groundwater (µg/L)					
		TCA	TCE	VC	11DCE	12DCE	11DCA
SW1	Sept. 1986[1]	--	--	--	--	--	--
	Jan. 1992[2]	0.5	--	--	--	--	--
	Dec. 1994[3]	--	--	--	--	--	--
	Nov. 1999[3]	--	--	--	--	--	--
	May 2000[3]	--	--	--	--	--	--
	Nov. 2000[3]	--	--	--	--	--	--
	May 2001[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]	--	--	--	--	--	--
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
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	--
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

Table 3.1-5. Trend Analysis of VOCs in Groundwater (Continued)

Well ID	Date Sampled	Concentration of Analyte in Groundwater (µg/L)					
		TCA	TCE	VC	11DCE	12DCE	11DCA
SW4 (cont)	May 2000[3]	2.88	8	0.11	0.21	0.49 (t) 4.3 (c)	1.67
	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
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

Key:
µg/L = Micrograms per liter
(c) = cis-1,2-Dichloroethene
(t) = trans-1,2-Dichloroethene
TCA = 1,1,1-Trichloroethane
TCE = Trichloroethene
VC = Vinyl chloride
11DCE = 1,1-Dichloroethene
12DCE = 1,2-Dichloroethene
11DCA = 1,1-Dichloroethane
DPW = Deep production well

(1) = Fred C. Hart Associates
(2) = Argonne National Laboratories
(3) = Earth Tech
(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 2001 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 2001 sampling event are similar to the VOCs that have been detected during previous investigations. Chlorinated hydrocarbons were the primary VOCs detected in site groundwater, with TCE, 1,1,1-TCA, 1,1-DCA, 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 2001 sampling event, the concentrations of VOCs detected at monitoring well SW7 decreased, and the highest concentrations of VOCs were detected at SW4. However, the only detection exceeding the New York State drinking water standards was TCE (34 µg/L) in the sample collected from SW4. The New York State drinking water standard for TCE is 5 µg/L.

Three 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.

The only VOC detected in the groundwater sample collected from deep monitoring well DW3 was cis-1,2-DCE (13.29 µg/L). Although the 13.29 µg/L detection of cis-1,2-DCE exceeds the New York State drinking water standard, it does not exceed the Federal drinking water standard of 70 µg/L.

No VOCs were detected in background monitoring wells SW1 and DW1.

A trend analysis of chlorinated hydrocarbon levels over time at AFP 59 is presented in Section 3.1.4. Despite a slight increase in the concentration of TCE at SW4 relative to the November 2000 sampling event, historic data indicate 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.*

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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

1/2

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 05/08/01 Well ID: SW1 Sample Number: 895W1W01 Recorded By: BL, LM

Project Name: AFP 39 Well Location: Duplicate Number: Checked By:

Project Number: 41012.06.05

EQUIPMENT

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

PID #: NA Sampling Equipment: Disposable Bailer

Electric Sounder #: WDC 311

WELL DATA

Elevation: Water Column in Well: 11.45" Total Vol. Extr.: 90 gallons

Well Diameter: 2" Borehole Diameter: 8" Ambient PID: NA

Well Depth: 28.40" Water Column in Borehole: Well Mouth PID: NA

Depth to Well Water: 16.97" Standing Water Vol.: 29.8g

Ground Condition of Well:

Remarks:

	PURGING (cont. on next page)				SAMPLING	
	1	2	3	4	1	2
Time	0802	0811	0819	0826	0850	
Rate (gal/min)	2	2	2	2		
Temperature °C	12.0	12.2	12.2	12.2		
pH	6.45	6.70	6.63	6.68		
Conductivity (mS/cm)	2.20	2.22	2.21	2.21		
Vol. Purged (gal)	10	26	44	58		
Remarks Turb. (NTU)	1.0	1	2	2		

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	0850					
Analytical Param	VOCs (SW8260)					
Volume Required	3, 40ml vials					
Preservation	HCL, 4° C					
Field Filtered	No					
Time						

0461.FIG

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 8 MAY 2001	Well ID: SW2	Sample Number:	Recorded By:
Project Name: AFP 5N	Well Location:	Duplicate Number:	Checked By:
Project Number: 41012.06.05			

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	
	#5	#6	#7	#8	1	2
Time	0833	0841				
Rate (g/min)	2	2				
Temperature (°C)	12.3	12.2				
pH	6.65	6.68				
Conductivity (mS/cm)	2.22	2.19				
Vol. Purged (g)	72	88				
~~Remarks~~ TURB. (NTU)	3	3				

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: 05/08/01 Well ID: DW1 Sample Number: 59DW1W61 Recorded By: BW, WM
Project Name: AFP 59 Well Location: Duplicate Number: Checked By:
Project Number: 41012.06.05

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10 Purging Equipment: Grundfos Ready Flo
PID #: NA Sampling Equipment: Disposable Bailer
Electric Sounder #: WDC 311

WELL DATA

Elevation: Water Column in Well: 45.90' Total Vol. Extr.: 195 g
Well Diameter: 4" Borehole Diameter: 6" Ambient PID: NA
Well Depth: ~~62.52~~ 62.92' Water Column in Borehole: Well Mouth PID: NA
Depth to Well Water: 17.02' Standing Water Vol.: 66.5g

Ground Condition of Well:
Remarks:

	PURGING (cont. on next page)				SAMPLING	
	1	2	3	4	1	2
Time	0918	0928	0940	0950	~~1000~~	
Rate (gal/min)	3	3	3	3		
Temperature °C	12.9	12.8	12.7	12.8		
pH	7.01	6.77	6.76	6.79		
Conductivity (mS/cm)	1.56	1.58	1.57	1.56		
Vol. Purged (gal)	24	54	90	120		
~~Remarks~~ Turb. (NTU)	2	1	2	1		

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	1020					
Analytical Param	VOCs (SW8260)					
Volume Required	3 40ml VOAs					
Preservation	HCl, 4°C					
Field Filtered	No					
Time						

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 8 MAY 2001	Well ID: DW1	Sample Number:	Recorded By:
Project Name: AFP 59	Well Location:	Duplicate Number:	Checked By:
Project Number: 4102.06.05			

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	
	#5	#6	#7	#8	1	2
Time	1000	1008	1015			
Rate (gal/min)	3	3	3			
Temperature (°C)	12.7	12.7	12.8			
pH	6.79	6.75	6.77			
Conductivity (mS/cm)	1.57	1.57	1.56			
Vol. Purged (gal)	150	174	195			
Turb. Remarks (NTU)	1	1	1			

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: SW3 | Sample Number: 595W3W61 | Recorded By:
Project Name: AFP 59 | Well Location: | Duplicate Number: 595W3W69 | Checked By:
Project Number: 41012.06.05

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10 | Purging Equipment: Grundfos Ready Flo
PID #: NA | Sampling Equipment: Disposable Bailer
Electric Sounder #: WDC 311

