



September 28, 2007

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Mr. Ram Pergadia  
New York State Department of Environmental Conservation  
21 South Putt Corners Road  
New Paltz, New York 12561

Re: W-18A Vicinity Investigation Work Plan  
Former Fairchild Semiconductor Facility  
91 All Angels Hill Road  
Wappingers Falls, New York  
Case No. 3-1152/8602

Dear Mr. Pergadia:

On behalf of Schlumberger Oilfield Services, Weiss Associates is transmitting the enclosed *W-18A Vicinity Investigation Work Plan* for the former Fairchild facility located at 91 All Angels Hill Road in Wappingers Falls, New York. This Work Plan responds to your letter request dated August 27, 2007 for a subsurface investigation under and around the remnant floor slabs near well W-18A, and a revised compliance monitoring program for this site.

The Work Plan describes the proposed sample locations and procedures to collect samples of soil, groundwater and soil vapor to determine if a secondary source exists beneath the former building slab in the vicinity of Well W-18A, and proposes a revised compliance monitoring program. Sub-slab soil vapor data will be collected using procedures described in *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH October, 2006). Therefore, the soil vapor data will be appropriate to evaluate a potential vapor intrusion pathway should it be needed in the future.

This investigation is planned be implemented October-November 2007. The Health and Safety Plan will be transmitted prior to field mobilization. If you have any comments or questions concerning this Work Plan, please contact me at (607) 678-4098.

Sincerely,

William A. McIlvride  
Project Manager

Enclosures: W-18A Vicinity Investigation Work Plan

cc: Joseph P. Crua, New York State Department of Health, Bureau of Environmental Exposure Investigation



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**W-18A VICINITY INVESTIGATION  
WORK PLAN**

for

**Former Fairchild Facility  
91 All Angels Hill Road  
Wappingers Falls, New York**

*prepared for*

**Fairchild Semiconductor Corporation**  
225 Schlumberger Drive  
Sugar Land, TX 77478

September 28, 2007



**W-18A VICINITY INVESTIGATION  
WORK PLAN**

for

**Former Fairchild Facility  
91 All Angels Hill Road  
Wappingers Falls, New York**

*prepared by*

**Weiss Associates**  
350 East Middlefield Road  
Mountain View, CA 94043

Weiss Project No. 363-1807-10-04

Weiss Associates work for Fairchild Semiconductor Corporation (Fairchild) was conducted under my supervision. To the best of my knowledge, the data contained herein are true and accurate and satisfy the scope of work prescribed by the client for this project. The data, findings, recommendations, specifications or professional opinions were prepared solely for the use of Fairchild in accordance with generally accepted professional engineering and geologic practice. The Summary contained in this work plan serves as a complement to the entire work plan and should not be treated as a stand-alone document. The reader is referred to the detailed information provided within this work plan for additional data not contained in the Summary. We make no other warranty, either expressed or implied, and are not responsible for the interpretation by others of the contents herein.

*William C. McIlvride* September 28, 2007  
William McIlvride, P.G., C.E.G.  
Sr. Project Hydrogeologist

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## SUMMARY

This W-18A Vicinity Investigation Work Plan was prepared by Weiss Associates (Weiss) on behalf of Fairchild Semiconductor Corporation (Fairchild), for its former facility located at 91 All Angels Hill Road in Wappingers Falls, New York (the Site). The work plan focuses on investigating whether or not a potential nearby source of contaminants is contributing to the presence of residual volatile organic compounds (VOCs), primarily trichloroethylene (TCE) in monitoring well W-18A, as suspected by the New York State Department of Conservation (NYSDEC).

In 1984, construction excavation work at the Site revealed the potential presence of solvents and hydrocarbons in soils and groundwater. Remediation and monitoring have included:

- In 1986, two extraction trenches were constructed and a ground water pumping and treatment system activated (Canonie, 1986) to remove and minimize the migration VOCs according to a remedial action plan and agreement between Fairchild and the NYSDEC.
- In June 2002, the NYSDEC concurred with ceasing groundwater extraction from the trenches in favor of implementing a program of in-situ reductive dechlorination enhanced by injection of Hydrogen Release Compound (HRC<sup>®</sup>). In July 2002 groundwater extraction ceased, and HRC<sup>®</sup> was injected to expedite remediation of the Site.
- Monitoring in accordance with the Remedial Action Plan (Canonie, 1986) and the HRC<sup>®</sup> work plan (Locus, 2002) has included measuring ground water levels and collecting ground water samples and analyzing them for VOCs.

Compared to historical data and since the HRC<sup>®</sup> was applied in 2002, VOC concentrations in all Site wells have been relatively stable or are declining. Out of the 14 wells monitored for VOCs, eight wells have steadily shown decreasing trends, two wells have historically remained at concentrations below detection limits, and four wells have concentrations within historical limits. Also, Sumps 1, 2, and 4, serving the ground water extraction trenches, show only low concentrations of VOCs (maximum 8.9 µg/L TCE). These results show that the residual groundwater contaminant plume is well delineated, stable, and is not migrating from the Site. This is substantiated by the facts that at WS-1, the point where ground water emerges in the wetland, has historically remained below detection limits and the nearby private drinking water supply wells show no detection of Site-related contaminants (Appendix A, Table 3).

Two of the monitoring wells, W-18A and W-27, have shown concentration vs. time trends that indicate their TCE concentrations will not decline below the MCL of 5 µg/L in the near future (Appendix A, Figures 13 and 19). This projection may indicate that soil or ground water with higher residual concentrations of TCE resides upgradient of these two wells. While no obvious source exists for W-27, for W-18A the floor slab of the former manufacturing facility lies nearby in the presumed upgradient direction, and no investigation of soil and ground water beneath this slab has been undertaken.



This Work Plan presents a plan for conducting soil vapor, soil and ground water investigations to further characterize the nature and extent of potential chemical impacts at and in the vicinity of W-18A, and also presents a compliance monitoring program for the Site. This Work Plan was developed based on discussions with NYSDEC and Department of Health (DOH) staff. Soil vapor, soil and ground water samples will be collected from beneath the floor slab and nearby W-18A (Figure 6), tentatively scheduled for October 2007. The results will be analyzed and reported following the investigation.

## 1. INTRODUCTION

This W-18A Vicinity Investigation Work Plan was prepared by Weiss Associates (Weiss) on behalf of Fairchild Semiconductor Corporation (Fairchild), for its former facility located at 91 All Angels Hill Road in Wappingers Falls, New York (the Site, Figure 1). This Work Plan contains a history of environmental investigation and remedial activities at the Site to date (data as of 2007 summarized in Appendix A), scope, objectives and rationale for the elements of the W-18A vicinity investigation (Sampling and Analysis Plan for soil vapor, soil, and ground water), a Quality Assurance Project Plan (QAPP, Appendix B), Site Health and Safety Plan (SHSP, Appendix C), and qualifications of key personnel (Appendix D).

A map depicting the locations of all ground water monitoring wells, extraction trenches, extraction sumps and inactive treatment plant is presented as Figure 2. This Introduction (Section 1) describes the project organization and subcontractor responsibilities. Section 2 provides the Site description and background. Section 3 provides the Work Plan scope, objectives and rationale for the elements of the W-18A vicinity investigation. Section 4 summarizes sampling equipment and procedures, and Section 5 presents field analytical procedures. Section 6 provides the project schedule and Site compliance monitoring program, and references are provided in Section 7. Supporting data are presented in Figures 3 through 6 and Tables 1 through 7.

### 1.1 Project Organization

Weiss will execute this Work Plan using its own staff of qualified geologists, chemists, and field personnel, and by subcontracting selected firms. Key personnel involved in this project are:

Weiss Project Manager	Bill McIlvride	(585) 747-7210 (mobile)
Program Safety and Health Manager	Joyce Adams	(510) 450-6162 (office)
Project Chemist	Tim Utterback	(510) 450-6193 (office)
Senior Reviewer	Tess Byler	(650) 968-700 (office)
Field Team Leader & Site Safety and Health Officer	Larry Whitten	(845) 264-5043 (mobile)

Project personnel responsibilities and lines of communication are described in the Quality Assurance Project Plan (QAPP) in Appendix B. Health and safety roles and responsibilities are presented in the Site Health and Safety Plan (SHSP) in Appendix C. Qualifications of project personnel are presented in Appendix D.

## 1.2 Subcontractor Responsibilities

Services to be subcontracted for work to be conducted under this Work Plan have been tentatively identified pending verification of capabilities and qualifications to perform the SOW and comply with the QAPP. These subcontractors are:

- Analytical laboratory services for soil vapor analyses—Alpha Analytical, Westborough, Massachusetts;
- Analytical laboratory services for soil and ground water analyses—EnviroTest Laboratories, Inc., Newburgh, New York;
- Drilling services—Zebra Environmental, Albany, New York
- Surveyor— Spectra Engineering, Poughkeepsie, New York; and,
- Line locating services—Utilities Service Corporation, New Windsor, New York.

The analytical laboratories are certified by the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) for all analytes analyzed for in this project. The analytic laboratory will assign a Laboratory Project Manager specifically to this project who will oversee all work including quality assurance (QA). This manager is responsible for ensuring that all analytical data generated under this project are reviewed prior to their release to Weiss. All subcontractor work is reviewed by the Weiss Project Manager for QA/QC as described in the QAPP (Appendix B).

## 2. SITE HISTORY AND DESCRIPTION

### 2.1 Site Location and Use

The Site is located approximately 60 miles north of New York City in Dutchess County, New York (Figure 1). The former manufacturing facility occupied ten acres within the 60-acre parcel formerly owned by Fairchild, and occupies the southern crest and eastern slope of a low hill bordered on the east by a small creek that flows north into a wetland (Figure 1). The Site is currently owned by the local fire department, which uses it for (1) storage of mobile homes (about 5 per year) used just off the former Fairchild property in fire suppression training, and (2) driver training.

### 2.2 Site Investigation and Remediation History

The former Fairchild facility manufactured semiconductor components until 1985. During operation, the on-Site hazardous waste management included: (1) acid neutralization and equalization tanks; (2) four vinyl lined aerobic lagoons; and (3) underground storage and treatment tanks. Contamination in soil and ground water was first identified in 1984 during construction excavations near the underground storage tanks. The highest concentrations of contamination were observed in areas adjacent to former storage tanks and shipping/receiving areas, and the primary former source of contaminants was located in the vicinity of former solvent and oil storage tanks on the east side of the facility (upgradient of the location of the subsequently-installed upper ground water extraction trench, (Figure 2; Locus, 2002). Soil borings and monitoring wells were installed and the results of the initial investigation were submitted to the NYSDEC in an engineering data report titled "Hydrocarbon Investigation" dated May 1985 (Canonie Environmental Services Corporation [Canonie], 1987)

Based on the initial subsurface investigation, Canonie (1986) prepared and submitted a remedial action plan that was approved by the NYSDEC in January 1986. In 1990, the solvent and oil tanks were decommissioned, associated contaminated soils excavated and removed from the Site, and disposed as hazardous and non-hazardous materials, depending on degree of contamination. A supplemental remedial action removed contaminated soil around monitoring well 26 and replaced it with clean fill. Excavation to bedrock demonstrated that residual source contamination was not consequential (NYSDEC, 2007b).

In March 1986, additional monitoring wells were installed, and in April 1986 construction began on two extraction trenches and a water treatment system to intercept and remove contaminated ground water, and minimize the migration of volatile organic compounds (VOCs). The remedial action plan and implementation was the basis for an Administrative Consent Order (Case No. 3-1152/8602) between Fairchild and the NYSDEC that was signed October 7, 1986.

Due to generally lower permeability materials at the Site, groundwater extraction trenches were used to collect groundwater for ex situ treatment (Figure 2). Two separate trench systems were used, a smaller 'T'-shaped trench closer to source area (upper extraction trench) 18 ft to 28 ft in depth and 130 ft in length, and a longer interceptor trench along the downgradient portion of the site (lower extraction trench) 8 ft to 34 ft in depth and 768 ft in length. The ground water extraction trenches were backfilled with gravel, and contain 6-inch perforated collection pipes that directed ground water to four sumps within the trenches (Figure 2). Sump SCP-1 is located in the upper trench, which is approximately 120 feet long. Two sumps (SCP-2 and SCP-3) are located in the lower trench, which is approximately 600 feet long. The fourth sump is located at the east side of well W-18A. For maintenance purposes, 4-inch diameter vertical cleanouts were installed at each end and at intervals of approximately every 100 feet along the trenches. In addition to the trenches, ground water was also extracted from recovery wells W-19 and W-26D.

The extracted ground water was pumped at rates of one to seven gallons per minute through two 2,000 pound granular activated carbon (GAC) vessels to remove VOCs prior to discharge through a permitted SPDES surface water outfall (No. 001) to the drainage ditch located on the east side of the property. This pump and treat remedial system operated from December 1986 through July 2002, achieving substantial decreases in ground water contaminant concentrations. Decreases were especially dramatic following the 1990 removal of the tanks and contaminated soil; TCE concentrations in the area upgradient of the tanks decreased from 33 milligrams per liter (mg/L) in 1991 to 0.028 mg/L in 2001. A detailed record of VOC concentrations in all wells is presented in Appendix A--Table 3 and Figures 7 through 20).

In the later stages of the ground water pump-and-treat period, groundwater concentrations declined, and in 2002 the treatment system was shut off in order to evaluate a different *in situ* remedial approach. This approach consisted of bioremediation using Hydrogen Release Compound (HRC<sup>®</sup>).

The HRC<sup>®</sup> remedy was implemented in July 2002 in accordance with the HRC<sup>®</sup> Work Plan (Locus, 2002), submitted to the NYSDEC in January 2002, and approved in June 2002. A baseline sampling event was conducted on July 21, 2002, prior to HRC<sup>®</sup> injection. Groundwater was pumped out of both trenches prior to injecting the HRC<sup>®</sup>. Between July 23 and 24 2002, 700 gallons of regular HRC<sup>®</sup> and HRC<sup>®</sup> primer were injected into the trenches. Seventy-two gallons of regular HRC<sup>®</sup> and eight gallons of HRC<sup>®</sup> primer were injected into the lower trench between cleanouts SCE-4 and SCE-6. Additionally, 560 gallons of standard HRC<sup>®</sup> and 60 gallons of HRC<sup>®</sup> primer were injected into the upper trench. (HRC<sup>®</sup> primer is a dilute form of HRC<sup>®</sup> designed to accelerate the reductive dechlorination process). From 2002-2007, ground water contaminant concentrations were monitored twice annually. In addition, in-situ remediation parameters to assess the effects of the HRC<sup>®</sup> on ground water chemistry were included in the analysis through October 2006.

Following HRC<sup>®</sup> injection in 2002, biodegradation was enhanced in well W-18A, upgradient of the upper trench, as shown by a decrease in TCE concentrations and concomitant increase in cis-1,2-DCE and vinyl chloride concentrations. In addition, TCE and cis-1,2-DCE concentrations have demonstrated a sustained declining trend in groundwater sampled from wells W-19 and W-20, which are located downgradient of the upper trench. TCE concentrations have decreased and cis-1,2-DCE concentrations have remained stable or are slightly declining in groundwater sampled from well

W-26D. Out of the 14 wells monitored for VOCs, eight wells have steadily shown decreasing trends, two wells have historically remained at concentrations below detection limits, and four wells have concentrations within historical limits.

A potential secondary source of VOC contamination was investigated in 2001 in the Well 19 and Well 20 vicinity where the former wastewater treatment system was located (Figure 2), just downgradient of the upper extraction trench. A soil vapor survey was conducted in October 2001, and followed up with ground water and soil sampling to characterize areas of high soils vapor VOC concentration. The results showed no evidence of an independent VOC source, and that contamination downgradient of the upper extraction trench probably originated from the primary source upgradient (Locus, 2002).

As requested by NYSDEC, private wells near the Site<sup>1</sup> were sampled in 1989 by the Dutchess County Department of Health, in 2001 and 2002 by Locus Technologies, and in 2005 by RMT and were found to have no Site-related contaminants (RMT, 2005a).

### 2.3 Geology and Hydrogeology

The Site is situated on top of a glacial drumlin, which is composed of fine-grained, clay-rich till and lacustrine deposits. The generalized soil profile consists of an upper layer of low permeability stiff, brown clayey silt with traces of sand that ranges in depth between seven feet to 25 feet below ground surface. Below this layer is a very stiff to hard gray clay and silt. This lower sedimentary layer is also of low permeability and extends down to bedrock. Bedrock consists of primarily phyllitic, black shale (i.e. argillite) that is Ordovician in age.

The ground water table morphology is a subdued reflection of the Site topography. The depth to ground water is commonly less than 10 ft at the crest of the hill in the W-18A vicinity, and about 20 to 30 ft at the higher elevations on the site at the east side of the crest of the hill. The ground surface and ground water gradient both slope down to the east, and at the base of hill the depth to ground water is less than 10 ft. Ground water likely discharges to the small surface stream that feeds the wetland northeast of the Site.

The direction of ground water flow in the W-18A vicinity in the last several years has been presented in a series of reports (RMT, 2005b; Weiss, 2007a, 2007b) and is typically interpreted as being toward the east (Figure 3). However, during the early years of Site investigation, wells present west and south of the building slab (now destroyed) provided data that indicated ground water in the W-18A vicinity was variable, with flow directions likely to the east, south, and west (Figures 4 and 5). While the W-18A vicinity is at a topographic divide and a subsurface hydraulic divide would be expected at this location, the situation is reported to have been caused in part by ground water mounding in the W-18A area from concentration of building and Site rainfall runoff there (Canonie, 1986). Records of ground water elevation measurements are presented in Appendix A, Table 3.

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<sup>1</sup> The four private wells are located at the following addresses: 101 All Angels Hill Road, Wappinger Falls, New York; 107 All Angels Hill Road, Wappinger Falls, New York; 221 Myers Corners Road, Wappinger Falls, New York; and 225 Myers Corners Road, Wappinger Falls, New York.

### **3. WORK PLAN SCOPE, OBJECTIVES AND RATIONALE**

The purpose of this investigation is to determine if a secondary source exists beneath the former building slab in the vicinity of W-18A. Because groundwater flow patterns are variable in the area, a secondary objective is to determine current groundwater flow patterns near W-18A. This section describes the specific Scope of Work (SOW), sampling objectives and rationale for the W-18A proposed samples.

The proposed sampling locations are shown in Figure 6. Soil vapor samples will be collected at five locations, soil samples will be collected at nine locations, and ground water samples will be collected at nine locations. The number of samples and analyses planned for primary and quality assurance/quality control (QA/QC) samples are summarized in Tables 1 through 3. Procedures for field and sampling activities are presented in Section 4.

#### **3.1 Project Objectives**

Specific Project objectives of the W-18A vicinity investigation include:

- Collect subsurface hydrogeologic data beneath the former building's floor slab;
- Define contamination sources, if present, including the source locations, type of contaminants, and Site features related to potential contaminant migration in the W-18A vicinity; and,
- If present, identify contaminants and define their horizontal and vertical extent in soil, ground water, and soil vapor, and evaluate spatial and temporal trends and the fate and transport of contamination.

In addition, because we're collecting soil vapor data using Summa™ canisters, we will have data appropriate to evaluate a potential vapor intrusion pathway should it be needed in the future.

#### **3.2 Data Quality Evaluation**

Project specific requirements for precision, accuracy, representativeness, completeness, and comparability (PARCC) are listed in the QAPP table located in Appendix B.

### 3.3 Line Locating

The proposed soil vapor and soil boring locations will be marked and Underground Service Alert (USA) will be contacted a minimum of two days before field activities to identify utility locations prior to beginning subsurface work. The only utility of concern is the municipal water main serving the fire hydrants around the building slab. A private utility locating service will also be contracted to verify the safety of the proposed boring locations. The final sample locations will depend on field conditions and the results of a subsurface utility survey.

### 3.4 Soil Vapor Sampling

Soil vapor sampling will be conducted at five locations as shown on Figure 6. The locations were centered in large areas of uninterrupted floor slab, such that the slab serves as a barrier, collecting vapors over a large area, and the samples will therefore serve as a screening tool for each respective area.

Two or three weeks prior to sampling, any slab penetrations such as former drains will be sealed with bentonite. Soil vapor samples will be collected from temporary probes 2 inches below the bottom of the slab within the sub-slab aggregate following methods prescribed by the NYSDOH (2006). Six-liter Summa™ canisters will be used to contain the sample. The samples will be analyzed for VOCs by EPA Method TO-15. Primary and QA/QC soil vapor samples will be analyzed as shown in Table 2.

### 3.5 Soil Sampling

Soil sampling will be conducted at nine locations at the Site. Soil boring locations will be distributed throughout the area of the Site based on proximity to W-18A, absence of previous borings in the area, abundance of penetrations in the floor slab such as trenches and drains, and to get good coverage of most of the floor slab area (Figure 6). One soil sample will be collected from the unsaturated zone about 5 ft bgs at each location from continuous cores extending from the surface to a depth of 15 ft to 20 ft bgs, using dual wall direct-push technology (Geoprobe® MacroCore®). The samples will be analyzed for VOCs by EPA Method 8021. The specific purpose of each sample location is as follows:

- SB-1: This location is north of W-18A just east of the floor slab in an area not previously sampled;
- SB-2: This boring is located south of W-18A just east of the floor slab, adjacent to a former abandoned waste solvent storage tank in a location not know to be previously sampled;
- SB-4: This boring is located west of W-18A just east of the floor slab, adjacent to another former abandoned waste solvent storage tank in a location not know to be previously sampled; and,
- SB-3, and SB-5 through 9: These borings provide coverage of the floor slab area west of W-18A, with greater density toward W18A itself.



Soil samples will be collected from each location using direct-push equipment and stored in the appropriate containers for their respective analyses. One glass jar full will be collected for each VOC sample.

### **3.6 Ground Water Sampling**

Grab ground water samples will be collected from the first water-bearing zone in each of the nine soil borings (Figure 6) at depths ranging from 10 to 25 ft bgs. Once ground water is reached, a temporary well casing with a 0.010-inch slotted screen will be lowered into the boring, and a bailer will be used to collect the water and pour into the collection vials. All ground water samples will be analyzed for VOCs by EPA Method 8021.

Ground water samples will be collected from each location using direct-push equipment and stored in the appropriate containers for their respective analyses. Three volatile organic analysis (VOA) bottles with hydrochloric acid preservative will be filled for each VOC sample. Ground water quality parameter (temperature, pH and specific conductance) field measurements will be made on bailed ground water from the nine grab ground water locations prior to sample collection.

### **3.7 Piezometer Installation**

Three of the grab ground water sampling temporary casings, at locations SB-6, SB-8, and SB-9, will be cemented in place to serve as temporary piezometers. The top-of casing elevation will be surveyed to the nearest 0.01 ft, and water level measurements made after the level stabilizes. The purpose of these piezometers is to provide a more accurate assessment of the ground water flow direction in the W-18A vicinity.

### **3.8 Field Quality Assurance/Quality Control Sampling**

QA/QC samples will be collected along with the environmental samples for each media sample and will be included with each sample shipment. Data from QA/QC samples will be used to evaluate the reliability of the environmental samples. One of every 10 samples will be a duplicate sample sent blind to the laboratory. Each of the QA/QC sample types with respect to laboratory data and laboratory QA/QC procedures is discussed in the QAPP. The QA/QC samples include trip blanks, QA/QC samples, rinsate samples and field blanks. These samples will be collected as shown in Tables 1 through 3.

The contract laboratory will be required to acknowledge sample receipt within 48 hours either by fax or by telephone. At that time, the contract laboratory will be required to communicate any other sample identification numbers assigned to samples upon arrival and will immediately notify Weiss of any handling problems such as insufficient sample volume, broken sample containers, etc. The contract laboratory will also retain sample numbers assigned by Weiss throughout the entire in-house tracking process. Weiss personnel will be able, by telephone and at any time during business hours, to track the progress of each sample through the contract laboratory using Weiss' sample identification numbers. Chain-of-custody (COC) procedures are discussed further in Section 4.2.6.

### **3.9 Photographs**

Digital photos may be taken to document sampling events and field activities. Digital photos may be used to enhance written descriptions of the field sampling events in field logbook entries. If photos are taken they will be downloaded and stored in project files at Weiss offices.

### **3.10 Investigation Derived Wastes**

Investigation-derived wastes (IDW) will consist of unused soil core from direct push boreholes, decontamination water, and used personnel protective equipment (PPE), such as gloves. The PPE will be disposed of as municipal trash. Soil will be screened using a PID, and both cuttings and decontamination water will be distributed onsite near the boreholes. This is appropriate because the Site has a maximum of about 80 ppb of TCE in groundwater, all known primary sources have been removed, and past IDW practice has been to dispose of all potentially contaminated drill cuttings, purge water and rinsate on the Site surface, usually near the borehole. This practice will be continued for this investigation, unless high concentrations (5 ppmv) of VOCs are detected by the organic vapor analyzer (OVA) during sampling. In this case, drill cuttings and rinsate will be contained in DOT-approved labeled 55-gallon steel drums. The labeled drums will be sampled and stored at the site in a storage container, pending laboratory analysis (Table 5). After reviewing the analytic results, Weiss will coordinate transportation and disposal of the investigation derived waste, if necessary.

## 4. SAMPLING EQUIPMENT AND PROCEDURES

Sampling equipment and procedures for the activities to be conducted under this Work Plan are described in the following sections.

### 4.1 List of Field Equipment, Containers and Supplies

Sample containers required to collect soil vapor, soil and ground water samples are specified in Table 5 of this Work Plan. Other field supplies will generally include the following:

- Decontamination supplies for sampling equipment, consisting of clean buckets, laboratory grade detergent, and distilled water;
- Summa™ Canisters for the collection of soil vapor;
- Helium gas detector, used in conjunction with a supplied helium atmosphere around the soil vapor sampling point to verify that the vapor sample is not being infiltrated by outdoor air;
- Laboratory supplied bottles for water samples;
- Glass jars for soil samples;
- Field monitoring equipment (photo ionization detector [PID] as specified by the Site Health and Safety Plan (SHSP); and,
- Appropriate personal protective equipment (PPE) as specified by the SSHP.

#### 4.1.1 Preservation Procedures and Holding Times

Vapor samples for each location will be collected in a Summa™ canister, which do not require preservation. Ground water samples specified in this Work Plan will consist of three VOA bottles with hydrochloric acid preservative for each sample location. The holding times for the analyses, and number and size of sample containers, are provided in Table 5.

### 4.2 Sampling Procedures

Environmental samples are subject to a number of changes during collection, transportation and preparation for analysis, including physical disruption, decompression, temperature changes and exposure to new chemical environments. The effects of these changes can be minimized through proper sample collection and handling techniques. This section describes basic sampling strategies and procedures to eliminate or minimize errors that can be introduced in sample collection. Included are descriptions of the procedures for the primary sampling methods anticipated for use in this

project. However, the need for additional sampling procedures or alternative methods may arise as required by site conditions.

The following procedures will be followed to collect environmental soil vapor, soil and ground water samples for this work scope. Details for operation, calibration, and preventative maintenance for field sampling equipment associated with and/or described in the following procedures are provided in the QAPP. Sample locations are shown on Figure 6, and will be measured and located in the field using a steel tape or hand held roll-a-wheel.

#### 4.2.1 Soil Vapor Sampling Procedures

This procedure is based on the NYSDOH (2006) guidance for soil gas surveys.

The soil vapor borings will be collected from 2 inches below the bottom of the slab from within the sub-slab aggregate. The concrete will be cored to access the sub-slab material. A temporary laboratory or food grade quality polyethylene tube 1/8 inch to 1/4 inch diameter will be inserted into the sub-slab aggregate and the surrounding hole backfilled with porous, inert material such as washed #1 crushed stone to cover the probe tip. The remaining annulus of the hole will be backfilled with hydrated bentonite chips to form a seal.

The polyethylene tubing at the surface will be sealed with an airtight valve and connected to a 60 cubic centimeter (cc) syringe. Prior to collecting the samples, the dead space volume, consisting of the volume of tubing and the annular space around the probe tip, will be calculated using the following formula:

$$P_t = \frac{D^2 * P_d * 9.27}{P_r}$$

Where

D = Internal diameter of probe (tubing), inches

P<sub>d</sub> = Probe (tubing) length, feet

P<sub>r</sub> = Pump rate, liters per minute

P<sub>t</sub> = Purge time for one probe volume, seconds

Therefore, if 1/4 inch tubing with a length of 10 feet was used with a purge rate of 200 milliliters per minute (mL/min), the purge time for three probe volumes is 1.5 minutes. At least three dead space volumes will be purged before sample collection. A minimum of 20 minutes will pass following purging to allow soil-vapor concentrations to stabilize.

A six-liter Summa™ canister and flow regulator will then be connected to the polyethylene sample tubing using airtight compression fittings. The flow regulator will be placed in-line to maintain an approximate 150 cc to 200 cc per minute flow rate while collecting soil-vapor samples. To check for leaks of ambient air into the sample, helium will be used as a tracer gas and applied

inside a plastic wrap around the sampling point and tubing. Prior to sampling, an additional tubing volume will be extracted and checked for helium content. If no helium is present, the sample tubing valve and sampling valve on the Summa™ canister will then be opened and soil-vapor sampling will begin.

A vacuum gauge and valve will be used. The gauge will indicate when the canister is full and the valve can be used to control the sample flow rate from the down hole source at a 200-mL/min rate to prevent stripping of volatiles and ambient air from diluting the soil gas samples. Therefore, the time required to fill a six-liter Summa™ canister at 200 mL/min is 30 minutes. Soil-vapor sampling will be completed when the negative pressure in the Summa™ canister has decreased from the laboratory applied -30 inches of mercury (Hg) to a negative pressure of -5 inches Hg. The pressure inside the Summa™ canister will be measured in the field by observing the pressure gauge located on the flow regulator. The following information will be recorded on field log forms:

- Sample ID;
- Date and time of sample collection;
- Sampling depth;
- Personnel collecting sample;
- Sampling methods and devices;
- Calculated soil vapor purge volume and volume of vapor extracted;
- Vacuum in Summa™ canisters before and after samples are collected; and,
- Apparent moisture content (dry, moist, saturated, etc.) of the sampling zone.

After collecting each sample, the polyethylene tubing will be removed and the core hole will be abandoned by backfilling any remaining opening with bentonite chips.

Filled canisters will be packed and shipped to the analytical laboratory at ambient temperature using laboratory-specified procedures under chain of custody documentation. The laboratory will be notified of the sampling event prior to starting field work.

#### *4.2.2 Soil Sampling Procedures*

Soil samples will be collected at nine locations from continuous cores extending to depths up to 20 ft bgs. One sample will be collected per location at about 5 ft bgs, immediately above ground water (typically less than 10 ft bgs) in brass or acetate tubes using direct-push equipment. Direct-push continuous core sampling system methods utilize a core barrel, which recovers a soil core from the interval through which the barrel is advanced. During advancement of the boreholes with the direct-push rig, continuous cores will be collected in 5-foot long clear 2-inch diameter acetate sleeves and logged by a geologist according to the Unified Soil Classification System (USCS) and New York State Department of Transportation soil description procedure (NYSDOT Soil Mechanics Bureau STP-2, December 1994). The acetate sleeves will be sliced at the desired sampling depth). The cutting device will be decontaminated between each cut. To collect soil for VOC analysis, soil samples will be collected from the borehole as independent, discrete samples in acetate liners. The

acetate liner will then be split and soil samples will be collected and placed in a glass jar, placed in a zip-lock bag, chilled immediately, and placed in a cooler with ice for shipment to the laboratory for analysis. All soil samples will be analyzed for VOCs by EPA Method 8021.

#### *4.2.3 Ground Water Sampling Procedures*

Grab ground water samples will be collected from permeable intervals in soil borings, estimated to be between 10 ft bgs and 20 ft bgs. Once ground water is encountered the hollow Geoprobe® sampler and rods will be retracted and a new, clean, temporary, 1-inch diameter, Schedule 40 PVC casing with a 0.01 slot screen will be placed in the borehole without the addition of water or other materials. Ground water samples will be collected from the temporary well as soon as water collects, using a bailer to remove the water and pour into the collection vials.

Water quality measurements will be made prior to sampling ground water to determine pH, specific conductivity, and temperature. After each VOA bottle is filled, it will be inverted and checked for air bubbles to ensure zero headspace. If a bubble appears, the bottle will be discarded and a new sample will be collected. All sample bottles and equipment will be kept away from fuels and solvents. Disposable gloves will be worn for each separate activity and then disposed.

Coordination between the field staff and the analytical laboratory will be required. The laboratory will be notified when the field work is scheduled, and if possible, samples will not be collected on Friday, or on a weekend. The laboratory will be notified of the sampling event prior to starting field work.

#### *4.2.4 Water Quality Parameters and Water Levels*

Water quality parameters and water levels will be taken before collecting the grab ground water sample. Water levels will be measured according to the procedures described in Section 5 of this Work Plan, which also addresses field water quality parameter procedures for measuring conductivity, pH and temperature.

At locations where the temporary well casing will be converted to a piezometer, the annular space will be backfilled with clean sand to 2 ft above the slotted interval, and the remainder of the annular space backfilled with bentonite chips. The piezometer head will be protected with a tamper-proof box cemented in place, and the top of casing elevation will be surveyed to the nearest 0.01 ft.

#### *4.2.5 Sample Numbering*

Each sample will be identified using the system described below. These numbers will be used to complete sample documentation including: sample labels, COC records, request-for-analysis forms and sample collection logs. The sample identification numbers will include:

- **Project Identification:** A two- letter designation will be used to identify the facility where the sample is collected. For this project, the three-letter designation will represent the location. The former Fairchild Wappingers Falls site will be designated as FWF.

- Sample Type: Each sample type collected during the sampling program will be identified by a two-letter code, as needed:
  - SV - Soil vapor sample
  - SS - Soil sample
  - GW - Ground water sample
- Sample Location: A two-letter designation with a number will be used to indicate the specific on-site boring number (e.g., SG04).

The sample types will have a number after them, referring to how many of those sample types are collected from a specific location on that day.

- Example: FWF-SG01-01 = Fairchild Wappingers Falls, Soil Vapor location no. 1, sample no. 1

#### *4.2.6 Sample Chain-of-Custody Forms and Custody Seals*

All sample shipments for analyses will be accompanied by a COC record. Forms will be completed and sent with the samples for each laboratory and each shipment (i.e., each day). If multiple coolers are sent to a single laboratory on a single day, forms will be completed and sent with the samples for each cooler.

The COC form will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is either in someone's physical possession, in someone's view, locked up or kept in a secured area that is restricted to authorized personnel. Until the samples are shipped, the custody of the samples will be the responsibility of Weiss Associates. The sampling team leader or designee will sign the COC form in the "relinquished by" box and note date, time, and air bill number (if applicable). The sample numbers for all rinsate samples, reference samples, laboratory QC samples, and duplicates will be documented on this form. A photocopy will be made for the project files.

The shipping containers in which samples are stored (usually sturdy picnic cooler or ice chest) will be sealed with self-adhesive custody seals any time they are not in someone's possession or view before shipping. All custody seals will be signed and dated.

#### *4.2.7 Packaging and Shipment*

All sample containers will be placed in a strong-outside shipping container. The following outlines the packaging procedures:

- Bagged ice, double-bagged in polyethylene bags, will be placed above and below the sample bottles.
- The bottom of the cooler will be lined with bubble wrap to minimize the potential for sample bottle breakage during shipment.

- Screw caps will be checked for tightness and, if not full, the sample will be marked with the level of liquid in the sample on the outside of the sample bottles with indelible ink.
- Sample labels will be affixed to the containers.
- All glass sample containers will be wrapped with bubble wrap to minimize the potential for sample bottle breakage.
- All sample containers will be sealed in heavy duty plastic zip-lock bags with sample numbers written on the outside of the bag with indelible ink.
- The appropriate COCs will be enclosed in a zip-lock plastic bag affixed to the underside of the cooler lid.
- The empty space in the cooler will be filled with bubble wrap or other packing material to prevent movement and breakage during shipment.
- Each ice chest will be securely taped shut with fiberglass strapping tape, and custody seals will be affixed to the front, right and back of each cooler.

Records will be maintained by Weiss Associates of the following information:

- Sampling contractor's name;
- Name and location of the site or sampling area;
- Carrier, air bill numbers, method of shipment;
- Shipment date and expected laboratory receipt date;
- Irregularities or anticipated problems associated with the samples; and,
- Whether additional samples will be shipped or if this is the last shipment.

### **4.3 Analytical Results Distribution**

Analytical results will be submitted to Weiss by the contract laboratory. All analytical results and miscellaneous field data gathered in the field will be submitted to the NYSDEC in the W-18A Vicinity Investigation Report.



## 5. FIELD ANALYTICAL PROCEDURES

### 5.1 Field Measurements

Field measurements include conductivity, pH, temperature, helium and PID measurements and ground water levels (Table 6). These parameters are measured according to corresponding vendor-supplied operation manuals. All probes contacting water will be thoroughly cleaned and rinsed with distilled water before and after each measurement. Instrument maintenance and calibration procedures are presented in Table 7.

Field measurements and analytical data will be recorded in the field logbook. All field equipment will be calibrated per manufacturer's instructions.

## 6. SCHEDULE AND COMPLIANCE MONITORING PROGRAM

### 6.1 Schedule

Once the Work Plan has been approved, fieldwork is expected to take place between mid to late October and early November 2007. To meet this schedule, all approvals and permits must be received by early to mid October.

Soil vapor sampling will be done the first day of field work. Soil and ground water sampling will be done in the following one or two days. The W-18A Vicinity Investigation Report will be submitted 60 days after the sampling is completed.

### 6.2 Compliance Monitoring Program

The compliance monitoring program will be modified slightly from the one proposed in the 2007 Annual Report (Weiss, 2007b) and previously approved by the NYSDEC (2007a). Monitoring activities will include:

- Ground water elevation measurements every April and October at 22 ground water monitoring wells, eight extraction trenches, and four extraction sumps;
- Sampling and analysis every five quarters (1.25 years) beginning April 2008 for the parameters VOCs, pH, temperature, and conductivity from wells W-8, W-10, W-12, W-13, W-14, W-19, W-20, W-21, W-22, W-24, W-25 and W-26D, and sumps SUMP-1, SUMP-2, SUMP-3, SUMP-4, and surface water station WS-1; and,
- Sampling and analysis every April and October for the parameters VOCs, pH, temperature, and conductivity from wells W-18A and W-27.

A compliance monitoring report containing a summary of Site activities and results will be submitted annually each November. This report will include a comparison of TCE concentrations in Well 27 to the year-by-year goals established by the NYSDEC (2007a), as follows:

Date	TCE Concentration Goal, µg/L	TCE Concentration Upper Limit, µg/L
1-Nov-07	80	96
1-Nov-08	61	73
1-Nov-09	46	55
1-Nov-10	35	42
1-Nov-11	26	32
1-Nov-12	20	24
1-Nov-13	15	18
1-Nov-14	11	14
1-Nov-15	9	10
1-Nov-16	7	8
1-Nov-17	5	6

Should the TCE concentration upper limit be exceeded for three consecutive years, it will be noted in the compliance monitoring report and considered for appropriate action.

## 7. REFERENCES

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- Locus Technologies (Locus), 2002. Quantitative Evaluation and Work Plan for Alternative Remedial Technologies, 91 All Angels Hill Road, Wappingers Falls, New York, January 15, 2002.
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- RMT, 2005b, Three-Year Evaluation Report, Former Fairchild Semiconductor Corporation Facility, 91 All Angels Hill Road Wappingers Falls, New York, November 30, 2005.
- Weiss (Weiss Associates), 2007a, Four-Year Evaluation of Enhanced In-Situ Bioremediation of Chlorinated Solvents in Ground Water, with 2006 Monitoring Results, for Former Fairchild Facility, 91 All Angels Hill Road, Wappingers Falls, New York, January 19, 2007.
- Weiss, 2007b, 2007 Annual Monitoring Report for Former Fairchild Facility, 91 All Angels Hill Road, Wappingers Falls, New York, June 28, 2007.

**FIGURES**

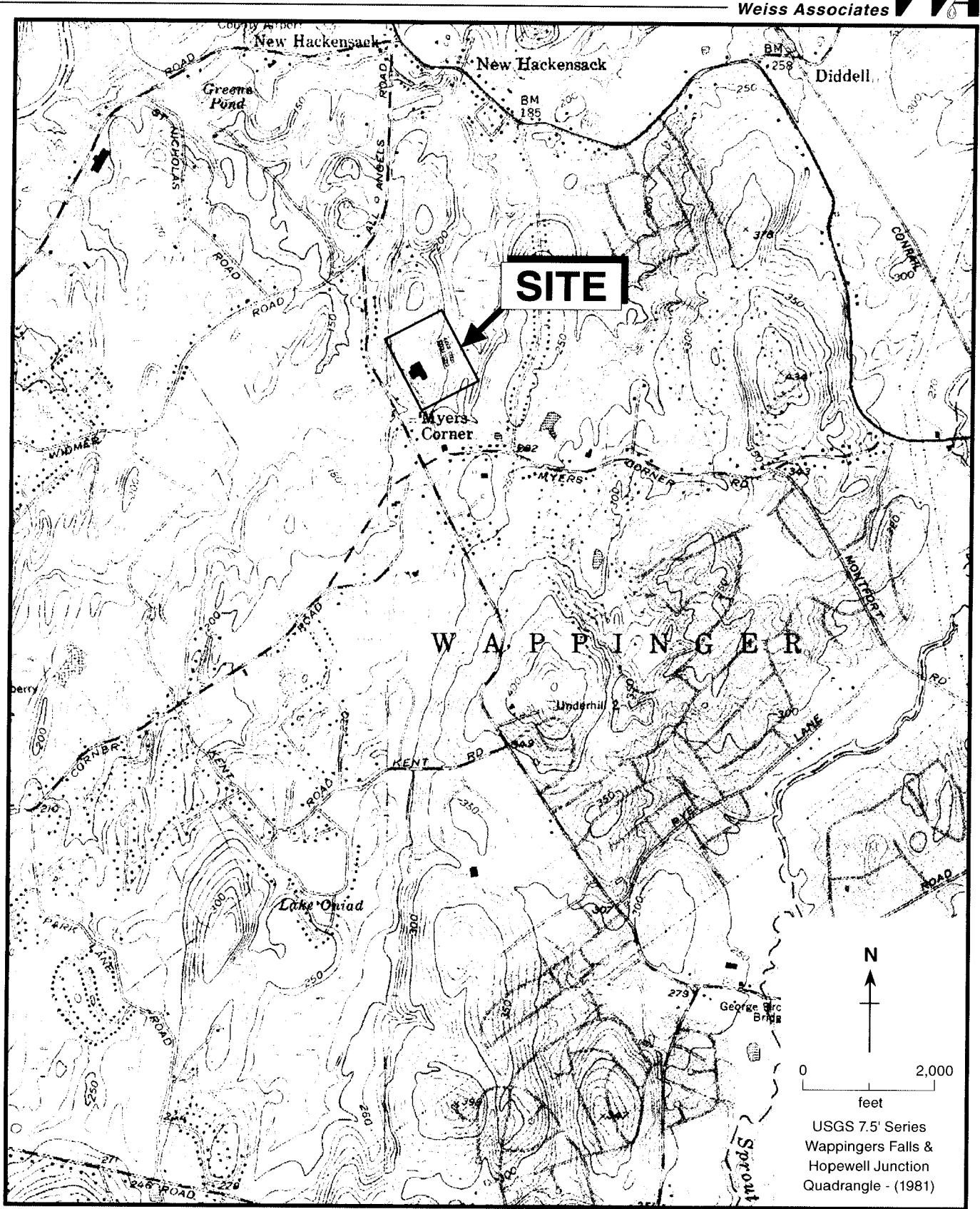
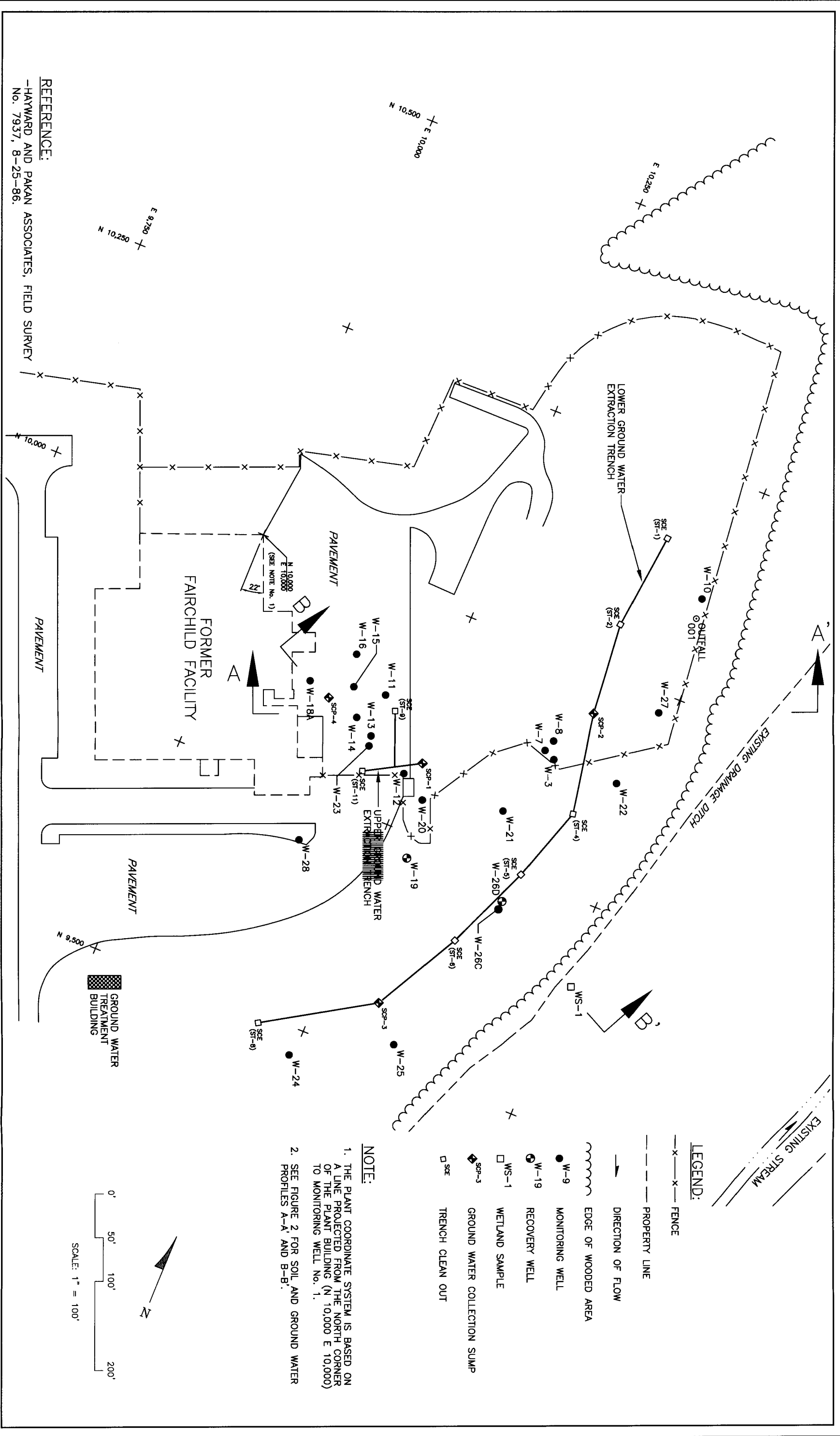


Figure 1. Site Location Map, Former Fairchild Facility, 91 All Angels Hill Road, Wappingers Falls, New York



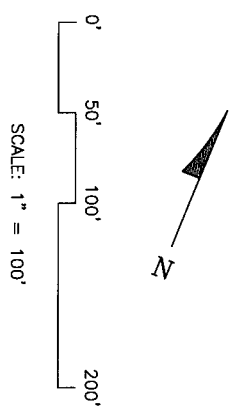
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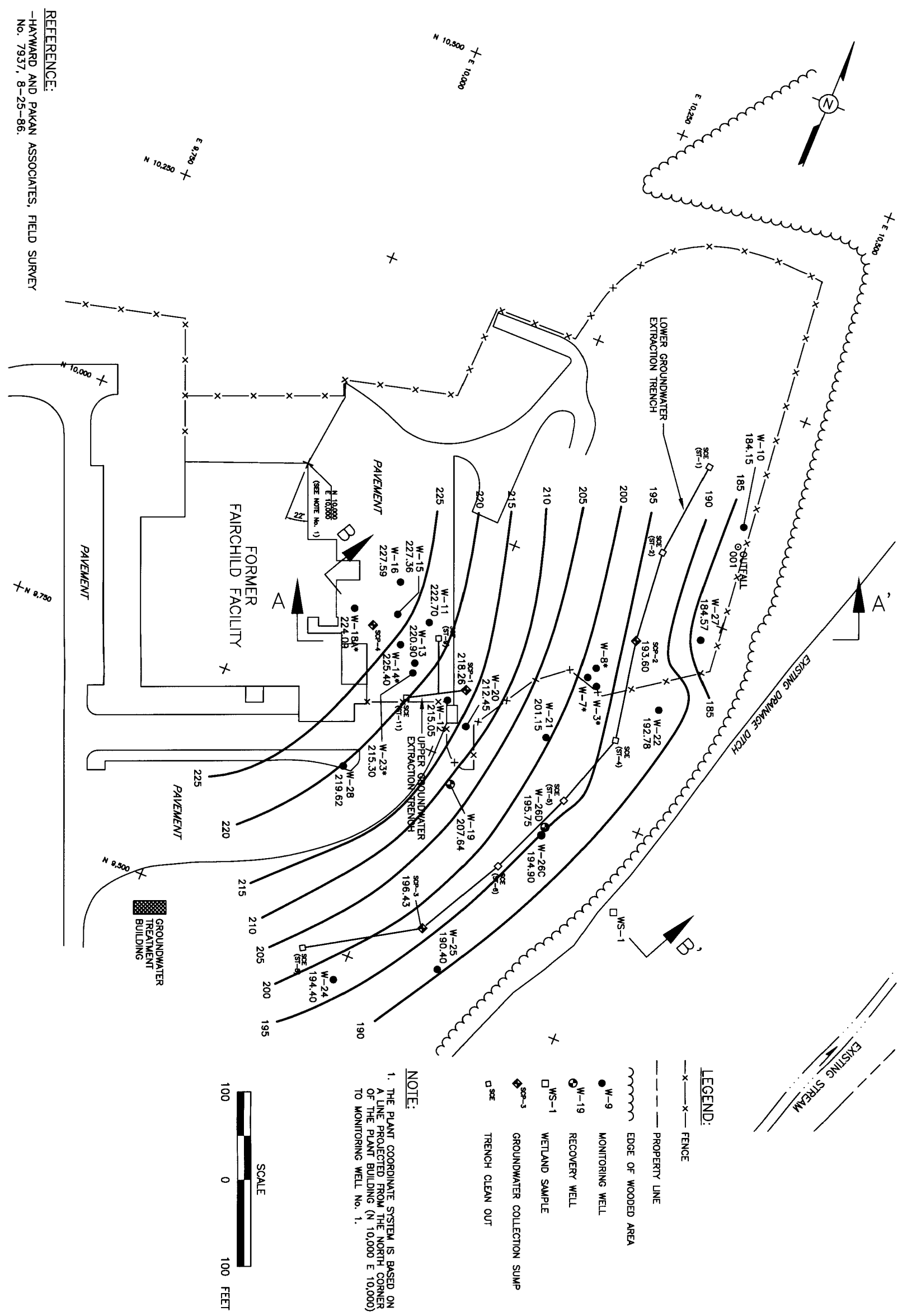
-HAYWARD AND PAKAN ASSOCIATES, FIELD SURVEY No. 7937, 8-25-86.

Figure 2. Site Plan and Monitoring Well Location Map, Former Fairchild Facility, 91 All Angels Road, Wappingers Falls, New York

**NOTE:**

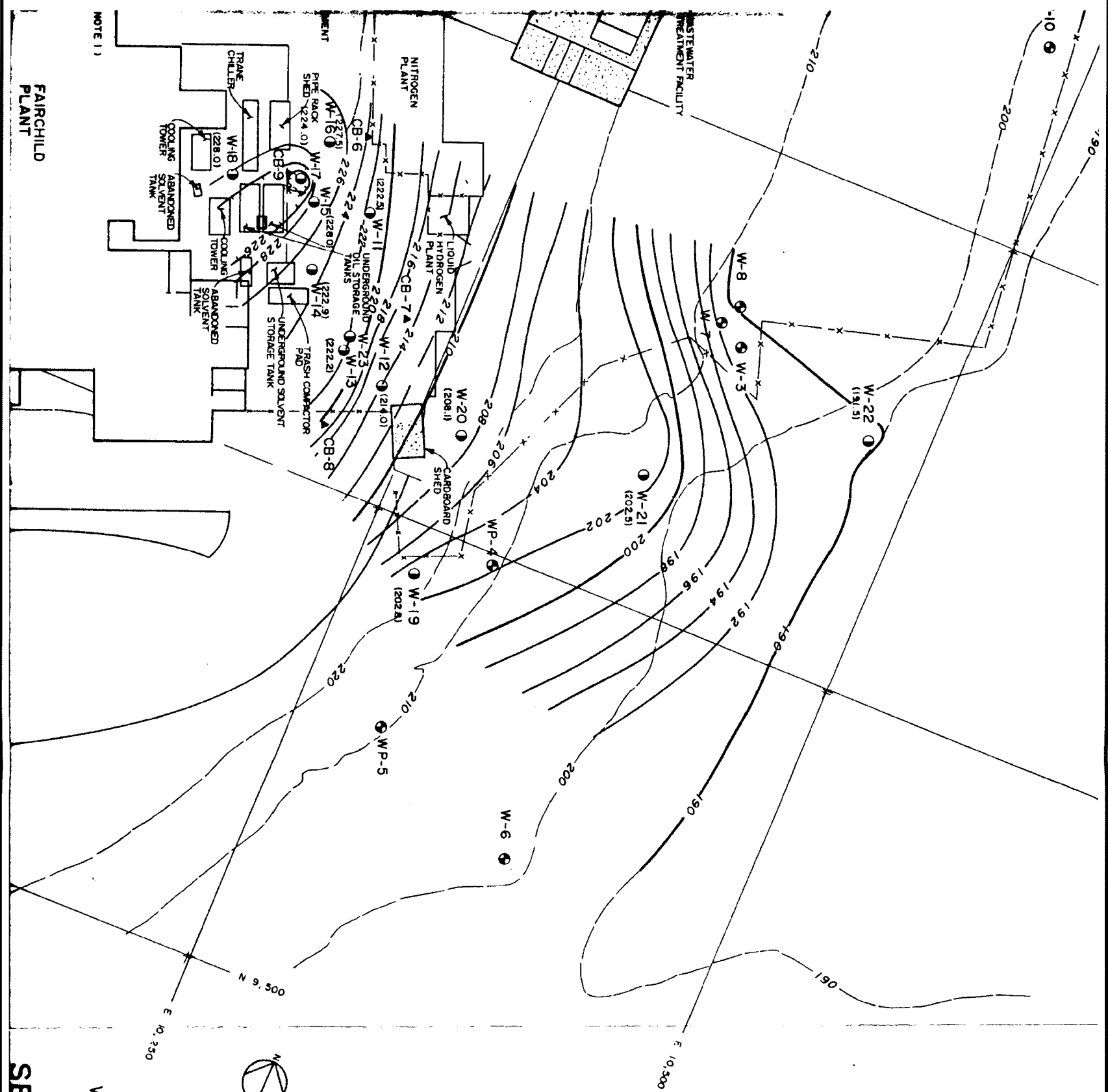
1. THE PLANT COORDINATE SYSTEM IS BASED ON A LINE PROJECTED FROM THE NORTH CORNER OF THE PLANT BUILDING (N 10,000 E 10,000) TO MONITORING WELL No. 1.
2. SEE FIGURE 2 FOR SOIL AND GROUND WATER PROFILES A-A' AND B-B'.





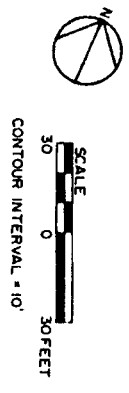
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 -HAYWARD AND PAKAN ASSOCIATES, FIELD SURVEY  
 No. 7937, 8-25-86.

