VALLEY FALLS DRY CLEANERS SITE
RENSSELAER COUNTY, NEW YORK
Site Management Plan

NYSDEC Site Number: 4-42-028

Prepared for:
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Prepared by:
EA Engineering, P.C., and Its Affiliate
EA Science and Technology
6712 Brooklawn Parkway, Suite 104
Syracuse, New York 13211-2158
(315) 431-4610

Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date

JUNE 2012

TABLE OF CONTENTS

LIST OF FIGURES

SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at the Valley Falls Dry Cleaners Site (hereinafter referred to as the "Site") under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by the New York State Department of Environmental Conservation (NYSDEC). The site was remediated in accordance with the NYS Environmental Conservation Law. The site has been assigned the NYSDEC # 4-42-028.

1.1.1 General

The NYSDEC took responsibility to remediate the 1.2-acre property located in the village of Valley Falls, Rensselaer County, town of Pittstown, New York. The NYSDEC completed a site investigation and remediated contaminated media at the site. A site location map is included as Figure 1 and the boundaries of this 1.2-acre site are provided in Figure 2.

After completion of the remedial work described in the Post-Remediation Report[1,] some contamination was left in the groundwater at this site, which is hereafter referred to as "remaining contamination." This Site Management Plan (SMP) was prepared to manage remaining groundwater contamination at the Site until the Site meets the remedial goals discussed in this report. Each report associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in NYS.

This SMP was prepared by EA Engineering, P.C., and Its Affiliate EA Science and Technology (EA), on behalf of NYSDEC in accordance with the requirements in NYSDEC Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation, dated December 2002, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Engineering Controls (ECs) that are required for the Site by this SMP.

1.1.2 Purpose

The Site contains residual contamination left after completion of the remedial action. A long-term groundwater monitoring program has been incorporated as an EC required at the site to minimize exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. The Institutional Controls (ICs)

1. NYSDEC. 2000. Post-Remediation Report, Valley Falls Dry Cleaner Site, Village of Valley Falls, Town of Pittstown, Rensselaer County, New York, Site Number 4-42-028.

associated with this site place restrictions on site use; and mandate operation, maintenance, monitoring, and reporting measures for each EC and IC. This SMP specifies the methods necessary to ensure compliance with each EC and IC required by this SMP for residual contamination at the Site. This plan has been approved by the NYSDEC. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of the procedures required to manage remaining contamination at the Site after completion of the remedial action including: (1) media monitoring and submittal of Periodic Review Reports and (2) defining criteria for termination of the groundwater monitoring program.

To address these needs, this SMP includes a Monitoring Plan for implementation of site monitoring. This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required to properly manage the Site. Failure to properly implement the SMP could lead to grounds for revocation of the Certificate of Completion.

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 New York Code of Rules and Regulations (NYCRR) Part 375 and, thereby, subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC project manager. In accordance with this SMP, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The Site is located in a residential area where single family homes are serviced by private drinking water wells. The Site is approximately 0.5 mi from the Hoosic River and is located within the incorporated village of Valley Falls, a small, rural community on the Hoosic River in the town of Pittstown, Rensselaer County (Figures 1 and 2).

The Site, the former Winchell Dry Cleaners property, consists of a relatively flat parcel of land, and includes the residence of the present owner at 11 Lyon Street. The property includes four contiguous parcels totaling approximately 1.2 acres.

1.2.2 Site History

The Site, formerly Winchell Dry Cleaners, was established in the 1940s by Mr. Winchell and operated continuously through the early 1970s. It was reportedly sold by Mr. Winchell to Mr. Johnson in the early 1970s. Mr. Johnson continued to operate the facility as a dry cleaner for a few years, and the property was resold and then abandoned in the mid-1970s. It is believed that the dry cleaning operation discharged perchloroethene (PCE) wastes directly onto the ground surface when operators washed lint filters in wash water which discharged into an on-site septic system.

In January 1992, the New York State Department of Health (NYSDOH) sampled nine private wells after it was notified of contamination at a private well in the village of Valley Falls. The results of the sampling analysis from one of the wells revealed that the concentration of PCE contamination exceeded the United States Environmental Protection Agency (USEPA) action level of 67 parts per billion (ppb). As a result, the Site was referred by the NYSDEC to the USEPA for an emergency response action. USEPA provided bottled water and installed granular activated carbon (GAC)/ultraviolet (UV) units at six residences that exceeded the NYSDOH drinking water standard of 5 ppb. The NYSDEC completed a Phase I assessment of the Site in June 1993 and the Site was listed on the NYS Registry as a Class 2 Inactive Hazardous Waste Disposal Site. NYSDEC initiated an in-house remedial investigation (RI) in 1996. This work was completed in December 1996.

A RI/Feasibility Study (FS) was completed in February 1998 that led to remedial design and construction in the fall of 1999. In addition to the replacement of selected potable water wells, contaminated soil, an on-site drywell, an abandoned septic system, and an underground storage tank (UST) were excavated as part of the construction.

The Site is currently surrounded by residential, commercial, and undeveloped lands (Figure 2). Bedrock is exposed near the surface to the south of the Site and is located on-site at a depth of 23 ft. It is believed that the eroded bedrock surface slopes to the north, allowing the overburden sand and gravel aquifer to reach a thickness greater than 70 ft near the Hoosic River, which is located approximately ¼-mi north of the Site.
The following reports are available for the Site:

- *Remedial Investigation Report, Valley Falls Dry Cleaners, Site Number 4-42-028* (NYSDEC, 1996)[2]

- *Record of Decision (ROD), Valley Falls Dry Cleaners Site, Village of Valley Falls, Rensselaer County, New York, Site Number 4-42-028* (NYSDEC, 1998)[3]

2. NYSDEC, 1996. Remedial Investigation Report, Valley Falls Dry Cleaners, Site Number 4-42-028. December.
3. NYSDEC, 1998. Record of Decision, Valley Falls Dry Cleaners Site, Village of Valley Falls, Rensselaer County, New York, Site Number 4-42-028. February.

- *Post-Remediation Report, Valley Falls Dry Cleaner Site, Village of Valley Falls, Town of Pittstown, Rensselaer County, New York, Site Number 4-42-028* (NYSDEC, 2000)[1].

1.2.3 Geologic Conditions

The Site lies on the south side of the lower Hoosic River Valley at an elevation of approximately 375 ft above mean sea level, within the Hudson River drainage basin. Valley Falls is approximately 6 mi east of the confluence of the Hoosic and Hudson rivers. Bedrock occurs at 23 ft below grade at the Site, and is mapped as lower Ordovician and upper Cambrian limestone and calcareous somewhat carbonaceous black shale. The bedrock is competent, largely deformed and nearly vertically bedded in outcrop. Bedrock in the area is overlain by a variety of unconsolidated glacial deposits, deposited during the advance and retreat of the late-Wisconsin Glaciation. Although remnants of the Eagle Bridge recessional moraine are evident south of the site, most of the area south of the Site is typified by lodgement till and drumlins. The Site itself lays near the southern margin of the Hoosic River glacial lacustine deltaic and river terrace deposits. The locations of the geologic sections are shown as Figure 3, and the cross sections are shown as Figures 4 and 5.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A RI was performed to characterize the nature and extent of contamination at the site. The results of the RI are described in detail in the following report:

- *Remedial Investigation Report, Valley Falls Dry Cleaner, Site Number 4-42-028* (NYSDEC, 1996)[2].

Generally, the RI determined that volatile organic compound (VOC) contamination from the former dry cleaning operation was present in on-site soil and in groundwater at and downgradient of the Site. Constituents of concern include PCE and its breakdown products of trichloroethylene (TCE) and dichloroethylene (DCE). Residential well sampling and monitoring well sampling results (from the upper and lower aquifers) indicated that wide spread low levels of PCE were present in groundwater downgradient of the Site. There are two ways that contaminants could migrate from the unconfined upper sand and gravel aquifer to the lower confined bedrock aquifer over time. One is by leakage along the steel casing of residential wells which are not grouted and sealed in a bedrock socket, and the second is by leakage through the glacial till unit downgradient of the Site. Analytical results also indicated that the highest levels of soil contamination were present below the water table and have remained localized beneath the Site. The RI also revealed the presence of an abandoned on-site fuel tank, dry well, septic tank, and associated pipes.

1.3.1 Soil

In April 1996, a total of four initial soil borings were advanced to bedrock using a hollow-stem auger. Continuous split-spoon samples were obtained from the ground surface to the top of competent bedrock. In September 1996, an additional nine soil borings were advanced to better delineate the extent of soil contamination using a NYSDEC truck mounted drill rig.

The soil sample analysis conducted at the Site indicated that the on-site soil primarily below the water table is contaminated with PCE, and its breakdown products of TCE and DCE. The concentration of the contaminants of concern ranges from 0.012 to 170 parts per million (ppm). Sample locations and the analytical results are shown in Figure 6. The soil cleanup level necessary to achieve protection of the groundwater is 0.84 ppm (840 ppb).

1.3.2 Site-Related Groundwater

Two aquifers were identified on-site: the upper sand and gravel (overburden) and the shale bedrock. The upper sand and gravel, and lower bedrock aquifer are separated by a glacial till unit. The upper sand and gravel aquifer was not present at the upgradient MW-1 location (upgradient of the Site). The till unit is saturated at the upgradient location, and is hydraulically connected to the upper sand and gravel aquifer. On-site and downgradient of the Site, the till unit functions as an aquitard impeding the movement of groundwater to the bedrock aquifer. Bedrock was encountered at a depth of 23 ft at the Site. Groundwater contour maps for the overburden and bedrock are included as Figures 7 and 8.

Both aquifers exhibit low yield. The shallow sand and gravel aquifer is an unconfined water table aquifer which yielded only about 1 gal per minute (gpm) or less to monitoring wells when pumped. In the past, however, most homes in the village depended on this aquifer for a water supply. Water was obtained from large diameter dug wells. Two residents in the vicinity of the Site still obtain their drinking water from shallow large diameter dug wells. The sand and gravel are about 9-ft deep at the Site, and the bottom 2-4 ft are saturated, depending on the season.

Most shallow dug wells have been replaced by drilled bedrock wells over the years. The shale bedrock aquifer yielded only about 1.5 gpm or less to monitoring wells which were drilled 30 ft into the rock. Most deep residential bedrock wells have higher yields at approximately 5 gpm or 6 gpm.

A total of six homeowner's wells were impacted with PCE contamination above the NYSDOH standards, criteria, and guidance (SCGs) value of 5 ppb. The on-site shallow groundwater is contaminated by PCE, and its breakdown products of TCE and DCE at concentrations up to 350 ppb.

There are two shallow dug wells in the sand and gravel aquifer which are contaminated with PCE at concentrations of 8 and 190 ppb. Four bedrock wells are contaminated with PCE at concentrations ranging from 5 to 130 ppb. The table below details residences with detections of PCE over the SCG.

RESIDENTIAL WELL ANALYTICAL RESULTS		
Residence	**Type of Well**	**PCE Concentration (ppb)**
16 Charles St	45-ft drilled well	8.0
10 Charles St	150-ft drilled well	5.0
36 State St	Dug	9.7
12 Charles St	15-ft Dug	115-190
9 Edward St	Drilled bedrock well	130
11 Lyon St	120-ft drilled well	47
31 State St	90 to 100-ft drilled well	5.2

Concentrations in the off-site shallow groundwater are in excess of 100 ppb for PCE and its breakdown products, extending from the site to the northwest. The areal extent of the shallow groundwater plume above 200 ppb in 1996 is approximately 3 acres. An isopleth map depicting the areal extent is shown as Figure 9.

There has been no apparent decline in concentration of contaminants in these wells over time. Contaminant concentrations in other residential bedrock wells generally occur at very low levels (1-2 ppb), but the contamination appears to be quite widespread, with very low levels showing up 0.5-mi downgradient of the site. The mechanism for transport of the contaminants from the upper sand and gravel aquifer to the bedrock aquifer is due to the downward hydraulic gradient at the site. Another possible mechanism for transport of the contaminants is leakage along the casing of the on-site homeowner well. Once contaminants are in the fractures and fissures in the bedrock, they can move along fractures with groundwater which may be influenced by the pumping of other bedrock wells in the area. The groundwater cleanup level that will bring the Site in compliance with SCGs for PCE, TCE, and DCE is 5 ppb, respectively.

1.3.3 Site-Related Soil Vapor Intrusion

The soil gas survey performed at the site (December 1995) was used to determine the lateral extent of PCE contamination and was accomplished with a Geoprobe mounted on a pick-up truck. A 10-ft grid was laid out over the Site and was expanded as samples and field gas chromatograph results were obtained. Soil gas samples were taken from a total of 56 sample points. Soil vapor sample locations and results are shown on Figure 10. The results of the soil gas survey indicated concentrations of PCE and breakdown products in the soil gas greater than 1 ppm south of the building's foundation, with a small area greater than 5 ppm, and one location greater than 10 ppm under the foundation. Based on these data, contaminants in soil vapor were believed to be limited to the immediate area surrounding the former dry cleaners building.

1.4 SUMMARY OF REMEDIAL ACTIONS

The Site was remediated in accordance with the NYSDEC-approved ROD dated February 1998[3] and the Post-Remediation Report dated September 2000[1]. The following is a summary of the remedial actions performed at the Site.

Remedial actions required by the ROD included the replacement of residential drinking water wells or the installation of GAC/UV systems on the affected wells; excavation and off-site disposal of contaminated soil; decommissioning the abandoned UST, septic tank, dry well, and associated piping; dewatering of from the excavation and treatment of groundwater prior to disposal. The ROD also required semi-annual monitoring of the affected private water supply wells and monitoring wells for a period of 5 years. The scope of work required confirmatory soil sampling, backfilling of the excavations, and installation of an 8-in. soil cover over all disturbed areas. Specific remedial elements are described below:

1. Excavation of soil/fill exceeding PCE concentrations of 0.84 ppm.

2. Construction and maintenance of an 8-in. soil cover system consisting of non-contaminated soil to prevent human exposure to contaminated soil/fill remaining at the site.

3. Decommission a 1,000 gal UST, septic tank, dry well, and piping. Two additional USTs were discovered and decommissioned during the excavation including a 500 gal tank and 2,000 gal tank.

4. Replacement of three private drinking water wells.

5. Confirmatory soil investigation that included 45 locations across the site area.

6. Development and implementation of a SMP for long-term management of remaining contamination which includes plans for groundwater monitoring.

Remedial activities were completed at the Site by 5 April 2000.

1.4.1 Removal of Contaminated Materials from the Site

A total of three USTs were recovered, cleaned, and disposed of off-site during the excavation. The tanks had capacities of 2,000 gal, 1,000 gal, and 500 gal. The 500 gal and 2,000 gal USTs were used to store petroleum products; both were corroded and had leaked product to the soil. Additionally, an abandoned septic tank, dry well, and all associated piping were excavated and disposed of off-site.

Soil cleanup objectives of 0.84 ppm for PCE impacted soils and 10 ppm for petroleum impacted soils were established prior to site remediation. No hazardous soil was found at

the Site and 269.49 tons of non-hazardous contaminated soil was excavated and disposed of off-site. A figure showing areas of excavation and confirmatory sample locations is shown as Figure 11. The excavation area was backfilled with clean fill and an 8-in. soil cover was installed to grade.

The vertical extent of contamination at the Site exceeded original estimates. As a result, a 10 in. recovery well was installed to a depth of 15 ft below grade that could be used to recover contaminated groundwater underneath the site. The well was constructed using 10-in. schedule 40 polyvinyl chloride casing and was screened from 5 to 15 ft. To date, the recovery well has not been used to recover contaminated groundwater. During excavation activities, an additional 26 soil borings were installed and screened with a photoionization detector (PID). Figure 12 shows the boring locations and borehole logs are included as Appendix A.