WELL DATA

Elevation: | Water Column in Well: 13.28" | Total Vol. Extr.: 104g
Well Diameter: 2" | Borehole Diameter: 8" | Ambient PID: NA
Well Depth: 30.81" | Water Column in Borehole: | Well Mouth PID: NA
Depth to Well Water: 17.53" | Standing Water Vol.: 34.5g

Ground Condition of Well:
Remarks:

	PURGING (cont. on next page)				SAMPLING	
	1	2	3	4	1	2
Time	1105	1115	1125	1135		
Rate (gal/min)	2	2	2	2		
Temperature °C	11.0	10.0	9.9	9.8		
pH	7.36	6.96	6.93	6.92		
Conductivity (mS/cm)	1.13	1.13	1.13	1.13		
Vol. Purged (gal)	8	28	48	68		
~~Remarks~~ Turb. (NTU)	31	30	10	10		

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	1155					
Analytical Param	VOCs (SW8260)					
Volume Required	3, 40mL Vials					
Preservation	HCL, 4°C					
Field Filtered	No					
Time						

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 8 MAY 2001	Well ID: SW3	Sample Number:	Recorded By:
Project Name: AFP 59	Well Location:	Duplicate Number:	Checked By:
Project Number: 41012.06.05			

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	
	#5	#6	#7	#8	1	2
Time	1145	1153				
Rate	2	2				
Temperature (°C)	10.0	10.0				
pH	6.91	6.92				
Conductivity	1.13	1.13				
Vol. Purged (g)	88	104				
~~Remarks~~ TURB (NTU)	10	10				

COLLECTED SAMPLES

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

1/2

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 8 MAY 2001 | Well ID: DW3 | Sample Number: 59DW3WG1 | Recorded By: WM/BW
Project Name: AFP 59 | Well Location: | Duplicate Number: 59DW3WG1MS 59DW3WG1MSD | Checked By:
Project Number: 41012.06.05

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10 | Purging Equipment: Grundfus Pump
PID #: NA | Sampling Equipment: Disp. Bailer
Electric Sounder #: Solinst WDC 311

WELL DATA

Elevation: | Water Column in Well: 72.9 | Total Vol. Extr.: 305 g
Well Diameter: 4" | Borehole Diameter: 6" | Ambient PID: NA
Well Depth: 88.0' | Water Column in Borehole: | Well Mouth PID: NA
Depth to Well Water: 15.10' | Standing Water Vol.: 106.8 g

Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1	2	3	4	1	2
Time	1318	1330	1345	1400		
Rate (gal/min)	4	4	4	4		
Temperature °C	15.6	15.1	15.0	14.9		
pH	7.06	6.86	6.87	6.87		
Conductivity (mS/cm)	1.08	1.33	1.33	1.31		
Vol. Purged (gal)	15	63	123	183		
~~Remarks~~ Turb. (NTU)	55	40	40	37		

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	1435					
Analytical Param	VOCs (SW8260)					
Volume Required	3, 40ml Vials					
Preservation	HCL, 4°C					
Field Filtered	No					
Time						

0461.FIG

2/2

GROUNDWATER PURGING AND SAMPLING RECORD

Date:	Well ID: DW3 (cont.)	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	
	~~5~~	~~6~~	3	4	1	2
Time	1415	1430				
Rate	4	4				
Temperature	15.2	15.3				
pH	6.84	6.89				
Conductivity	134	1.34				
Vol. Purged	243	303				
~~Remarks~~ Turb (NTU)	44	45				

COLLECTED SAMPLES

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

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1/

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 05/08/01 Well ID: SW4 Sample Number: 59SW4W61 Recorded By: WM/DW
Project Name: AFP59 Well Location: Duplicate Number: Checked By:
Project Number: 41012.06.05

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10 Purging Equipment: Grundfos Ready Flo
PID #: NA Sampling Equipment: Disposable Bailer
Electric Sounder #: Solinst WDC 311

WELL DATA

Elevation: Water Column in Well: ~~17.60~~ 16.60 Total Vol. Extr.: 75g
Well Diameter: 2" Borehole Diameter: 8" Ambient PID: NA
Well Depth: 29.0' Water Column in Borehole: Well Mouth PID: NA
Depth to Well Water: 12.40 Standing Water Vol.: 43.3

Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1	2	3	4	# 5	# 6
Time	1655	1710	1722	1732	1745	1750
Rate (gal/min)	1	1	1	1	1	1
Temperature °C	20.3	20.1	18.8	18.6	18.3	18.3
pH	6.68	6.61	6.60	6.56	6.57	6.57
Conductivity (mS/cm)	~~1.09~~ 1.29	1.41	1.42	1.41	1.41	1.43
Vol. Purged (gal)	2	17	29	39	~~42~~ 52	57
~~Remarks~~ Turb (NTU)	428	360	88	55	20	13

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	1810					
Analytical Param	VOCs (SW8260C)					
Volume Required	3, 40ml Vials					
Preservation	HCL, 4°C					
Field Filtered	NO					
Time						

0461.FIG

NOTE: TEMP. READINGS HIGH D/C APPROXIMATELY 50' OF TUBING FROM SW4 TO WATER DISCHARGE POINT AT WHICH PARAMETERS MEASURED. PAVEMENT WAS IN SUNLIGHT.

2/

GROUNDWATER PURGING AND SAMPLING RECORD

Date: 8 MAY 2001	Well ID: SW4	Sample Number:	Recorded By: WM/DL
Project Name: AFP 59	Well Location:	Duplicate Number:	Checked By:
Project Number: 41012.06.05			

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	
	#7	#8	#9	#10	1	2
Time	1753	1756	1759	1802		
Rate	1	1	1	1		
Temperature	18.0	18.0	18.0	17.8		
pH	6.56	6.55	6.56	6.57		
Conductivity	1.41	1.41	1.41	1.42		
Vol. Purged	60	63	66	69		
Remarks TWS	15	10	10	5		

COLLECTED SAMPLES

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

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GROUNDWATER PURGING AND SAMPLING RECORD

Date:	Well ID: SW7	Sample Number: 595W7W61	Recorded By: WM/PW
Project Name: AFP 59	Well Location:	Duplicate Number:	Checked By:
Project Number: 41012.06.05			

EQUIPMENT

pH/Conductivity/Temperature Meter #: Horiba U-10	Purging Equipment: Grundfos Ready Flo
PID #: NA	Sampling Equipment: Disposable Bailer
Electric Sounder #: WDC 311	

WELL DATA

Elevation:	Water Column in Well: 8.4'	Total Vol. Extr.: 65 gallons
Well Diameter: 2"	Borehole Diameter: 8"	Ambient PID:
Well Depth: 26.5'	Water Column in Borehole: 8.4'	Well Mouth PID:
Depth to Well Water: 18.10	Standing Water Vol.: 21.8	

Ground Condition of Well:
Remarks:

	PURGING				SAMPLING	
	1535 1	1542 2	3	4	1	2
Time	~~1527~~	~~1535~~	1549	1556	1601	
Rate (gal/min)	2	2	2	2	2	
Temperature °C	16.1	15.0	15.0	15.2	15.1	
pH	7.02	6.81	6.80	~~6.84~~ 6.95 ~~6.78~~	6.81	
Conductivity (mS/cm)	1.55	1.58	1.57	1.57	1.54	
Vol. Purged (gal)	~~16~~ 16	30	44	~~48~~ 58	68	
Turb. (NTU)	185	110	75	45	27	
Remarks						