Figure 3. Ground water Elevation Contour Map, April 28-29, 2007, Former Fairchild Facility, 91 All Angels Hill Road, Wappingers Falls, New York



CH 84-098-02-E13  
 3. FOR TIE-IN DETAILS SEE DRAWING  
 CH 84-098-02-E12

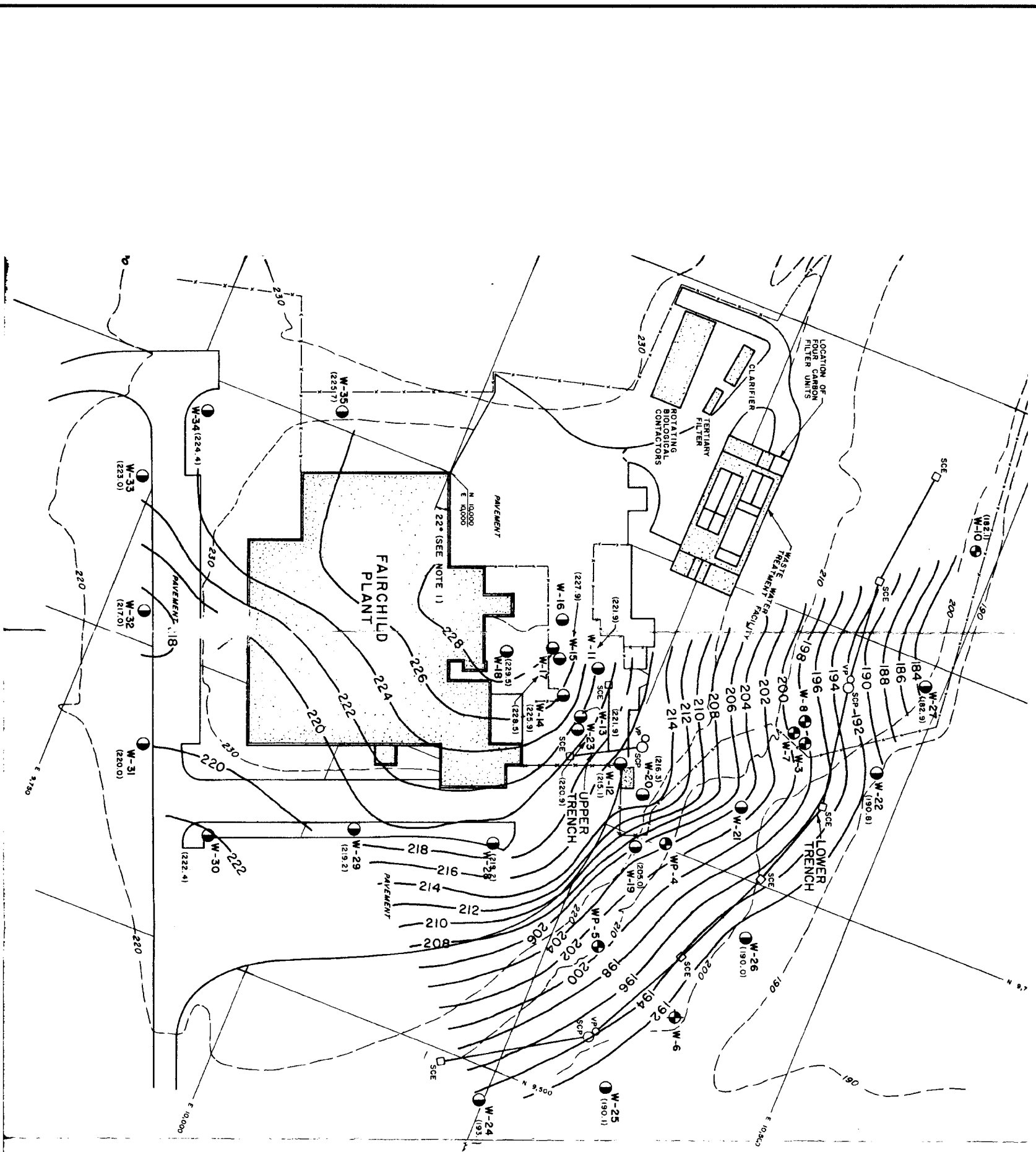
**LEGEND**  
 -190- GROUND ELEVATION CONTOURS  
 WP-4 ● MONITORING WELL POINT INSTALLED BY OTHERS  
 W-3 ● EXISTING MONITORING WELL INSTALLED BY OTHERS  
 W-18 ● HYDROCARBON INVESTIGATION BORING AND MONITORING WELL INSTALLED BY CANONIE ENGINEERS, INC.  
 CB9 ▲ HYDROCARBON INVESTIGATION BORING  
 -210- WATER LEVEL ELEVATION CONTOUR, FEET  
 (202.8) WATER LEVEL MEASURED AT WELL (AUGUST 19, 1985)



**WATER LEVEL ELEVATION CONTOURS**  
 FAIRCHILD FACILITY  
 WAPPINGERS FALLS, NEW YORK  
 PREPARED FOR  
**FAIRCHILD SEMICONDUCTOR CORP**

Figure 4. Historical Ground Water Elevation Contours, August 19, 1985, Former Fairchild Facility, 91 All Angels Hill Road (from Canonie, 1986).





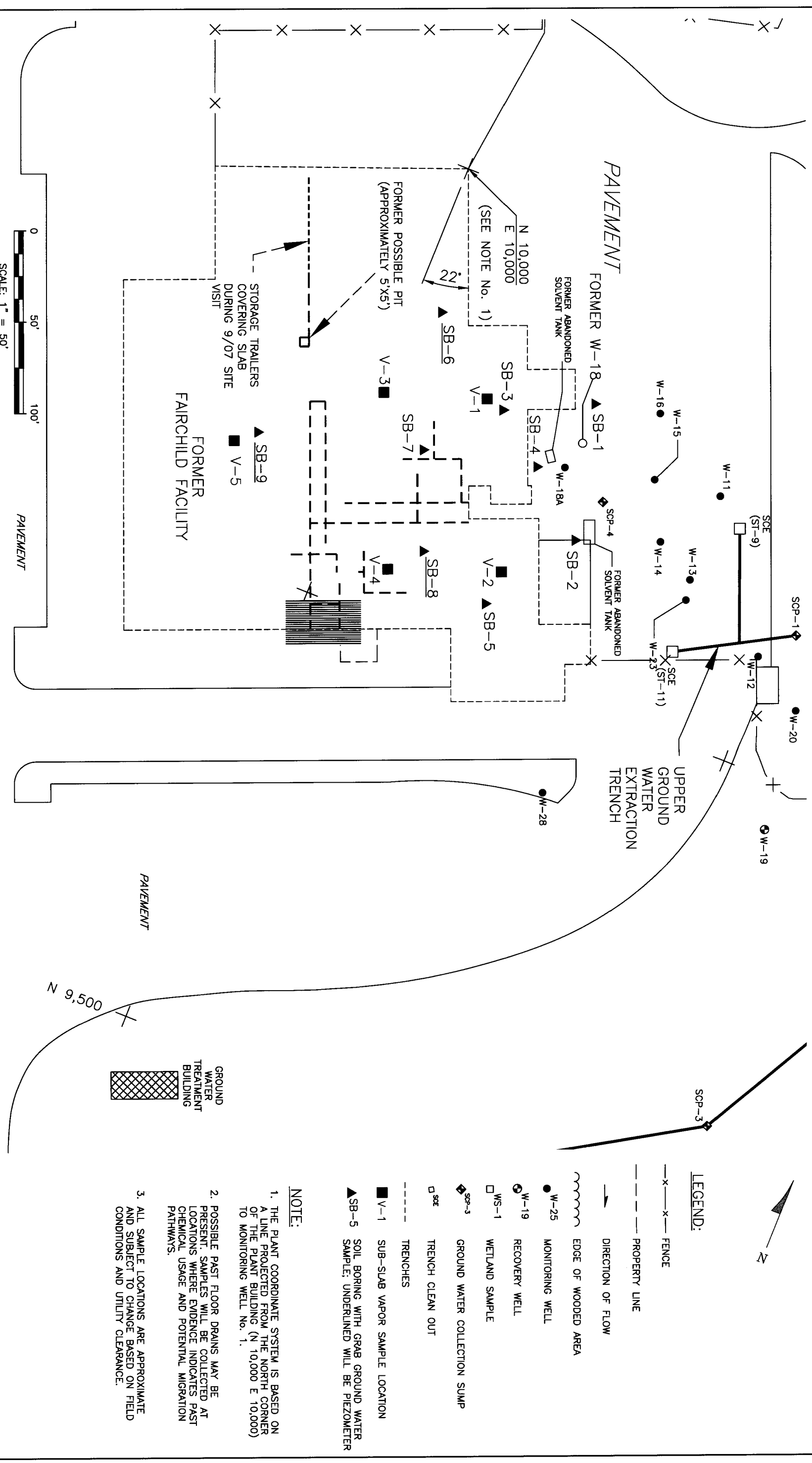
- NOTES:**
1. THE PLANT COORDINATE SYSTEM IS BASED ON A LINE PROJECTED FROM THE NORTH CORNER OF THE PLANT BUILDING (N 10,000; E 10,000) TO MONITORING WELL 1.
  2. FOR TRENCH DETAILS SEE DWG. CH84-098-02-E12.

- LEGEND**
- 190 — EXISTING GROUND SURFACE ELEVATION CONTOURS
  - WP-4 ● MONITORING WELL POINTS INSTALLED BY OTHERS
  - WP-1 ● EXISTING MONITORING WELL
  - W-11 ● HYDROCARBON INVESTIGATION BORING AND MONITORING WELL INSTALLED BY CANONIE ENVIRONMENTAL SERVICES CORP.
  - SCP ○ TRENCH COLLECTION PIT
  - VP □ VALVE PIT
  - SCE □ TRENCH CLEAN OUT
  - (190.1) GROUND WATER ELEVATION AS RECORDED ON JULY 16 THROUGH JULY 21, 1986.
  - 196 GROUND WATER ELEVATION CONTOUR



GROUND WATER  
ELEVATION CONTOURS  
FAIRCHILD FACILITY  
WAPPINGERS FALLS, NEW YORK  
PREPARED FOR  
**FAIRCHILD  
SEMICONDUCTOR CORP.**

Figure 5. Historical Ground Water Elevation Contours, July 16-21, 1986, Former Fairchild Facility, 91 All Angels Hill Road (from Canonie, 1987).