1.4.2 Site-Related Treatment Systems

Prior to remedial activities at the Site, seven GAC/UV water treatment systems were installed at private residences by the NYSDOH. In 1992, five treatment systems were installed by Megometrics Corporation. In 1994 and 1996, two additional treatments were installed by Rust Environment and Infrastructure. No additional systems have been installed since that time.

Systems installed by Megometrics Corporation include pre-filtration for sediment removal, two 12-in. diameter, 52-in. tall GAC vessels and UV disinfection. Systems installed by Rust Environment and Infrastructure are of the same design, but with larger capacity carbon vessels (3.3 ft^3). In 2002, NYSDEC requested that two systems be removed. One was turned over to NYSDEC and the other was turned over to the homeowner for private maintenance. Locations of installed GAC/UV treatment systems are shown in Figure 13.

1.4.3 Remaining Contamination

Based on post-excavation analytical data, the impacted soil has been removed from the Site. Analytical results from the overburden groundwater monitoring well located on-site reveals the presence of PCE over the SCG.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated groundwater exists beneath the Site, ECs are required to protect human health and the environment. This Engineering Plan describes the procedures for the implementation and management of each EC at the Site. The EC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of each EC.
- The basic implementation and intended role of each EC.
- A description of the features to be evaluated during each required inspection and periodic review.
- A description of plans and procedures to be followed for implementation of ECs. Any other provisions necessary to identify or establish methods for implementing the ECs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

2.2.1.1 Granular Activated Carbon Systems

Exposure to remaining contamination in groundwater at the Site is prevented by GAC whole-house water treatment systems at four private water supply wells. Each of the systems utilize pre-filtration for sediment removal, two 12-in. × 52-in., or 14-in. × 47-in., GAC vessels for the removal of VOCs and UV disinfection. Procedures for monitoring the system are included in the Monitoring Plan (Section 3 of this SMP). Procedures for the inspection and maintenance of the GAC systems are provided in the Operations and Maintenance Plan included in Section 4 of this SMP. The Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the Site, occurs.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

2.2.2.1 Granular Activated Carbon Systems

The GAC system is a temporary control, and the quality and integrity of this system will be inspected semi-annually until the systems are decommissioned.

2.2.2.2 Monitored Natural Attenuation

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

2.3 INSPECTIONS AND NOTIFICATIONS

2.3.1 Inspections

Inspections of each remedial component installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed.
- If these controls continue to be protective of human health and the environment.
- Compliance with requirements of this SMP.
- Achievement of remedial performance criteria.
- Sampling and analysis of appropriate media during monitoring events.
- If site records are complete and up to date.
- Changes, or needed changes, to the remedial or monitoring system.

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this SMP (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the ECs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.3.2 Notifications

Notifications will be submitted by the consulting firm to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the NYSDEC Work Assignment #D004445-23, 6NYCRR Part 375, and/or Environmental Conservation Law.

- Notice within 48-hours of any damage or defect to the foundation structures that reduces or has the potential to reduce the effectiveness of other ECs, and likewise any action to be taken to mitigate the damage or defect.

- Notice within 48-hours of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, including a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the Site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the NYSDEC Work Assignment #D004445-23, and all approved work plans and reports, including this SMP.

- Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.4 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.4.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance, the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to [qualified environmental professional]. These emergency contact lists must be maintained in an easily accessible location at the Site.

EMERGENCY CONTACT NUMBERS	
Medical, Fire, and Police	911
One Call Center	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center	(800) 222-1222
Pollution Toxic Chemical Oil Spills	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362
Note: Contact numbers subject to change and should be updated as necessary	

2.4.2 Map and Directions to Nearest Health Facility

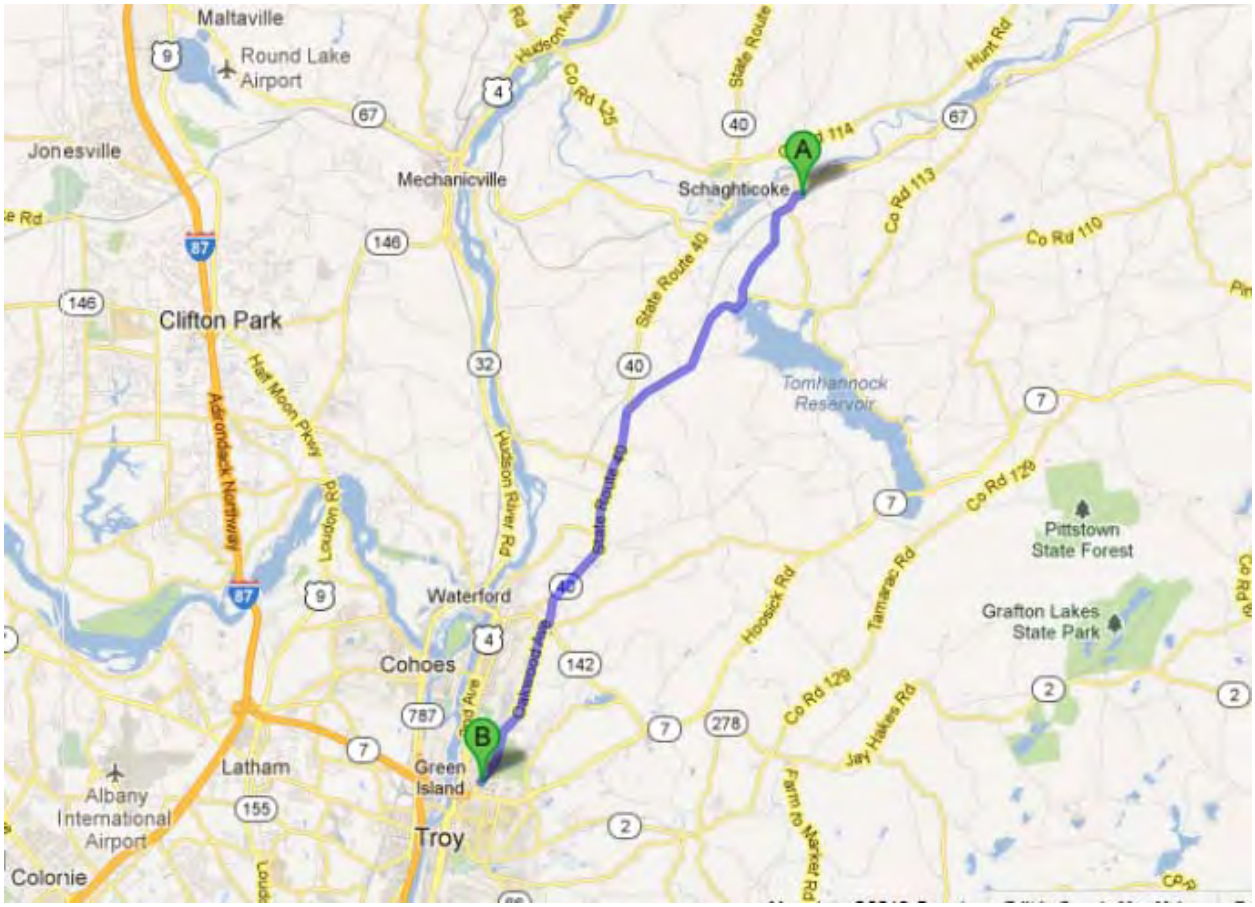
Site Location: Valley Falls Dry Cleaners
Nearest Hospital Name: St. Mary's Hospital
Hospital Location: 1300 Massachusetts Avenue, Troy, NY 12180
Hospital Telephone: (518) 268-5000

Directions to the Hospital:

1. Start out going west on Lyon St toward Edward St.
2. Turn left onto State St/CR117/Main St. Continue to follow CR117.
3. Continue onto CR 119/Madigan Rd
4. Slight right onto CR 117/Melrose Valley Falls Rd
5. Continue onto NY-40 S/State Route 40 S
6. Turn right onto State Route 40 S
7. Take the 1st left onto NY-40 S/State Route 40 S. Destination will be on the left.

Total Distance: 13.2 miles
Total Estimated Time: 24 minutes

Map Showing Route from the Site to the Hospital:



2.4.3 Response Procedures

As appropriate, the fire department and other emergency response groups will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan. The list will also be posted prominently at the Site and made readily available to all personnel at all times.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy (monitored natural attenuation) to reduce or mitigate contamination of groundwater at the Site. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of appropriate media (e.g., groundwater).
- Assessing compliance with applicable NYSDEC SCGs, particularly ambient groundwater standards.
- Assessing achievement of the remedial performance criteria (below NYSDEC Ambient Water Quality Standards [AWQS] standards).
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment.
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency.
- Information on all designed monitoring systems (e.g., well logs).
- Analytical sampling program requirements.
- Reporting requirements.
- Quality Assurance (QA)/Quality Control (QC) requirements.
- Inspection and maintenance requirements for monitoring wells.
- Monitoring well decommissioning procedures.

- Annual inspection and periodic certification.

Five-quarter (every 15 months) monitoring of the performance of the remedy and overall reduction in contamination on-site [and off-site] will be conducted for the first 3 years. The frequency thereafter will be determined by NYSDEC. Trends in contaminant levels in groundwater in the affected areas will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are summarized in the table below and outlined in detail in Sections 3.2 and 3.3 below.

MONITORING SCHEDULE			
Monitoring Program	Frequency(1)	Matrix	Analysis
Groundwater	15 Months	Aqueous	USEPA Method 8260B
(1) The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH.			

3.2 MEDIA MONITORING PROGRAM

The only media required to be monitored under the site remedy (monitored natural attenuation) currently is on-site and off-site groundwater.

3.2.1 Groundwater Monitoring

Groundwater Elevation Monitoring

In order to evaluate the groundwater flow direction at the site, groundwater level gauging will be performed on the eight monitoring well (Figure 2). Depth to groundwater measurements will be collected on a quarterly basis and in conjunction with groundwater sampling (conducted every 15 months). An electronic water level meter will be used for this field task capable of recording water elevations to within +/- 0.01-in. accuracy. The depth to groundwater measurements will be used to generate groundwater elevation/flow direction maps for both the overburden and bedrock monitoring wells. The following table identifies the wells to be gauged and sampled at frequency noted above and in the following section.

MONITORING WELL NETWORK			
MW-1S	MW-2S	MW-3S	MW-4S
MW-1D	MW-2D	MW-3D	MW-4D

3.2.2 Groundwater Sampling

The groundwater monitoring schedule will include sampling events approximately 15-months apart (five-quarter), in order to collect samples that reflect seasonal groundwater fluctuation. Eight wells noted above (well logs included in Appendix B), including each

locatable and functional existing site-related monitoring well, will be gauged and sampled.

Groundwater monitoring well sampling procedures will include water level measurements, well purging, field measurements, and sample collection at each monitoring well location. A copy of the purging and sampling log form used to record well purging, water quality measurements, and sampling flow rates is provided in Appendix C. The objective of the groundwater sampling protocol is to obtain samples that are representative of the aquifer in the well vicinity so that analytical results reflect the composition of the groundwater as accurately as possible. Water level measurements and analytical results will be included in the reports issued after each groundwater sampling event.

Rapid and significant changes can occur in groundwater samples upon exposure to sunlight, temperature, and pressure changes at ground surface. Therefore, groundwater sampling will be conducted in a manner that will minimize interaction of the sample and the surface environment. The equipment and protocol for collecting groundwater samples by each method are described in Section 3.3. Groundwater samples will be collected using low-flow sampling procedures. Monitoring wells will be purged until water quality measurements are stabilized (variation of less than 10 percent), and turbidity is recorded below 50 nephelometric turbidity units. Purge water will be handled as detailed in Section 3.3.6.

The sampling frequency may be modified with the approval NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

3.3 SAMPLING PROTOCOL

3.3.1 Purging and Sampling Equipment

Well purging may be performed by using submersible/peristaltic pumps or by using dedicated polyethylene bailers. Equipment for sampling may include the following:

- Submersible pumps and dedicated polyethylene tubing
- Teflon-lined polyethylene bailers dedicated in each well for well purging
- Electronic water level measurement unit with accuracy of 0.01 ft
- Flow measurement device (containers graduated in milliliters) and stop watch.

3.3.2 Field Analytical Equipment

Field equipment to be used at the Site will include a Horiba U-22 water quality meter (or similar) with a flow-through cell, which includes probes for measurement of pH,

oxidation-reduction potential (ORP), turbidity, dissolved oxygen, temperature, and conductivity. Each piece of equipment will be checked by the field technician to assure that it is in proper working order before its use and calibrated as required by the manufacturer. Prior to each use, field analytical equipment probe(s) will be decontaminated. After each use, the instrument will be checked and stored in an area shielded from weather conditions.

The calibration of each instrument will be checked at the beginning of each day of groundwater sampling.

3.3.3 Groundwater Sampling Purge Method

Groundwater samples will be analyzed for VOCs by USEPA Method 8260B, in accordance with the NYSDEC Analytical Services Protocol (ASP) during the sampling event. The following procedures will be used for monitoring well groundwater sampling:

- Wear appropriate personal protective equipment as specified in the Health and Safety Plan (HASP) and the HASP Addendum. In addition, samplers will use new sampling gloves for the collection of each sample.

- Unlock and remove the well cap and monitor headspace with a PID.

- Measure the static water level in the well with an electronic water level indicator. The water level indicator will be washed with Alconox detergent and water, then rinsed with deionized water between individual wells to prevent cross-contamination.

- Calculate the volume of water in the well.

- Purge the well with a low-flow submersible pump at a flow rate between 0.2-0.5 Liters/minute.

- Allow field parameters of pH, Eh, dissolved oxygen, specific conductivity, and temperature to stabilize before sampling. Purging will be complete if the following conditions are met:

    - Consecutive pH readings are ±0.2 pH units of each other
    - Consecutive water temperatures are ±0.5°C of each other
    - Consecutive measured specific conductance is ±10 percent of each other.

- If the well goes dry before the required volumes are removed, the well may be sampled when it recovers (recovery period up to 24 hours).

- If the well goes dry, obtain the sample from the well with a bailer suspended on

new, clean nylon twine. The sampling will be performed with a new bailer dedicated to each individual well.

- Collect the sample aliquot for VOC analysis, by lowering and raising the bailer slowly to avoid agitation and degassing, carefully pouring directly into the appropriate sample bottles. Sample bottles containing appropriate preservative for the parameter to be analyzed will be obtained from the laboratory.

- Obtain a field measurement of pH, dissolved oxygen, turbidity, ORP, temperature, and specific conductivity with a YSI/Horiba and record it on the purging and sampling form. The instruments will be decontaminated between wells to prevent cross-contamination.

- Place the analytical samples in cooler and chill to 4ºC. The samples will be shipped to the analytical laboratories within 24 hours.

- If a submersible pump is used, it will be fully decontaminated and the polyethylene suction/discharge line will be properly discarded.

- Re-lock well cap.

- Fill out the field logbook, sample log sheet, labels, custody seals, and chain-of-custody forms.

Groundwater samples will be placed in appropriate sample containers, sealed, and submitted to the laboratory for analysis. The samples will be labeled, handled, and packaged following the procedures described in the Generic Quality Assurance Project Plan (QAPP) and QAPP Addendum. QA/QC samples (duplicate, matrix spike and matrix spike duplicate) will be collected at the frequency detailed in the Generic QAPP and QAPP Addendum. Sample forms to be completed during groundwater sampling are included in Appendix C.

