Campagnolo Property

TOMPKINS COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: 755013

Prepared for:

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1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at Campagnolo Property (hereinafter referred to as the "Site") under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by New York State Department of Environmental Conservation (NYSDEC). The site was remediated in accordance with Order on Consent Index # DER-755013-12-10, Site # 755013, which was executed on April 22, 2011.

1.1.1 General

Benedetto and Giuliana Campagnolo entered into an Order on Consent with the NYSDEC to remediate an approximately 0.45 acre property located in the City of Ithaca, Tompkins County, New York. This Order on Consent required the Remedial Party, Benedetto and Giuliana Campagnolo, to remediate contaminated media at the site. A figure showing the site location and boundaries of this approximately 0.45 acre site is provided in Figure 1. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement.

The remedial activities are being conducted in general accordance with the Record of Decision (ROD) for the site, dated May 2010. After completion of the remedial work described in the ROD, some contamination was left in the subsurface at this site, which is hereafter referred to as 'remaining contamination' This Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by Hazard Evaluations, Inc. on behalf of Benedetto and Giuliana Campagnolo, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 3, 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site.

1.1.2 Purpose

The site contains contamination left after completion of the remedial activities. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Tompkins County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes three plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and

Maintenance Plan for implementation of remedial collection, containment, treatment, and recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual for complex systems).

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 by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the Order on Consent, (Index # DER-755013-12-10, Site # 755013) for the site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, 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 the City of Ithaca, County of Tompkins, New York and is identified as SBL Nos. 51-1-18.1 and 51-1-18.2 on the Tompkins County Tax Map. The site is an approximately 0.45 acre area parcel located on the east side of North Meadow Street (Route 34), between Cascadilla Street to the north, and Esty Street to the south (see Figure 1).

1.2.2 Site History

This site was used for a dry cleaning service from the late 1960s through 1977. An approximately 18-pound dry cleaning machine was located in the building, and an aboveground solvent tank was formerly located outside on the east side of the building. Tetrachloroethene (PCE) had previously been used in dry cleaning operations as a cleaning solvent, but is not currently used at the site. No other facilities or businesses situated immediately adjacent to the site historically are known to have used PCE.

Currently there is a two-story concrete building on the site. The building is a slab on-grade structure with approximately 3,200 square feet of the space leased and used for various commercial services. Asphalt and/or concrete paved parking surfaces surround the building on all sides. Adjacent parcels are currently used for a combination of residential and commercial purposes. The grade at the site is generally flat with an elevation of approximately 386 feet above mean sea level.

The following Investigations/Actions were performed on-site:

- Environmental Site Assessment conducted in connection with a potential property transaction, completed in 2001
- On-site soil vapor intrusion investigation, completed in 2002
- Mitigation of on-site building, completed in 2003
- Immediate Investigation Work Assignments to conduct off-site soil vapor intrusion investigations completed in 2005 and 2006
- Mitigation of two off-site buildings completed in 2005
- Remedial Investigation/Feasibility Study completed April 2010
- Soil Vapor Sampling completed December 2010

1.2.3 Geologic Conditions

The generalized site geology indicates a layered system characterized at the surface with a fill layer ranging from two to four feet thick across the area. The fill material consists primarily of clay and silt mixed with some ash, wood, cinder, and gravel. The fill overlies an approximately 11- to 12-foot thick silt and clay unit containing thin and discontinuous sand and silt layers.

The silt and clay unit overlies a silty fine sand unit ranging in thickness from approximately 11.5 to 12.5 feet. The silty fine sand unit overlies a clayey silt unit present at approximately 28 feet below ground surface (bgs). A geologic section is shown in Figure 2.

Groundwater at the site was first encountered within the discontinuous sand and silt layers of the silt and clay unit. The depth to groundwater measured in shallow monitoring wells has ranged from approximately four to 8.5 feet bgs. The general direction of groundwater flow is to the west-northwest. A groundwater flow figure is shown in Figure 3.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A Remedial Investigation (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 reports:

"Remedial Investigation Report, Campagnolo Property, Site No. 755013, City of Ithaca, Tompkins County, NY"; July 2008, prepared by URS Corporation for the NYSDEC.

Generally, the RI determined that the disposal of hazardous waste has resulted in the contamination of groundwater and soil vapor. The site contaminants that are considered to be the primary contaminants of concern in groundwater are Tetrachloroethene (PCE) and its breakdown products, including cis-1,2-dichloroethene (cis-1,2-DCE), trichloroethene (TCE), and/or vinyl chloride. The site contaminants that are considered to be the primary contaminants of concern in soil vapor are PCE and TCE. No site-related sub-surface soil contamination of concern was identified during the RI.

Below is a summary of site conditions primarily from when the RI was performed between March 2007 and March 2008.

Soil

Subsurface soil samples were collected at the site during the RI. Subsurface soil samples were collected below pavement materials to depths as great as 10 feet below ground surface to assess soil contamination impacts to groundwater. The results indicate

that soils at the site do not exceed the unrestricted use Standards, Criteria and Guidance (SCGs) for volatile organic compounds (VOCs). The distribution of soil sampling locations is depicted on Figure 4.

Groundwater

Groundwater samples were collected from the overburden using temporary sampling points and monitoring wells. The samples were collected to assess groundwater conditions on- and off-site. The results indicate that contamination in the shallow groundwater at the site exceeds the SCGs for VOCs. In general, the horizontal extent of groundwater contamination is limited to the site property and areas immediately adjacent and does not extend past the west side of North Meadow Street. No site-related contamination was found in groundwater samples collected from deeper portions of the overburden. Table 1 (below) includes all contaminants that exceed the groundwater and drinking water SCGs.

Table 1 – Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
cis – 1,2-Dichloroethene	0.60-207	5	7 of 34
trans – 1,2-Dichloroethene	0.11-5.97	5	1 of 34
Benzene	0.43-4.54	1	1 of 34
Isopropylbenzene	0.20-17.5	5	1 of 34
Tetrachloroethene	0.12-31.9	5	6 of 34
Trichloroethene	0.36-6.56	5	1 of 34
Vinyl chloride	0.63-37.3	2	6 of 34

a – ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b – SCG: Standards, Criteria, or Guidance – Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface Water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10NYCRR Part 5).

Based on the findings of the RI, the disposal of hazardous waste has resulted in the contamination of groundwater. The concentrations and distribution of the contaminants of concern are shown on Figure 5.

Site-Related Soil Vapor Intrusion

The evaluation of the potential for soil vapor intrusion resulting from the presence of site related soil or groundwater contamination was evaluated by the sampling of sub-slab soil vapor under structures, and indoor air inside the structures. At this site, due to the presence of buildings in the impacted area, a full suite of samples were collected to evaluate whether soil vapor intrusion was occurring.

Soil vapor intrusion samples (a combined sample set including sub-slab, indoor, and outdoor air) were collected in 2007 and 2008 to complement the air sampling investigation that began in 2005. From 2005 to 2008, soil vapor intrusion samples were collected from 16 residential and/or commercial buildings surrounding the site. Figure 6 shows the general locations of the buildings sampled. Based on the air sampling results, the Department installed two sub-slab depressurization (SSD) systems. One SSD system was installed beneath the on-site building located on the parcel identified as SBL No. 51-1-18.2; and the other SSD system was installed beneath a commercial building located off-site. In 2003, the property owner installed a SSD system beneath the on-site building located on the parcel identified as SBL No. 51-1-18.1. Subsequent inspections of the SSD systems, including post-mitigation air sampling, indicated that the systems are properly operating. Overall, the results of the air sampling effort indicated that no sampling of additional buildings was needed to assist with the completion of the RI. However, based on air sampling results, one residential building near the site should be monitored periodically to evaluate concentration changes over time.

In addition, one residential property adjacent to the site had been vacant throughout all site investigations. The unoccupied status of the property had been verified through conversations with the site owners and neighboring property owners. The building appeared abandoned and it was confirmed that the utilities had been disconnected. However, during a site visit in 2009, it was discovered that this property now has a residential tenant. Due to this building's proximity to the site and to areas of groundwater contaminated with VOCs, soil vapor intrusion sampling should be conducted at this location.

The primary soil vapor contaminants are PCE and TCE, which are associated with the former on-site dry cleaning operation. Based on the findings of the remedial investigation, the disposal of hazardous waste has resulted in the contamination of soil vapor.

1.4 SUMMARY OF REMEDIAL ACTIONS

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to the public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

Soil vapor intrusion sampling specified in the ROD was performed in December 2010 at the residential building requiring periodic monitoring and at the previously unoccupied residential building adjacent to the site. The potential for mitigation at one of these buildings was referred to in the ROD as a remedial design element. However, based on the air sampling results at the two homes, no additional air sampling and/or mitigation at those locations will be required.

The remaining remedial elements for this site are:

1. Operation, maintenance and monitoring of existing sub-slab depressurization systems.
2. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.
3. Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the site.

4. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) Excavation Management Plan

1.4.1 Site-Related Treatment Systems

Mitigation measures were taken at the two on-site buildings and an adjacent off-site building to address current and/or potential indoor air contamination of VOCs associated with soil vapor intrusion. As discussed in Section 1.3, the mitigation involved the installation of SSD systems beneath each of the buildings.

While no long-term treatment systems were installed as part of the site remedy, the site remedy includes the operation, maintenance and monitoring of the existing SSD systems (both off-site and on-site).

1.4.2 Remaining Contamination

The soil, groundwater and soil vapor conditions remaining at the site are presumably unchanged since the RI was completed. Site contamination conditions are detailed in Section 1.3. As discussed in Section 1.4, soil vapor intrusion sampling conducted following the completion of the RI provided results to show that no additional air sampling and/or mitigation are required.

Continued operation of the SSD systems, groundwater monitoring, and imposition of land use and groundwater use restrictions will be implemented to protect public health and the environment.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated groundwater and soil vapor exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- 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 EC/ICs, such as the implementation of the Excavation Management Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

Sub-Slab Depressurization Systems

Procedures for operating and maintaining the existing sub-slab depressurization systems are documented in the Operation and Maintenance Plan (Section 4 of this SMP). Procedures for monitoring the system are included in the Monitoring Plan (Section 3 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.