COLLECTED SAMPLES

	1	2	3	4	5	6
Sample Time	1610					
Analytical Param	VOCs (SW8260)					
Volume Required	3, 40ml Vials					
Preservation	HCl, 4°C					
Field Filtered	No					
Time						

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 TETRA TECH INTERNATIONAL LTD. COMPANY

PAGE ___ OF ___

Laboratory: O'Brien & Gere Laboratories	Project Name: AFP59 41012.06.05		Chain of Custody No.: № 9030
Address: 5000 Brittonfield Parkway	Point of Contact / Phone No.: Dave Parse 703-706-0505		
City: East Syracuse	State: NY	Zip Code: 13057	Site Contact / Phone No.: Brandon Watts 703-706-9401

ERPIMS Information					Other Sample Information						Analysis	Comment
LOCID	SBD	SED	SACODE	SAMPNO	Sample I.D.	Date	Time	Matrix	No. of Con.	Cooler No.	VOCs (SW8260B)	
SW1	0	0	N	1	59SW1WG1	05/08/01	0550	WG	3	1	X	
DW1	0	0	N	1	59DW1WG1	05/08/01	1020	WG	3	1	X	
SW3	0	0	N	1	59SW3WG1	05/08/01	1155	WG	3	1	X	
SW3	0	0	FD	1	59SW3WG9	05/08/01	1155	WG	3	1	X	
DW3	0	0	N	1	59DW3WG1	05/08/01	1435	WG	3	1	X	
DW3	0	0	MS	1	59DW3WG1MS	05/08/01	1435	WG	3	1	X	
DW3	0	0	MD	1	59DW3WG1MSD	05/08/01	1435	WG	3	1	X	
SW7	0	0	N	1	59SW7WG1	05/08/01	1610	WG	3	1	X	
SW4	0	0	N	1	59SW4WG1	05/08/01	1810	WG	3	1	X	
Field QC	0	0	TB	1	59TBO50801	05/08/01	0500	WG	3	1	X	
Field QC	0	0	AB	1	AB050501	05/08/01	1810	WG	3	1	X	
				ZGW	05/09/01							

	Relinquished By / Company	Date	Time	Received By / Company	Date	Time
1.	Brandon Watts / Earth Tech	05/09/01	1110	1.		
2.				2.		
3.				3.		
4.				4.		
5.				5.		

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

Data Quality Review

Air Force Plant 59 #41012-06.05, Johnson City, NY
F41624-97-D-8018/0072

Volatile Organic Analysis by Method SW8260B - Aqueous Samples
Data Package

This data quality review pertains to groundwater samples collected on May 8, 2001 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 O'Brien & Gere Laboratories, Inc. (O'Brien & Gere) in Syracuse, New York. All samples were analyzed for the full list of volatile constituents included in the method.

Recommendations from the AFCEE *Quality Assurance Project Plan, Version 3.0* (USAF, 1998) were utilized by O'Brien and Gere for quality control limits and data flagging criteria.

Table DQR-1 provides a cross-reference list for field sample IDs and lab sample IDs from O'Brien & Gere.

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

Field Sample ID	Lab Sample ID	Field Sample ID	Lab Sample ID
SW1	S5433	DW3	S5437
DW1	S5434	SW7	S5438
SW3	S5435	SW4	S5439
SW3	S5436	TRIP BLANK	S5440
DW3 MS	S5437 MS	AMBIENT BLANK	S5441
DW3 MSD	S5437 MSD		

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	Not detected substantially above the level reported in 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.

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

Initial calibration criteria were met for all standards. Standards were run at 0.30, 0.50, 4, 10, 20, and 40 µg/L. With the exception of styrene, the percent RSD was less than 20%. The RSD for styrene was 20.18%.

Continuing calibration verifications were performed at the required frequency and reporting factors (RFs) for target analytes were within 20 percent of the expected value with the exception of bromomethane, which exhibited a %D value of 26.8%. Since there were no positive results for bromomethane, no qualification is considered necessary.

As is standard practice, and unless otherwise noted herein, the validator qualifies **J** those positive results which fall between the method detection limit (MDL) and the reporting limit (RL), removing the F flag assigned by the laboratory.

Laboratory Control Samples

In laboratory control sample (LCS) L052101W1, all constituent recoveries were within the corresponding control ranges. No qualification is necessary.

Blanks

In Preparation Blank (PB) 052101W1, 1.1 ug/L hexachlorobutadiene was detected. Since there were no positive values for this constituent, no qualification is considered necessary.

One trip blank and one ambient blank were collected and analyzed for volatile organic compounds. No constituents were detected above the method detection limit (MDL) in the ambient blank sample. Methylene chloride was detected in the ambient blank at a concentration of 0.1 ug/L. Thus the validator qualifies **B** those positive methylene chloride values which are less than or equal to 1 ug/L.

Matrix Spike/Matrix Spike Duplicate

Sample DW3 served as the MS/MSD sample for this sample delivery group. With some exceptions, constituent recoveries were within quality control limits.

1,3,5-trimethylbenzene: MS and MSD recovered at 28 and 27%, respectively (range is 72-112%)
1,2,4-trimethylbenzene: MS and MSD recovered at 17 and 16%, respectively (r: 75-125)
m+p xylene: MS and MSD recovered at 59 and 57%, respectively (r: 75-125)
2,2-dichloropropane: MSD recovered at 74% (r: 75-125)
o-xylene: MS and MSD recovered at 71 and 70% respectively (r: 75-125)
p-isoproplytoluene: Both MS and MSD recovered at 66% (r: 75-125)
styrene: Both MS and MSD recovered at 8% (r: 75-125)

No package-wide qualification is made by the validator based on this information alone. However, qualification of the specific sample above is considered appropriate. Specifically, non-detect results for the following constituents are qualified **UJ** by the data validator.

1,3,5-trimethylbenzene	2,2-dichloropropane
m+p xylene	p-isopropyltoluene
1,2,4-trimethylbenzene	o-xylene

The non-detect result for styrene is qualified **R** by the data validator in this sample only. The validator removes the F flag assigned by the laboratory as appropriate.

Surrogate Recovery

Four surrogates were used for the monitoring of volatiles in all samples. All surrogate recoveries met the corresponding QC criteria

Field Duplicates

Field duplicate results (in ug/L units) are summarized below.

	#S5435 (SW3)	#S5436 (SW3)	RPD (%)
1,1,1-Trichloroethane	0.43	0.46	7
1,1-Dichloroethane	0.3	0.32	6
cis-1,2-Dichloroethene	1.24	1.29	4
Trichloroethene	0.8	0.7	13

Agreement was excellent, and no qualification is necessary

Summary

The data completeness is 99%. With the exception of styrene in sample DW3, all of the 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-3.