3.3.4 Decontamination Procedures

All non-dedicated equipment and tools used to collect samples for chemical analysis will be decontaminated prior to and between each monitoring well using an Alconox rinse and potable water rinse. Additional cleaning of the equipment with steam may be needed under some circumstances. Decontamination fluids will be discharged to the ground surface unless a visible sheen or odor is detected either on the equipment or the fluids, at which point the decontamination water will be staged in an appropriate container and disposed of appropriately.

3.3.5 Storage and Disposal of Waste

The consultant is responsible for the proper storage, handling, and disposal of investigative derived waste including personal protective equipment, solids and liquids generated during the well drilling, well development, and well sampling activities. All drummed materials will be clearly labeled as to their contents and origin. All investigative derived waste will be managed in accordance with NYSDEC DER Technical and Administrative Guidance Memorandum 4032.

Accordingly, handling and disposal will be as follows:

- Liquids generated from contaminated equipment decontamination that exhibit visual staining, sheen, or discernable odors will be collected in drums or other containers at the point of generation. They will be stored in an appropriate staging area as approved by NYSDEC. A waste subcontractor will then remove the drums and dispose at an off-site location.

- Liquid generated during well purging or a decontamination activity that does not exhibit visible staining, sheen, or discernable odors will be discharged to an unpaved area on the site, where it can percolate into the ground.

- Soil and rock cuttings from drilling operations that do not exhibit visible staining, sheen, or discernable odors will be disposed of on-site.

- Soil and rock cuttings from drilling operations that exhibit visible staining, sheen, or discernable odors will be staged onsite until an appropriate treatment/disposal procedure has been determined after the completion of the site characterization.

- Used protective clothing and equipment that is suspected to be contaminated with hazardous waste will be placed in plastic bags, packed in 55-gal ring-top drums, and transported to the drum staging area.

- Non-contaminated trash and debris will be placed in a trash dumpster and disposed of by a local garbage hauler.

- Non-contaminated protective clothing will be packed in plastic bags and placed in a trash dumpster for disposal by a local garbage hauler.

3.3.6 Laboratory Analysis and Reporting

Groundwater samples will be analyzed by an Environmental Lead Proficiency Analytical Testing- and Environmental Laboratory Accreditation Program-certified laboratory for VOCs USEPA Method 8260B. It is anticipated that preliminary analytical results will be

available within 2 weeks of receipt at the laboratory, and final results will be provided within the standard turnaround time (i.e., 30 days). Analytical results will be provided as Category A deliverables.

3.3.7 Monitoring Well Repairs, Replacement, And Decommissioning

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance. The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.4 GRANULATED ACTIVATED CARBON SYSTEM SAMPLING

The GAC system monitoring schedule will include semi-annual sampling events. Three GAC units will be sampled; the fourth GAC unit (12 Charles Street) has not been sampled since April 2007 due to the owner's death. The house has subsequently been vacant and will be sampled again once it's occupied. Sampling points include a raw and intermediate port. Final samples are collected at the kitchen tap. The GAC units currently reported and expected to be sampled as part of the groundwater monitoring program are:

- 11 Lyon Street, Valley Falls, New York
- 12 Charles Street, Valley Falls, New York
- 9 Edward Street, Valley Falls, New York
- 31 State Street, Valley Falls, New York.

The sampling frequency may be modified with the approval of the NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

3.4.1 Sampling Protocol

3.4.1.1 Purging and Sampling Equipment

Standard protocol at sites with limited water usage is to allow a sampling tap to run for at least 15 minutes prior to sampling for volatiles to insure that representative water is in the system. After purging, samples are collected in the following order: effluent, intermediate, and raw water in order to minimize the possibility of cross-contamination. Volatile organic samples are collected in 40-mL vials, capped, and then checked to ensure that no air bubbles are trapped in the vial. Care is taken during collection to minimize agitation and to immediately place sample containers on ice to prevent volatilization.

Bacteria sampling of the final (treated) water is conducted after volatile sampling. Sampling protocol requires decontamination of the water sampling port by heating with an open flame for 1 minute prior to sampling.

GAC samples will be placed in appropriate sample containers, sealed, and submitted to the laboratory for analysis. The samples will be labeled, handled, and packaged following the procedures described in Generic QAPP and QAPP Addendum. Sample/inspection forms to be completed during GAC sampling are included in Appendix D.

3.4.1.2 Granular Activated Carbon System Laboratory Analysis and Reporting

Groundwater samples will be analyzed by an Environmental Lead Proficiency Analytical Testing- and Environmental Laboratory Accreditation Program-certified laboratory for VOCs USEPA Method 524.2. A sample for the tap will be collected and analyzed for bacteria at each location. It is anticipated that preliminary analytical results will be available within 2 weeks of receipt at the laboratory and final results will be provided within the standard turnaround time (i.e., 30 days).

3.4.1.3 Granular Activated Carbon Repairs, Replacement, and Decommissioning

GAC units will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the units unusable. Repairs and/or replacement of GAC units will be performed based on assessments of structural integrity and overall performance.

3.5 SITE-WIDE INSPECTION

Site-wide inspections will be performed concurrently with groundwater sampling events. During these inspections, an inspection form will be completed (Appendix E). The form will compile sufficient information to assess the following:

- General site conditions at the time of the inspection.

- The site management activities are being conducted including, where appropriate, confirmation sampling and a health and safety inspection.

- Confirm that site records are up to date.

3.6 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

All sampling and analyses will be performed in accordance with the requirements of the Generic QAPP Main Components of the QAPP include:

- QA/QC objectives for data measurement.

- Sampling Program:

    - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.

    - Sample holding times will be in accordance with the NYSDEC ASP requirements.

    - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected, as necessary.

- Sample tracking and custody.

- Calibration procedures:

    - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.

    - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846, and subsequent updates that apply to the instruments used for the analytical methods.

- Analytical procedures.

- Internal QC and checks.

- QA performance and system audits.

- Preventative maintenance procedures and schedules.

3.7 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on-site with field personnel. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. A letter report will also be prepared subsequent to each sampling event. The report will include, at a minimum:

- Date of event
- Personnel conducting sampling
- Description of the activities performed
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc)
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.)
- Sampling results in comparison to appropriate standards/criteria
- A figure illustrating sample type and sampling locations
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format)
- Any observations, conclusions, or recommendations
- A determination as to whether groundwater conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in the table below.

SCHEDULE OF MONITORING/INSPECTION REPORTS	
Task	**Reporting Frequency[(1)]**
Groundwater Sample Letter Report	Following each sampling event
Periodic Review Report	Every 2 years
(1) The frequency of events will be conducted as specified until otherwise approved by NYSDEC inspections, reporting and certifications.	

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

This Operation and Maintenance Plan describes the measures necessary to operate, monitor, and maintain the mechanical components of the remedy selected for the Site. This Operation and Maintenance Plan:

- Includes the steps necessary to allow individuals unfamiliar with the Site to operate and maintain the GAC systems
- Includes an operation and maintenance contingency plan
- Will be updated periodically to reflect changes in site conditions or the manner in which the GAC systems are operated and maintained.

4.2 ENGINEERING CONTROL SYSTEM OPERATION AND MAINTENANCE

Currently, there are active treatment systems on four residential private supply wells. The point of entry treatment system consists of utilizing pre-filtration for sediment removal, two GAC vessels for the removal of VOCs, and an UV light for disinfection.

4.3 SCOPE OF MAINTENANCE FOR GRANULAR ACTIVATED CARBON SYSTEMS

A visual inspection of the GAC system will be conducted during each semi-annual sampling event. The following maintenance activities should be completed during each round of sampling:

- Cleaning the particle filter
- Cleaning the quartz sleeve
- Change out the UV light (annually)
- Inspection of carbon vessel, UV light, and associated plumbing for leaks and/or damages.

A carbon vessel change out will be required when site contaminants are reported at 1 µg/L or above in the intermediate water sample. During the carbon change out, the primary vessel will be removed and the secondary vessel will be moved to the primary vessel. The new carbon vessel will then be inserted as the secondary vessel.

4.4 MAINTENANCE AND PERFORMANCE MONITORING REPORTING REQUIREMENTS

Maintenance reports and any other information generated during regular operations at the Site will be kept on file with the NYSDEC. All reports, forms, and other relevant information generated will be available upon request to the NYSDEC and submitted as part of the Periodic Review Report, as specified in the Section 5 of this SMP.

4.4.1 Routine Maintenance Reports

Checklists or forms (Appendix D) will be completed during each routine maintenance event. Checklists/forms will include, but not be limited to the following information:

- Date.
- Name, company, and position of person(s) conducting maintenance activities.
- Maintenance activities conducted.
- Any modifications to the system.
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet).
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

4.4.2 Non-Routine Maintenance Reports

During each non-routine maintenance event, a form will be completed which will include, but not be limited to, the following information:

- Date.
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities.
- Presence of leaks.
- Date of leak repair.
- Other repairs or adjustments made to the system.

- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet).

- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

5.0 INSPECTIONS, REPORTING, AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms which are contained in Appendixes B through D. Additionally, a general site-wide inspection will be completed and recorded on the inspection form. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective.
- The Monitoring Plan is being implemented.
- The site remedy continues to be protective of public health and the environment.

5.2 CERTIFICATION OF ENGINEERING CONTROLS

After the last groundwater sampling event of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in NYS will prepare the following certification:

For each IC/EC identified for the Site, I certify that all of the following statements are true:

- The inspection of the Site to confirm the effectiveness of the IC/ECs required by the remedial program was performed under my direction.

- The IC/EC employed at this Site is unchanged from the date the control was put in place, or last approved by the Department.

- Nothing has occurred that would impair the ability of the control to protect the public health and the environment.

- Nothing has occurred that would constitute a violation or failure to comply with any SMP for this control.

- If a financial assurance mechanism is required under the oversight document for the Site, the mechanism remains valid and sufficient for the intended purpose under the document.

- The EC systems are performing as designed and are effective.

- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices.

- The information presented in this report is accurate and complete.

- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner or Owner's Designated Site Representative] (and if the site consists of multiple properties): [I have been authorized and designated by all site owners to sign this certification] for the Site. The signed certification will be included in the Periodic Review Report described below.

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every 2 years. In the event that the Site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site depicted in Figure 2. The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment, and certification of each ECs/ICs required by the remedy for the Site.

- Results of the required annual site inspections and severe condition inspections, if applicable.

- Each applicable inspection forms and other records generated for the site during the reporting period in electronic format.

- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions.

- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of each compound analyzed, along with the applicable standards, with each exceedance highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.

- Results of all analyses, copies of each laboratory data sheets, and the required laboratory data deliverables for each samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format.

- A site evaluation, which includes the following:

    - The compliance of the remedy with the requirements of the site-specific Remedial Action Work Plan, ROD, or Decision Document.

    - The operation and the effectiveness of each treatment unit, etc., including identification of any needed repairs or modifications.

    - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored.

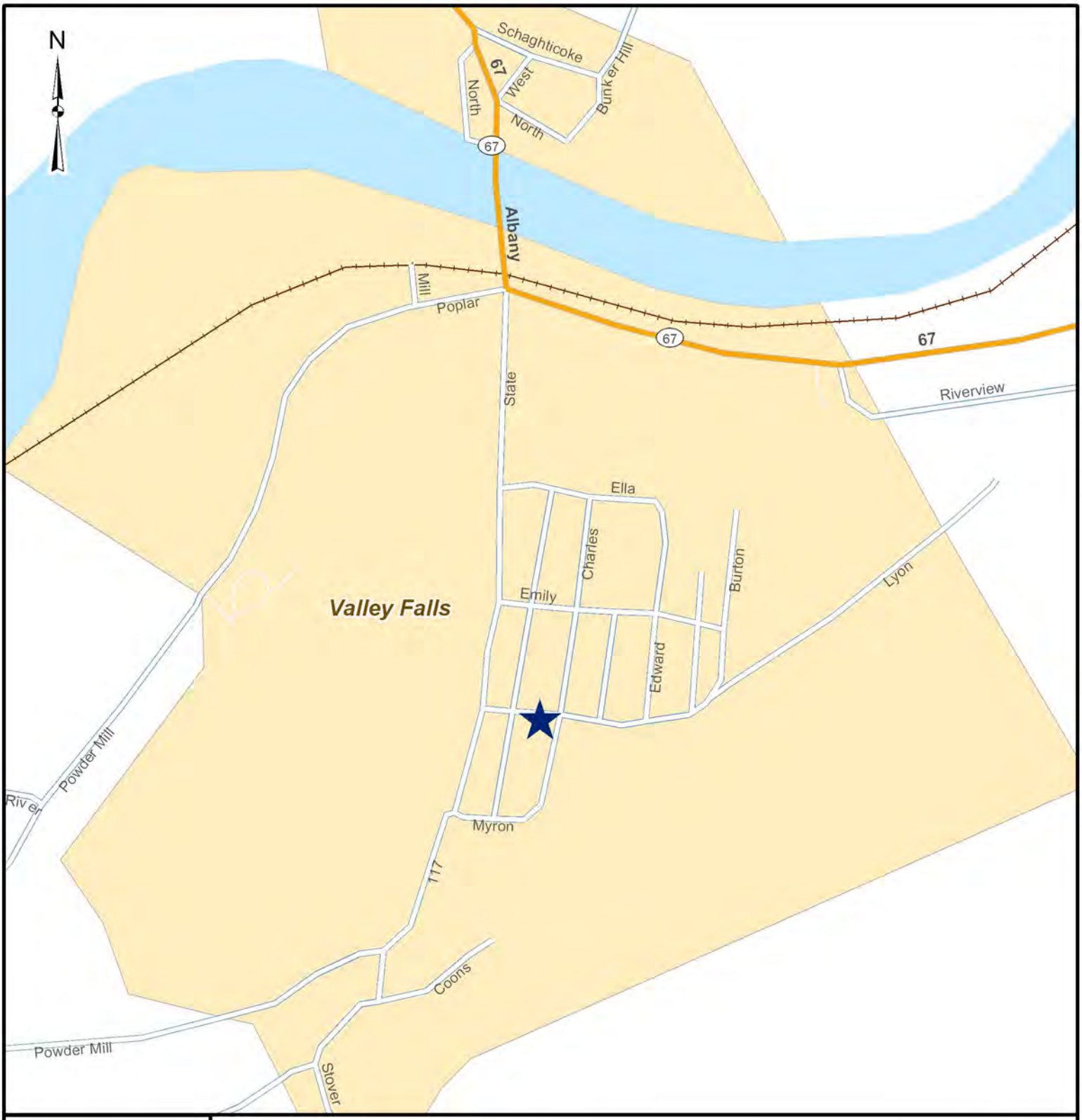
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan.

    - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Central Office and Regional Office in which the site is located, and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an IC/EC, a Corrective Measures Plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Plan until it is approved by the NYSDEC.



Legend

★ Site Location

Miles

0 0.05 0.1 0.2

Source: StreetMap USA

EA Engineering, Science, and Technology, Inc.