Sub-slab Depressurization Systems

The active SSD systems will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSD systems are no longer required, a proposal to discontinue the SSD systems will be submitted by the property owner to the NYSDEC and NYSDOH.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls is required by the ROD to: (1) operate, maintain and monitor Engineering Control systems (SSD); (2) requires the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3); (3) limit the use and development of the site to commercial and/or industrial uses only; (4) restricts the use of the groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDEC, NYSDOH or County DOH; and, (5) requires

compliance with the NYSDEC approved Site Management Plan. Adherence to these Institutional Controls on the site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns;
- All Engineering Controls must be operated and maintained as specified in this SMP;
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP;
- Groundwater monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP.

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The property may only be used for commercial and/or industrial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as unrestricted and/or restricted residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;

- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Management Plan

The site has been remediated for commercial and/or industrial use. Any future intrusive work that will encounter or disturb the remaining contamination will be performed in compliance with the Excavation Management Plan that is attached as Appendix A to this SMP. Any work conducted pursuant to the Excavation Management Plan must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the site. A sample HASP is attached as Appendix B to this SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A-1 of the Excavation Management Plan. Any intrusive construction work will be performed in compliance with the Excavation Management Plan, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

The site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal

of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluation

Prior to the construction of any enclosed structures located over areas that contain remaining contamination and the potential for soil vapor intrusion (SVI) has been identified, an SVI evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York." Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary (unvalidated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation.

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components 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 Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If site records are complete and up to date; and
- 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 plan (Section 5.3).

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 EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner 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 Order on Consent, 6NYCRR Part 375, and/or Environmental Conservation Law.

- 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes 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 Order on Consent, 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.

2.5 CONTINGENCY PLAN

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

2.5.1 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 C. Mark Hanna, President of Hazard Evaluations, Inc. (HEI). These emergency contact lists must be maintained in an easily accessible location at the site.

Table 2: 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
NYSDEC Spill Response Region 7	Syracuse: (315) 426-7519 Kirkwood: (607) 775-2545
Tompkins County Department of Emergency Response	(607) 257-3888

Table 3: Contact Numbers

Mark Hanna, President of Hazard Evaluations, Inc.	(716) 667-3130
Tompkins County Environmental Health Division	(607) 274-6688
Ithaca Water and Sewer Division	(607) 272-1717

* Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: 503-511 North Meadow Street, Ithaca, New York 14850

Nearest Hospital Name: Cayuga Medical Center

Hospital Location: 101 Dates Drive, Ithaca, New York 14850

Hospital Telephone: (607) 274-4011

Directions to the Hospital:

1. Head north on North Meadow Street toward Cascadilla Street (157 ft)
2. Take the first left onto Cascadilla Street (361 ft)
3. Slight left onto North Fulton Street (0.2 mile)
4. Turn right onto West Buffalo Street (0.3 mile)
5. Continue onto NY-96 North/Cliff Street; Continue to follow NY-96 (2.2 mile)
6. Turn right onto Harris B Dates Drive Extension (256 feet)
7. Take first left onto Harris B Dates Drive (0.5 mile)
8. Turn right onto Dates Drive; Destination will be on the right (0.1 mile)

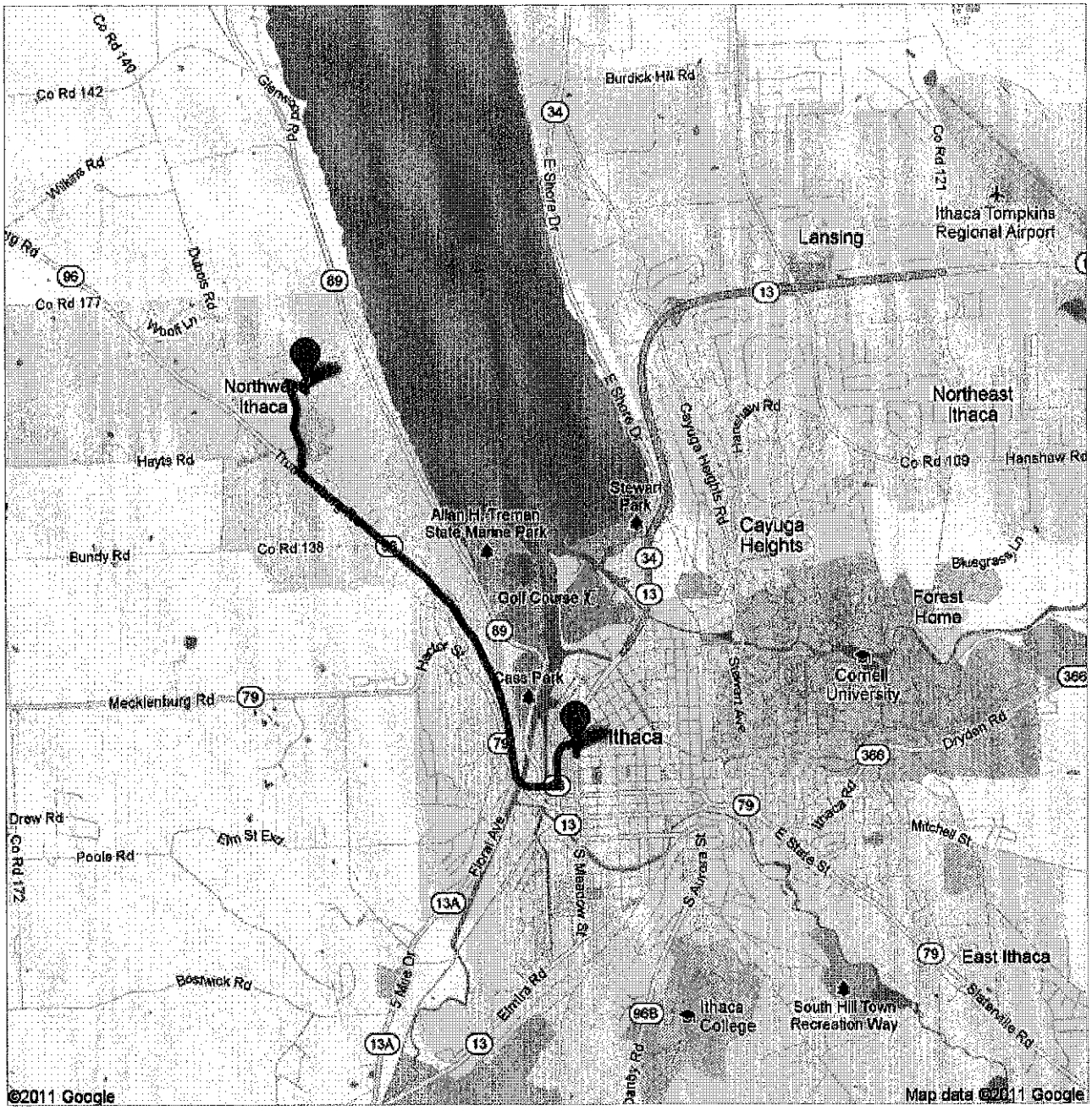
Total Distance: 3.5 miles

Total Estimated Time: 10 minutes

Map Showing Route from the site to the Hospital:

Google

Directions to 101 Dates Dr, Ithaca, NY 14850
3.5 mi – about **10 mins**



2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 2). The list will also be posted prominently at the site and made readily available to all personnel at all times.

When a spill occurs, the following actions (these are not comprehensive guidelines; they are intended only as general guidelines) are recommended:

- If the materials spilled are hazardous (check Material Safety Data Sheets associated with the spilled materials, etc.), the health and safety of the responders and people potentially affected by the release should be addressed.
- Measures to contain the spill should be undertaken (absorbent booms, etc.)
- The Fire Department and/or Hazmat team should be notified as soon as possible.
- NYSDEC Spill Hotline (1-800-457-7362) should be notified as soon as possible.

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 to reduce or mitigate contamination at the site, and all affected site media identified below. Monitoring of other Engineering Controls is described in Chapter 4, Operation, Monitoring and Maintenance Plan. 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 groundwater
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards;
- Assessing achievement of the remedial performance criteria.
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- 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/Quality Control (QA/QC) requirements;

- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Annual monitoring of the performance of the remedy and overall reduction in contamination on-site will be conducted for the first five 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 Table 4 and outlined in detail in Sections 3.2 and 3.3 below.

Table 4: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Monitoring Wells MW-01S, CP-MW-03S and CP-MW-05S	Annually until otherwise determined by the NYSDEC	Groundwater	VOCs using USEPA Method 8260B, TCL

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH

3.2 MEDIA MONITORING PROGRAM

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site.

3.2.1 Groundwater Monitoring

Groundwater monitoring will be performed on a periodic basis to assess the performance of the remedy.

The network of monitoring wells has been installed to monitor both up-gradient and down-gradient groundwater conditions at the site. The monitoring wells to be monitored as part of this SMP include the following: MW-01S, CP-MW-03S and CP-MW-05S. The monitoring well array is identified in Figure 7. All three of these monitoring wells are shallow wells, installed within overburden, in a low yielding silty

clay to clayey silt unit with occasional water producing sand stringers. The 2-inch ID overburden monitoring wells were installed using 4-1/4 inch ID hollow-stem auger (HAS) drilling methods.

The wells were constructed using 2-inch ID Schedule 40 polyvinyl chloride (PVC) pipe, with a 5 to 10-foot length of #10 (0.010-inch) slot screen and an appropriate length of riser to allow for flush mount finish. The wells were installed to final depths of 14 feet below ground surface (bgs) (MW-01S), and 10 feet bgs (CP-MW-03S and CP-MW-05S). Sand filter pack material consisting of washed and graded sand (size #00) was placed in the annular space between the screened section and borehole wall. A hydrated bentonite seal was placed in the annular space above the sand filter pack extending to approximately 1 foot bgs. Each well was finished at ground surface with an 8-inch flush mount protective casing set in concrete. A description of the Test Boring Logs, including material descriptions and well construction details, is provided in Figure 8. Well construction details are provided in the well construction diagrams in Appendix C.

The highest levels of PCE breakdown products are located just southwest of the site. Dissolved PCE and its breakdown products in groundwater are limited in horizontal extent around the building and is most concentrated southwest of the building. As groundwater at the site flows west-northwest, elevated concentrations of PCE and its breakdown products present south of the site are likely due to a relatively flat groundwater flow gradient and dispersion. The groundwater contamination does not appear to migrate past the west side of North Meadow Street. Baseline groundwater quality conditions identified as part of the RI are identified in Figure 9.

The following is a table of the wells to be sampled and analytes to be tested.