Table DQR-3
Summary of Detected Chemicals at Former Air Force Plant 59
Ground Water Sampling - May 2001 Event

Location ID Date Sampled	DW1 5/8/01	DW3 5/8/01	SW1 5/8/01	SW3 5/8/01	SW3 (DUP) 5/8/01	SW4 5/8/01	SW7 5/8/01
Analyte	**Volatiles by EPA SW-846 Method 8260 (ug/L)**						
1,1,1-Trichloroethane	0.8 U	0.8 U	0.8 U	**0.43 J**	**0.46 J**	**3.35**	**1.18**
1,1-Dichloroethane	0.4 U	0.4 U	0.4 U	**0.3 J**	**0.32 J**	**1.3**	**0.47**
1,1-Dichloroethene	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	**0.36 J**	1.2 U
cis-1,2-Dichloroethene	1.2 U	**13.29**	1.2 U	**1.24**	**1.29**	**3.19**	**1.46**
Methylene chloride	2 U	2 U	2 U	2 U	2 U	2 U	**0.1 B**
Tetrachloroethene	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	**0.64 J**	**0.3 J**
trans-1,2-Dichloroethene	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	**0.38 J**	0.6 U
Trichloroethene	1 U	1 U	1 U	**0.8 J**	**0.7 J**	**34**	**1.9**
Trichlorofluoromethane	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	**1.66**	0.8 U

Key: J = The analyte was positively identified, but the quantitation is an estimation.
B = The analyte was found in an associated blank, as well as in the sample.
U = The analyte was analyzed for, but not detected. The associated numerical value is at or below the method detection limit (MDL).
(DUP) = Duplicate sample taken in the field.

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

APPENDIX A
FORM I's

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW1 (WG1) Lab Sample ID: S5433 Matrix:Water

%Solids: Initial Calibration ID: JS21AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
(m+p)-Xylene	.019	.6	.019	1		U
1,1,1,2-Tetrachloroethane	.017	.5	.017	1		U
1,1,1-Trichloroethane	.014	.8	.014	1		U
1,1,2,2-Tetrachloroethane	.09	.5	.09	1		U
1,1,2-Trichloroethane	.01	1.	.01	1		U
1,1-Dichloroethane	.009	.4	.009	1		U
1,1-Dichloroethene	.025	1.2	.025	1		U
1,1-Dichloropropene	.02	1.	.02	1		U
1,2,3-Trichlorobenzene	.05	.3	.05	1		U
1,2,3-Trichloropropane	.072	3.2	.072	1		U
1,2,4-Trichlorobenzene	.021	.4	.021	1		U
1,2,4-Trimethylbenzene	.011	1.3	.011	1		U
1,2-Dibromo-3-chloropropane	.205	2.6	.205	1		U
1,2-Dibromoethane	.053	.6	.053	1		U
1,2-Dichlorobenzene	.013	.3	.013	1		U
1,2-Dichloroethane	.012	.6	.012	1		U
1,2-Dichloropropane	.014	.4	.014	1		U
1,3,5-Trimethylbenzene	.012	.5	.012	1		U
1,3-Dichlorobenzene	.01	1.2	.01	1		U
1,3-Dichloropropane	.012	.4	.012	1		U
1,4-Dichlorobenzene	.014	.3	.014	1		U
1-Chlorohexane	.018	.5	.018	1		U
2,2-Dichloropropane	.013	3.5	.013	1		U
2-Chlorotoluene	.015	.4	.015	1		U
4-Chlorotoluene	.011	.6	.011	1		U
Benzene	.009	.4	.009	1		U
Bromobenzene	.037	.3	.037	1		U
Bromochloromethane	.014	.4	.014	1		U
Bromodichloromethane	.011	.8	.011	1		U
Bromoform	.042	1.2	.042	1		U
Bromomethane	.074	1.1	.074	1		U

6-22-01

Comments:

AFCEE FORM O-2

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW1 (WG1) Lab Sample ID: S5433 Matrix:Water

%Solids: Initial Calibration ID: JS21AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
Carbon tetrachloride	.007	2.1	.007	1		U
Chlorobenzene	.005	.4	.005	1		U
Chloroethane	.01	1.	.01	1		U
Chloroform	.011	.3	.011	1		U
Chloromethane	.046	1.3	.046	1		U
cis-1,2-Dichloroethene	.062	1.2	.062	1		U
cis-1,3-Dichloropropene	.01	1.	.01	1		U
Dibromochloromethane	.012	.5	.012	1		U
Dibromomethane	.04	2.4	.04	1		U
Dichlorodifluoromethane	.01	1.	.01	1		U
Ethylbenzene	.008	.6	.008	1		U
Hexachlorobutadiene	.031	1.1	.031	1		U
Isopropylbenzene	.015	.5	.015	1		U
Methylene chloride	.03	2.	.03	1		U
n-Butylbenzene	.015	1.1	.015	1		U
n-Propylbenzene	.016	.4	.016	1		U
Naphthalene	.04	1.	.04	1		U
o-Xylene	.012	1.1	.012	1		U
p-Isopropyltoluene	.031	1.2	.031	1		U
sec-Butylbenzene	.015	1.3	.015	1		U
Styrene	.015	.5	.015	1		U
tert-Butylbenzene	.016	1.4	.016	1		U
Tetrachloroethene	.008	1.4	.008	1		U
Toluene	.011	1.1	.011	1		U
trans-1,2-Dichloroethene	.077	.6	.077	1		U
trans-1,3-Dichloropropene	.02	1.	.02	1		U
Trichloroethene	.01	1.	.01	1		U
Trichlorofluoromethane	.01	.8	.01	1		U
Vinyl chloride	.013	1.1	.013	1		U
Xylene (total)	.019	1.1	.019	1		U

Comments:

AFCEE FORM O-2

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW1 (WG1) Lab Sample ID: S5433 Matrix:Water

%Solids: Initial Calibration ID: V521AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4 (surrogate)	87	62-139	
Bromofluorobenzene (surrogate)	91	75-125	
Dibromofluoromethane (surrogate)	88	75-125	
Toluene-d8 (surrogate)	103	75-125	

Internal Std.	Qualifier
1,4-Dichlorobenzene-d4	
Chlorobenzene-d5	
Fluorobenzene	

Comments:

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: DW1 (WG1) Lab Sample ID: S5434 Matrix:Water