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VILLAGE OF VALLEY FALLS, NEW YORK

FIGURE 1
SITE LOCATION MAP

PROJECT MGR: JCH	DESIGNED BY: MJS	CREATED BY: MJS	CHECKED BY: JAV	SCALE: AS SHOWN	DATE: APRIL 2010	PROJECT NO: 14474.23	FILE NO: GIS/PROJECTS/ FIGURE1.MXD

Legend

- Monitoring Well
- Valley Falls Site Parcel

Feet

0 50 100 200 300

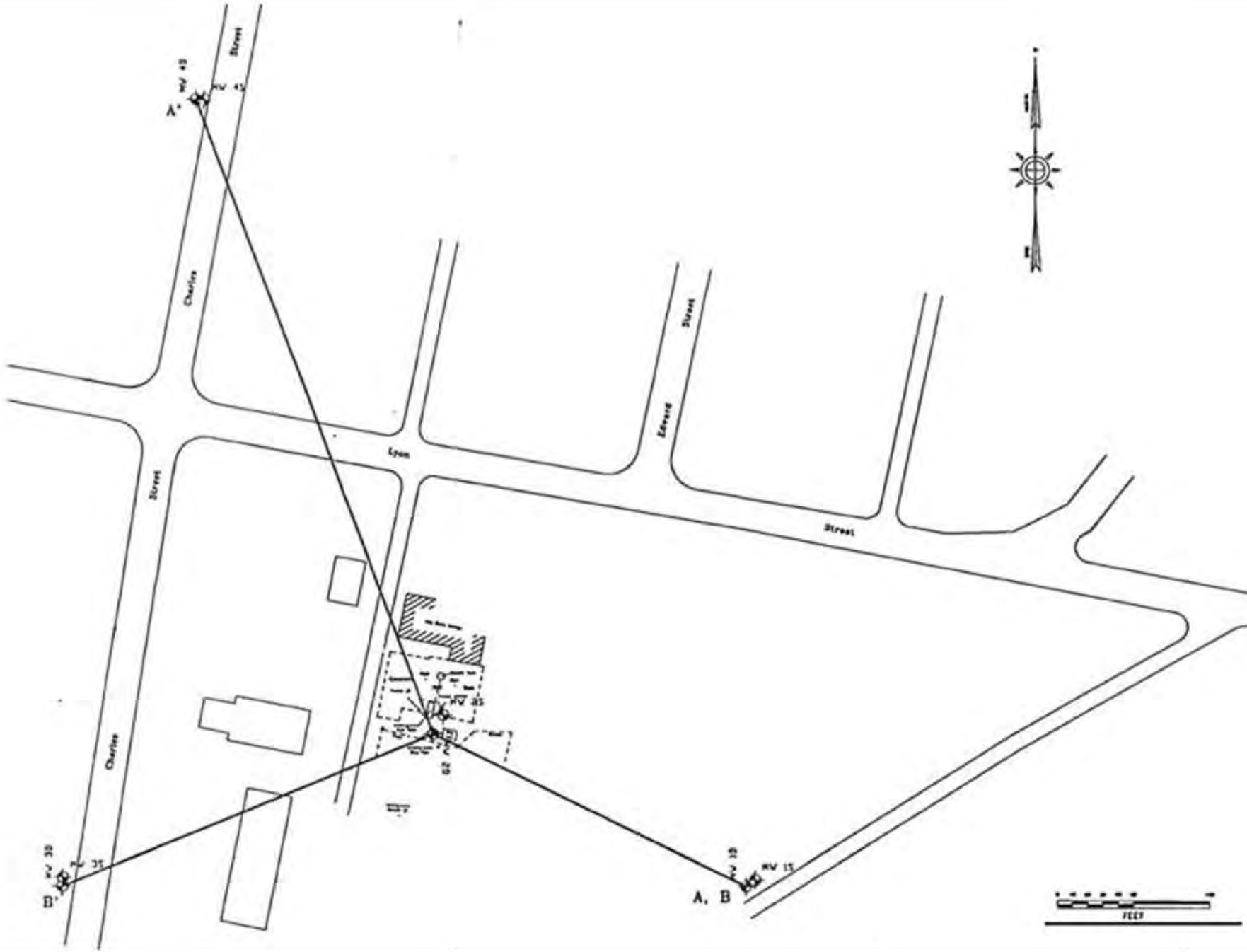
Source: NYS-GIS Clearinghouse

EA Engineering, Science, and Technology, Inc.

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VILLAGE OF VALLEY FALLS, NEW YORK

FIGURE 2
SITE MAP

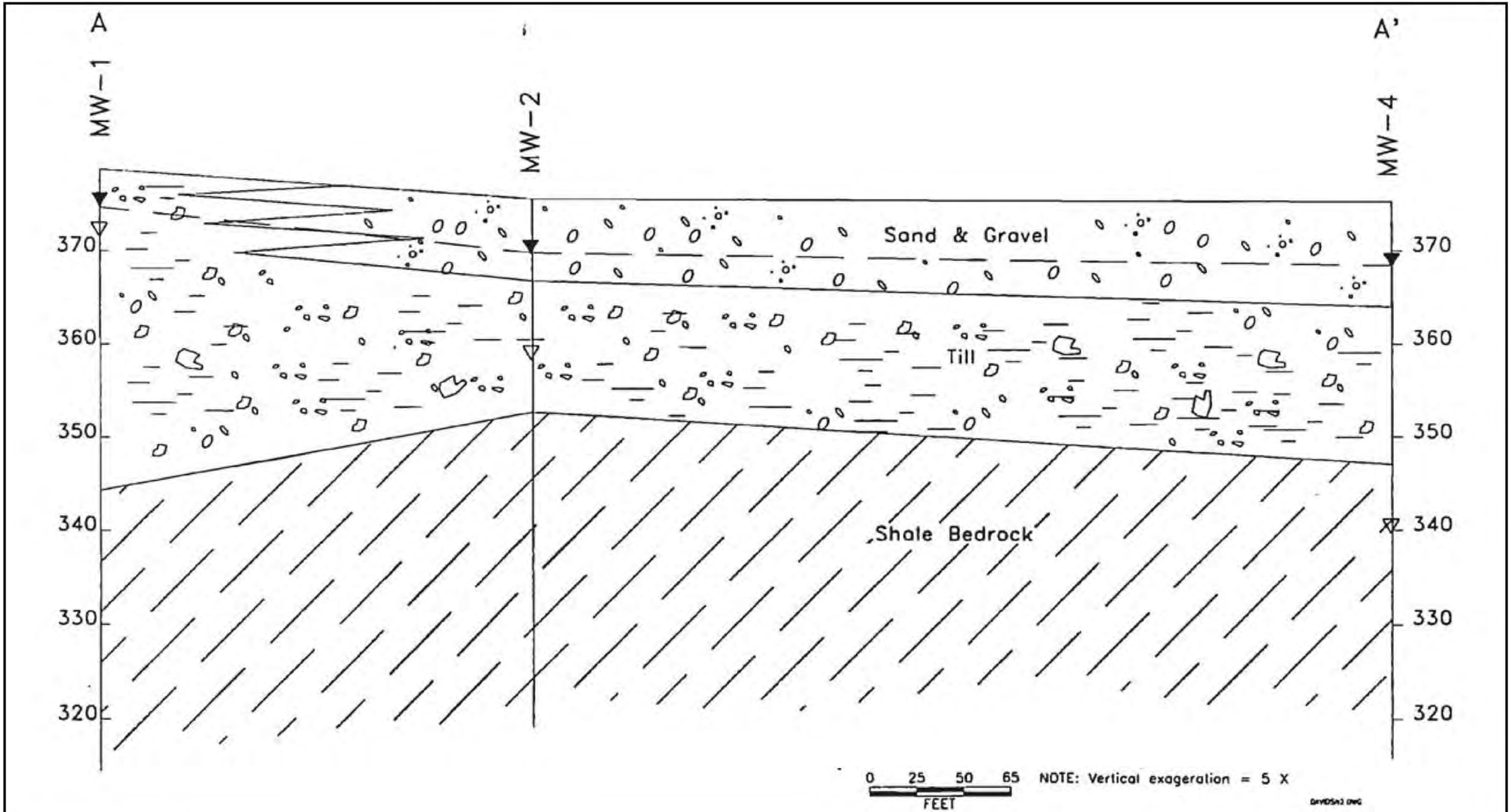
PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE2.MXD



VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VALLEY FALLS, NEW YORK

FIGURE 3
LOCATIONS OF GEOLOGIC
CROSS SECTIONS

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE2.MXD

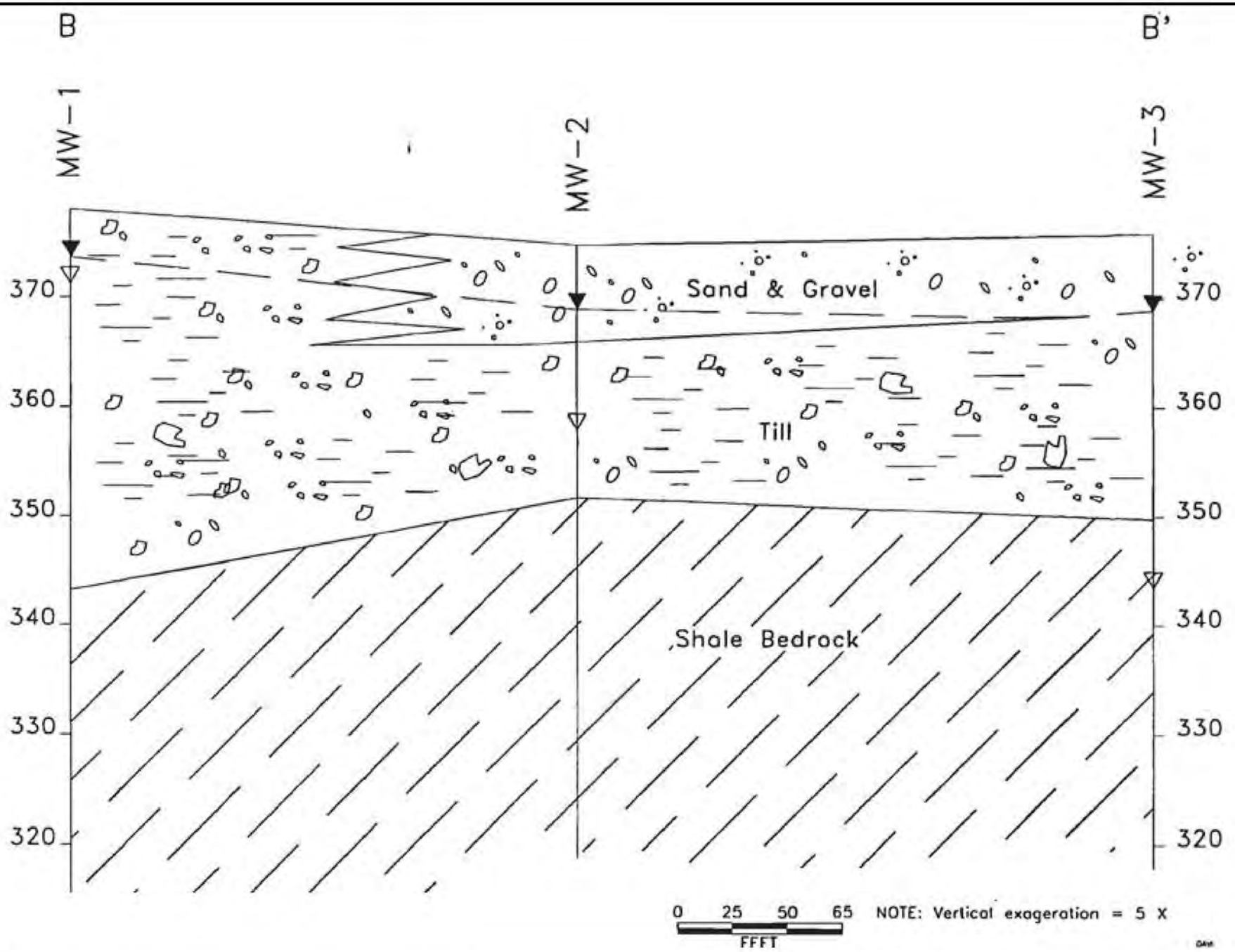


▼ Watertable – Upper Aquifer
▽ Potentiometric Surface – Bedrock Aquifer

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VALLEY FALLS, NEW YORK

FIGURE 4
GEOLOGIC CROSS SECTION A-A'

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE2.MXD

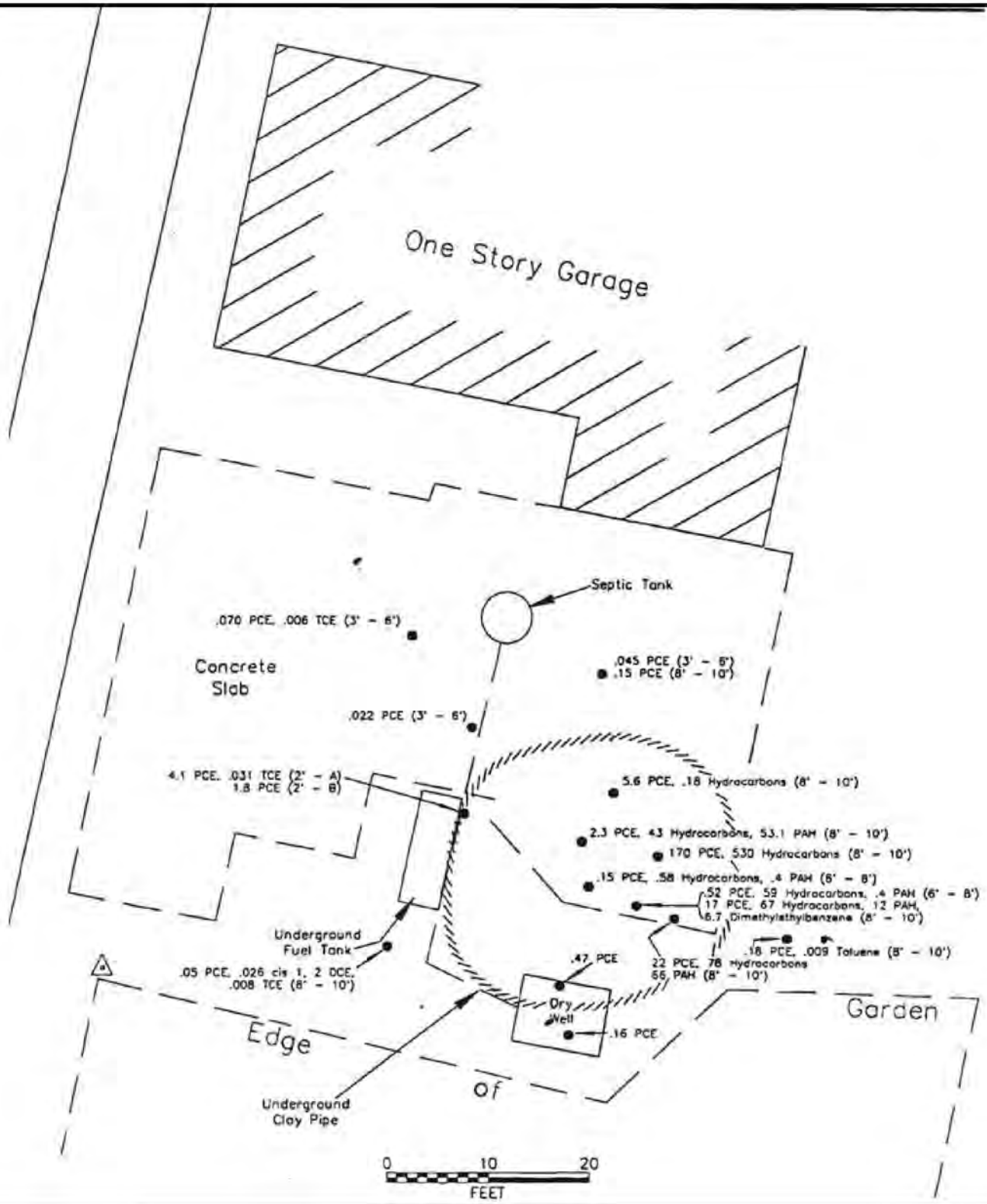


▼ Watertable – Upper Aquifer
▽ Potentiometric Surface – Bedrock Aquifer

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VALLEY FALLS, NEW YORK

FIGURE 5
GEOLOGIC CROSS SECTION B-B'

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE2.MXD



KEY

- Soil sample location
- Estimated area of soils above site clean up level of .84 ppm PCE (primarily 7–9', approximately 50 – 100 cu. yards)
- All concentrations in Parts Per Million

EA Engineering, Science, and Technology, Inc.