Monitoring Wells	**Analytes**
MW-01S	VOCs using USEPA Method 8260B, TCL
MW-03S	VOCs using USEPA Method 8260B, TCL
MW-05S	VOCs using USEPA Method 8260B, TCL

The monitoring wells will be sampled annually until such time as NYSDEC concur that groundwater monitoring is no longer required or an alternative monitoring frequency is approved. The sampling frequency may be modified with the approval by NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

Deliverables for the groundwater monitoring program are specified below in Section 3.6.

3.2.1.1 Sampling Protocol

A round of water-level measurements will be collected from selected monitoring wells prior to sampling to evaluate groundwater flow and hydraulic gradients. Groundwater samples will be collected from selected monitoring wells using NYSDEC-approved low-flow sampling procedures, and analyzed for VOCs using USEPA Method 8260. All monitoring well sampling will be conducted in accordance with NYSDEC-approved procedures. Analysis will be conducted by a laboratory that is accredited pursuant to the NYSDOH Environmental Laboratory Accreditation Program (ELAP). One trip blank and one equipment blank sample will be collected and analyzed for QA/QC.

Groundwater field parameters – including pH, temperature, specific conductance, dissolved oxygen (DO), turbidity, and oxidation-reduction potential (ORP) – will be measured during well purging. All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in Appendix D. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log. The well sampling log will serve as the inspection form for the groundwater monitoring well network.

3.2.1.2 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.

3.2.2 Sub-Slab Depressurization (SSD) System

SSD systems have been installed to mitigate possible soil vapor intrusion into occupied buildings. The existing two on-site buildings, as well as the building immediately north adjacent to the site, currently have SSD systems installed as part of past investigations. Operation and Maintenance of the existing SSD systems is described in Section 4.0 below.

3.3 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (Appendix E). The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that site records are up to date.

3.4 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance Project Plan (QAPP) prepared for the site (Appendix F). 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 Analytical Services Protocol (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;
- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.
- Internal QC and Checks;
- QA Performance and System Audits;
- Preventative Maintenance Procedures and Schedules;
- Corrective Action Measures.

3.5 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site. 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 (PRR), as specified in the Reporting Plan of this SMP (Section 5.3).

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. A letter report will also be prepared [if required by NYSDEC], subsequent to each sampling event. The report (or letter) 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 (o be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- 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.

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 existing sub-slab depressurization system (SSDS) for the site. This Operation and Maintenance Plan:

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

A copy of this Operation and Maintenance Plan, along with the complete SMP, will be kept at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of the SMP.

4.2 SUB-SLAB DEPRESSURIZATION SYSTEM OPERATION AND MAINTENANCE

4.2.1 Scope

The operation and maintenance requirements for the SSDS system include procedures related to the following processes: routine operation, shutdown, general maintenance and monitoring requirements, and record keeping.

4.2.2 System Testing

The system testing will be conducted if, in the course of the system lifetime, significant changes are made to the system, and the system must be restarted. This testing includes the following:

- Any leaks associated with cracks in the concrete slab and around utilities entering through the slab will be sealed. The integrity of the seals will be checked with smoke tubes.
- Appliances within the building, which vent to the atmosphere, will be checked to see if operation of the SSD will result in a backdraft.
- A check to ensure that vacuum pressure readings are greater than the minimum of 0.004 inches of water at all locations beneath the targeted extent of the concrete slab. This will include drilling small holes and 3/8" in diameter and checking with smoke tubes, micromanometers, etc., presence of a draft into the hole or a negative vacuum head, respectively.
- A test to confirm that the alarm associated with the SSD is functioning.

4.2.3 System Operation: Routine Operation Procedures

Routine maintenance activities associated with the SSD system include the following:

- Inspection of the concrete slabs and cleanouts linking the sub-slab drainage pipe to the footing drains to ensure they are removing any water that may seep below the slab.
- Measure sub-slab vacuum heads to check the targeted sub-slab extent is attaining the minimum vacuum head of 0.2" of water column.
- Measure the vacuum/pressure head and flow rate at the blower.

4.2.4 System Operation: Routine Equipment Maintenance

Routine maintenance activities associated with the SSD system include the following:

- Inspection of the SSD system visually for any damages.

- Test for presence of leaks with smoke detector tubes and fix any seal and leaks identified.
- Check to ensure air intakes are not located close to the SSD exhaust.

4.2.5 System Operation: Non-Routine Equipment Maintenance

Non-Routine maintenance activities associated with the SSD system include the following:

- Replace the blowers and other parts, as needed, based on their life expectancy.
- If monitoring indicates that the system is not functioning as the design intended, the system may have to be redesigned, modified and restarted.

4.3 SUB-SLAB DEPRESSURIZATION SYSTEM PERFORMANCE MONITORING

SSD systems have been installed to mitigate possible soil vapor intrusion into occupied buildings. The two existing on-site buildings, as well as the building immediately north adjacent to the site, currently have SSD systems installed as part of past investigations.

4.3.1 Monitoring Schedule

In order to provide continued compliance with State Guidance, the SSD systems installed by the State will be inspected and maintained annually.

Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSD system has been reported or an emergency occurs that is deemed likely to affect the operation of the system. Monitoring deliverables for the SSD system are specified in Section 5.3.

4.3.2 General Equipment Monitoring

A visual inspection of the complete system will be conducted during the monitoring event. SSD system components to be monitored include, but are not limited to, the following:

- Vacuum blower; and,
- General system piping.

If any equipment readings are not within their typical range, any equipment is observed to be malfunctioning, or the system is not performing within specifications, maintenance and repair as per the Operation and Maintenance Plan are required immediately, and the SSD system restarted.

4.3.3 System Monitoring Devices and Alarms

The SSD system has a warning device to indicate that the system is not operating properly. In the event that the warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSD system restarted. Operational problems will be noted in the subsequent Periodic Review Report.

4.3.4 Sampling Event Protocol

The samples will be collected in accordance with the requirements outlined in the Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006. Indoor and ambient air samples will be collected annually. The samples will preferably be collected during the heating season and from the basements when present. The samples will be collected in evacuated stainless steel canisters equipped with flow regulators over a 24-hour period. The air samples will be analyzed by a NYSDOH certified laboratory, for VOCs in accordance with USEPA Method TO-15.

Prior to sampling, a NYSDOH Indoor Air Quality Questionnaire and Building Inventory will be completed to evaluate potential presence of confounding sources that may interfere with evaluation of the analytical results.

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

5. 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 and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or 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 and presented in the subsequent PRR. Additionally, a general site-wide inspection form will be completed during the site-wide inspection. All inspection and monitoring forms are subject to review and approval by NYSDEC.

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;

- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and FER.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State will prepare the following certification:

For each institutional or engineering control 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 institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control 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 environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of 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;*
- *Use of the site is compliant with the environmental easement;*

- *The engineering control 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 (Section 5.3).

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every year, beginning eighteen months after the Certificate of Completion is issued. 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. 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 incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All 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 all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all 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 RAWP, ROD or Decision Document;
    - The operation and the effectiveness of all treatment units, 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; and
    - The overall performance and effectiveness of the remedy.
- A performance summary for all treatment systems at the site during the calendar year, including information such as:
    - The number of days the system was run for the reporting period;
    - A description of breakdowns and/or repairs along with an explanation for any significant downtime;
    - A description of the resolution of performance problems;

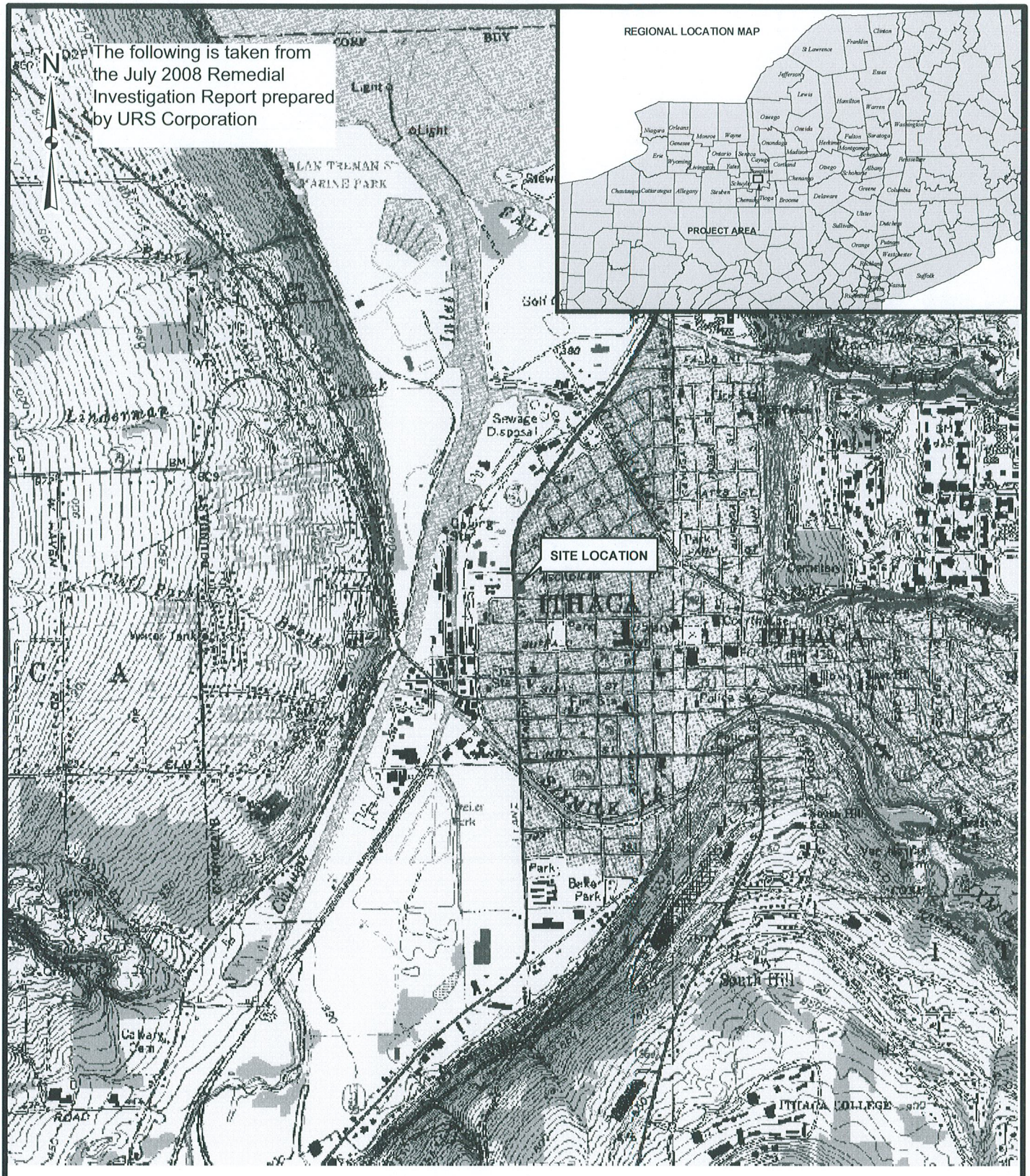
- A summary of the performance, effluent and/or effectiveness monitoring; and
- Comments, conclusions, and recommendations based on data evaluation.