%Solids: Initial Calibration ID: V521AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
(m+p)-Xylene	.019	.6	.019	1	U	U
1,1,1,2-Tetrachloroethane	.017	.5	.017	1	U	
1,1,1-Trichloroethane	.014	.8	.014	1	U	
1,1,2,2-Tetrachloroethane	.09	.5	.09	1	U	
1,1,2-Trichloroethane	.01	1.	.01	1	U	
1,1-Dichloroethane	.009	.4	.009	1	U	
1,1-Dichloroethene	.025	1.2	.025	1	U	
1,1-Dichloropropene	.02	1.	.02	1	U	
1,2,3-Trichlorobenzene	.05	.3	.05	1	U	
1,2,3-Trichloropropane	.072	3.2	.072	1	U	
1,2,4-Trichlorobenzene	.021	.4	.021	1	U	
1,2,4-Trimethylbenzene	.011	1.3	.011	1	U	
1,2-Dibromo-3-chloropropane	.205	2.6	.205	1	U	
1,2-Dibromoethane	.053	.6	.053	1	U	
1,2-Dichlorobenzene	.013	.3	.013	1	U	
1,2-Dichloroethane	.012	.6	.012	1	U	
1,2-Dichloropropane	.014	.4	.014	1	U	
1,3,5-Trimethylbenzene	.012	.5	.012	1	U	
1,3-Dichlorobenzene	.01	1.2	.01	1	U	
1,3-Dichloropropane	.012	.4	.012	1	U	
1,4-Dichlorobenzene	.014	.3	.014	1	U	
1-Chlorohexane	.018	.5	.018	1	U	
2,2-Dichloropropane	.013	3.5	.013	1	U	
2-Chlorotoluene	.015	.4	.015	1	U	
4-Chlorotoluene	.011	.6	.011	1	U	
Benzene	.009	.4	.009	1	U	
Bromobenzene	.037	.3	.037	1	U	
Bromochloromethane	.014	.4	.014	1	U	
Bromodichloromethane	.011	.8	.011	1	U	
Bromoform	.042	1.2	.042	1	U	
Bromomethane	.074	1.1	.074	1	U	

gpc 6.22.01

Comments:

AFCEE FORM O-2

AFCEE

ORGANIC ANALYSES DATA SHEET 2

RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: DW1 (WG1) Lab Sample ID: S5434 Matrix:Water

%Solids: Initial Calibration ID: J521AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
Carbon tetrachloride	.007	2.1	.007	1		U
Chlorobenzene	.005	.4	.005	1		U
Chloroethane	.01	1.	.01	1		U
Chloroform	.011	.3	.011	1		U
Chloromethane	.046	1.3	.046	1		U
cis-1,2-Dichloroethene	.062	1.2	.062	1		U
cis-1,3-Dichloropropene	.01	1.	.01	1		U
Dibromochloromethane	.012	.5	.012	1		U
Dibromomethane	.04	2.4	.04	1		U
Dichlorodifluoromethane	.01	1.	.01	1		U
Ethylbenzene	.008	.6	.008	1		U
Hexachlorobutadiene	.031	1.1	.031	1		U
Isopropylbenzene	.015	.5	.015	1		U
Methylene chloride	.03	2.	.03	1		U
n-Butylbenzene	.015	1.1	.015	1		U
n-Propylbenzene	.016	.4	.016	1		U
Naphthalene	.04	1.	.04	1		U
o-Xylene	.012	1.1	.012	1		U
p-Isopropyltoluene	.031	1.2	.031	1		U
sec-Butylbenzene	.015	1.3	.015	1		U
Styrene	.015	.5	.015	1		U
tert-Butylbenzene	.016	1.4	.016	1		U
Tetrachloroethene	.008	1.4	.008	1		U
Toluene	.011	1.1	.011	1		U
trans-1,2-Dichloroethene	.077	.6	.077	1		U
trans-1,3-Dichloropropene	.02	1.	.02	1		U
Trichloroethene	.01	1.	.01	1		U
Trichlorofluoromethane	.01	.8	.01	1		U
Vinyl chloride	.013	1.1	.013	1		U
Xylene (total)	.019	1.1	.019	1		U

Comments:

AFCEE FORM O-2

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: DW1 (WG1) Lab Sample ID: S5434 Matrix:Water

%Solids: Initial Calibration ID: J521AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4 (surrogate)	88	62-139	
Bromofluorobenzene (surrogate)	90	75-125	
Dibromofluoromethane (surrogate)	88	75-125	
Toluene-d8 (surrogate)	100	75-125	

Internal Std.	Qualifier
1,4-Dichlorobenzene-d4	
Chlorobenzene-d5	
Fluorobenzene	

Comments:

AFCEE FORM O-2

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW3 (WG1) Lab Sample ID: S5435 Matrix:Water

%Solids: Initial Calibration ID: J5214F30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
(m+p)-Xylene	.019	.6	.019	1	U	U
1,1,1,2-Tetrachloroethane	.017	.5	.017	1	U	U
1,1,1-Trichloroethane	.014	.8	.43	1		J
1,1,2,2-Tetrachloroethane	.09	.5	.09	1	U	U
1,1,2-Trichloroethane	.01	1.	.01	1	U	U
1,1-Dichloroethane	.009	.4	.3	1		J
1,1-Dichloroethene	.025	1.2	.025	1	U	U
1,1-Dichloropropene	.02	1.	.02	1	U	
1,2,3-Trichlorobenzene	.05	.3	.05	1	U	
1,2,3-Trichloropropane	.072	3.2	.072	1	U	
1,2,4-Trichlorobenzene	.021	.4	.021	1	U	
1,2,4-Trimethylbenzene	.011	1.3	.011	1	U	
1,2-Dibromo-3-chloropropane	.205	2.6	.205	1	U	
1,2-Dibromoethane	.053	.6	.053	1	U	
1,2-Dichlorobenzene	.013	.3	.013	1	U	
1,2-Dichloroethane	.012	.6	.012	1	U	
1,2-Dichloropropane	.014	.4	.014	1	U	
1,3,5-Trimethylbenzene	.012	.5	.012	1	U	
1,3-Dichlorobenzene	.01	1.2	.01	1	U	
1,3-Dichloropropane	.012	.4	.012	1	U	
1,4-Dichlorobenzene	.014	.3	.014	1	U	
1-Chlorohexane	.018	.5	.018	1	U	
2,2-Dichloropropane	.013	3.5	.013	1	U	
2-Chlorotoluene	.015	.4	.015	1	U	
4-Chlorotoluene	.011	.6	.011	1	U	
Benzene	.009	.4	.009	1	U	
Bromobenzene	.037	.3	.037	1	U	
Bromochloromethane	.014	.4	.014	1	U	
Bromodichloromethane	.011	.8	.011	1	U	
Bromoform	.042	1.2	.042	1	U	
Bromomethane	.074	1.1	.074	1	U	

fpl 6.22.01

Comments:

AFCEE FORM D-2

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW3 (WG1) Lab Sample ID: S5435 Matrix:Water