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VILLAGE OF VALLEY FALLS, NEW YORK

FIGURE 6
SUMMARY OF ON-SITE SAMPLE ANALYTICAL RESULTS

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE2.MXD

Legend

- Monitoring Well
- Overburden Contour 1ft
- ValleyFallsParcel

Feet

0 50 100 200 300

Source: NYS-GIS Clearinghouse

EA Engineering, Science, and Technology, Inc.

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VALLEY FALLS, NEW YORK

FIGURE 7
INTERPOLATED OVERBURDEN
GROUNDWATER CONTOURS

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE3.MXD

Legend

- Monitoring Well
- Bedrock Contour 5ft
- ValleyFallsParcel

Feet

0 50 100 200 300

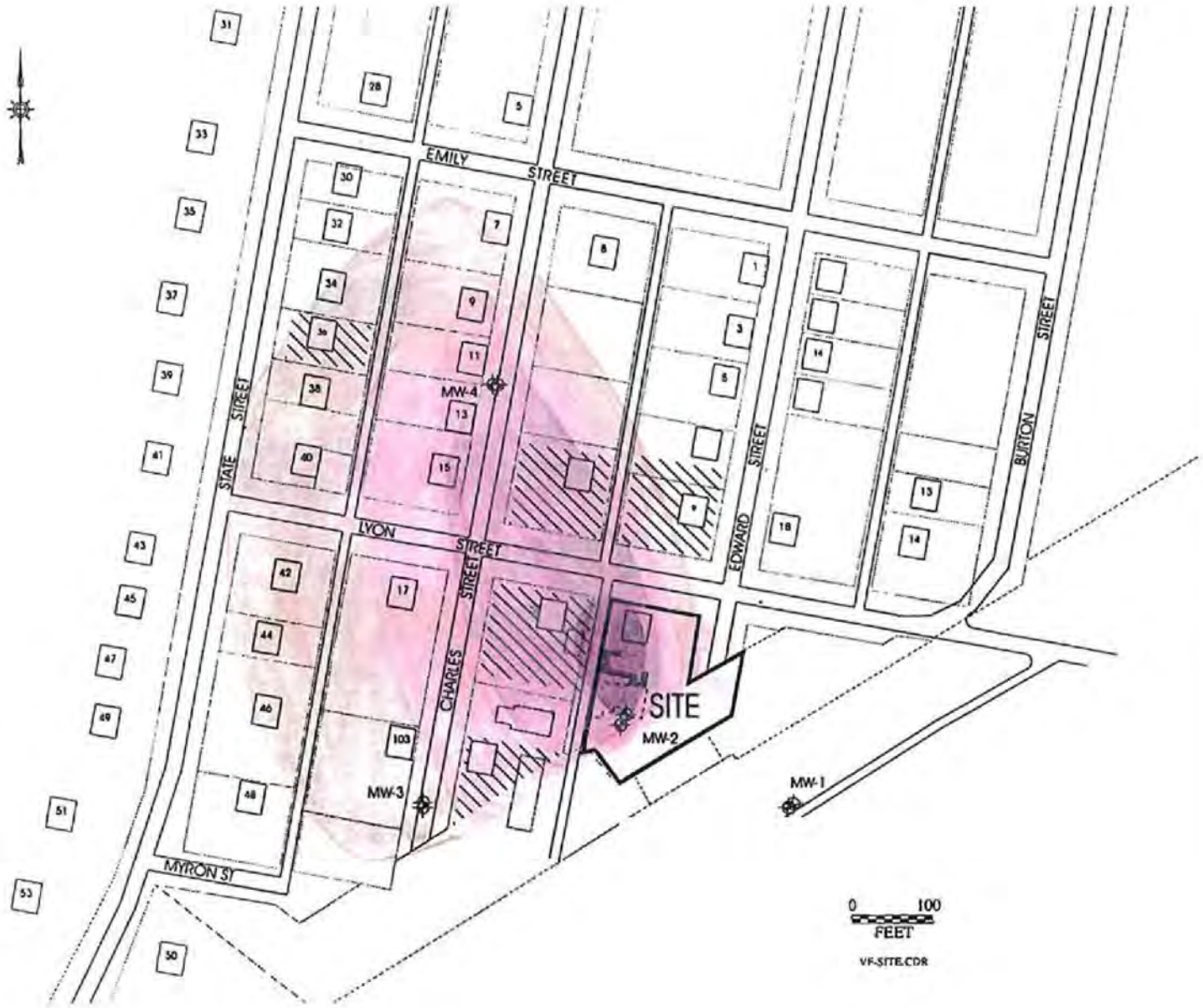
Source: NYS-GIS Clearinghouse

EA Engineering, Science, and Technology, Inc.

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VALLEY FALLS, NEW YORK

FIGURE 8
INTERPOLATED BEDROCK
GROUNDWATER CONTOUR MAP
OCTOBER 2008

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE4.MXD



PCE CONCENTRATIONS IN THE UPPER AQUIFER

- > 200 ppb
- > 100 ppb
- > 50 ppb
- > 10 ppb
- Affected Area
- House

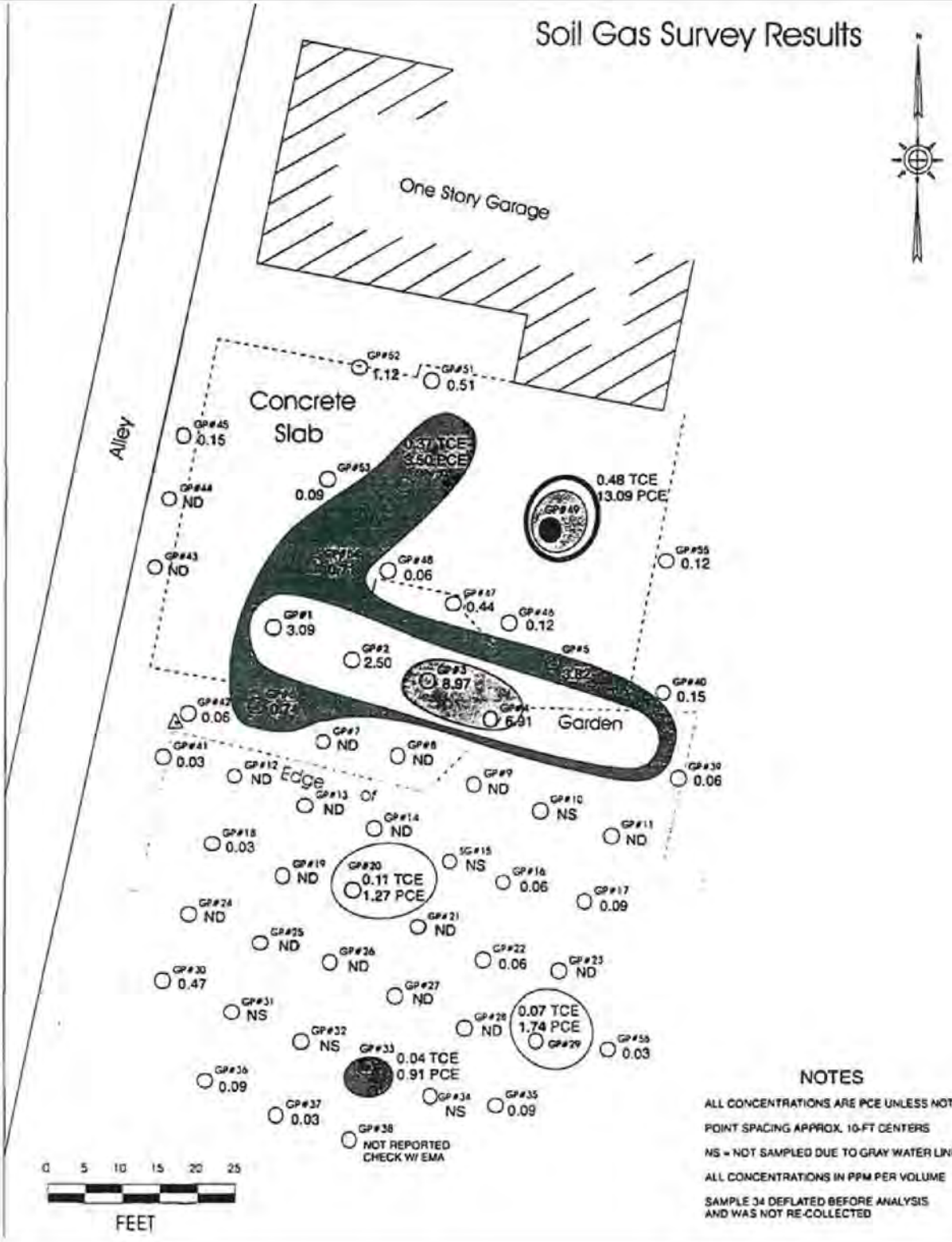
EA Engineering, Science, and Technology, Inc.

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VILLAGE OF VALLEY FALLS, NEW YORK

FIGURE 9
PCE CONCENTRATIONS IN THE UPPER AQUIFER

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE2.MXD

Soil Gas Survey Results



NOTES

ALL CONCENTRATIONS ARE PCE UNLESS NOTED

POINT SPACING APPROX. 10-FT CENTERS

NS = NOT SAMPLED DUE TO GRAY WATER LINE

ALL CONCENTRATIONS IN PPM PER VOLUME

SAMPLE 34 DEFLATED BEFORE ANALYSIS AND WAS NOT RE-COLLECTED

- > .5 ppm
- > 1 ppm
- > 5 ppm
- > 10 ppm

EA Engineering, Science, and Technology, Inc.

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VILLAGE OF VALLEY FALLS, NEW YORK

FIGURE 10
SOIL GAS SURVEY RESULTS

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE2.MXD

N

GARAGE

ES-30a (3ft.)
ES-30b (8ft.)

ES-32a(7ft.)
ES-32b(10ft.)

ES-33a (7ft.)
ES-33b (10ft.)

ES-05(3ft.)

ES-3(5ft.)

ES-29a (3ft.)
ES-29b (8ft.)

ES-16a (7ft.)
ES-16b (9ft.)

ES-01(5ft.)

ES-34a(10ft.)

ES-02(5ft.)

ES-15 (7ft.)
ES-15a (9ft.)

ES-04(3ft.)

LIMITS OF EXCAVATION

ES-09(6ft.)

ES-15b (12ft.)

ES-13a (7ft.)
ES-13b (9ft.)

ES-06(4ft.)

ES-10(8ft.)

ES-08(2ft.)

ES-28(8ft.)

ES-24a (7ft.)
ES-24b (10ft.)

ES-11(8ft.)
ES-12(10ft.)

ES-27a (7ft.)
ES-27b (10ft.)

ES-23(12ft.)

ES-25a (7ft.)
ES-25b (10ft.)

ES-19(8ft.)

ES-26a (7ft.)
ES-26b (10ft.)

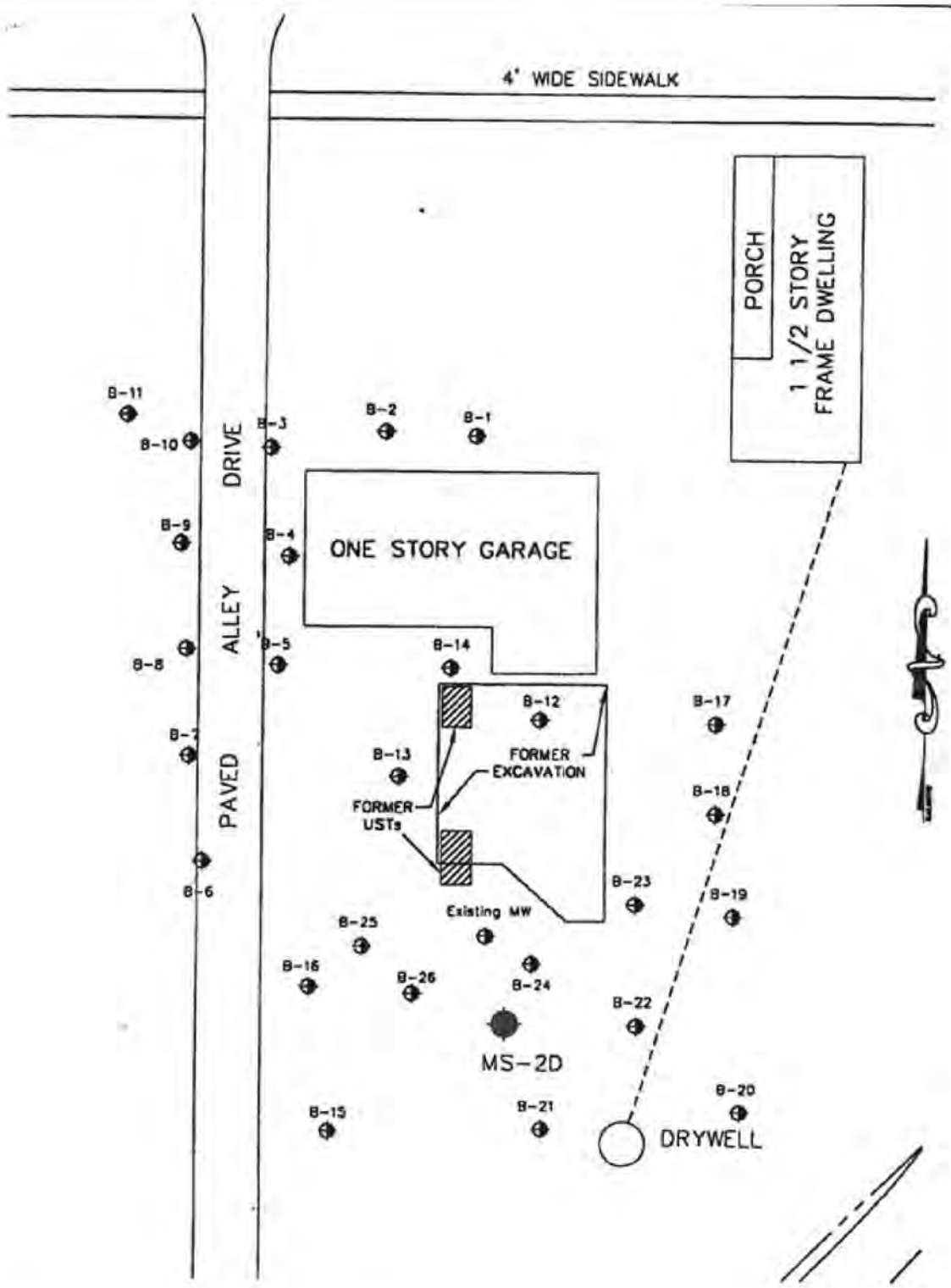
ES-20(8ft.)

NOTE: Depths are measured from grade.

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VALLEY FALLS, NEW YORK

FIGURE 11
POST-EXCAVATION SOIL
SAMPLE LOCATIONS

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE2.MXD



SOIL BORING LOCATIONS

MONITORING WELL COMPLETED IN BEDROCK

EA Engineering, Science, and Technology, Inc.