**LEGEND:**

- x-x- FENCE
- - - PROPERTY LINE
- DIRECTION OF FLOW
- ~~~~~ EDGE OF WOODED AREA
- W-25 MONITORING WELL
- ⊕ W-19 RECOVERY WELL
- WS-1 WETLAND SAMPLE
- ◆ SCP-3 GROUND WATER COLLECTION SUMP
- SCE TRENCH CLEAN OUT
- - - TRENCHES
- V-1 SUB-SLAB VAPOR SAMPLE LOCATION
- ▲ SB-5 SOIL BORING WITH GRAB GROUND WATER SAMPLE; UNDERLINED WILL BE PIEZOMETER

**NOTE:**

1. THE PLANT COORDINATE SYSTEM IS BASED ON A LINE PROJECTED FROM THE NORTH CORNER OF THE PLANT BUILDING (N 10,000 E 10,000) TO MONITORING WELL No. 1.
2. POSSIBLE PAST FLOOR DRAINS MAY BE AT LOCATIONS WHERE EVIDENCE INDICATES PAST CHEMICAL USAGE AND POTENTIAL MIGRATION PATHWAYS.
3. ALL SAMPLE LOCATIONS ARE APPROXIMATE AND SUBJECT TO CHANGE BASED ON FIELD CONDITIONS AND UTILITY CLEARANCE.

Figure 6. Proposed Sample Locations, Former Fairchild Facility, 91 All Angels Hill Road, Wappingers Falls, New York

**TABLES**

Table 1. Ground Water Sampling Requirements, Former Fairchild Facility,  
91 All Angels Hill Road, Wappingers Falls, New York

Laboratory (and Extraction) Method and Analytic Parameters	Ground Water Samples	Quality Control Samples	Trip Blank	Total Analyses <sup>b</sup>
VOCs by EPA Method 8021	9	1 <sup>a</sup>	1	11
Field Parameters, pH, temperature, and conductivity	9	0	0 <sup>c</sup>	9

**Notes**

All analyses to be performed on standard turnaround time.

<sup>a</sup>One duplicate sample will be collected per 10 samples.

<sup>b</sup>Maximum number of analysis to be performed.

<sup>c</sup>One trip blank will be collected on the day of ground water sampling.

**Abbreviations**

VOCs = volatile organic compounds

EPA = US Environmental Protection Agency

Table 2. Soil Vapor Analytic Sampling Requirements, Former Fairchild Facility,  
91 All Angels Hill Road, Wappingers Falls, New York

Laboratory (and Extraction) Method and Analytic Parameters	Soil Vapor Samples	Quality Control Samples	Trip Blank	Total Analyses <sup>b</sup>
EPA Method TO-15	5	1 <sup>a</sup>	0 <sup>c</sup>	6

**Notes**

All analyses to be performed on standard turnaround time.

<sup>a</sup>One duplicate sample will be collected per 10 samples.

<sup>b</sup>Maximum number of analysis to be performed.

<sup>c</sup>No trip blanks will be collected on the day of soil vapor sampling.

**Abbreviations**

EPA = US Environmental Protection Agency

Table 3. Soil Sampling Requirements, Former Fairchild Facility,  
91 All Angels Hill Road, Wappingers Falls, New York

Laboratory (and Extraction) Method and Analytic Parameters	Soil Samples	Quality Control Samples <sup>a</sup>	Trip Blank	Total Analyses <sup>b</sup>
VOCs by EPA Method 8021	9	1	0 <sup>c</sup>	10

**Notes**

All analyses to be performed on standard turnaround time.

<sup>a</sup>One duplicate sample will be collected per 10 samples.

<sup>b</sup>Maximum number of analysis to be performed.

<sup>c</sup>One trip blank will be collected on the day of soil sampling.

**Abbreviations**

VOCs = volatile organic compounds

EPA = US Environmental Protection Agency

Table 4. Investigation-Derived Waste Sampling Requirements, Former Fairchild Facility,  
91 All Angels Hill Road, Wappingers Falls, New York

Laboratory (and Extraction) Method, and Analytic Parameters	Purge Water/ Rinsate Samples	Composite Soil Samples	Total Analysis
VOCs by EPA Method 8021	1	0	1

**Notes**

All analyses to be performed on standard turn around time.

No QA/QC or Trip Blanks to be included.

The composite samples will consist of soil samples collected from the drill cuttings from each borehole.

The composite ground water samples will consist of ground water and rinsate collected from each borehole.

**Abbreviations**

QA/QC = quality assurance/quality control

EPA = US Environmental Protection Agency

VOCs = volatile organic compounds

Table 5. Type and Number of Containers and Preservatives for Soil, Soil Vapor Ground Water and IDW Samples  
Former Fairchild Facility, 91 All Angels Hill Road, Wappingers Falls, New York

Parameter	Matrix	Container	Preservative	Lid	Refrigeration	Maximum Holding Times	
						Extraction <sup>a</sup>	Analysis <sup>b</sup>
Volatile Organic Compounds by EPA Method 8021	Soil	Brass tube or Glass Jar	NA	NA	Ice to 4°C	---	14 days
	Water	3- 40 ml glass vials	HCL	Cap with Teflon® seal	Ice to 4°C	---	14 days
Volatile Organic Compounds by EPA Method TO-15	Soil Vapor	6- Liter Summa™ canister	NA	NA	NA	---	14 days

**Notes**

<sup>a</sup>Starting from the date of collection

<sup>b</sup>Starting from the date of extraction; if no extraction is involved, starting from the date of collection

**Abbreviations**

°C = degrees Celsius  
HCl = hydrochloric acid  
ml = milliliter  
N/A = not applicable



Table 6. Field Measurement Instruments, Former Fairchild Facility,  
91 All Angels Hill Road, Wappingers Falls, New York

Measurement	Instrument	Calibration Procedure/Precision
Water level	Electric sounder with steel tape	Reference to steel tape /+ 0.01 ft
pH	pH meter	2-point buffer solutions /+ 0.1 pH unit
Electric conductivity	Conductivity meter	standard solution /+ 100 $\mu$ mhos/cm
Water temperature	Mercury thermometer	Factory calibrated /+ 0.5°C checked against other thermometers
VOCs in ambient air	Organic Vapor Analyzer	Factory calibrated /1 ppm
Helium concentration	Helium Detector	Factory calibrated /0.01 to 100%

**Abbreviations**

°C = degrees Celsius

$\mu$ mhos/cm = micromhos per centimeter

ft = feet

ppm = parts per million

Table 7. Maintenance Schedule For Field Equipment, Former Fairchild Facility,  
91 All Angels Hill Road, Wappingers Falls, New York

Instrument	Inspect Probes, Cables, Meters	Calibrate	Charger or Battery Check	Battery Charge
Water level meter	M	--	M	AN
pH meter	M	D	D	AN
Conductivity meter	M	D	Q	AN
Thermometer	M	Q	--	--
Organic Vapor Analyzer	D	M	D	AN
Helium gas detector	D	D	D	AN

**Abbreviations**

-- = not applicable

AN = as needed

D = twice a day (prior to use and at the end of data collection) during field operations

M = monthly or before each application

Q = quarterly or before each application

## APPENDIX A

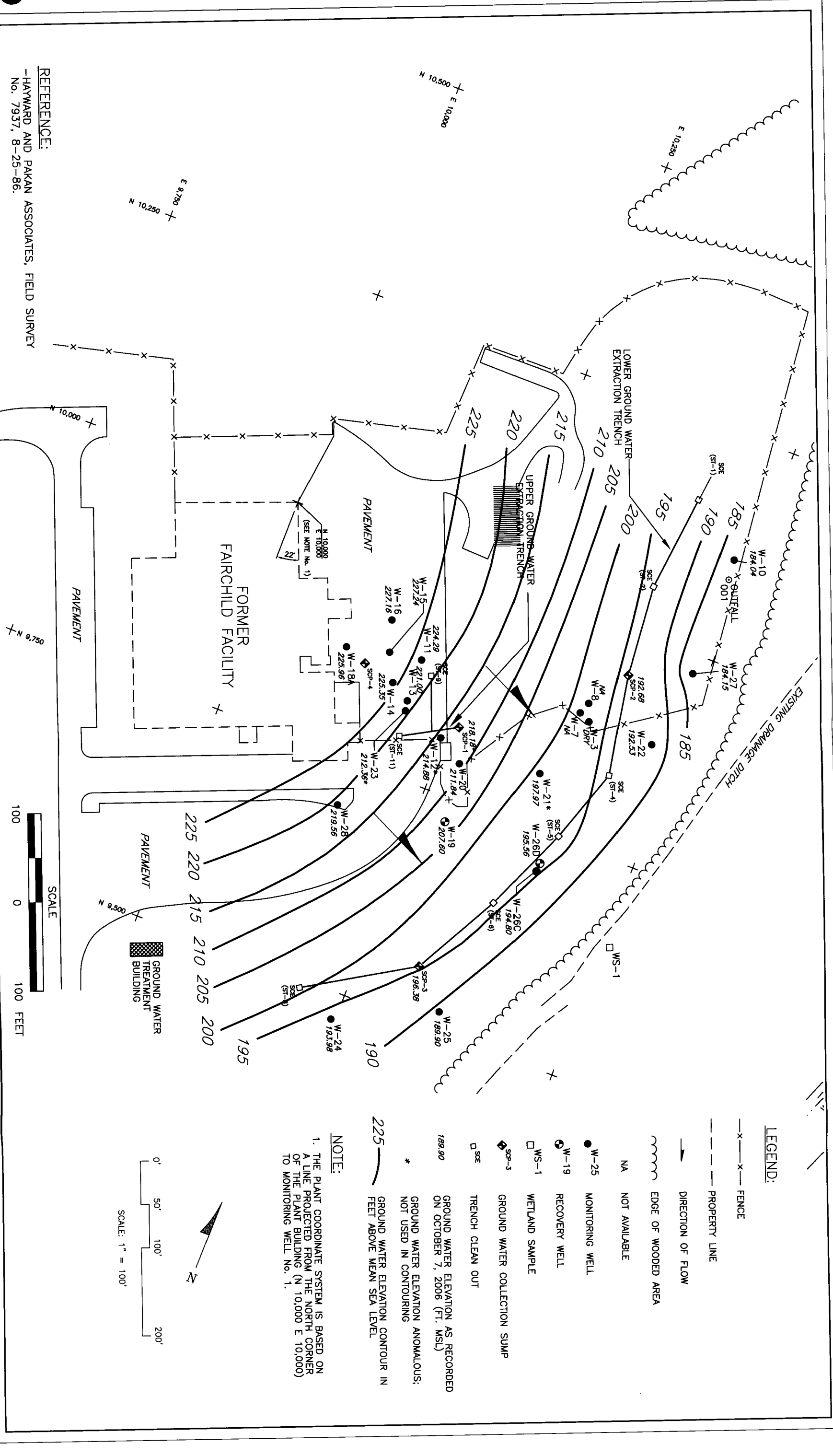
### 2007 ANNUAL REPORT SELECTED FIGURES AND TABLES

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- Figure 4. Groundwater Elevation Contour Map, April 28-29, 2007
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- Figure 7. TCE Concentration Trends for Group I, Group II, Group III, and Group IV Wells
- Figure 8. Monitoring Well W-8, Selected VOCs vs. Time
- Figure 9. Monitoring Well W-10, Selected VOCs vs. Time
- Figure 10. Monitoring Well W-12, Selected VOCs vs. Time
- Figure 11. Monitoring Well W-13, Selected VOCs vs. Time
- Figure 12. Monitoring Well W-14, Selected VOCs vs. Time
- Figure 13. Monitoring Well W-18A, Selected VOCs vs. Time
- Figure 14. Monitoring Well W-19, Selected VOCs vs. Time
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- Figure 16. Monitoring Well W-21, Selected VOCs vs. Time
- Figure 17. Monitoring Well W-22, Selected VOCs vs. Time
- Figure 18. Monitoring Well W-26D, Selected VOCs vs. Time
- Figure 19. Monitoring Well W-27, Selected VOCs vs. Time
- Figure 20. Sump S-3, Selected VOCs vs. Time

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- Table 2. Historical Groundwater Elevations, March 1, 1989 to April 29, 2007
- Table 3. Volatile Organic Compounds in Groundwater

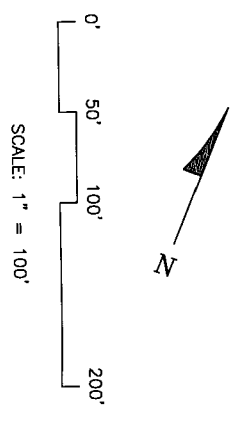


**LEGEND:**

- x-x- FENCE
- - - PROPERTY LINE
- DIRECTION OF FLOW
- ~ EDGE OF WOODED AREA
- NA NOT AVAILABLE
- W-25 MONITORING WELL
- ⊕ W-19 RECOVERY WELL
- WS-1 WETLAND SAMPLE
- ◆ SCP-3 GROUND WATER COLLECTION SUMP
- SCE TRENCH CLEAN OUT
- 199.90 GROUND WATER ELEVATION AS RECORDED ON OCTOBER 7, 2006 (FT. MSL)
- \* GROUND WATER ELEVATION ANOMALOUS; NOT USED IN CONTOURING
- GROUND WATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL

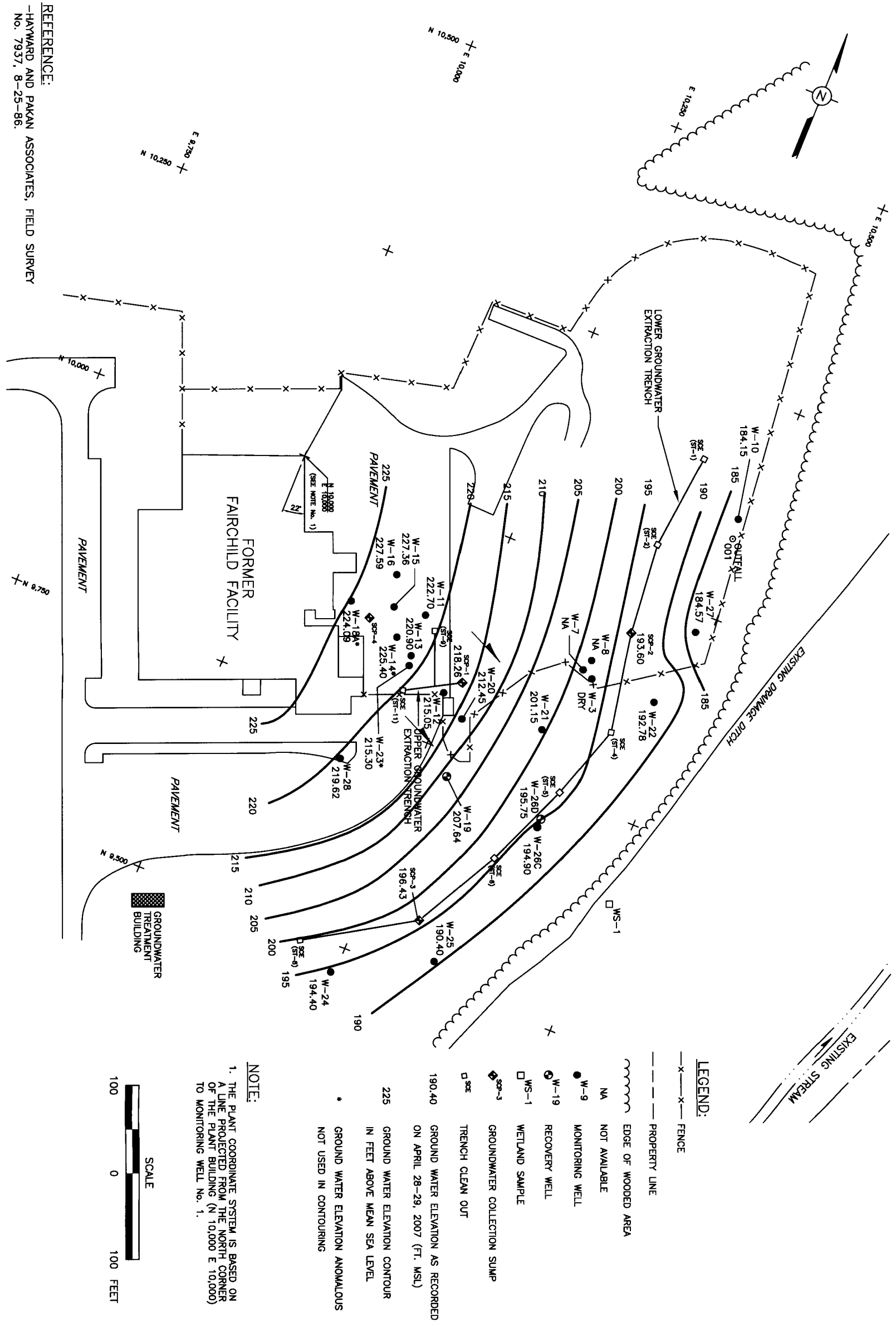
**NOTE:**

1. THE PLANT COORDINATE SYSTEM IS BASED ON A LINE PROJECTED FROM THE NORTH CORNER OF THE PLANT BUILDING (N 10,000 E 10,000) TO MONITORING WELL No. 1.



**REFERENCE:**  
 -HAYWARD AND PAKAN ASSOCIATES, FIELD SURVEY  
 No. 7937, 8-25-86.

Figure 3. Ground Water Elevation Contour Map, October 7, 2006, 91 All Angels Hill Road, Wappingers Falls, New York



**REFERENCE:**  
 -HAYWARD AND PAKAN ASSOCIATES, FIELD SURVEY  
 No. 7937, 8-25-86.

**NOTE:**  
 1. THE PLANT COORDINATE SYSTEM IS BASED ON A LINE PROJECTED FROM THE NORTH CORNER OF THE PLANT BUILDING (N 10,000 E 10,000) TO MONITORING WELL No. 1.

Figure 4. Ground Water Elevation Countour Map, April 28-29, 2007, 91 All Angels Hill Road, Wappingers Falls, New York

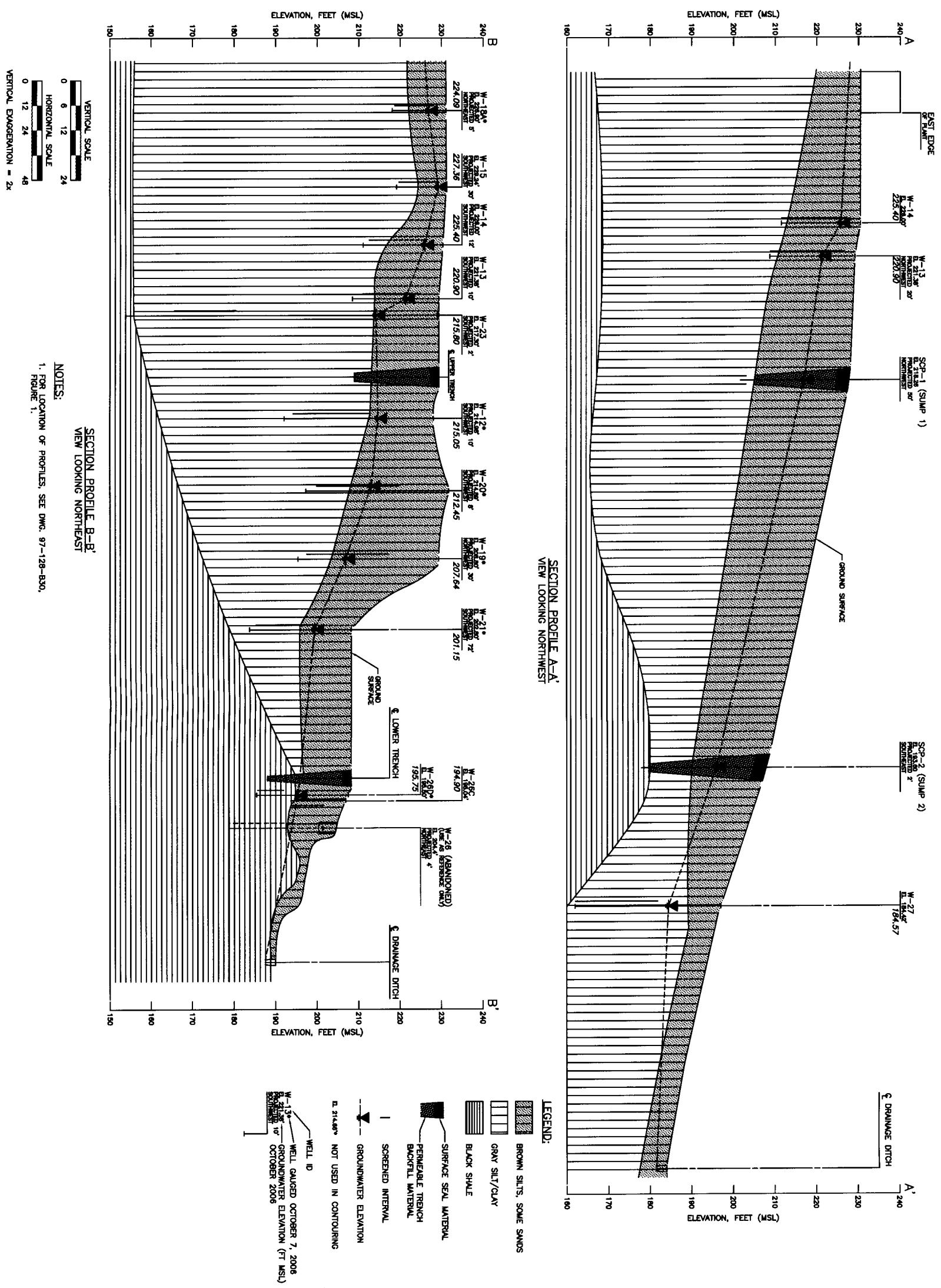
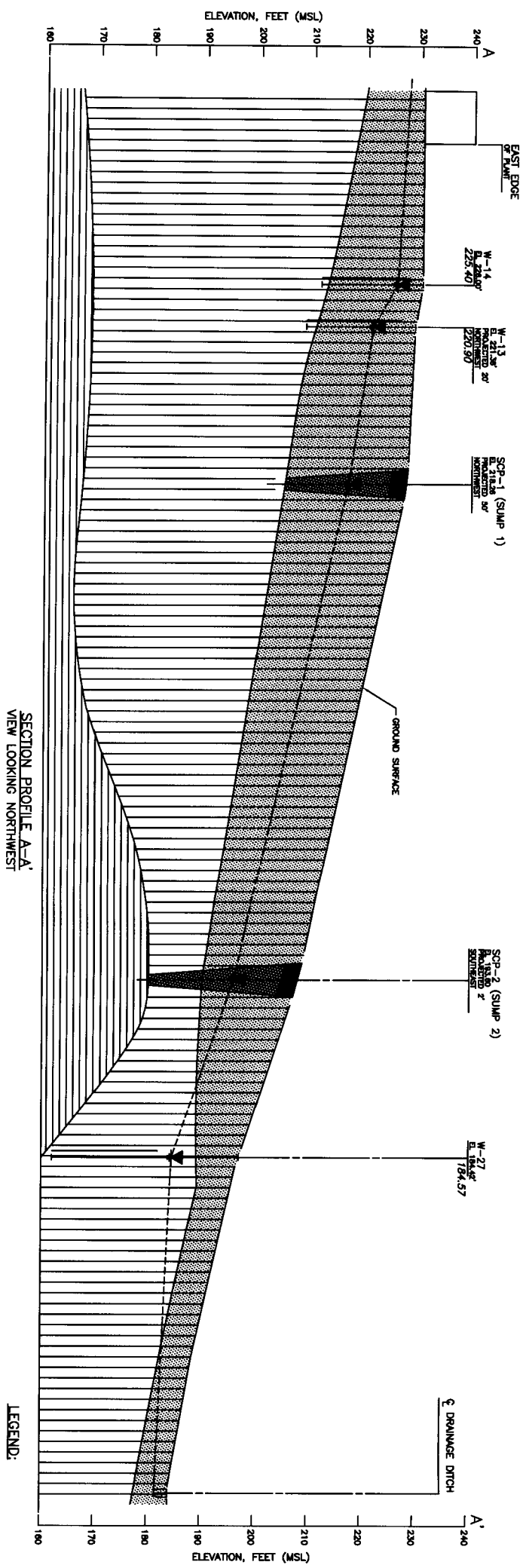
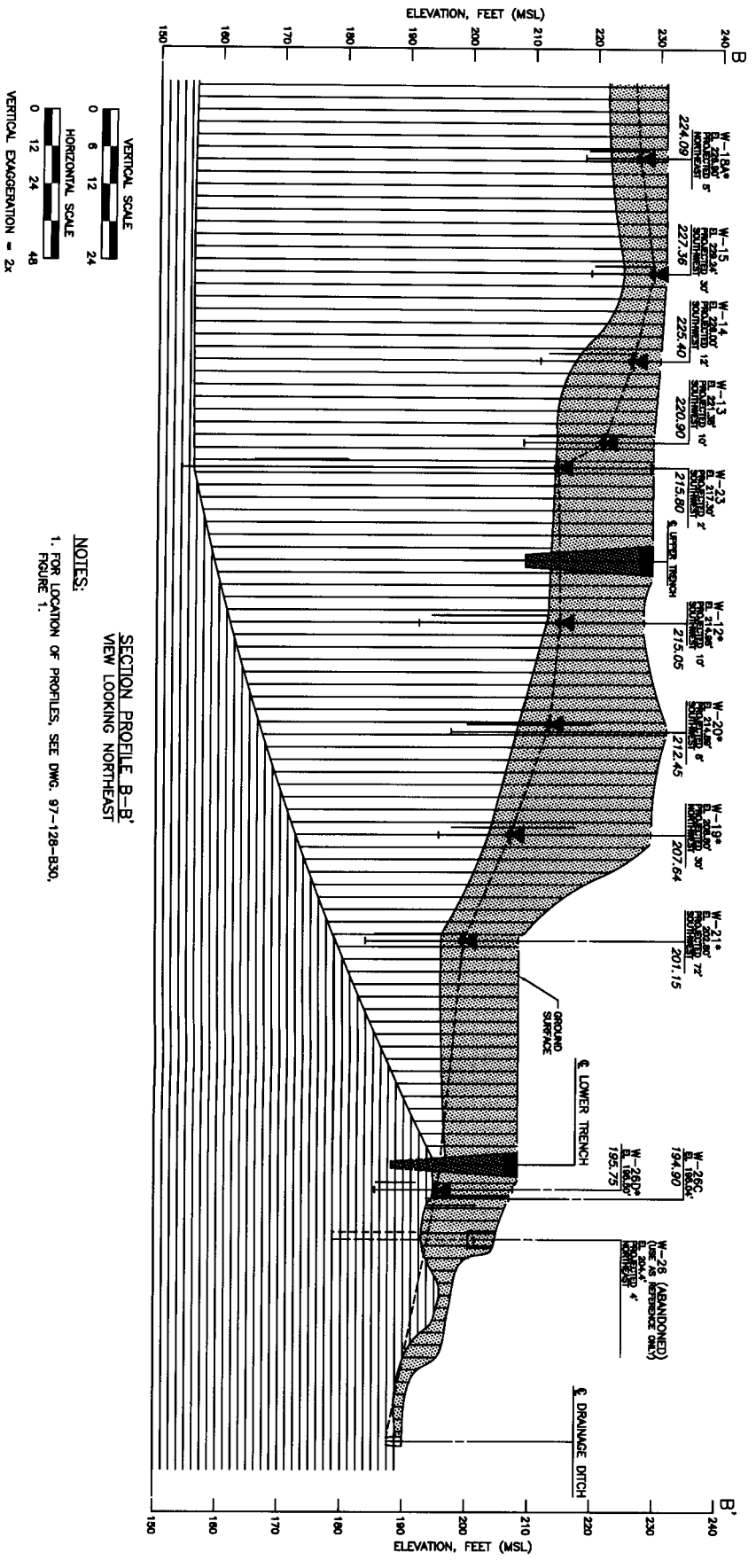


Figure 5. Groundwater Elevation Contour Profile, April 29, 2007, 91 All Angels Hill Road, Wappingers Falls, New York.



**LEGEND:**

- BROWN SILTS, SOME SANDS
- GRAY SILT/CLAY
- BLACK SHALE
- SURFACE SEAL MATERIAL
- PERMEABLE TRENCH BACKFILL MATERIAL
- SCREENED INTERNAL
- GROUNDWATER ELEVATION
- NOT USED IN CONTOURING
- WELL ID
- WELL GAUGED OCTOBER 7, 2008 GROUNDWATER ELEVATION (FT MSL)
- WELL GAUGED OCTOBER 2008 GROUNDWATER ELEVATION (FT MSL)



VERTICAL SCALE  
0 6 12 24

HORIZONTAL SCALE  
0 12 24 48

VERTICAL EXAGGERATION = 2x

**NOTES:**  
1. FOR LOCATION OF PROFILES, SEE DWG. 97-128-830.  
FIGURE 1.

Figure 6. Groundwater Elevation Contour Profile, April 29, 2007, 91 All Angels Hill Road, Wappingers Falls, New York.

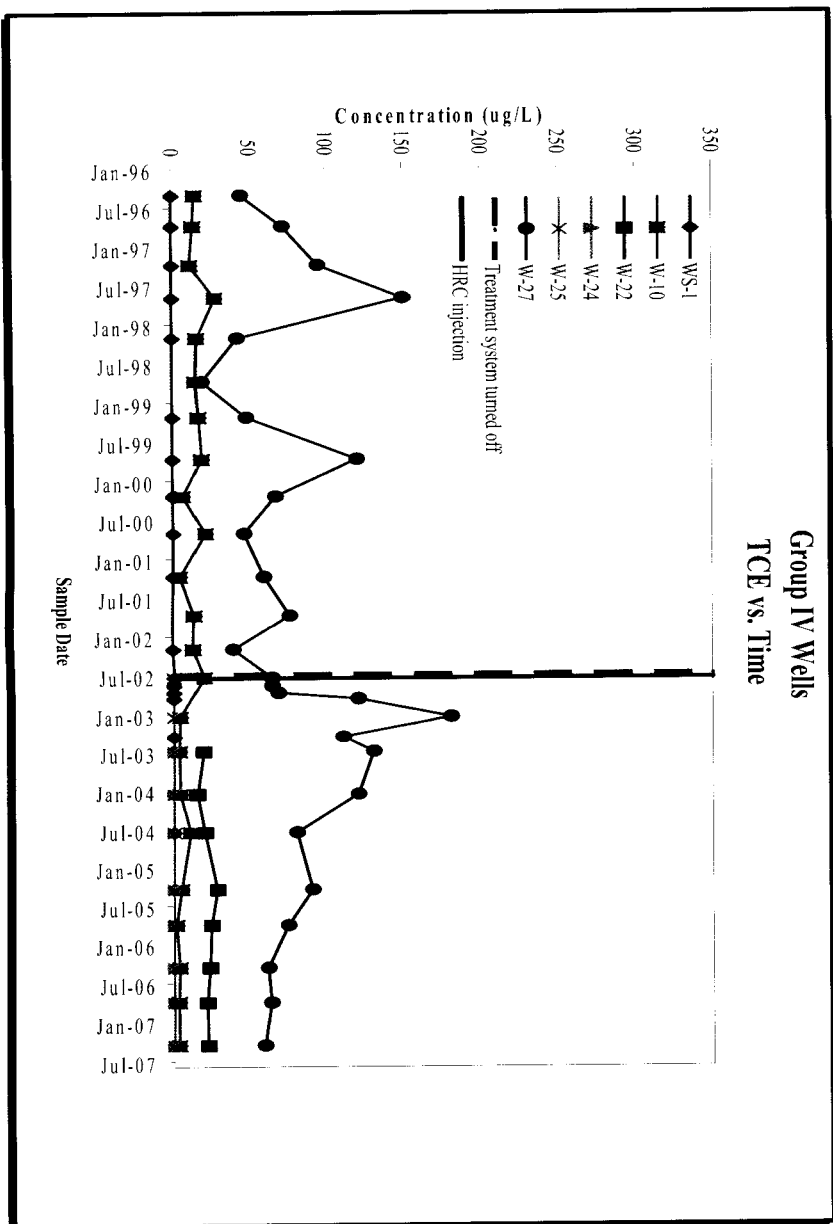
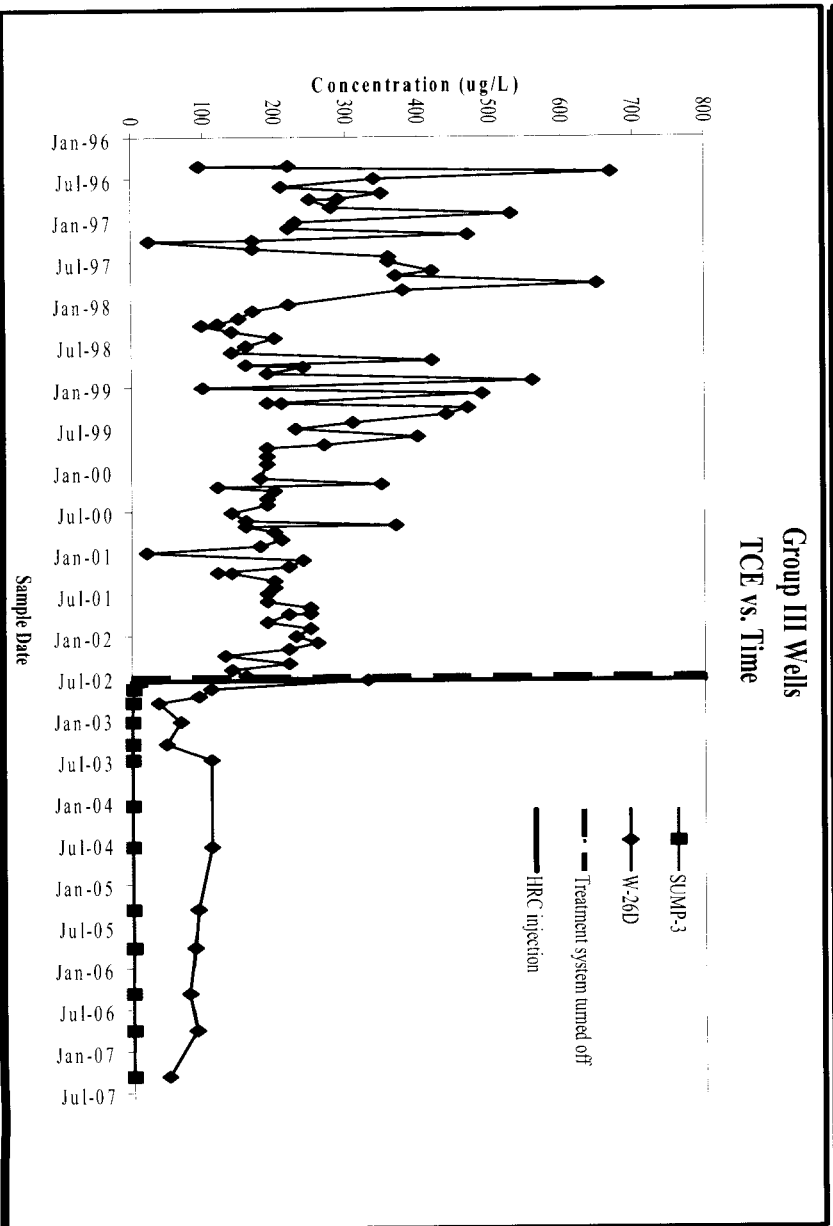
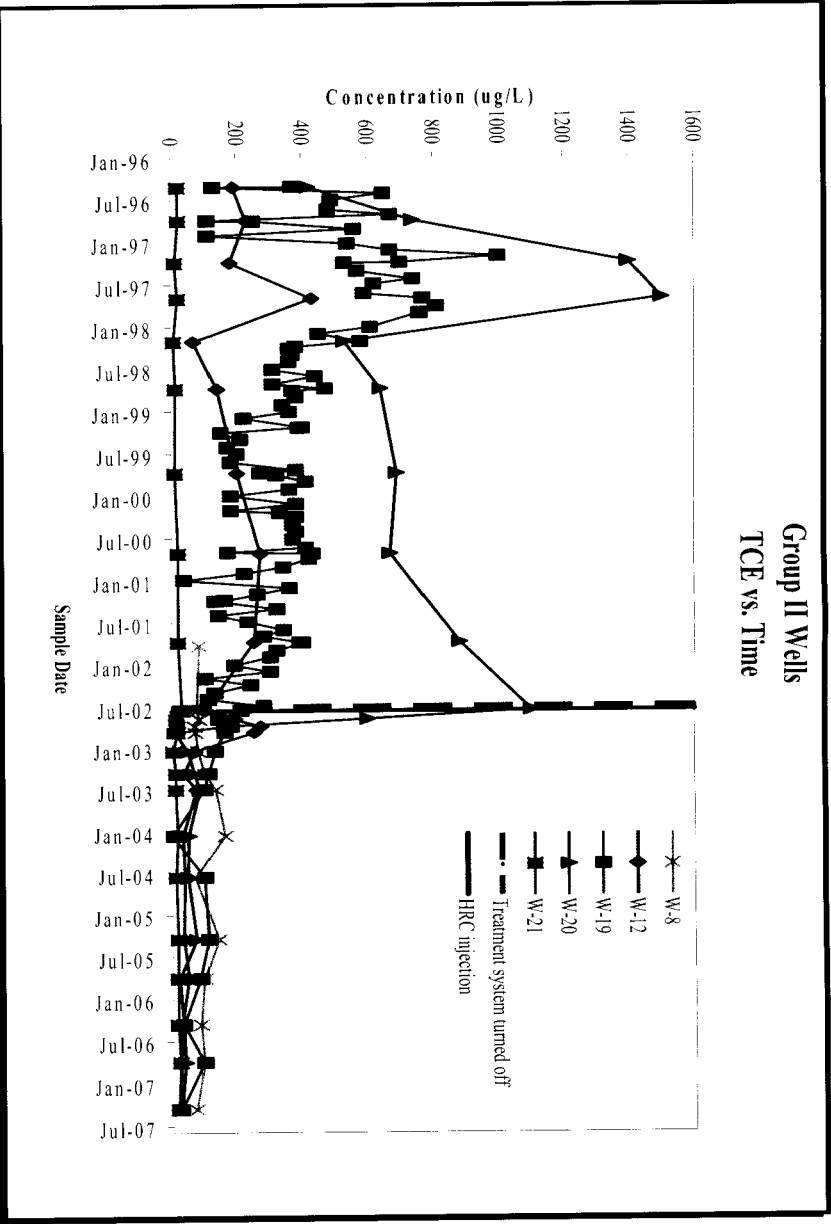
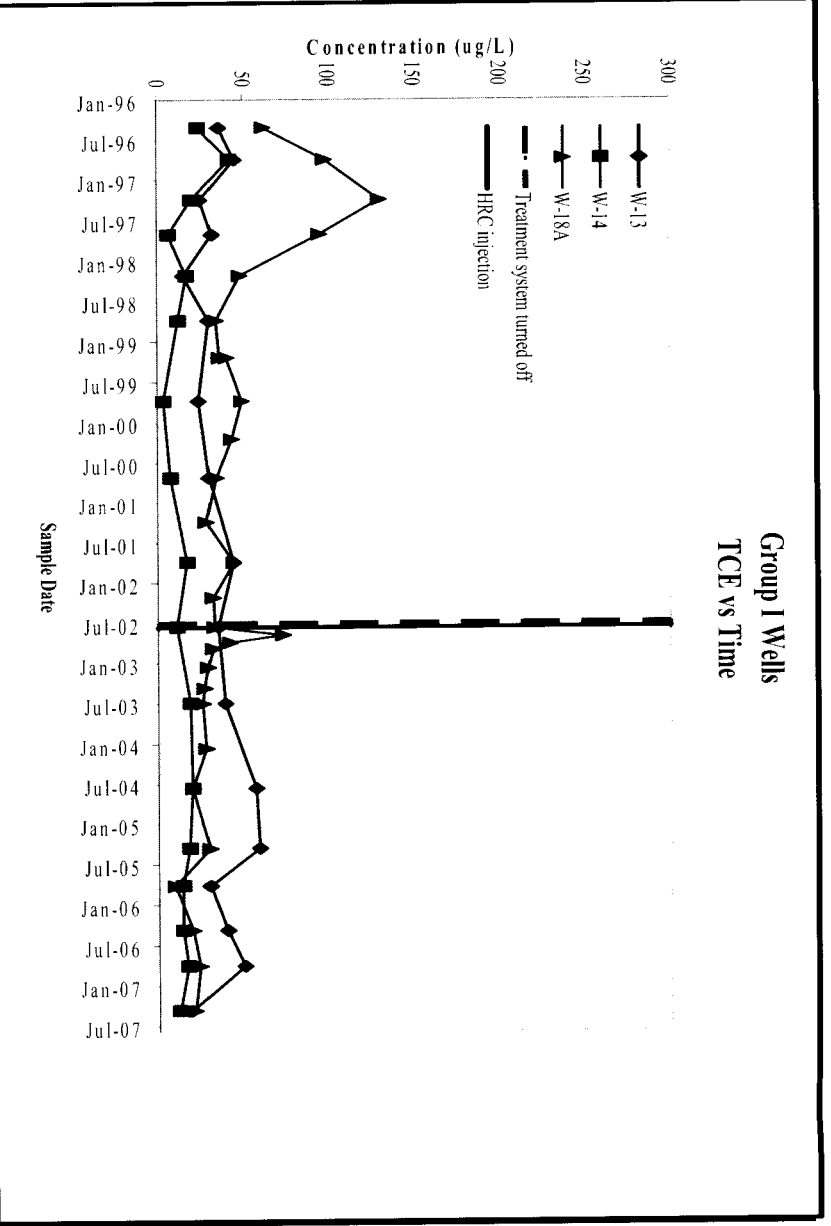


Figure 7. TCE Concentration Trends for Group I, Group II, Group III, and Group IV Wells, 91 Angels Hill Road, Wappingers Falls, New York.



**Figure 8. Monitoring Well W-8  
 Selected VOCs vs. Time**

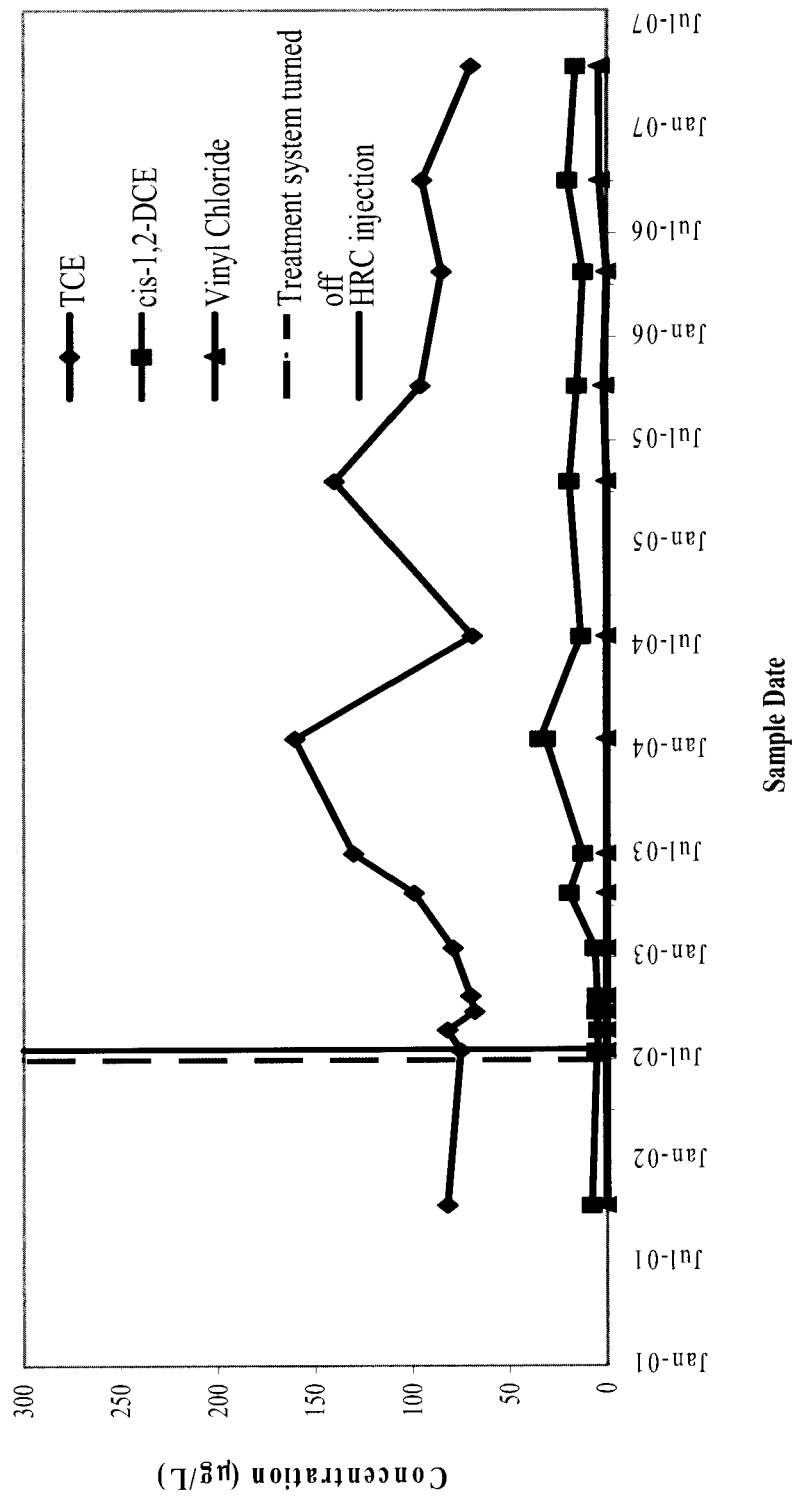


Figure 8. Monitoring Well W-8, Selected VOC Concentration vs. Time – 91 Angels Hill Road, Wappingers Falls, New York

Figure 9. Monitoring Well W-10  
 Selected VOCs vs. Time

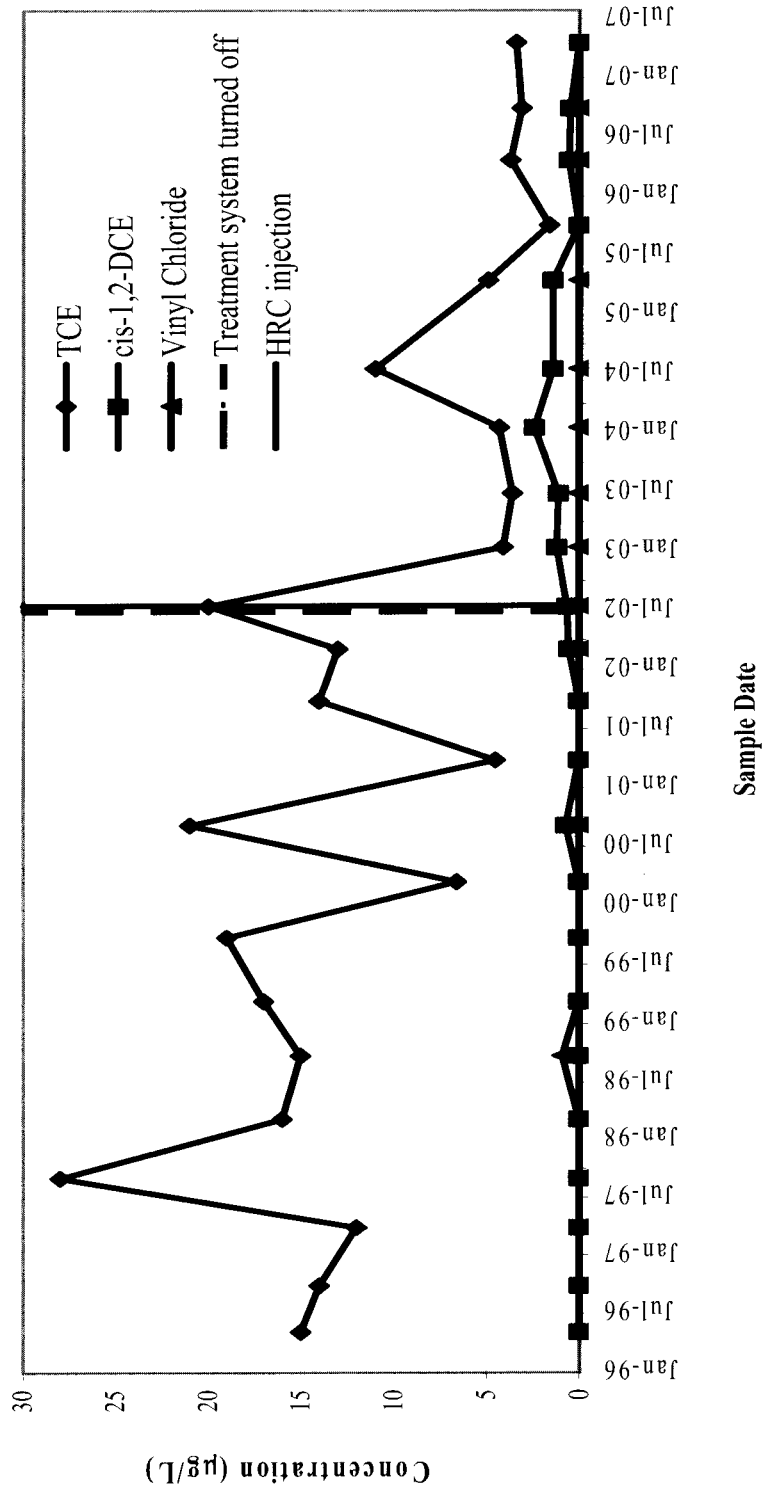


Figure 9. Monitoring Well W-10, Selected VOC Concentration vs. Time – 91 Angels Hill Road, Wappingers Falls, New York

**Figure 10. Monitoring Well W-12  
Selected VOCs vs. Time**

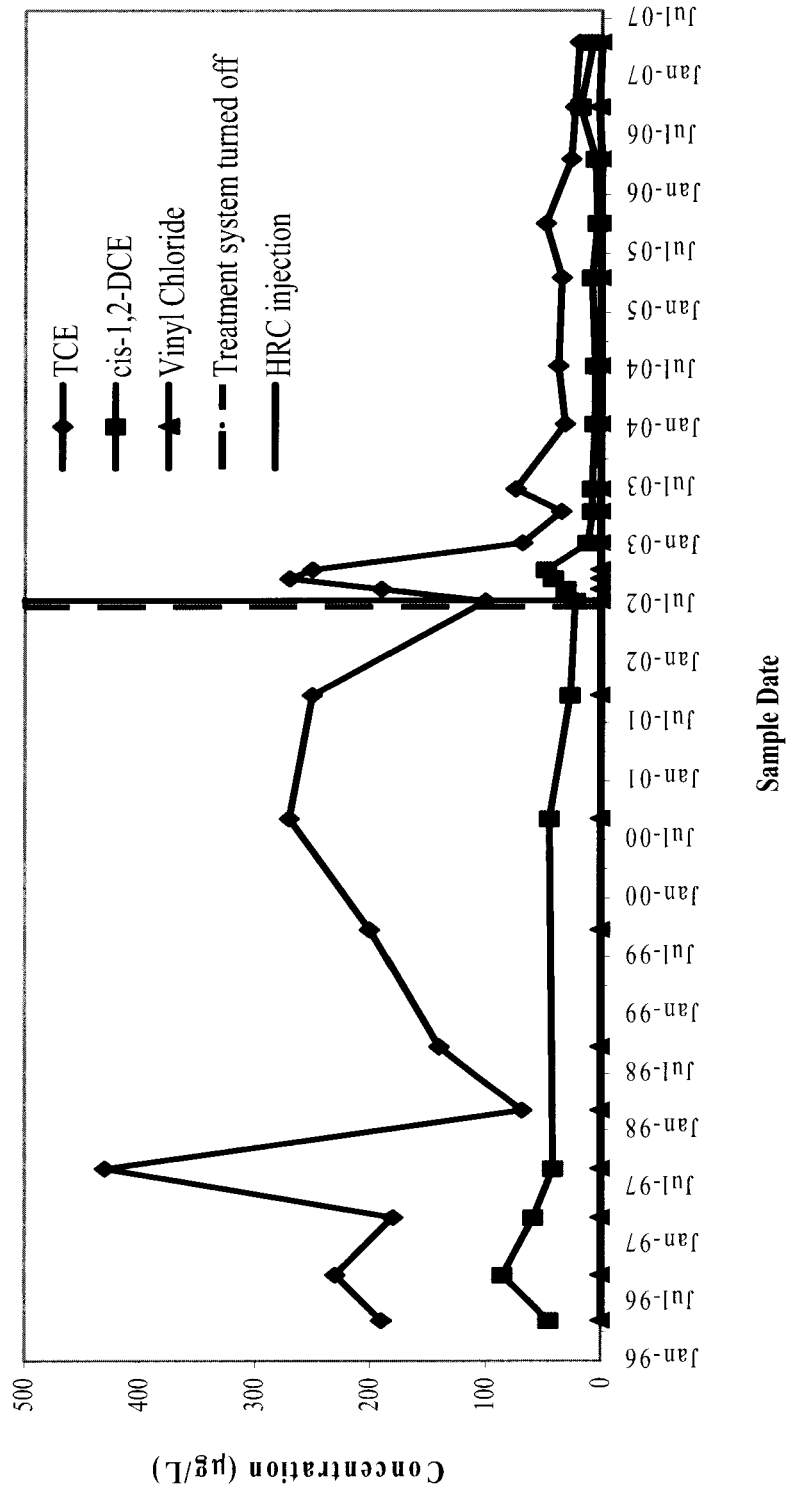


Figure 10. Monitoring Well W-12, Selected VOC Concentration vs. Time – 91 Angels Hill Road, Wappingers Falls, New York

**Figure 11. Monitoring Well W-13  
Selected VOCs vs. Time**

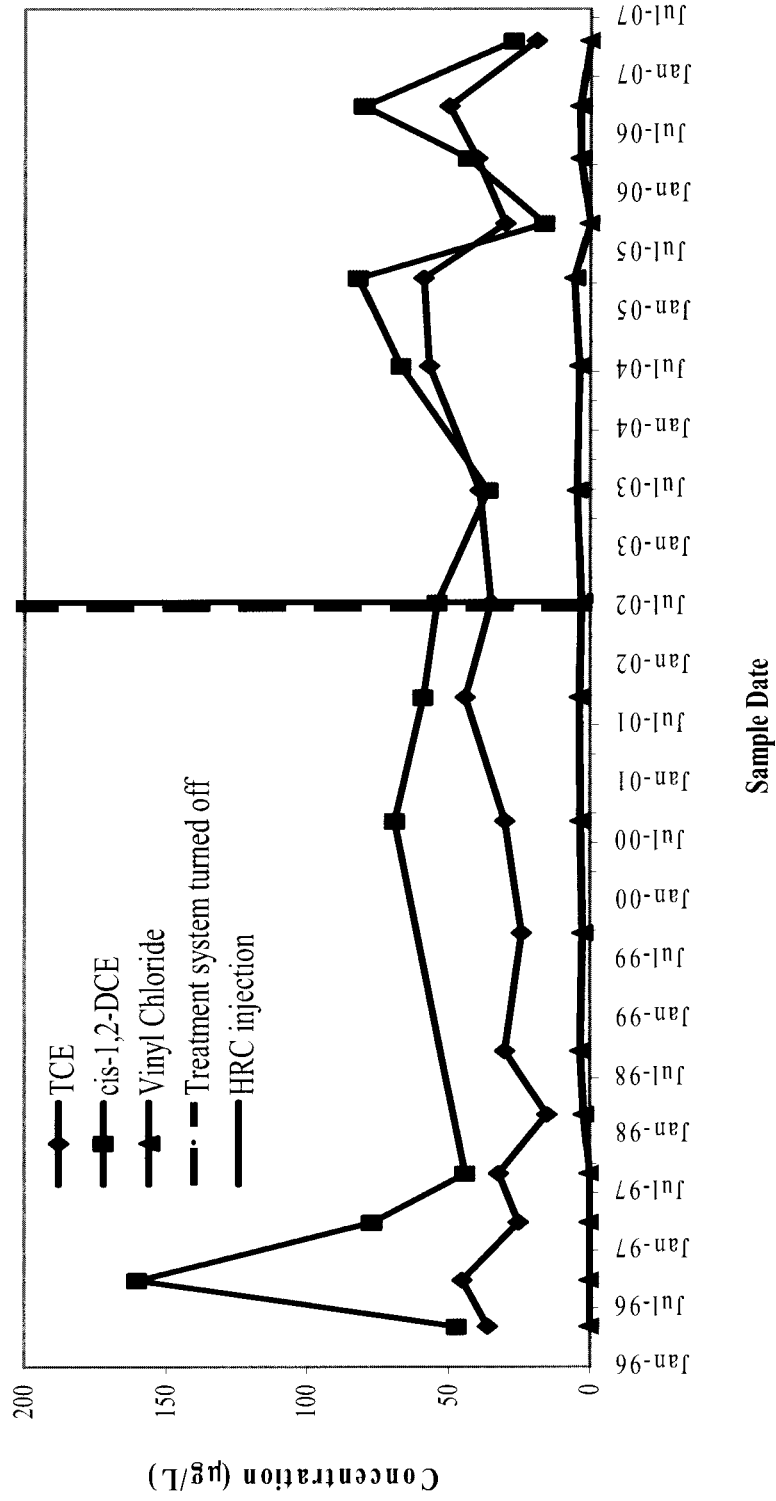


Figure 11. Monitoring Well W-13, Selected VOC Concentration vs. Time – 91 Angels Hill Road, Wappingers Falls, New York



**Figure 12. Monitoring Well W-14  
Selected VOCs vs. Time**

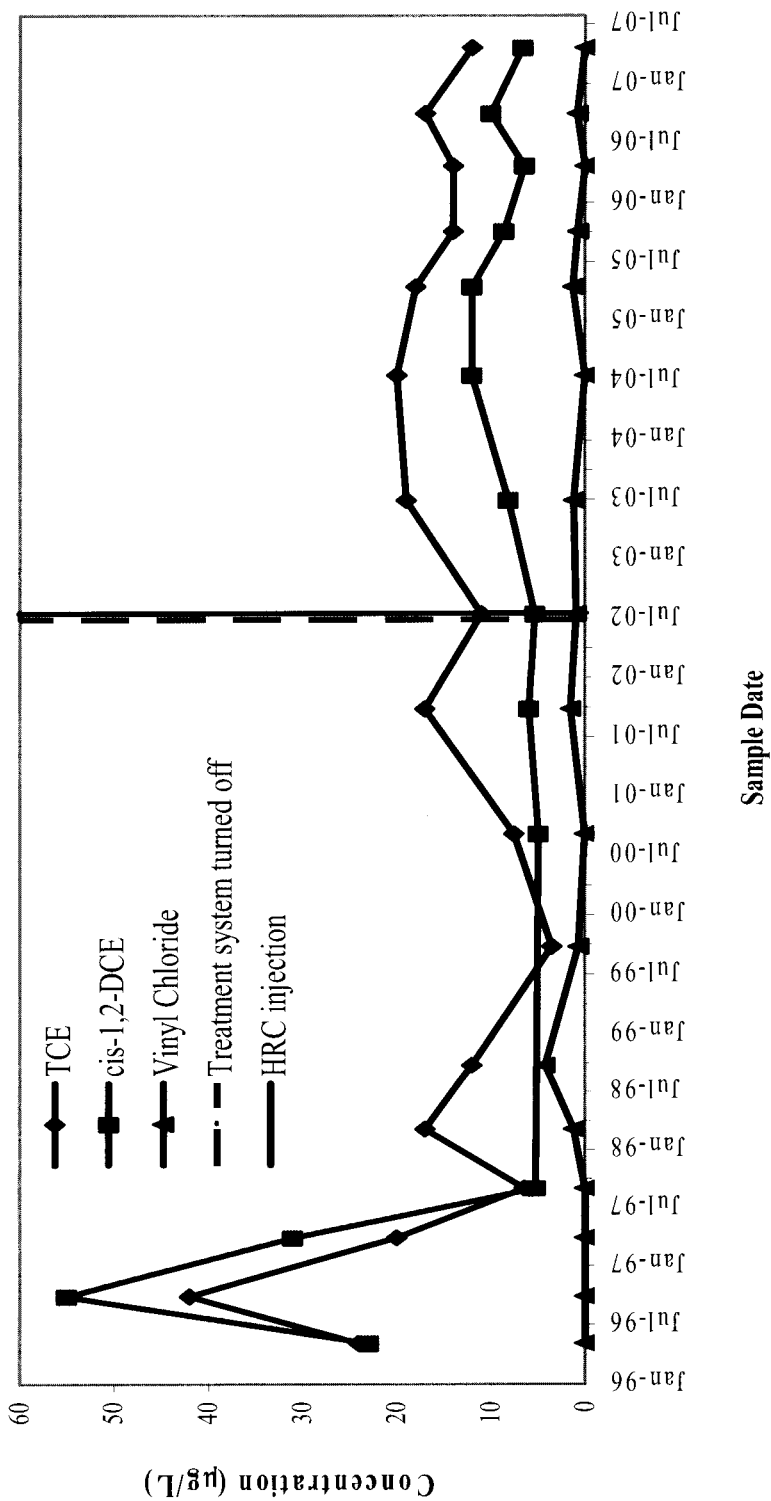


Figure 12. Monitoring Well W-14, Selected VOC Concentration vs. Time - 91 Angels Hill Road, Wappingers Falls, New York

**Figure 13. Monitoring Well W-18A  
 Selected VOCs vs. Time**

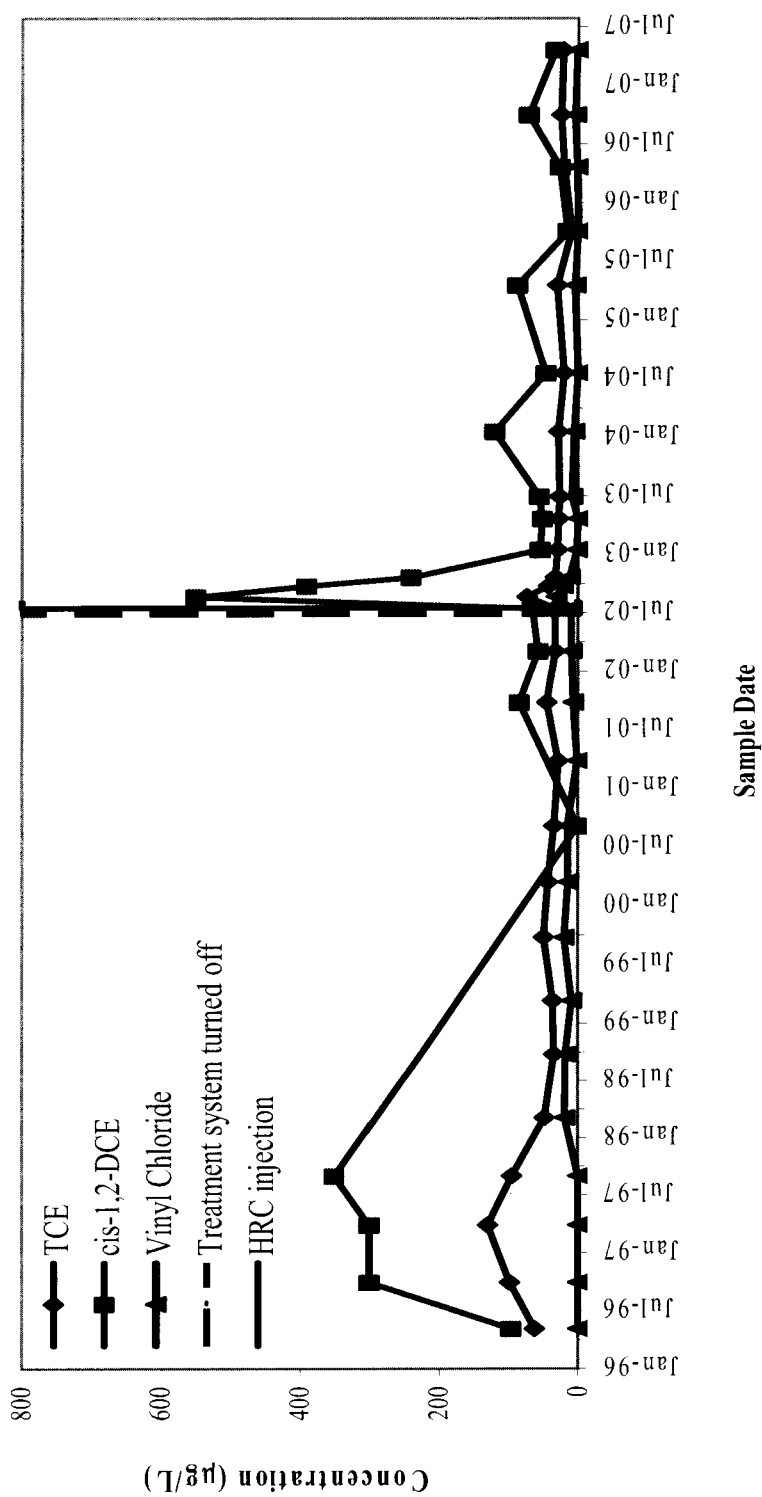


Figure 13. Monitoring Well W-18A, Selected VOC Concentration vs. Time – 91 Angels Hill Road, Wappingers Falls, New York

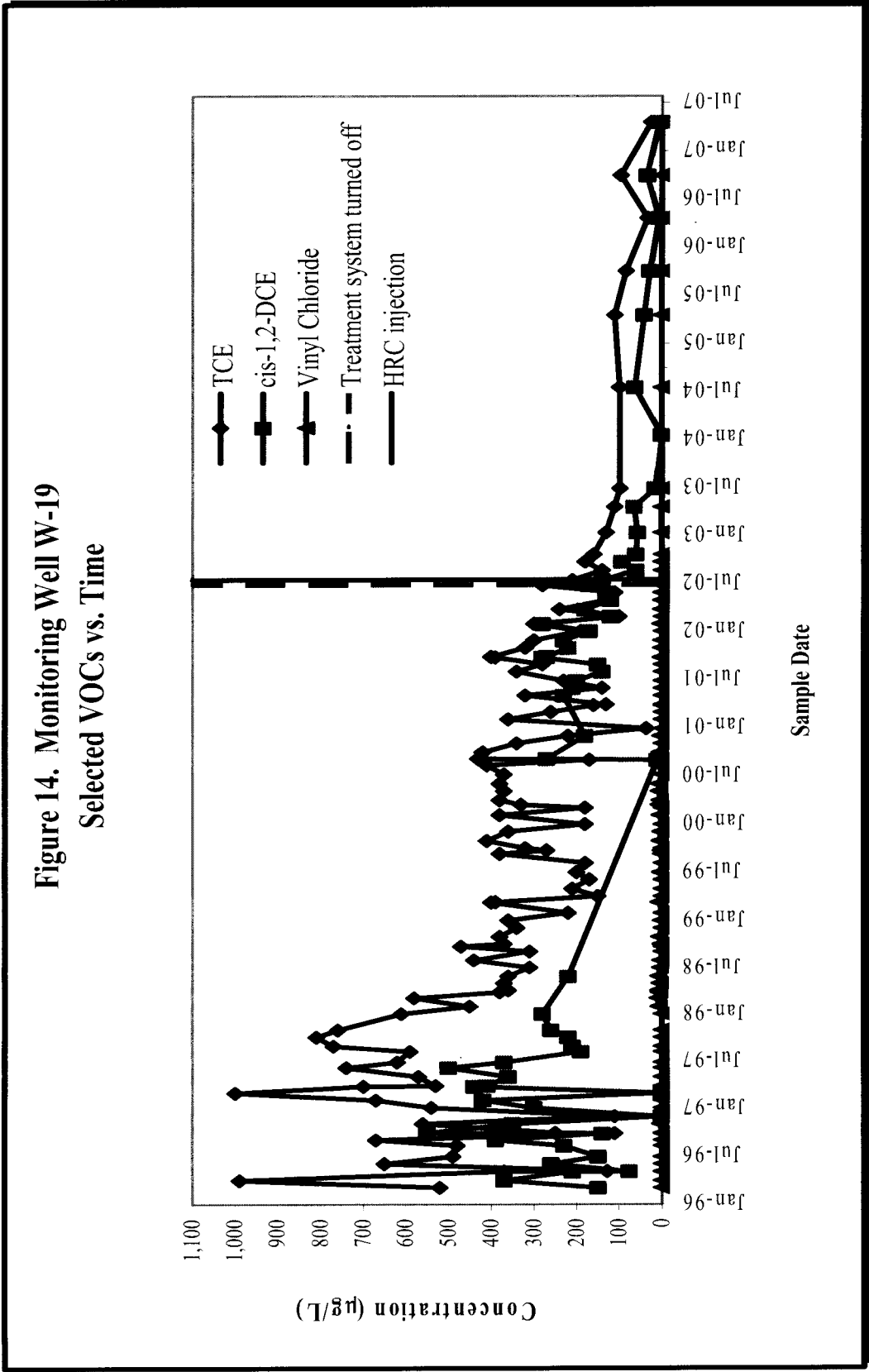


Figure 14. Monitoring Well W-19, Selected VOC Concentration vs. Time – 91 Angels Hill Road, Wappingers Falls, New York

Figure 15. Monitoring Well W-20  
 Selected VOCs vs. Time

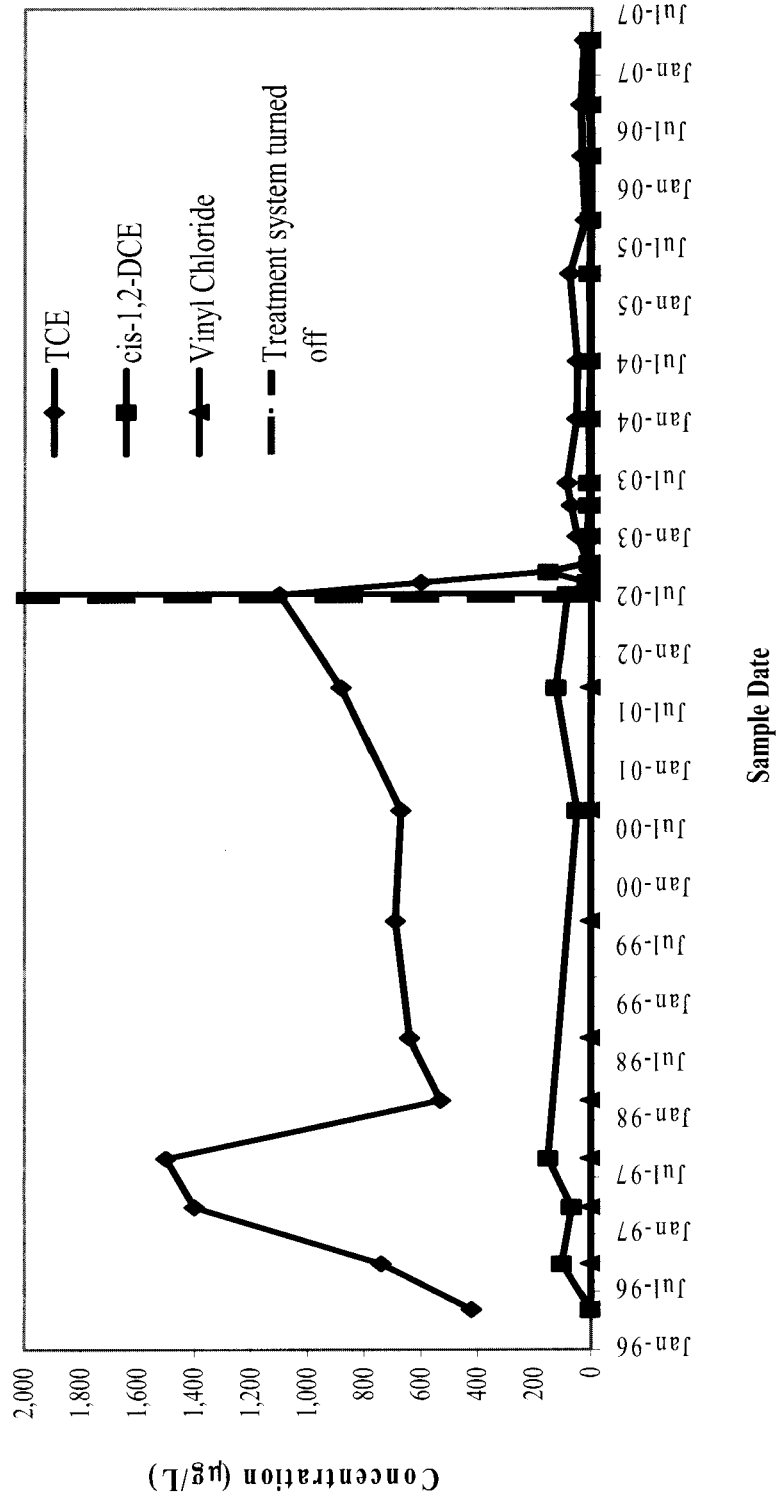


Figure 15. Monitoring Well W-20, Selected VOC Concentration vs. Time - 91 Angels Hill Road, Wappingers Falls, New York



**Figure 16. Monitoring Well W-21  
Selected VOCs vs. Time**

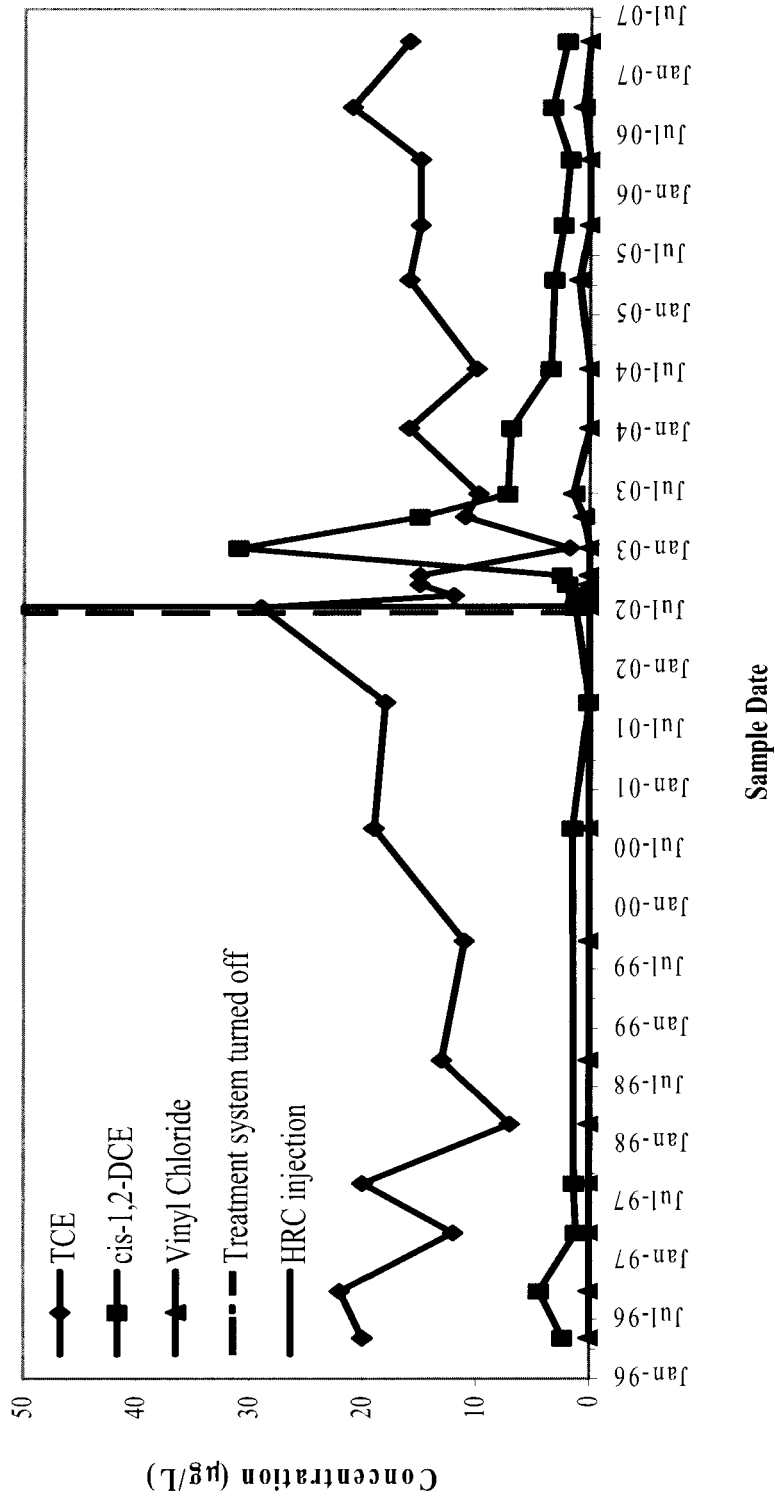


Figure 16. Monitoring Well W-21, Selected VOC Concentration vs. Time – 91 Angels Hill Road, Wappingers Falls, New York

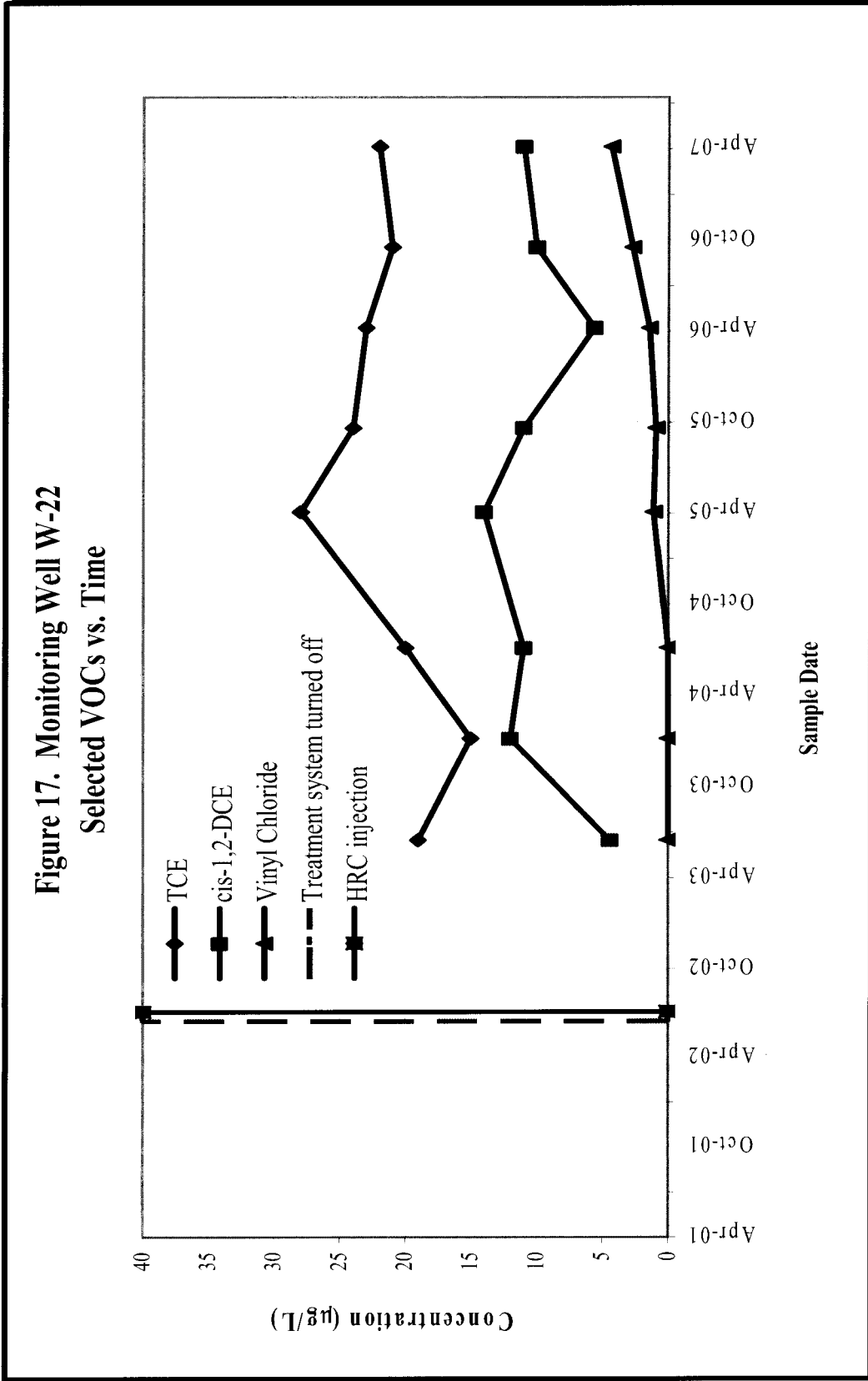


Figure 17. Monitoring Well W-22, Selected VOC Concentration vs. Time – 91 Angels Hill Road, Wappingers Falls, New York

**Figure 18. Monitoring Well W-26D**  
**Selected VOCs vs. Time**

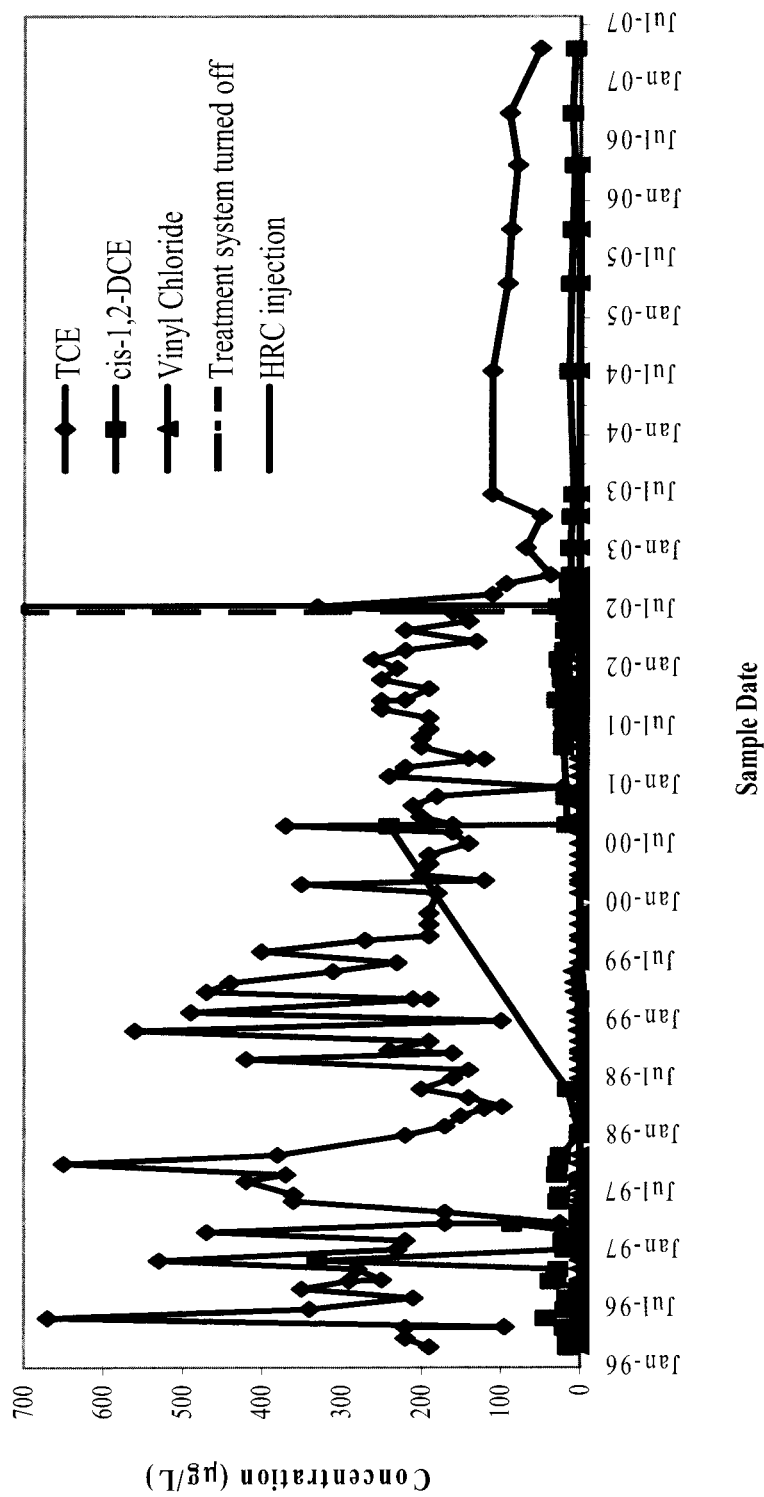


Figure 18. Monitoring Well W-26D, Selected VOC Concentration vs. Time – 91 Angels Hill Road, Wappingers Falls, New York

**Figure 19. Monitoring Well W-27  
Selected VOCs vs. Time**

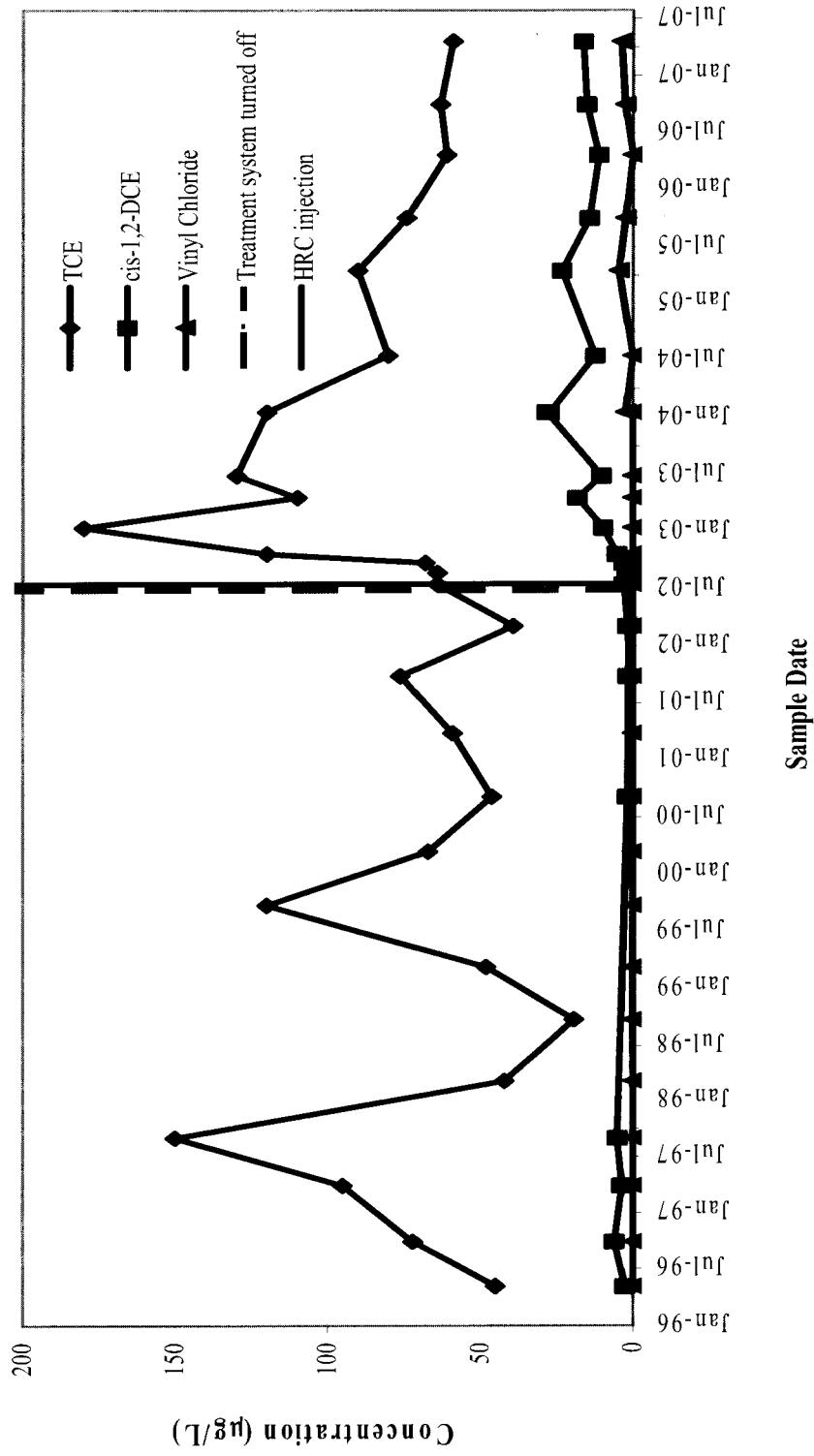


Figure 19. Monitoring Well W-27, Selected VOC Concentration vs. Time – 91 Angels Hill Road, Wappingers Falls, New York

Figure 20. Sump S-3  
 Selected VOCs vs. Time

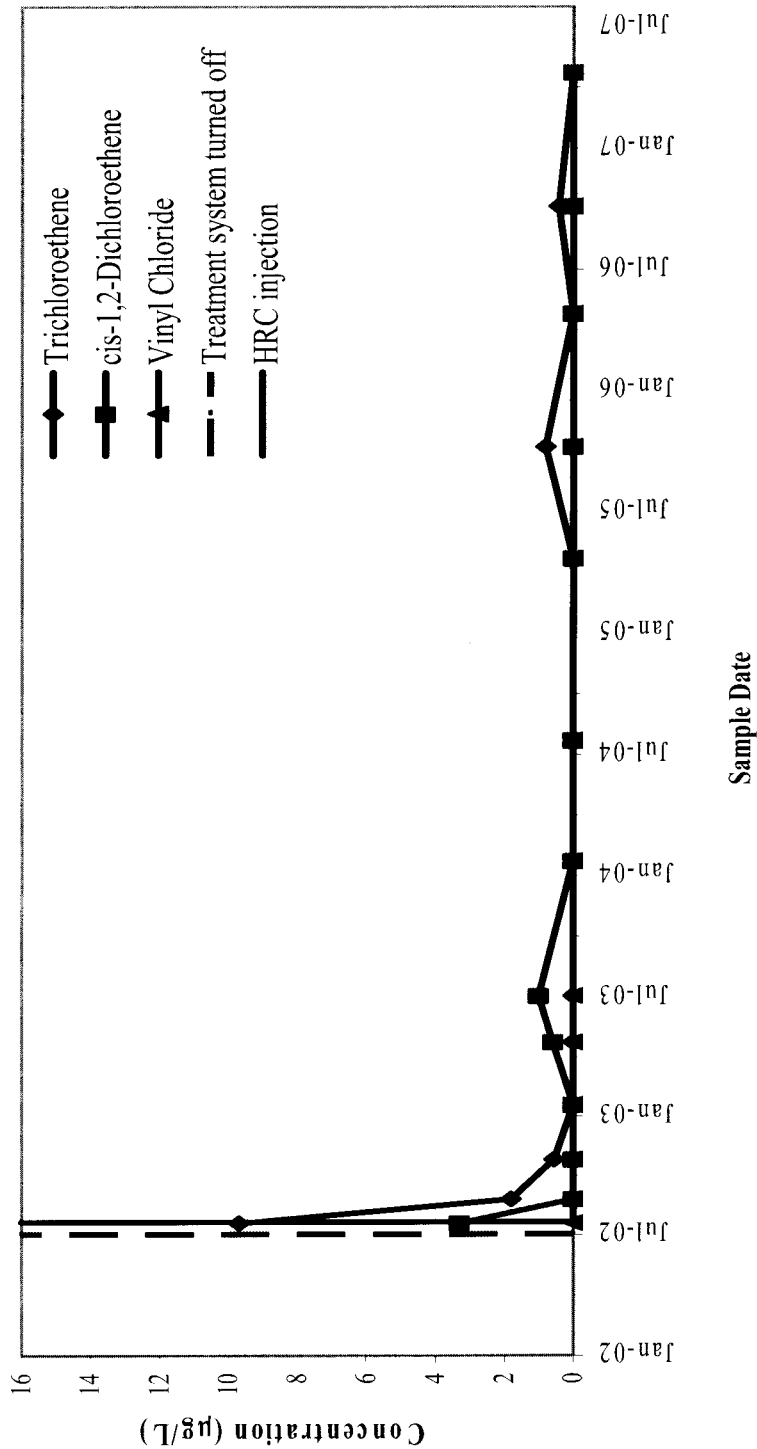


Figure 20. Sump S-3, Selected VOC Concentration vs. Time – 91 Angels Hill Road, Wappingers Falls, New York



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SCE-1	03/31/01	(a)	15.00	NA
	04/28/01		DRY	NA
	05/31/01		DRY	NA
	06/26/01		DRY	NA
	07/31/01		DRY	NA
	08/31/01		DRY	NA
	09/30/01		DRY	NA
	10/28/01		DRY	NA
	11/25/01		DRY	NA
	12/23/01		DRY	NA
	01/13/02		DRY	NA
	02/03/02		DRY	NA
	03/10/02		DRY	NA
	06/09/02		--	--
	08/04/02		13.88	NA
	08/26/02		15.57	NA
	09/28/02		13.21	NA
	10/26/02		8.12	NA
	01/17/03		7.58	NA
	04/26/03		9.50	NA
	07/05/03		9.84	NA
	10/25/03		8.76	NA
	01/24/04		12.76	NA
	04/28/04		10.01	NA
	07/24/04		13.76	NA
	10/29/04		11.94	NA
	01/30/05		11.86	NA
	04/24/05		12.35	NA
	07/11/05		--	--
	10/02/05		--	--
01/14/06		8.12	NA	
04/29/06		9.98	NA	
10/07/06		11.54	NA	
04/28/07		10.44	NA	
SCE-11	01/28/01	(a)	DRY	NA
	02/28/01		DRY	NA
	03/31/01		DRY	NA
	04/28/01		DRY	NA
	05/31/01		DRY	NA
	06/26/01		DRY	NA
	07/31/01		DRY	NA
	08/31/01		DRY	NA
	09/30/01		DRY	NA
	10/28/01		DRY	NA
	11/25/01		DRY	NA
	12/23/01		DRY	NA
01/13/02		DRY	NA	



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SCE-11	02/03/02		DRY	NA
	03/10/02		DRY	NA
	06/09/02		---	---
	08/04/02		16.84	NA
	08/26/02		16.56	NA
	09/28/02		16.44	NA
	10/26/02		16.49	NA
	01/17/03		14.30	NA
	04/26/03		13.90	NA
	07/05/03		14.35	NA
	10/25/03	(a)	13.30	NA
	01/24/04		13.24	NA
	04/28/04		12.57	NA
	07/24/04		13.28	NA
	10/29/04		12.98	NA
	01/30/05		12.70	NA
	04/24/05		12.77	NA
	07/11/05		---	---
	10/02/05		---	---
	01/14/06		12.60	NA
	04/29/06		14.00	NA
	10/07/06		15.23	NA
	04/28/07		15.20	NA
SCE-2	03/31/01	(a)	16.70	NA
	04/28/01		DRY	NA
	05/31/01		DRY	NA
	06/26/01		DRY	NA
	07/31/01		DRY	NA
	08/31/01		DRY	NA
	09/30/01		DRY	NA
	10/28/01		DRY	NA
	11/25/01		DRY	NA
	12/23/01		DRY	NA
	01/13/02		DRY	NA
	02/03/02		DRY	NA
	03/10/02		DRY	NA
	06/09/02		DRY	NA
	08/04/02		15.60	NA
	08/26/02		13.95	NA
	09/28/02		14.90	NA
	10/26/02		9.78	NA
	01/17/03		9.07	NA
	04/26/03		11.12	NA
07/05/03		11.50	NA	
10/25/03		10.43	NA	
01/24/04		14.25	NA	
04/28/04		11.67	NA	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SCE-2	07/24/04		15.42	NA
	10/29/04		13.60	NA
	01/30/05		13.44	NA
	04/24/05		13.97	NA
	07/11/05		---	---
	10/02/05		---	---
	01/14/06		9.80	NA
	04/29/06		11.60	NA
	10/07/06		13.11	NA
	04/28/07		12.08	NA
SCE-4	03/31/01	(a)	10.60	NA
	04/28/01		DRY	NA
	05/31/01		DRY	NA
	06/26/01		DRY	NA
	07/31/01		DRY	NA
	08/31/01		DRY	NA
	09/30/01		DRY	NA
	10/28/01		DRY	NA
	11/25/01		DRY	NA
	12/23/01		DRY	NA
	01/13/02	(a)	DRY	NA
	02/03/02		DRY	NA
	03/10/02		DRY	NA
	06/09/02		---	---
	08/04/02		9.44	NA
	08/26/02		9.48	NA
	09/28/02		8.80	NA
	10/26/02		3.68	NA
	01/17/03		2.95	NA
	04/26/03		5.07	NA
	07/05/03		5.40	NA
	10/25/03		4.31	NA
	01/24/04		8.07	NA
	04/28/04		5.62	NA
	07/24/04		9.31	NA
	10/29/04		7.50	NA
	01/30/05		7.36	NA
04/24/05		7.90	NA	
07/11/05		---	---	
10/02/05		---	---	
01/14/06		3.72	NA	
04/29/06		5.68	NA	
10/07/06		7.00	NA	
SCE-4	04/28/07		5.95	NA
SCE-5	03/31/01	(a)	DRY	NA
	04/28/01		DRY	NA
	05/31/01		DRY	NA



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
SCE-5	06/26/01		DRY	NA	
	07/31/01		DRY	NA	
	08/31/01		DRY	NA	
	09/30/01		DRY	NA	
	10/28/01		DRY	NA	
	11/25/01		DRY	NA	
	12/23/01		DRY	NA	
	01/13/02		DRY	NA	
	02/03/02		DRY	NA	
	03/10/02		DRY	NA	
	06/09/02		DRY	NA	
	08/04/02		DRY	NA	
	08/26/02		DRY	NA	
	09/28/02		DRY	NA	
	10/26/02		DRY	NA	
	01/17/03		---	---	
	SCE-5	04/26/03		DRY	NA
		07/05/03		DRY	NA
		10/25/03		DRY	NA
		01/24/04		DRY	NA
04/28/04			DRY	NA	
07/24/04			DRY	NA	
10/29/04			DRY	NA	
01/30/05			DRY	NA	
04/24/05			DRY	NA	
07/11/05			---	---	
10/02/05			DRY	NA	
01/14/06			DRY	NA	
04/29/06			DRY	NA	
10/07/06			DRY	NA	
04/28/07			DRY	NA	
SCE-6	03/31/01	(a)	DRY	NA	
	04/28/01		DRY	NA	
	05/31/01		DRY	NA	
	06/26/01		DRY	NA	
	07/31/01		DRY	NA	
	08/31/01		DRY	NA	
	09/30/01		DRY	NA	
	10/28/01		DRY	NA	
	11/25/01		DRY	NA	
	12/23/01		DRY	NA	
	01/13/02		DRY	NA	
	02/03/02		DRY	NA	
	03/10/02		DRY	NA	
	06/09/02		DRY	NA	
	08/04/02		10.12	NA	
08/26/02		10.07	NA		



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
SCE-6	09/28/02		9.95	NA	
	10/26/02		9.79	NA	
	01/17/03		9.63	NA	
	04/26/03		9.90	NA	
	07/05/03		9.90	NA	
	10/25/03		9.73	NA	
	01/24/04		10.18	NA	
	04/28/04		9.80	NA	
	07/24/04		10.04	NA	
	10/29/04		10.07	NA	
	01/30/05		10.10	NA	
	04/24/05		10.00	NA	
	07/11/05		---	---	
	10/02/05		---	---	
	01/14/06		9.68	NA	
	04/29/06		9.92	NA	
	10/07/06		10.06	NA	
	04/28/07		9.99	NA	
	SCE-8	03/31/01	(a)	17.39	NA
		04/28/01		DRY	DRY
05/31/01			DRY	DRY	
06/26/01			DRY	DRY	
07/31/01			DRY	DRY	
08/31/01			DRY	DRY	
09/30/01			DRY	DRY	
10/28/01			DRY	DRY	
11/25/01			DRY	DRY	
12/23/01			DRY	DRY	
01/13/02			DRY	DRY	
02/03/02			DRY	DRY	
03/10/02			DRY	DRY	
06/09/02			DRY	DRY	
08/04/02			15.57	NA	
08/26/02			16.46	NA	
09/28/02			15.40	NA	
10/26/02			16.20	NA	
01/17/03			DRY	DRY	
04/26/03			15.30	NA	
07/05/03		DRY	DRY		
10/25/03		15.30	NA		
SCE-8	01/24/04	(a)	15.55	NA	
	04/28/04		15.20	NA	
	07/24/04		15.56	NA	
	10/29/04		15.44	NA	
	01/30/05		15.46	NA	
	04/24/05		15.42	NA	
07/11/05		---	---		

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SCE-8	10/02/05		---	---
	01/14/06		16.40	NA
	04/29/06		17.18	NA
	10/07/06		15.50	NA
	04/28/07		15.32	NA
SCE-9	03/31/01	(a)	DRY	DRY
	04/28/01		DRY	DRY
	05/31/01		DRY	DRY
	06/26/01		DRY	DRY
	07/31/01		DRY	DRY
	08/31/01		DRY	DRY
	09/30/01		DRY	DRY
	10/28/01		DRY	DRY
	11/25/01		DRY	DRY
	12/23/01		DRY	DRY
	01/13/02		DRY	DRY
	02/03/02		DRY	DRY
	03/10/02		DRY	DRY
	06/09/02		DRY	DRY
	08/04/02		17.50	NA
	08/26/02		17.30	NA
	09/28/02		17.23	NA
	10/26/02		17.30	NA
	01/17/03		15.21	NA
	SCE-9	04/26/03		11.70
07/05/03			15.30	NA
10/25/03			14.20	NA
01/24/04			14.10	NA
04/28/04			13.33	NA
07/24/04			14.10	NA
10/29/04			13.98	NA
01/30/05			13.48	NA
04/24/05			13.60	NA
07/11/05			---	---
10/02/05			---	---
01/14/06			13.41	NA
04/29/06			14.85	NA
10/07/06		16.05	NA	
04/28/07		16.00	NA	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)		
SUMP-1	03/15/91	228.10	16.70	211.40		
	06/26/91		16.80	211.30		
	09/23/91		16.30	211.80		
	06/15/92		17.34	210.76		
	09/15/92		17.18	210.92		
	12/18/92		11.65	216.45		
	03/25/93		17.18	210.92		
	09/23/93		21.45	206.65		
	03/31/94		19.58	208.52		
	09/26/94		23.43	204.67		
	12/02/94		23.50	204.60		
	SUMP-1		01/03/95	228.10	19.21	208.89
			02/21/95		19.15	208.95
			03/14/95		19.72	208.38
04/11/95		16.33	211.77			
05/02/95		20.57	207.53			
06/13/95		19.70	208.40			
07/11/95		20.57	207.53			
08/08/95		19.28	208.82			
09/12/95		20.21	207.89			
09/30/95		20.20	207.90			
11/14/95		19.76	208.34			
01/23/96		11.86	216.24			
02/13/96		18.22	209.88			
03/28/96		17.55	210.55			
04/08/96		19.30	208.80			
05/04/96		18.00	210.10			
06/25/96		18.36	209.74			
07/16/96		14.88	213.22			
08/20/96		17.86	210.24			
09/30/96		20.20	207.90			
SUMP-1	10/15/96	228.10	18.89	209.21		
	11/12/96		18.84	209.26		
	12/10/96		18.26	209.84		
	01/14/97		18.78	209.32		
	02/11/97		22.00	206.10		
	03/28/97		18.80	209.30		
	04/22/97		18.70	209.40		
	05/16/97		20.70	207.40		
	06/27/97		18.04	210.06		
	07/15/97		18.30	209.80		
SUMP-1	08/25/97	228.10	19.67	208.43		
	09/02/97		19.58	208.52		
	10/14/97		18.92	209.18		
	11/29/97		19.91	208.19		
	12/20/97		19.40	208.70		
	01/31/98		18.53	209.57		
SUMP-1	02/28/98	228.10	18.46	209.64		



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SUMP-1	03/06/98		19.79	208.31
	04/24/98		18.32	209.78
	05/17/98		19.50	208.60
	06/25/98		18.48	209.62
	07/24/98		18.60	209.50
	08/30/98		20.05	208.05
	09/27/98		19.03	209.07
	10/24/98		16.26	211.84
	11/22/98		18.53	209.57
	12/30/98		18.47	209.63
	01/29/99		19.36	208.74
	02/28/99		18.10	210.00
	03/13/99		18.73	209.37
	04/25/99		18.00	210.10
	05/16/99		19.40	208.70
	06/27/99		18.60	209.50
	07/23/99		18.38	209.72
	08/29/99		18.90	209.20
	09/27/99		11.77	216.33
	11/23/99		16.95	211.15
SUMP-1	01/30/00	228.10	16.95	211.15
	02/27/00		18.36	209.74
	03/18/00		17.83	210.27
	04/28/00		18.23	209.87
	05/09/00		20.72	207.38
	06/06/00		17.98	210.12
	07/11/00		20.35	207.75
	08/15/00		17.77	210.33
	09/09/00		17.81	210.29
	10/29/00		18.85	209.25
	11/25/00		17.95	210.15
	12/28/00		16.00	212.10
	01/28/01		18.35	209.75
	02/28/01		19.22	208.88
	03/31/01		18.61	209.49
	04/28/01		19.10	209.00
	05/31/01		19.20	208.90
	06/26/01		18.20	209.90
	07/31/01		19.10	209.00
	08/31/01		19.18	208.92
09/30/01		18.66	209.44	
10/28/01		17.89	210.21	
11/25/01		18.22	209.88	
12/23/01		19.19	208.91	
01/13/02		16.27	211.83	
02/03/02		18.25	209.85	
03/10/02		18.25	209.85	
06/09/02		15.68	212.42	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SUMP-1	08/04/02		11.42	216.68
	08/26/02		11.15	216.95
	09/28/02		11.10	217.00
	10/26/02		11.17	216.93
	01/17/03		8.92	219.18
	04/26/03		8.65	219.45
	07/05/03		9.00	219.10
	10/25/03		7.90	220.20
	01/24/04		7.90	220.20
	04/28/04		7.21	220.89
	07/24/04		7.95	220.15
	10/29/04		7.68	220.42
	01/30/05		7.32	220.78
	04/24/05		7.45	220.65
	07/11/05		7.80	220.30
	10/02/05		9.80	218.30
	01/14/06		7.30	220.80
	04/29/06		8.70	219.40
10/07/06		9.92	218.18	
04/28/07		9.84	218.26	
SUMP-2	03/15/91	207.90	26.90	181.00
	06/26/91		26.50	181.40
	09/23/91		26.90	181.00
	06/15/92		21.75	186.15
	09/15/92		27.69	180.21
	12/18/92		20.15	187.75
	03/25/93		18.98	188.92
	09/23/93		24.75	183.15
	03/31/94		11.55	196.35
	09/26/94	207.90	23.76	184.14
SUMP-2	12/02/94		24.48	183.42
	01/03/95		25.76	182.14
	02/21/95		27.48	180.42
	03/14/95		20.89	187.01
	04/11/95		23.30	184.60
	05/02/95		21.78	186.12
	06/13/95		27.38	180.52
	07/11/95		21.78	186.12
	08/08/95		24.40	183.50
	09/12/95		27.24	180.66
	09/30/95		27.72	180.18
	11/14/95		19.15	188.75
	01/23/96		11.08	196.82
02/13/96		27.28	180.62	
03/28/96		27.10	180.80	
04/08/96		27.46	180.44	
05/04/96		27.20	180.70	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SUMP-2	06/25/96		24.20	183.70
	07/16/96		14.19	193.71
	08/20/96		21.32	186.58
	09/30/96		27.72	180.18
	10/15/96		24.48	183.42
	11/12/96		20.98	186.92
	12/10/96		21.22	186.68
	01/14/97		20.86	187.04
	02/11/97		20.95	186.95
	03/28/97		21.10	186.80
	04/22/97		21.02	186.88
	05/16/97		20.00	187.90
	06/27/97		21.64	186.26
	07/15/97		21.28	186.62
	08/25/97		21.18	186.72
	09/02/97		20.10	187.80
	10/14/97		21.50	186.40
	11/29/97		21.05	186.85
	12/20/97		21.13	186.77
	01/31/98		20.24	187.66
	02/28/98		20.99	186.91
	03/06/98		20.78	187.12
	04/24/98		21.39	186.51
	05/17/98		19.54	188.36
	06/25/98		21.41	186.49
	07/24/98		21.40	186.50
	08/30/98		21.15	186.75
	09/27/98		21.50	186.40
	10/24/98		21.00	186.90
	11/22/98		21.30	186.60
	12/30/98		21.37	186.53
	01/29/99		21.10	186.80
	02/28/99		18.57	189.33
03/13/99		21.00	186.90	
04/25/99		20.20	187.70	
05/16/99		21.10	186.80	
06/27/99		21.29	186.61	
07/23/99		21.76	186.14	
08/29/99		21.21	186.69	
SUMP-2	09/27/99	207.90	21.80	186.10
	11/23/99		22.45	185.45
	01/30/00		22.80	185.10
	02/27/00		20.10	187.80
	03/18/00		20.10	187.80
	04/28/00		20.87	187.03
	05/09/00		20.11	187.79
	06/06/00		21.27	186.63
07/11/00		21.20	186.70	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SUMP-2	08/15/00		21.30	186.60
	09/09/00		20.98	186.92
	10/29/00		21.10	186.80
	11/25/00		21.05	186.85
	12/28/00		21.10	186.80
	01/28/01		21.00	186.90
	02/28/01		18.60	189.30
	03/31/01		18.90	189.00
	04/28/01		21.11	186.79
	05/31/01		21.20	186.70
	06/26/01		21.00	186.90
	07/31/01		21.28	186.62
	08/31/01		21.07	186.83
	09/30/01		21.00	186.90
	10/28/01		21.37	186.53
	11/25/01		21.78	186.12
	12/23/01		21.91	185.99
	01/13/02		23.40	184.50
	02/03/02		21.10	186.80
	03/10/02		21.11	186.79
	06/09/02		19.95	187.95
	08/04/02		17.78	190.12
	08/26/02		17.79	190.11
	09/28/02		17.17	190.73
	10/26/02		11.95	195.95
	01/17/03		11.30	196.60
	04/26/03		13.32	194.58
	07/05/03		13.75	194.15
	10/25/03		12.65	195.25
	01/24/04		15.10	192.80
04/28/04		13.88	194.02	
07/24/04		17.63	190.27	
10/29/04		15.62	192.28	
01/30/05		15.65	192.25	
04/24/05		16.16	191.74	
07/11/05		13.61	194.29	
10/02/05		18.60	189.30	
01/14/06		12.15	195.75	
04/29/06		13.82	194.08	
10/07/06		15.22	192.68	
SUMP-2	04/28/07		14.30	193.60



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SUMP-3	03/01/89	207.10	14.50	192.60
	03/15/91		15.90	191.20
	06/26/91		15.80	191.30
	09/23/91		16.20	190.90
	06/15/92		16.82	190.28
	09/15/92		17.05	190.05
	12/18/92		12.26	194.84
	03/25/93		14.58	192.52
SUMP-3	09/23/93	207.10	16.25	190.85
	03/31/94		10.74	196.36
	09/26/94		12.71	194.39
	12/02/94		16.66	190.44
	01/03/95		16.41	190.69
	02/21/95		15.95	191.15
	03/14/95		16.78	190.32
	04/11/95		13.45	193.65
	05/02/95		15.96	191.14
	06/13/95		16.66	190.44
	07/11/95		15.96	191.14
	08/08/95		16.38	190.72
	09/12/95		16.46	190.64
	09/30/95		16.51	190.59
	11/14/95		13.46	193.64
	01/23/96		10.36	196.74
	02/13/96		16.06	191.04
	03/28/96		16.85	190.25
	04/08/96		15.96	191.14
	05/04/96		15.75	191.35
	06/25/96		15.90	191.20
	07/16/96		11.37	195.73
	08/20/96		16.26	190.84
	09/30/96		16.51	190.59
	10/15/96		16.36	190.74
	11/12/96		16.46	190.64
	12/10/96		15.96	191.14
	01/14/97		16.36	190.74
	02/11/97		16.24	190.86
	03/28/97		16.46	190.64
	04/22/97		16.34	190.76
	05/16/97		16.55	190.55
06/27/97	17.00	190.10		
07/15/97	16.50	190.60		
08/25/97	16.01	191.09		
09/02/97	16.85	190.25		
10/14/97	16.30	190.80		
11/29/97	16.00	191.10		
12/20/97	16.38	190.72		
SUMP-3	01/31/98		15.80	191.30

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
SUMP-3	02/28/98		15.69	191.41	
	03/06/98		16.01	191.09	
	04/24/98		16.00	191.10	
	05/17/98		16.10	191.00	
	06/25/98		16.50	190.60	
	07/24/98		16.42	190.68	
	08/30/98		16.00	191.10	
	09/27/98		16.49	190.61	
	10/24/98		15.65	191.45	
	11/22/98		16.57	190.53	
	12/30/98		16.28	190.82	
	01/29/99		15.95	191.15	
	02/28/99		14.00	193.10	
	03/13/99		16.00	191.10	
	04/25/99		15.75	191.35	
	05/16/99		15.96	191.14	
	SUMP-3	06/27/99	207.10	16.48	190.62
		07/23/99		16.20	190.90
		08/29/99		16.30	190.80
		09/27/99		16.11	190.99
11/23/99			14.75	192.35	
01/30/00			15.40	191.70	
02/27/00			15.95	191.15	
03/18/00			13.55	193.55	
04/28/00			15.79	191.31	
05/09/00			16.55	190.55	
06/06/00			16.58	190.52	
07/11/00			15.90	191.20	
08/15/00			16.32	190.78	
09/09/00			16.00	191.10	
10/29/00			15.95	191.15	
11/25/00			16.00	191.10	
12/28/00			16.40	190.70	
01/28/01			16.21	190.89	
02/28/01			14.10	193.00	
03/31/01			12.70	194.40	
04/28/01		15.86	191.24		
05/31/01		15.95	191.15		
06/26/01		15.80	191.30		
07/31/01		15.95	191.15		
08/31/01		15.92	191.18		
09/30/01		15.88	191.22		
10/28/01		16.40	190.70		
11/25/01		15.70	191.40		
12/23/01		14.88	192.22		
01/13/02		14.15	192.95		
02/03/02		14.67	192.43		
SUMP-3	03/10/02		14.65	192.45	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SUMP-3	06/09/02		15.62	191.48
	07/21/02		13.05	194.05
	08/04/02		10.85	196.25
	08/26/02		11.67	195.43
	09/28/02		10.70	196.40
	10/26/02		10.55	196.55
	04/26/03		10.70	196.40
	07/05/03		10.65	196.45
	10/25/03		10.45	196.65
	01/24/04		10.79	196.31
	04/28/04		10.53	196.57
	07/24/04		10.72	196.38
	10/29/04		10.72	196.38
	01/30/05		10.73	196.37
	04/24/05		10.75	196.35
	07/11/05		10.67	196.43
	10/02/05		12.60	194.50
	01/14/06		10.44	196.66
	04/30/06		10.60	196.50
	10/07/06		10.72	196.38
04/28/07		10.67	196.43	
SUMP-4	12/02/94	(a)	12.16	NA
	01/03/95		11.88	NA
	02/21/95		11.88	NA
	03/14/95		11.45	NA
	04/11/95	(a)	11.59	NA
	05/02/95		11.80	NA
	06/13/95		11.90	NA
	07/11/95		11.80	NA
	08/08/95		10.74	NA
	09/12/95		12.09	NA
	11/14/95		11.59	NA
	01/23/96		5.80	NA
	02/13/96		11.62	NA
	04/08/96		11.57	NA
	06/25/96		10.98	NA
	07/16/96		8.12	NA
	08/20/96		NM	NA
	10/15/96		NM	NA
	11/12/96		NM	NA
	12/10/96		11.62	NA
01/14/97		11.63	NA	
02/11/97		12.10	NA	
03/28/97		12.00	NA	
04/22/97		12.20	NA	
06/27/97		NM	NA	
SUMP-4	07/15/97		NM	NA

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SUMP-4	08/25/97		NM	NA
	09/02/97		NM	NA
	10/14/97		NM	NA
	02/28/98		NM	NA
	03/06/98		NM	NA
	04/24/98		NM	NA
	05/17/98		NM	NA
	06/25/98		NM	NA
	07/24/98		NM	NA
	08/30/98		NM	NA
	09/27/98		NM	NA
	10/24/98		12.05	NA
	11/22/98		12.00	NA
	12/30/98		12.10	NA
	01/29/99		11.07	NA
	02/28/99		11.74	NA
	03/13/99		11.32	NA
	04/25/99		11.45	NA
	05/16/99		11.38	NA
	06/27/99		12.03	NA
	07/23/99		11.75	NA
	08/29/99		12.00	NA
	09/27/99		5.58	NA
	11/23/99		12.00	NA
	01/30/00		12.00	NA
	02/27/00		12.00	NA
	03/18/00		12.00	NA
	04/28/00		12.35	NA
	05/09/00		12.00	NA
	06/06/00		12.00	NA
	07/11/00		12.00	NA
	08/15/00		12.08	NA
	09/09/00		12.00	NA
10/29/00		12.04	NA	
11/25/00		12.00	NA	
12/28/00	(a)	12.00	NA	
01/28/01		12.00	NA	
02/28/01		12.00	NA	
03/31/01		8.00	NA	
04/28/01		12.00	NA	
05/31/01		11.32	NA	
06/26/01		11.35	NA	
07/31/01		12.00	NA	
08/31/01		11.42	NA	
09/30/01		11.40	NA	
10/28/01		11.40	NA	
11/25/01		11.36	NA	
SUMP-4	12/23/01		11.35	NA

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
SUMP-4	01/13/02		11.00	NA
	02/03/02		11.37	NA
	03/10/02		10.25	NA
	06/09/02		10.45	NA
	08/04/02		4.80	NA
	08/26/02		5.00	NA
	09/28/02		4.25	NA
	10/26/02		4.40	NA
	01/17/03		4.88	NA
	04/26/03		5.25	NA
	07/05/03		5.40	NA
	10/25/03		4.25	NA
	01/24/04		5.00	NA
	04/28/04		4.35	NA
	07/24/04		4.70	NA
	10/29/04		6.45	NA
	01/30/05		6.65	NA
	04/24/05		5.63	NA
	07/11/05		---	---
	10/02/05		---	---
	01/14/06		4.20	NA
	04/29/06		4.76	NA
10/07/06		5.17	NA	
04/28/07		4.80	NA	
W-10	03/15/91	200.80	18.80	182.00
	06/26/91		19.90	180.90
	09/23/91		20.10	180.70
	12/17/91		18.40	182.40
	03/24/92		18.83	181.97
	06/15/92		19.50	181.30
	09/15/92		19.82	180.98
	12/18/92		17.57	183.23
	03/25/93		17.54	183.26
	09/23/93		20.45	180.35
	03/31/94		16.74	184.06
	09/26/94		19.70	181.10
	12/02/94		18.12	182.68
	01/03/95		17.79	183.01
	02/21/95		17.96	182.84
	03/14/95		18.24	182.56
	04/11/95		18.50	182.30
05/02/95		18.92	181.88	
06/13/95		19.56	181.24	
07/11/95		18.92	181.88	
W-10	08/08/95	200.80	19.32	181.48
	09/12/95		21.04	179.76
	09/30/95		30.91	169.89

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-10	11/14/95		17.64	183.16
	01/23/96		16.93	183.87
	02/13/96		18.26	182.54
	03/28/96		19.02	181.78
	04/08/96		18.29	182.51
	05/04/96		19.01	181.79
	06/25/96		19.32	181.48
	07/16/96		17.80	183.00
	08/20/96		19.60	181.20
	09/30/96		20.91	179.89
	10/15/96		18.50	182.30
	11/12/96		18.24	182.56
	12/10/96		17.76	183.04
	01/14/97		18.69	182.11
	02/11/97		18.44	182.36
	03/28/97		17.87	182.93
	04/22/97		17.79	183.01
	05/16/97		18.73	182.07
	06/27/97		19.00	181.80
	07/15/97		19.94	180.86
	08/25/97		19.82	180.98
	09/02/97		19.82	180.98
	10/14/97		19.96	180.84
	11/29/97		18.99	181.81
	12/20/97		18.47	182.33
	01/31/98		18.31	182.49
	02/28/98		18.00	182.80
	03/06/98		18.40	182.40
	04/24/98		19.00	181.80
	05/17/98		18.86	181.94
	06/25/98		19.75	181.05
	07/24/98		20.60	180.20
	08/30/98		20.45	180.35
	09/27/98		20.14	180.66
	10/24/98		19.57	181.23
	11/22/98		19.50	181.30
12/30/98		19.43	181.37	
01/29/99		18.57	182.23	
02/28/99		18.24	182.56	
03/13/99		18.68	182.12	
04/25/99		19.02	181.78	
05/16/99		19.52	181.28	
06/27/99		20.62	180.18	
07/23/99		21.45	179.35	
08/29/99		20.49	180.31	
09/27/99		19.04	181.76	
11/23/99		18.95	181.85	
W-10	01/30/00		18.80	182.00

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-10	02/27/00		16.92	183.88
	03/18/00		17.78	183.02
	04/28/00		18.78	182.02
	05/09/00		18.86	181.94
	06/06/00		19.80	181.00
	07/11/00		19.41	181.39
W-10	08/15/00	200.80	19.35	181.45
	09/09/00		19.40	181.40
	10/29/00		18.85	181.95
	11/25/00		18.77	182.03
	12/28/00		18.65	182.15
	01/28/01		18.29	182.51
	02/28/01		18.60	182.20
	03/31/01		17.32	183.48
	04/28/01		18.87	181.93
	05/31/01		19.20	181.60
	06/26/01		19.22	181.58
	07/31/01		20.61	180.19
	08/31/01		21.52	179.28
	09/30/01		20.35	180.45
	10/28/01		21.80	179.00
	11/25/01		19.88	180.92
	12/23/01		19.45	181.35
	01/13/02		19.13	181.67
	02/03/02		19.00	181.80
	03/10/02		18.85	181.95
	06/09/02		18.10	182.70
	07/21/02		19.73	181.07
	08/04/02		19.45	181.35
	08/26/02		20.00	180.80
	09/28/02		18.90	181.90
	10/26/02		16.50	184.30
	01/17/03		16.16	184.64
	04/26/03		16.40	184.40
	07/05/03		16.55	184.25
	10/25/03		16.11	184.69
	01/24/04		16.98	183.82
	04/28/04		16.77	184.03
07/24/04		19.56	181.24	
10/29/04		16.84	183.96	
01/30/05		16.95	183.85	
04/24/05		16.97	183.83	
07/11/05		17.05	183.75	
10/02/05		21.10	179.70	
01/14/06		15.35	185.45	
04/29/06		16.35	184.45	
10/07/06		16.76	184.04	
W-10	04/28/07		16.65	184.15



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)		
W-11	03/15/91	230.40	6.00	224.40		
	06/26/91		7.20	223.20		
	09/23/91		7.00	223.40		
	06/15/92		6.67	223.73		
	12/18/92		6.94	223.46		
	03/25/93		5.94	224.46		
	09/23/93		8.40	222.00		
	03/31/94		5.35	225.05		
	09/26/94		DRY	DRY		
	12/02/94		4.82	225.58		
	01/03/95		1.70	228.70		
	02/21/95		5.49	224.91		
	03/14/95		4.78	225.62		
	04/11/95		8.70	221.70		
	05/02/95		6.46	223.94		
	W-11		06/13/95	230.40	6.76	223.64
			07/11/95		6.46	223.94
			08/08/95		6.82	223.58
			09/12/95		8.84	221.56
09/30/95		8.51	221.89			
11/14/95		6.10	224.30			
01/23/96		5.56	224.84			
02/13/96		6.56	223.84			
03/28/96		6.31	224.09			
04/08/96		6.12	224.28			
05/04/96		6.81	223.59			
06/25/96		6.28	224.12			
07/16/96		5.56	224.84			
08/20/96		6.80	223.60			
09/30/96		8.51	221.89			
10/15/96		6.26	224.14			
11/12/96		6.77	223.63			
12/10/96		5.92	224.48			
01/14/97		6.69	223.71			
02/11/97		6.42	223.98			
03/28/97		6.21	224.19			
04/22/97		5.93	224.47			
05/16/97		6.35	224.05			
06/27/97		7.32	223.08			
07/15/97		6.84	223.56			
08/25/97		6.70	223.70			
09/02/97		6.70	223.70			
10/14/97	8.52	221.88				
11/29/97	6.04	224.36				
12/20/97	6.83	223.57				
01/31/98	6.01	224.39				
02/28/98	5.76	224.64				
W-11	03/06/98		5.40	225.00		





Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-11	04/24/98		6.47	223.93
	05/17/98		6.00	224.40
	06/25/98		6.34	224.06
	07/24/98		7.54	222.86
	08/30/98		8.16	222.24
	09/27/98		7.90	222.50
	10/24/98		7.28	223.12
	11/22/98		DRY	DRY
	12/30/98		6.69	223.71
	01/29/99		5.10	225.30
	02/28/99		6.20	224.20
	03/13/99		6.19	224.21
	04/25/99		6.81	223.59
	05/16/99		7.88	222.52
	06/27/99		8.25	222.15
	07/23/99		7.45	222.95
	08/29/99		8.25	222.15
	09/27/99		8.68	221.72
	11/23/99		6.56	223.84
	01/30/00		7.90	222.50
	02/27/00		5.95	224.45
	03/18/00		2.27	228.13
	04/28/00		6.00	224.40
05/09/00		6.35	224.05	
W-11	06/06/00	230.40	8.82	221.58
	07/11/00		5.55	224.85
	08/15/00		3.84	226.56
	09/09/00		6.64	223.76
	10/29/00		7.25	223.15
	11/25/00		4.89	225.51
	12/28/00		6.12	224.28
	01/28/01		8.86	221.54
	02/28/01		6.27	224.13
	03/31/01		6.35	224.05
	04/28/01		6.90	223.50
	05/31/01		6.81	223.59
	06/26/01		6.62	223.78
	07/31/01		8.00	222.40
	08/31/01		DRY	DRY
	09/30/01		8.12	222.28
	10/28/01		8.50	221.90
	11/25/01		---	---
	12/23/01		9.14	221.26
	01/13/02		7.35	223.05
02/03/02		7.24	223.16	
03/10/02		7.08	223.32	
06/09/02		5.70	224.70	
W-11	08/04/02		5.90	224.50

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-11	08/26/02		5.41	224.99
	09/28/02		5.91	224.49
	10/26/02		5.68	224.72
	01/17/03		5.77	224.63
	04/26/03		6.10	224.30
	07/05/03		7.96	222.44
	10/25/03		5.38	225.02
	01/24/04		7.03	223.37
	04/28/04		5.65	224.75
	07/24/04		6.54	223.86
	10/29/04		6.00	224.40
	01/30/05		6.19	224.21
	04/24/05		5.89	224.51
	07/11/05		5.84	224.56
	10/02/05		---	---
	01/14/06		4.80	225.60
	04/29/06		5.70	224.70
	10/07/06		6.11	224.29
	04/28/07		7.70	222.70
W-12	03/15/91	227.80	16.60	211.20
	06/26/91		17.00	210.80
	09/23/91		16.90	210.90
	12/17/91		16.80	211.00
	06/15/92		17.15	210.65
	09/15/92		16.98	210.82
	11/13/92		17.28	210.52
	12/18/92		15.95	211.85
	03/25/93		13.92	213.88
	09/23/93		17.12	210.68
	03/31/94		18.47	209.33
	09/26/94		21.63	206.17
	12/02/94		21.32	206.48
	01/03/95		18.89	208.91
W-12	02/21/95	227.80	18.79	209.01
	03/14/95		18.90	208.90
	04/11/95		17.03	210.77
	05/02/95		19.13	208.67
	06/13/95		13.23	214.57
	07/11/95		19.13	208.67
	08/08/95		19.33	208.47
	09/12/95		19.71	208.09
	09/30/95		19.04	208.76
	11/14/95		17.64	210.16
	01/23/96		12.88	214.92
	02/13/96		17.99	209.81
	03/28/96		18.00	209.80
W-12	04/08/96		18.08	209.72
	05/04/96		18.20	209.60

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-12	06/25/96		17.76	210.04
	07/16/96		14.68	213.12
	08/20/96		17.46	210.34
	09/30/96		19.04	208.76
	10/15/96		18.08	209.72
	11/12/96		18.44	209.36
	12/10/96		17.62	210.18
	01/14/97		18.34	209.46
	02/11/97		18.56	209.24
	03/28/97		18.24	209.56
	04/22/97		17.66	210.14
	05/16/97		17.77	210.03
	06/27/97		18.33	209.47
	07/15/97		18.78	209.02
	08/25/97		17.60	210.20
	09/02/97		26.26	201.54
	10/14/97		18.72	209.08
	11/29/97		18.48	209.32
	12/20/97		18.64	209.16
	01/31/98		18.00	209.80
	02/28/98		17.60	210.20
	03/06/98		17.76	210.04
	04/24/98		18.00	209.80
	05/17/98		17.81	209.99
	06/25/98		18.10	209.70
	07/24/98		18.60	209.20
	08/30/98		18.60	209.20
	09/27/98		18.52	209.28
	10/24/98		17.21	210.59
	11/22/98		18.97	208.83
	12/30/98		19.21	208.59
	01/29/99		18.60	209.20
	02/28/99		17.10	210.70
03/13/99		18.14	209.66	
04/25/99		18.00	209.80	
05/16/99		18.56	209.24	
06/27/99		18.69	209.11	
07/23/99		18.72	209.08	
08/29/99		18.55	209.25	
09/27/99		13.14	214.66	
11/23/99		17.78	210.02	
01/30/00		18.71	209.09	
W-12	02/27/00	227.80	17.27	210.53
	03/18/00		17.62	210.18
	04/28/00		17.72	210.08
	05/09/00		17.77	210.03
	06/06/00		18.25	209.55
	07/11/00		17.94	209.86

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-12	08/15/00		18.00	209.80
	09/09/00		17.85	209.95
	10/29/00		18.10	209.70
	11/25/00		16.86	210.94
	12/28/00		17.25	210.55
	01/28/01		18.47	209.33
	02/28/01		17.75	210.05
	03/31/01		17.31	210.49
	04/28/01		18.42	209.38
	05/31/01		18.23	209.57
	06/26/01		18.08	209.72
	07/31/01		18.51	209.29
	08/31/01		18.70	209.10
	09/30/01		18.75	209.05
	10/28/01		18.20	209.60
	11/25/01		18.00	209.80
	12/23/01		19.35	208.45
	01/13/02		15.55	212.25
	02/03/02		18.10	209.70
	03/10/02		18.75	209.05
	06/09/02		15.77	212.03
	07/21/02		17.43	210.37
	08/04/02		12.55	215.25
	08/26/02		12.33	215.47
	09/28/02		12.90	214.90
	10/26/02		12.82	214.98
	01/17/03		9.54	218.26
	04/26/03		9.30	218.50
	07/05/03		9.92	217.88
	10/25/03		8.82	218.98
	01/24/04		9.30	218.50
	04/28/04		9.00	218.80
07/24/04		9.60	218.20	
10/29/04		9.67	218.13	
01/30/05		9.27	218.53	
04/24/05		9.62	218.18	
07/11/05		9.97	217.83	
10/02/05		12.65	215.15	
01/14/06		8.89	218.91	
04/30/06		10.40	217.40	
10/07/06		12.92	214.88	
04/28/07		12.75	215.05	
W-13	03/15/91	229.10	8.00	221.10
	06/26/91		8.00	221.10
	09/23/91		8.40	220.70
	12/17/91		8.20	220.90
	06/15/92		8.25	220.85

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-13	09/15/92		8.40	220.70
	11/13/92		9.00	220.10
	12/18/92		7.67	221.43
	03/25/93		7.30	221.80
W-13	09/23/93	229.10	8.00	221.10
	03/31/94		7.40	221.70
	09/26/94		8.23	220.87
	12/02/94		7.94	221.16
	01/03/95		7.65	221.45
	02/21/95		8.74	220.36
	03/14/95		8.16	220.94
	04/11/95		8.26	220.84
	05/02/95		8.55	220.55
	06/13/95		8.87	220.23
	07/11/95		8.55	220.55
	08/08/95		7.99	221.11
	09/12/95		9.96	219.14
	09/30/95		10.22	218.88
	11/14/95		7.26	221.84
	01/23/96		6.64	222.46
	02/13/96		8.26	220.84
	03/28/96		8.35	220.75
	04/08/96		7.76	221.34
	05/04/96		8.33	220.77
	06/25/96		7.84	221.26
	07/16/96		7.00	222.10
	08/20/96		8.27	220.83
	09/30/96		10.22	218.88
	10/15/96		7.90	221.20
	11/12/96		7.82	221.28
	12/10/96		7.08	222.02
	01/14/97		8.39	220.71
	02/11/97		8.01	221.09
	03/28/97		7.59	221.51
	04/22/97		7.59	221.51
05/16/97		8.07	221.03	
06/27/97		8.64	220.46	
07/15/97		7.84	221.26	
08/25/97		7.71	221.39	
09/02/97		7.86	221.24	
10/14/97		8.98	220.12	
11/29/97		7.79	221.31	
12/20/97		8.05	221.05	
01/31/98		8.00	221.10	
02/28/98		7.46	221.64	
03/06/98		8.00	221.10	
04/24/98		8.10	221.00	
W-13	05/17/98		8.32	220.78

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
W-13	06/25/98		8.34	220.76	
	07/24/98		9.22	219.88	
	08/30/98		8.76	220.34	
	09/27/98		8.52	220.58	
	10/24/98		8.61	220.49	
	11/22/98		9.60	219.50	
	12/30/98		9.72	219.38	
	01/29/99		8.12	220.98	
	02/28/99		8.15	220.95	
	03/13/99		8.50	220.60	
	04/25/99		8.33	220.77	
	05/16/99		9.36	219.74	
	06/27/99		9.64	219.46	
	W-13	07/23/99	229.10	10.44	218.66
		08/29/99		8.99	220.11
		09/27/99		8.03	221.07
11/23/99			8.49	220.61	
01/30/00			9.48	219.62	
02/27/00			8.80	220.30	
03/18/00			7.14	221.96	
04/28/00			8.73	220.37	
05/09/00			8.32	220.78	
06/06/00			8.88	220.22	
07/11/00			8.04	221.06	
08/15/00			8.17	220.93	
09/09/00			8.46	220.64	
10/29/00			9.13	219.97	
11/25/00			7.56	221.54	
12/28/00			7.99	221.11	
01/28/01			7.71	221.39	
02/28/01			7.90	221.20	
03/31/01			7.07	222.03	
04/28/01			8.85	220.25	
05/31/01			8.15	220.95	
06/26/01			8.22	220.88	
07/31/01			9.15	219.95	
08/31/01			10.47	218.63	
09/30/01			8.40	220.70	
10/28/01			9.03	220.07	
11/25/01		10.00	219.10		
12/23/01		9.35	219.75		
01/13/02		7.55	221.55		
02/03/02		8.55	220.55		
03/10/02		8.84	220.26		
06/09/02		8.30	220.80		
07/21/02		7.37	221.73		
08/04/02		7.90	221.20		
W-13	08/26/02		7.30	221.80	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-13	09/28/02		7.38	221.72
	10/26/02		7.72	221.38
	01/17/03		8.00	221.10
	04/26/03		8.10	221.00
	07/05/03		8.33	220.77
	10/25/03		6.85	222.25
	01/24/04		8.38	220.72
	04/28/04		7.45	221.65
	07/24/04		7.59	221.51
	10/29/04		7.70	221.40
	01/30/05		7.46	221.64
	04/24/05		7.38	221.72
	07/11/05		7.77	221.33
	10/02/05		10.20	218.90
	01/14/06		6.58	222.52
04/29/06		8.08	221.02	
10/07/06		8.10	221.00	
W-13	04/28/07		8.20	220.90
W-14	03/15/91	230.10	4.90	225.20
	06/26/91		5.30	224.80
	09/23/91		5.20	224.90
	12/17/91		4.80	225.30
W-14	06/15/92	230.10	4.46	225.64
	09/15/92		5.88	224.22
	11/13/92		5.20	224.90
	12/18/92		4.49	225.61
	03/25/93		3.62	226.48
	09/23/93		4.40	225.70
	03/31/94		4.00	226.10
	09/26/94		5.38	224.72
	12/02/94		5.01	225.09

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
W-14	01/03/95		4.50	225.60	
	02/21/95		6.12	223.98	
	03/14/95		5.07	225.03	
	04/11/95		5.67	224.43	
	05/02/95		5.99	224.11	
	06/13/95		6.62	223.48	
	07/11/95		5.99	224.11	
	08/08/95		4.88	225.22	
	09/12/95		7.63	222.47	
	09/30/95		6.70	223.40	
	11/14/95		4.38	225.72	
	01/23/96		3.38	226.72	
	02/13/96		4.96	225.14	
	03/28/96		5.14	224.96	
	04/08/96		4.66	225.44	
	05/04/96		5.12	224.98	
	W-14	06/25/96		NM	NA
		07/16/96		NM	NA
		08/20/96		NM	NA
		09/30/96		6.70	223.40
		10/15/96		7.04	223.06
		11/12/96		4.56	225.54
		12/10/96		3.96	226.14
01/14/97			5.29	224.81	
02/11/97			4.78	225.32	
03/28/97			4.61	225.49	
04/22/97			4.12	225.98	
05/16/97			4.80	225.30	
06/27/97			8.00	222.10	
07/15/97			4.92	225.18	
08/25/97			4.76	225.34	
09/02/97			5.36	224.74	
10/14/97			6.77	223.33	
11/29/97			4.89	225.21	
12/20/97			5.13	224.97	
01/31/98			5.11	224.99	
02/28/98			4.38	225.72	
03/06/98			4.95	225.15	
04/24/98			4.90	225.20	
05/17/98		4.91	225.19		
06/25/98		5.31	224.79		
07/24/98		6.73	223.37		
08/30/98		5.17	224.93		
09/27/98		5.93	224.17		
10/24/98		5.61	224.49		
11/22/98		6.89	223.21		
12/30/98		7.10	223.00		
01/29/99		4.82	225.28		



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-14	02/28/99	230.10	5.11	224.99
	03/13/99		4.94	225.16
	04/25/99		5.14	224.96
	05/16/99		6.25	223.85
	06/27/99		6.97	223.13
	07/23/99		8.15	221.95
	08/29/99		6.10	224.00
	09/27/99		4.01	226.09
	11/23/99		5.67	224.43
	01/30/00		6.60	223.50
	02/27/00		4.20	225.90
	03/18/00		4.34	225.76
	04/28/00		5.84	224.26
	05/09/00		4.85	225.25
	06/06/00		6.15	223.95
	07/11/00		5.00	225.10
	08/15/00		5.22	224.88
	09/09/00		6.55	223.55
	10/29/00		6.65	223.45
	11/25/00		4.21	225.89
12/28/00	5.60	224.50		
01/28/01	6.89	223.21		
W-14	02/28/01	230.10	5.21	224.89
	03/31/01		4.60	225.50
	04/28/01		6.20	223.90
	05/31/01		5.25	224.85
	06/26/01		5.37	224.73
	07/31/01		7.08	223.02
	08/31/01		8.55	221.55
	09/30/01		5.54	224.56
	10/28/01		8.71	221.39
	11/25/01		7.87	222.23
	12/23/01		6.93	223.17
	01/13/02		4.40	225.70
	02/03/02		5.60	224.50
	03/10/02		5.73	224.37
	06/09/02		5.25	224.85
	07/21/02		3.81	226.29
	08/04/02		4.18	225.92
	08/26/02		3.50	226.60
	09/28/02		3.90	226.20
	10/26/02		4.10	226.00
01/17/03	4.40	225.70		
04/26/03	4.70	225.40		
07/05/03	4.93	225.17		
10/25/03	3.61	226.49		
01/24/04	6.05	224.05		
04/28/04	4.40	225.70		

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-14	07/24/04		4.04	226.06
	10/29/04		4.90	225.20
	01/30/05		4.70	225.40
	04/24/05		4.38	225.72
	07/11/05		4.90	225.20
	10/02/05		8.72	221.38
	01/14/06		2.64	227.46
	04/29/06		4.56	225.54
	10/07/06		4.75	225.35
04/28/07		4.70	225.40	
W-15	03/15/91	230.80	4.80	226.00
	06/26/91		6.10	224.70
	06/15/92		5.73	225.07
	09/15/92		6.22	224.58
	11/13/92		7.20	223.60
	12/18/92		5.57	225.23
	03/25/93		5.86	224.94
	09/23/93		5.80	225.00
	03/31/94		4.73	226.07
	09/26/94		3.91	226.89
	12/02/94		4.54	226.26
	01/03/95		4.87	225.93
	02/21/95		6.54	224.26
	03/14/95		5.67	225.13
	04/11/95		6.18	224.62
	05/02/95		6.21	224.59
	06/13/95		6.43	224.37