%Solids: Initial Calibration ID: J521AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
Carbon tetrachloride	.007	2.1	.007	1		U
Chlorobenzene	.005	.4	.005	1		U
Chloroethane	.01	1.	.01	1		U
Chloroform	.011	.3	.011	1		U
Chloromethane	.046	1.3	.046	1		U
cis-1,2-Dichloroethene	.062	1.2	1.24	1		
cis-1,3-Dichloropropene	.01	1.	.01	1		U
Dibromochloromethane	.012	.5	.012	1		U
Dibromomethane	.04	2.4	.04	1		U
Dichlorodifluoromethane	.01	1.	.01	1		U
Ethylbenzene	.008	.6	.008	1		U
Hexachlorobutadiene	.031	1.1	.031	1		U
Isopropylbenzene	.015	.5	.015	1		U
Methylene chloride	.03	2.	.03	1		U
n-Butylbenzene	.015	1.1	.015	1		U
n-Propylbenzene	.016	.4	.016	1		U
Naphthalene	.04	1.	.04	1		U
o-Xylene	.012	1.1	.012	1		U
p-Isopropyltoluene	.031	1.2	.031	1		U
sec-Butylbenzene	.015	1.3	.015	1		U
Styrene	.015	.5	.015	1		U
tert-Butylbenzene	.016	1.4	.016	1		U
Tetrachloroethene	.008	1.4	.008	1		U
Toluene	.011	1.1	.011	1		U
trans-1,2-Dichloroethene	.077	.6	.077	1		U
trans-1,3-Dichloropropene	.02	1.	.02	1		U
Trichloroethene	.01	1.	.8	1	P	J
Trichlorofluoromethane	.01	.8	.01	1		U
Vinyl chloride	.013	1.1	.013	1		U
Xylene (total)	.019	1.1	.019	1		U

Comments:

AFCEE FORM O-2

AFCEE

ORGANIC ANALYSES DATA SHEET 2

RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW3 (WG1) Lab Sample ID: S5435 Matrix:Water

%Solids: Initial Calibration ID: J521AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4 (surrogate)	87	62-139	
Bromofluorobenzene (surrogate)	89	75-125	
Dibromofluoromethane (surrogate)	89	75-125	
Toluene-d8 (surrogate)	95	75-125	

Internal Std.	Qualifier
1,4-Dichlorobenzene-d4	
Chlorobenzene-d5	
Fluorobenzene	

Comments:

AFCEE FORM O-2

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW3 (WG9) Lab Sample ID: S5436 Matrix:Water

%Solids: Initial Calibration ID: J521AF3C.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
(m+p)-Xylene	.019	.6	.019	1		U
1,1,1,2-Tetrachloroethane	.017	.5	.017	1		U
1,1,1-Trichloroethane	.014	.8	.46	1		J
1,1,2,2-Tetrachloroethane	.09	.5	.09	1		U
1,1,2-Trichloroethane	.01	1.	.01	1		U
1,1-Dichloroethane	.009	.4	.32	1		J
1,1-Dichloroethene	.025	1.2	.025	1		U
1,1-Dichloropropene	.02	1.	.02	1		U
1,2,3-Trichlorobenzene	.05	.3	.05	1		U
1,2,3-Trichloropropane	.072	3.2	.072	1		U
1,2,4-Trichlorobenzene	.021	.4	.021	1		U
1,2,4-Trimethylbenzene	.011	1.3	.011	1		U
1,2-Dibromo-3-chloropropane	.205	2.6	.205	1		U
1,2-Dibromoethane	.053	.6	.053	1		U
1,2-Dichlorobenzene	.013	.3	.013	1		U
1,2-Dichloroethane	.012	.6	.012	1		U
1,2-Dichloropropane	.014	.4	.014	1		U
1,3,5-Trimethylbenzene	.012	.5	.012	1		U
1,3-Dichlorobenzene	.01	1.2	.01	1		U
1,3-Dichloropropane	.012	.4	.012	1		U
1,4-Dichlorobenzene	.014	.3	.014	1		U
1-Chlorohexane	.018	.5	.018	1		U
2,2-Dichloropropane	.013	3.5	.013	1		U
2-Chlorotoluene	.015	.4	.015	1		U
4-Chlorotoluene	.011	.6	.011	1		U
Benzene	.009	.4	.009	1		U
Bromobenzene	.037	.3	.037	1		U
Bromochloromethane	.014	.4	.014	1		U
Bromodichloromethane	.011	.8	.011	1		U
Bromoform	.042	1.2	.042	1		U
Bromomethane	.074	1.1	.074	1		U

Comments:

AFCEE FORM O-2

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW3 (WG9) Lab Sample ID: S5436 Matrix:Water

%Solids: Initial Calibration ID: J521AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
Carbon tetrachloride	.007	2.1	.007	1		U
Chlorobenzene	.005	.4	.005	1		U
Chloroethane	.01	1.	.01	1		U
Chloroform	.011	.3	.011	1		U
Chloromethane	.046	1.3	.046	1		U
cis-1,2-Dichloroethene	.062	1.2	1.29	1		
cis-1,3-Dichloropropene	.01	1.	.01	1		U
Dibromochloromethane	.012	.5	.012	1		U
Dibromomethane	.04	2.4	.04	1		U
Dichlorodifluoromethane	.01	1.	.01	1		U
Ethylbenzene	.008	.6	.008	1		U
Hexachlorobutadiene	.031	1.1	.031	1		U
Isopropylbenzene	.015	.5	.015	1		U
Methylene chloride	.03	2.	.03	1		U
n-Butylbenzene	.015	1.1	.015	1		U
n-Propylbenzene	.016	.4	.016	1		U
Naphthalene	.04	1.	.04	1		U
o-Xylene	.012	1.1	.012	1		U
p-Isopropyltoluene	.031	1.2	.031	1		U
sec-Butylbenzene	.015	1.3	.015	1		U
Styrene	.015	.5	.015	1		U
tert-Butylbenzene	.016	1.4	.016	1		U
Tetrachloroethene	.008	1.4	.008	1		U
Toluene	.011	1.1	.011	1		U
trans-1,2-Dichloroethene	.077	.6	.077	1		U
trans-1,3-Dichloropropene	.02	1.	.02	1		U
Trichloroethene	.01	1.	.7	1		
Trichlorofluoromethane	.01	.8	.01	1		U
Vinyl chloride	.013	1.1	.013	1		U
Xylene (total)	.019	1.1	.019	1		U

Comments:

AFCEE FORM O-2

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ORGANIC ANALYSES DATA SHEET 2

RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW3 (WG9) Lab Sample ID: S5436 Matrix:Water

%Solids: Initial Calibration ID: J521AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4 (surrogate)	89	62-139	
Bromofluorobenzene (surrogate)	90	75-125	
Dibromofluoromethane (surrogate)	89	75-125	
Toluene-d8 (surrogate)	96	75-125	

Internal Std.	Qualifier
1,4-Dichlorobenzene-d4	
Chlorobenzene-d5	
Fluorobenzene	

Comments:

AFCEE FORM O-2

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ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: DW3 (WG1) Lab Sample ID: S5437 Matrix:Water