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 institutional or engineering control, 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.

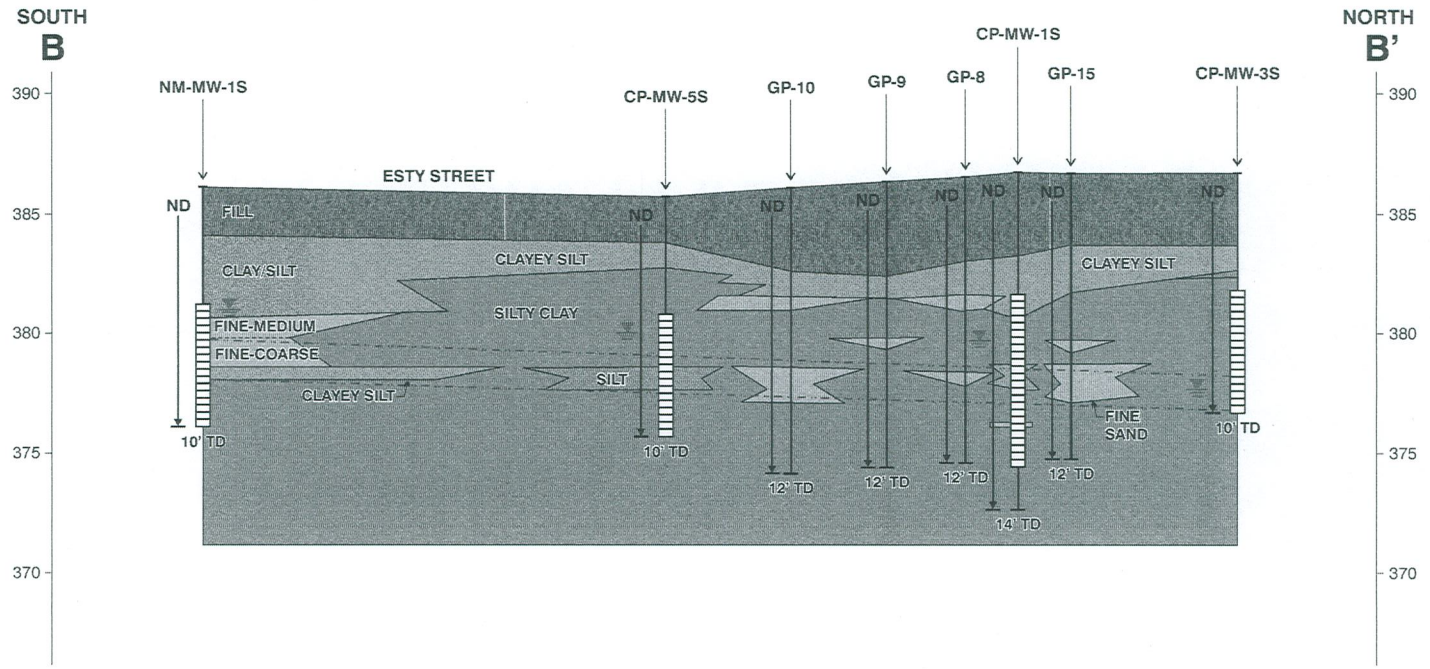
FIGURES



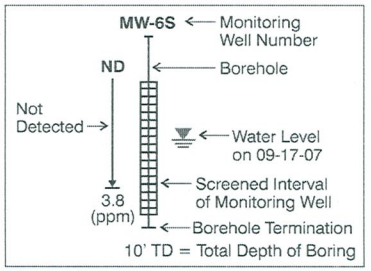
SMP SEPTEMBER 2011	CAMPAGNOLO PROPERTY SITE LOCATION MAP	FIGURE 1

SMP August 2011	CAMPAGNOLO PROPERTY SITE PLAN	FIGURE 1

The following is taken from the June 2009 Feasibility Study Report prepared by URS Corporation



Silt | Silty Sand | Clayey Silt | Topsoil
Sand | Clay | Clay/Silt | Fill
Sandy Silt | Silty Clay | Clayey Sand



Approximate depth of 20" sewer line present beneath North Meadow Street (projected)

Horizontal Scale: 1" = 50'
Vertical Scale: 1" = 5'
10x Vertical Exaggeration

Section location shown on Figure 2-3

NOTES:
1. Geologic conditions shown are representative of conditions encountered at each boring location to the depth drilled. Extrapolations between borings have been interpreted using standardly accepted geologic practices and principles. Actual conditions may vary between borings from those shown.
2. Elevations based on North American Vertical Datum, 1988.

CAMPAGNOLO PROPERTY
ITHACA, NEW YORK
DECEMBER 13, 2007
GEOLOGIC CROSS SECTION B - B'

SMP
September 2011

Figure 2

AG19933-117261-121407-GCM

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SMP August 2011	CAMPAGNOLO PROPERTY GROUNDWATER CONTOUR MAP	FIGURE 3