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VILLAGE OF VALLEY FALLS, NEW YORK

FIGURE 12
SOIL BORING SKETCH MAP

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE2.MXD

Monitoring Well

Homes with GAC systems

Homes where GAC were removed

Homes with constituents above NYSDOH Standards

Valley Falls Parcel (Approximate)

Source: NYS GIS Clearing House

VALLEY FALLS DRY CLEANERS SITE (4-42-028)
SITE MANAGEMENT PLAN
VALLEY FALLS, NEW YORK

FIGURE 13
Locations of GAC/UV
Treatment Systems

0 50 100 200 300 Feet

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	MJS	MJS	JAV	AS SHOWN	APRIL 2010	14474.23	GIS/PROJECTS/ FIGURE2.MXD

Appendix A

Borehole Log During Excavation Activities

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME
B1

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0		0			(0-4') BROWN SANDY GRAVEL
1					
2					
3					
4		0			
5					(4-8) BROWN SILTY SAND AND GRAVEL, MOIST
6					
7					
8		0			
9					(8-12)
10					8-10: SANDY f GRAVEL, WET
11					10-11: SILTY SAND AND mf GRAVEL, SOME CLAY
12					11-12: GRAY SILTY CLAY, SOME ANGULAR m GRAVEL (TILL), VERY MOIST
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4 "
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

LEGEND

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B2

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0		0			(0-4') BROWN SANDY GRAVEL
1					
2					
3					
4		0			(4-8') BROWN SILTY SAND AND mf GRAVEL, MOIST. WET @ 7'.
5					
6					
7					
8		3			(8-12')
9					8-10: SILTY COARSE SAND AND mf GRAVEL, WET
10					
11					10-11: BROWN SILTY CLAY AND MEDIUM ROUNDED GRAVEL
12					11-12: GREY SILTY CLAY WITH ANGULAR mc GRAVEL.
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

- ☐ Native material
- ☐ Sand Pack
- ☐ Bentonite
- ☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B3

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4') BLIND PROBE
1					
2					
3					
4		2			(4-8) BROWN SILTY COARSE SAND AND mf GRAVEL, MOIST.
5					2" LAYERS WHICH VARY IN COARSENESS
6					
7					WET AT 7'
8		2			
9					(8-12) GRAVEL, SOME COARSE SAND, WET
10					
11					11.5': 4-6" FRACTURED SHALE
12					12': BROWN SILTY CLAY (TILL)
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2¼"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

LEGEND

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B4

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4) BLIND PROBE
1					
2					
3					
4					(4-8) COARSE SAND AND mf GRAVEL
5					
6					
7		2.7			
8					(8-12)
9					8-10: BROWN SAND AND GRAVEL, VERY MOIST
10		3			
11					10-11: BROWN SILTY CLAY AND GRAVEL
12					11-12: GRAY SILTY CLAY AND GRAVEL
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2¼"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

LEGEND

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B5

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion
5		3		
7		3.4		
10		3.9		

Notes: ppm=parts per million, nd=not detected

Field Description of Soil

(0-4')
Blind probe.

(4-8')
BROWN COARSE SAND AND mf GRAVEL, VERY MOIST.
WET AT 7'.
5': 2" LAYER OF BLACK ORGANIC MATERIAL

(8-12')
8-10: SILTY COARSE SAND AND f GRAVEL, WET
10': 2" LAYER OF BLACK GRAVEL
10-12: BROWN SILTY CLAY AND GRAVEL.

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type:
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

LEGEND

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B6

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: T. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion
0				
1				
2				
3				
4				
5		3.5		
6				
7		2.7		
8				
9				
10		2.6		
11				
12				
13				
14				
15				
16				
17				

Notes: ppm=parts per million, nd=not detected

Field Description of Soil

(0-4) BLIND PROBE.

(4-8)

4-5: BROWN SILTY f SAND

5': 2" LAYER OF BLACK ORGANIC MATERIAL

5-7': mf GRAVEL

7-8': SANDY mf GRAVEL WET AT 7'

(8-12')

8-10: COARSE SAND AND mf GRAVEL, WET

10': 2" LAYER OF RED-BROWN STAINING

10-12: BROWN SILTY CLAY AND GRAVEL, VERY MOIST.

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

- ☐ Native material
- ☐ Sand Pack
- ☐ Bentonite
- ☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME
B7

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: T. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion
0				
1				
2				
3				
4				
5				
6				
7		3.0		
8				
9		2.6		
10				
11				
12				
13				
14				
15				
16				
17				

Field Description of Soil

(0-4') BLIND PROBE

(4-8')

4-7: BROWN SILTY COARSE SAND, SOME f GRAVEL

WET AT 7'

7-8': SANDY GRAVEL

(8-12')

8-9.5: COARSE SAND AND m GRAVEL, WET

9.5-12: BROWN SILTY CLAY WITH ROUNDED AND ANGULAR GRAVEL

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

LEGEND

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B8

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4') BLINDPROBE
1					
2					
3					
4					(4-8')
5					4-7.5': BROWN SILTY SAND, MOIST
6					
7		3.2			7.5-8: mf GRAVEL, WET
8					(8-12')
9					
10		2.8			8-10: COARSE SAND AND mf GRAVEL
11		2.5			10': 2" RED-ORANGE STAINING
12					10-12: BROWN SILTY CLAY AND GRAVEL.
13					11': LARGE PIECE OF BLACKSHALE.
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:
Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

- ☐ Native material
- ☐ Sand Pack
- ☐ Bentonite
- ☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B9

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion
0				
1				
2				
3				
4		3.5		
5				
6				
7		2.8		
8				
9				
10				
11				
12		3.3		
13				
14				
15				
16				
17				

Field Description of Soil

(0-4) BLIND PROBE

(4-8)
4-7: SILTY SAND, SOME GRAVEL.

7-8: mf GRAVEL

(8-12)
GRAVEL, WET

12': BROWN SILTY CLAY

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

LEGEND

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B10

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion
7		2.4		
9		2.4		

Field Description of Soil

(0-4') BLIND PROBE

(4-8') SILTY SAND AND GRAVEL
8': SILTY GRAVEL

(8-12')
8-9: SILTY f SAND, VERY MOIST TO WET

9-11.5: SILTY f SAND AND ROUNDED GRAVEL

11.5-12: BROWN SILTY CLAY WITH GRAVEL, BECOMING GRAY WITH DEPTH

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:
Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

☐ Native material
☐ Sand Pack
☐ Bentanite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B11

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4) BLIND PROBE
1					
2					
3					
4					(4-8) INTERLAYERED SILTY SAND AND GRAVEL AND COARSE SAND AND mf GRAVEL. WET AT 8'
5					
6					
7					
8		1.2			(8-12)
9					8-11: COARSE SAND AND mf GRAVEL
10					
11		2.1			11-12: BROWN SILTY CLAY AND GRAVEL
12					
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:
Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

LEGEND

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B12

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/08/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion
7		2.0		
11		3.6		

Field Description of Soil

(0-4) BLIND PROBE

(4-8) BROWN COARSE SAND AND mf GRAVEL, VERY MOIST. WET AT 7'

(8-12)

8-11: COARSE SAND AND GRAVEL

11': 2" LAYER OF CRUSHED STONE

11-12: BROWN SILTY CLAY AND GRAVEL BECOMING GRAY

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B13

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRYCLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4) BLIND PROBE
1					
2					
3					
4					(4-8) BROWN SAND AND GRAVEL WET AT 7'
5					
6					
7		2.0			
8					(8-12) 8-10: COARSE SAND AND GRAVEL
9					
10		1.0			10-12: BROWN SILTY CLAY AND GRAVEL, BECOMING GREY
11					
12					
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

- ☐ Native material
- ☐ Sand Pack
- ☐ Bentanite
- ☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B14

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion
0				
1				
2				
3				
4				
5				
6				
7		3.2		
8				
9				
10		4.0		
11				
12				
13				
14				
15				
16				
17				

Field Description of Soil

(0-4') BLIND PROBE

(4-8') SANDY GRAVEL WET AT 7'

(8-12)

8-10: SANDY GRAVEL

10': LAYER (3") OF CRUSHED STONE

10-12: BROWN SILTY CLAY and GRAVEL

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

LEGEND

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B-15

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: T. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4') BUNDPROBE
1					
2					
3					
4					(4-8') SAND AND GRAVEL WET AT 7'
5					
6					
7		3.0			
8					(8-12') 8-10: SANDY GRAVEL
9					
10		4.2			10-12: SILTY CLAY AND GRAVEL
11					
12					
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

- ☐ Native material
- ☐ Sand Pack
- ☐ Bentonite
- ☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B16

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRYCLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4) BLINDPROBE
1					
2					
3					
4					(4-8') BROWN COARSE SAND AND GRAVEL WET AT 8'
5					
6					
7					
8		3.4			(8-12) 8-9.5' SANDY GRAVEL
9		3.3			9.5-12' BROWN SILTY CLAY AND GRAVEL, BECOMING GRAY.
10					
11					
12					
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

Drawn by: J. Carr

- ☐ Native material
- ☐ Sand Pack
- ☐ Bentonite
- ☐ Portland Cement Grout

LEGEND

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B17

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/8/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4) BLIND PROBE
1					
2					
3					
4					(4-8) INTERLAYERED COARSE SAND AND mf GRAVEL; AND, SILTY SAND, SOME GRAVEL - WET AT 7'
5					
6					
7		1.9			NATURAL VARVING OBSERVED AT 8'
8					
9					(8-12)
10					8-10: COARSE SAND AND mf GRAVEL
11		33			10': FRACTURED ROCK ZONE (2")
12					10-11': COARSE SAND AND mf GRAVEL
13					11-12': BROWN SILTY CLAY AND GRAVEL, MOIST (RED-ORANGE STAINING AT 11')
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2¼"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B18

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/9/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4) BLIND PROBE
1					
2					
3					
4					(4-8) BROWN SAND AND GRAVEL, WET
5		1.1			
6					
7					
8					(8-12) 8-10': COARSE SAND AND mf GRAVEL
9					
10		2.0			10': 2" LAYER CRUSHED STONE
11					
12					10-12': GREY CLAY, LITTLE SILT, TRACE GRAVEL.
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4'
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

LEGEND

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME B-19

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRYCLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/08/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4') BLIND PROBE
1					
2					
3					
4					(4-8') BROWN SANDY GRAVEL WET AT 6'
5					
6		3.7			
7					
8					(8-12) 8-9: SAME 9-12: BROWN CLAY, SOME SILT. BECOMING GRAY WITH DEPTH
9		3.0			
10					
11					
12					
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

- ☐ Native material
- ☐ Sand Pack
- ☐ Bentonite
- ☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B20

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRYCLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/9/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4') BLIND PROBE
1					
2					
3					(4-8')
4					4-6': SILTY SAND
5					6-8': SAND AND GRAVEL
6		1.8			WET AT 6'
7					(8-12')
8					mf GRAVEL, SOME COARSE SAND, WET.
9					(12-16')
10					12-14: SAND AND GRAVEL
11					14-16: TAN SILTY CLAY, TRACE GRAVEL, VERY MOIST.
12					
13					
14		2.3			
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 16'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited Latham, NY

WELL LOG

BORING NAME: B-21.

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/9/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4') BLIND PROBE
1					
2					
3					
4					(4-8') SAND AND GRAVEL WET AT 5'
5		1.9			
6					(8-12') mf GRAVEL, SOME COARSE SAND, WET
7					
8					
9					(12-16') 12-14: SAME
10					
11					14-16: BROWN CLAYEY SILT, WET GRAY WITH DEPTH
12					
13					
14		2.0			
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2¼"
Depth: 16'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

- ☐ Native material
- ☐ Sand Pack
- ☐ Bentonite
- ☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B-22

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRYCLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/9/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4') BLIND PROBE
1					
2					
3					(4-8') SANDY mf GRAVEL, WET
4					
5					
6					(8-12') SANDY mf GRAVEL
7					
8					(14-18')
9					14-15: SAME
10					2" OF RED-BRDWN STAINING AT 15'
11					15-18: BROWN SILTY CLAY, TRACE GRAVEL
12					
13					
14					
15		2.3			
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 18'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B23

CLIENT:
PROJECT:
LOCATION:

DATE STARTED/COMPLETED: 3/9/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4') BLIND PROBE
1					
2					
3					
4					(4-8') SAND AND GRAVEL, WET.
5					
6					
7					
8					(8-12') 8-11: SAME
9					
10					11': 2" LAYER OF RED-BROWN STAINING
11		250			
12					11-12: BROWN SILTY CLAY, TRACE GRAVEL.
13					
14					PETROLEUM ODORS AT 11'
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

LEGEND

- ☐ Native material
- ☐ Sand Pack
- ☐ Bentanite
- ☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B24

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/9/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4) BLIND PROBE
1					
2					
3					(4-8') SAND AND GRAVEL, WET
4					
5					
6					(8-12')
7					8-11: SAME
8					11-12: BROWN SILTY CLAY, TRACE GRAVEL
9					11': 2-4" FRACTURED ROCK
10					PETROLEUM ODORS AT 11'
11		165			
12					
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2 1/4"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

LEGEND

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B25

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRYCLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/9/00
LOGGED BY: J. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4) BLIND PROBE
1					
2					
3					
4					(4-8) SANDY mf GRAVEL, WET
5					
6					
7					
8					(8-12) 8-11: SAME
9					
10					
11		1.7			11-12: SILTY CLAY, TRACE GRAVEL
12					
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2¼"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:

Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

Drawn by: J. Carr

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1–10%
little=10–20%
some=20–30%
and=30–50%

LEGEND

very fine sand=0.6–0.13mm
fine sand=0.13–0.25mm
medium sand=0.25–0.50mm
coarse sand=0.5–1mm
very coarse sand=1–2mm

▽ = ground water table
f-gravel=2–4mm
m-gravel=4–64mm
c-gravel=64–256mm

Tyree Organization, Limited
Latham, NY

WELL LOG

BORING NAME: B26

CLIENT: NYSDEC
PROJECT: VALLEY FALLS DRY CLEANERS
LOCATION: VALLEY FALLS, NY

DATE STARTED/COMPLETED: 3/9/00
LOGGED BY: T. MURRAY
DRILLER: ZEBRA
RIG: GEOPROBE

Depth Below Grade	Sample Interval & Name	P.I.D. Reading (ppm)	Blow Counts/ Recovery (feet)	Well Completion	Field Description of Soil
0					(0-4') BLIND PROBE
1					
2					
3					
4					(4-8') COARSE SAND AND mf GRAVEL, WET AT 5'
5					
6					
7					
8					(8-12) 8-11: SAME
9					11': 2-3" OF FRACTURED ROCK
10					
11		10			11-12: SILTY CLAY, TRACE GRAVEL
12					
13					
14					
15					
16					
17					

Notes: ppm=parts per million, nd=not detected

Drawn by: J. Carr

BORE HOLE DATA
Drilling Method: GEOPROBE
Hole Dia.: 2¼"
Depth: 12'

WELL DATA
Riser Type: N/A
Riser Dia.:
Riser Length:
Interval:
Screen Type:
Screen Dia.:
Screen Length:
Slot:
Interval:

FILTER PACK
Source:
Composition:
Volume Used:
Interval:

GROUT / SEAL
Type:
Volume Used:
Interval:

WELL HEAD COMPLETION
Manhole: ☐ YES ☐ NO
Size:
Concrete Pad: ☐ YES ☐ NO
Size:

WELL DEVELOPMENT
Performed: ☐ YES ☐ NO
Method:
Amt. Purged:
Date:

LEGEND

☐ Native material
☐ Sand Pack
☐ Bentonite
☐ Portland Cement Grout

trace=1-10%
little=10-20%
some=20-30%
and=30-50%

very fine sand=0.6-0.13mm
fine sand=0.13-0.25mm
medium sand=0.25-0.50mm
coarse sand=0.5-1mm
very coarse sand=1-2mm

▽ = ground water table
f-gravel=2-4mm
m-gravel=4-64mm
c-gravel=64-256mm

Appendix B

Monitoring Well Boring Logs

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

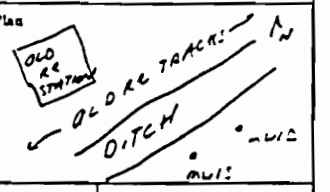
PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

BORING/ WELL NO. MW-1S

Sheet 1 of 2
Location Description: see map below

Weather: 20° windy
Date/Time Start: 12/19/95 11:15
Date/Time Finish: 12/19/95 17:00

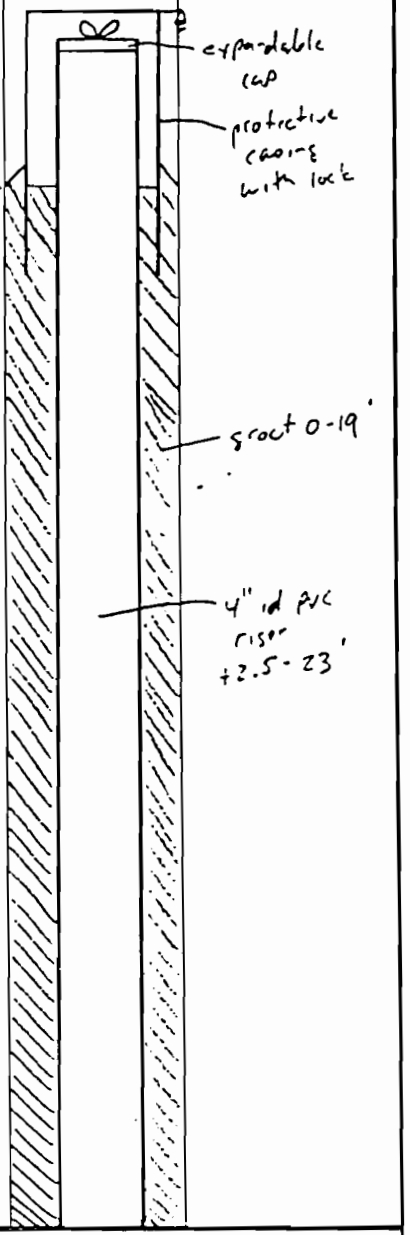
Location Plan



GROUNDWATER OBSERVATIONS

Water Level	5.92			
Date	4/9/96			
Time	1530			
Meas. From	TOC			

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
+3							
+2							
+1							
0		A					
					see MW1D		
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							



SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ, NQ CORING

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

BORING/ WELL NO. MW-15

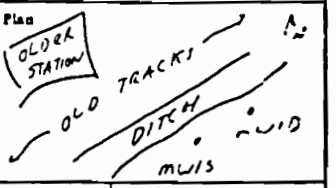
Sheet 2 of 2
Location Description: See map below

GROUNDWATER OBSERVATIONS

Water Level	5.92			
Date	4/9/96			
Time	1530			
Meas. From	TOC			

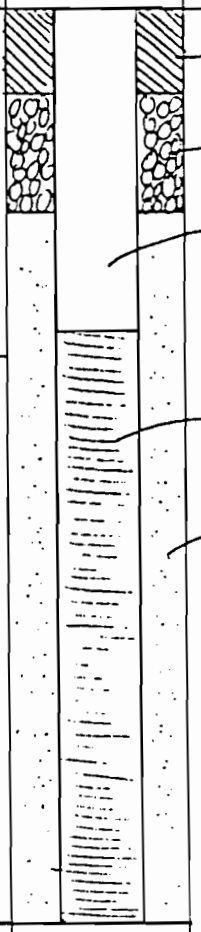
Weather: 20° windy
Date/Time Start: 12/19/95 11:15
Date/Time Finish: 12/19/95 17:00

Location Plan



Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL
18		A			
19					
20					
		4	100		SANDY SILT, grey; some clay, thix, wet, clean
21		5			
		3			
22		4			
		5	100		as above grading to
23		3			
		5			
24		3			SAND + GRAVEL, vf; some silt & the clay wet, till-like, loose
		A			
25					
26					
27					
28					
29					
30					
31					
32					
33					
					TD = 33.0'

SCHEMATIC



COMMENTS

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ, NQ CORING

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

BORING/ WELL NO. MW-1D
Sheet 1 of 3
Location Description: see map below

Weather: clear 0°
Date/Time Start: 2/13/95 8:15
Date/Time Finish: 12/17/95 10:40

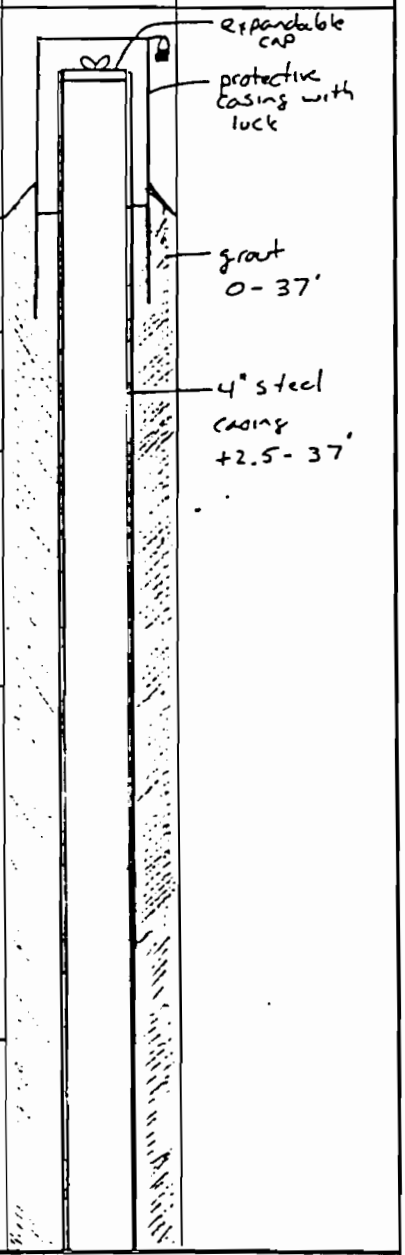
Location Plan

GROUNDWATER OBSERVATIONS

Water Level	8.59			
Date	4/9/96			
Time	1600			
Meas. From	TOC			

Sample Blows/ Depth	Sample I.D.	SPT Depth	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL
		+3			
		+2			
		+1			
		0			
5			25		SANDY SILT, vf, dk brn; trace gravel, moist, clean, topsoil
3		1			
6					
5		2			
3			50		SILTY CLAY, brn-tan; little f sand, v. moist clean, plastic
3		3			
2					
3		4			
4			20		SAND & GRAVEL, f-med; trace brn silt, clean, moist
4		5			
3					
4		6			
3			100		as above, wet, clean
3		7			
4					
7		8			
4			50		CLAYEY SILT, tan; trace vf sand, wet, clean
3		9			
6					
5		10			
2			100		as above, plastic, wet, clean
2		11			
2					
3		12			
4			100		as above, grading to grey
5		13			
4					
3		14			
1			100		CLAY, grey, little silt, plastic, clean, sticky
1		15			
1					
1		16			
1			100		as above, grey-brn
1		17			
1					

SCHEMATIC



COMMENTS

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ, NQ CORING

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

BORING/ WELL NO. MW-1D

PROJECT NAME VALLEY FALLS
PROJECT NUMBER 728726.01000

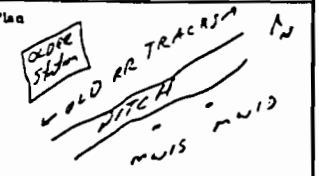
Sheet 2 of 3
Location Description: see map below

GROUNDWATER OBSERVATIONS

Water Level	8.59			
Date	4/4/96			
Time	1600			
Meas. From	TOC			

Weather clear 0°
Date/Time Start 12/13/95 8:15
Date/Time Finish 12/19/95 10:40

Location Plan



~~Sample~~ Blows ~~Depth~~	Sample I.D.	~~Elev.~~ Depth	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
1		18					
1			100		CLAYEY SILT, grey; little vf sand, stiff, wet, clean		
1		19					
2							
3		20					
1			50		as above		
2		21					
3							
2		22					
2			50		as above		
1		23					
2					SAND, vf; some silt, dk grey, wet, clean		
4		24					
3			25		as above, some gravel, firmed		
4		25					
2							
3		26					
7			10		TILL, grey, loose, wet		
9		27					
13							
15		28					
3			10		as above, v loose		
5		29					
2							
6		30					
27			50		as above, tight, hard, moist, clean		
22		31					
27							
35		32					
26			40		as above, and shale frags, vv hard		
50/1"		33					
RB					BEDROCK AT 33.5'		
		34			Rollerbit, no sample		
		35					
		36					
↓	Loss of water	37	*REC	ROD			
C	NME		46	74	SHALE, grey green, slightly deformed, occ quartz stringers ⊥ to bedding		
		38					
↓							

Grout 0-37
4" steel casing +2.5-37'
Rock socket 33.5-37
open hole 37-63

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ, NQ CORING

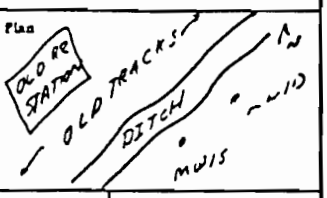
Contractor: American Auger
Driller: John Pietrach
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

BORING/WELL NO. MW-10
Sheet 3 of 3
Location Description: see map below

Weather: 0° clear
Date/Time Start: 12/13/95 8:15
Date/Time Finish: 12/19/95 10:40

Location Plan: 

GROUNDWATER OBSERVATIONS

Water Level	8.59			
Date	4/9/96			
Time	1600			
Meas. From	TOC			

~~Sampler~~ SPT ~~Depth~~	Sample I.D.	~~Set~~ Depth	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
C	LOW	39	*Rec	RAD			
		40					
		41					
		42					
	NONE		60	86	SHALE as above		
		43					
		44					
		45					
		46					open hole, 37-63'
	NONE	47	60	75	as above		
		48					
		49					
		50					
		51					
	NONE	52	30	0	as above, fractured		
		53					
		54					
		55					
	NONE	56	30	0	as above		
		57					
		58					
		59					
		60					
		61					
		62					
RB					no sample, roller bit		
		63					
					TD=63.0		

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ NQ CORING

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

BORING/ WELL NO. MW-2S

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 72 8726 . 01000

Sheet 1 of 1
Location Description: see map below

Weather: sunny 25°
Date/Time Start: 4/9/96 14:30
Date/Time Finish: 4/9/96 17:00

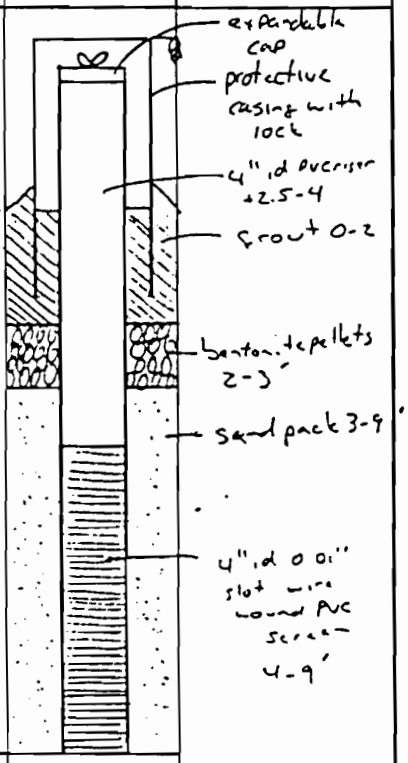
Location Plan: OLD FOUNDATION; MW-2S; MW-2D; N

GROUNDWATER OBSERVATIONS

Water Level	7.55			
Date	4/11/96			
Time	900			
Meas. From	TOC			

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL
+3					
+2					
+1					
0		A			
1					
2					
3					
4					
5					
6					
7					
		3	50		SAND + GRAVEL, brn, l. Hle silt, wet, clean
8		3			
		5			
9		7			
					TD=9'

SCHEMATIC



COMMENTS

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ NQ CORING

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torelli
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

BORING/WELL NO. MW-2D
Sheet 1 of 3
Location Description: seemp below

GROUNDWATER OBSERVATIONS

Water Level	17.28			
Date	4/11/96			
Time	730			
Meas. From	TOC			

Weather: sunny 25°
Date/Time Start: 4/9/96 7:30
Date/Time Finish: 4/10/96 12:10

Location Plan: old foundation; N; MW-2S; MW-2D

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
+3							protective top with lock
+2							
+1							
0							
		=	50		SANDY SILT, vf; little gravel, moist, clean, dk brn		grout 0-26'
1		1					
		1					
2		3					
		3	50		as above grading to		
3		4					
		5					
4		6					
		4	50	.	SAND & GRAVEL, f-co, wet, clean		4" steel casing +2.5-26'
5		4					
		5					
6		5					
		4	100		as above, little brn silt		
7		4					
		4					
8		11					
		5	50		as above		
9		7			TILL, brn, hard, tight		
		7					
10		13			as above, grey		
		3	0		no recovery		
11		7					
		8					
12		7					
		6	50		as above, grey loose wet clean		
13		3					
		2					
14		3					
		3	100		as above, loose		
15		3					
		4					
16		3					
		4	100		as above		
17		5					
		5					

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ, NQ CORING

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

BORING/WELL NO. MW-2D

Sheet 2 of 3
Location Description: see map below

GROUNDWATER OBSERVATIONS

Water Level	17.28			
Date	4/11/96			
Time	730			
Meas. From	TOC			

Weather: Sunny 25°
Date/Time Start: 4/9/96 7:30
Date/Time Finish: 4/10/96 12:10

Location Plan: old foundation; N; • MW2S; • MW2D

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
18		7					
		4			TILL, as above		
19		7					
		6					
20		7					
		9			as above, sampling tight, hard		
21		13					
		50/4"					
22		A					
		50/2"			as above, vv tight hard		
23		RB			BEDROCK		
					Rollerbit, no samples		
24							
25							
26	LOSS OF WATER		"REC	RQD			
	NONE	C	36	100	SHALE, black, grey, calcareous, slightly deformed, 50% quartz stringers ⊥ to bedding		
27							
28							
29							
	NONE		60	91	as above		
30							
31							
32							
33							
34							
	NONE		60	100	as above		
35							
36							
37							
38							

SCHEMATIC: 4" steel casing +2.5-26; grout 0-26; open hole 26-56

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ NQ CORING

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

BORING/WELL NO. MW-2D

Sheet 3 of 3
Location Description: see map below

GROUNDWATER OBSERVATIONS

Water Level	17.28			
Date	4/11/96			
Time	730			
Meas. From	TOC			

Weather: sunny 25°
Date/Time Start: 4/9/96 7:30
Date/Time Finish: 4/10/96 12:10

Location Plan: old foundation; N; • MW2S; • MW2D

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
39	LOW	C	"Rec	RaD			
	NONE		60"	76	SHALE, as above		
40							
							open hole 26-56'
41							
42							
43							
44							
	NONE		12	60	as above		
45							
	NONE		48	82	as above		
46							
47							
48							
49							
	NONE		60	100	as above		
50							
51							
52							
53							
54							
	NONE		24	90	as above		
55							
56							
					TD=56'		