%Solids: Initial Calibration ID: V5214F30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
(m+p)-Xylene	.019	.6	.019	1		U J
1,1,1,2-Tetrachloroethane	.017	.5	.017	1		U U
1,1,1-Trichloroethane	.014	.8	.014	1		U
1,1,2,2-Tetrachloroethane	.09	.5	.09	1		U
1,1,2-Trichloroethane	.01	1.	.01	1		U
1,1-Dichloroethane	.009	.4	.009	1		U
1,1-Dichloroethene	.025	1.2	.025	1		U
1,1-Dichloropropene	.02	1.	.02	1		U
1,2,3-Trichlorobenzene	.05	.3	.05	1		U
1,2,3-Trichloropropane	.072	3.2	.072	1		U
1,2,4-Trichlorobenzene	.021	.4	.021	1		U
1,2,4-Trimethylbenzene	.011	1.3	.011	1		U U J
1,2-Dibromo-3-chloropropane	.205	2.6	.205	1		U U
1,2-Dibromoethane	.053	.6	.053	1		U
1,2-Dichlorobenzene	.013	.3	.013	1		U
1,2-Dichloroethane	.012	.6	.012	1		U
1,2-Dichloropropane	.014	.4	.014	1		U
1,3,5-Trimethylbenzene	.012	.5	.012	1		U U J
1,3-Dichlorobenzene	.01	1.2	.01	1		U U
1,3-Dichloropropane	.012	.4	.012	1		U
1,4-Dichlorobenzene	.014	.3	.014	1		U
1-Chlorohexane	.018	.5	.018	1		U
2,2-Dichloropropane	.013	3.5	.013	1		U U J
2-Chlorotoluene	.015	.4	.015	1		U U
4-Chlorotoluene	.011	.6	.011	1		U
Benzene	.009	.4	.009	1		U
Bromobenzene	.037	.3	.037	1		U
Bromochloromethane	.014	.4	.014	1		U
Bromodichloromethane	.011	.8	.011	1		U
Bromoform	.042	1.2	.042	1		U
Bromomethane	.074	1.1	.074	1		U

Comments:

6.22.01

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ORGANIC ANALYSES DATA SHEET 2

RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: DW3 (WG1) Lab Sample ID: S5437 Matrix:Water

%Solids: Initial Calibration ID: JS21AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
Carbon tetrachloride	.007	2.1	.007	1		U
Chlorobenzene	.005	.4	.005	1		U
Chloroethane	.01	1.	.01	1		U
Chloroform	.011	.3	.011	1		U
Chloromethane	.046	1.3	.046	1		U
cis-1,2-Dichloroethene	.062	1.2	13.29	1		
cis-1,3-Dichloropropene	.01	1.	.01	1		U
Dibromochloromethane	.012	.5	.012	1		U
Dibromomethane	.04	2.4	.04	1		U
Dichlorodifluoromethane	.01	1.	.01	1		U
Ethylbenzene	.008	.6	.008	1		U
Hexachlorobutadiene	.031	1.1	.031	1		U
Isopropylbenzene	.015	.5	.015	1		U J
Methylene chloride	.03	2.	.03	1		U
n-Butylbenzene	.015	1.1	.015	1		U
n-Propylbenzene	.016	.4	.016	1		U
Naphthalene	.04	1.	.04	1		U
o-Xylene	.012	1.1	.012	1		U J
p-Isopropyltoluene	.031	1.2	.031	1		U
sec-Butylbenzene	.015	1.3	.015	1		U
Styrene	.015	.5	.015	1		R
tert-Butylbenzene	.016	1.4	.016	1		U
Tetrachloroethene	.008	1.4	.008	1		U
Toluene	.011	1.1	.011	1		U
trans-1,2-Dichloroethene	.077	.6	.077	1		U
trans-1,3-Dichloropropene	.02	1.	.02	1		U
Trichloroethene	.01	1.	.01	1		U
Trichlorofluoromethane	.01	.8	.01	1		U
Vinyl chloride	.013	1.1	.013	1		U
Xylene (total)	.019	1.1	.019	1		U J

6.22.01

Comments:

AFCEE FORM O-2

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: DW3 (WG1) Lab Sample ID: S5437 Matrix:Water

%Solids: Initial Calibration ID: V521AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4 (surrogate)	88	62-139	
Bromofluorobenzene (surrogate)	90	75-125	
Dibromofluoromethane (surrogate)	79	75-125	
Toluene-d8 (surrogate)	102	75-125	

Internal Std.	Qualifier
1,4-Dichlorobenzene-d4	
Chlorobenzene-d5	
Fluorobenzene	

Comments:

AFCEE FORM O-2

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ORGANIC ANALYSES DATA SHEET 2

RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW4 (WG1) Lab Sample ID: S5439 Matrix:Water

%Solids: Initial Calibration ID: V52IAF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
(m+p)-Xylene	.019	.6	.019	1		U J
1,1,1,2-Tetrachloroethane	.017	.5	.017	1		U J
1,1,1-Trichloroethane	.014	.8	3.35	1		
1,1,2,2-Tetrachloroethane	.09	.5	.09	1		U J
1,1,2-Trichloroethane	.01	1.	.01	1		U J
1,1-Dichloroethane	.009	.4	1.3	1		
1,1-Dichloroethene	.025	1.2	.36	1		J
1,1-Dichloropropene	.02	1.	.02	1		U J
1,2,3-Trichlorobenzene	.05	.3	.05	1		U
1,2,3-Trichloropropane	.072	3.2	.072	1		U
1,2,4-Trichlorobenzene	.021	.4	.021	1		U
1,2,4-Trimethylbenzene	.011	1.3	.011	1		U
1,2-Dibromo-3-chloropropane	.205	2.6	.205	1		U
1,2-Dibromoethane	.053	.6	.053	1		U
1,2-Dichlorobenzene	.013	.3	.013	1		U
1,2-Dichloroethane	.012	.6	.012	1		U
1,2-Dichloropropane	.014	.4	.014	1		U
1,3,5-Trimethylbenzene	.012	.5	.012	1		U
1,3-Dichlorobenzene	.01	1.2	.01	1		U
1,3-Dichloropropane	.012	.4	.012	1		U
1,4-Dichlorobenzene	.014	.3	.014	1		U
1-Chlorohexane	.018	.5	.018	1		U
2,2-Dichloropropane	.013	3.5	.013	1		U
2-Chlorotoluene	.015	.4	.015	1		U
4-Chlorotoluene	.011	.6	.011	1		U
Benzene	.009	.4	.009	1		U
Bromobenzene	.037	.3	.037	1		U
Bromochloromethane	.014	.4	.014	1		U
Bromodichloromethane	.011	.8	.011	1		U
Bromoform	.042	1.2	.042	1		U
Bromomethane	.074	1.1	.074	1		U

Comments:

AFCEE FORM O-2

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW4 (WG1) Lab Sample ID: S5439 Matrix:Water