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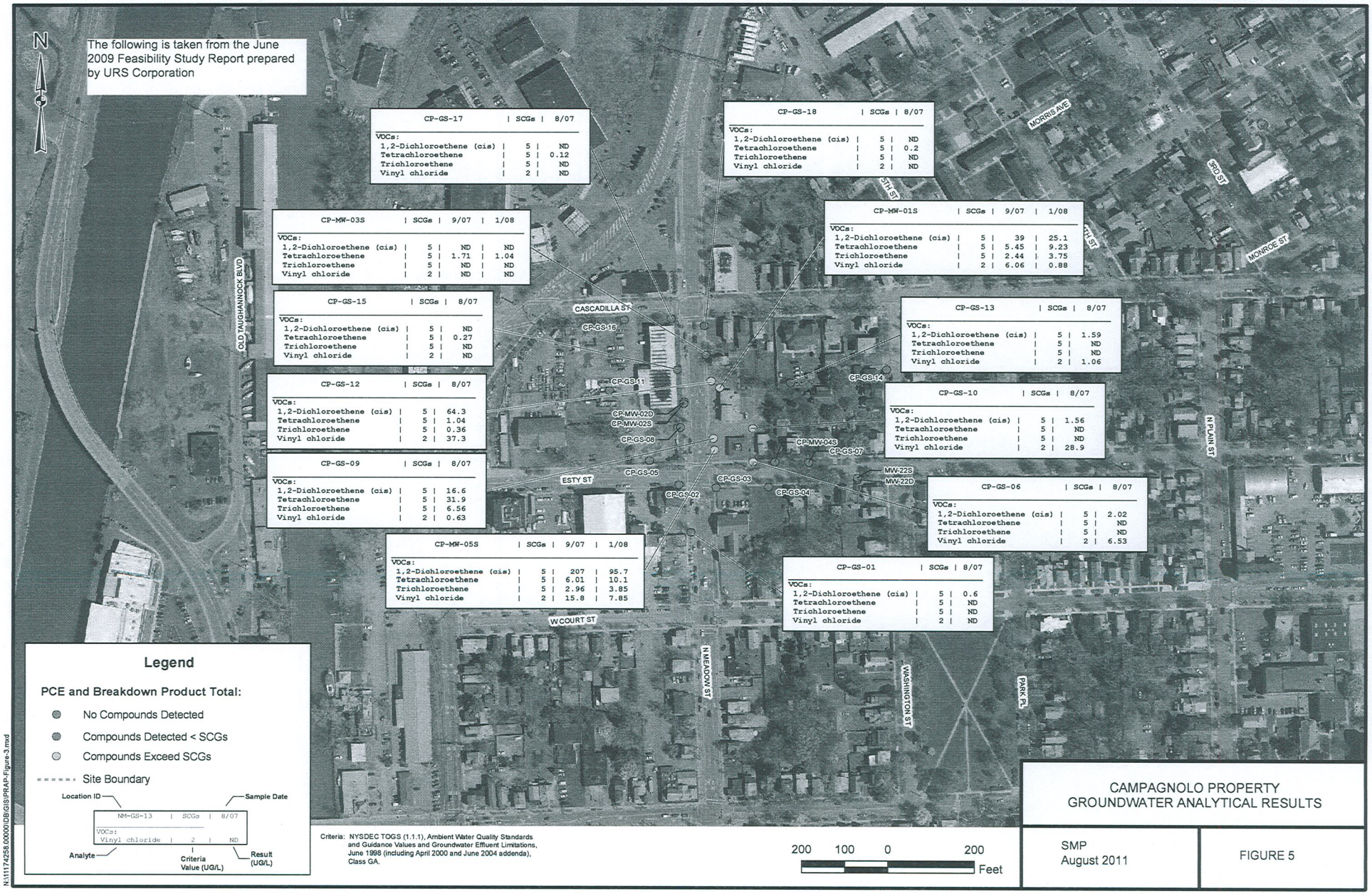
SMP August 2011	CAMPAGNOLO PROPERTY SITE REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS EXCEEDING SOIL CRITERIA	FIGURE 4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The following is taken from the June 2009 Feasibility Study Report prepared by URS Corporation
CP-GS-17 | SCGs | 8/07
VOCs:
1,2-Dichloroethene (cis) | 5 | ND
Tetrachloroethene | 5 | 0.12
Trichloroethene | 5 | ND
Vinyl chloride | 2 | ND
CP-GS-18 | SCGs | 8/07
VOCs:
1,2-Dichloroethene (cis) | 5 | ND
Tetrachloroethene | 5 | 0.2
Trichloroethene | 5 | ND
Vinyl chloride | 2 | ND
CP-MW-03S | SCGs | 9/07 | 1/08
VOCs:
1,2-Dichloroethene (cis) | 5 | ND | ND
Tetrachloroethene | 5 | 1.71 | 1.04
Trichloroethene | 5 | ND | ND
Vinyl chloride | 2 | ND | ND
CP-MW-01S | SCGs | 9/07 | 1/08
VOCs:
1,2-Dichloroethene (cis) | 5 | 39 | 25.1
Tetrachloroethene | 5 | 5.45 | 9.23
Trichloroethene | 5 | 2.44 | 3.75
Vinyl chloride | 2 | 6.06 | 0.88
CP-GS-15 | SCGs | 8/07
VOCs:
1,2-Dichloroethene (cis) | 5 | ND
Tetrachloroethene | 5 | 0.27
Trichloroethene | 5 | ND
Vinyl chloride | 2 | ND
CP-GS-13 | SCGs | 8/07
VOCs:
1,2-Dichloroethene (cis) | 5 | 1.59
Tetrachloroethene | 5 | ND
Trichloroethene | 5 | ND
Vinyl chloride | 2 | 1.06
CP-GS-12 | SCGs | 8/07
VOCs:
1,2-Dichloroethene (cis) | 5 | 64.3
Tetrachloroethene | 5 | 1.04
Trichloroethene | 5 | 0.36
Vinyl chloride | 2 | 37.3
CP-GS-10 | SCGs | 8/07
VOCs:
1,2-Dichloroethene (cis) | 5 | 1.56
Tetrachloroethene | 5 | ND
Trichloroethene | 5 | ND
Vinyl chloride | 2 | 28.9
CP-GS-09 | SCGs | 8/07
VOCs:
1,2-Dichloroethene (cis) | 5 | 16.6
Tetrachloroethene | 5 | 31.9
Trichloroethene | 5 | 6.56
Vinyl chloride | 2 | 0.63
CP-GS-06 | SCGs | 8/07
VOCs:
1,2-Dichloroethene (cis) | 5 | 2.02
Tetrachloroethene | 5 | ND
Trichloroethene | 5 | ND
Vinyl chloride | 2 | 6.53
CP-MW-05S | SCGs | 9/07 | 1/08
VOCs:
1,2-Dichloroethene (cis) | 5 | 207 | 95.7
Tetrachloroethene | 5 | 6.01 | 10.1
Trichloroethene | 5 | 2.96 | 3.85
Vinyl chloride | 2 | 15.8 | 7.85
CP-GS-01 | SCGs | 8/07
VOCs:
1,2-Dichloroethene (cis) | 5 | 0.6
Tetrachloroethene | 5 | ND
Trichloroethene | 5 | ND
Vinyl chloride | 2 | ND
MORRIS AVE
3RD ST
5TH ST
6TH ST
MONROE ST
OLD TAUGHANNOCK BLVD
CASCADILLA ST
CP-GS-16
CP-GS-11
CP-GS-14
CP-MW-02D
CP-MW-02S
CP-GS-08
CP-MW-04S
CP-GS-07
CP-GS-05
CP-GS-03
CP-GS-02
CP-GS-04
MW-22S
MW-22D
ESTY ST
N PLAIN ST
W COURT ST
N MEADOW ST
WASHINGTON ST
PARK PL
Legend
PCE and Breakdown Product Total:
No Compounds Detected
Compounds Detected < SCGs
Compounds Exceed SCGs
Site Boundary
Location ID
Sample Date
NM-GS-13 | SCGs | 8/07
VOCs:
Vinyl chloride | 2 | ND
Analyte
Criteria Value (UG/L)
Result (UG/L)
Criteria: NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 (including April 2000 and June 2004 addenda), Class GA.
200 100 0 200
Feet
CAMPAGNOLO PROPERTY
GROUNDWATER ANALYTICAL RESULTS
SMP
August 2011
FIGURE 5
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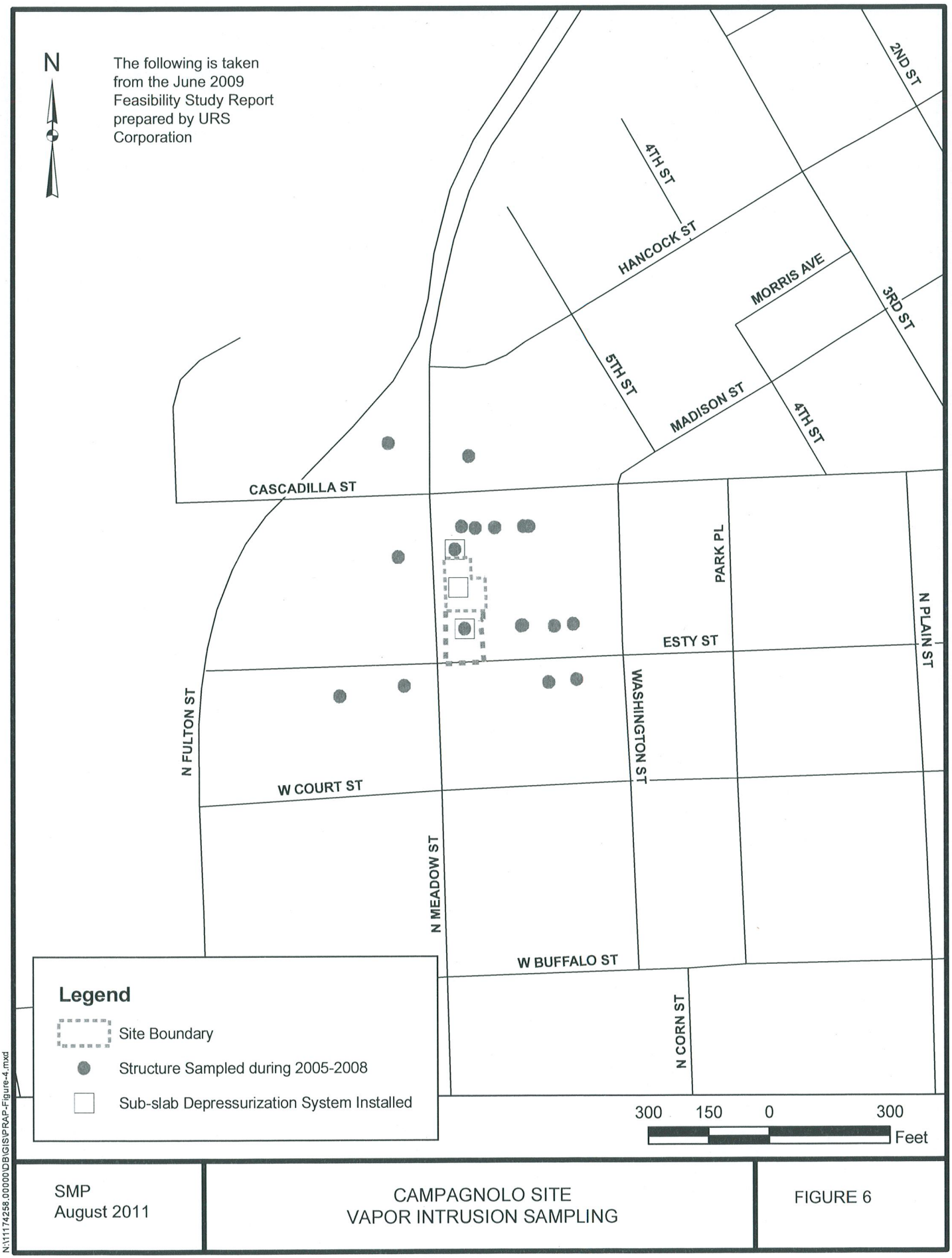

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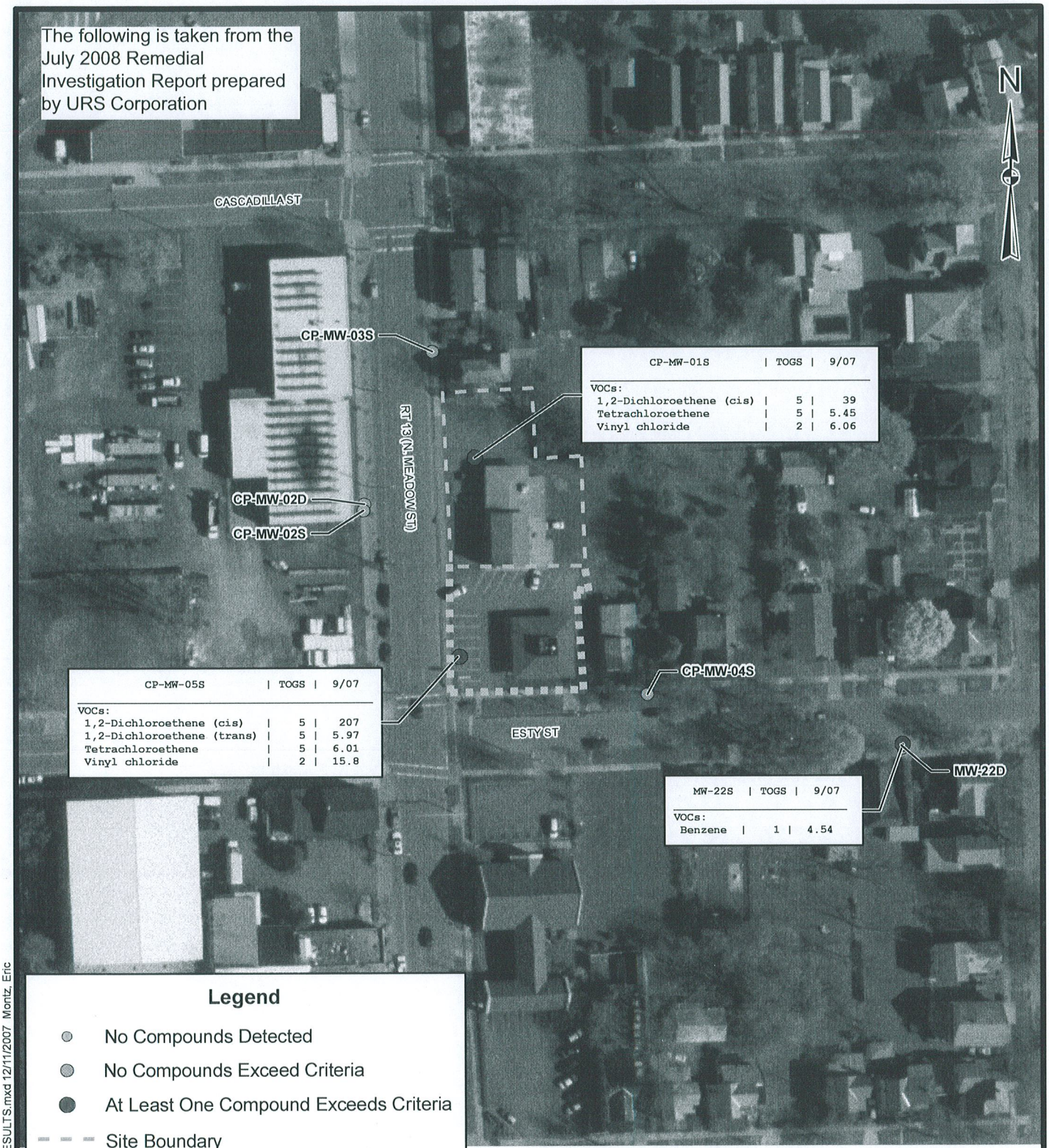
SMP August 2011	CAMPAGNOLO SITE VAPOR INTRUSION SAMPLING	FIGURE 6