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ, NQ CORING

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

BORING/ WELL NO. MW-35

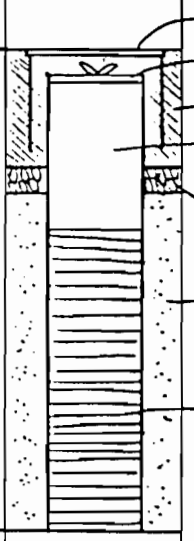
Sheet 1 of 1
Location Description: see map below

GROUNDWATER OBSERVATIONS

Water Level	7.74			
Date	4/10			
Time	1:00			
Meas. From	TOC			

Weather: Sunny 32°
Date/Time Start: 4/4/96 15:00
Date/Time Finish: 4/4/96 16:30

Location Plan: Parks St; Mayors house; N

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
0		A			See MW30 boring log		
1							
2							
3							
4							
5							
6							
7							
8					TD = 8'		

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ, NQ coring

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torelli
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

BORING/ WELL NO. MW-3D

Sheet 1 of 3
Location Description: See map below

Weather: Sunny 32°
Date/Time Start: 4/14/96 8:45
Date/Time Finish: 4/5/96 ± 10:00

Location Plan: Charles St; MW3S; MW3D; mayor's house; N

GROUNDWATER OBSERVATIONS

Water Level	32.91			
Date	4/10			
Time	8:30			
Meas. From	TOC			

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
0							flush-mount
		4	50		SANDY SILT, dk brn, vf		expandable cap
1		5					
		4					
2		4					
		8	50		SAND + GRAVEL, f-md, brn, clean wet		
3		7					
		5					
4		7					
		2	25		as above		
5		3					
		4					
6		4					
		5	100		as above		4" steel casing 0.5-29'
7		5					
		18			TILL, brn, hard, wet, clay		grout 0-29'
8		32					
		38	50		as above, vv wet		
9		50/5"					
		A					
10		A					
		27	50		as above, grey		
11		50/5"					
		A					
12		A					
		A					
13		A					
		A					
14		A					
		A					
15		A					
		33	50		as above, grey, vv hard + tight		
16		50/3"					
		A					
17		A					
		A					
18		A					
		A					
19		A					
		A					
20		A					

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ, NQ CORING

Contractor: American Auger Driller: John Pietrich Inspector: Chris Torell Rig Type: Foremost CT250	**PARSONS ENGINEERING SCIENCE, INC.** DRILLING RECORD PROJECT NAME: VALLEY FALLS PROJECT NUMBER: 728726.01000	BORING/WELL NO. MW-3D Sheet 2 of 3 Location Description: see map below

GROUNDWATER OBSERVATIONS

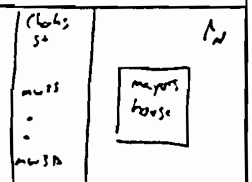
Water Level	32.81			
Date	4/10			
Time	9:33			
Meas. From	TOC			

Weather: sunny 32°

Date/Time Start: 4/4/96 8:45

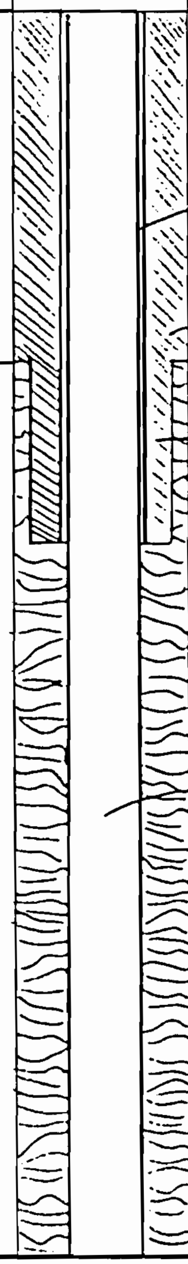
Date/Time Finish: 4/5/96 10:00

Location Plan



Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	COMMENTS
		38			as above, bedrock frags	
21		50/4"				
		A				
22		A				
		A				
23		A				
		A				
24		A				4" steel casing 0.5-29'
		50/4"			as above	
25		A				
		A				grout 0.5-29'
26		A				
		RB			BEDROCK roller bit, no samples	
27						rock socket 26-29'
28						
29	Lost water		REC	RQD		
	NONE	C	36	100	SHALE, green black, calcareous, occ quartz stringers ⊥ to bedding, occ weathered zones	
30						
31						
32						
33	NONE		60	90	as above	open hole 29-58'
34						
35						
36						
37						
38	NONE		60	80	as above	
39						
40						
41						

SCHEMATIC



SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6 1/4" HSA, HQ, NQ CORING

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

BORING/ WELL NO. MW-3D

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

Sheet 3 of 3
Location Description: See MSD below

Weather: Sunny 32°
Date/Time Start: 4/4/96 8:45
Date/Time Finish: 4/5/96 10:00

Location Plan: Charles St; MW-3S; MW-3D; MSD; N

GROUNDWATER OBSERVATIONS

Water Level	32.81			
Date	4/10			
Time	8:30			
Meas. From	TOC			

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
		C					
42							
43	NONE		16	90	as above		
44							
	NONE		60	95	as above		
45							
46							
47							
48							
49							
	NONE		60	100	as above		
50							
51							
52							
53							
54							
	NONE		48	78	as above		
55							
56							
57							
58							
					TD: 58.0		

open hole 29-58'

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ NQ CORING

Contractor: American Auger
Driller: John Petrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

BORING/WELL NO. MW-4S

Sheet 1 of 1
Location Description: see map below

GROUNDWATER OBSERVATIONS

Water Level	5.82			
Date	4/10			
Time	1500			
Meas. From	TOC			

Weather: 35° sunny
Date/Time Start: 4/3/96 14:40
Date/Time Finish: 4/3/96 16:00

Location Plan: Town Hall; Cascade St; MW-4D & MW-4S; N

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
0		A			see MW-4D		flush mount ext. portable cap
10		1			SAND + GRAVEL, f-co, brn, l, H/e silt		grout 0-3'
11		8					4" id PVC riser 0.5-6
		12			TILL, grey, moist, tight TD:11'		bentonite pellets 3-5'
		17					sand pack 5-11'
							4" id, 0.01" slot PVC wire-wrap screen 6-11'

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6 1/4" HSA, HQ, NQ CORING

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726-01000

BORING/ WELL NO. MW-40

Sheet 1 of 3
Location Description: see map below

GROUNDWATER OBSERVATIONS

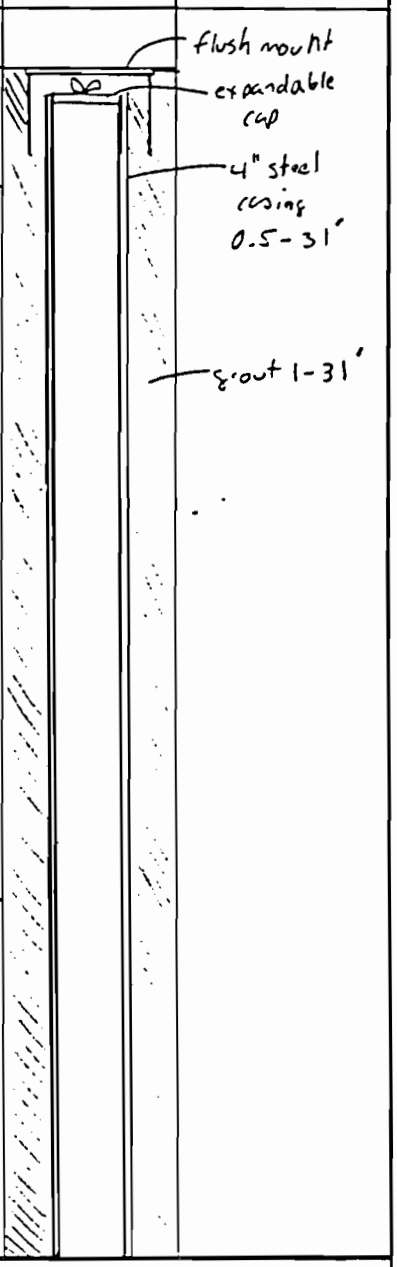
Water Level	33.96			
Date	4/10			
Time	1600			
Meas. From	TOC			

Weather: 45° Sunny
Date/Time Start: 4/2/96 10:00
Date/Time Finish: 4/3/96 12:20

Location Plan: Town Hall; Charles St; mws; mwd; N

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL
0		7	25		SANDY SILT, vf, l. Hle cinders, brn black, clean, moist
1		4			
		6			
2		8			
		9	50		SAND + GRAVEL, f-co, brn, clean, v moist
3		11			
		7			
4		9			
		4	25		as above, v v moist
5		7			
		7			
6		5			
		4	25		as above, wet
7		7			
		5			
8		6			
		6	50		as above
9		7			
		5			
10		6			
		11	100		as above
11		7			
		6			CLAY; l. Hle silt, sand, gravel, brn tight, wet
12		8			
		8	25		as above, grey
13		33			
		27			
14		17			
		11	25		TILL, grey, moist, clean
15		15			
		19			
16		28			
		19	50		as above, v tight & hard, clean
17		22			
		31			
17		100			
		50	10		as above, rocky, dry - moist, vv hard
19		50/1"			
		A			
20		4			

SCHEMATIC



COMMENTS

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ, NQ CORING

Contractor: American Auger
Driller: John Pretrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

BORING/ WELL NO. MW-4D

PROJECT NAME VALLEY FALLS
PROJECT NUMBER 728726.01000

Sheet 2 of 3
Location Description: see map below

GROUNDWATER OBSERVATIONS

Water Level	33.9'			
Date	4/10			
Time	1600			
Meas. From	TOC			

Weather 45° Sunny
Date/Time Start 4/2/96 10:00
Date/Time Finish 4/3/96 12:20

Location Plan: Town Hall; Charles Street; MW-4D; N

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
		39	20		TILL, as above		
21		50/3"					
		A					
22		A					
		13	50		as above		
23		15					
		33					
24		50/1"					
		38	50		as above		
25		50/1"					grout 1-31'
		A					
26		A					
		2	0		slough, no sample recovery		
27		3					4" steel casing 0.5-31'
		5					
28		18					
		RB			BEDROCK at 28'		
29					roller bit, no samples		
30							rock socket 28-31'
31	Grab	C	REC	RQD			
	none	C	46	96	SHALE, black/green, calcareous, some quartz stringers ⊥ to bedding, occ weathered zones		
32							
33							
34							
35							
36							
	none		60	85	as above		open hole 31-54'
37							
38							
39							
40							
	none		23	22	as above, slightly fissile		
41							

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ, NQ CORING

Contractor: American Auger
Driller: John Pietrich
Inspector: Chris Torell
Rig Type: Foremost CT250

PARSONS ENGINEERING SCIENCE, INC.
DRILLING RECORD

PROJECT NAME: VALLEY FALLS
PROJECT NUMBER: 728726.01000

BORING/ WELL NO. MW-4D

Sheet 3 of 3
Location Description: SE side of Rte

GROUNDWATER OBSERVATIONS

Water Level	33.96			
Date	4/10			
Time	1100			
Meas. From	TOC			

Weather: 45° Sunny
Date/Time Start: 4/2/96 10:00
Date/Time Finish: 4/3/96 12:20

Location Plan: Town Hall; Charles Street; MW45; MW4D; N

Sample Depth	Sample I.D.	SPT	% Rec.	PID Reading	FIELD IDENTIFICATION OF MATERIAL	SCHEMATIC	COMMENTS
		C					
42							
43							
	None		24	100	as above, very consistent		
44							
45							
	None		60	80	as above, occ weathered zones		
46							
47							
48							
49							
50							
	None		41	39	as above		
51							
52							
53							
54							
	None		60	35	as above		
55							
56							
57							
58							
59							
					TD = 59.2'		

open hole 31-59'

SAMPLING METHOD
SS = SPLIT SPOON
A = AUGER CUTTINGS
C = CORED

COMMENTS: METHODS: 6¼" HSA, HQ, NQ CORING

Appendix C

Groundwater Monitoring Well Purging and Sampling Log Form

EA Engineering PC and its Affliate,
EA Science and Technology

GROUNDWATER SAMPLING
PURGE FORM

Well I.D.:	**EA Personnel:**	**Client:**
Location:	**Well Condition:**	**Weather:**
Sounding Method:	**Gauge Date:**	**Measurement Ref:**
Stick Up/Down (ft):	**Gauge Time:**	**Well Diameter (in):**

Purge Date:	**Purge Time:**
Purge Method:	**Field Technician:**

Well Volume		
A. Well Depth (ft):	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft):	**E. Well Volume (gal) C*D):**	**Pump Type:**
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Designation:**

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	ORP (mV)	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)

Total Quantity of Water Removed (gal): _____ **Sampling Time:** _____
Samplers: _____ **Split Sample With:** _____
Sampling Date: _____ **Sample Type:** _____

COMMENTS AND OBSERVATIONS: _____

Appendix D

Granular Activated Carbon Sampling Form

Valley Falls GAC Sampling Form

GAC Location: _____
Owner Name: _____
System Address: _____
City: _____ Zip: _____
Performed By: _____
Company: _____

Date of Visit: _____
Telephone: _____
Alt. Telephone: _____
Site No.: _____
Site Name: _____

Sample Information					
	Date	Time	Purge Start Time	Purge Stop Time	# of Vials
Pre					
Mid					
Post					
Bacteria (at tap)					

Visual Inspection			Notes:
Cleaned the particle filter	Yes	No	_____
Cleaned the quartz sleeve	Yes	No	_____
Changed out UV light	Yes	No	_____
Inspected carbon vessel, UV light, and associated plumbing for leaks	Yes	No	_____

Appendix E

Annual Inspection Record

Valley Falls Dry Cleaners Site
Valley Falls, New York
Site No. 4-42-028

Annual Inspection Record

A. GENERAL INFORMATION

Date: _____
Inspector: _____

B. INSPECTION - SOIL AND VEGETATIVE COVER
Former Excavation Area

Component	Condition	Comments
Soil Cover (Check for erosion, unauthorized excavation, noticeable settling, etc.)		
Vegetative Cover (check for any sparse or stressed vegetation)		
Fencing (if applicable, inspect surrounding fenceline for damage/breaches)		
Site Use (Describe the current site use in the area of the excavation, and note any changes since the previous inspection)		
Other observations or comments		

MW-1S

Component	Acceptable	Damaged/ Unacceptable	Comments
Can the well be located?			
Accessibility			
Outer Casing			
Pressure Cap			
Lock			

MW-1D

Component	Acceptable	Damaged/ Unacceptable	Comments
Can the well be located?			
Accessibility			
Outer Casing			
Pressure Cap			
Lock			

MW-2S

Component	Acceptable	Damaged/ Unacceptable	Comments
Can the well be located?			
Accessibility			
Outer Casing			
Pressure Cap			
Lock			

MW-2D

Component	Acceptable	Damaged/ Unacceptable	Comments
Can the well be located?			
Accessibility			
Outer Casing			
Pressure Cap			
Lock			

MW-3S

Component	Acceptable	Damaged/ Unacceptable	Comments
Can the well be located?			
Accessibility			
Outer Casing			
Pressure Cap			
Lock			

MW-3D

Component	Acceptable	Damaged/ Unacceptable	Comments
Can the well be located?			
Accessibility			
Outer Casing			
Pressure Cap			
Lock			

MW-4S

Component	Acceptable	Damaged/ Unacceptable	Comments
Can the well be located?			
Accessibility			
Outer Casing			
Pressure Cap			
Lock			

MW-4D

Component	Acceptable	Damaged/ Unacceptable	Comments
Can the well be located?			
Accessibility			
Outer Casing			
Pressure Cap			
Lock			