%Solids: Initial Calibration ID: V52IAF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/l or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
Carbon tetrachloride	.007	2.1	.007	1		U
Chlorobenzene	.005	.4	.005	1		U
Chloroethane	.01	1.	.01	1		U
Chloroform	.011	.3	.011	1		U
Chloromethane	.046	1.3	.046	1		U
cis-1,2-Dichloroethene	.062	1.2	3.19	1		
cis-1,3-Dichloropropene	.01	1.	.01	1		U
Dibromochloromethane	.012	.5	.012	1		U
Dibromomethane	.04	2.4	.04	1		U
Dichlorodifluoromethane	.01	1.	.01	1		U
Ethylbenzene	.008	.6	.008	1		U
Hexachlorobutadiene	.031	1.1	.031	1		U
Isopropylbenzene	.015	.5	.015	1		U
Methylene chloride	.03	2.	.03	1		U
n-Butylbenzene	.015	1.1	.015	1		U
n-Propylbenzene	.016	.4	.016	1		U
Naphthalene	.04	1.	.04	1		U
o-Xylene	.012	1.1	.012	1		U
p-Isopropyltoluene	.031	1.2	.031	1		U
sec-Butylbenzene	.015	1.3	.015	1		U
Styrene	.015	.5	.015	1		U
tert-Butylbenzene	.016	1.4	.016	1		U
Tetrachloroethene	.008	1.4	.64	1		J
Toluene	.011	1.1	.011	1		U
trans-1,2-Dichloroethene	.077	.6	.38	1		J
trans-1,3-Dichloropropene	.02	1.	.02	1		U
Trichloroethene	.01	1.	34.	1		
Trichlorofluoromethane	.01	.8	1.66	1		
Vinyl chloride	.013	1.1	.013	1		U
Xylene (total)	.019	1.1	.019	1		U

fpl 6/27/01

Comments:

AFCEE FORM O-2

AFCEE
ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW4 (WG1) Lab Sample ID: S5439 Matrix:Water

%Solids: Initial Calibration ID: V5264F30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4 (surrogate)	90	62-139	
Bromofluorobenzene (surrogate)	88	75-125	
Dibromofluoromethane (surrogate)	89	75-125	
Toluene-d8 (surrogate)	90	75-125	

Internal Std.	Qualifier
1,4-Dichlorobenzene-d4	
Chlorobenzene-d5	
Fluorobenzene	

Comments:

AFCEE FORM O-2

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ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW7 (WG1) Lab Sample ID: S5438 Matrix:Water

%Solids: Initial Calibration ID: J521AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
(m+p)-Xylene	.019	.6	.019	1		U
1,1,1,2-Tetrachloroethane	.017	.5	.017	1		U
1,1,1-Trichloroethane	.014	.8	1.18	1		
1,1,2,2-Tetrachloroethane	.09	.5	.09	1		U
1,1,2-Trichloroethane	.01	1.	.01	1		U
1,1-Dichloroethane	.009	.4	.47	1		
1,1-Dichloroethene	.025	1.2	.025	1		U
1,1-Dichloropropene	.02	1.	.02	1		U
1,2,3-Trichlorobenzene	.05	.3	.05	1		U
1,2,3-Trichloropropane	.072	3.2	.072	1		U
1,2,4-Trichlorobenzene	.021	.4	.021	1		U
1,2,4-Trimethylbenzene	.011	1.3	.011	1		U
1,2-Dibromo-3-chloropropane	.205	2.6	.205	1		U
1,2-Dibromoethane	.053	.6	.053	1		U
1,2-Dichlorobenzene	.013	.3	.013	1		U
1,2-Dichloroethane	.012	.6	.012	1		U
1,2-Dichloropropane	.014	.4	.014	1		U
1,3,5-Trimethylbenzene	.012	.5	.012	1		U
1,3-Dichlorobenzene	.01	1.2	.01	1		U
1,3-Dichloropropane	.012	.4	.012	1		U
1,4-Dichlorobenzene	.014	.3	.014	1		U
1-Chlorohexane	.018	.5	.018	1		U
2,2-Dichloropropane	.013	3.5	.013	1		U
2-Chlorotoluene	.015	.4	.015	1		U
4-Chlorotoluene	.011	.6	.011	1		U
Benzene	.009	.4	.009	1		U
Bromobenzene	.037	.3	.037	1		U
Bromochloromethane	.014	.4	.014	1		U
Bromodichloromethane	.011	.8	.011	1		U
Bromoform	.042	1.2	.042	1		U
Bromomethane	.074	1.1	.074	1		U

10-22-01

Comments:

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ORGANIC ANALYSES DATA SHEET 2

RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW7 (WG1) Lab Sample ID: S5438 Matrix:Water

%Solids: Initial Calibration ID: JS21AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Analyte	MDL	RL	Concentration	Dilution	Confirm	Qualifier
Carbon tetrachloride	.007	2.1	.007	1	U	U
Chlorobenzene	.005	.4	.005	1	U	U
Chloroethane	.01	1.	.01	1	U	U
Chloroform	.011	.3	.011	1	U	U
Chloromethane	.046	1.3	.046	1	U	U
cis-1,2-Dichloroethene	.062	1.2	1.46	1		
cis-1,3-Dichloropropene	.01	1.	.01	1	U	U
Dibromochloromethane	.012	.5	.012	1	U	U
Dibromomethane	.04	2.4	.04	1	U	U
Dichlorodifluoromethane	.01	1.	.01	1	U	U
Ethylbenzene	.008	.6	.008	1	U	U
Hexachlorobutadiene	.031	1.1	.031	1	U	U
Isopropylbenzene	.015	.5	.015	1	U	U
Methylene chloride	.03	2.	.1	1	F	B
n-Butylbenzene	.015	1.1	.015	1	U	U
n-Propylbenzene	.016	.4	.016	1	U	U
Naphthalene	.04	1.	.04	1	U	U
o-Xylene	.012	1.1	.012	1	U	U
p-Isopropyltoluene	.031	1.2	.031	1	U	U
sec-Butylbenzene	.015	1.3	.015	1	U	U
Styrene	.015	.5	.015	1	U	U
tert-Butylbenzene	.016	1.4	.016	1	U	U
Tetrachloroethene	.008	1.4	.3	1	F	J
Toluene	.011	1.1	.011	1	U	U
trans-1,2-Dichloroethene	.077	.6	.077	1	U	U
trans-1,3-Dichloropropene	.02	1.	.02	1	U	U
Trichloroethene	.01	1.	1.9	1		
Trichlorofluoromethane	.01	.8	.01	1	U	U
Vinyl chloride	.013	1.1	.013	1	U	U
Xylene (total)	.019	1.1	.019	1	U	U

Comments:

AFCEE FORM O-2

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ORGANIC ANALYSES DATA SHEET 2
RESULTS

Analytical Method: 8260 Preparatory Method:5030 AAB#: 052101W1

Lab Name: O'Brien & Gere Laboratories, Inc. Contract #: F41624-97-D-8018/0072

Field Sample ID: SW7 (WG1) Lab Sample ID: S5438 Matrix:Water

%Solids: Initial Calibration ID: J521AF30.M

Date Received: 05/10/01 Date Prepared:05/21/01 Date Analyzed:05/21/01

Concentration Units(mg/L or mg/Kg dry weight): ug/L

Surrogate	Recovery	Control Limits	Qualifier
1,2-Dichloroethane-d4 (surrogate)	87	62-139	
Bromofluorobenzene (surrogate)	89	75-125	
Dibromofluoromethane (surrogate)	88	75-125	
Toluene-d8 (surrogate)	98	75-125	

Internal Std.	Qualifier
1,4-Dichlorobenzene-d4	
Chlorobenzene-d5	
Fluorobenzene	

Comments:

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