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SMP September 2011	CAMPAGNOLO PROPERTY SITE REMEDIAL INVESTIGATION GROUNDWATER MONITORING WELL ANALYTICAL RESULTS (AUGUST 2007 - SEPTEMBER 2007)	Figure 7

Figure 8 - The following is taken from the July 2008 Remedial Investigation Report prepared by URS Corporation

TEST BORING LOG

BORING NO. : CP-MW-01S

PROJECT/PROJECT LOCATION:	NYSDEC - Campagnolo Property
CLIENT:	NYSDEC
BORING CONTRACTOR:	Nothnagle Drilling
SHEET:	1 OF 1
JOB NO. :	11175061.00000
NORTHING:	890380.6006 **EASTING:** 840439.3297
GROUND ELEVATION:	386.61
DATE STARTED:	8/30/07
DATE FINISHED:	8/30/07
DRILLER:	Kevin Busch
GEOLOGIST:	R. Murphy
REVIEWED BY:	Tim Brunein

GROUNDWATER:

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	CORE	TUBE
TYPE	HSA	Split Spoon		
DIA.	4 1/4"	2"		
WT.		140 lbs.		
FALL		30"		

* POCKET PENETROMETER READING

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-2	NA/4/3/1	75	ND/ND	Asphalt FILL. Brown silty sand, some gravel, dry.		8" Flushmount Casing
		2-4	1/2/2/2	95	ND/ND	FILL. Dark gray silt, some clay, ash, cinder, coal, gravel, moist.		Bentonite: 3.5'-1'
-5		4-6	3/2/2/2	75	ND/ND	ML. Gray brown CLAYEY SILT, moist. -siltier with trace to some fine sand and very moist 5-6'.		2" Sch. 40 PVC Riser: 5'-0'
		6-8	3/2/3/2	100	ND/ND	CL. Gray SILTY CLAY, moist. -siltier and very moist 7.5-8.0'		#00N (Ricci Bros.) Sand: 12'-3.5'
-10		8-10	woh/woh/ 2/3	90	ND/ND	ML. Gray CLAYEY SILT, some very fine sand, very moist. CL. Gray SILTY CLAY, moist.		
		10-12	woh/woh/ 2/2	90	ND/ND	SM. Gray silty very fine SAND, dilatent, little water. CL. Gray SILTY CLAY, moist.		10 slot, 2" Sch. 40 PVC Screen: 12'-5'
		12-14	woh/woh/ woh/woh	90	ND/ND	-peat layers at 13' and 13.5'.		
-15						End of boring at 14'. Augered to 12', sampled to 14', .		
-20								
-25								

COMMENTS: Boring was advanced with a BK-81 HD Rig.

Collected soil sample CP-MW-01S-4-6' and submitted for laboratory analysis of TCL VOCs.

BORING NO. : CP-MW-01S

URS Corporation

TEST BORING LOG

PROJECT/PROJECT LOCATION: NYSDEC - Campagnolo Property	BORING NO. : CP-MW-03S
CLIENT: NYSDEC	SHEET: 1 OF 1
BORING CONTRACTOR: Nothnagle Drilling	JOB NO. : 11175061.00000
	NORTHING: 890458.4499 EASTING: 840407.7069

GROUNDWATER:					CAS.	SAMPLER	CORE	TUBE
DATE	TIME	LEVEL	TYPE	TYPE	HSA	Split Spoon		
				DIA.	4 1/4"	2"		
				WT.		140 lbs.		
				FALL		30"		
				* POCKET PENETROMETER READING				

GROUND ELEVATION:	386.24
DATE STARTED:	8/30/07
DATE FINISHED:	8/30/07
DRILLER:	Kevin Busch
GEOLOGIST:	R. Murphy
REVIEWED BY:	Tim Bruce

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-2	NA/5/8/10	60	ND/ND	Concrete FILL. Brown to gray brown, medium to coarse sand, some fine to coarse gravel, cobble at 3', damp.		8" Flushmount Casing Bentonite: 3.5'-1'
		2-4	10/12/5/5	50	ND/ND	ML. Dark gray CLAYEY SILT, moist.		2" Sch. 40 PVC Riser: 5'-0'
-5		4-6	3/1/2/2	60	ND/ND	SP. Brown medium to coarse SAND, trace fine gravel, very moist. CL. Brown SILTY CLAY, moist.		#00N (Ricci Bros.) Sand: 10'-3.5'
		6-8	2/3/3/3	100	ND/ND	-more silt, trace fine sand, and very moist zones from 6.3-6.4' and 6.7-6.8'.		10 slot, 2" Sch. 40 PVC Screen: 10'-5'
-10		8-10	2/2/2/2	100	ND/ND	-becomes gray brown from 8-9'. -siltier, very moist zone at 9'. -becomes gray from 9-10', with trace organics (decayed wood).		
						End of boring at 10'.		
-15								
-20								
-25								

COMMENTS: Boring was advanced with a BK-81 HD Rig.

Collected soil sample CP-MW-03S-4-6' and submitted for laboratory analysis of TCL VOCs.

BORING NO. : CP-MW-03S

URS Corporation

TEST BORING LOG

PROJECT/PROJECT LOCATION: NYSDEC - Campagnolo Property	BORING NO. : CP-MW-05S
CLIENT: NYSDEC	SHEET: 1 OF 1
BORING CONTRACTOR: Nothnagle Drilling	JOB NO. : 11175061.00000
GROUNDWATER:	NORTHING: 890234.7132 EASTING: 840427.7214

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE
				DIA.	4 1/4"	2"		
				WT.		140 lbs.		
				FALL		30"		
				* POCKET PENETROMETER READING				

GROUND ELEVATION:	385.77
DATE STARTED:	8/31/07
DATE FINISHED:	8/31/07
DRILLER:	Kevin Busch
GEOLOGIST:	R. Murphy
REVIEWED BY:	Tim Bonnie

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-2	NA/3/3/3	50	ND/ND	Asphalt and gravel subbase. FILL. Brown clayey silt, some gravel, moist.		8" Flushmount Casing Bentonite: 3.5'-1'
		2-4	2/2/4/5	50	ND/ND	FILL. Brown medium to coarse sand, moist. ML. Brown CLAYEY SILT, moist. CL. Brown SILTY CLAY, moist.		2" Sch. 40 PVC Riser: 5'-0'
-5		4-6	3/2/3/3	70	ND/ND	-Gray brown 4-7'.		#00N (Ricci Bros.) Sand: 10'-3.5'
		6-8	3/3/3/3	100	ND/ND	ML Gray brown SILT, some fine sand, trace organics (roots), wet.		10 slot, 2" Sch. 40 PVC Screen: 10'-5'
-10		8-10	woh/2/ 3/3	100	ND/ND	CL. Gray SILTY CLAY, moist. -organic (decayed wood) layer at 9.7'. End of boring at 10'.		
-15								
-20								
-25								

COMMENTS: Boring was advanced with a BK-81 HD Rig.

Collected soil sample CP-MW-05S-6-7' and submitted for laboratory analysis of TCL VOCs.

BORING NO. : **CP-MW-05S**

The following is taken from the July 2008 Remedial Investigation Report prepared by URS Corporation

Figure 9

GROUNDWATER SAMPLE ANALYTICAL RESULTS
CAMPAGNOLO PROPERTY REMEDIAL INVESTIGATION

Location ID			CP-MW-01S	CP-MW-02D	CP-MW-02D	CP-MW-02S	CP-MW-02S
Sample ID			CP-MW-01S	CP-MW-02D	CP-MW-02D	CP-MW-02S	CP-MW-02S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/16/08	09/18/07	01/17/08	09/18/07	01/17/08
Parameter	**Units**	*					
Volatile Organic Compounds							
1,1-Dichloroethene	UG/L	5					
1,2-Dichloroethene (cis)	UG/L	5	25.1				
1,2-Dichloroethene (trans)	UG/L	5					
1,4-Dichlorobenzene	UG/L	3					
Acetone	UG/L	50		2.01 J		3.74 J	
Benzene	UG/L	1					
Carbon disulfide	UG/L	60		0.26 J		1.08	
Chlorobenzene	UG/L	5					
Cyclohexane	UG/L	-					
Dichlorodifluoromethane	UG/L	5					
Ethylbenzene	UG/L	5					
Isopropylbenzene (Cumene)	UG/L	5					
Methyl ethyl ketone (2-Butanone)	UG/L	50					
Methyl tert-butyl ether	UG/L	10					
Methylcyclohexane	UG/L	-					
Methylene chloride	UG/L	5					
Tetrachloroethene	UG/L	5	9.23				
Toluene	UG/L	5					
Trichloroethene	UG/L	5	3.75				
Vinyl chloride	UG/L	2	0.88 J				
Xylene (total)	UG/L	5					

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 (including April 2000 and June 2004 addenda), Class GA.

Flags assigned during chemistry validation are shown.

(oval) Concentration Exceeds

UG/L - Micrograms per liter.

J - The reported concentration is an estimated value.

Only Detected Results Reported.