	07/11/95		6.21	224.59
	08/08/95		3.39	227.41
	09/12/95		8.26	222.54
	09/30/95		4.42	226.38
	11/14/95		1.49	229.31
	01/23/96		2.54	228.26
	02/13/96		3.94	226.86
	03/28/96		3.41	227.39
	04/08/96		0.04	230.76
	05/04/96		3.68	227.12
	06/25/96		4.13	226.67
07/16/96		2.20	228.60	
08/20/96		5.03	225.77	
09/30/96		4.42	226.38	
10/15/96		4.29	226.51	
11/12/96		3.54	227.26	
12/10/96		1.62	229.18	
01/14/97		5.19	225.61	
02/11/97		5.42	225.38	
03/28/97		2.52	228.28	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-15	04/22/97		3.10	227.70
	05/16/97		4.71	226.09
	06/27/97		DRY	DRY
	07/15/97		5.30	225.50
	08/25/97		4.04	226.76
	09/02/97		5.09	225.71
	10/14/97		8.89	221.91
	11/29/97		3.80	227.00
	12/20/97		4.27	226.53
	01/31/98		4.41	226.39
	02/28/98		3.98	226.82
	03/06/98		3.91	226.89
	04/24/98		2.05	228.75
	05/17/98		4.28	226.52
	06/25/98		5.35	225.45
	07/24/98		6.92	223.88
	08/30/98		4.76	226.04
	09/27/98		5.50	225.30
	10/24/98		5.87	224.93
	W-15	11/22/98	230.80	7.00
12/30/98			5.20	225.60
01/29/99			3.37	227.43
02/28/99			4.83	225.97
03/13/99			4.00	226.80
04/25/99			3.68	227.12
05/16/99			8.35	222.45
06/27/99			7.57	223.23
07/23/99			9.03	221.77
08/29/99			6.28	224.52
09/27/99			3.56	227.24
11/23/99			3.67	227.13
01/30/00			8.62	222.18
02/27/00			1.12	229.68
03/18/00			1.47	229.33
04/28/00			5.21	225.59
05/09/00			4.76	226.04
06/06/00			5.49	225.31
07/11/00			2.00	228.80
08/15/00			3.03	227.77
09/09/00		4.41	226.39	
10/29/00		8.30	222.50	
11/25/00		2.30	228.50	
12/28/00		3.11	227.69	
01/28/01		1.00	229.80	
02/28/01		3.78	227.02	
03/31/01		1.93	228.87	
04/28/01		5.35	225.45	
W-15	05/31/01		3.50	227.30

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
W-15	06/26/01		2.90	227.90	
	07/31/01		7.30	223.50	
	08/31/01		9.20	221.60	
	09/30/01		4.34	226.46	
	10/28/01		6.65	224.15	
	11/25/01		5.60	225.20	
	12/23/01		3.04	227.76	
	01/13/02		1.30	229.50	
	02/03/02		3.46	227.34	
	03/10/02		4.04	226.76	
	06/09/02		3.58	227.22	
	08/04/02		2.17	228.63	
	08/26/02		2.76	228.04	
	09/28/02		1.23	229.57	
	10/26/02		1.56	229.24	
	01/17/03			NR (1)	NA
	04/26/03			3.81	226.99
	07/05/03			4.26	226.54
	10/25/03			1.08	229.72
	01/24/04			5.62	225.18
	04/28/04			1.68	229.12
	07/24/04			2.10	228.70
	10/29/04			6.00	224.80
01/30/05			4.60	226.20	
04/24/05			3.95	226.85	
07/11/05			3.94	226.86	
10/02/05			8.55	222.25	
01/14/06			0.65	230.15	
W-15	04/29/06	230.80	2.85	227.95	
	10/07/06		3.56	227.24	
	04/28/07		3.44	227.36	
W-16	03/15/91	231.40	4.20	227.20	
	06/26/91		4.70	226.70	
	09/23/91		5.50	225.90	
	06/15/92		4.43	226.97	
	09/15/92		4.80	226.60	
	11/13/92		5.20	226.20	
	12/18/92		2.54	228.86	
	03/25/93		0.00	231.40	
	09/23/93		4.80	226.60	
	03/31/94		2.74	228.66	
	09/26/94		4.92	226.48	
	12/02/94		3.95	227.45	
	01/03/95		3.52	227.88	
	02/21/95		5.12	226.28	
	03/14/95		3.96	227.44	
	W-16	04/11/95		4.78	226.62

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-16	05/02/95		4.81	226.59
	06/13/95		5.28	226.12
	07/11/95		4.81	226.59
	08/08/95		3.99	227.41
	09/12/95		6.72	224.68
	09/30/95		5.40	226.00
	11/14/95		3.12	228.28
	01/23/96		2.89	228.51
	02/13/96		NR (1)	NA
	03/28/96		3.94	227.46
	04/08/96		3.84	227.56
	05/04/96		3.89	227.51
	06/25/96		4.27	227.13
	07/16/96		3.06	228.34
	08/20/96		4.90	226.50
	09/30/96		5.40	226.00
	10/15/96		4.22	227.18
	11/12/96		4.60	226.80
	12/10/96		3.31	228.09
	01/14/97		4.72	226.68
	02/11/97		4.03	227.37
	03/28/97		3.71	227.69
	04/22/97		3.50	227.90
	05/16/97		4.37	227.03
	06/27/97		5.30	226.10
	07/15/97		5.18	226.22
	08/25/97		4.32	227.08
	09/02/97		4.80	226.60
	10/14/97		6.00	225.40
	11/29/97		3.95	227.45
12/20/97		4.30	227.10	
01/31/98		4.10	227.30	
02/28/98		3.42	227.98	
03/06/98		4.10	227.30	
04/24/98		4.31	227.09	
05/17/98		4.11	227.29	
06/25/98		4.90	226.50	
07/24/98		5.92	225.48	
W-16	08/30/98	231.40	5.22	226.18
	09/27/98		5.41	225.99
	10/24/98		5.30	226.10
	11/22/98		6.00	225.40
	12/30/98		4.76	226.64
	01/29/99		4.00	227.40
	02/28/99		5.30	226.10
	03/13/99		4.29	227.11
	04/25/99		3.94	227.46
	05/16/99		5.48	225.92

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
W-16	06/27/99		8.12	223.28	
	07/23/99		7.00	224.40	
	08/29/99		7.27	224.13	
	09/27/99		4.11	227.29	
	11/23/99		4.05	227.35	
	01/30/00		7.11	224.29	
	02/27/00		1.00	230.40	
	03/18/00		1.88	229.52	
	04/28/00		4.68	226.72	
	05/09/00		4.35	227.05	
	06/06/00		4.94	226.46	
	07/11/00		4.71	226.69	
	08/15/00		4.21	227.19	
	09/09/00		4.51	226.89	
	10/29/00		5.32	226.08	
	11/25/00		3.45	227.95	
	12/28/00		4.10	227.30	
	01/28/01		1.33	230.07	
	02/28/01		4.12	227.28	
	03/31/01		2.98	228.42	
	04/28/01		5.08	226.32	
	05/31/01		4.25	227.15	
	06/26/01		4.25	227.15	
	07/31/01		5.98	225.42	
	08/31/01		7.47	223.93	
	09/30/01		4.70	226.70	
	10/28/01		5.68	225.72	
	11/25/01		1.61	229.79	
	12/23/01		3.72	227.68	
	01/13/02		2.57	228.83	
	02/03/02		3.60	227.80	
	03/10/02		1.58	229.82	
	06/09/02		3.88	227.52	
	08/04/02		3.21	228.19	
	08/26/02		3.41	227.99	
	09/28/02		1.15	230.25	
	10/26/02		2.43	228.97	
	01/17/03			NR (1)	NA
	04/26/03			4.22	227.18
	07/05/03			4.72	226.68
10/25/03			1.55	229.85	
01/24/04			5.88	225.52	
04/28/04			2.44	228.96	
07/24/04			3.31	228.09	
10/29/04			6.60	224.80	
01/30/05			4.72	226.68	
04/24/05			4.37	227.03	
W-16	07/11/05	231.40	4.38	227.02	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-16	10/02/05		8.66	222.74
	01/14/06		0.63	230.77
	04/29/06		3.50	227.90
	10/07/06		4.24	227.16
	04/28/07		3.81	227.59
W-18A	03/15/91	230.80	6.80	224.00
	06/26/91		6.60	224.20
	09/23/91		5.40	225.40
	12/17/91		4.80	226.00
	03/24/92		4.64	226.16
	06/15/92		4.83	225.97
	09/15/92		4.78	226.02
	11/13/92		5.40	225.40
	12/18/92		5.20	225.60
	03/25/93		4.96	225.84
	09/23/93		3.58	227.22
	03/31/94		4.25	226.55
	09/26/94		3.72	227.08
	12/02/94		4.40	226.40
	01/03/95		5.10	225.70
	02/21/95		6.12	224.68
	03/14/95		4.91	225.89
	04/11/95		5.02	225.78
	05/02/95		7.83	222.97
	06/13/95		8.68	222.12
	07/11/95		7.83	222.97
	08/08/95		4.00	226.80
	09/12/95		9.40	221.40
	09/30/95		9.04	221.76
	11/14/95		5.83	224.97
	01/23/96		3.12	227.68
	02/13/96		7.45	223.35
	03/28/96		7.85	222.95
	04/08/96		6.66	224.14
	05/04/96		8.81	221.99
06/25/96		9.00	221.80	
07/16/96		6.04	224.76	
08/20/96		9.80	221.00	
09/30/96		9.04	221.76	
10/15/96		8.95	221.85	
11/12/96		8.78	222.02	
12/10/96		9.55	221.25	
01/14/97		8.95	221.85	
02/11/97		9.20	221.60	
03/28/97		8.72	222.08	
04/22/97		9.43	221.37	
W-18A	05/16/97		9.02	221.78



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
W-18A	06/27/97		8.01	222.79	
	07/15/97		8.90	221.90	
	08/25/97		4.00	226.80	
	09/02/97		8.93	221.87	
	10/14/97		9.00	221.80	
	11/29/97		9.01	221.79	
	12/20/97		9.07	221.73	
	01/31/98		9.02	221.78	
	02/28/98		8.89	221.91	
	W-18A	03/06/98	230.80	8.95	221.85
		04/24/98		9.12	221.68
		05/17/98		9.21	221.59
		06/25/98		9.30	221.50
07/24/98			9.05	221.75	
08/30/98			9.32	221.48	
09/27/98			9.00	221.80	
10/24/98			9.04	221.76	
11/22/98			9.19	221.61	
12/30/98			9.00	221.80	
01/29/99			9.00	221.80	
02/28/99			9.01	221.79	
03/13/99			6.33	224.47	
04/25/99			8.78	222.02	
05/16/99			9.40	221.40	
06/27/99			9.31	221.49	
07/23/99			9.95	220.85	
08/29/99			9.30	221.50	
09/27/99			5.57	225.23	
11/23/99			9.21	221.59	
01/30/00			9.62	221.18	
02/27/00			8.40	222.40	
03/18/00			4.45	226.35	
04/28/00			9.50	221.30	
05/09/00			9.22	221.58	
06/06/00			9.67	221.13	
07/11/00			9.20	221.60	
08/15/00		8.34	222.46		
09/09/00		9.00	221.80		
10/29/00		9.00	221.80		
11/25/00		8.77	222.03		
12/28/00		8.87	221.93		
01/28/01		8.75	222.05		
02/28/01		4.93	225.87		
03/31/01		4.08	226.72		
04/28/01		9.22	221.58		
05/31/01		8.95	221.85		
06/26/01		9.50	221.30		
W-18A	07/31/01		9.44	221.36	



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-18A	08/31/01		10.70	220.10
	09/30/01		9.38	221.42
	10/28/01		9.13	221.67
	11/25/01		9.20	221.60
	12/23/01		9.50	221.30
	01/13/02		7.86	222.94
	02/03/02		9.28	221.52
	03/10/02		8.37	222.43
	06/09/02		9.56	221.24
	07/21/02		8.23	222.57
	08/04/02		4.45	226.35
	08/26/02		5.00	225.80
	09/28/02		3.60	227.20
	10/26/02		3.90	226.90
	01/17/03		4.32	226.48
	04/26/03		4.67	226.13
	07/05/03		5.05	225.75
	10/25/03		3.40	227.40
	W-18A	01/24/04	230.80	5.74
04/28/04			3.90	226.90
07/24/04			4.18	226.62
10/29/04			5.06	225.74
01/30/05			4.95	225.85
04/24/05			4.98	225.82
07/11/05			4.76	226.04
10/02/05			8.30	222.50
01/14/06			2.89	227.91
04/30/06			5.15	225.65
10/07/06			4.84	225.96
04/28/07			6.71	224.09
W-19		03/15/91	232.00	27.80
	06/26/91		27.40	204.60
	09/23/91		28.80	203.20
	12/17/91		26.60	205.40
	03/24/92		26.94	205.06
	06/15/92		26.92	205.08
	09/15/92		26.83	205.17
	12/18/92		27.94	204.06
	03/25/93		25.82	206.18
	09/23/93		28.98	203.02
	03/31/94		29.45	202.55
	09/26/94		26.26	205.74
	12/02/94		31.32	200.68
	01/03/95		30.86	201.14
	02/21/95		31.24	200.76
	03/14/95		29.91	202.09
	W-19	04/11/95		31.20



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-19	05/02/95		30.69	201.31
	06/13/95		29.84	202.16
	07/11/95		30.69	201.31
	08/08/95		28.99	203.01
	09/12/95		27.40	204.60
	09/30/95		27.34	204.66
	11/14/95		29.47	202.53
	01/23/96		23.04	208.96
	02/13/96		29.47	202.53
	03/28/96		29.43	202.57
	04/08/96		29.38	202.62
	05/04/96		31.56	200.44
	06/25/96		30.86	201.14
	07/16/96		30.04	201.96
	08/20/96		28.49	203.51
	09/30/96		27.34	204.66
	10/15/96		30.76	201.24
	11/12/96		27.09	204.91
	12/10/96		26.38	205.62
	01/14/97		30.72	201.28
	02/11/97		26.51	205.49
	03/28/97		28.18	203.82
	04/22/97		24.90	207.10
	05/16/97		30.82	201.18
06/27/97		30.55	201.45	
07/15/97		30.31	201.69	
08/25/97		29.93	202.07	
09/02/97		30.40	201.60	
W-19	10/14/97	232.00	31.14	200.86
	11/29/97		25.30	206.70
	12/20/97		30.36	201.64
	01/31/98		28.62	203.38
	02/28/98		27.43	204.57
	03/06/98		28.30	203.70
	04/24/98		29.91	202.09
	05/17/98		23.74	208.26
	06/25/98		30.30	201.70
	07/24/98		31.43	200.57
	08/30/98		30.59	201.41
	09/27/98		30.36	201.64
	10/24/98		26.00	206.00
	11/22/98		30.64	201.36
	12/30/98		28.57	203.43
	01/29/99		28.87	203.13
	02/28/99		26.05	205.95
03/13/99		26.74	205.26	
W-19	04/25/99		29.34	202.66
	05/16/99		29.70	202.30

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-19	06/27/99		31.00	201.00
	07/23/99		29.45	202.55
	08/29/99		30.80	201.20
	09/27/99		27.98	204.02
	11/23/99		25.24	206.76
	01/30/00		30.63	201.37
	02/27/00		23.22	208.78
	03/18/00		29.80	202.20
	04/28/00		28.72	203.28
	05/09/00		28.84	203.16
	06/06/00		29.05	202.95
	07/11/00		28.40	203.60
	08/15/00		28.42	203.58
	09/09/00		28.79	203.21
	10/29/00		91.30	140.70
	11/25/00		28.25	203.75
	12/28/00		30.00	202.00
	01/28/01		29.45	202.55
	02/28/01		29.00	203.00
	03/31/01		22.70	209.30
	04/28/01		28.70	203.30
	05/31/01		28.35	203.65
	06/26/01		27.90	204.10
	07/31/01		30.35	201.65
	08/31/01		28.64	203.36
	09/30/01		28.62	203.38
	10/28/01		28.42	203.58
	11/25/01		28.27	203.73
	12/23/01		28.94	203.06
	01/13/02		27.80	204.20
	02/03/02		30.85	201.15
	03/10/02		28.56	203.44
	06/09/02		28.64	203.36
07/21/02		30.71	201.29	
08/04/02		23.50	208.50	
08/26/02		24.58	207.42	
09/28/02		23.80	208.20	
W-19	10/26/02	232.00	23.20	208.80
	01/17/03		24.20	207.80
	04/26/03		24.80	207.20
	07/05/03		24.60	207.40
	10/25/03		22.70	209.30
	01/24/04		25.25	206.75
	04/28/04		23.36	208.64
	07/24/04		24.00	208.00
	10/29/04		24.55	207.45
	01/30/05		25.05	206.95
04/24/05		25.15	206.85	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-19	07/11/05		22.52	209.48
	10/02/05		25.64	206.36
	01/14/06		19.74	212.26
	04/30/06		22.15	209.85
	10/07/06		24.40	207.60
	04/28/07		24.36	207.64
W-20	03/15/91	234.10	23.60	210.50
	06/26/91		23.30	210.80
	09/23/91		23.60	210.50
	12/17/91		22.60	211.50
	06/15/92		23.44	210.66
	09/15/92		23.50	210.60
	12/18/92		23.73	210.37
	03/25/93		22.95	211.15
	09/23/93		25.58	208.52
	03/31/94		21.19	212.91
	09/26/94		25.24	208.86
	12/02/94		24.74	209.36
	01/03/95		23.20	210.90
	02/21/95		24.30	209.80
	03/14/95		22.93	211.17
	04/11/95		24.39	209.71
	05/02/95		24.44	209.66
	06/13/95		25.12	208.98
	07/11/95		24.44	209.66
	08/08/95		24.18	209.92
	09/12/95		25.69	208.41
	09/30/95		26.69	207.41
	11/14/95		21.02	213.08
	01/23/96		20.41	213.69
	02/13/96		22.78	211.32
	03/28/96		23.04	211.06
	04/08/96		22.68	211.42
	05/04/96		23.12	210.98
	06/25/96		24.64	209.46
	07/16/96		21.34	212.76
	08/20/96		22.98	211.12
09/30/96		26.69	207.41	
10/15/96		22.84	211.26	
11/12/96		23.61	210.49	
12/10/96		20.49	213.61	
01/14/97		23.58	210.52	
02/11/97		23.76	210.34	
03/28/97		23.24	210.86	
04/22/97		21.80	212.30	
05/16/97		23.11	210.99	
W-20	06/27/97	234.10	24.83	209.27



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-20	07/15/97		24.20	209.90
	08/25/97		24.08	210.02
	09/02/97		24.06	210.04
	10/14/97		25.63	208.47
	11/29/97		22.83	211.27
	12/20/97		23.91	210.19
	01/31/98		22.30	211.80
	02/28/98		21.64	212.46
	03/06/98		22.20	211.90
	04/24/98		23.95	210.15
	05/17/98		22.26	211.84
	06/25/98		23.59	210.51
	07/24/98		25.00	209.10
	08/30/98		26.09	208.01
	09/27/98		25.30	208.80
	10/24/98		25.36	208.74
	11/22/98		26.57	207.53
	12/30/98		26.89	207.21
	01/29/99		24.03	210.07
	02/28/99		23.29	210.81
	03/13/99		23.56	210.54
	04/25/99		23.40	210.70
	05/16/99		25.40	208.70
	06/27/99		25.67	208.43
	07/23/99		26.45	207.65
	08/29/99		25.00	209.10
	09/27/99		21.42	212.68
	11/23/99		24.38	209.72
	01/30/00		25.30	208.80
	02/27/00		21.92	212.18
	03/18/00		22.38	211.72
	04/28/00		23.75	210.35
	05/09/00		23.17	210.93
	06/06/00		24.64	209.46
	07/11/00		24.50	209.60
	08/15/00		24.30	209.80
	09/09/00		24.15	209.95
	10/29/00		25.45	208.65
	11/25/00		23.62	210.48
12/28/00		23.83	210.27	
01/28/01		25.27	208.83	
02/28/01		23.27	210.83	
03/31/01		21.30	212.80	
04/28/01		24.57	209.53	
05/31/01		24.72	209.38	
06/26/01		24.71	209.39	
07/31/01		25.94	208.16	
W-20	08/31/01		26.35	207.75

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
W-20	09/30/01		25.20	208.90	
	10/28/01		26.10	208.00	
	11/25/01		26.72	207.38	
	12/23/01		26.71	207.39	
	01/13/02		24.82	209.28	
	02/03/02		25.55	208.55	
	03/10/02		25.78	208.32	
	06/09/02		22.02	212.08	
	W-20	07/21/02	234.10	22.92	211.18
		08/04/02		20.64	213.46
08/26/02			20.37	213.73	
09/28/02			19.25	214.85	
10/26/02			19.21	214.89	
01/17/03			18.00	216.10	
04/26/03			17.86	216.24	
07/05/03			18.60	215.50	
10/25/03			18.94	215.16	
01/24/04			19.85	214.25	
04/28/04			18.68	215.42	
07/24/04			18.61	215.49	
10/29/04			19.76	214.34	
01/30/05			19.65	214.45	
04/24/05			18.35	215.75	
07/11/05			19.25	214.85	
10/02/05			21.78	212.32	
01/14/06			17.61	216.49	
04/30/06		19.65	214.45		
10/07/06		22.25	211.85		
04/28/07		21.65	212.45		
W-21	03/15/91	211.00	13.90	197.10	
	06/26/91		15.00	196.00	
	09/23/91		15.70	195.30	
	12/17/91		12.20	198.80	
	06/15/92		14.10	196.90	
	09/15/92		15.59	195.41	
	12/18/92		12.18	198.82	
	03/25/93		9.50	201.50	
	09/23/93		17.90	193.10	
	03/31/94		6.75	204.25	
	09/26/94		11.11	199.89	
	12/02/94		13.35	197.65	
	01/03/95		11.40	199.60	
	02/21/95		16.18	194.82	
	03/14/95		11.11	199.89	
	04/11/95		14.64	196.36	
W-21	05/02/95		14.33	196.67	
	06/13/95		15.54	195.46	



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-21	07/11/95		14.33	196.67
	08/08/95		13.31	197.69
	09/12/95		16.80	194.20
	09/30/95		18.40	192.60
	11/14/95		9.58	201.42
	01/23/96		6.24	204.76
	02/13/96		11.94	199.06
	03/28/96		13.02	197.98
	04/08/96		12.54	198.46
	05/04/96		13.01	197.99
	06/25/96		15.22	195.78
	07/16/96		9.60	201.40
	08/20/96		14.06	196.94
	09/30/96		18.40	192.60
	10/15/96		12.78	198.22
	11/12/96		12.70	198.30
	12/10/96		8.86	202.14
01/14/97		13.74	197.26	
W-21	02/11/97	211.00	12.40	198.60
	03/28/97		11.41	199.59
	04/22/97		10.60	200.40
	05/16/97		13.21	197.79
	06/27/97		13.46	197.54
	07/15/97		14.28	196.72
	08/25/97		13.05	197.95
	09/02/97		15.55	195.45
	10/14/97		16.34	194.66
	11/29/97		12.56	198.44
	12/20/97		14.65	196.35
	01/31/98		12.11	198.89
	02/28/98		10.26	200.74
	03/06/98		11.84	199.16
	04/24/98		13.88	197.12
	05/17/98		11.66	199.34
	06/25/98		14.14	196.86
	07/24/98		16.18	194.82
	08/30/98		16.48	194.52
	09/27/98		16.00	195.00
	10/24/98		16.34	194.66
	11/22/98		17.50	193.50
	12/30/98		18.20	192.80
01/29/99		12.60	198.40	
02/28/99		9.49	201.51	
03/13/99		13.37	197.63	
04/25/99		13.02	197.98	
05/16/99		16.44	194.56	
06/27/99		16.85	194.15	
07/23/99		17.70	193.30	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-21	08/29/99		16.58	194.42
	09/27/99		13.38	197.62
	11/23/99		14.96	196.04
	01/30/00		16.36	194.64
	02/27/00		8.92	202.08
	03/18/00		10.13	200.87
	04/28/00		14.38	196.62
	05/09/00		13.21	197.79
	06/06/00		15.41	195.59
	07/11/00		13.30	197.70
	08/15/00		14.11	196.89
	09/09/00		14.46	196.54
	10/29/00		15.54	195.46
	11/25/00		15.48	195.52
	12/28/00		14.78	196.22
	01/28/01		15.72	195.28
	02/28/01		9.30	201.70
	03/31/01		9.36	201.64
	04/28/01		15.30	195.70
	05/31/01		13.87	197.13
06/26/01		15.14	195.86	
07/31/01		16.78	194.22	
08/31/01		18.05	192.95	
09/30/01		15.12	195.88	
10/28/01		17.25	193.75	
11/25/01		18.22	192.78	
12/23/01		18.80	192.20	
W-21	01/13/02	211.00	17.95	193.05
	02/03/02		16.60	194.40
	03/10/02		16.68	194.32
	06/09/02		9.91	201.09
	07/21/02		11.54	199.46
	08/04/02		10.87	200.13
	08/26/02		10.97	200.03
	09/28/02		10.19	200.81
	10/26/02		8.20	202.80
	01/17/03		7.41	203.59
	04/26/03		9.18	201.82
	07/05/03		9.21	201.79
	10/25/03		7.78	203.22
	01/24/04		11.20	199.80
	04/28/04		4.56	206.44
	07/24/04		11.10	199.90
	10/29/04		10.33	200.67
01/30/05		10.60	200.40	
04/24/05		11.15	199.85	
07/11/05		9.11	201.89	
10/02/05		13.80	197.20	



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-21	01/14/06		6.06	204.94
	04/30/06		8.30	202.70
	10/07/06		11.03	199.97
	04/28/07		9.85	201.15
W-22	03/15/91	198.50	9.80	188.70
	06/26/91		10.20	188.30
	09/23/91		10.30	188.20
	06/15/92		11.89	186.61
W-22	09/15/92		10.05	188.45
	12/18/92		6.95	191.55
	09/23/93		19.90	178.60
	03/31/94		3.53	194.97
	09/26/94		7.29	191.21
	12/02/94		8.24	190.26
	01/03/95		8.06	190.44
	02/21/95		8.62	189.88
	03/14/95		7.73	190.77
	04/11/95		8.64	189.86
	05/02/95		8.71	189.79
	06/13/95		10.13	188.37
	07/11/95		8.71	189.79
	08/08/95		8.66	189.84
	09/12/95		12.68	185.82
	09/30/95		11.70	186.80
	11/14/95		6.78	191.72
	01/23/96		3.63	194.87
	02/13/96		8.72	189.78
	03/28/96		9.41	189.09
04/08/96		8.57	189.93	
05/04/96		9.31	189.19	
06/25/96		9.54	188.96	
07/16/96		4.96	193.54	
08/20/96		8.92	189.58	
09/30/96		11.70	186.80	
10/15/96		8.89	189.61	
11/12/96		7.68	190.82	
W-22	12/10/96	198.50	7.20	191.30
	01/14/97		8.03	190.47
	02/11/97		8.00	190.50
	03/28/97		7.57	190.93
	04/22/97		7.59	190.91
	05/16/97		8.22	190.28
	06/27/97		9.30	189.20
	07/15/97		7.75	190.75
	08/25/97		9.04	189.46
	09/02/97		9.21	189.29
	10/14/97		9.69	188.81

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-22	11/29/97		7.89	190.61
	12/20/97		8.09	190.41
	01/31/98		7.75	190.75
	02/28/98		7.53	190.97
	03/06/98		7.85	190.65
	04/24/98		8.66	189.84
	05/17/98		7.79	190.71
	06/25/98		9.05	189.45
	07/24/98		10.12	188.38
	08/30/98		10.29	188.21
	09/27/98		9.83	188.67
	10/24/98		9.17	189.33
	11/22/98		9.56	188.94
	12/30/98		9.60	188.90
	01/29/99		18.04	180.46
	02/28/99		7.40	191.10
	03/13/99		8.65	189.85
	04/25/99		9.14	189.36
	05/16/99		9.47	189.03
	06/27/99		10.56	187.94
	07/23/99		11.16	187.34
	08/29/99		10.28	188.22
	09/27/99		8.70	189.80
	11/23/99		9.17	189.33
	01/30/00		10.00	188.50
	02/27/00		6.66	191.84
	03/18/00		7.88	190.62
	04/28/00		8.72	189.78
	05/09/00		7.79	190.71
	06/06/00		9.57	188.93
	07/11/00		8.90	189.60
	08/15/00		8.70	189.80
	09/09/00		9.09	189.41
	10/29/00		8.75	189.75
	11/25/00		8.67	189.83
	12/28/00		8.15	190.35
01/28/01		8.36	190.14	
02/28/01		7.40	191.10	
03/31/01		7.21	191.29	
04/28/01		8.92	189.58	
05/31/01		9.21	189.29	
06/26/01		9.32	189.18	
07/31/01		10.40	188.10	
08/31/01		11.25	187.25	
09/30/01		10.00	188.50	
10/28/01		10.00	188.50	
W-22	11/25/01	198.50	10.21	188.29
	12/23/01		9.86	188.64

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-22	01/13/02		10.12	188.38
	02/03/02		8.78	189.72
	03/10/02		8.85	189.65
	06/09/02		7.95	190.55
	08/04/02		7.75	190.75
	08/26/02		8.30	190.20
	09/28/02		7.20	191.30
	10/26/02		4.98	193.52
	01/17/03		5.07	193.43
	04/26/03		5.77	192.73
	07/05/03		6.08	192.42
	10/25/03		5.42	193.08
	01/24/04		6.62	191.88
	04/28/04		5.74	192.76
	07/24/04		7.55	190.95
	10/29/04		5.97	192.53
	01/30/05		5.81	192.69
	04/24/05		6.05	192.45
	07/11/05		5.12	193.38
	10/02/05		9.30	189.20
01/14/06		4.55	193.95	
04/29/06		5.60	192.90	
10/07/06		5.97	192.53	
W-22	04/28/07		5.72	192.78
W-23	03/15/91	229.00	9.00	220.00
	06/26/91		9.20	219.80
	09/23/91		9.50	219.50
	09/23/91		9.50	219.50
	06/15/92		9.25	219.75
	09/15/92		9.37	219.63
	11/13/92		8.04	220.96
	12/18/92		8.16	220.84
	03/25/93		0.00	229.00
	09/23/93		9.70	219.30
	03/31/94		8.31	220.69
	09/26/94		11.34	217.66
	12/02/94		11.07	217.93
	01/03/95		8.59	220.41
	02/21/95		11.82	217.18
	03/14/95		10.93	218.07
	04/11/95		11.23	217.77
	05/02/95		11.76	217.24
	06/13/95		12.26	216.74
	07/11/95		11.76	217.24
08/08/95		11.12	217.88	
09/12/95		13.12	215.88	
W-23	09/30/95		12.60	216.40

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-23	11/14/95		NM	NA
	01/23/96		10.98	218.02
	02/13/96		NR (1)	NA
	03/28/96		10.05	218.95
	04/08/96		7.33	221.67
	05/04/96		10.80	218.20
	06/25/96		6.60	222.40
W-23	07/16/96		5.98	223.02
	08/20/96	229.00	5.20	223.80
	09/30/96		12.60	216.40
	10/15/96		2.10	226.90
	11/12/96		0.86	228.14
	12/10/96		NM	NA
	01/14/97		7.60	221.40
	02/11/97		10.25	218.75
	03/28/97		10.84	218.16
	04/22/97		8.73	220.27
	05/16/97		8.14	220.86
	06/27/97		14.29	214.71
	07/15/97		10.48	218.52
	08/25/97		14.74	214.26
	09/02/97		15.09	213.91
	10/14/97		15.91	213.09
	11/29/97		12.70	216.30
12/20/97		13.40	215.60	
01/31/98		12.45	216.55	
02/28/98		8.90	220.10	
W-23	03/06/98		11.80	217.20
	04/24/98		12.31	216.69
	05/17/98		11.96	217.04
	06/25/98		12.05	216.95
	07/24/98		20.32	208.68
	08/30/98		12.66	216.34
	09/27/98		12.30	216.70
	10/24/98		12.34	216.66
	11/22/98		23.43	205.57
	12/30/98		23.70	205.30
	01/29/99		12.13	216.87
	02/28/99		13.34	215.66
	03/13/99		12.89	216.11
	04/25/99		10.80	218.20
	05/16/99		14.36	214.64
06/27/99		15.00	214.00	
07/23/99		16.05	212.95	
08/29/99		14.59	214.41	
09/27/99		11.31	217.69	
11/23/99		9.80	219.20	
W-23	01/30/00		11.48	217.52

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
W-23	02/27/00		10.97	218.03	
	03/18/00		11.41	217.59	
	04/28/00		12.20	216.80	
	05/09/00		11.99	217.01	
	06/06/00		12.10	216.90	
	07/11/00		11.50	217.50	
	08/15/00		11.21	217.79	
	09/09/00		11.27	217.73	
	10/29/00		12.23	216.77	
	11/25/00		11.14	217.86	
	12/28/00		12.50	216.50	
	01/28/01		14.26	214.74	
	02/28/01		11.81	217.19	
	03/31/01		10.17	218.83	
	04/28/01		14.98	214.02	
	05/31/01		15.36	213.64	
	06/26/01		15.60	213.40	
	W-23	07/31/01	229.00	16.81	212.19
		08/31/01		17.32	211.68
		09/30/01		14.54	214.46
10/28/01			15.00	214.00	
11/25/01			16.27	212.73	
12/23/01			15.20	213.80	
01/13/02			14.08	214.92	
02/03/02			14.22	214.78	
03/10/02			14.34	214.66	
06/09/02			11.08	217.92	
08/04/02			13.81	215.19	
08/26/02			12.71	216.29	
09/28/02			11.30	217.70	
10/26/02			11.70	217.30	
01/17/03			12.14	216.86	
04/26/03			13.38	215.62	
07/05/03			12.80	216.20	
10/25/03			10.20	218.80	
01/24/04			13.50	215.50	
04/28/04			13.36	215.64	
07/24/04		12.35	216.65		
10/29/04		14.05	214.95		
01/30/05		10.51	218.49		
04/24/05		13.74	215.26		
07/11/05		14.57	214.43		
10/02/05		17.43	211.57		
01/14/06		10.92	218.08		
04/29/06		13.86	215.14		
10/07/06		16.64	212.36		
W-23	04/28/07		13.20	215.80	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-24	03/15/91	202.20	8.20	194.00
	06/26/91		10.00	192.20
	09/23/91		11.50	190.70
	12/17/91		8.20	194.00
	03/24/92		8.34	193.86
	06/15/92		9.54	192.66
	09/15/92		9.50	192.70
	12/18/92		7.94	194.26
	03/25/93		6.97	195.23
	09/23/93		10.85	191.35
	03/31/94		6.52	195.68
	09/26/94		7.73	194.47
	12/02/94		8.21	193.99
	01/03/95		7.92	194.28
	02/21/95		8.71	193.49
	03/14/95		8.24	193.96
	04/11/95		8.70	193.50
	05/02/95		9.28	192.92
	06/13/95		10.18	192.02
	07/11/95		9.28	192.92
	08/08/95		9.11	193.09
	09/12/95		11.67	190.53
	09/30/95		9.89	192.31
	11/14/95		7.66	194.54
	01/23/96		7.30	194.90
	02/13/96		8.33	193.87
	03/28/96		8.45	193.75
	W-24		04/08/96	202.20
05/04/96		8.00	194.20	
06/25/96		9.63	192.57	
07/16/96		7.78	194.42	
08/20/96		9.91	192.29	
09/30/96		9.89	192.31	
10/15/96		8.53	193.67	
11/12/96		8.18	194.02	
12/10/96		7.49	194.71	
01/14/97		8.68	193.52	
02/11/97		8.42	193.78	
03/28/97		7.96	194.24	
04/22/97		7.83	194.37	
05/16/97		8.01	194.19	
06/27/97		8.10	194.10	
07/15/97		10.16	192.04	
08/25/97		10.30	191.90	
09/02/97	10.34	191.86		
10/14/97	11.83	190.37		
11/29/97	8.60	193.60		
W-24	12/20/97		8.40	193.80

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-24	01/31/98		8.18	194.02
	02/28/98		7.64	194.56
	03/06/98		7.97	194.23
	04/24/98		8.33	193.87
	05/17/98		8.06	194.14
	06/25/98		8.87	193.53
	07/24/98		10.15	192.25
	08/30/98		11.20	191.20
	09/27/98		12.10	190.30
	10/24/98		10.31	192.09
	11/22/98		11.08	191.32
	12/30/98		11.01	191.39
	01/29/99		8.28	194.12
	02/28/99		7.60	194.80
	03/13/99		8.31	194.09
	04/25/99		8.54	193.86
	05/16/99		9.76	192.64
	06/27/99		11.30	191.10
	07/23/99		12.42	189.98
	08/29/99		11.10	191.30
	09/27/99		9.84	192.56
	11/23/99		9.19	193.21
	01/30/00		10.05	192.35
	02/27/00		7.42	194.98
	03/18/00		8.11	194.29
	04/28/00		9.40	193.00
	05/09/00		8.06	194.34
	06/06/00		9.98	192.42
	07/11/00		9.75	192.65
	08/15/00		9.41	192.99
09/09/00		9.40	193.00	
10/29/00		9.25	193.15	
11/25/00		9.47	192.93	
12/28/00		8.12	194.28	
01/28/01		9.00	193.40	
02/28/01		7.30	195.10	
W-24	03/31/01	202.20	7.80	194.60
	04/28/01		9.50	192.90
	05/31/01		9.47	192.93
	06/26/01		9.77	192.63
	07/31/01		11.52	190.88
	08/31/01		13.42	188.98
	09/30/01		11.90	190.50
	10/28/01		12.26	190.14
	11/25/01		12.36	190.04
	12/23/01		11.45	190.95
W-24	01/13/02		10.60	191.80
	02/03/02		10.12	192.28

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-24	03/10/02		10.00	192.40
	06/09/02		8.65	193.75
	08/04/02		8.73	193.67
	08/26/02		10.11	192.29
	09/28/02		9.17	193.23
	10/26/02		8.08	194.32
	01/17/03		8.00	194.40
	04/26/03		8.44	193.96
	07/05/03		8.56	193.84
	10/25/03		8.00	194.40
	01/24/04		8.45	193.95
	04/28/04		8.43	193.97
	07/24/04		10.00	192.40
	10/29/04		8.33	194.07
	01/30/05		8.36	194.04
	04/24/05		8.21	194.19
	07/11/05		8.04	194.36
	10/02/05		12.16	190.24
	01/14/06		7.14	195.26
	04/29/06		8.25	194.15
10/07/06		8.42	193.78	
04/28/07		7.80	194.40	
W-25	03/15/91	197.40	8.00	189.40
	06/26/91		9.00	188.40
	09/23/91		9.70	187.70
	12/17/91		7.80	189.60
	03/24/92		7.96	189.44
	06/15/92		8.68	188.72
	09/15/92		8.95	188.45
	12/18/92		6.28	191.12
	03/25/93		5.42	191.98
	09/23/93		9.34	188.06
	03/31/94		5.20	192.20
	09/26/94		5.08	192.32
	12/02/94		7.50	189.90
	01/03/95		6.69	190.71
	02/21/95		7.39	190.01
	03/14/95		7.46	189.94
	04/11/95		7.19	190.21
	05/02/95		8.20	189.20
	06/13/95		8.92	188.48
	07/11/95		8.20	189.20
08/08/95		8.19	189.21	
09/12/95		10.14	187.26	
09/30/95		11.64	185.76	
W-25	11/14/95	197.40	8.04	189.36
	01/23/96		5.98	191.42



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-25	02/13/96		7.49	189.91
	03/28/96		8.00	189.40
	04/08/96		7.28	190.12
	05/04/96		8.40	189.00
	06/25/96		8.52	188.88
	07/16/96		5.75	191.65
	08/20/96		8.88	188.52
	09/30/96		11.64	185.76
	10/15/96		7.54	189.86
	11/12/96		7.39	190.01
	12/10/96		6.56	190.84
	01/14/97		8.13	189.27
	02/11/97		7.88	189.52
	03/28/97		7.17	190.23
	04/22/97		7.16	190.24
	05/16/97		7.77	189.63
	06/27/97		7.97	189.43
	07/15/97		9.26	188.14
	08/25/97		9.19	188.21
	09/02/97		9.31	188.09
	10/14/97		9.90	187.50
	11/29/97		7.80	189.60
	12/20/97		8.00	189.40
	01/31/98		7.68	189.72
	02/28/98		7.24	190.16
	03/06/98		7.67	189.73
	04/24/98		7.76	189.64
	05/17/98		7.90	189.50
	06/25/98		8.48	188.92
	07/24/98		9.53	187.87
	08/30/98		10.08	187.32
	09/27/98		10.05	187.35
10/24/98		8.97	188.43	
11/22/98		9.32	188.08	
12/30/98		9.19	188.21	
01/29/99		8.40	189.00	
02/28/99		6.42	190.98	
03/13/99		7.91	189.49	
04/25/99		8.00	189.40	
05/16/99		8.87	188.53	
06/27/99		10.12	187.28	
07/23/99		10.84	186.56	
08/29/99		10.00	187.40	
09/27/99		8.70	188.70	
11/23/99		8.08	189.32	
01/30/00		8.70	188.70	
02/27/00		6.30	191.10	
03/18/00		6.30	191.10	



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-25	04/28/00		8.00	189.40
	05/09/00		7.77	189.63
	06/06/00		9.20	188.20
	07/11/00		8.77	188.63
	08/15/00		8.67	188.73
	09/09/00		8.77	188.63
	10/29/00		8.30	189.10
W-25	11/25/00	197.40	8.27	189.13
	12/28/00		8.20	189.20
	01/28/01		7.87	189.53
	02/28/01		6.05	191.35
	03/31/01		5.89	191.51
	04/28/01		8.35	189.05
	05/31/01		8.60	188.80
	06/26/01		8.96	188.44
	07/31/01		10.08	187.32
	08/31/01		11.05	186.35
	09/30/01		9.85	187.55
	10/28/01		10.28	187.12
	11/25/01		10.13	187.27
	12/23/01		9.43	187.97
	01/13/02		8.39	189.01
	02/03/02		8.35	189.05
	03/10/02		8.49	188.91
	06/09/02		7.63	189.77
	07/21/02		8.13	189.27
	08/04/02		7.69	189.71
	08/26/02		8.77	188.63
	09/28/02		7.57	189.83
	10/26/02		6.67	190.73
	01/17/03		7.12	190.28
	04/26/03		7.33	190.07
	07/05/03		8.11	189.29
	10/25/03		5.68	191.72
	01/24/04		7.64	189.76
	04/28/04		6.89	190.51
	07/24/04		5.40	192.00
	10/29/04		7.31	190.09
	01/30/05		7.20	190.20
04/24/05		7.14	190.26	
07/11/05		7.71	189.69	
10/02/05		10.05	187.35	
01/14/06		5.95	191.45	
04/29/06		7.14	190.26	
10/07/06		7.50	189.90	
W-25	04/28/07		7.00	190.40

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-26	03/15/91	198.90	11.10	187.80
	06/14/91		11.70	187.20
	09/23/91		15.00	183.90
	12/17/91		12.80	186.10
	03/24/92		18.61	180.29
	06/15/92		11.37	187.53
W-26C	09/04/92	208.49	DRY	DRY
	09/15/92		DRY	DRY
	09/23/92		DRY	DRY
	10/07/92		DRY	DRY
	12/01/92		DRY	DRY
	12/18/92		DRY	DRY
	03/25/93		DRY	DRY
	09/23/93		DRY	DRY
	10/14/97		DRY	DRY
	11/29/97		DRY	DRY
W-26C	12/20/97	208.49	DRY	DRY
	01/31/98		DRY	DRY
	02/28/98		DRY	DRY
	03/06/98		DRY	DRY
	04/24/98		DRY	DRY
	05/17/98		DRY	DRY
	06/25/98		DRY	DRY
	07/24/98		DRY	DRY
	08/30/98		DRY	DRY
	09/27/98		DRY	DRY
	10/24/98		DRY	DRY
	11/22/98		DRY	DRY
	12/30/98		DRY	DRY
	01/29/99		DRY	DRY
	02/28/99		DRY	DRY
	03/13/99		DRY	DRY
	04/25/99		DRY	DRY
	05/16/99		DRY	DRY
	06/27/99		DRY	DRY
	07/23/99		DRY	DRY
08/29/99	DRY	DRY		
09/27/99	DRY	DRY		
11/23/99	NM	NA		
01/30/00	DRY	DRY		
02/27/00	DRY	DRY		
03/18/00	DRY	DRY		
04/28/00	DRY	DRY		
05/09/00	DRY	DRY		
06/06/00	DRY	DRY		
07/11/00	DRY	DRY		
W-26C	08/15/00		DRY	DRY



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
W-26C	09/09/00		DRY	DRY	
	10/29/00		DRY	DRY	
	11/25/00		DRY	DRY	
	12/28/00		DRY	DRY	
	01/28/01		DRY	DRY	
	02/28/01		DRY	DRY	
	03/31/01		DRY	DRY	
	04/28/01		DRY	DRY	
	05/31/01		DRY	DRY	
	06/26/01		DRY	DRY	
	07/31/01		DRY	DRY	
	08/31/01		DRY	DRY	
	09/30/01		DRY	DRY	
	10/28/01		DRY	DRY	
	11/25/01		DRY	DRY	
	12/23/01		DRY	DRY	
	01/13/02		DRY	DRY	
	02/03/02		DRY	DRY	
	03/10/02		DRY	DRY	
	06/09/02		DRY	DRY	
	08/04/02		DRY	DRY	
	08/26/02		DRY	DRY	
	09/28/02		DRY	DRY	
10/26/02			13.45	195.04	
01/17/03			DRY	DRY	
04/26/03			DRY	DRY	
07/05/03			DRY	DRY	
W-26C	10/25/03	208.49	13.40	195.09	
	01/24/04		DRY	DRY	
	04/28/04		DRY	DRY	
	07/24/04		13.75	194.74	
	10/29/04		13.78	194.71	
	01/30/05		13.75	194.74	
	04/24/05		DRY	DRY	
	07/11/05		DRY	DRY	
	10/02/05		13.82	194.67	
	01/14/06		12.84	195.65	
W-26C	04/29/06		13.55	194.94	
	10/07/06		13.69	194.80	
	04/28/07		13.59	194.90	
	W-26D	09/04/92	208.75	16.34	192.41
		09/15/92		16.55	192.20
09/23/92			16.79	191.96	
10/07/92			16.81	191.94	
12/01/92			16.82	191.93	
12/18/92			13.50	195.08	
03/25/93			14.38	194.20	



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-26D	09/23/93		17.20	191.38
	03/31/94		17.59	190.99
	09/26/94		18.82	189.76
	12/02/94		17.32	191.26
	01/03/95		17.02	191.56
	02/21/95		17.28	191.30
	03/14/95		17.24	191.34
	04/11/95		17.26	191.32
	06/13/95		17.34	191.24
	07/11/95		NM	NA
	08/08/95		17.24	191.34
	09/12/95		17.69	190.89
	09/30/95		5.63	202.95
	11/14/95		17.04	191.54
	01/23/96		12.50	196.08
	02/13/96		17.60	190.98
	03/28/96		18.40	190.18
	04/08/96		17.94	190.64
	05/04/96		17.80	190.78
	06/25/96		17.00	191.58
	07/16/96		18.02	190.56
	08/20/96		17.52	191.06
	09/30/96		5.63	202.95
10/15/96		15.05	193.53	
11/12/96		16.27	192.31	
W-26D	12/10/96	208.75	14.76	193.82
	01/14/97		16.35	192.23
	02/11/97		16.04	192.54
	03/28/97		18.11	190.47
	04/22/97		15.00	193.58
	05/16/97		18.10	190.48
	06/27/97		17.80	190.78
	07/15/97		18.02	190.56
	08/25/97		18.24	190.34
	09/02/97		18.26	190.32
	10/14/97		17.73	190.85
W-26D	11/29/97		15.50	193.08
	12/20/97	208.75	16.70	191.88
	01/31/98		16.90	191.68
	02/28/98		16.55	192.03
	03/06/98		18.11	190.47
	04/24/98		15.94	192.64
	05/17/98		15.00	193.60
	06/25/98		15.61	192.99
	07/24/98		16.80	191.80
	08/30/98		17.00	191.60
09/27/98		17.41	191.19	
10/24/98		16.46	192.14	



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-26D	11/22/98		18.50	190.10
	12/30/98		17.23	191.37
	01/29/99		14.99	193.61
	02/28/99		17.50	191.10
	03/13/99		16.60	192.00
	04/25/99		18.05	190.55
	05/16/99		18.30	190.30
	06/27/99		17.45	191.15
	07/23/99		18.10	190.50
	08/29/99		17.40	191.20
	09/27/99		14.20	194.40
	11/23/99		15.57	193.03
	01/30/00		16.61	191.99
	02/27/00		12.94	195.66
	03/18/00		14.65	193.95
	04/28/00		15.72	192.88
	05/09/00		16.42	192.18
	06/06/00		16.50	192.10
	07/11/00		15.33	193.27
	08/15/00		15.31	193.29
	09/09/00		15.54	193.06
	10/29/00		16.20	192.40
	11/25/00		16.11	192.49
	12/28/00		16.25	192.35
	01/28/01		18.92	189.68
	02/28/01		21.60	187.00
	03/31/01		15.10	193.50
	04/28/01		16.28	192.32
	05/31/01		15.57	193.03
	06/26/01		16.28	192.32
	07/31/01		17.40	191.20
	08/31/01		18.00	190.60
	09/30/01		18.00	190.60
10/28/01		18.20	190.40	
11/25/01		18.05	190.55	
12/23/01	208.58	17.45	191.15	
01/13/02		18.45	190.15	
02/03/02		18.56	190.04	
03/10/02		18.57	190.03	
06/09/02		18.50	190.10	
07/21/02		15.30	193.30	
08/04/02		13.15	195.45	
08/26/02		14.20	194.40	
09/28/02		13.15	195.45	
10/26/02		13.10	195.50	
01/17/03		13.71	194.89	
W-26D	04/26/03	208.58	13.64	194.96
	07/05/03		13.80	194.80

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-26D	10/25/03		12.80	195.80
	01/24/04		13.80	194.80
	04/28/04		13.20	195.40
	07/24/04		13.59	195.01
	10/29/04		13.25	195.35
	01/30/05		13.29	195.31
	04/24/05		13.27	195.33
	07/11/05		13.08	195.52
	10/02/05		15.75	192.85
	01/14/06		12.22	196.38
	04/30/06		12.81	195.79
	10/07/06		13.04	195.54
	04/28/07		12.83	195.75
	W-27	03/15/91	199.90	16.30
06/26/91			17.70	182.20
09/23/91			17.60	182.30
12/17/91			16.40	183.50
03/24/92			16.50	183.40
06/15/92			17.23	182.67
09/15/92			17.45	182.45
12/18/92			15.68	184.22
03/25/93			15.68	184.22
09/23/93			17.30	182.60
03/31/94			15.09	184.81
09/26/94			16.91	182.99
12/02/94			16.11	183.79
01/03/95			15.96	183.94
02/21/95		16.08	183.82	
W-27	03/14/95		16.09	183.81
	04/11/95		16.31	183.59
	05/02/95		16.57	183.33
	06/13/95		17.30	182.60
	07/11/95		16.57	183.33
	08/08/95		16.82	183.08
	09/12/95		19.08	180.82
	09/30/95		19.11	180.79
	11/14/95		15.67	184.23
	01/23/96		15.14	184.76
	02/13/96		16.22	183.68
	03/28/96		16.47	183.43
	04/08/96		16.08	183.82
	05/04/96		16.40	183.50
06/25/96		16.95	182.95	
07/16/96		15.64	184.26	
08/20/96		17.27	182.63	
W-27	09/30/96	199.90	19.11	180.79
	10/15/96		16.35	183.55

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-27	11/12/96		16.04	183.86
	12/10/96		15.65	184.25
	01/14/97		16.42	183.48
	02/11/97		16.25	183.65
	03/28/97		15.90	184.00
	04/22/97		15.90	184.00
	05/16/97		16.42	183.48
	06/27/97		16.55	183.35
	07/15/97		17.78	182.12
	08/25/97		17.49	182.41
	09/02/97		25.30	174.60
	10/14/97		17.96	181.94
	11/29/97		17.09	182.81
	12/20/97		16.39	183.51
	01/31/98		16.00	183.90
	02/28/98		16.00	183.90
	03/06/98		16.16	183.74
	04/24/98		16.36	183.54
	05/17/98		16.20	183.70
	06/25/98		15.95	183.95
	07/24/98		18.10	181.80
	08/30/98		18.40	181.50
	09/27/98		18.14	181.76
	10/24/98		17.17	182.73
	11/22/98		17.47	182.43
	12/30/98		17.30	182.60
	01/29/99		16.41	183.49
	02/28/99		16.80	183.10
	03/13/99		16.44	183.46
	04/25/99		16.47	183.43
	05/16/99		17.24	182.66
	06/27/99		18.68	181.22
	07/23/99		36.85	163.05
08/29/99		18.51	181.39	
09/27/99		16.74	183.16	
11/23/99		16.67	183.23	
01/30/00		16.68	183.22	
02/27/00		15.48	184.42	
03/18/00		15.95	183.95	
04/28/00		16.31	183.59	
05/09/00		16.24	183.66	
06/06/00		17.58	182.32	
07/11/00		16.86	183.04	
08/15/00		16.90	183.00	
09/09/00		17.10	182.80	
10/29/00		16.64	183.26	
11/25/00		16.58	183.32	
W-27	12/28/00		16.34	183.56





Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-27	01/28/01		16.20	183.70
	02/28/01		16.70	183.20
	03/31/01		15.77	184.13
	04/28/01		16.62	183.28
	05/31/01		17.00	182.90
	06/26/01		17.18	182.72
	07/31/01		18.57	181.33
	08/31/01		19.54	180.36
W-27	09/30/01	199.90	18.23	181.67
	10/28/01		18.83	181.07
	11/25/01		17.90	182.00
	12/23/01		17.22	182.68
	01/13/02		17.00	182.90
	02/03/02		16.80	183.10
	03/10/02		16.72	183.18
	06/09/02		16.20	183.70
W-27	07/21/02		17.20	182.70
	08/04/02	199.90	17.00	182.90
	08/26/02		17.60	182.30
	09/28/02		16.70	183.20
	10/26/02		15.48	184.42
	01/17/03		15.32	184.58
	04/26/03		15.47	184.43
	07/05/03		16.00	183.90
	10/25/03		15.15	184.75
	01/24/04		15.88	184.02
	04/28/04		15.56	184.34
	07/24/04		17.03	182.87
	10/29/04		15.62	184.28
	01/30/05		15.62	184.28
	04/24/05		15.53	184.37
	07/11/05		15.85	184.05
10/02/05		19.25	180.65	
01/14/06		14.84	185.06	
04/29/06		15.38	184.52	
10/07/06		15.75	184.15	
04/28/07		15.33	184.57	
W-28	03/15/91	227.60	8.50	219.10
	06/26/91		8.70	218.90
	09/23/91		9.00	218.60
	12/17/91		7.70	219.90
	03/24/92		7.40	220.20
	06/15/92		7.52	220.08
	09/15/92		7.62	219.98
	12/18/92		5.36	222.24
	03/25/93		4.00	223.60
	09/23/93		6.25	221.35



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-28	03/31/94		7.54	220.06
	09/26/94		6.42	221.18
	12/02/94		7.81	219.79
	01/03/95		6.35	221.25
	02/21/95		6.80	220.80
	03/14/95		7.72	219.88
	04/11/95		7.61	219.99
	05/02/95		9.17	218.43
	06/13/95		8.34	219.26
	07/11/95		9.17	218.43
	08/08/95		7.48	220.12
	09/12/95		10.58	217.02
	09/30/95		9.35	218.25
	11/14/95		5.76	221.84
	01/23/96		5.70	221.90
	02/13/96		7.29	220.31
	03/28/96		7.65	219.95
	04/08/96		7.38	220.22
	05/04/96		7.38	220.22
W-28	06/25/96	227.60	7.76	219.84
	07/16/96		5.22	222.38
	08/20/96		8.58	219.02
	09/30/96		9.35	218.25
	10/15/96		7.85	219.75
	11/12/96		7.58	220.02
	12/10/96		4.30	223.30
W-28	01/14/97		8.26	219.34
	02/11/97	227.60	7.85	219.75
	03/28/97		6.51	221.09
	04/22/97		7.78	219.82
	05/16/97		7.99	219.61
	06/27/97		8.60	219.00
	07/15/97		8.00	219.60
	08/25/97		7.67	219.93
	09/02/97		8.02	219.58
	10/14/97		9.95	217.65
	11/29/97		9.58	218.02
	12/20/97		7.58	220.02
	01/31/98		7.60	220.00
	02/28/98		6.10	221.50
	03/06/98		7.60	220.00
	04/24/98		7.16	220.44
	05/17/98		8.00	219.60
06/25/98		8.46	219.14	
07/24/98		9.81	217.79	
08/30/98		8.94	218.66	
09/27/98		8.76	218.84	
W-28	10/24/98		8.86	218.74



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-28	11/22/98		10.37	217.23
	12/30/98		11.75	215.85
	01/29/99		6.20	221.40
	02/28/99		7.46	220.14
	03/13/99		7.96	219.64
	04/25/99		7.38	220.22
	05/16/99		9.73	217.87
	06/27/99		10.12	217.48
	07/23/99		11.12	216.48
	08/29/99		9.92	217.68
	09/27/99		8.21	219.39
	11/23/99		8.40	219.20
	01/30/00		9.75	217.85
	02/27/00		3.14	224.46
	03/18/00		3.90	223.70
	04/28/00		8.72	218.88
	05/09/00		7.99	219.61
	06/06/00		8.65	218.95
	07/11/00		8.67	218.93
	08/15/00		7.11	220.49
	09/09/00		8.13	219.47
	10/29/00		8.43	219.17
	11/25/00		5.78	221.82
	12/28/00		6.78	220.82
	01/28/01		7.00	220.60
	02/28/01		8.64	218.96
	03/31/01		3.77	223.83
04/28/01		8.44	219.16	
05/31/01		7.78	219.82	
W-28	06/26/01	227.60	7.33	220.27
	07/31/01		9.42	218.18
	08/31/01		11.06	216.54
	09/30/01		8.97	218.63
	10/28/01		9.11	218.49
	11/25/01		10.68	216.92
	12/23/01		8.90	218.70
	01/13/02		6.72	220.88
	02/03/02		8.11	219.49
	03/10/02		7.90	219.70
	06/09/02		5.90	221.70
	08/04/02		7.85	219.75
	08/26/02		8.46	219.14
	09/28/02		5.77	221.83
	10/26/02		6.82	220.78
	01/17/03		8.02	219.58
	04/26/03		8.62	218.98
W-28	07/05/03		8.70	218.90
	10/25/03		4.90	222.70

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-28	01/24/04		9.58	218.02
	04/28/04		6.15	221.45
	07/24/04		5.93	221.67
	01/30/05		8.50	219.10
	04/24/05		8.21	219.39
	07/11/05		8.00	219.60
	10/02/05		12.04	215.56
	01/14/06		3.20	224.40
	04/29/06		6.94	220.66
	10/07/06		8.04	219.56
	04/28/07		7.98	219.62
W-29	03/15/91	227.60	7.00	220.60
	06/26/91		6.60	221.00
	09/23/91		6.80	220.80
	12/17/91		6.40	221.20
	03/24/92		6.80	220.80
	06/15/92		6.16	221.44
	09/15/92		6.68	220.92
	12/18/92		5.88	221.72
	03/25/93		5.34	222.26
	09/23/93		5.75	221.85
	03/31/94		5.72	221.88
	09/26/94		5.62	221.98
	12/02/94		8.25	219.35
	01/03/95		6.04	221.56
	02/21/95		6.28	221.32
	03/14/95		6.29	221.31
	04/11/95		6.88	220.72
	05/02/95		6.59	221.01
	06/13/95		6.62	220.98
	07/11/95		6.59	221.01
08/08/95		5.51	222.09	
09/12/95		7.69	219.91	
09/30/95		7.31	220.29	
11/14/95		5.48	222.12	
01/23/96		5.94	221.66	
02/13/96		6.75	220.85	
03/28/96		6.44	221.16	
04/08/96		6.48	221.12	
W-29	05/04/96	227.60	6.44	221.16
	06/25/96		7.98	219.62
	07/16/96		5.30	222.30
	08/20/96		6.39	221.21
	09/30/96		7.31	220.29
W-29	10/15/96		5.90	221.70
	11/12/96	227.60	6.56	221.04
	12/10/96		5.66	221.94

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-29	01/14/97		6.97	220.63
	02/11/97		6.87	220.73
	03/28/97		5.75	221.85
	04/22/97		5.96	221.64
	05/16/97		5.96	221.64
	06/27/97		6.47	221.13
	07/15/97		6.06	221.54
	08/25/97		5.64	221.96
	09/02/97		7.95	219.65
	10/14/97		7.02	220.58
	11/29/97		6.30	221.30
	12/20/97		6.53	221.07
	01/31/98		6.27	221.33
	02/28/98		5.52	222.08
	03/06/98		6.04	221.56
	04/24/98		5.74	221.86
	05/17/98		5.55	222.05
	06/25/98		5.78	221.82
	07/24/98		7.00	220.60
	08/30/98		6.36	221.24
	09/27/98		6.65	220.95
	10/24/98		6.70	220.90
	11/22/98		7.87	219.73
	12/30/98		8.08	219.52
	01/29/99		6.41	221.19
	02/28/99		6.60	221.00
	03/13/99		6.96	220.64
	04/25/99		6.45	221.15
	05/16/99		7.29	220.31
	06/27/99		7.35	220.25
07/23/99		7.89	219.71	
08/29/99		6.95	220.65	
09/27/99		5.96	221.64	
11/23/99		6.46	221.14	
W-3	01/13/02	(a)	NM	NA
	02/03/02		NM	NA
	03/10/02		DRY	NA
	06/09/02		DRY	NA
	08/04/02		DRY	NA
	08/26/02		DRY	NA
	09/28/02		DRY	NA
	10/26/02		13.68	NA
	01/17/03		13.98	NA
	04/26/03		DRY	NA
	07/05/03		DRY	NA
10/25/03		7.20	NA	
01/24/04		DRY	NA	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
W-3	04/28/04		DRY	NA	
	07/24/04		DRY	NA	
	01/30/05		DRY	NA	
	04/24/05		DRY	NA	
	07/11/05		---	---	
	10/02/05		DRY	NA	
	01/14/06		6.35	NA	
W-3	04/29/06	(a)	DRY	NA	
	10/07/06		DRY	NA	
	04/28/07		DRY	NA	
W-30	03/15/91	229.60	7.10	222.50	
	06/26/91		8.00	221.60	
	09/23/91		8.00	221.60	
	12/17/91		6.80	222.80	
	03/24/92		6.90	222.70	
	06/15/92		7.72	221.88	
	09/15/92		8.10	221.50	
	12/18/92		5.10	224.50	
	03/25/93		4.72	224.88	
	09/23/93		6.15	223.45	
	03/31/94		4.74	224.86	
	09/26/94		6.20	223.40	
	12/02/94		7.06	222.54	
	01/03/95		5.90	223.70	
	02/21/95		6.56	223.04	
	03/14/95		6.83	222.77	
	04/11/95		6.97	222.63	
	W-30	05/02/95		7.88	221.72
		06/13/95		7.71	221.89
		07/11/95		7.88	221.72
08/08/95			7.72	221.88	
09/12/95			8.90	220.70	
09/30/95			7.70	221.90	
11/14/95			5.16	224.44	
01/23/96			5.32	224.28	
02/13/96			6.68	222.92	
03/28/96			6.25	223.35	
04/08/96			6.06	223.54	
05/04/96			6.11	223.49	
06/25/96			7.44	222.16	
07/16/96		5.94	223.66		
08/20/96		8.06	221.54		
09/30/96		7.70	221.90		
10/15/96		7.20	222.40		
11/12/96		7.45	222.15		
12/10/96		6.17	223.43		
W-30	01/14/97		7.85	221.75	



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-30	02/11/97		7.80	221.80
	03/28/97		6.60	223.00
	04/22/97		6.20	223.40
	05/16/97		7.60	222.00
	06/27/97		8.04	221.56
	07/15/97		7.94	221.66
	08/25/97		7.43	222.17
	09/02/97		7.90	221.70
	10/14/97		8.88	220.72
	11/29/97		8.05	221.55
	12/20/97		7.40	222.20
	01/31/98		7.20	222.40
	02/28/98		6.05	223.55
	W-30	03/06/98	229.60	6.99
04/24/98			6.76	222.84
05/17/98			6.99	222.61
06/25/98			7.61	221.99
W-30	07/24/98	229.60	8.33	221.27
	08/30/98		8.00	221.60
	09/27/98		9.25	220.35
	10/24/98		9.05	220.55
	11/22/98		10.11	219.49
	12/30/98		8.50	221.10
	01/29/99		6.25	223.35
	02/28/99		7.65	221.95
	03/13/99		7.23	222.37
	04/25/99		6.12	223.48
	05/16/99		8.43	221.17
	06/27/99		8.75	220.85
	07/23/99		9.28	220.32
	08/29/99		8.45	221.15
09/27/99		6.83	222.77	
11/23/99		7.11	222.49	
W-31	03/15/91	228.60	9.30	219.30
	06/26/91		10.20	218.40
	09/23/91		11.30	217.30
	12/17/91		9.00	219.60
	03/24/92		8.50	220.10
	06/15/92		10.01	218.59
	09/15/92		10.24	218.36
	12/18/92		7.34	221.26
	03/25/93		6.08	222.52
	09/23/93		8.65	219.95
	03/31/94		6.60	222.00
	09/26/94		7.28	221.32
	12/02/94		9.04	219.56
	01/03/95		7.96	220.64

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-31	02/21/95		8.22	220.38
	03/14/95		8.92	219.68
	04/11/95		9.06	219.54
	05/02/95		9.97	218.63
	06/13/95		10.25	218.35
	07/11/95		9.97	218.63
	08/08/95		8.83	219.77
	09/12/95		14.02	214.58
	09/30/95		10.30	218.30
	11/14/95		7.04	221.56
	01/23/96		6.78	221.82
	02/13/96		8.67	219.93
	03/28/96		8.33	220.27
	04/08/96		8.35	220.25
	05/04/96		8.70	219.90
	06/25/96		NM	NA
	07/16/96		7.59	221.01
	08/20/96		9.97	218.63