Figure 9

GROUNDWATER SAMPLE ANALYTICAL RESULTS
CAMPAGNOLO PROPERTY REMEDIAL INVESTIGATION

Location ID			CP-MW-03S	CP-MW-03S	CP-MW-04S	CP-MW-04S	CP-MW-04S
Sample ID			CP-MW-03S	CP-MW-03S	CP-MW-04S	CP-MW-04S DUP	CP-MW-04S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			09/19/07	01/16/08	09/19/07	09/19/07	01/16/08
Parameter	Units	*				Field Duplicate (1-1)	
Volatile Organic Compounds							
1,1-Dichloroethene	UG/L	5					
1,2-Dichloroethene (cis)	UG/L	5					
1,2-Dichloroethene (trans)	UG/L	5					
1,4-Dichlorobenzene	UG/L	3				0.19 J	
Acetone	UG/L	50	3.73 J		2.28 J	2.24 J	
Benzene	UG/L	1					
Carbon disulfide	UG/L	60	0.19 J		0.62	0.77	
Chlorobenzene	UG/L	5					
Cyclohexane	UG/L	-					
Dichlorodifluoromethane	UG/L	5					
Ethylbenzene	UG/L	5					
Isopropylbenzene (Cumene)	UG/L	5					
Methyl ethyl ketone (2-Butanone)	UG/L	50					
Methyl tert-butyl ether	UG/L	10					
Methylcyclohexane	UG/L	-					
Methylene chloride	UG/L	5					
Tetrachloroethene	UG/L	5	1.71	1.04			
Toluene	UG/L	5	0.22 J		0.20 J	0.21 J	
Trichloroethene	UG/L	5					
Vinyl chloride	UG/L	2					
Xylene (total)	UG/L	5	0.12 J		0.15 J	0.15 J	

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 (including April 2000 and June 2004 addenda), Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds

UG/L - Micrograms per liter.

J - The reported concentration is an estimated value.

Only Detected Results Reported.

Figure 9

GROUNDWATER SAMPLE ANALYTICAL RESULTS
CAMPAGNOLO PROPERTY REMEDIAL INVESTIGATION

Location ID			CP-MW-04S	CP-MW-05S	CP-MW-05S	MW-22D	MW-22D
Sample ID			CP-MW-04S DUP	CP-MW-05S	CP-MW-05S	MW-22D	MW-22D
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			01/16/08	09/19/07	01/16/08	09/17/07	01/17/08
Parameter	Units	*	Field Duplicate (1-1)				
Volatile Organic Compounds							
1,1-Dichloroethene	UG/L	5		0.36 J			
1,2-Dichloroethene (cis)	UG/L	5		207 D	95.7		
1,2-Dichloroethene (trans)	UG/L	5		5.97	2.30 J		
1,4-Dichlorobenzene	UG/L	3		0.15 J			
Acetone	UG/L	50		3.44 J			
Benzene	UG/L	1					
Carbon disulfide	UG/L	60					
Chlorobenzene	UG/L	5					
Cyclohexane	UG/L	-					
Dichlorodifluoromethane	UG/L	5					
Ethylbenzene	UG/L	5					
Isopropylbenzene (Cumene)	UG/L	5					
Methyl ethyl ketone (2-Butanone)	UG/L	50					
Methyl tert-butyl ether	UG/L	10					
Methylcyclohexane	UG/L	-					
Methylene chloride	UG/L	5					
Tetrachloroethene	UG/L	5		6.01	10.1		
Toluene	UG/L	5		0.16 J			
Trichloroethene	UG/L	5		2.96	3.85		
Vinyl chloride	UG/L	2		15.8	7.85		
Xylene (total)	UG/L	5					

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 (including April 2000 and June 2004 addenda), Class GA.

Flags assigned during chemistry validation are shown.

(oval) Concentration Exceeds

UG/L - Micrograms per liter.

J - The reported concentration is an estimated value.

Only Detected Results Reported.

APPENDIX A

EXCAVATION MANAGEMENT PLAN

APPENDIX A – EXCAVATION WORK PLAN

A-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the Department. Currently, this notification will be made to:

Harry Warner, P.E.

Regional Hazardous Waste Remediation Engineer

NYS Department of Environmental Conservation
Division of Environmental Remediation
615 Erie Blvd W.
Syracuse, NY 13204

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed in areas of remaining contamination, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control,
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work,
- A summary of the applicable components of this EWP,
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120,
- A copy of the contractor's health and safety plan, in electronic format, if it differs from the HASP provided in Appendix B of this document,
- Identification of disposal facilities for potential waste streams,

- Identification of sources of any anticipated backfill, along with all required chemical testing results.

As detailed in the ROD and within this SMP, areas at this site that may have remaining contamination include: soils beneath the building on the parcel identified as SBL No. 51-1-18.1 on the Tompkins County Tax Map; and materials saturated with contaminated groundwater.

A-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

A-3 STOCKPILE METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC.

A-4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

A-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

All trucks loaded with site materials will exit the vicinity of the site using only approved truck routes. Approved truck routes will take into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport; [(g) community input [where necessary]]

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Any off-site queuing must be approved by the Department.

A-6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

A-7 MATERIALS REUSE ON-SITE

Chemical criteria for on-site reuse of material will be approved by NYSDEC. The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

A-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

A-9 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards will be identified. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

A-10 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the periodic reports prepared pursuant to Section 5 of the SMP.

A-11 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved though the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

2. The recommended technique for manual lifting/lowering involves five maneuvers:
   a. Get a firm footing. Keep your feet apart for a stable base. Put one foot slightly in front of the other.
   b. Bend your knees. Do not bend at the waist. When grasping the object, a firm grip should be obtained before lifting/lowering.
   c. Lift/lower with your legs. Lift/lower the load slowly and in a straight line, avoiding sudden movements.
   d. Keep the load close to the body. Generally, the closer the load is to the body, the less force it exerts on your back.
   e. Keep your back straight. Do not add the weight of your body to the load. Avoid twisting.
3. When a turn or change of direction is necessary, the object should be lifted or lowered into a carrying position, then the whole body should be turned with the feet, avoiding any trunk twisting motion.
4. Objects to be lifted to shoulder height should first be lifted to waist height, then rested on a level surface so the grasping position can be changed prior to lifting to a higher level.
5. Employees should never lift a load above their head.

D. Carrying/Holding Guidelines

1. Manual carrying is an inefficient way of transporting materials in the work place. Where possible, reduce or eliminate manual carrying tasks.
2. Employees should never carry a load above their head.
3. Carry an object close to the body using both hands. One-handed carries are awkward and tend to unbalance the employee.
4. Do not carry objects that are so large they will obstruct visibility.
5. Grips on an object should not be changed while carrying or holding an object. Rest the object on a secure surface prior to changing grip.
6. Avoid two person carries where possible. If an object is of a size, shape, or mass that it requires two people to carry, use two people of similar size and physique. Perform lifting of the item in unison.
7. Avoid carrying objects on stairs, particularly where the line of sight may be obstructed or the object can interfere with leg movement.

E. Pushing/Pulling Guidelines

1. Check the condition of the floor, ground, or other surface prior to pushing or pulling an object across it.
2. Be aware of the "break out" force of the object - the force at which a push or pull overcomes the frictional force between the surface and object. Adjust posture to avoid losing balance when this point is reached.
3. Get assistance when moving or guiding a large load.
4. Where possible, always push rather than pull a load.

F. Workplace Design

1. Store heavy or bulky materials at heights between the knee and shoulder to avoid the need to stretch or bend.
2. Pack or arrange items to be lifted to avoid shifting of weight in the package.
3. Design work areas to avoid the need to lift, carry, push, or pull heavy or bulky materials for extended distances.
4. Design workplaces with the following in mind.
   a. Lifts from the floor should be avoided.
   b. The torso should never twist while handling loads.
   c. Asymmetrical or unbalanced one-handed lifts should be avoided.
   d. Loads should not be lifted with sudden movements.
   e. Loads should not be lifted over obstacles.
   f. Loads should not be lifted at extended reaches.
   g. Uncomfortable postures should not be necessary throughout the work cycle.
   h. Environmental factors (e.g., task lighting, dry work surfaces, heat stress) should be considered.

G. Training

1. Require that personnel who may have MMH as part of their duties receive training that includes the following topics:
   a. Showing personnel how to avoid unnecessary physical stress and strain during MMH operations.

b. Teaching personnel to become aware of what they can comfortably handle without undue strain.

c. Instructing personnel on the proper use of equipment.

d. Teaching personnel to recognize potential hazards and how to prevent or correct them.

2. This training must be completed prior to an employee being assigned to a task that involves MMH activities.

5. Documentation Summary

Training rosters or other proof of completion of MMH training will be filed in the Health and Safety File.

6. Resources

A. Recommended Weight Limit Calculations (RWL) – Attachment 69-1

B. Work Practices Guide for Manual Lifting, NIOSH
http://www.cdc.gov/niosh

C. Canadian Centre for Occupational Health and Safety
http://www.ccosha.ca/oshaanswers/ergonomics/mmh/

D. Oregon OSHA "Ergonomics of Manual Materials Handling"
http://www.cbs.state.or.us/external/osha/pdf/workshops/206w.pdf

E. North Carolina Department of Labor "A Guide to Manual Materials Handling and Back Safety
http://www.nclabor.com/osha/etta/indguide/ig26.pdf

F. European Agency for Safety and Health at Work
http://uk.osha.eu.int/good_practice/msd.stm

APPENDIX C

FIELD ACTIVITY FORMS

SAFETY COMPLIANCE AGREEMENT, BRIEFING FORM,
AIR MONITORING LOG, AND CALIBRATION CHECK SHEET
FOR Campagnolo PROPERTY

I have read the Health and Safety Plan for the project and I understand it, and agree to comply with all of its provisions. I understand that I could be prohibited from working on the project for violating any of the health and safety requirements specified in the Plan.

	Name	**Signature**
URS Site Manager		
Site Health & Safety Officer		
Site Personnel		

SAFETY ISSUES

	DISCUSSED	
	Yes	No
Protective Clothing/Equipment	___	___
Chemical and Physical Hazards	___	___
Control Methods	___	___
Air Monitoring Action Levels and Requirements	___	___
Nearest Phone	___	___
Hospital Name/Address/Directions	___	___

Meeting conducted by: _____ Date: _____

Attendees' Names (print) **Signatures**

_____

_____

_____

_____

DAILY INSTRUMENT CALIBRATION CHECK SHEET

DATE	INSTRUMENT	BATTERY CHECK OK?	ZERO ADJUST OK?	CALIBRATION GAS (PPM)	READING (PPM)	CALIBRATED BY

FIELD MONITORING ACTIVITY LOG

DATE	ACTIVITY MONITORED	TIME	LOCATION	READING	ACTION	READING BY

APPENDIX D

STANDARD OPERATING SAFETY PROCEDURES

APPENDIX D
TABLE 1
PERSONAL SAFETY RULES

_ Visual contact must be maintained between crewmembers on site.