	09/30/96		10.30	218.30
	10/15/96		9.19	219.41
11/12/96		9.18	219.42	
12/10/96		6.97	221.63	
01/14/97		9.73	218.87	
W-31	02/11/97	228.60	9.75	218.85
	03/28/97		8.60	220.00
	04/22/97		10.05	218.55
W-31	05/16/97	228.60	9.60	219.00
	06/27/97		10.26	218.34
	07/15/97		9.66	218.94
	08/25/97		9.53	219.07
	09/02/97		9.80	218.80
	10/14/97		14.10	214.50
	11/29/97		14.00	214.60
	12/20/97		9.34	219.26
	01/31/98		9.40	219.20
	02/28/98		8.19	220.41
	03/06/98		9.21	219.39
	04/24/98		8.76	219.84
	05/17/98		9.20	219.40
	06/25/98		9.60	219.00
	07/24/98		10.41	218.19
	08/30/98		9.89	218.71
	09/27/98		14.36	214.24
	10/24/98		10.00	218.60
	11/22/98		11.06	217.54
	12/30/98		10.90	217.70
01/29/99		8.00	220.60	
02/28/99		9.66	218.94	



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-31	03/13/99		6.24	222.36
	04/25/99		8.37	220.23
	05/16/99		10.44	218.16
	06/27/99		10.78	217.82
	07/23/99		12.91	215.69
	08/29/99		10.10	218.50
	09/27/99		9.03	219.57
	11/23/99		9.36	219.24
W-32	03/15/91	229.60	12.10	217.50
	06/26/91		13.70	215.90
	09/23/91		15.00	214.60
	12/17/91		11.80	217.80
	03/24/92		12.30	217.30
	06/15/92		12.63	216.97
	09/15/92		13.94	215.66
	12/18/92		9.68	219.92
	03/25/93		8.16	221.44
	09/23/93		13.60	216.00
	03/31/94		9.50	220.10
	09/26/94		10.27	219.33
	12/02/94		11.83	217.77
	01/03/95		11.20	218.40
	02/21/95		12.39	217.21
	03/14/95		11.63	217.97
	04/11/95		12.75	216.85
	05/02/95		12.95	216.65
06/13/95		13.96	215.64	
07/11/95		12.95	216.65	
08/08/95		11.78	217.82	
09/12/95		14.91	214.69	
09/30/95		14.42	215.18	
11/14/95		8.88	220.72	
W-32	01/23/96	229.60	8.51	221.09
	02/13/96		11.52	218.08
W-32	03/28/96	229.60	11.44	218.16
	04/08/96		11.40	218.20
	05/04/96		11.25	218.35
	06/25/96		17.33	212.27
	07/16/96		9.06	220.54
	08/20/96		12.38	217.22
	09/30/96		14.42	215.18
	10/15/96		11.51	218.09
	11/12/96		11.96	217.64
	12/10/96		8.76	220.84
	01/14/97		12.06	217.54
	02/11/97		12.19	217.41
03/28/97		10.64	218.96	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	
W-32	04/22/97		7.00	222.60	
	05/16/97		11.77	217.83	
	06/27/97		13.50	216.10	
	07/15/97		13.70	215.90	
	08/25/97		11.47	218.13	
	09/02/97		12.35	217.25	
	10/14/97		14.84	214.76	
	11/29/97		14.59	215.01	
	12/20/97		11.91	217.69	
	01/31/98		11.09	218.51	
	02/28/98		10.23	219.37	
	03/06/98		11.24	218.36	
	04/24/98		11.65	217.95	
	05/17/98		10.58	219.02	
	06/25/98		12.00	217.60	
	07/24/98		13.37	216.23	
	08/30/98		12.55	217.05	
	09/27/98		14.11	215.49	
	10/24/98		13.04	216.56	
	11/22/98		14.88	214.72	
	12/30/98			DRY	DRY
	01/29/99			11.28	218.32
	02/28/99			11.50	218.10
	03/13/99			11.55	218.05
	04/25/99			11.42	218.18
	05/16/99			13.00	216.60
06/27/99			14.04	215.56	
07/23/99			14.86	214.74	
08/29/99			13.84	215.76	
09/27/99			11.90	217.70	
11/23/99			11.98	217.62	
W-33	03/15/91	229.60	6.90	222.70	
	06/26/91		7.10	222.50	
	09/23/91		7.50	222.10	
	12/17/91		6.30	223.30	
	03/24/92		6.90	222.70	
	06/15/92		6.95	222.65	
	09/15/92		7.27	222.33	
	12/18/92		4.40	225.20	
	03/25/93		4.03	225.57	
	09/23/93		6.31	223.29	
W-33	03/31/94		4.52	225.08	
	09/26/94	229.60	4.45	225.15	
W-33	12/02/94	229.60	6.03	223.57	
	01/03/95		4.79	224.81	
	02/21/95		5.94	223.66	
	03/14/95		9.36	220.24	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-33	04/11/95		8.63	220.97
	05/02/95		7.23	222.37
	06/13/95		7.47	222.13
	07/11/95		7.23	222.37
	08/08/95		6.31	223.29
	09/12/95		6.10	223.50
	09/30/95		7.49	222.11
	11/14/95		4.36	225.24
	01/23/96		4.60	225.00
	02/13/96		6.18	223.42
	03/28/96		6.02	223.58
	04/08/96		5.91	223.69
	05/04/96		6.00	223.60
	06/25/96		6.38	223.22
	07/16/96		5.19	224.41
	08/20/96		7.17	222.43
	09/30/96		7.49	222.11
	10/15/96		6.50	223.10
	11/12/96		6.50	223.10
	12/10/96		4.41	225.19
	01/14/97		7.12	222.48
	02/11/97		7.15	222.45
	03/28/97		5.70	223.90
	04/22/97		6.72	222.88
	05/16/97		6.92	222.68
	06/27/97		7.56	222.04
	07/15/97		7.58	222.02
	08/25/97		6.47	223.13
	09/02/97		6.94	222.66
	10/14/97		8.24	221.36
	11/29/97		8.15	221.45
	12/20/97		6.51	223.09
	01/31/98		6.38	223.22
02/28/98		5.76	223.84	
03/06/98		6.51	223.09	
04/24/98		6.28	223.32	
05/17/98		6.34	223.26	
06/25/98		6.86	222.74	
07/24/98		7.40	222.20	
08/30/98		6.94	222.66	
09/27/98		7.60	222.00	
10/24/98		7.24	222.36	
11/22/98		8.03	221.57	
12/30/98		7.81	221.79	
01/29/99		5.60	224.00	
02/28/99		6.66	222.94	
03/13/99		3.55	226.05	
W-33	04/25/99		6.00	223.60



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-33	05/16/99		7.54	222.06
	06/27/99		7.82	221.78
	07/23/99		8.60	221.00
	08/29/99		7.58	222.02
	09/27/99		6.92	222.68
W-33	11/23/99	229.60	7.09	222.51
W-34	03/15/91	227.60	3.80	223.80
	06/26/91		3.60	224.00
	09/23/91		4.00	223.60
	12/17/91		2.80	224.80
	03/24/92		3.10	224.50
	06/15/92		3.08	224.52
	09/15/92		3.46	224.14
	12/18/92		2.72	224.88
	03/25/93		2.99	224.61
	09/23/93		4.80	222.80
	03/31/94		2.96	224.64
	09/26/94		3.29	224.31
	12/02/94		2.69	224.91
	01/03/95		2.37	225.23
	02/21/95		2.62	224.98
	03/14/95		2.31	225.29
	04/11/95		2.85	224.75
	05/02/95		2.89	224.71
	06/13/95		3.60	224.00
	07/11/95		2.89	224.71
	08/08/95		3.42	224.18
	09/12/95		4.92	222.68
	09/30/95		5.11	222.49
	11/14/95		2.43	225.17
	01/23/96		2.29	225.31
	02/13/96		2.54	225.06
	03/28/96		3.00	224.60
04/08/96		2.32	225.28	
05/04/96		3.36	224.24	
06/25/96		2.96	224.64	
07/16/96		2.52	225.08	
08/20/96		3.16	224.44	
09/30/96		5.11	222.49	
10/15/96		2.84	224.76	
11/12/96		2.94	224.66	
12/10/96		2.38	225.22	
01/14/97		2.95	224.65	
02/11/97		3.29	224.31	
03/28/97		2.65	224.95	
04/22/97		2.83	224.77	
W-34	05/16/97		2.92	224.68

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-34	06/27/97		3.87	223.73
	07/15/97		4.00	223.60
	08/25/97		4.05	223.55
	09/02/97		3.96	223.64
	10/14/97		4.40	223.20
	11/29/97		4.41	223.19
	12/20/97		3.07	224.53
	01/31/98		3.00	224.60
	02/28/98		2.61	224.99
	03/06/98		2.80	224.80
	04/24/98		3.34	224.26
	05/17/98		3.20	224.40
	06/25/98		3.70	223.90
	07/24/98		4.57	223.03
W-34	08/30/98	227.60	4.27	223.33
	09/27/98		4.85	222.75
	10/24/98		4.64	222.96
	11/22/98		4.87	222.73
	12/30/98		4.77	222.83
	01/29/99		3.80	223.80
	02/28/99		3.00	224.60
	03/13/99		3.56	224.04
	04/25/99		3.16	224.44
	05/16/99		4.36	223.24
	06/27/99		6.16	221.44
	07/23/99		7.35	220.25
	08/29/99		5.27	222.33
	09/27/99		5.52	222.08
11/23/99		3.48	224.12	
W-35	03/15/91	229.60	3.10	226.50
	06/26/91		4.30	225.30
	09/23/91		5.30	224.30
	12/17/91		2.30	227.30
	03/24/92		3.50	226.10
	06/15/92		3.48	226.12
	09/15/92		1.90	227.70
	09/15/92		4.62	224.98
	03/25/93		2.48	227.12
	09/23/93		6.10	223.50
	03/31/94		0.90	228.70
	09/26/94		1.46	228.14
	12/02/94		2.73	226.87
	01/03/95		2.23	227.37
	02/21/95		3.45	226.15
	03/14/95		2.58	227.02
W-35	04/11/95		2.69	226.91
	05/02/95		3.79	225.81



Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-35	06/13/95		4.60	225.00
	07/11/95		3.79	225.81
	08/08/95		2.70	226.90
	09/12/95		7.44	222.16
	09/30/95		8.40	221.20
	11/14/95		2.11	227.49
	01/23/96		2.35	227.25
	02/13/96		2.59	227.01
	03/28/96		2.89	226.71
	04/08/96		2.29	227.31
	05/04/96		3.32	226.28
	06/25/96		3.18	226.42
	07/16/96		2.14	227.46
	08/20/96		3.90	225.70
	09/30/96		8.40	221.20
	10/15/96		3.26	226.34
	11/12/96		3.04	226.56
	12/10/96		2.10	227.50
	01/14/97		3.66	225.94
	02/11/97		3.71	225.89
03/28/97		2.68	226.92	
04/22/97		3.46	226.14	
05/16/97		3.41	226.19	
W-35	06/27/97	229.60	5.05	224.55
	07/15/97		5.22	224.38
	08/25/97		3.80	225.80
	09/02/97		4.14	225.46
	10/14/97		5.73	223.87
	11/29/97		5.45	224.15
	12/20/97		2.60	227.00
	01/31/98		2.90	226.70
	02/28/98		2.55	227.05
	03/06/98		3.02	226.58
	04/24/98		2.71	226.89
	05/17/98		3.28	226.32
	06/25/98		3.90	225.70
	07/24/98		4.75	224.85
	08/30/98		4.55	225.05
	09/27/98		8.66	220.94
	10/24/98		4.44	225.16
	11/22/98		4.98	224.62
	12/30/98		3.68	225.92
	01/29/99		2.62	226.98
02/28/99		3.80	225.80	
03/13/99		2.97	226.63	
04/25/99		3.26	226.34	
05/16/99		4.66	224.94	
W-35	06/27/99		6.75	222.85

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-35	07/23/99		8.93	220.67
	08/29/99		6.21	223.39
	09/27/99		5.40	224.20
	11/23/99		3.51	226.09
W-7	01/13/02	(a)	NM	NA
	02/03/02		NM	NA
	03/10/02		26.39	NA
	06/09/02		25.75	NA
	08/04/02		28.21	NA
	08/26/02		27.00	NA
	09/28/02		26.48	NA
	10/26/02		25.22	NA
	01/17/03		25.15	NA
	01/17/03		25.15	NA
	04/26/03		25.24	NA
	07/05/03		25.80	NA
	10/25/03		24.99	NA
	01/24/04		25.55	NA
	04/28/04		25.00	NA
	07/24/04		26.66	NA
	10/29/04		25.12	NA
01/30/05		25.00	NA	
04/24/05		24.94	NA	
07/11/05		---	---	
W-7	10/02/05		---	---
	01/14/06		24.07	NA
	04/29/06		24.88	NA
	10/07/06		12.35	NA
	04/28/07		24.58	NA
W-8	01/13/02	(a)	NM	NA
	02/03/02		NM	NA
W-8	03/10/02	(a)	21.77	NA
	06/09/02		15.22	NA
	07/21/02		19.48	NA
	08/04/02		17.12	NA
	08/26/02		16.98	NA
	09/28/02		16.79	NA
	10/26/02		12.41	NA
	01/17/03		12.28	NA
	01/17/03		12.28	NA
	04/26/03		14.10	NA
	07/05/03		14.09	NA
	10/25/03		12.40	NA
01/24/04		16.00	NA	
04/28/04		14.60	NA	
07/24/04		17.68	NA	

Table 2. Historical Groundwater Elevations, March 1, 1989 to April 28, 2007  
91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Date	Top of Casing (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
W-8	10/29/04		15.22	NA
	01/30/05		15.60	NA
	04/24/05		16.20	NA
	07/11/05		---	---
	10/02/05		---	---
	01/14/06		10.89	NA
	04/30/06		13.66	NA
	10/07/06		15.58	NA
	04/28/07		14.60	NA

**Notes and Abbreviations:**

l = Groundwater level not measured due to frozen groundwater  
a = top of casing elevation unknown  
ft = feet  
ft amsl = feet above mean sea level  
NA = not available  
NM = not measured



Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
----- micrograms per liter (µg/L) ----->>														
001	01/06/94	<1	<1	<1	<1	2.4	<1	1	<1	<1	<1	1.3	<1	0.6
	03/02/94	1	<1	1.8	<1	4.5	<1	1.1	<1	<1	<1	1.1	<1	<1
	04/06/94	0.9	<1	2	<1	6.1	<1	1.2	<1	<1	<1	1	<1	<1
	05/04/94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	06/01/94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	07/06/94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	08/03/94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	09/07/94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/05/94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.1
	11/03/94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	12/06/94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	01/03/95	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	02/07/95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	03/07/95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	04/04/95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	05/02/95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	06/06/95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
07/05/95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
08/01/95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
09/05/95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
10/03/95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
11/07/95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
12/05/95	<1	<1	<1	<1	1.8	<1	<1	<1	3.6	<1	<1	<1	<1	
03/05/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
04/02/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
05/07/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
06/04/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
07/02/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
08/06/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
09/03/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
10/01/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
11/05/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
12/03/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
01/07/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
02/04/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
03/04/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
04/01/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
05/06/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
06/10/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
07/01/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	



Weiss Associates

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride	
		micrograms per liter (µg/L) ----->>													
001	08/12/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	09/02/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	10/07/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	11/04/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	01/06/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	02/03/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	03/09/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	04/07/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	05/05/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	06/02/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	07/07/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	08/04/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	09/08/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	10/06/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	11/03/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/07/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
01/05/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
02/02/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
03/15/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
04/06/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
09/14/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
10/05/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
11/02/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
12/07/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
01/04/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
02/08/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
03/07/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
04/04/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
05/09/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
06/06/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
07/11/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
08/15/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
09/05/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
10/03/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
11/07/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
12/05/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
01/02/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
02/06/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
03/06/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		
04/03/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,1,1-TCA	trans-1,2-DCE	cis-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride	
micrograms per liter (µg/L)															
001	05/08/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	06/05/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	07/03/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	
	08/07/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	09/04/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	10/02/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	11/06/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/04/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	01/08/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	02/05/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	03/05/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	04/02/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	05/07/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	06/04/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	07/02/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	CU-1 IN	03/14/91	<5	<5	<5	<5	<5	---	<5	57	<5	<5	<5	<5	<5
		06/25/91	<1	<1	<1	<1	<1	---	<1	<1	<1	<1	<1	<1	<1
09/23/91		0.5	<1	0.8	2	---	---	<1	90	<1	<1	1	<1	<1	
12/17/91		<1	<1	<1	<1	---	---	<1	40	<1	<1	<1	<1	<1	
03/24/92		<1	<1	<1	0.7	---	---	<1	18	<1	<1	1	<1	<1	
06/15/92		<1	<1	<1	1.5	---	---	<1	68	<1	<1	<1	<1	<1	
09/15/92		<1	<1	0.7	1.7	---	---	<1	140	<1	<1	<1	<1	<1	
12/18/92		<1	<1	<1	0.5	<1	3.1	<1	6.1	<1	<1	1.4	<1	<1	
03/26/93		3.8	<0.6	<1	1.7	<1	<3.8	<1	16	<1	<1	<1	<1	<1	
09/23/93		1.7	<1	<1	1.5	<1	12	<1	37	0.5	<1	<1	<1	<1	
03/31/94		<1	<1	<1	<1	<1	<1	<1	4.8	<1	<1	<1	<1	<1	
09/28/94		<1	<1	<1	0.6	---	2.3	<1	---	<1	---	<1	<1	<1	
09/28/94 FD		<1	<1	<1	1.2	<1	4.4	<1	27	2.8	<1	<1	<1	<1	
03/24/95		<2	<2	<2	<2	<2	1.9	<2	8.6	<2	<2	<2	<2	<2	
09/30/95		<1	<1	<1	<1	<1	10	<1	48	<1	<1	<1	<1	<1	
05/06/96		<1	<1	<1	<1	<1	9	<1	16	<1	<1	<1	<1	<1	
09/28/96		<1	<1	<1	<1	<1	5.3	<1	21	<1	<1	<1	<1	<1	
03/30/97	<1	<1	<1	<1	<1	1.5	<1	29	<1	<1	<1	<1	<1		
09/02/97	<1	<1	<1	<1	<1	6.2	<1	22	<1	<1	<1	<1	<1		
03/08/98	0.8	<1	<1	<1	<1	---	<1	44	<1	<1	<1	<1	<1		
09/27/98	<1	<1	<1	<1	<1	---	<1	33	<1	<1	1	<1	1		
03/14/99	<1	<1	<1	0.7	<1	---	<1	31	<1	<1	<1	<1	<1		
09/27/99	<1	<1	<1	<1	<1	---	<1	16	<1	<1	<1	<1	<1		
03/18/00	<1	<1	<1	<1	<1	---	<1	9.3	<1	<1	<1	<1	3.1		

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
<<----- micrograms per liter (µg/L) ----->>											
CU-1 IN	09/09/00	<1	<1	<1	<1	70	<1	<1	2.8	<1	<1
	03/31/01	<1	<1	<1	<1	20	<1	<1	<1	<1	<1
	09/30/01	<1	<1	<1	<1	55	<1	<1	1.7	<1	<1
	03/10/02	<1	<1	<1	<1	23	<1	<1	1.2	<1	<1
	07/21/02	<1	<1	<1	<1	9.1	<1	<1	<1	<1	<1
	03/14/91	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	06/25/91	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1
	09/23/91	<1	<1	<1	<1	<1	<1	<1	1	<1	<1
	12/17/91	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	03/24/92	0.7	<1	<1	<1	<1	<1	<1	<1	<1	<1
	06/15/92	1.5	<1	<1	<1	<1	<1	<1	<1	<1	<1
	09/15/92	3	<1	1.2	<1	<1	<1	<1	1.3	<1	<1
	12/18/92	1.7	<1	<2.5	<1	<1	<1	<1	1.1	<1	<1
	03/26/93	0.9	<1	<1	1.2	2.6	1.6	<1	1.3	<1	<1
09/23/93	<1	<1	<1	1.2	1.6	<1	<1	1.6	<1	<1	
03/31/94	0.7	<1	<1	1.2	<1	<1	<1	0.8	<1	<1	
09/28/94	<1	<1	<1	2.3	<1	<1	<1	0.9	<1	<1	
03/24/95	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
09/30/95	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
05/06/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
09/28/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
03/30/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
09/02/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
03/08/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
09/27/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.9	
03/14/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
09/27/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
03/18/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
09/09/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
03/31/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
09/30/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
03/10/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
07/21/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
CU-2 IN	09/30/95	<1	<1	<1	<1	2.3	<1	<1	<1	<1	<1
CU-2 OUT	03/24/95	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	09/30/95	<1	<1	<1	<1	1.5	<1	<1	<1	<1	<1
	05/06/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
micrograms per liter (µg/L)													
CU-2 OUT	09/28/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	03/30/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	09/02/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	09/27/98	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.8
	03/14/99	<1	<1	<1	<1	<1	<1	2.1	<1	<1	<1	<1	<1
	09/27/99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	03/18/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	09/09/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	03/31/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	09/30/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
03/10/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
07/21/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
SUMP-1	03/15/91	<5	<5	<5	<5	<5	<5	50	<5	<5	<5	<5	2000
	10/08/06	<1	<1	<1	1	<1	<1	3.4	<1	<1	<1	<1	<2
	10/8/06 FD	<1	<1	<1	1.1	<1	<1	0.98	<1	<1	<1	<1	<2
04/27/07	<1	<1	<1	1.2	<1	<1	8.9	<1	<1	1.5	<1	<1	
SUMP-2	03/15/91	<5	<5	<5	<5	<5	<5	120	<5	<5	<5	<5	<5
	10/08/06	<1	<1	<1	0.78	<1	<1	3.1	<1	<1	<1	<1	<2
	04/27/07	<1	<1	<1	4.1	<1	<1	2.1	<1	<1	<1	<1	<1
	03/15/91	0.7	<0.5	<0.5	<5	0.95	1.4	14	<0.5	<0.5	<0.5	<0.5	<0.5
SUMP-3	11/09/93	<1	<1	<1	4.8	<1	1	70	<1	<1	<1	<1	<1
	07/21/02	<1	<1	<1	3.3	<1	<1	9.7	<1	<1	<1	<1	<1
	08/27/02	<1	<1	<1	<1	<1	<1	1.8	<1	<1	<1	<1	<1
	08/27/02 FD	<1	<1	<1	<1	<1	<1	1.2	<1	<1	<1	<1	<1
	09/29/02	<1	<1	<1	<1	<1	<1	1.4	<1	<1	<1	<1	<1
	10/27/02	<1	<1	<1	<1	<1	<1	0.55	<1	<1	<1	<1	<1
	10/27/02 FD	<1	<1	<1	<1	<1	<1	0.72	<1	<1	<1	<1	<1
	01/19/03	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	01/19/03 FD	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	04/27/03	<1	<1	<1	0.59	<1	<1	<1	<1	<1	<1	<1	<1
	04/27/03 FD	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	07/06/03	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
	01/25/04	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	01/25/04 FD	<1	<1	<1	<1	<1	<1	0.5 J	<1	<1	<1	<1	<1
07/25/04	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
07/25/04 FD	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
04/25/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
micrograms per liter (µg/L) ----->>>													
SUMP-3	04/25/05 FD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	<20
	10/11/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<1.0	<1.0	<20
	10/11/05 FD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<1.0	<1.0	<20
	04/30/06	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	04/30/06 FD	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	10/09/06	<1	<1	<1	<1	<1	<1	0.43 J	<1	<1	<1	<1	<2
	10/9/2006 FD	<1	<1	<1	<1	<1	<1	0.34 J	<1	<1	<1	<1	<2
	04/29/07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SUMP-4	10/08/06	<1	<1	<1	2.5	<1	<1	56	0.79	<1	<1	<1	<2
	04/29/07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SVE4	11/27/01	<10	<10	<10	75	<10	<10	600	<10	<10	<10	<10	<10
	11/27/01	<1	<1	<1	5	<1	<1	98	<1	<1	<1	<1	<1
SVG2	11/06/01	<1	<1	<1	3.5	<1	<1	55	<1	<1	<1	<1	<1
SVI6	11/06/01	2.9	<1	<1	37	<1	0.8	2.8	<1	4.4	<1	<1	<1
SVL4	11/06/01	1	<1	<1	28	<1	2.2	100	<1	<1	<1	<1	<1
SVL6	11/06/01	4	<1	1.6	110	<1	3.4	28	1.8	23	<1	<1	<1
W-7	10/21/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
W-8	10/14/01	<1	<1	<1	7.5	<1	3.8	82	<1	<1	<1	<1	<1
	07/21/02	<1	<1	<1	4.8	<1	2	75	<1	<1	<1	<1	<1
	08/27/02	<1	<1	<1	4.1	<1	2.1	82	<1	<1	<1	<1	<1
	09/29/02	<1	<1	<1	5.0	<1	1.9	68	<1	<1	<1	<1	<1
	10/27/02	<1	<1	<1	4.6	<1	2.3	70	<1	<1	<1	<1	<1
	01/19/03	<1	<1	<1	5.8	<1	2	79	<1	<1	<1	<1	<1
	04/27/03	<1	<1	<1	19	<1	1.4	99	0.86	<1	<1	<1	<1
	07/06/03	<1	<1	<1	12	<1	2.3	130	<1	<1	0.6 J	<1	0.6 J
	01/25/04	<1	<1	<1	31	<1	1.7	(B)	<1	0.6 J	0.7 J	<1	<1
	01/25/04 <sup>1</sup>	<10	<10	<10	34	<10	<10	160	<10	<10	<10	<10	<10
	07/25/04	<1	<1	<1	13	<1	<1	69	<1	<1	<1	<1	0.5
	04/25/05	<1	<1	<1	19	<1	1.4	140	<1	<1	<2	<2	<40
	10/11/05	<0.5	<0.5	<0.5	15	<0.5	<0.5	96	<0.5	1.6	<1	<1	<20
	04/30/06	<0.5	<0.5	<0.5	12	<0.5	<0.5	79 E	<0.5	1.8	<0.5	<0.5	<0.5
W-8	04/30/06 <sup>1</sup>	<2.5	<2.5	<2.5	12 D	<2.5	<2.5	85 D	<2.5	<2.5	<2.5	<2.5	<2.5

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
micrograms per liter (µg/L) ----->>>											
W-8	10/09/06	<2	<2	<2	<2	95	<2	3.7	<2	<2	2.3 J
	4/29/2007 <sup>3</sup>	<1	<1	<1	<1	70	<1	4.1*	<1	<1	<1
W-9	11/25/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	03/14/91	<0.5	<0.5	<0.5	1.5	25	<0.5	<0.5	<0.5	<0.5	<0.5
W-10	06/26/91	<1	<1	<1	<1	37	<1	<1	<1	<1	<1
	09/23/91	<1	<1	<1	1	39	<1	<1	<1	<1	<1
	12/17/91	<1	<1	<1	<1	14	<1	4	<1	<1	<1
	03/24/92	<1	<1	<1	1	14	<1	<1	<1	<1	<1
	06/15/92	<1	<1	<1	1.1	31	<1	<1	<1	<1	<1
	09/15/92	<1	<1	<1	1.2	32	<1	<1	<1	<1	<1
	12/18/92	<1	<1	<1	0.6	10	<1	<1	<1	<1	<1
	03/26/93	<1	<1	<1	<1	11	<1	<1	<1	<1	<1
	09/23/93	<1	<1	<1	<1	8.8	<1	<1	<1	<1	<1
	03/31/94	<1	<1	<1	<1	6.3	<1	<1	<1	<1	<1
	09/28/94	<1	<1	<1	<1	20	<1	<1	<1	<1	1.0
	03/24/95	<2	<2	<2	<2	20	<2	<2	<2	<2	<2
	09/30/95	<1	<1	<1	<1	24	<1	<1	<1	<1	<1
	05/06/96	<1	<1	<1	<1	15	<1	<1	<1	<1	<1
	09/28/96	<1	<1	<1	<1	14	<1	<1	<1	<1	<1
	03/30/97	<1	<1	<1	<1	12	<1	<1	<1	<1	<1
	09/02/97	<1	<1	<1	<1	28	<1	<1	<1	<1	<1
	03/08/98	<1	<1	<1	<1	16	<1	<1	<1	<1	<1
	09/27/98	<1	<1	<1	0.5	15	<1	<1	0.9	<1	<1
	03/14/99	<1	<1	<1	<1	17	<1	<1	<1	<1	<1
09/27/99	<1	<1	<1	<1	19	<1	<1	<1	<1	<1	
03/18/00	<1	<1	<1	<1	6.6	<1	<1	<1	<1	<1	
09/09/00	<1	<1	<1	<1	21	<1	<1	<1	<1	<1	
03/31/01	<1	<1	<1	<1	4.5	<1	<1	<1	<1	<1	
09/30/01	<1	<1	<1	<1	14	<1	<1	<1	<1	<1	
03/10/02	<1	<1	<1	<1	13	<1	<1	<1	<1	<1	
07/21/02	<1	<1	<1	<1	20	<1	<1	<1	<1	<1	
01/19/03	<1	<1	<1	<1	4.1	<1	<1	<1	<1	<1	
07/05/03	<1	<1	<1	<1	3.6	<1	<1	<1	<1	<1	
01/25/04	<1	<1	<1	<1	4.3	<1	<1	<1	<1	<1	
07/25/04	<1	<1	<1	<1	11	<1	<1	<1	<1	<1	
04/24/05	<0.5	<0.5	<0.5	<0.5	4.9	<0.5	<0.5	<0.5	<1.0	<1.0	
10/11/05	<0.5	<0.5	<0.5	<0.5	1.6	<0.5	<0.5	<0.5	<1.0	<1.0	
04/30/06	<0.5	<0.5	<0.5	<0.5	3.9	<0.5	<0.5	<0.5	<0.5	<0.5	

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
micrograms per liter (µg/L)														
W-10	04/30/06	<0.5	<0.5	<0.5	<0.5	0.53 RE	<0.5	<0.5	3.7 RE	<0.5	<0.5	<0.5	<0.5	<0.5
	10/08/06	<1	<1	<1	<1	0.46 J	<1	<1	3.1	<1	<1	<1	<1	<2
	04/29/07	<1	<1	<1	<1	<1	<1	<1	3.4	<1	<1	<1	<1	<1
	10/14/01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	06/25/91	3	<1	<1	<1	---	77	<1	150	28	<1	<1	<1	<1
	12/17/91	<10	<10	<10	<10	---	---	<10	140	<10	<10	<10	<10	<10
	06/15/92	1.9	<1	<1	<1	---	---	7.8	200	17	<1	<1	<1	<1
	12/18/92	1.8	<1	<2.5	<2.5	25	<1	5.2	120	13	<1	0.9	<1	<1
	03/31/94	1.5	<1	<1	<1	38	<1	4.5	160	13	<1	0.9	<1	<1
	09/27/94	1.1	<1	<1	<1	54	<1	4.8	280	25	<1	0.8	<1	<1
W-11	03/24/95	1.1	<2	1.9	<1	33	<2	3.2	120	10	<2	<2	<2	<2
	09/30/95	<1	<1	<1	<1	30	<1	4.1	150	16	<1	<1	<1	<1
	05/06/96	<10	<10	<10	<10	45	<10	12	190	<10	<10	<10	<10	<10
	09/28/96	3.2	<1	5.2	<1	85	<1	<1	230	14	<1	7.2	<1	<1
	09/28/96 FD	3.1	<1	5.1	<1	---	<1	<1	---	---	<1	---	<1	<1
	03/30/97	<5	<5	<5	<5	58	14	16	180	<5	<5	<5	<5	<5
	09/02/97	<5	<5	<5	<5	41	<5	6.1	430	11	<5	<5	<5	<5
	03/07/98	0.9	<1	<1	<1	---	---	1.8	68	5.1	<1	<1	<1	<1
	09/27/98	1.9	<1	<1	<1	---	---	3.3	140	7.5	<1	0.8	<1	1.4
	09/27/99	1.3	<1	<1	<1	---	---	2.4	200	7.8	<1	0.8	<1	<1
W-12	09/27/99 FD	1.2	<1	<1	<1	---	---	2.4	---	---	<1	---	<1	<1
	09/09/00	2.7	<1	<1	<1	44	0.7	5.6	270	9.2	<1	1	<1	<1
	09/30/01	1	<1	<1	<1	26	<1	2.2	250	5.9	<1	<1	<1	<1
	07/21/02	1.3	<1	<1	<1	22	<1	2.6	100	4.7	<1	<1	<1	<1
	08/27/02	2.1	<1	<1	<1	30	<1	4.2	190	7.5	<1	0.94	<1	<1
	09/29/02	2.1	<1	<1	<1	41	<1	4	270	6.8	<1	1.2	<1	<1
	10/27/02	2.1	<10	<10	<10	47	<10	3.5	250	6	<10	1.4	<10	<10
	01/19/03	0.8	<1	<1	<1	11	<1	<1	68	1.9	<1	0.8	<1	0.6
	04/27/03	0.77	<1	<1	<1	7.2	<1	0.52	34	1.3	<1	0.87	<1	<1
	07/06/03	2.1	<1	<1	<1	7.5	<1	0.98 J	74	2.5	0.54 J	<1	<1	0.52
W-13	01/25/04	<1	<1	<1	<1	5.1	<1	<1	31	1.2	<1	0.9 J	<1	<1
	07/25/04	<1	<1	<1	<1	4.9	<1	<1	37	0.8	<1	1.1	<1	<1
	04/25/05	0.7	<0.5	<0.5	<0.5	7.7	<0.5	1.7	34	1.4	<0.5	2.4	<1	<20
	10/11/05	<0.5	<0.5	<0.5	<0.5	3	<0.5	<0.5	48	1.5	<0.5	1.4	<1	<20
	04/30/06	0.9	<0.5	<0.5	<0.5	4.7	<0.5	1.3	26	1.3	<0.5	0.78	<0.5	<0.5
	10/09/06	2.4	<1	0.28 J	<1	18	<1	<1	23	1.6	2.2	0.34 J	<1	<2
	04/29/07	1.8	<1	<1	<1	7.2	<1	<1	19	1.2	<1	<1	<1	<1
	06/25/91	40	<10	<10	<10	---	390	28	200	<10	<10	<10	<10	<10



Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
micrograms per liter (µg/L)											
W-13	12/17/91	<10	<10	<10	36	78	<10	<10	<10	<10	12
	06/15/92	15	<1	5.4	40	79	17	24	<1	<1	<1
	12/18/92	12	<1	<2.5	16	50	12	4.3	1.5	<1	<1
	03/31/94	2.7	<1	<1	6.8	45	21	<1	0.5	<1	<1
	09/27/94	15	<1	<1	27	210	16	11	2.2	2.7	1.3
	03/24/95	8.3	<2	58	19	45	9.8	2.8	<2	2	<2
	09/30/95	<1	<1	<1	<1	58	20	<1	<1	<1	<1
	05/06/96	4.8	<1	48	14	36	13	<1	<1	<1	<1
	09/28/96	8.9	<1	30	<1	45	6.4	<1	12	<1	<1
	03/30/97	6.7	<1	23	17	25	6.4	<1	<1	<1	<1
	09/02/97	8.3	<1	3.3	16	32	5.3	<1	<1	2.4	<1
	03/07/98	4.1	<1	<1	10	15	4	2.1	<1	2.3	<1
	09/27/98	8.2	<1	1.9	10	30	5.2	3.4	<1	<1	1.2
	09/27/99	8.5	<1	1.9	12	24	5	2.6	0.6	1.3	<1
	09/09/00	9.6	<1	2.2	12	30	4.6	3.4	<1	<1	<1
	09/30/01	6.9	<1	4.7	8.3	44	7	3.6	<1	<1	<1
	07/21/02	6	<1	1.6	6.4	35	7.2	3.1	<1	1.0	<1
	07/05/03	8.6	<1	1.9	9.3	39	5.3	4.5	<1	0.85	<1
	07/25/04	5.1	<1	<1	5.4	57	4.2	3.6	<1	<1	<1
	04/24/05	6.3	<0.5	1.9	6.7	59	3.2	5.5	<1	<1	<20
10/11/05	1.1	<0.5	<0.5	1.1	30	8.6	<0.5	<1	3.1	<20	
04/30/06	4.8	<0.5	1.9	6.3	40	2.3	3.4	<0.5	<0.5	<0.5	
10/08/06	4.5	<1	<1	4.1	50	2.6	3.5	<1	<1	<2	
04/29/07	2.1	<1	<1	3.6	19	2.2	<1	<1	9.6	<1	
4/29/2007 FD	2.1	<1	<1	3.7	19	2.2	<1	<1	8.8	<1	
W-14	06/25/91	52	<10	<10	<10	190	44	24	<10	<1	<10
	12/17/91	23	<1	<1	20	64	13	<1	6	<1	<1
	06/15/92	29	<1	1	29	100	34	32	<1	<1	<1
	12/18/92	20	<1	<2.5	14	40	15	9.8	<1	<1	<1
	03/31/94	12	<1	<1	12	50	13	9.4	<1	11	<1
	09/27/94	26	<1	<1	13	72	24	19	<1	20	<1
	03/24/95	14	<2	<2	7.3	40	12	8.9	<2	5.7	<2
	09/30/95	<1	<1	<1	<1	46	<1	<1	<1	<1	<1
	05/06/96	4.2	<1	<1	2.8	24	5.3	<1	<1	<1	<1
	09/28/96	9.9	<1	24	<1	42	12	<1	<1	<1	<1
03/30/97	<1	<1	14	<1	20	5	<1	<1	<1	<1	
09/02/97	<1	<1	<1	<1	6.4	1.3	<1	<1	<1	<1	
03/07/98	6	<1	<1	0.8	17	3.1	1.2	<1	0.9	<1	
09/27/98	12	<1	<1	0.9	12	5.4	4.2	<1	<1	0.9	

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride	
micrograms per liter (µg/L)														
W-14	09/27/99	8.4	<1	<1	---	---	<1	3.5	1	0.7	<1	<1	<1	
	09/09/00	<1	<1	1.2	4.9	<1	<1	7.5	<1	<1	<1	<1	<1	
	09/30/01	8.8	<1	<1	5.9	<1	<1	17	3.4	1.5	<1	<1	<1	
	07/21/02	3.9	<1	<1	5.3	<1	<1	11	2.5	0.92	<1	<1	<1	
	07/05/03	3.1	<1	<1	8.1	<1	0.65 J	19	3.5	1.2	<1	<1	<1	
	07/25/04	2.3	<1	<1	12	<1	<1	20	2.6	<1	<1	<1	<1	
	04/24/05	1.7	<0.5	<0.5	12	<0.5	0.6	18	2.4	1.3	<1	<1	<20	
	10/11/05	1.4	<0.5	<0.5	8.6	<0.5	<0.5	14	2.5	0.8	<1	5.1	<20	
	04/30/06	0.83	<0.5	<0.5	6.3	<0.5	0.56	14	1.9	<0.5	<0.5	<0.5	<0.5	
	04/30/06 <sup>1</sup>	0.86 RE	<0.5	<0.5	6.4 RE	<0.5	0.57 RE	14 RE	1.9 RE	<0.5	<0.5	<0.5	<0.5	
	10/08/06	0.87 J	<1	<1	10	<1	<1	17	2.1	0.82	<1	<1	<2	
	04/29/07	<1	<1	<1	6.6	<1	<1	12	1.6	<1	<1	2.3	<1	
	W-18A	03/15/91	<50	<50	<50	---	<50	910	3300	290	430	<50	<50	1.2
		06/26/91	<100	<100	<100	---	3400	560	2200	120	390	<100	<100	<100
09/23/91		<50	30	30	---	---	400	1300	140	350	<50	<50	<50	
12/17/91		<10	<10	<10	---	---	110	300	180	<10	<10	<10	<10	
03/24/92		7	<1	5	---	---	120	290	120	3	2	<1	<1	
06/15/92		10	<10	9	---	---	93	250	92	<10	<10	<10	<10	
09/15/92		11	<10	4	---	---	57	200	58	8	<10	<10	13	
12/18/92		20	<10	<25	800	<10	200	730	90	100	7	<10	<10	
03/26/93		30	<1	20	950	1.1	480	1100	80	50	<1	<1	<1	
09/23/93		8.4	2.5	5.6	200	<10	180	89	63	<10	<10	<10	<10	
03/31/94		0.5	<1	<1	24	<1	19	28	32	<1	<1	<1	<1	
09/27/94		0.9	<1	<1	49	<1	39	44.0	20.0	<1	<1	<1	<1	
03/24/95		5.3	<2	4.5	100	<2	60	90	<2	2.4	1.9	<2	<2	
09/30/95		<20	<20	<20	240	<20	56	170	<20	<20	<20	<20	<20	
05/06/96	<10	<10	<10	96	<10	41	62	26	<10	<10	<10	<10		
09/28/96	12	<1	6.6	300	<1	<1	98	11	<1	<1	<1	<1		
03/30/97	<20	<20	<20	300	<20	50	130	<20	<20	<20	<20	<20		
09/02/97	33	<10	<10	350	<10	29	95	<10	<10	<10	<10	<10		
03/07/98	5.3	<1	2.5	---	---	10	48	5.8	19	<1	<1	<1		
09/27/98	8.1	<1	2.1	---	---	7.5	34	3	18	<1	<1	0.8		
03/14/99	6.1	<1	1.3	---	---	5.5	36	3.7	9.4	<1	<1	<1		
03/14/99 FD	6.6	<1	1.5	---	---	6.3	40	4.1	11	<1	<1	<1		
09/27/99	14	<1	1.7	---	---	6.2	49	5.2	20	<1	<1	<1		
03/18/00	6.9	<1	1.4	---	---	7.1	43	7.4	14	<1	<1	<1		
09/09/00	7.2	<1	1.3	<1	78	3.9	34	5.8	15	<1	<1	<1		
03/31/01	2.8	<1	<1	---	---	10	28	15	1.2	<1	<1	<1		
09/30/01	8.9	<1	1.1	84	<1	8.7	44	7.8	7.1	<1	<1	<1		

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
micrograms per liter (µg/L) ----->>														
W-18A	03/10/02	4.1	<1	1.2	57	<1	<1	4.8	32	3.9	9.2	<1	<1	<1
	07/21/02	5.9	<1	1	65	<1	<1	2.8	33	7.1	10	<1	<1	<1
	08/27/02	19	<1	3.5	550	1.4	1.4	2.6	73	8.9	31	<1	<1	<1
	09/29/02	16	<1	3.7	390	1.4	1.4	2	42	8.0	22	<1	<1	<1
	10/27/02	13	<1	3	240	1	1	1.4	32	5.9	12	<1	<1	<1
	01/20/03	3.4	<1	0.8	54	<1	<1	12	29	14	1.2	<1	<1	<1
	04/27/03	4.7	<1	1.3	51	<1	<1	9.5	27	15	<1	<1	<1	<1
	07/06/03	12	<1	1.1	55	<1	<1	3.9	26	11	8.6	<1	<1	<1
	01/25/04	9.7	<1	<2	120	<1	<1	5.3	28	8.6	5.6	<1	<1	<1
	01/25/04	10	<2	1.2	(B)	<2	<2	5.9	28	8.9	7.2	<2	<2	<2
	07/25/04	3.7	<1	<1	46	<1	<1	7.9	20	4.1	<1	<1	<1	<1
	04/25/05	5.3	<0.5	1	87	<0.5	<0.5	6.1	30	12	4.6	<1	<1	<20
	10/11/05	0.6	<0.5	<0.5	14	<0.5	<0.5	0.9	9.5	1.3	<0.5	<1	<1	<20
	04/30/06	<0.5	<0.5	1.2	26	<0.5	<0.5	3.2	20	9.2	0.98	<0.5	<0.5	<0.5
	10/09/06	2.6	<1	1.3	71	<1	<1	2.9	24	4.7	4.3	<1	<1.0	<2
	04/29/07	1.5	<1	<1	32 E	<1	<1	3.5	21 E	5	1.1 *	<1	<1	<1
	W-19	03/14/91	<50	<50	<50	---	<50	<50	<50	660	<50	<50	<50	<50
06/25/91		<100	<100	<100	---	300	300	33	1600	<100	<100	<100	<100	<100
09/23/91		<10	<10	<10	---	---	---	28	1200	<10	<10	<10	<10	<10
12/17/91		4.9	<10	2.6	---	---	---	20	240	<10	0.5	3.4	<10	<10
03/24/92		8	<1	4.7	---	---	---	26	270	<1	4.5	4.2	<1	<1
06/15/92		<10	<10	<10	---	---	---	32	1500	<10	<10	<10	<10	<10
09/15/92		7	<1	8.1	---	---	---	29	1100	<1	<1	3.3	<1	<1
12/18/92		<10	<10	<2.5	190	<10	<10	30	800	<10	<10	<10	<10	<10
03/26/93		7	<7.2	<2.5	220	<1	<1	34	990	<1	<1	<1	<1	<1
09/23/93		9.9	<10	7.9	290	<10	<10	35	710	<10	12	<10	<10	<10
10/06/93		8	<10	<10	250	<10	<10	36	570	<10	<10	<10	<10	45
11/03/93		<50	<50	<50	310	<50	<50	39	790	<50	<50	<50	<50	71
12/01/93		15	<1	<1	340	<1	<1	<1	960	<1	15	36	<1	<1
01/06/94		13	<1	11	250	<1	<1	46	660	2.2	<1	4.3	<1	<1
02/02/94		11	1.2	11	320	<1	<1	38	900	.8	<1	4.8	<1	<1
03/02/94		11	<10	14	350	<10	<10	40	900	<10	12	6	<10	5
03/31/94		9	<10	<10	330	<10	<10	35	1000	<10	7.3	6	<10	<10
04/06/94	11	<10	14	410	<10	<10	35	1100	<10	15	<10	<10	<10	
05/04/94	13	<1	<1	300	<1	<1	39	830	<1	13	3.6	<1	<1	
06/01/94	<100	<100	<100	320	<100	<100	<100	1000	<100	<100	<100	<100	<100	
07/06/94	<100	<100	<100	430	<100	<100	33	1200	<100	<100	<100	<100	98	
08/03/94	10	<10	11	340	<10	<10	35	820	<10	<10	8.0	<10	<10	
09/07/94	11	<1	16	550	<1	<1	43	1000	<1	<1	3.7	<1	3.1	

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
micrograms per liter (µg/L)														
W-19	09/29/94	13	<10	<10	<10	580	<10	55	1400	<10	<10	13.0	<10	<10
	10/05/94	8.8	<10	<10	<10	360	<10	51	1000	<10	<10	9	<10	<10
	11/03/94	<10	<10	<10	<10	30	<10	5	830	<10	<10	<10	<10	<10
	12/06/94	14	<1	3.6	<1	360	<1	31	700	1.1	13	3.8	<1	<1
	01/03/95	<1	<1	<1	<1	290	<1	<1	810	<1	<1	<1	<1	<1
	02/07/95	10	<1	<1	<1	350	<1	33	730	<1	<1	15	<1	16
	03/07/95	9.6	<1	14	<1	330	<1	31	870	<1	5	13	<1	<1
	03/24/95	<2	<2	<2	<2	290	<2	29	860	<2	14	14	<2	<2
	04/04/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
	05/02/95	7.4	<1	10	<1	230	<1	28	830	<1	<1	3.7	<1	<1
	06/06/95	<1	<1	3.2	<1	120	<1	17	370	<1	<1	<1	<1	<1
	07/05/95	<100	<100	<100	<100	<100	200	<100	<100	<100	<100	<100	<100	<100
	08/01/95	<50	<50	<50	<50	300	<50	<50	1100	<50	<50	<50	<50	<50
	09/05/95	<10	<10	<10	<10	210	<10	<10	300	<10	<10	<10	<10	<10
	09/30/95	<20	<20	<20	<20	300	<20	31	600	<20	<20	<20	<20	<20
	10/03/95	<10	<10	<10	<10	270	<10	<10	650	<10	<10	<10	<10	<10
	11/07/95	<10	<10	11	<10	200	<10	22	560	<10	<10	<10	<10	<10
	12/05/95	<1	<1	13	<1	260	<1	23	590	<1	<1	<1	<1	<1
	03/05/96	6.4	<1	5.5	<1	150	<1	25	520	<1	<1	3	<1	15
	04/02/96	<10	<10	<10	<10	370	<10	48	990	<10	<10	<10	<10	<10
	05/06/96	<20	<20	<20	<20	210	<20	34	370	<20	<20	<20	<20	<20
	05/07/96	8.6	<1	12	<1	76	2.9	28	128	<1	<1	3.3	<1	<1
	06/04/96	<10	<10	16	<10	260	<10	36	650	<10	<10	<10	<10	<10
	07/02/96	<10	<10	<10	<10	150	<10	29	490	<10	<10	<10	<10	<10
	08/13/96	13	<10	<10	<10	230	<10	23	480	<10	<10	<10	<10	<10
	09/03/96	<25	<25	<25	<25	390	<25	<25	670	<25	<25	<25	<25	<25
	09/28/96	7	<1	9.7	<1	140	<1	21	110	<1	<1	<1	<1	<1
	10/01/96	10	<1	4.7	<1	550	<1	30	250	<1	<1	<1	<1	<1
	11/05/96	8.6	<1	5.8	<1	350	<1	22	560	<1	4.3	<1	<1	<1
	12/03/96	<1	<1	<1	<1	<1	<1	<1	110	<1	<1	<1	<1	<1
	01/07/97	<10	<10	<10	<10	300	<10	18	540	<10	<10	<10	<10	<10
	02/04/97	<20	<20	<20	<20	420	<20	21	670	<20	<20	<20	<20	<20
	03/04/97	320	<20	220	<20	<20	<20	100	1000	<20	<20	<20	<20	<20
	03/30/97	<10	<10	12	<10	440	<10	47	700	<10	<10	12	<10	<10
	04/01/97	<20	<20	<20	<20	410	<20	42	530	<20	<20	<20	<20	<20
	05/06/97	<20	<20	<20	<20	360	<20	54	570	<20	<20	<20	<20	<20
	06/10/97	<20	<20	<20	<20	500	<20	52	740	<20	<20	<20	<20	<20
	07/01/97	<20	<20	<20	<20	370	<20	33	620	<20	<20	<20	<20	<20
	08/12/97	<20	<20	<20	<20	190	<20	<20	590	<20	<20	<20	<20	<20
W-19	09/02/97	<20	<20	<20	<20	210	<20	<20	770	<20	<20	<20	<20	<20

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
----- micrograms per liter (µg/L) ----->>													
W-19	10/07/97	<20	<20	<20	220	<20	21	810	<20	<20	<20	<20	<20
	11/04/97	<20	<20	<20	260	<20	<20	760	<20	<20	<20	<20	<20
	01/06/98	<20	<20	<20	280	<20	<20	610	<20	<20	<20	<20	<20
	02/03/98	9.9	<1	6.2	---	---	19	450	<1	7.7	<1	<1	<1
	03/08/98	8.7	<1	5.8	---	---	17	580	<1	9.5	<1	<1	<1
	03/31/98	7.7	<1	5.2	---	---	16	380	<1	7.1	2.4	<1	<1
	04/07/98	9.4	<1	6.7	---	---	19	360	<1	8.6	2.7	<1	<1
	05/05/98	6.2	<5	4.4	---	---	16	370	<5	4.9	<5	<5	<5
	06/02/98	8.9	<1	5.6	220	<1	17	360	<1	8.2	<1	<1	<1
	07/07/98	6.2	<1	3.8	---	---	12	310	<1	4	<1	<1	<1
	08/04/98	7.2	<1	4.5	---	---	16	440	<1	3	<1	<1	<1
	09/08/98	6.9	<1	4.2	---	---	15	310	<1	<1	<1	<1	<1
	09/27/98	7	<1	4.2	---	---	17	470	<1	<1	<1	<1	<1
	09/27/98 FD	6.8	<1	2.5	---	---	17	<1	<1	<1	<1	<1	<1
	10/06/98	7.3	<1	4.6	---	---	15	370	<1	2.2	2	<1	<1
	11/03/98	7.3	<1	4.8	---	---	14	380	<1	5.6	1.8	<1	<1
	12/07/98	0.8	<1	<1	---	---	3.2	340	<1	<1	0.8	<1	<1
	01/05/99	7.5	<1	4.1	---	---	13	360	<1	1.6	<1	<1	<1
	02/02/99	<2	<2	<2	---	---	2	220	<2	<2	<2	<2	<2
	03/14/99	9.5	<1	4.9	---	---	17	400	<1	5.7	2.3	<1	<1
	03/15/99	9.8	<5	6.2	---	---	20	390	<5	7.5	<5	<5	<5
	04/06/99	<1	<2	<1	---	---	1.7	150	<2	<1	<1	<1	<1
	05/04/99	<2	<2	<2	---	---	2.6	210	<2	<2	<2	<2	<2
	06/08/99	1	<1	<1	---	---	2	170	<1	<1	<1	<1	<1
	07/06/99	10	<2	7.6	---	---	22	200	<2	4.4	3.1	<2	<2
	08/10/99	<2	<2	<2	---	---	2	180	<2	<2	<2	<2	<2
	09/14/99	7	<1	4.2	---	---	14	380	<1	1.9	1.7	<1	<1
	09/27/99	4.2	<1	3	---	---	9.4	270	<1	2.8	1.8	<1	<1
	10/05/99	5.7	<5	5	---	---	14	320	<5	<5	5	<5	<5
	11/02/99	7	<5	5	---	---	17	410	<5	5	<5	<5	<5
	12/07/99	7.5	<1	4.6	---	---	14	360	<1	3.4	<1	<1	<1
	01/04/00	<2	<2	<2	---	---	2.5	180	<2	<2	19	<2	<2
	02/08/00	7.2	<5	3.8	---	---	14	380	<5	5.1	3.1	<5	<5
	03/07/00	<2	<2	<2	---	---	2	180	<2	<2	5.5	<2	<2
	03/18/00	7.4	<5	5	---	---	16	330	<5	7.2	2.8	<5	<5
	03/18/00 FD	7.6	<2	5.3	---	---	16	---	---	---	---	---	---
	04/04/00	8	<5	4.8	---	---	18	380	<5	5	<5	<5	<5
	05/09/00	8.1	<5	4.7	---	---	15	370	<5	7.1	<5	<5	<5
	06/06/00	8.5	<5	5.5	---	---	17	380	<5	7	<5	<5	<5
W-19	07/11/00	4.3	<5	2.8	---	---	15	370	<5	<5	<5	<5	<5

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
----- micrograms per liter (µg/L) ----->>														
W-19	08/15/00	7.4	<5	4.6	4.6	---	---	17	410	<5	4.6	2.8	<5	<5
	09/05/00	<2	<2	<2	<2	10	<2	1.4	170	<2	<2	<2	<2	<2
	09/09/00	8.3	<1	5.1	5.1	270	1.1	16	430	<1	5.4	2.8	<1	<1
	10/03/00	8	<5	<5	<5	---	---	17	420	<5	5.4	<5	<5	<5
	11/07/00	8	<5	6	6	---	---	18	340	<5	<5	<5	<5	<5
	12/05/00	7	<1	3.5	3.5	180	<1	11	220	<1	3.2	<1	<1	<1
	01/02/01	<1	<1	1.3	1.3	---	---	1.9	36	<1	<1	<1	<1	<1
	02/06/01	7.4	<5	<5	<5	---	---	21	360	<5	<5	<5	<5	<5
	03/06/01	7	<5	6	6	---	---	14	260	<5	<5	<5	<5	<5
	03/31/01	3	<1	1.2	1.2	---	---	4.5	160	<1	<1	<1	<1	<1
	04/03/01	4	<2	2.1	2.1	---	---	7.4	130	<2	<2	35	<2	<2
	05/08/01	6.6	<5	<5	<5	230	<5	15	320	<5	<5	<5	<5	<5
	06/05/01	5	<5	<5	<5	210	<5	13	140	<5	<5	<5	<5	<5
	07/03/01	5.2	<2	2.2	2.2	200	<2	9.5	230	<2	<2	2.5	<2	<2
	08/07/01	<5	<5	<5	<5	140	<5	10	340	<5	<5	9.4	<5	<5
	09/04/01	<5	<5	<5	<5	150	<5	9.4	280	<5	<5	<5	<5	<5
	09/30/01	5.1	<1	5.8	5.8	280	<1	10	390	<1	2.6	1.8	<1	<1
	10/02/01	6	<5	5.2	5.2	270	<5	14	400	<5	<5	<5	<5	<5
	11/06/01	4.9	<1	4.1	4.1	220	<1	9.8	320	<1	1.5	<1	<1	<1
	12/04/01	4.5	<1	2.1	2.1	230	3.1	8	300	<1	0.73	<1	<1	<1
	01/08/02	2.6	<1	1.3	1.3	170	<1	5.1	190	<1	<1	0.6	<1	<1
	02/05/02	6.7	<5	3.9	3.9	280	<5	16	300	<5	3.6	4.5	<5	<5
	03/05/02	3.1	<2	<2	<2	120	<2	4	100	<2	<2	1.2	<2	<2
	04/02/02	5.1	<2	2.6	2.6	180	<2	8.3	240	<2	1.4	2.8	<2	<2
	05/07/02	6	<1	3	3	120	1.2	9.4	130	<1	1.7	0.56	<1	<1
	06/04/02	3.2	<1	1	1	130	0.55	3.7	110	<1	0.5	2.2	<1	<1
	07/02/02	3.8	<5	<5	<5	170	<5	12	280	<5	<5	<5	<5	<5
	07/21/02	5.4	<1	4	4	140	0.54	9.9	210	<1	2.7	1.8	<1	<1
	08/27/02	2.3	<1	1.1	1.1	61	<1	4.2	140	<1	<1	1.5	<1	<1
	09/29/02	2.4	<1	1.2	1.2	93	<1	3.8	180	<1	0.51	1.1	<1	<1
	10/27/02	2	<2	1.2	1.2	60	<2	3.8	160	<2	<2	1.4	<2	<2
	01/19/03	1.9	<1	1.4	1.4	57	<1	3.5	130	<1	0.8	1.4	<1	<1
	04/27/03	1.9	<1	1.3	1.3	64	<1	4.5	110	<1	1.2	0.98	<1	<1
	07/06/03	1	<1	<1	<1	15	<1	2.4	98	<2	<1	0.95 J	<1	0.6 J
	01/25/04	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	07/25/04	2.2	<1	0.9 J	0.9 J	63	<1	4.5	99	<1	1.2	<1	<1	<1
	04/25/05	1.3	<1	<1	<1	41	<1	2.3	110	<1	1.7	<2	<2	<40
	10/11/05	0.8	<0.5	0.7	0.7	28	<0.5	2	84	0.7	1	<1	<1	<20
	04/30/06	<0.5	<0.5	<0.5	<0.5	7.1	<0.5	1.1	33	0.76	<0.5	0.57	<0.5	<0.5
W-19	10/09/06	1.1	<1	0.74 J	0.74 J	34	<1	<1	96	0.85 J	1.0	0.47 J	<1	<2

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
----- micrograms per liter (µg/L) ----->>														
W-19	04/29/07	<1	<1	<1	<1	5.8	<1	1	24	<1	<1	<1	<1	<1
W-20	06/25/91	<10	<10	<10	<10	---	27	<10	1200	<10	<10	<10	<10	<10
	12/17/91	<1	<1	<1	<1	---	---	<1	40	<1	<1	<1	<1	<1
	06/15/92	<1	<1	<1	<1	---	---	3.8	1200	<1	<1	1.5	<1	<1
	12/18/92	<1	<1	<2.5	<1	14	<1	2.4	550	<1	<1	<1	<1	<1
	03/31/94	<1	<1	<1	<1	<1	<1	<1	69	<1	<1	<1	<1	<1
	09/27/94	0.9	<1	<1	<1	210	<1	5.6	1200	1.7	<1	1.2	<1	<1
	03/24/95	<2	<2	3.3	<1	42	<2	1.9	1600	<2	0.7	1.3	<2	<2
	09/30/95	<50	<50	<50	<50	100	<50	<50	1100	<50	<50	<50	<50	<50
	05/06/96	<50	<50	<50	<50	<50	<50	<50	420	<50	<50	<50	<50	<50
	09/28/96	2.1	<1	7	<1	100	<1	<1	740	<1	<1	4	<1	<1
	03/30/97	<20	<20	<20	<20	66	<20	<20	1400	<20	<20	<20	<20	<20
	09/02/97	<10	<10	<10	<10	150	<10	17	1500	<10	<10	<10	<10	<10
	03/07/98	<1	<1	<1	<1	---	---	1.5	530	<1	<1	<1	<1	<1
	09/27/98	<20	<20	<20	<20	---	---	<20	640	<20	<20	<20	<20	<20
	09/27/99	<1	<1	0.5	<1	---	---	2	690	<1	<1	0.7	<1	<1
	09/09/00	0.8	<1	0.8	<1	45	<1	2.9	670	<1	<1	1	<1	<1
	09/30/01	<10	<10	<10	<10	120	<10	<10	880	<10	<10	<10	<10	<10
	07/21/02	1.4	<1	1.3	<1	81	<1	3.8	1100	<1	<1	1.7	<1	<1
	08/27/02	<1	<1	<1	<1	11	<1	0.54	600	<1	<1	0.74	<1	<1
	09/29/02	<1	<1	0.57	<1	150	<1	0.62	160	<1	<1	2.5	<1	<1
	10/27/02	<1	<1	<1	<1	3.2	<1	<1	8.5	<1	<1	<1	<1	<1
	01/19/03	<1	<1	<1	<1	15	<1	<1	47	<1	<1	0.9	<1	<1
	04/27/03	<1	<1	<1	<1	6.5	<1	<1	68	<1	<1	1.8	<1	<1
	07/06/03	<1	<1	<1	<1	5.8	<1	<1	84	<1	<1	2.9	<1	0.64 J
	01/25/04	<1	<1	<1	<1	8.2	<1	<1	49	<1	<1	0.6 J	<1	<1
	07/25/04	<1	<1	<1	<1	3.6	<1	<1	47	<1	<1	1 J	<1	<1
	04/25/05	<0.5	<0.5	<0.5	<0.5	5.6	<0.5	<0.5	74	0.5	0.8	<1	<1	<20
	10/11/05	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	20	<0.5	<0.5	<1	<1	<20
	04/30/06	<0.5	<0.5	<0.5	<0.5	2.4	<0.5	<0.5	32	<0.5	<0.5	<0.5	<0.5	<0.5
	10/09/06	<1	<1	0.26 J	<1	8.1	<1	<1	37	<1	1.6	<1	<1	<2
W-20	04/29/07	<1	<1	<1	<1	5.8	<1	<1	25	<1	1.5*	<1	<1	<1
W-21	06/25/91	<1	<1	<1	<1	---	4	<1	<1	<1	<1	<1	<1	<1
	12/17/91	<1	<1	<1	<1	---	---	<1	14	<1	<1	<1	<1	<1
	06/15/92	<1	<1	<1	<1	---	---	<1	69	<1	<1	<1	<1	<1
	12/18/92	<1	<1	<1	<1	<1	<1	<1	14	<1	<1	<1	<1	<1
	03/31/94	<1	<1	<1	<1	1.4	<1	<1	22	<1	<1	<1	<1	<1
	09/28/94	<1	<1	<1	<1	1.8	<1	<1	36	0.7	<1	<1	<1	<1

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	micrograms per liter (µg/L)												
		1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
W-21	03/24/95	<2	<2	<2	1.8	<2	<2	<2	27	<2	<2	<2	<2	<2
	09/30/95	<1	<1	<1	<1	<1	<1	<1	17	<1	<1	<1	<1	<1
	05/06/96	<1	<1	<1	2.3	<1	<1	<1	20	<1	<1	<1	<1	<1
	09/28/96	<1	<1	<1	4.4	<1	<1	<1	22	<1	<1	<1	<1	<1
	03/30/97	<1	<1	<1	1.1	<1	<1	<1	12	<1	<1	<1	<1	<1
	09/02/97	<1	<1	<1	1.3	<1	<1	<1	20	<1	<1	<1	<1	<1
	03/07/98	<1	<1	<1	---	<1	<1	<1	7	<1	<1	<1	<1	<1
	09/27/98	<1	<1	<1	---	<1	<1	<1	13	<1	<1	<1	<1	1.7
	09/27/99	<1	<1	<1	---	<1	<1	<1	11	<1	<1	<1	<1	<1
	09/09/00	<1	<1	<1	1.4	<1	<1	<1	19	<1	<1	<1	<1	<1
	09/30/01	<1	<1	<1	<1	<1	<1	<1	18	<1	<1	<1	<1	<1
	07/21/02	<1	<1	<1	1.2	<1	<1	<1	29	<1	<1	<1	<1	<1
	08/27/02	<1	<1	<1	1.1	<1	<1	<1	12	<1	<1	<1	<1	<1
	09/29/02	<1	<1	<1	1.9	<1	<1	<1	15	<1	<1	<1	<1	<1
	10/27/02	<1	<1	<1	2.4	<1	<1	<1	15	0.58	<1	<1	<1	<1
	01/20/03	<1	<1	<1	31	<1	<1	<1	1.7	<1	<1	<1	<1	<1
	04/27/03	<1	<1	<1	15	<1	<1	<1	11	<1	0.55	<1	<1	<1
	07/06/03	<1	<1	<1	7.2	<1	<1	<1	9.8	<1	1.4	<1	<1	0.83 J
	01/25/04	<1	<1	<1	6.9	<1	<1	<1	16	<1	0.7 J	<1	<1	<1
	07/25/04	<1	<1	<1	3.4	<1	<1	<1	10	<1	<1	<1	<1	<1
04/25/05	<0.5	<0.5	<0.5	3.1	<0.5	<0.5	<0.5	16	<0.5	0.9	<1	<1	<20	
10/11/05	<0.5	<0.5	<0.5	2.3	<0.5	<0.5	<0.5	15	<0.5	<0.5	<1	<1	<20	
04/30/06	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	15	<0.5	<0.5	<0.5	<0.5	<0.5	
10/09/06	<1	<1	<1	3.3	<1	<1	<1	21	0.27 J	0.56	<1	<1	<2	
4/27/2007 <sup>4</sup>	<1	<1	<1	2	<1	<1	<1	16	<1	<1	<1	<1	<1	
W-22	07/05/03	<1	<1	<1	4.4	<1	<1	19	<1	<1	<1	<1	<1	
	01/25/04	<1	<1	<1	12	<1	<1	15	<1	<1	<1	<1	<1	
	07/25/04	<1	<1	<1	11	<1	<1	20	<1	<1	<1	<1	<1	
	04/24/05	<0.5	<0.5	<0.5	14	<0.5	<0.5	28	<0.5	1.1	<1	<1	<20	
	10/11/05	<0.5	<0.5	<0.5	11	<0.5	<0.5	24	<0.5	0.9	<1	<1	<20	
	04/30/06	<0.5	<0.5	<0.5	5.6	<0.5	<0.5	22	<0.5	1.4	<0.5	<0.5	<0.5	
	04/30/06 <sup>1</sup>	<0.5	<0.5	<0.5	5.6 RE	<0.5	<0.5	23 RE	<0.5	1.4 RE	<0.5	<0.5	<0.5	
	10/08/06	<1	<1	<1	10	<1	<1	21	<1	2.7	<1	<1	<2	
	04/29/07	<1	<1	<1	11	<1	<1	22	<1	4.3 *	<1	<1	<1	
	03/14/91	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
06/25/91	<1	<1	<1	---	<1	<1	<1	<1	<1	<1	<1	<1		
09/23/91	<1	<1	<1	---	<1	<1	<1	<1	<1	<1	<1	<1		
12/17/91	<1	<1	<1	---	<1	<1	<1	<1	<1	<1	<1	<1		



Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	micrograms per liter (µg/L)																
		1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride					
W-24	03/24/92	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	06/15/92	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	09/15/92	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	12/18/92	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	03/26/93	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	07/05/03	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	01/25/04	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	07/25/04	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	04/24/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20
	10/11/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20
	04/30/06	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2
	10/08/06	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	04/29/07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	W-25	03/14/91	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
06/25/91		<1	<1	<1	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
09/23/91		<1	<1	<1	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
12/17/91		<1	<1	<1	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
03/24/92		<1	<1	<1	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
06/15/92		<1	<1	<1	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
09/15/92		<1	<1	<1	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
12/18/92		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
03/26/93		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
07/21/02		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
01/19/03		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
07/05/03		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
01/25/04		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
07/25/04		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
04/24/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	
10/11/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<20	
04/30/06	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	
10/08/06	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
04/29/07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
W-26	03/14/91	<50	<50	<50	---	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	06/25/91	<1	<1	<1	---	71	890	840	2	17	200	750	<50	<50	<50	<50	<50	<50
	09/23/91	3	<1	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	12/17/91	<1	<1	<1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	03/24/92	2	<1	0.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	06/15/92	<1	<1	<1	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride	
micrograms per liter (µg/L)														
W-26C	09/15/92	1.7	<1	4.4	---	---	7.6	380	<1	<1	1.6	<1	<1	
	12/18/92	<1	<1	<1	11	<1	11	71	<1	<1	<1	<1	<1	
	03/26/93	1.3	<1	<2.5	24	<1	3.3	250	<1	<1	<1	<1	<1	
	09/23/93	<10	<10	4.3	27	<10	<10	400	<10	<10	<10	<10	<10	
	W-26D	09/15/92	2	<1	6.2	---	---	7.3	430	<1	<1	1.8	<1	<1
		12/18/92	0.5	<1	<2.5	2.9	<1	2	41	<1	<1	<1	<1	<1
		03/26/93	1.3	<1	<2.5	13	<1	3.1	290	<1	<1	<1	<1	<1
		09/23/93	1.2	<1	<1	13	<1	5.7	370	1.8	<1	1.4	<1	<1
		10/06/93	<1	1	6.4	30	<1	<1	530	<1	8.8	2.3	<1	<1
		11/03/93	1	<1	3.7	23	<1	4.4	400	1	<1	.9	<1	1.5
		11/09/93	0.8	<1	<1	17	<1	4.5	360	.8	<1	.8	<1	<1
		12/01/93	0.9	<1	<1	<1	<1	<1	690	<1	<1	3	<1	3.4
		01/06/94	1.3	<1	<1	24	<1	5	340	1.2	<1	1.1	<1	<1
02/02/94		0.8	<1	1.6	8.2	<1	3.1	250	1.6	<1	.8	<1	<1	
03/02/94		<10	<10	<10	<10	<10	<10	250	<10	<10	<10	<10	<10	
03/31/94		<1	<1	<1	7.9	<1	0.8	47	<1	<1	<1	<1	<1	
04/06/94		0.5	<1	1.2	11	<1	1.4	200	<1	<1	<1	<1	<1	
05/04/94	<10	<10	<10	16	<10	<10	370	<10	<10	<10	<10	<10		
06/01/94	<10	<10	<10	19	<10	<10	480	<10	<10	9	<10	<10		
07/06/94	<10	<10	<10	34	<10	6	520	<10	<10	<10	<10	<10		
08/03/94	<10	1	1.1	1	26	<10	500	<10	<10	<10	<10	<10		
09/07/94	1.1	<0.01	2.2	29	<0.01	5.9	760	<0.01	<1	1.1	<0.01	1.4		
09/29/94	<10	<10	<10	20	<10	<10	330	<10	<10	<10	<10	<10		
10/05/94	<10	<10	<10	29	<10	<10	670	<10	<10	<10	<10	<10		
11/03/94	<10	<10	<10	<10	<10	<10	480	<10	<10	<10	<10	12		
12/06/94	<1	<1	<1	9.5	<1	<1	350	<1	<1	2	<1	<1		
01/03/95	<1	<1	2.5	<1	<1	3.5	270	<1	<1	1.3	<1	<1		
02/07/95	<1	<1	<1	18	<1	<1	390	<1	<1	9	<1	<1		
03/07/95	<1	<1	1.4	16	<1	2.2	260	<1	<1	<1	<1	<1		
03/24/95	<2	<2	<2	19	<2	<2	310	<2	<2	5	<2	<2		
04/04/95	<10	<10	<10	9	<10	<10	270	<10	<10	<10	<10	<10		
05/02/95	0.6	<1	1.5	20	<1	3.8	410	1.9	<1	1	<1	<1		
06/06/95	<1	<1	16	<1	<1	2.1	440	<1	<1	<1	<1	<1		
07/05/95	<10	<10	<10	<10	<10	<10	400	<10	<10	<10	<10	<10		
08/01/95	<10	<10	<10	28	<10	<10	680	<10	<10	<10	<10	<10		
09/05/95	<10	<10	<10	19	<10	<10	410	<10	<10	<10	<10	<10		
09/30/95	<1	<1	<1	18	<1	<1	180	<1	<1	<1	<1	<1		
10/03/95	<1	<1	<1	21	<1	<1	290	<1	<1	<1	<1	<1		
11/07/95	<10	<10	<10	17	<10	<10	340	<10	<10	<10	<10	<10		

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride	
		micrograms per liter (µg/L) ----->>>													
W-26D	12/05/95	<1	<1	<1	7.1	<1	<1	<1	150	<1	<1	<1	<1	<1	
	03/05/96	1.1	<1	<1	15	<1	<1	3.6	190	<1	<1	<1	<1	<1	
	04/02/96	<10	<10	<10	15	<10	<10	<10	220	<10	<10	<10	<10	<10	
	05/06/96	1.1	<1	<1	19	<1	<1	2.7	220	<1	<1	<1	<1	<1	
	05/07/96	<1	<1	1.6	11	<1	<1	2.8	95	<1	<1	<1	<1	<1	
	06/04/96	<10	<10	<10	43	<10	<10	<10	670	<10	<10	<10	<10	<10	
	07/02/96	<10	<10	<10	18	<10	<10	<10	340	<10	<10	<10	<10	<10	
	08/06/96	<10	<10	<10	16	<10	<10	<10	210	<10	<10	<10	<10	<10	
	09/03/96	<25	<25	<25	<25	<25	<25	<25	350	<25	<25	<25	<25	<25	
	09/28/96	1.4	<1	1.6	37	<1	<1	<1	290	2.5	<1	2.4	<1	<1	
	10/01/96	<1	<1	<1	30	<1	<1	1.7	250	<1	<1	<1	<1	<1	
	11/05/96	<1	<1	<1	27	<1	<1	2.4	280	<1	<1	<1	<1	<1	
	12/03/96	8.3	<1	4.6	330	<1	<1	17	530	<1	<1	<1	<1	<1	
	01/07/97	<10	<10	<10	18	<10	<10	<10	230	<10	<10	<10	<10	<10	
	02/04/97	<20	<20	<20	20	<20	<20	<20	220	<20	<20	<20	<20	<20	
	03/04/97	<20	<20	<20	<20	<20	<20	<20	470	<20	<20	<20	<20	<20	
	03/30/97	<5	<5	5	85	<5	<5	15	170	<5	<5	<5	<5	<5	
	04/01/97	<5	<5	<5	<5	<5	<5	<5	25	<5	<5	<5	<5	<5	
	05/06/97	<20	<20	<20	<20	<20	<20	<20	170	<20	<20	<20	<20	<20	
	06/10/97	<20	<20	<20	27	<20	<20	<20	360	<20	<20	<20	<20	<20	
07/01/97	<20	<20	<20	25	<20	<20	<20	360	<20	<20	<20	<20	<20		
08/12/97	<20	<20	<20	<20	<20	<20	<20	420	<20	<20	<20	<20	<20		
09/02/97	<20	<20	<20	29	<20	<20	<20	370	<20	<20	<20	<20	<20		
10/07/97	<20	<20	<20	27	<20	<20	<20	650	<20	<20	<20	<20	<20		
11/04/97	<20	<20	<20	24	<20	<20	<20	380	<20	<20	<20	<20	<20		
01/06/98	<20	<20	<20	<20	<20	<20	<20	220	<20	<20	<20	<20	<20		
02/03/98	<1	<1	<1	---	---	---	---	170	<1	<1	<1	<1	<1		
03/08/98	<1	<1	<1	---	---	---	---	150	<1	<1	<1	<1	<1		
03/8/98 FD	<1	<1	<1	---	---	---	---	150	<1	<1	<1	<1	<1		
03/31/98	<1	<1	<1	---	---	---	---	120	<1	<1	<1	<1	<1		
04/07/98	<1	<1	<1	---	---	---	---	98	<1	<1	<1	<1	<1		
05/05/98	<1	<1	<1	---	---	---	---	140	<1	<1	<1	<1	<1		
06/02/98	0.7	<1	<1	15	<1	<1	2.2	200	<1	<1	<1	<1	<1		
07/07/98	0.6	<1	<1	---	---	---	---	160	<1	<1	<1	<1	<1		
08/04/98	<2	<2	<2	---	---	---	---	140	<2	<2	<2	<2	<2		
09/08/98	7.6	<5	4.8	---	---	---	18	420	<5	<5	<5	<5	<5		
09/27/98	0.7	<1	<1	---	---	---	---	160	<1	<1	<1	<1	<1		
10/06/98	0.9	<1	0.5	---	---	---	3	240	<1	<1	<1	<1	<1		
11/03/98	0.6	<1	<1	---	---	---	1.4	190	<1	<1	<1	<1	<1		
12/07/98	7.2	<1	4	---	---	---	14	560	<1	<1	<1	<1	<1		

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
micrograms per liter (µg/L)														
W-26D	01/05/99	<1	<1	<1	<1	<1	<1	<1	99	<1	<1	<1	<1	<1
	02/02/99	5.8	<5	4.3	<1	<1	<1	14	490	<5	3.2	<5	<5	<5
	03/14/99	0.6	<1	<1	<1	<1	<1	1.5	190	<1	<1	<1	<1	<1
	03/15/99	<2	<2	<2	<2	<1	<1	1.8	210	<2	<2	<2	<2	<2
	04/06/99	8.2	<5	5	<5	<1	<1	16	470	<1	5.5	<5	<5	<5
	05/04/99	9.6	<5	6	<5	<1	<1	20	440	<5	6.2	5	<5	<5
	06/08/99	9.5	<1	6.8	<1	<1	<1	19	310	<1	7.7	<1	<1	<1
	07/06/99	<2	<2	<2	<2	<1	<1	2.8	230	<2	<2	<2	<2	<2
	08/10/99	6.6	<5	5	<5	<1	<1	15	400	<5	<5	<5	<5	<5
	09/14/99	1	<1	<1	<1	<1	<1	2.7	270	<1	<1	1	<1	<1
	09/27/99	0.7	<1	<1	<1	<1	<1	1.9	190	<1	<1	0.5	<1	<1
	11/02/99	<2	<2	<2	<2	<1	<1	2.2	190	<2	<2	<2	<2	<2
	12/07/99	1	<1	<1	<1	<1	<1	2.1	190	<1	<1	1	<1	<1
	02/08/00	1.1	<2	<2	<2	<1	<1	2.8	180	<2	<2	6.4	<2	<2
	03/07/00	6.9	<5	5	<5	<1	<1	15	350	<5	<5	5	<5	<5
	03/18/00	<2	<2	<2	<2	<1	<1	2	120	<2	<2	2.1	<2	2
	04/04/00	<2	<2	<2	<2	<1	<1	2.1	200	<2	<2	2.1	<2	<2
	05/09/00	<2	<2	<2	<2	<1	<1	2.1	190	<2	<2	2.7	<2	<2
	06/06/00	<2	<2	<2	<2	<1	<1	2.1	190	<2	<2	2.7	<2	<2
	07/11/00	<2	<2	<2	<2	<1	<1	<2	140	<2	<2	<2	<2	<2
	08/15/00	<2	<2	<2	<2	<1	<1	1.7	160	<2	<2	<2	<2	<2
	09/05/00	7.6	<5	5.3	240	<5	<5	16	370	<5	3.9	2.6	<5	<5
	09/09/00	0.7	<1	<1	16	<1	<1	1.6	160	<1	<1	0.7	<1	<1
	10/03/00	<2	<2	<2	<2	<1	<1	2.4	200	<2	<2	<2	<2	<2
	11/07/00	<2	<2	<2	<2	<1	<1	2	210	<2	<2	<2	<2	<2
	12/05/00	<1	<1	<1	17	<1	<1	2	180	<1	<1	<1	<1	<1
	01/02/01	<1	<1	<1	<1	<1	<1	<1	21	<1	<1	<1	<1	<1
	02/06/01	<5	<5	<5	<5	<1	<1	<5	240	<5	<5	<5	<5	<5
	03/06/01	<2	<2	<2	<2	<1	<1	2.6	220	<2	<2	<2	<2	<2
	03/31/01	<1	<1	<1	<1	<1	<1	1.4	120	<1	<1	<1	<1	<1
	04/03/01	<2	<2	<2	<2	<1	<1	<2	140	<2	<2	<2	<2	<2
	05/08/01	<2	<2	<2	20	<2	<2	2.5	200	<2	<2	<2	<2	<2
	06/05/01	<2	<2	<2	20	<2	<2	2.4	200	<2	<2	<2	<2	<2
	07/03/01	<2	<2	<2	18	<2	<2	2.2	190	<2	<2	<2	<2	<2
	08/07/01	<2	<2	<2	20	<2	<2	2.5	190	<2	<2	<2	<2	<2
	09/04/01	<2	<2	<2	17	<2	<2	3.1	250	<2	<2	<2	<2	<2
	09/30/01	<1	<1	<1	14	<1	<1	2.4	250	<1	<1	<1	<1	<1
	10/02/01	<2	<2	<2	28	<2	<2	3.6	220	<2	<2	<2	<2	<2
	11/06/01	0.95	<1	<1	17	<1	<1	2.4	190	<1	<1	<1	<1	<1
W-26D	12/04/01	1.2	<1	<1	21	<1	<1	3.1	250	<1	<1	<1	<1	<1

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
----- micrograms per liter (µg/L) ----->>														
W-26D	01/08/02	1.2	<1	<1	23	<1	<1	3.7	230	<1	<1	0.86	<1	<1
	02/05/02	<5	<5	<5	26	<5	<5	4.9	260	<5	<5	<5	<5	<5
	03/05/02	1.2	<2	<2	19	<2	<2	3.9	220	<2	<2	<2	<2	<2
	04/02/02	<2	<2	<2	12	<2	<2	1.4	130	<2	<2	<2	<2	<2
	05/07/02	1.1	<2	<2	18	<2	<2	2.6	220	<2	<2	<2	<2	<2
	06/04/02	0.78	<1	<1	13	<1	<1	1.7	140	<1	<1	<1	<1	<1
	07/02/02	<2	<2	<2	17	<2	<2	1.9	160	<2	<2	<2	<2	<2
	07/21/02	1.1	<5	<5	27	<5	<5	3.9	330	<5	<5	<5	<5	<5
	08/27/02	0.54	<1	<1	12	<1	<1	0.95	110	<1	<1	<1	<1	<1
	09/29/02	0.56	<1	<1	13	<1	<1	0.88	93	<1	<1	<1	<1	<1
	10/27/02	<1	<1	<1	11	<1	<1	<1	37	<1	<1	<1	<1	<1
	01/19/03	<1	<1	<1	12	<1	<1	0.7	68	<1	<1	<1	<1	<1
	04/27/03	<1	<1	<1	10	<1	<1	0.62	48	<1	<1	<1	<1	<1
	07/06/03	<1	<1	<1	7.7	<1	<1	0.93 J	110	<1	<1	0.54 J	<1	0.57 J
	01/25/04 <sup>2</sup>	---	---	---	---	---	---	---	---	---	---	---	---	---
	07/25/04	<1	<1	<1	13	<1	<1	0.5 J	110	<1	<1	<1	<1	<1
	04/25/05	<0.5	<0.5	<0.5	11	<0.5	<0.5	0.6	91	<0.5	<0.5	<1.0	<1.0	<20
10/11/05	<0.5	<0.5	<0.5	9.1	<0.5	<0.5	<0.5	87	<0.5	<0.5	<1.0	<1.0	<20	
04/30/06	<0.5	<0.5	<0.5	6.9	<0.5	<0.5	<0.5	73 E	<0.5	<0.5	<0.5	<0.5	<0.5	
04/30/06 <sup>1</sup>	<2.5	<2.5	<2.5	6.3 D	<2.5	<2.5	<2.5	79 D	<2.5	<2.5	<2.5	<2.5	<2.5	
10/09/06	<1	<1	<1	10	<1	<1	<1	89	<1	<1	<1	<1	<1.0	
04/29/07	<1	<1	<1	5.8	<1	<1	<1	50	<1	<1	<1	<1	<1.0	
W-27	03/14/91	<5	<5	<5	---	<5	<5	<5	81	<5	<5	<5	<5	<5
	06/26/91	<1	<1	<1	---	1	---	<1	70	<1	<1	<1	<1	<1
	09/23/91	<1	<1	<1	---	---	---	<1	64	<1	<1	<1	<1	<1
	12/17/91	<1	<1	<1	---	---	---	<1	21	<1	<1	<1	<1	<1
	03/24/92	<1	<1	<1	---	---	---	0.5	80	<1	<1	<1	<1	<1
	06/15/92	<1	<1	<1	---	---	---	0.7	90	<1	<1	<1	<1	<1
	09/15/92	<1	<1	<1	---	---	---	<1	64	<1	<1	<1	<1	<1
	12/18/92	<1	<1	<2.5	2.4	<1	<1	<1	68	<1	<1	<1	<1	<1
	03/26/93	<1	<1	<1	1.9	<1	<1	<1	58	<1	<1	<1	<1	<1
	09/23/93	<1	<1	<1	0.9	<1	<1	<1	60	<1	<1	<1	<1	<1
	03/31/94	<1	<1	<1	6.3	<1	<1	2.3	150	<1	<1	<1	<1	<1
	09/28/94	<1	<1	<1	1.9	<1	<1	<1	80	<1	<1	<1	<1	<1
	03/24/95	<2	<2	<2	2.5	<2	<2	0.6	76	<2	<2	<2	<2	<2
	09/30/95	1.7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	05/06/96	<1	<1	<1	2.5	<1	<1	<1	45	<1	<1	<1	<1	<1
	09/28/96	<1	<1	<1	5.9	<1	<1	<1	72	<1	<1	<1	<1	<1
	03/30/97	<1	<1	2.1	3.4	<1	<1	<1	95	<1	<1	<1	<1	<1

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
----- micrograms per liter (µg/L) ----->>>														
W-27	09/02/97	<1	<1	<1	<1	4.9	<1	<1	150	<1	<1	<1	<1	<1
	03/08/98	<1	<1	<1	<1	---	---	<1	42	<1	<1	<1	<1	<1
	09/27/98	<1	<1	<1	<1	---	---	<1	19	<1	<1	<1	<1	<1
	03/14/99	<1	<1	<1	<1	---	---	<1	48	<1	<1	<1	<1	<1
	09/27/99	<1	<1	<1	<1	---	---	1.2	120	<1	<1	<1	<1	<1
	03/18/00	<1	<1	<1	<1	---	---	1	67	<1	<1	<1	<1	<1
	09/09/00	<1	<1	<1	<1	1.5	<1	<1	46	<1	<1	<1	<1	<1
	03/31/01	<1	<1	<1	<1	---	---	<1	59	<1	<1	<1	<1	<1
	09/30/01	<1	<1	<1	<1	1.4	<1	<1	76	<1	<1	<1	<1	<1
	03/10/02	<1	<1	<1	<1	1.5	<1	<1	39	<1	<1	<1	<1	<1
	07/21/02	<1	<1	<1	<1	2.8	<1	0.64	64	<1	<1	<1	<1	<1
	08/27/02	<1	<1	<1	<1	1.8	<1	<1	64	<1	<1	<1	<1	<1
	09/29/02	<1	<1	<1	<1	2.8	<1	0.68	68	<1	<1	<1	<1	<1
	10/27/02	<1	<1	<1	<1	5.1	<1	0.84	120	<1	<1	<1	<1	<1
	01/19/03	<1	<1	<1	<1	9.4	<1	1	180	<1	<1	<1	<1	<1
	04/26/03	<1	<1	<1	<1	18	<1	0.6	110	<1	<1	<1	<1	<1
	07/05/03	<1	<1	<1	<1	10	<1	0.68 J	130	<1	<1	<1	<1	<1
	01/25/04	<1	<1	<1	<1	28	<1	<1	120	<1	<1	<1	<1	<1
	01/25/04 <sup>1</sup>	<10	<10	<10	<10	27	<10	<10	(B)	<10	<10	<10	<10	<10
	07/25/04	<1	<1	<1	<1	12	<1	<1	80	<1	<1	<1	<1	<1
04/24/05	<0.5	<0.5	<0.5	<0.5	23	<0.5	<0.5	90	<0.5	<0.5	4.5	<1	<1	<20
10/11/05	<0.5	<0.5	<0.5	<0.5	14	<0.5	<0.5	74	<0.5	<0.5	2.3	<1	<1	<20
04/30/06	<0.5	<0.5	<0.5	<0.5	13	<0.5	<0.5	62 E	<0.5	<0.5	2.3	<0.5	<0.5	<0.5
04/30/06 <sup>1</sup>	<2.5	<2.5	<2.5	<2.5	11 D	<2.5	<2.5	61 D	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
10/08/06	<1	<1	<1	<1	15	<1	<1	63	<1	<1	2.5	<1	<1.0	<2
04/29/07	<1	<1	<1	<1	16	<1	<1	59	<1	<1	3.7 *	<1	<1	<1
WS-1	03/14/91	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	06/26/91	<1	<1	<1	<1	---	<1	<1	<1	<1	<1	<1	<1	<1
	09/23/91	<1	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1
	12/17/91	<1	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1
	03/24/92	<1	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1
	06/15/92	<1	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1
	09/15/92	<1	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1
	12/18/92	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	03/26/93	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	09/23/93	<1	<1	<1	<1	<1	<1	<1	0.6	<1	<1	<1	<1	<1
03/31/94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
09/28/94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
03/24/95	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	

Table 3. Volatile Organic Compounds in Groundwater, 91 All Angels Hill Road, Wappingers Falls, New York

Well ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	1,1,1-TCA	TCE	PCE	Vinyl Chloride	Chloroform	Freon 113	Methylene Chloride
----- micrograms per liter (µg/L) ----->>													
WS-1	09/30/95	<1	<1	<1	<1	<1	<1	0.6	<1	<1	<1	<1	<1
	05/06/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	09/28/96	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	03/30/97	<1	<1	<1	<1	<1	1.1	<1	<1	<1	<1	<1	<1
	09/02/97	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	03/08/98	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1
	03/14/99	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1
	09/27/99	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1
	03/18/00	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1
	09/09/00	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	03/31/01	<1	<1	<1	---	---	<1	<1	<1	<1	<1	<1	<1
	03/10/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	07/21/02	<1	<1	<1	<1	<1	<1	0.71	<1	<1	<1	<1	<1
	08/27/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	09/29/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	10/27/02	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	04/26/03	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	07/05/03	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	01/25/04	---	---	---	---	---	---	---	---	---	---	---	---
	07/25/04	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	04/24/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<20
	10/11/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<20
	04/30/06	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	10/08/06	<1	<1	<1	<1	<1	<1	0.3	<1	<1	<1	<1	<2
WS-1	04/29/07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

**Chemical Abbreviations:**

- 1,1-DCA = 1,1-dichloroethane
- 1,2-DCA = 1,2-dichloroethane
- 1,1-DCE = 1,1-dichloroethene
- 1,2-DCE = 1,2-dichloroethene
- 1,1,1-TCA = 1,1,1-trichloroethane
- cis-1,2-DCE = cis-1,2-dichloroethene
- Freon 12 = dichlorodifluoromethane
- PCE = tetrachloroethene
- TCE = trichloroethene
- trans-1,2-DCE = trans-1,2-dichloroethene

**Notes:**

- 1 = For quality assurance purposes the lab reanalyzed the sample; results for both analyses are being presented
- 2 = Groundwater samples not collected due to frozen groundwater.
- 3 = Chloroethane was detected at a concentration of 1.0 ug/L
- 4 = 1,2-Dichlorobenzene was detected at a concentration of 1.3 ug/L.
- = not analyzed
- <# = analyte not detected above detection limit
- \* = LCS or LCSD exceeds the control limits
- D = the sample was diluted due to target compounds that exceed the linear calibration range
- E = detected concentrations exceed the calibration range of the instrument for the specific analysis
- FD = field duplicate sample
- J = detected concentration was below the laboratory reporting limit
- RE = the sample was reanalyzed

**APPENDIX B**

**QUALITY ASSURANCE PROJECT PLAN**





**Weiss Associates**

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## **QUALITY ASSURANCE PROJECT PLAN**

**FOR**

**FORMER FAIRCHILD FACILITY**

**91 All Angels Hill Road  
Wappingers Falls, New York**

*Prepared for*

**Fairchild Semiconductor Corporation**  
225 Schlumberger Drive  
Sugar Land, TX 77478

*Prepared by*

**Weiss Associates**  
350 E. Middlefield Road  
Mountain View, CA 94043



## QUALITY ASSURANCE PROJECT PLAN

FOR

FORMER FAIRCHILD FACILITY

91 All Angels Hill Road  
Wappingers Falls, New York

*Prepared by*

**Weiss Associates**

350 E. Middlefield Road  
Mountain View, CA 94043

Weiss Project No. 363-1807-10

*William C. McIlvride* September 28, 2007

William McIlvride, C.E.G.  
Sr. Project Hydrogeologist

Weiss Associates work for Fairchild Semiconductor Corporation (Fairchild) was conducted under my supervision. To the best of my knowledge, the data contained herein are true and accurate and satisfy the scope of work prescribed by the client for this project. The data, findings, recommendations, specifications or professional opinions were prepared solely for the use of Fairchild in accordance with generally accepted professional engineering and geologic practice. The Summary contained in this report serves as a complement to the entire report and should not be treated as a stand-alone document. The reader is referred to the detailed information provided within this report for additional data not contained in the Summary. We make no other warranty, either expressed or implied, and are not responsible for the interpretation by others of the contents herein.

*Tess Byler*

September 28, 2007

Tess Byler, P.G.  
Sr. Project Geologist

Date

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Figure 1 Sample of a "Cooler Receipt Form"

## TABLES

Table 1. Chemical Data Quality Control Evaluation in Terms of Precision, Accuracy, Representativeness, Completeness, and Comparability

## QUALITY ASSURANCE PROJECT PLAN

### 1. INTRODUCTION

This Quality Assurance Project Plan (QAPP) presents the functions, procedures, and specific quality assurance (QA) and quality control (QC) activities to achieve the data quality goals for the site investigation at the former Fairchild facility at 91 All Angels Hill Road in Wappingers Falls, New York (Site). It specifies the procedures that will be implemented to ensure that environmental data collection techniques are consistent with specific quality goals of accuracy, precision, completeness, representativeness and comparability.

The Site background description and project's scope and goals are described in detail in the Work Plan. In brief, the purpose of the investigation is to identify whether or not a source of contaminants is present in the W-18A vicinity, in particular, beneath the floor slab of the former manufacturing building.

This QAPP follows the guidance set forth by the New York State Department of Conservation (NYSDEC) Division of Environmental Remediation (DER) *Draft DER-10 Technical Guidance for Site Investigation and Remediation*, December, 2002; and the Environmental Protection Agency (USEPA) Region 9 guidance document entitled *U.S. EPA Guidance for Quality Assurance Project Plans*, EPA QA/G-5 Requirements for Quality Assurance Project Plans for Environmental Operations (USEPA, 1998).

## 2. PROJECT MANAGEMENT

Weiss Associates' (Weiss) project management structure establishes direct, straightforward accountability while providing the Project Manager (PM) the flexibility to meet the challenges inherent in environmental investigation and engineering work. The project structure and personnel presented herein were developed specifically for the work at former Fairchild facility at Wappingers Falls, New York.

### 2.1 Program and Project Organizational Structures

This organizational structure provides the Weiss Project Manager with a dedicated organization, including Weiss technical and administrative support staff, and subcontracting managers. In addition, the Project Manager will be able to meet the fluctuating staffing and technical needs by utilizing our team's corporate network of experienced and diversified technical resources as needed. Weiss' project organizational structure is designed to provide a clear line of management responsibility and authority; facilitate delegation of authority to the management level responsible for completing work products; and maintain appropriate cost, schedule, and QC. The organization reflects strong technical and management leadership and integration across multiple tasks and provides a direct line of communication between Weiss team managers and their client counterparts. The Weiss team lines of authority flow from the Project Manager to the respective support staff. This section addresses all general organizational items for projects conducted at the former Fairchild facility in Wappingers Falls.

#### 2.1.1 Project Management Responsibilities

It is the responsibility of all management personnel who may affect the quality of environmental investigations, studies, operations, or other quality-related functions to be aware of and implement the quality policies and practices set forth in this QAPP. The PM may delegate authority to appropriate personnel to assure activities are conducted in a compliant, cost-effective and timely manner. A summary of the responsibilities of key project management personnel is provided below.

##### 2.1.1.1 Project Manager

The Project Manager (PM) will have the authority to select or dismiss Weiss staff; select or terminate major subcontractors; approve or disapprove budgets and schedules; stop work; and communicate with the client and regulatory agency representatives, as necessary, to evaluate the progress on any task and ensure the early resolution of any problem. He/she will establish and interpret contractual policies; monitor schedule and cost; coordinate all reporting and other forms of communications; ensure necessary resources are made available; identify and resolve potential problems or conflicts; and provide for safe performance and quality of the work.

### 2.1.1.2 Site Safety and Health Officer

The Site Safety and Health Officer (SSHO) will direct the implementation of all matters regarding environmental protection, fire protection, occupational safety and health, industrial hygiene, personal protection from hazardous chemical exposure, and permitting for this project. The SSHO has the organizational freedom and authority to require changes to work practices; identify problems and proposed solutions; and if necessary, stop work activities that could pose a threat to personnel or the environment. The SSHO will work under the supervision of the Safety and Health Manager, and will coordinate activities with the PM, as appropriate.

### 2.1.1.3 Field Team Leader

The Field Team Leader (FTL) reports to the PM and is responsible for project performance in the field, including identifying and scheduling personnel resources, materials, and equipment. The FTL is assigned to overview and control specific field activities, and is responsible for field cost tracking through administrators and project billing. The FTL will also conduct project control assessments and provide purchasing support for small purchases to start-up projects.

## 2.1.2 Subcontractor Responsibilities

Weiss will work with several contractors through the various tasks associated with this project. Each contractor will be subcontracted to Weiss for specific work assignments. The assignments to be contracted-out under this QAPP include:

- Analytical laboratory services;
- Drilling services; and
- Utility location services.

The contractors for each task will be selected when the field work is scheduled. Selection will be based on qualifications, availability and cost. The analytical laboratory will be certified for all parameters analyzed in soil, soil vapor and water by the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP). The laboratory QA program will play an important part in ensuring that valid data are obtained from the field sampling activities. In-house Laboratory PMs assigned specifically to this project will oversee quality assurance for the laboratory's work. These managers are responsible for ensuring that all analytic data generated under this contract are reviewed prior to their release to Weiss and the client. (Refer to Section 6.0 of this QAPP for data review, validation, and verification requirements).

## 2.2 Documentation and Records

The following section itemizes the information and records that will be included in data report packages.



### 2.2.1 Field Reports

This section provides procedures for the use of project field reports and forms.

Field reports contain a written record of all major on-site activities for a given project or task. The field reports will serve as a diary of the events of the day and a daily log of all activities carried out in the field that involve Weiss personnel. Since the field report becomes part of the permanent file for the project, and because the information contained in the field reports may be admitted as evidence in cost recovery or other legal proceedings, it is critical that the report be properly maintained. Although field activities will vary, the general information that should be recorded in each field report will remain similar, and is described below.

Each field report will contain the following information:

- Project name;
- Weiss project number;
- Weiss Project Manager's name;
- Start date; and,
- End date.

The content of daily entries in the logbook will vary with the site activity, the following minimum information will be recorded each day:

- Date, start time, weather conditions;
- Arrival/departure of site visitors;
- Weiss field personnel;
- Type of activity;
- Equipment to be used;
- Calibration activities, with reference to appropriate calibration forms;
- Names of subcontractors on-site and their activities;
- References to field documentation forms used;
- Deviations from the sampling plan;
- Record of communications, including the time, individuals involved, etc.;
- Health and safety issues discussed or anticipated;
- Problems encountered and related corrective actions; and
- Time leaving the site.

The field reports will be legible, factual, and free of personal opinion. Hypotheses for observed phenomena will be labeled as such. Corrections to erroneous data will be made by crossing a line through the entry with the date and initials of the person making the correction.

The Field Team Leader (FTL) is ultimately responsible for maintaining the field reports. Following the completion of all work for the project, the field reports will be supplied to the Weiss Project Manager for inclusion in the permanent project files.

### 2.2.2 Field Forms

Weiss will use a variety of forms in order to conveniently log and trace all work activities occurring at the site for this WO. These field documentation forms shall include:

- Tailgate Safety Meeting Forms;
- Borehole/Piezometer Construction Log Forms;
- Soil Vapor Sampling Forms
- Water Sampling Forms;
- Chain-of-Custody (COC) Records; and
- Equipment Calibration Forms.

The forms described below will be used when appropriate for this project. Hard copies of all pertinent field-related documentation will be organized by category, and will be included in the project files following completion of the project.

### 2.2.3 Data Reduction, Validation and Documentation

Weiss will provide for each analytical method and major measurement parameter the following procedures:

#### 2.2.3.1 Procedures to Ensure Data Integrity

Criteria will be used to assure data integrity during the collection and reporting process as identified throughout this document. Included in the criteria are the strict adherence to procedures and protocols provided for the collection of field data and samples, and for the laboratory analyses and reporting process. Procedures to ensure integrity of analytical laboratory data are presented in Sections 2.2.3 of this QAPP. Procedures to ensure integrity of collected field data are discussed in Section 4.2 of the Workplan. Procedures to ensure data integrity during shipping are discussed in Section 4.2 of the Workplan (Sample Chain-of-Custody, Packaging and Transport).

#### 2.2.3.2 Treatment of Outliers and Corrective Action Plans

The following section describes the specific mechanisms employed when outlier data are identified.

#### 2.2.3.3 Field Data

Field data that fall outside of the historical range for a given parameter, show in excess of 50% departure from a historically established trend, or show disagreement with duplicate measurements beyond allowable tolerances in field instrument precision, will be followed up at the direction of the QC Systems Manager with one or more of the following corrective actions:

- Datum is annotated;
- Field Sampling Procedure (FSP) documentation is reviewed for adherence to QA/QC procedures;

- Measurement is repeated to check the error;
- Duplicate sample is measured;
- Equipment calibrations are checked and/or repeated;
- Measuring device is repaired or replaced; and/or,
- Sample is re-collected and analyzed.

This process will be documented in the field logbooks.

#### 2.2.3.4 Laboratory Data

Outlier data generated during the laboratory analyses process are identified by the numerous QA/QC procedures built into the sample data management systems utilized throughout the tracking process. An effective QA program requires rapid, effective, and thorough correction of QA and QC issues. Effective action minimizes the possibility of providing data of unknown or insufficient quality. Corrective actions are described in general terms below. Method-specific corrective actions are discussed in relevant sections.

The Contract Laboratory directs the corrective action when problems that affect product or service quality are identified and are ultimately responsible for developing solutions that are consistent with accepted scientific practices and which produce data of known and acceptable quality.

Once a situation has been identified as producing marginal or noncompliant data, the cause of the problem will be identified. Corrective action requires defined responsibilities for scheduling, performing, documenting, and demonstrating the effectiveness of the action. It is the responsibility of the Contract Laboratory to work with the QC Systems Manager to develop a plausible corrective action plan. The plan is tested, if possible, to determine whether the action results in the production of compliant data by eliminating the problem.

A corrective action report is used to document all corrective action plans. The Contract Laboratory may initiate the form. Corrective action plans will be kept on file.

If the non-conformance has affected any data and it is not possible to complete the corrective action plan and produce compliant data, the Contract Laboratory and the QC Systems Manager will contact the Weiss PM who will then decide what further action, if any, need be taken.

#### 2.2.3.5 Data Management

The QC and QA samples will be collected and analyzed by the Contract Laboratory and the QA Laboratory, respectively. These QC and QA samples include duplicates of field samples, rinseate blanks, trip blanks, and ambient blanks. QC samples, which represent approximately 10% of the field samples, help Weiss to identify and diagnose problems related to sampling and analysis. QA samples, which represent approximately 10% of the field samples, will be used for monitoring of sampling and performance of the Contract Laboratory.

### 2.2.3.6 Comprehensive Certificate of Analysis

The Contract Laboratory will address the following requirements in preparing a Comprehensive Certificate of Analysis:

- A “Cooler Receipt Form” (Fig. 1) will be completed by the laboratory documenting sample conditions on arrival at the laboratory. Original copies of Cooler Receipt Forms, as well as original copies of Chain-of-Custody forms, will be provided with the Certificate of Analysis;
- For each analytical method, the laboratory will report all analytes as a detected concentration or as less than the specified reporting limit. All samples with out-of-control spike recoveries being attributed to matrix interference will be designated as such. Dilution factors, date of extraction, date of analysis, and practical quantitation limits will be reported for each analyte and method;
- Reports of method blanks will include all analytes for each analytical method. Analytical results for each sample will be clearly associated with a particular method blank. Any detected concentration found in method blanks will be reported. Reports of concentrations below the technical detection limit are necessary to evaluate low level determinations of target compounds in samples;
- Surrogate spike recoveries will be reported for all applicable methods. The report will also specify the control limits for surrogate recoveries. Any out-of-control recoveries will result in the sample being rerun once. If subsequent analyses result in out-of-control recoveries, both results will be reported and the data flagged;
- Results for laboratory duplicates will be reported with relative percent difference (RPD) limits for duplicate analyses;
- Laboratory control sample results will be reported with control limits for these analyses. Analytical results for each sample will be clearly associated with that particular sample;
- A summary of all samples with detected concentrations of target compounds indexed by method and by sample identification (ID) will be included in the data package;
- A summary of all surrogate recoveries for organic compound analyses for each applicable method with the acceptable recovery range clearly indicated will be provided in the data package. This summary will be performed for all samples for each analytical method involving surrogate spikes; and,
- A summary of all MS/MSD analyses for each applicable method indicating acceptable recovery ranges and QC acceptance criteria for RPD will be provided in the data package.

### 2.2.3.7 Laboratory Data Packages

Laboratory data packages will consist of a case narrative, Chain-of-Custody documentation, summary of results for environmental samples, and a summary of QA/QC results. Detailed

descriptions of the requirements for each component of a laboratory data package are provided in the following sections.

#### 2.2.3.7.1 Case Narrative

The case narrative will be written on laboratory letterhead and the release of data will be authorized by the Laboratory Manager or designee. Items to be included in the case narrative are the field sample ID with the corresponding laboratory ID, parameters analyzed for in each sample and the methodology used (USEPA method numbers or other citation), a statement on the status of samples analyzed with respect to holding times (met or exceeded), detailed description of all problems encountered, discussion of possible reasons for out of control QA/QC criteria, and observations regarding any occurrences which may effect sample integrity or data quality.

##### 2.2.3.7.1.1 Chain-of-Custody Documentation

Legible copies of Chain-of-Custody forms for each sample will be maintained in the data package. Cooler log-in sheets will be associated with the corresponding Chain-of-Custody form. Any internal laboratory tracking documents will be included.

##### 2.2.3.7.1.2 Summary of Environmental Results

For each environmental sample analysis, this summary should include field ID and corresponding laboratory ID, sample matrix, date of sample extraction (if applicable), date and time of analysis, identification of the instrument used for analysis, GC column and detector specifications (if applicable), weight or volume of sample used for analysis/extraction, dilution or concentration factor used for the sample extract, percentage of moisture in the sample, method detection limit or sample quantitation limit, definitions of any data qualifiers used, and analytic results.

##### 2.2.3.7.1.3 Summary of Quality Assurance/Quality Control Results

The following QA/QC results will be presented in summary form on standard forms. Acceptance limits for all categories of QC criteria will be provided with the data.

- **Method Blank Analyses.** The concentrations of any analytes found in initial calibration blanks, continuing calibration blank, and in the preparation blank will be reported. The date and time of analysis will also be reported;
- **Interference Check Sample.** The source of the interference check sample, true value concentrations, found concentrations, the percent recovery for each element analyzed, and the date and time of analysis will be reported;
- **Precision and Accuracy.** Matrix Spikes (MS) and Duplicates (MSD). For matrix spike analyses, the sample results, spiked sample results, percent recovery, the spiking solution used, and the control range for each element will be detailed. For post digestion spikes, the concentration of the spiked sample, the sample result, the spiking solution added, percent recovery, and control limits will be detailed. For laboratory duplicates, the original concentration, duplicate concentration, relative percent difference, and control limits will be detailed. Date and time for all analyses will be recorded;
- **Precision and Accuracy.** Laboratory Control Samples - The source of the laboratory control sample, true value concentrations, detected concentrations,

the percent recovery for each element analyzed, and the date and time of analysis will be reported;

- **Surrogate Standard Recovery.** The name and concentration of each surrogate compound added will be detailed. The percent recovery of each surrogate compound in the samples, method blanks, MS/MSD and other QA/QC analyses will be summarized with sample ID's such that the information can be linked to sample and QA/QC analyses;
- **Instrument Detection Limits.** The laboratory detection limits will be low enough to compare data to Standards, Criteria, and Guidance (SCGs) including Maximum Contaminant Levels (MCLs).

### 3. MEASUREMENT/DATA ACQUISITION

This section describes sample method requirements, analytical methods and QC requirements, instrument calibration, and data acquisition requirements.

#### 3.1 Sampling Design

The Work Plan outlines the experimental design of the project including the sampling network design, types of samples required, sample matrices, measurement parameters of interest and the rationale for the design.

#### 3.2 Sampling Methods Requirements

The Work Plan provides a general description of sample collection procedures, including sampling methods and equipment, sample preservation requirements, decontamination procedures, and selection and preparation of sample containers. The Weiss PM is responsible for implementation of the Work Plan, and will review any errors or revisions in the sampling system.

#### 3.3 Equipment Decontamination

The decontamination procedures that will be followed are in accordance with approved procedures. Decontamination of sampling equipment must be conducted consistently as to assure the quality of samples collected. All equipment that comes into contact with potentially contaminated soil or water will be decontaminated. Disposable equipment intended for one-time use will not be decontaminated, but will be packaged for appropriate disposal. Decontamination will occur prior to and after each use of a piece of equipment. All sampling devices used, including trowels and augers, will be steam-cleaned or decontaminated prior to be using at another boring location.

Equipment will be decontaminated in a predesignated area on pallets or plastic sheeting, and clean bulky equipment will be stored on plastic sheeting in uncontaminated areas. Cleaned small equipment will be stored in plastic bags. Materials to be stored more than a few hours will also be covered. After each sample collection, the drive rods and other components will be decontaminated before reuse.

##### 3.3.1 Equipment Decontamination By-Products

In the process of collecting environmental samples at the Site, the sampling team will generate different types of potentially contaminated IDW that include the following:

- Used personal protective equipment (PPE)
- Disposable sampling equipment
- Decontamination fluids
- Soil cuttings from soil borings
- Purged groundwater and excess groundwater collected for sample container filling.

The EPA's National Contingency Plan (NCP) requires that management of IDW generated during sampling comply with all applicable or relevant and appropriate requirements (ARARs) to the extent practicable. The sampling plan will follow the Office of Emergency and Remedial Response (OERR) Directive 9345.3-02 (May 1991), which provides the guidance for the management of IDW. In addition, other legal and practical considerations that may affect the handling of IDW will be considered.

- Used PPE and disposable equipment will be double bagged and placed in a municipal refuse dumpster. These wastes are not considered hazardous and can be sent to a municipal landfill. Any PPE and disposable equipment that is to be disposed of which can still be reused will be rendered inoperable before disposal in the refuse dumpster.
- Decontamination fluids that will be generated in the sampling event will consist of dilute nitric acid, pesticide-grade solvent, distilled water, residual contaminants, and water with non-phosphate detergent. The decontamination fluids will be disposed of in an appropriate manner.
- Soil cuttings generated during the subsurface sampling will be disposed of in an appropriate manner.
- Purged groundwater will be disposed of in an appropriate manner.

### 3.4 Sample Handling and Custody Requirements

The following is a general description of the sample handling and custody requirements. Sample containers, preservation methods, and analytical holding times are presented in the Work Plan Table 5.

For each shipment of water samples provided to the Contract Laboratory, one (1) sample will be provided in sufficient quantity for MS/MSD analyses and re-extraction (if necessary). Care will be taken in the transport of sample containers, particularly glass containers. Sturdy shipping containers with padded dividers or other packaging materials will be used to minimize the possibility of breakage. When possible, the sample cooler along with the sample containers and labels will be provided by the Contract Laboratory. Field personnel will include Chain-of-Custody with all samples collected for analyses.

During sampling activities, appropriate decontamination measures will be taken to minimize sample contamination from sources including sampling equipment and sample containers. Drilling rigs and associated equipment will be decontaminated by steam cleaning.



To monitor the effectiveness of these decontamination procedures and the potential effects of ambient conditions, each sampling program will include provisions for collecting the appropriate field QA/QC samples. These samples will include trip blanks, rinseate samples, and field blanks.

Pre-cleaned and certified sample containers will be used. The supplier or the Contract Laboratory will verify the cleanliness of sample containers.

All water samples collected will be preserved immediately upon sample collection except when preservation is not required.

Appropriate measures will be taken to ensure that storage requirements with respect to temperature are maintained in the field, during transport to the laboratory, and during storage at the laboratory. Temperature blanks will be used for all coolers containing samples requiring preservation at reduced temperature.

Sample container labels will include the sample number, the date and time of collection, site name and location, whether the sample is a grab or composite, the analyses to be performed, and the sampler's initials. The label will not soak or float off. Indelible ink will be used for all labels.

All samples will be collected, transported, and received under strict Chain-of-Custody protocols consistent with procedures established by U.S. EPA.

Environmental samples will be transported to the Contractor Laboratory and QA Laboratory using the most rapid means available. Depending on the distance between the project site and laboratories, the samples may be delivered by field personnel, a courier service, or an overnight delivery service. Transportation will be scheduled to ensure that the samples arrive within the required holding times and within the specified temperature range. All samples will be packaged and transported according to U.S. EPA, NYSDEC and DOT regulations.

A sample numbering system will be used to identify each sample. These numbers will be used to complete sample documentation including: Sample labels, Chain-of-Custody records, request-for-analysis forms, and sample collection logs.

### **3.5 Analytical Methods Requirements**

All analytical procedures performed under this contract shall conform to the most recently promulgated version of SW-846 for soil and ground water samples and the compendium of methods for Toxic Organic (TO) Compounds in ambient air for the soil vapor analysis.

This QAPP shall address the analyses listed in the Workplan Table 5 that will be relevant for work specifically for this project. Alternate or additional procedures must be pre-approved by the client and Weiss PM. Workplan Table 5 presents the holding times for these analyses.

### **3.6 Analytical Quality Control Requirements**

The term "data quality" refers to the level of reliability associated with a particular data set or data point. The data quality associated with environmental measurement data is a function of the

sampling plan rationale, the procedures used to collect the samples, and the analytical methods and instrumentation used in making the measurements. Each component has its own potential sources of uncertainty and biases that may affect the overall data quality. Sources of uncertainty that can be traced to the sampling component of environmental data collection are poor sampling plan design, incorrect sample handling, faulty sample transportation, and inconsistent use of field procedures. The most common sources of uncertainty that can be traced to the analytical component of environmental data collection are problems associated with sample preparation, equipment calibration, and laboratory contamination. Although these major sources of potential uncertainty can be minimized by the proper execution of all QC mechanisms, uncertainty cannot be eliminated entirely from environmental data. The amount of uncertainty that is tolerable depends on the objective of the sampling program and the intended use of the data. The purpose of this section is to describe how data quality will be assessed and the criteria used to define acceptable limits of uncertainty.

To quantitatively assess the quality of the data, a variety of QC samples are used. Method blank and laboratory control samples uniquely measure the laboratory component of measurement performance. MS/MSD, laboratory duplicates, and surrogate spikes measure the matrix component of measurement performance, but also reflect laboratory performance. The Contract Laboratory shall, as a minimum, analyze internal QC samples at the frequency specified by the analytical method and in this QAPP. In the field, additional QC samples are used to assess field sampling techniques and environmental conditions during sample collection and transportation. Trip blanks, equipment rinseate blanks, and ambient blanks will be used to assess field representativeness. These QC samples will be evaluated in terms of PARCC, as described later in this section, in order to determine overall data quality. Appropriate mechanisms, including the definition of laboratory control limits for each of these elements, will be established to ensure that control is maintained.

### *3.6.1 Quality Control Samples*

The following are the general QC samples the laboratory will conduct for the ground water portion of the project, as applicable. The QC samples that will be conducted for the soil gas portion of the project are method blanks, laboratory control samples and field duplicate samples.

#### *3.6.1.1 Method Blanks*

Method blanks are used to monitor the laboratory preparation and analysis systems for interferences and contamination from glassware, reagents, sample manipulations, and the general laboratory environment. The method blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing, and which is taken through the entire sample preparation process. One method blank shall be prepared for each batch of samples (one per batch, up to a maximum of 20 samples). Some methods do not have a distinct preparation, and for these tests, the instrument blank, which contains all reagents used with samples, is considered to be the method blank.

#### *3.6.1.2 Instrument Blanks*

Instrument blanks are used to monitor the cleanliness of the instrument portion of the sample analysis process. Instrument blanks consist of the solvent or acid solution of the standard used to calibrate the instrument. With the exception of metals analyses, instrument blanks are analyzed for

each instrument with each batch of environmental samples, or every 20 samples, or every 12 hours for GC/MS analyses. Routine metals analyses receive an instrument blank for each batch of field samples, or every 20 samples. Instrument blanks are also analyzed on an as-needed basis for troubleshooting.

#### 3.6.1.3 Laboratory Control Samples (LCS)

Laboratory control samples are well characterized, laboratory generated samples of a known matrix (reagent grade water, or other approved matrices) used to monitor the laboratory analytical process independent of matrix effects. LCS samples are spiked with a known quantity of specific target analytes, and are taken through the entire sample preparation and analytical process. LCS samples are prepared and analyzed with each batch of environmental samples up to a maximum of 20 samples of a similar matrix. LCS samples measure laboratory performance regarding the accuracy of the preparation process by measuring spiked target analyte recoveries in a controlled matrix. LCS results, together with matrix spike results, can also establish the presence of matrix effects. For methods where there is no distinct preparation, a continuing calibration standard may be used as the LCS, if it meets all LCS and matrix-matching criteria.

#### 3.6.1.4 Matrix Spikes and Matrix Spike Duplicates (MS/MSD)

Matrix spikes measure matrix-specific method performance. A matrix spike sample is prepared by adding a known quantity of target analytes to a single field sample prior to sample digestion or extraction to determine how well the target analytes can be recovered from the sample matrix. The accuracy of the matrix-specific method may be determined by the recovery of the spiked analytes after native concentrations of the spike analytes are subtracted. If a MSD is analyzed, the matrix specific precision of the method may also be calculated.

For this project, one sample in the Work Plan shall be provided for each analytical method in sufficient quantity such that one MS/MSD set per sample batch or one MS/MSD set per 20 samples minimum can be generated in addition to an aliquot reserved for actual sample analysis. This sample will include sufficient volume such that one re-extraction/re-analysis of the MS or MS/MSD pair may be performed if necessary. The sample chosen for matrix spiking purposes shall be representative of other samples in the batch.

Matrix spike data evaluation is more complex than blank or LCS data evaluation since matrix spikes measure matrix effects in addition to sample preparation and analysis effects. The heterogeneity of soil, grab samples, and sequentially collected water samples further complicates the evaluation since matrix specific accuracy and precision assume that the native concentration in the three sample analyses is constant. However, appropriately trained personnel aware of the data's end use may improve data quality by an evaluation of matrix spike data.

#### 3.6.1.5 Surrogate Spikes

GC, GC/MS, and High Performance Liquid Chromatography (HPLC) analyses include the addition, subsequent quantitation, and recovery calculation of surrogate compounds. Surrogate compounds are:

- Compounds not requested for analysis (non-target analytes);
- Compounds that do not interfere with the determination of required analytes;

- Compounds that are chemically similar to the target analytes, yet are not naturally occurring; and,
- Compounds exhibiting similar response behaviors to analytes under determination.

Surrogate standards help to monitor both performance of the analytical system and the effectiveness of the method for each sample matrix. Surrogate compounds are added to every sample and QC sample at the beginning of the sample preparation, and the surrogate recovery calculation is used to monitor matrix effects and sample preparation. Surrogate control criteria are applied to all environmental samples, QC samples, and method blanks. Re-analysis and re-extraction will be performed if surrogate criteria are not met unless clearly defined matrix effects can be documented.

#### 3.6.1.6 Field Duplicate Samples

Field duplicate samples are two samples collected at the same time from the same source at the same depth or sample location, and which are submitted to one laboratory as separate samples, i.e., “blind” duplicates. For this project, one field duplicate will be submitted to the Contract Laboratory for every 10 samples collected.

#### 3.6.1.7 Trip Blanks

Trip blanks are used to evaluate representativeness by identifying any VOCs that may have been introduced to the environmental samples during shipment, handling, or storage on-site and at the laboratory. Trip blanks are prepared in the laboratory by pouring de-ionized, distilled water into sample vials. The trip blanks are then shipped from the laboratory to Weiss, taken into the field, and then shipped with the sample containers back to the laboratory with each cooler containing volatile organic analyses. Trip blanks are never opened in the field. Trip blanks will be analyzed for VOCs only.

#### 3.6.1.8 Equipment Rinseate Blanks

The equipment rinseate blanks are prepared in the field by pouring deionized water into the pre-cleaned disposable bailer or other sampling equipment to ensure that it is clean. No equipment rinseate blanks will be needed if dedicated disposal sampling equipment is used.

### 3.6.2 Analytical/Statistical/Control Parameters

As part of the data validation process to be performed on each project, analytic results will be evaluated for the following control parameters and is summarized in Table 1.

#### 3.6.2.1 Precision

Precision will be evaluated through the analysis of laboratory duplicate samples.

The relative percent difference for laboratory duplicates will be calculated and used as a measure of precision, and will be included in the quantitative assessment of completeness.

Laboratory duplicates will be performed for all metals analyses at a rate of one in twenty (one for each batch up to a maximum of twenty), if required. Precision for organic compound analyses may be determined by the analysis of MS/MSD samples.

### 3.6.2.2 Contract Laboratory Internal Quality Control Checks

Internal QC checks are performed on sample batches. Samples are batched together by matrix and analyses requested for efficient data production in the laboratory. Each batch of samples (twenty or fewer samples of the same matrix type prepared using the same reagents, standards and procedures in the same time frame) are processed with a set of specific QC “samples” which are used to assess the performance of the entire measurement process (sample preparation, analysis and data reduction). The analytical batch shall be analyzed sequentially on a single instrument. Significant gaps (greater than two hours) in the analytical sequence will result in the termination of the previous sequence and the initiation of a new analytical sequence. The practice of “holding a batch open” for as much as two weeks and performing a single set of batch QC samples for all analyses performed during that period is unacceptable relative to the requirements of these specifications. If the batch size is found to exceed 20 samples, the data will be rejected.

Each batch contains a method blank to assess contamination and prevent false positive results. The acceptance criteria for method blanks is no target analytes should be detected above half the PQL. If analytes are detected above half the PQL, the batch will be re-extracted and re-analyzed.

To assess performance with respect to precision and accuracy, the batch contains a laboratory control sample and matrix QC. A laboratory control sample is a reagent blank spiked with a representative selection of the target analytes and prepared and analyzed in exactly the same manner as the samples in the batch. This standard is free of any interferences from sample matrix or similar problems and demonstrates the ability of the entire measurement system to recover the target analytes. Matrix QC consists of selecting one sample in the batch and analyzing a duplicate and spike of that sample. For organic analyses, a spike and spike duplicate are generally used. The purpose of matrix QC is to obtain both precision and accuracy information. In the absence of sufficient sample to perform matrix QC, two laboratory control samples are prepared so that both precision and accuracy data are available.

Accuracy is expressed as percent recovery of the spike and is determined using the following equation:

$$\%R = \frac{(\text{Spike Result} - \text{Sample Result}) \times 100}{\text{Concentration added}}$$

Precision between two measurements is expressed as relative percent difference and is calculated as follows:

$$\text{Relative Percent Difference (RPD)} = \frac{(\text{Result A} - \text{Result B}) \times 100}{(\text{Result A} + \text{Result B})/2}$$

Where A and B can be duplicate sample results, duplicate matrix spike results, or two laboratory control sample results.

Acceptance criteria are established so that the analyst can rapidly assess the quality of the data. Results near the detection limit, within five times, often demonstrate high RPD, which does not

invalidate the data because error near the detection limit of most analyses is greater than is expected for other measurements.

With as many measurements as the laboratory performs and because acceptance criteria are based on a 99% confidence interval and the wide variety of matrix types that the laboratory receives, QC parameters do at times fail to meet acceptance criteria. In the event that a particular limit is exceeded, the analyst must determine if the failure invalidates the entire batch. The QC data for the corresponding analytical batch are reviewed to determine the disposition of the batch. When batch failure is evidenced by low surrogate recoveries for method blank, surrogate, MS/MSD or laboratory control sample for recoveries or RPD, corrective actions will be taken.

### 3.6.2.3 Accuracy

#### 3.6.2.3.1 Accuracy—Organic/Inorganic Compounds

Accuracy for organic/inorganic compounds analyses will be evaluated through the collection and analysis of MS/MSD samples, laboratory control samples, and by spiking samples with surrogate compounds where applicable. For each shipment of samples that is sent to the Contract Laboratory, one sample will be provided in sufficient quantity such that a matrix spike can be generated in addition to an aliquot reserved for actual sample analysis. This sample will include sufficient volume such that one re-extraction/re-analysis of the MS may be performed, if necessary. Only samples obtained from the project sites will be used for MS/MSD procedures. Trip blanks and rinseate samples will not be used for MS/MSD analyses.

The MS/MSD samples will be fortified with a series of method target compounds, while a third aliquot of the sample will be analyzed unfortified. The MS for inorganic analyses will be an analytical spike (i.e., a spike of the solution being extracted prior to the extraction procedure). Accuracy will be measured in terms of percent recovery of each of the fortified components. MS/MSD analyses not meeting the laboratory QC will be re-extracted/reanalyzed once. Failure of different spike analytes on successive runs for methods with multiple spike analytes will be considered a re-analysis failure and will satisfy the requirement for re-analysis.

Laboratory control sample analyses are matrix spikes on a blank matrix (such as de-ionized water or reagent sand) to assess Contract Laboratory accuracy independent of matrix effects. Failure of MS/MSD and/or laboratory control sample analyses to meet QC criteria will initiate a review of the data for the corresponding analytical batch. If review indicates out-of-control data due to laboratory error, the Contract Laboratory will perform re-extraction/re-analysis to correct the out-of-control condition. With the exception of compromised data due to clearly substantiated matrix effects, the Contract Laboratory will perform re-extraction/re-analysis to correct out-of-control data.

QC criteria for GC/MS analyses (surrogate recoveries, laboratory control sample recoveries, MS/MSD recoveries and RPD) will conform to EPA SW-846 standards. QC criteria for GC analyses (surrogate recoveries, laboratory control sample recoveries, and MS/MSD recoveries) will fall within a 65-135% range.

### 3.6.2.4 Representative Samples

Representativeness criteria for the field portion of the sampling and analysis program are best satisfied by making certain that sampling locations are selected properly, that a sufficient number of samples are collected, and that the sampling QA/QC protocols and procedures are strictly adhered to.

#### *3.6.2.4.1 Field Procedures*

The Workplan will provide detailed descriptions of sampling locations and the number of samples to be obtained.

During field investigations, unanticipated conditions may warrant the collection of additional samples. In these cases, recommendations will be made by the Weiss PM to the client or regulatory agency representative for approval, and will be documented in field notes or conversation confirmation memos.

#### *3.6.2.4.2 Laboratory Procedures*

Representativeness criteria for the laboratory portion of the sampling and analysis program are best satisfied by making certain that the aliquots selected for analysis are representative of the sample submitted. For non-VOC parameters, the Contract Laboratory will shake water samples prior to removing aliquots for analysis. Further, laboratory duplicates provide an indication of the ability of the laboratory to select representative samples. The Contract Laboratory shall also employ a specific information management system to assist in tracking the progress of each sample through the analytical process.

#### *3.6.2.5 Data Comparability*

Comparability is the extent to which comparisons among different measurements of the same quantity or quality will yield valid conclusions. Comparability of laboratory data can be maximized by the use of standard approved methodologies, the use of standard units and report format, the use of calculations as referenced in the methodology for quantitation, and the use of standard measures of accuracy and precision for QC samples.

Comparability of data generated at the Contract Laboratory will be controlled by the procedures described in Section 3.6. Performance of these procedures will be monitored periodically by performance evaluation studies. The Contract Laboratory may participate in at least one performance evaluation study per quarter.

#### *3.6.2.6 Completeness*

Completeness will be evaluated qualitatively and quantitatively. The qualitative evaluation of completeness will be determined as a function of all events contributing to the sampling event including items such as correct handling of Chain-of-Custody forms, results of field duplicates, etc. The quantitative description of completeness will be defined as the percentage of Contract Laboratory controlled QC parameters that are acceptable. Completeness will be calculated using the following equation:

$$\text{Completeness} = (\text{RO} \div \text{RP}) \times 100$$

Where:

RO = Total number of data results obtained

RP = Total number of results planned

QC parameters that will be assessed for quantitative determinations of completeness will include surrogate percent recovery for organic compounds analyses, analysis of laboratory duplicates for RPD, analysis of MS/MSD analyses for percent recovery and RPD, and analysis of laboratory control samples for percent recovery, and holding times. The closer this value is to 100, the more complete is the measurement process.

The requirement for holding times will be 100%. If any sample exceeds the holding time specified in Workplan Table 5, re-sampling and re-analysis are required.

Failure of the analytic data to meet the standards for completeness will result in rejection of data with re-sampling and re-extraction/re-analysis performed. Completeness requirements will be applied to data for the entire WO project; however, this requirement will also be applied to individual data packages for a single Chain-of-Custody.

Non-conforming data as a result of well substantiated matrix effects will not be considered in assessing contractor compliance with respect to completeness. In the event of significant occurrence of non-conforming data, the contractor will present a summary of data to substantiate an argument for matrix effects to the PM. These data will be reviewed by Weiss. The Weiss PM will determine the validity of an argument for matrix effects and instruct the contractor as to the necessity of re-sampling/re-extraction/re-analysis.

### 3.6.2.7 Additional Analytical Quality Control Requirements

In addition to the QC parameters discussed above, this section includes a description of sensitivity limits used.

#### 3.6.2.7.1 Sensitivity

Four sensitivity limit terms are used:

- Instrument detection limit (IDL);
- Method detection limit (MDL); and
- Practical quantitation limit (PQL).

The IDL is an empirically derived value, which measures the sensitivity of an instrument (in contrast to a method), by repeatedly analyzing standards over several days and multiplying by a factor of three times the standard deviation of the instrument response. IDLs are used for metals methods.

The MDL is an empirically derived value used to estimate the lowest concentration a method can detect in a matrix-free environment. SW-846 defines the MDL as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from the analysis of replicate samples of a given matrix containing analytes, which have been processed through the preparation or extraction procedure. MDLs are updated annually by the laboratory following the guidance in 40 CFR 136.



The PQL is the lowest concentration that can be reliably achieved within limits of precision and accuracy during routine operating conditions. The PQLs for reagent water are set at the low standard used for the initial calibration curve (generally three to five times the MDL). Sample PQLs are highly matrix dependent. The PQLs provided in SW-846 are for guidance and may not always be achievable.

In general, method blanks and samples are reported to the PQL. Target analytes found in method blank samples above the MDL, but below the PQL, are quantitated and flagged as an estimated value. This qualifier indicates the decreased precision and accuracy the method delivers below the PQL for that analyte.

Matrix effects (i.e., highly contaminated samples requiring dilution for analysis, dilution to bring detected levels within the range of calibration, and matrix interference requiring elevation of detection limits) will be considered in assessing the Contract Laboratory's compliance with the requirements for sensitivity.

### **3.7 Instrument Calibration Procedures and Frequency**

#### *3.7.1 Field Instrumentation*

A variety of field instrumentation will be utilized during this program. Section 5 of the Workplan provides descriptions of the equipment anticipated to be used, along with general discussions regarding their operation and maintenance.

Generally, all field equipment will be calibrated according to the procedures provided herein at least once per day or immediately before use. The pH and conductivity meter will be calibrated before and after the purging of each monitoring well, and prior to monitoring well sampling. All calibration data will be recorded in the field logbook. Any data collected by field instrumentation which may be suspect due to failed calibration checks will be noted in the field log book, and these data will be regenerated using newly collected samples.

#### *3.7.2 Laboratory Instrumentation*

For GC analyses, the initial response factors for all calibration levels must lie within 20% relative standard deviation. Additionally, a continuing calibration check will be performed at the beginning of a run of samples and whenever it is necessary. All analytes in the calibration check samples must meet a standard of +/-15% from initial calibration. The initial calibration curve will consist of at least five points for each analyte measured.

A preventative maintenance program for all facility and instrumentation used for sampling and analyses will be employed. The Contract Laboratory(s) will maintain a bound logbook for each analytical instrument as a permanent record documenting any routine preventative maintenance and/or service. The Contract Laboratory(s) will also be a participant in performance evaluation programs offered through agencies on the federal level, and/or mandated at the state level.

### **3.8 Data Acquisition Requirements (Non-Direct Measurements)**

Sampling and analysis methods, procedures, and protocols will follow those provided in the Work Plan and this QAPP. Sections 4 and 5 of the Workplan provide detailed descriptions of sampling and analysis methods.

### **3.9 Data Management**

Data Management encompasses procedures for receiving, storing, and reporting data derived from field activities and laboratory analyses. Procedures for receiving data include filing, sample tracking, and data qualification. Data storage includes entry of data into a computer database, verification of entered data, and backup procedures. Data reporting procedures include the processes for extracting information from the database into tabular, graphic, and other informational forms.

#### *3.9.1 Data Receipt and Tracking*

Data generated by the analytical laboratory will be submitted to Weiss in electronic and hard copy formats. Data submitted to Weiss will duplicate original data, which will be secured at the laboratory. Each sample will be assigned an unambiguous identification number. Input of sample data into the Weiss database will be correlated to the sample identification number. Any identification system applied to the samples by the laboratory will be clearly cross-referenced in the data report to the original sample identification number designated on the COC. Sample identification procedures are discussed in greater detail in the workplan.

#### *3.9.2 Electronic Data Management*

Review, assessment and manipulation of data will be facilitated by use of Microsoft access database program. After the laboratory completed its analysis of the samples, a hard copy of the data and an electronic data deliverable (EDD) will be sent to Weiss. The hard copy data and EDD are compared against each other in order to identify inconsistencies. Once these two sources of data agree, the data are validated. After validation, the EDD is converted to the database format and imported into the database. After data validation flags are added, the data are available to end-users.

#### *3.9.3 Data Archive*

Hard copies of all chemical data packages will be managed by the PM, and will be archived in the project files. Laboratory data will also be archived in the electronic data management system.

Field data hard copies, including completed field forms, boring logs, and photographs, will also be archived in the project files. Field data archival will be the responsibility of the PM. Weiss will submit copies of the laboratory data reports to DTSC as appendices to technical reports.

## 4. SAMPLE CHAIN-OF-CUSTODY, PACKAGING AND TRANSPORT

### 4.1 Chain-of-Custody and Laboratory Receiving Procedures

All samples will be collected, transported, and received under strict COC protocols consistent with procedures established by NYSDEC and US EPA for litigation-related materials. Copies of COC forms will be provided to the Weiss PM whenever samples are shipped from the field. The forms may be submitted by facsimile.

#### 4.1.1 Chain-of-Custody Procedures

The procedures for completing COC forms are:

- The sample collection team will utilize the referenced COC form or an approved equivalent.
- All information requested on the COC form will be legibly completed by the sampling team using indelible ink. This information includes the project name, sample number, date and time of sample collection, preservatives if used, and analyses requested.
- The COC forms will accompany the samples at all times.
- When transferring possession of the samples, the relinquisher will sign the form and enter the date and time the samples were relinquished. The receiver will also sign and date the form upon receiving the samples. The signed COC form will remain with the samples.
- The signature requirements for relinquishing/receiving the samples will be repeated until the samples arrive at their final destination (e.g., contract laboratory).
- The commercial courier receipt (if applicable) will be retained for COC documentation.

#### 4.1.2 Laboratory Receiving Procedures

Upon receiving the samples, laboratory personnel will document the disposition and custody of the samples during each phase of the analytical process. Cooler receipt forms will be used to document the condition of samples on arrival at the laboratory. The air temperature inside each cooler and of the temperature blank will be measured immediately after the cooler is opened. The results will be recorded on the cooler receipt form.

## 4.2 Sample Packaging Procedures

Care will be taken in the transport of sample containers, particularly glass containers. Use of sturdy shipping containers with padded dividers or other packaging materials will be used to minimize the possibility of breakage. When possible, the sample cooler along with the sample containers and labels will be provided by the contract laboratory. The following sections provide guidelines that will be followed by field personnel when packing coolers.

### 4.2.1 Sample Temperature Control

Sample cooling will be achieved by using crushed or cubed ice in double-sealed heavy-duty polyethylene bags placed on top of and between samples.

Include a VOA bottle filled with tap water clearly labeled “temperature check” so that the laboratory can verify the temperature of the sample upon receipt. For all samples received with a temperature between 6°C to 10°C, the sample(s) and temperature will be noted on the COC and then analyzed. For samples with temperature greater than 10°C, the sample will be rejected by the laboratory for analysis and immediately reported to the Weiss PM. For samples below 0°C, the samples will be rejected and reported.

## 4.3 Sample Transportation Procedures

Environmental samples will be transported to the contractor laboratory and the QA laboratory using the most rapid means available. Depending on the distance between the project site and laboratories, the samples may be delivered by field personnel, a courier service, or an overnight delivery service. Transportation will be scheduled to ensure that the samples arrive within the required holding times and within the specified temperature range. All samples will be packaged and transported according to US EPA, State of California, and DOT regulations.

## 5. ASSESSMENT/OVERSIGHT

### 5.1 Contractor Quality Control

#### 5.1.1 Quality Management Organization

The PM is ultimately accountable for implementation of Contractor QC and performing all contract work in accordance with the established quality objectives. The PM and his/her staff will provide QA oversight of this project. The PM will have access to a Weiss Project Chemist as his/her primary assistant for QC.

Project Management Organizational structures, lines of authority and communications, and position responsibilities are described in detail in Section 2.1.

The Weiss organization establishes an independent chain-of-command so that quality issues can be identified and resolved effectively.

### 5.2 Reports to Management

Specific reporting mechanisms have been developed to keep DTSC management informed of the status of project quality. This will be accomplished in part by including the DTSC PM on the distribution of various reports and Corrective Action Requests. QA issues that arise in the field will be noted in field forms and discussed with the DTSC PM.

#### 5.2.1 Field Sampling Plan

A site-specific field sampling plan for this project is presented in the workplan in accordance with the QAPP and the SOW. If there is any conflict between the provisions of the two documents, the stricter of the two will apply.

#### 5.2.2 Non-Routine Occurrences Reports

Written reports of all significant non-routine occurrence events will be sent to the Weiss PM. These reports will identify the problem, corrective action, and verbal/written instructions from the PM personnel for sampling or re-analysis. Significant events are occurrences impacting cost of work, schedule of work, quality of work, and quality of environmental analytic data.

### *5.2.3 Certificates of Analysis*

A certificate of analysis will be prepared. Generally, analyses are to be performed on a normal turnaround basis (14 days) and the comprehensive report will be received no later than 20 days after the last sample has been acquired for the project (date of last sampling). Draft data reports will be provided as soon as they are available (anticipated to be approximately 10 to 15 working days after the samples are received at the laboratory). The SOW provides schedules for delivery of these data.

### *5.2.4 Chain-of-Custody Forms*

Chain-of-Custody Forms are described in Section 4.2.6 of the Workplan. If requested, copies of the Chain-of-Custody forms will be provided to the NYSDEC whenever samples are delivered to the Contract Laboratory.

### *5.2.5 Cooler Receipt Forms*

Each laboratory has its own Cooler Receipt Form. An example of the Cooler Receipt Form is provided as Figure 1.

## **5.3 Data Validation and Usability**

The Contract Laboratory is responsible for maintaining accurate, legible records and logs in accordance with standard operating procedures (SOPs) and is required to review all produced data before submittal. The Contract Laboratory reviews raw data and its reduction to final results. All data are subject to second party review within the laboratory to prevent simple transcription or calculation errors. All parties reviewing must initial the data prior to sending it for reporting.

## **6. DATA REVIEW, VALIDATION AND VERIFICATION REQUIREMENTS**

Final results and associated QC are reported daily by analysts through the Contract Laboratory and are keyed into the computer by data management personnel. Any QC results falling outside acceptable limits are appropriately flagged and an explanation included on the report.

After the data entry personnel verify the results, the sample is listed as data complete for that analysis. When all of the required analyses on all of the samples in a project file are complete, entered, and verified, a report is generated. At this point, the report is transferred to the appropriate Laboratory PM for final review.

Each project is assigned to a PM when the samples are received at the laboratory. This individual is selected based on the scope of work, familiarity with the program requirements, or, in some cases, upon specific needs or requests.

### **6.1 Validation and Verification Methods**

All analytical records, including QC data, are generated and stored as described in the following subsections. At a minimum, all steps of sample preparation and analysis must document the laboratory sample number, the responsible analyst, date, sample weight or volume information with appropriate units, and any cross references, such as QC, necessary to fully reconstruct the documented analytical trail. Detailed SOPs for all methods which include data handling procedures are maintained and are available to each analyst. The Contract Laboratory is responsible for ensuring adherence to these procedures. The Contract Laboratory is responsible for routinely auditing all records and logs and reporting deficiencies for corrective action.

### **6.2 Reconciliation with Data Quality Objectives**

Once an analytical report is complete, the Laboratory PM reviews the final report against the following criteria:

- Reasonableness of data;
- Accuracy in transcription of names, dates, sample number and results, and consistency in labeling throughout the report; and,
- Acceptability of QA/QC data. The Laboratory PM ensures that the QC data are within acceptance limits and that appropriate QC data are included in the final report. If a QC parameter is outside acceptance limits, the Laboratory PM ensures that an appropriate explanation is included in the report.

Upon receipt of the Certificates of Analysis and laboratory data packages, Weiss personnel will check to ensure that the deliverables are complete and that samples were analyzed as requested.

Ten percent of the data for all methods will be validated. If non-conformance is found, an additional 10% of the data will be validated. For Weiss' data validation, the following field and laboratory QC criteria, as applicable, will be reviewed for all samples: holding times, instrument calibration, laboratory preparation blanks, blanks collected during sampling, surrogates, internal standards, LCSs, MS/MSD samples, and matrix duplicates. All sample results will be identified as usable, estimated and usable, or rejected and unusable; and data qualifiers will be assigned to sample results as needed.

### **6.3 Late Delivery of Data Penalty**

The maximum turnaround time (TAT) for all levels of sampling analysis and associated reports will be 14 working days. If the laboratory fails to deliver the final deliverables within the time specified, the laboratory will pay damages at the rate of five percent (5%) per calendar day of delay of the analysis price on the affected samples. See the Laboratory Master Services agreement for more information on this subject.



**FIGURES**

**COOLER RECEIPT FORM**

Project: \_\_\_\_\_ Date Received: \_\_\_\_\_

**PRELIMINARY EXAMINATION PHASE:**

Date cooler was opened: \_\_\_\_\_ By (print): \_\_\_\_\_ Sign: \_\_\_\_\_

1. Did cooler come with a shipping slip (airbill, etc.)? Yes  No   
If YES, enter carrier name and air bill number here: \_\_\_\_\_
2. Were custody seals on outside of cooler? Yes  No   
How many & where: \_\_\_\_\_, seal date: \_\_\_\_\_, seal name \_\_\_\_\_
3. Were custody seals unbroken and intact at the date and time of arrival? Yes  No
4. Were custody papers sealed in a plastic bag and taped inside to the lid? Yes  No
5. Were custody papers filled out properly (ink, signed, etc.)? Yes  No
6. Did you sign custody papers in the appropriate place? Yes  No
7. Was project identifiable from custody papers? Yes  No   
If YES, enter project name at the top of this form.
8. If required, was enough ice used? Type of ice: \_\_\_\_\_ Yes  No
9. What was the cooler temperature upon receipt? \_\_\_\_\_ Yes  No
10. Have designated person initial here to acknowledge receipt of cooler: \_\_\_\_\_ Date: \_\_\_\_\_

**LOG-IN PHASE:**

Date samples were logged in: \_\_\_\_\_ By (print): \_\_\_\_\_ Sign: \_\_\_\_\_

1. Describe type of packing in cooler: \_\_\_\_\_
2. Did all containers arrive unbroken and were labels in good condition? Yes  No
3. Were all container labels complete (ID, date, time, preservative, etc.)? Yes  No
4. Did all container labels agree with custody papers? Yes  No
5. Were correct containers used for the tests indicated? Yes  No
6. Were correct preservatives added to the samples? Yes  No
7. Was a sufficient amount of sample sent for the tests indicated? Yes  No
8. Were bubbles absent in VOA samples? If NO, list by QA#: \_\_\_\_\_ Yes  No
9. Was the Project Chemist called and status discussed? Yes  No   
If YES, who was called? \_\_\_\_\_ By whom? \_\_\_\_\_  
Provide details on the back of this form.

Figure 1. Sample of a "Cooler Receipt Form"

**TABLES**

Table 1. Chemical Data Quality Control Evaluation in Terms of Precision, Accuracy, Representativeness, Completeness, and Comparability

PARCC	Quality Control Program	Applicable Methods	Collection Frequency	Evaluation Criteria
Precision	Field Duplicates	Inorganic/Organic	10% for all matrices	Relative Percent Difference <sup>a</sup>
	MS/MSD Pairs	Organic	One per batch of samples	Relative Percent Difference
	LCS/LCSD Pairs	Inorganic/Organic	One per batch of samples	Relative Percent Difference
	Lab Duplicates	Inorganics	One per batch of samples	Relative Percent Difference
Accuracy	Surrogate Spikes	Organic	As required by the analysis	Percent Recovery <sup>b</sup>
	MS	Organic	One per batch of samples	Percent Recovery
	MSD	Inorganic/Organic	One per batch of samples	Percent Recovery
	LCS	Inorganic/Organic	One per batch of samples	Percent Recovery
Representativeness	Method Blanks	Inorganic/Organic	One per batch of samples	Qualitative, Degree of Confidence
	Trip Blanks	Organic	One per cooler with VOA vials	Qualitative, Degree of Confidence
	Field Duplicates	Inorganic/Organic	10% for all matrices	Qualitative, Degree of Confidence
	Holding Time	Inorganic/Organic	---	Quantitative/Qualitative, Degree of Confidence
Comparability	Equipment Rinsate Blanks	Inorganic/Organic	One per sampling crew per day if non-dedicated equipment is used	Qualitative, Degree of Confidence
	Standard Field Procedures	Inorganic/Organic	---	Qualitative, Degree of Confidence
	Standard Analytical Methods	Inorganic/Organic	---	Qualitative, Degree of Confidence
	Standard Units of Measure	Inorganic/Organic	---	Qualitative, Degree of Confidence
Completeness	Valid Data	Inorganic/Organic	---	Percent Acceptable Data <sup>c</sup>

Notes:

LCS/LCSD Laboratory Control Sample/Laboratory Control Sample Duplicate  
 MS/MSD Matrix Spike/Matrix Spike Duplicate

PARCC Precision, Accuracy, Representativeness, Completeness, and Comparability  
 VOA Volatile Organic Analysis

$$^a \text{Relative Percent Difference} = \frac{(\text{Sample Concentration} - \text{Duplicate Concentration})}{(\text{Sample Concentration} + \text{Duplicate Concentration})/2} \times 100$$

$$^b \text{Percent Recovery} = \frac{\text{Spiked Analyte Concentration in Spiked Sample} - \text{Spiked Analyte Concentration in Unspiked Sample}}{\text{Concentration of Analyte Used for Spiking}} \times 100$$

$$^c \text{Percent Valid Data} = \frac{\text{Number of Acceptable Data Points}}{\text{Total Number of Measurements}} \times 100$$

Data will be evaluated for contract compliance in a separate activity.

**APPENDIX C**

**THE HEALTH AND SAFETY PLAN WILL BE SUBMITTED UNDER  
SEPARATE COVER PRIOR TO FIELD MOBILIZATION**

**APPENDIX D**

**QUALIFICATIONS OF PROJECT PERSONNEL**

## **William A. McIlvride**

*SENIOR PROJECT HYDROGEOLOGIST*

*Project Management  
Soil and Ground Water Investigation  
Innovative Remediation Technologies*

### **EXPERIENCE SUMMARY**

Hydrogeologist and Certified Engineering Geologist with a Master's degree and over 20 years of professional experience in subsurface natural soil and fill investigation, ground water resource evaluation, remediation, and landscape management projects. Lead Hydrogeologist for Weiss Associates innovative technology remediation projects since 2000.

### **EDUCATION**

M.S., Geology, 1982, Thesis work surficial mapping involving distinguishing artificial fill from underlying natural unconsolidated deposits in hundreds of boreholes/test pits and interpreting findings, University of Massachusetts, Amherst, Massachusetts  
B.A., Geology And Geography, 1976, Magna Cum Laude, Boston University, Boston, Massachusetts

### **REGISTRATION**

Registered Geologist No. 4359, California  
Certified Engineering Geologist No. 1359, California

### **PROFESSIONAL HISTORY**

- 2000–Present Senior Project Hydrogeologist, Weiss Associates, Emeryville, California**—Provide hydrogeologic analysis and project management for the Weiss Innovative Technologies Group, overseeing innovative bioremediation and electrochemical geooxidation technology implementations for ground water and soil remediation projects. Perform site assessments to distinguish fill from underlying natural materials, technical review, site evaluation, technology assessment, adaptation to site-specific conditions, project execution and evaluation.
- 1990–1999 Technical Director & Director, Grounds Department, Baha'i World Center, Haifa, Israel**—Supervised 70-person staff caring for world-class 120 acre gardens. Assessed environmental impacts of site development proposals and impacts from adjacent landfills, and completed closure of an abandoned landfill. Supervised irrigation, integrated pest management (IPM), composting, and ground water resource investigation programs. Developed an Environmental Health and Safety program for the 650-person organization and implemented safe pesticide practices. Promoted from Technical Director to Director in 1995.
- 1986–1990 Senior Project/Principal Hydrogeologist, Weiss Associates, Emeryville, California**—Managed five EPA-Superfund site investigations and cleanups of chlorinated VOCs in soil and ground water, meeting or exceeding all schedule and budget targets. Completed numerous Phase I and Phase II investigations involving landfills, property transfers, USTs, and liability determinations. In numerous

hydrogeologic investigations, determined the boundary between fill and underlying natural materials and the role of fill in utility/tank backfills as it impacted ground water flow and contaminant transport. Liaised with regulatory agency staff and designed remediation programs to meet water and air quality requirements. Supervised an 11-person technical staff.

**1983–1986** **Staff/Project Hydrogeologist, Weiss Associates, Emeryville, California—**Supervised and performed aquifer tests, ground water modeling, water and soil sampling and remediation system installation. Wrote reports satisfying California and Federal regulations. Reviewed bids and oversaw contractors in drilling monitoring and extraction wells, and remediation systems for hydraulic control of ground water contaminated with chlorinated hydrocarbons. Oversaw boring investigation of emplaced fill to determine if compaction was done properly

**1982–1983** **Geologist, USDA Natural Resource Conservation Service, Davis, California—**Conducted erosion and sedimentation studies of California drainage basins. Wrote a comprehensive report on the effects of fire on soil erosion in chaparral lands, earning Certificate of Merit for Outstanding Achievement.

*California Division of Mines and Geology, San Francisco, California—*Compiled geologic data and mapped landslides.

**1979–1982** **Consulting Geologist, Amherst, Massachusetts—**Investigated Quaternary geology of archeological sites and conducted subsurface soil investigations. Interpretation at four sites distinguished the contact between fill and natural unconsolidated materials to establish potential human-impacted depth zones.

**1981** **Assistant Professor, Hampshire College, Amherst, Massachusetts—**Developed and taught a glacial geomorphology course and directed major student research projects.

## PROFESSIONAL AFFILIATIONS

American Geophysical Union  
Association of Ground Water Scientists and Engineers  
Buffalo Association of Professional Geologists  
New York State Council of Professional Geologists  
New York Water and Environment Association

## REPRESENTATIVE PROJECTS

**Bioremediation of Contaminated Fill and Sediments, Federal Facility, Pennsylvania:** Supervised field-scale pilot testing of augmented bioremediation to treat PCB, PAH, metals, and pesticides in a 1.5-acre area of contaminated fill and sediments. Fifteen weeks following inoculation, a statistically significant decrease in pesticide and leachable vanadium was achieved; that and decreasing PCB concentrations indicate that the bioremediation is effective and on track to achieve site cleanup goals in two years.



**Technology Assessment, Manufacturing Facility, Massena, New York:** Project manager and technical supervisor for electrochemical geooxidation pilot study for remediation of PCB-contaminated sediment from the Grasse River. Prepared Work Plan, co-designed technical and performance assessment approaches, supervised construction of field test cell involving excavation, replacement and compaction of fill, maintained operations for 5 months, oversaw performance sampling, and analyzed results. Presented results at professional meetings and to potential clients to help win contracts for further technology development.

**Quarry Dewatering Impact Evaluation, Western New York:** Analyzed data from quarry dewatering operations, developed a hydrogeologic conceptual model, and modeled a range of scenarios to estimate impacts of quarry dewatering to neighboring residential wells.

**Ground Water and Soil Contamination Investigation and Corrective Action, Federal Weapons Testing Facility, California:** Developed and presented a proposal that won against eight competitors to provide hydrogeologic site investigation and cleanup of a research and explosives testing facility. This RCRA site contained landfills, USTs, abandoned disposal wells, lagoons, and burn pits, with contaminants including tritium, fuels, chlorinated solvents, and high explosive compounds. Work included oversight of investigation, modeling, and production of RI/FS reports for regulatory approval. The client, pleased with progress on the project, doubled the original scope of work within the first year, and has retained the project team for more than 17 years.

**Ground Water Resource Investigation and Development, Haifa, Israel:** Conducted hydrogeological survey of a fractured dolomite aquifer affected by salt-water intrusion, developed a conceptual model for a successful fresh-water irrigation water supply well, supervised pilot well hydraulic testing, and designed the successful production well.

**Landfill Closure, Akka, Israel:** Obtained permits, designed grading plan, investigated fill/natural material boundaries, calculated cut and fill volumes, and oversaw earthmoving contractors moving 50,000 cubic meters of fill, natural soil and debris to reclaim a five hectare trash landfill and abandoned sand quarry site.

**Ground Water Supply—Protection and Development, Federal Facility, California:** Discovered a water supply threatened by a chlorinated solvent plume in a deep bedrock aquifer. Ground water was flowing down an abandoned well from a contaminated, shallow alluvial aquifer to the deeper aquifer. Oversaw well abandonment, alternative pumping, and installation of a new 500-ft-deep double-cased well to assure an uninterrupted 300-gpm supply of clean water.

**Remedial Investigation/Feasibility Study, Superfund Site, Santa Clara, California:** Directed a ground water and soil investigation, feasibility study, and remedial action for chlorinated hydrocarbon contamination. Defined plume with monitoring wells and distinguished it from plumes at neighboring sites by mapping individual chlorinated hydrocarbon compounds and their breakdown products. Modeled ground water flow, and sited and installed extraction wells. Supervised UST removal, installation of an extraction sump at the contaminant source, and treatment with granular activated carbon and air stripping. Prepared a risk assessment and RI/FS report and presented findings to California and EPA regulators, guiding them to deselect the most costly, and unwarranted, remedial options for the site. This site was the first of about 40 Superfund sites in Silicon Valley to reach a Record of Decision, and is currently close to meeting cleanup goals.

## PUBLICATIONS/PRESENTATIONS

Authored or co-authored more than 50 technical reports for submittal to regulatory agencies. A list of published articles is available upon request. Have made numerous presentations at technical conferences.

**Joyce E. Adams, P.G.**  
*SENIOR PROJECT GEOLOGIST*  
*HEALTH & SAFETY LEAD*

*Regulatory Compliance*  
*Soil and Ground Water Investigation*  
*Hydrogeologic Interpretation*  
*Well Installation*  
*Soil and Ground Water Remediation*

## **EXPERIENCE SUMMARY**

Geologist with a Bachelor's Degree and 17 years of experience in soil and ground water investigations and hazardous materials and waste management compliance. Experience includes project management, workplan and budget preparation, hydrogeologic and geochemical interpretation, subsurface investigations, field work supervision, and technical writing. Field work includes monitoring well installation, air, soil and ground water sampling, and construction oversight. Several years experience managing regulatory compliance with hazardous materials and hazardous waste. Activities include environmental planning; regulatory reporting; implementation of compliance programs; training instruction on hazardous materials and hazardous waste. Ms. Adams is currently the Project Manager for two California Environmental Protection Agency Department of Toxic Substance Control technical support contracts.

## **EDUCATION**

BS, 1990, Geology, California State University, Fresno, California  
AA, 1987, Liberal Arts, Skyline College, San Bruno, California  
Extension course, "Fundamentals of Ground Water Hydrology," 1991, University of California, Berkeley  
Extension course, "Fundamentals of Industrial Hygiene," 1997, Center for Occupational and Environmental Health, University of California, Berkeley  
"RCRA/Title 22, California Hazardous Waste Management Course," 2003, McCoy and Associates, Inc.

**Honors:** Outstanding Student in Geology; School of Natural Sciences, 1990  
Dean's list for nine semesters  
Athletic Director's Award, 1986

## **REGISTRATION**

Registered Geologist, State of California No. 7380, State changed title to Professional Geologist in 2005.

## **PROFESSIONAL HISTORY**

**1997–present** **Project Geologist, Weiss Associates, Emeryville, California**—Responsible for project management requiring site investigations, well design and installation, RCRA/CERCLA hydrogeologic characterization, NPDES compliance, interaction with regulatory agencies, technical reporting, evaluation and maintenance of ground water and soil remediation systems, and vadose zone characterization. Provide environmental compliance services to clients. Obtain permits for wastewater discharge. Conduct training of hazardous materials storage and

management and waste disposal. Prepare storm water pollution prevention plans and conducted storm water sampling and reporting. Prepare written compliance programs and implement management systems for continued compliance. Responsible for the coordination of borehole drilling, monitoring well installation, and ground water monitoring, including: lithologic descriptions; evaluation of chemical analysis (VOCs, SVOCs, metals, hydrocarbons) and radiological analysis (e.g.: Sr-90, Ra-226, tritium, Cs-137) of soil and ground water data; interpretation of hydrogeologic data; environmental regulation research; project budgeting; field coordination, permitting; and report writing.

**1990–1997**      **Staff/Senior Staff Geologist, Weiss Associates, Emeryville, California**—Managed field activities, coordinated and tracked quarterly sampling schedules for twelve sites. Collected, compiled, interpreted and reported on hydrogeologic data for ground water monitoring and ground water remedial action projects. Performed soil and ground water sampling and well installations. Prepared permit applications and coordinated soil and ground water disposal.

Performed environmental investigations, research and report writing for agency-regulated reports. Managed remedial projects with ground water pump-and-treat systems and soil vapor extraction systems.

## REPRESENTATIVE PROJECTS

**Environmental Investigations, Department of Toxic Substances Control, Northern California:** Project manager for investigations at eight sites. The sites are commercial, industrial and residential. Work scope has included preparing workplans and implementing the workplans for soil, soil gas, ground water, and surface water investigations, interpreting hydrogeologic and chemical data, and preparing an array of reports including Technical Memoranda and Data Gap, Remedial Investigation, and Five Year Reports.

**Storm/Surface Water, Port of Oakland, Oakland, California:** Coordinated and conducted field work associated with storm water and surface water in accordance with the State Water Resources Board.

**Removal Action Oversight, Port of Oakland, Oakland, California:** Prepared and implemented a removal action work plan to remediate soils at a site that was used primarily for aircraft and vehicle parts repair and maintenance. Approximately 75 yards of material were removed during excavation in two areas at the site.

**Post-Closure Maintenance, Port of Oakland Site, Oakland, California:** Involved in implementing the Final Closure and Post-Closure Maintenance Plan for a landfill, which included, ground water monitoring well installation, development and quarterly ground water monitoring, quarterly landfill gas monitoring and quarterly landfill cap inspections. Office and field work include: preparing workplans and budgets, supervising well drilling and installation, logging soil borings, supervising ground water monitoring, interpreting hydrogeologic and chemical data, and preparing final reports.

**Preliminary Site Assessments and Site Audits, Port of Oakland Site, Oakland, California:** Participated in several preliminary site assessments including a pipe investigation, and several soil investigations.

**Drinking Water Sampling, Port of Oakland Site, Oakland, California:** Conducted several rounds of drinking water sampling activities from locations varying from faucets, spigots, ships water vaults, to fire hydrants. The drinking water analysis included: VOCs, SVOCs, metals, alkalinity, color, specific conductance, hardness, threshold odor, pH, total dissolved solids, turbidity, chloride, fluoride, sulfate, nitrate, nitrite, cyanide and total coliform, fecal coliform, and *Escherichia coli*.

**Ground Water Investigation, Port of Oakland, Oakland, California:** Conducting ground water monitoring in accordance with the client's long term monitoring program. Responsibilities include: negotiating reduced sampling and reporting, coordinating field work, data synthesis and reporting. Contaminants include TCE. Additional tasks included conducting a fast-track ground water investigation to define the upgradient and downgradient plume boundaries and ground water flow direction.

**HazMat Regulation Compliance, Port of Oakland, Oakland, California:** Participated in developing and training various groups on the Hazardous Material Compliance. Worked closely with the Client to understand their operations and waste management process, and tailored the training for each group.

**GIS/Database Design, Port of Oakland, Oakland, California:** Coordinated the design and development of a database for compiling all airport soil and ground water data that will be integrated with a GIS system, which will allow easy access to, and viewing of, data for any portion of the airport.

**Low-rate Air Injection Bioremediation, Antioch, California:** Coordinated and conducted field work associated with a low-rate air injection system for bioremediating diesel-contaminated soils beneath an active power plant. Includes: 1) coordinating and conducting field work for the pilot test and start-up test; and 2) coordinating installation of full-scale system based on successful pilot system results.

**Subsurface Remediation, South Bay, San Francisco, California:** Obtained permits for and coordinated the installation of a ground water extraction system for removal of volatile organic compounds including TCE, PCE, 1,2-DCE, 1,1-DCE, 1,1-DCA from the ground water. Managed ongoing operation and maintenance and groundwater monitoring program.

**Hydrogeologic Investigation, CERCLA, Superfund Site, South Bay, San Francisco, California:** Prepared Five-Year Review, annual/semi-annual reports, and NPDES reports, and responsible for general project management. Supervised the operation and maintenance of the ground water extraction treatment system and soil vapor extraction system for the remediation of volatile organic compounds including TCE, PCE, 1,1-DCE, 1,1-DCE, 1,1-DCA.

**Environmental Investigation, Former US Army Disciplinary Barracks, Lompoc, California:** Project manager for investigations at two of the seven sites at this former Army facility targeted for redevelopment by the Federal Bureau of Prisons. The sites are a landfill and a vehicle wash rack/grease rack area. Work scope has included soil, soil gas, ground water, and surface water investigations, interpreting hydrogeologic and chemical data, and preparing final reports along with interacting with the U.S. EPA, RWQCB, and County of Santa Barbara during the investigations.

**Environmental Investigation, Former Camp Ono Facility, Well Installations, San Bernardino, California:** Project manager for installing, developing and sampling two ground water monitoring wells in San Bernardino. Work scope has included installing two wells using the air rotary casing hammer method and low carbon-steel blank casing with a stainless steel screen interval, installing and sampling with dedicated low-flow sampling pumps, interpreting hydrogeologic and chemical data, and preparing final reports.

**Hydrogeologic Investigations of Gasoline Service Stations, Northern California:** Coordinated projects and conducted subsurface investigations to assess the extent of hydrocarbons in soil and ground water at service stations in northern California. Office and field work include: preparing workplans and budgets, supervising well drilling and installation, logging soil borings, supervising ground water monitoring, interpreting hydrogeologic and chemical data, and preparing final reports.

**Hydrogeologic Investigation, DOE Site, San Francisco Bay, San Francisco, California:** Prepared Quality Assurance Project Plan and Health and Safety Plan following the DOE Guidelines and prepared a RCRA Facility Assessment using the EPA RCRA Guidance Document.

**Site Characterization, DOE Site, Davis, California:** Significant involvement in preparing the Site Characterization Report which summarized all previous work and evaluated data collected during a two-month limited field investigation which covered three operable units.

**Investigative Derived Waste, DOE Site, Davis, California:** Implemented IDW sampling protocol while collecting soil samples from 265 drums that were generated from radiological and chemical contaminated areas within the site.

**Health and Safety, DOE Site, Davis, California:** Implemented the Health and Safety Plan during an investigation for radionuclides (Ra-226, Sr-90, Cs-137, tritium) in soil and ground water. During removal actions at the site, implemented the Health and Safety Coordinator role by monitoring site worker health and safety using the WBGT area heat stress monitor, noise dosimeter, PID, LEL/O<sub>2</sub> meter, light meter and personal sampling pumps.

**Health and Safety, Corps of Engineers, Sacramento, California:** Prepared four Health and Safety Plans for various sites in southern and northern California. Implemented a Health and Safety Plan during an investigation for hydrocarbons in soil.

**Health and Safety, Sunnyvale, California:** Significant involvement in the preparation of an Environmental Safety and Health Plan for construction activities at a CERCLA Superfund site. Implemented the Environmental Compliance Component of the Environmental Safety and Health Plan.

**Dual Phase High Vacuum Remediation, South Bay San Francisco, California:** Coordinated field work associated with a pilot test for dual phase high vacuum system for remediating saturated soil and ground water contaminated with volatile organic compounds.

## **TRAINING:**

40 - hour OSHA training, including Level C training and air monitoring practices and techniques, Environmental and Safety Resources, San Bruno, 1990

8 - hour SARA training, Weiss Associates, Emeryville, 2004

8 - hour Supervisory training, Weiss Associates, Emeryville, 1996

CPR/First Aid Certified, Weiss Associates, Emeryville, 1999/1999

Radiation Worker II, Environmental Management Services, Davis, 1999

## Timothy R. Utterback, P.E.

PROJECT ENGINEER/CHEMIST

Environmental Engineering

### EXPERIENCE SUMMARY

Mr. Utterback is a registered engineer with 17 years of experience in environmental engineering and quantitative analytical chemistry. He has performed all aspects of Superfund risk assessments and is a technical resource for statistical analysis and laboratory data quality at Weiss Associates. He performs contaminant transport modeling and risk determinations for human health and ecological risk assessment projects. Mr. Utterback currently manages laboratory data validation, database import, and all aspects of workplans and reports related to analytical laboratory data for the Department of Energy (DOE) Laboratory for Energy Related Health Research (LEHR) site. He is also the project chemist for National Aeronautics and Space Administration (NASA) and United States Army Corps of Engineers (USACE) projects at Weiss Associates. Prior to working at Weiss Associates he was an analytical chemist at environmental and research laboratories.

### EDUCATION

BS Civil Engineering, 1994, UC Davis, Davis, California  
BS Physics, 1987, UC Santa Barbara, Santa Barbara, California

### REGISTRATION

California Registered Engineer, License No. C056986

### PROFESSIONAL HISTORY

#### 1994—Present

#### **Project Engineer and Chemist, Weiss Associates, Emeryville, California—**

Mr. Utterback is Weiss Associates resource for chemical contaminant risk assessments performed according to Superfund risk assessment guidance and radiological dose calculations for authorized release of radioactive materials following DOE Order 5400.5. He has prepared workplans, sampling and analysis plans, and validated data for chemical and radioactive contamination at NASA and US DOE sites. DOE and NASA workplans involved statistical sampling designs following EPA, MARSSIM, and NUREG guidelines. He has performed statistical analysis and hypothesis testing for chemical and radiological contaminants. He wrote a visual BASIC program to interface with the contaminant transport model NUFT, developed by Lawrence Livermore National Laboratory.

Mr. Utterback is currently responsible for analytical data quality and chemical and radiological analysis aspects of workplans and reports prepared by Weiss Associates. He manages the database for DOE areas of the LEHR site in Davis, California. He previously managed all aspects of several high profile MTBE release sites for Chevron Products Company. Mr. Utterback has also provided litigation support for fuel release lawsuits. He has designed,

permitted, built, and maintained several environmental treatment systems for Chevron Products Company and other oil companies.

**1991—1994**

**Analyst, CalTest Analytical Laboratory, Napa, California**—Mr. Utterback performed EPA methods 3510, 3520, 5030, 8270, 8080, 8140, 8150, 8015, 8020 and 8240 of sample preparation and analysis by GC/MS, GC/ECD, GC/NPD techniques. He obtained laboratory certifications from the Department of Health Services for organic analysis methods and participated in the continuing laboratory certification program. He helped to develop the organic laboratory internal QA/QC program at CalTest and trained several other analysts on QA/QC procedures, sample preparation procedures, instrument techniques and instrument maintenance.

**1989—1990**

**Lab Technician/Physical Chemist, Henkel Research Corporation (HRC), Santa Rosa, California**—Mr. Utterback performed quantitative analysis of reaction products for various chemical research projects by gas chromatography techniques. He designed and performed GC chemical analysis methods and QA/QC procedures as were needed for specific research projects. In addition, he assisted in the physical chemistry research program at HRC to determine applications for new chemical products.

**1987—1989**

**Lab Technician, ETC/Multi-Tech Laboratory, Santa Rosa, California**—Mr. Utterback performed sample preparation and analysis for cold vapor mercury, arsenic, selenium, hexavalent chromium (flame AA) and ICP metals by EPA Methods. He performed acid digestion, STLC extraction, mercury and hexavalent chromium sample preparation techniques as well as various general chemistry analysis methods such as: conductivity, turbidity, pH and hexavalent chromium by color spectrometry.

**PROFESSIONAL TRAINING**

40 Hour Health and Safety Training (29 CFR 1910.120)

**REPRESENTATIVE PROJECTS**

**Risk Assessment for US DOE Project: LEHR Facility, Davis, California.** Prepared comprehensive CERCLA risk assessment of chemical and radiological contamination for the Western Dog Pens area after placement of soil backfill. Completed human health and ecological risk assessments following the procedures established in the site-wide risk assessment. Performed data quality evaluation, exposure assessment, contaminant migration modeling, biotransfer, statistical determination of exposure point concentrations, toxicity assessment, risk estimation and risk characterization.

**Risk Characterization for US DOE Project: LEHR Facility, Davis, California.** Designed spatial analysis for radionuclides and chemicals in operable unit soil. Prepared uncertainty evaluations for radiological and chemical risk calculations. Evaluated equilibrium between parent and daughter radionuclides to determine presence or absence of contamination. Evaluated data quality issues and their impact on estimated risks. Compared risk contributions from released contamination and natural conditions.

**Determination of Risk-Based Cleanup Levels for US DOE Project: LEHR Facility, Davis, California.** Prepared determination of risk-based action standards to guide interim removal actions in DOE areas. Human health risk assessment for onsite researchers and residential farmers located adjacent to the site. Back calculated risk-based action standards for chemical and radiological contaminants of concern. Performed data quality evaluation, constituent of concern determination, exposure assessment, contaminant migration modeling, and toxicity assessment.

**Risk Assessment for Commercial Redevelopment Project: Britannia Oyster Point II, South San Francisco, California.** Prepared human health and ecological risk assessment for uranium bearing slag buried at commercial redevelopment site. Quantified radiological risk and chemical toxicological risk from uranium. Evaluated potential radon emanation to indoor air, ground water impact at the site and potential contaminant migration to the San Francisco Bay. Prepared risk management plan to protect potential receptors during and after site redevelopment.

**Risk Assessment for Former Semiconductor Site: Intel Freedom Circle, Santa Clara, California.** Prepared human health and ecological risk assessment for current and future land use at site containing metals and pesticide contamination. Performed data quality evaluation, exposure assessment, contaminant migration modeling, determination of exposure point concentrations, toxicity assessment, risk estimation, uncertainty evaluation and risk characterization.

**Pesticide Risk Assessment: Shell International, Maracay Venezuela.** Produced a comprehensive human health risk assessment for a former pesticide formulation facility owned by Shell International in Venezuela. Guided the data collection process, reviewed the data, evaluated all potential human exposure pathways and back calculated site-specific target levels to guide remedial action at the site. Modeled the potential impact of site contamination on the regional ground water aquifer in Maracay.

**Project Engineer: Chevron Products Company Sites.** Management and primary client contact for high priority and litigious MTBE sites in Santa Clara Valley. Services included engineering design, construction, operations and maintenance, site closure negotiation, litigation support, agency negotiations, strategic planning, corrective action plans, risk assessments, feasibility studies, and pilot tests.

**Radiological Dose Calculations for Authorized Release: UC Berkeley Bevatron Facility, Berkeley, California.** Calculated radiological dose to public from authorized release of concrete shielding blocks at UC Berkeley Bevatron facility according to DOE Order 5400.5. Dose to public receptors was determined using RESRAD, Riskind, and TSD-Dose codes under varying exposure scenario assumptions. Work was performed under attorney-client privilege.

**Radiological Dose Calculations for US DOE Project: LEHR Facility, Davis, California.** Calculated radiological dose to public from authorized release of slightly radioactive gravel according to DOE Order 5400.5. Authorized limits were determined for individual radionuclides using RESRAD, Riskind, and TSD-Dose codes under varying exposure scenario assumptions. The gravel was released from the LEHR site in 2004 based on the results of the authorized release report.

**Radiological Survey Planning and Design: NASA Wallops Flight Facility, Wallops Island, Virginia.** Prepared radiological field survey design for clearance of former scrapyard area. Designed survey grid, specified survey techniques, instrumentation, and statistical analysis consistent with MARSSIM and NUREG guidance documents.



**Radiological Survey Planning and Design for US DOE Project:** *LEHR Facility, Davis, California.* Survey planning and design, statistical hypothesis formulation, specification of decision errors, specification of statistical tests, calculation of the number of samples to satisfy test parameters, and design of sampling grid following MARSSIM and NUREG guidance documents.

**Statistical Radiological Data Analysis for US DOE Project:** *LEHR Facility, Davis, California.* Statistical grouping and testing of radiological background data to determine potential depth stratification, lateral stratification and/or soil type stratification. Calculation of background values for grouped data based on results of statistical tests. Determination of required detection limits for post remedial action data using background values for grouped data.

**Vadose Zone Fate and Transport Modeling for US DOE Project:** *LEHR Facility, Davis, California.* Visual basic programming to develop an EXCEL interface for C input files to the NUFT program. Used visual basic interface program to run NUFT for iterative solution of residual vadose zone soil concentrations that will be protective of ground water.

**Ground Water Modeling:** *Napa Valley Petroleum vs Holt, Napa, California.* Modeled MTBE release to ground water for lawsuit exhibit. Determined mass of accidental MTBE released due to defendant actions. Simulated migration of MTBE plume from source area to potential ground water receptors. Determined human health risk from MTBE/Fuel release.

**Subaqueous Cap Modeling:** *Port of Richmond, Richmond, California.* Modeled chemical migration through a proposed subaqueous cap at a contaminated former ship storage channel. Used environmental chemodynamics to determine movement and transfer of chemicals through sediment, water and air in a tidal setting.

**Project Chemist for US DOE Project:** *LEHR Facility, Davis, California.* Manage data validation and database import for soil, air and water sample results for radiological, volatile, semivolatile, pesticide, PCB, metal, and wet chemistry data following USEPA contract laboratory program validation procedures. Prepare analytical chemistry aspects of workplans, sampling plans, and reports for waste characterization and removal action confirmation data.

**Project Chemist for NASA Project:** *Scrapyard Area, Wallops Island, Virginia.* Prepared workplans for radiological surveys, radionuclide background investigation, PCB characterization, and waste characterization. Validated radiological and PCB data following USEPA contract laboratory program validation procedures.

**Project Chemist for United States Army Corps of Engineers, South Pacific Division, Sacramento Engineer District Project:** *Muscoy Plume, San Bernardino, California.* Prepared *Quality Assurance Project Plan* and analytical chemistry portions of site investigation report. Documented impact of quality control failures on the usability of chemical data.

**Operations and Maintenance Program Management:** *Chevron Products Company Sites throughout California.* Management for more than twenty ground water treatment systems in northern and central California. System upgrade design and permit procurements from discharge authorities and city building departments. Upgrade and repair cost estimate preparation and construction oversight. Management of discharge compliance report program and out of compliance issues. Permit renewal, budget tracking and field coordination.

**Design of Soil Treatment System for Air Force Center for Environmental Excellence:** *Luke Air Force Base, Arizona.* Heat transfer calculations and component specifications for humidifier design. Blower sizing calculation and design specification. Steel frame, concrete slab and concrete footing detail for mounting blower, electrical panel and above ground piping manifold. Trench design specifications for below grade piping installation, soil backfill, road base compaction, and asphalt surfaces. Traffic rated vault specifications for treatment system wells.

**Design, Permitting and Installation of Ground Water Treatment System for Texaco Refining and Marketing Inc:** *Former Texaco Service Station, 1400 Farmers Lane, Santa Rosa, California.* Below grade trench and vault specifications. Steel frame and concrete footing design for equipment mounting. Collection of contractor bids for construction. Building, plumbing, encroachment and electrical permits. Management of construction and coordination of final inspections by building department.

**Tess Byler, P.G.**  
*SENIOR PROJECT GEOLOGIST*

*Project Management  
Hydrogeologic Investigations*

### **EXPERIENCE SUMMARY**

Proven manager of large multifaceted environmental projects from planning through implementation, including compliance, site stewardship, investigation, and construction. Ms. Byler's strengths include innovative technical approaches, excellent communication skills, team consensus building, and knowledge of local and national regulatory agencies.

### **EDUCATION**

M.S., Geology, George Washington University, 1988  
B.S., Earth Science, Florida International University, 1979

### **REGISTRATION**

Professional Geologist, California #8131

### **PROFESSIONAL HISTORY**

- 2007-present Senior Project Geologist, Weiss Associates, Emeryville, California**
- 1990-2007 Senior Project Manager, CH2MHill, Oakland, California**
- 2000-2002 Environmental Restoration Project Manager, Stanford Linear Accelerator Center, Environmental Safety and Health Division, Palo Alto California**
- 1987-1989 Group Leader, Roux Associates, Huntington, New York, New York**
- 1985-1987 Hydrogeologist, William F. Cosulich Engineers, Syosset, New York**
- 1978-1983 Scientist, U.S. Environmental Protection Agency, Washington, D.C.**

### **PROFESSIONAL AFFILIATIONS**

Groundwater Resources Association, California  
National Water Well Association  
Environmental Leadership Task Force, Colorado  
Agricultural Chemicals Task Force, Colorado

### **USEPA FELLOWSHIP**

University of Southern California- Environmental Management Program

## **TRAINING**

OSHA Hazardous Waste Operations/Emergency Response  
Hazardous Waste Disposal  
OSHA Site Supervisor Training  
OSHA Construction Safety/Inspection

## **REPRESENTATIVE PROJECTS**

### **Site Investigation and Remediation**

Program Manager, confidential client, hexavalent chromium in the Mojave Desert. Presented long term strategy, negotiated with regulators, and management of phytoremediation irrigation system and in situ remediation design teams.

Project Manager, Mare Island Landfill Areas (1AB)- Technical lead on the Remedial Investigation and removal actions to obtain closure for redevelopment.

Project Manager for facility investigation and closure including building decontamination and groundwater and soil remediation, including litigation support

Task Leader/ Project Manager for site investigation activities and cleanup plans and actions at more than 10 small to large-scale facilities. Responsible for developing work plans, schedules, budget preparation and tracking, risk assessment, public meeting preparation, community relations, and representing sites to the public. Field drilling, sampling and hydraulic studies

### **Compliance and Regulatory**

Environmental Assessment of proposed Free Electron Laser experimental facility at Stanford Linear Accelerator Center, including presentation to Department of Energy stakeholders. US Air Force Academy: Site-wide compliance audit and preparation of pollution prevention and waste minimization plans Facility wide compliance audits of US Air Force, Kopper Chemicals and National Semiconductor (multiple sites nationwide)

Union Pacific Laramie, Wyoming: Task Manager for RCRA Part B permit for closure and post closure monitoring, and negotiation with agencies on approach.

Drafted Record of Decision documents for several sites and performed 5 year reviews.

Alameda County Water District- Onsite consulting for District's most complicated sites for the Regional Water Quality Control Board and Department of Toxic Substances Control. Performed more than 50 small to large scale environmental audits at industrial and commercial facilities.

Designed and implemented Large Scale Retrospective and Small Scale prospective groundwater and surface water studies for national pesticide registration requirements

Obtained regulator and public buy-in for a 377-acre research park overlying an EPA-designated Special Groundwater Protection Area by developing and presenting a groundwater management plan in public meetings.

For hazardous waste incinerator placement, directed hydraulic suitability studies and described findings at public hearings.

Assistant Project Manager for developing National technology based standards for the steam electric power, pulp and paper and offshore oil and gas industries.

## **REPRESENTATIVE PUBLICATIONS**

- Successful In-situ Bioremediation of Hexavalent Chromium in the Mojave Desert, with Robert Tossell, Gene Ng and Brad Johnson, April 2006 Battelle Conference [abstract]
- Hydrogeology of the Dakota/Kheyenne Aquifer, with A. Victor-Gasper, Colorado Groundwater Atlas, Colorado Groundwater Association, January 1998.
- Groundwater of the Arkansas Alluvial Aquifer, with M. Ryman and D. Anderson in Colorado Groundwater Atlas, Colorado Groundwater Association, January 1998.
- Perimeter Approach to Corrective Action in National Groundwater Association Hydrocarbon Conference Proceedings, Houston Texas, 1996.
- Improved RCRA Corrective Actions, with D. Price and K. Minter, Hydrocarbon Processing, Volume 74, No. 8, August 1995.
- Managing Pesticides on a Local Level: How to Implement a Pesticide Vulnerability Study, Assessing and Managing Health Risks for Drinking Water Contamination: Approaches and Applications, International Hydrological Association Symposium Proceedings, Rome, Italy, September 1994.
- A Groundwater Management Approach for Reducing Risk of Contamination in Water Supply Wells, Proceedings from the Rocky Mountain Association of Environmental Professionals Annual Conference, September 1991.
- Modeling of Synthetic Organic Chemical Contamination in a Sand Aquifer Segment Underlying the New Cassel Industrial Area, Long Island, NY, Master's Thesis, George Washington University, 1988.
- Proposed Rule-Effluent Limitation Guidelines, Pretreatment Standards and New Source Performance Standards under Clean Water Act; Steam Electric Power Generating Point Source Category, with John Lum, Federal Register Volume 45, Number 200, October 14, 1980.
- Development Document for Effluent Limitations Guidelines and Standards for the Steam Electric Point Source Category, with John Lum, EPA 44011-80/029b, September 1980.

**Larry Whitten**

*FIELD OPERATIONS TECHNICIAN*

*Hazard waste site remediation operation,  
Water, air, and soil environmental sampling,  
Industrial/sanitary and water treatment facilities.*

**EXPERIENCE SUMMARY**

Mr. Whitten has 28 years of environmental treatment and field work experience. He currently operates, maintains, and manages a 6 MGD Advanced Wastewater Treatment Plant, and was the former operator of the Wappinger Falls Groundwater Treatment facility. He performs miscellaneous groundwater, air and soil vapor environmental sampling in accordance to EPA, NYSDEC and other required protocols. In addition to Mr. Whitten's 28 years of work experience, he has worked in overseeing treatment plant construction and upgrades, hazardous waste site remediation, large scale groundwater sampling programs, treatment system trouble shooting, site safety programs enforcement, maintenance scheduling, budgeting, overseeing of well drilling, well closure, soil testing, and vapor testing.

**EDUCATION**

Essex Junction High School	1976
Essex Junction Vocational School	1976
State University of New York Wastewater Training	1987

**PROFESSIONAL HISTORY**

**1985- Present Field Operation Technician**—Operation and maintenance of groundwater treatment system. Perform all groundwater and vapor sampling. Measure ground water well levels. Assist and oversee all hazardous waste remediation projects on site.

**2003-Present;** *Weiss Associates, Emeryville, CA*

**1996-2003;** *Locus Technologies, Wappingers Falls, New York*

**1995-1996;** *Smith Environmental, Wappingers Falls, New York*

**1985-1995;** *Canonie Environmental, Wappingers Falls, New York*

**1985-Present- WPCF Operator,** IBM, *Hopewell Junction, New York*—Operations and maintenance of 6 MGD Nitrification/Denitrification Wastewater Treatment Plant. Oversees and enforces site safety program. Performs large scale groundwater and vapor sampling at IBM Burlington, Vermont site.

**1982-1985, Industrial Wastewater Treatment Plant Operator,** *Fairchild Semiconductor, Wappingers Falls, New York*—Operation and maintenance of fluoride waste treatment plant. Managed off-shift operations. Construction oversight and start up of new fluoride treatment plant.

**1979-1982.** **Sanitary/ Water Treatment Operator, Camo Pollution Control, Hyde Park, New York**—Operation and maintenance of sanitary and water treatment plant. Completed all required sampling.

#### **PROFESSIONAL TRAINING AND CERTIFICATIONS**

New York State Grade 4A Wastewater Treatment Plant Operator #8885  
New York State Department of Health Grade C Plant or Distribution Water System Operator #NY0029104  
New York Water Environmental Associate Grade 2A Wastewater Collection System Operator #CSC00077  
40 Hour OSHA Hazwoper Training  
Permit Required Confined Space Training  
Fire Fighter 2000 Basic Fire Training  
IS 100 and 700 National Incident Management Command Systems  
Health and Safety Training

#### **PROFESSIONAL MEMBERSHIPS**

New York Water Environmental Association Inc.  
Water Environment Federation