_ Any practice that increases the probability of hand-to-mouth transfer and ingestion of materials is prohibited in any area designated as contaminated. These practices include as a minimum, eating, drinking, chewing gum or tobacco, and smoking.

_ Hands and face must be thoroughly washed upon leaving the work area, and before engaging in any other activities, especially eating or drinking.

_ Due to interference of facial hair with the mask-to-face seal on air-purifying respirators, personnel working on site will not be permitted to wear facial hair that interferes with the seal.

_ Contact with contaminated surfaces or surfaces suspected of contamination should be avoided. Site personnel should avoid walking through puddles, mud, or other discolored areas, and should not kneel or sit on the ground.

_ Field personnel shall be familiar with the physical characteristics of the site, including:

- wind direction in relation to the working area
- accessibility to associates, equipment, and vehicles
- communications
- work zones
- site access

_ Medicine and alcohol can exacerbate the effect from exposure to toxic chemicals. Field personnel should not take prescribed drugs where the potential for absorption, inhalation, or ingestion of toxic substances exists unless specifically approved by a qualified physician. Alcoholic beverage and controlled substance intake is strictly forbidden during onsite operations.

APPENDIX D

TABLE 2

OPERATIONAL SAFETY RULES

- No visitors shall be allowed into any Exclusion Zone without the permission of the NYSDEC.

- Onsite personnel must use the buddy system when wearing respiratory protective equipment. A third person, suitably equipped, is required as a safety backup during initial site entries.

- During day-to-day operations, onsite workers will act as a safety backup to each other. Offsite personnel will provide emergency assistance.

- Wind indicators will be set up so as to be visible from the Exclusion Zone.

- Daily briefings will be held to review site hazards, changes in level of personal protection required, special safety precautions for assigned work activities, and emergency response.

- All personnel going on site must be thoroughly briefed on anticipated hazards, and trained on equipment to be worn, safety procedures, emergency procedures, and communications.

APPENDIX C

MONITORING WELL DEVELOPMENT LOGS

WELL DEVELOPMENT LOG

URS Corporation

PROJECT TITLE: Campagnolo Property - Remedial Investigatior WELL NO.: CP-MW-01S

PROJECT NO.: 11175061.00000

STAFF: R. Murphy

DATE(S): 9/4/2007

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	11.44	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	7.23	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	4.21	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.72	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=	-	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	4.5	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)											
PARAMETERS	Initial	0.5	1.0	1.5	3.0	3.5	4.0	4.5				
pH	5.97	5.25	5.2	5.28	6.05	6.02	5.77	5.94				
SPEC. COND. (uS/cm)	710	750	770	780	770	680	720	690				
APPEARANCE	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy	cloudy				
TEMPERATURE (°F)	70.0	69.1	68.4	67.9	67.0	66.5	65.6	67.0				
TURBIDITY (NTUs)	57	139	418	>1000	>1000	109	188	40				
					Dry							

COMMENTS: Purged to dryness (3 gallons) using a check valve and tubing.
Returned later same day and pumped dry again using peristaltic pump.

WELL DEVELOPMENT LOG

URS Corporation

PROJECT TITLE: Campagnolo Property - Remedial Investigatior WELL NO.: CP-MW-03S

PROJECT NO.: 11175061.00000

STAFF: R. Murphy

DATE(S): 9/4/2007 and 9/10/2007

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	9.35	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	9.13	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	0.22	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.04	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=	-	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	0.1	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)											
PARAMETERS	Initial	0.1										
pH	5.49	5.69										
SPEC. COND. (uS/cm)	950	840										
APPEARANCE	clear	clear										
TEMPERATURE (°F)	70.0	69.0										
TURBIDITY (NTUs)	16	42										

COMMENTS: Pumped dry using a peristaltic pump and tubing.
6 ounces removed on 9/4/2007
8 ounces removed on 9/10/2007

WELL DEVELOPMENT LOG

URS Corporation

PROJECT TITLE: Campagnolo Property - Remedial Investigatior WELL NO.: CP-MW-05S

PROJECT NO.: 11175061.00000

STAFF: R. Murphy

DATE(S): 9/4/2007 and 9/10/2007

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	9.20	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	7.15	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	2.05	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.35	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=	-	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	3	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)											
PARAMETERS	Initial	0.5	0.75	1.0	1.3	1.50	2.0	3.0				
pH	3.98	5.45	6.02	6.05	5.83	5.28	5.46	5.8				
SPEC. COND. (uS/cm)	Over Range	Over Range	Over Range	Over Range	Over Range	Over Range	Over Range	Over Range				
APPEARANCE	cloudy	cloudy	clear	clear	clear	clear	clear	clear				
TEMPERATURE (°F)	70.0	68.5	69.0	69.2	71.0	69.6	69.9	68.8				
TURBIDITY (NTUs)	159	38	13	10	6	22	17	7				

COMMENTS: 9/4/2007 - Pumped dry after removing 0.75 gallons using check valve and tubing. Cycled peristaltic pump until 1.0 gallons removed.

9/10/2007 - Cycled pump until 3.0 total gallons removed.

APPENDIX D

GROUNDWATER MONITORING WELL SAMPLING LOG FORM

WELL MONITORING DATA SHEET
Hazard Evaluations, Inc.

Date: Job # Well #:

Site Name: Spill/Site #:

Crew:

Measured Well Depth: Well Elevation: Reference Point:

Measured Initial Phase Level: Initial Water Level:

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method (circle): Bailer Submersible Pump Other Pump Other

Initial Water Quality Observation:

Final Water Quality Observation:

Volume Calculation: DTB – DTW * 0.163 = 1- well volume

Sample Record

Date: Time:

Crew:

Method: Volume:

Sample ID: Chain of Custody #:

Water Quality Observation:

pH: Temperature:

Analyses:

Comments:

Volume Calculator	
Well Diameter	Multiply By
1”	0.041
2”	0.163
3”	0.367
4”	0.653
5”	1.468
6”	2.61

APPENDIX E

FIELD SAMPLING PLAN

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

FIELD SAMPLING PLAN

WORK ASSIGNMENT D004433-17

CAMPAGNOLO PROPERTY
CITY OF ITHACA (C)

SITE NO. 7-55-013
TOMPKINS COUNTY, NY

Prepared for:
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York

DIVISION OF ENVIRONMENTAL REMEDIATION

URS Corporation
77 Goodell Street
Buffalo, New York 14203

G3799E

March 2007

FIELD SAMPLING PLAN
FOR THE
CAMPAGNOLO PROPERTY REMEDIAL INVESTIGATION
ITHACA, NEW YORK

Prepared For

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
WORK ASSIGNMENT D004433-17

Prepared By

URS CORPORATION
77 GOODELL STREET
BUFFALO, NEW YORK 14203

MARCH 2007

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FIELD SAMPLING PLAN

FIGURES

(Following Text)

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1.0 INTRODUCTION

This Field Sampling Plan (FSP) is designed to provide detailed step-by-step procedures for the field activities proposed for the Remedial Investigation of the Campagnolo Property. This FSP will serve as the field procedures manual to be strictly followed by all URS Corporation (URS) personnel. Adherence to these procedures will ensure the quality and defensibility of the field data collected. This FSP must be used in conjunction with the Health and Safety Plan (HASP), and Quality Assurance Project Plan (QAPP) (URS, March 2007).

The objective of the investigation is to define the nature and extent of contamination resulting from historic activities at the Campagnolo Property. A detailed discussion of these plans is provided in the February 2007 Project Management Work Plan (PMWP). Detailed field procedures for these programs are provided in this FSP.

1.1 Site Description

The Campagnolo Property Site is located near the intersection of North Meadow Street and Esty Street in Ithaca, NY (Tompkins County), Figure 1. The site is in an area of mixed commercial and residential land use. A building occupies a portion of the site, the rest of which is open and predominantly covered by concrete/asphalt parking areas and sidewalks. The Campagnolo property was used for a dry cleaning service from the late 1960s through 1977. An approximately 18 pound dry cleaning machine was located in the building, and an aboveground solvent tank was formerly located outside and on the west side of the original building. This area has been covered by an addition to the structure.

1.2 Site Investigation History

A subsurface investigation performed by Buck Engineering, L.L.C., in November 2001, identified chlorinated solvents in the groundwater samples collected using direct-push sampling equipment at six locations on the Campagnolo Property.

In March and April 2002 the RETEC Group, Inc. reportedly collected a sub slab soil gas sample, two indoor air samples and an outdoor air sample for analysis of VOCs. Based on results from these samples a sub-slab depressurization system was reportedly installed in the dry cleaner building in early 2003.

On behalf of NYSDEC, URS Corporation (URS) conducted an investigation in July-August 2005 to assess soil vapor, indoor air, sub-slab vapor, and outdoor air at the site and in five neighboring residences and one restaurant near the site. Results were presented in a Field Investigation Letter Report dated September 2005. Results indicated that chlorinated solvents were present in the soil vapor samples west of the site. Chlorinated solvents included tetrachloroethene, tricholorethene, and their daughter compounds, as well as other chlorinated solvents. Sub-slab vapor, basement air, and air in living areas also reported chlorinated solvents. The highest reported concentration of tetrachloroethene was in a basement sub-slab sample collected south of the site at 53,000 ug/m^3. Based upon these results, the NYSDEC and NYSDOH installed mitigation systems in two residences.

Based upon the results of the July-August 2005 testing, NYSDEC elected to perform additional structure sampling in the site vicinity. On behalf of NYSDEC, URS conducted the additional investigations in March-April 2006 and presented the results in a Field Investigation Letter Report dated July 2006. First, structures that were sampled in summer 2005 (except for those which were mitigated) had to be re-sampled during the heating season months to measure indoor air VOC concentrations under conditions when VOCs are most likely to accumulate within the building. Secondly, NYSDEC and the New York State Department of Health (NYSDOH) selected additional structures located one or two structures beyond the initial "inner ring" of houses originally sampled because they were within two lots of the site. Four of the six structures sampled in 2005 were re-sampled as part of this investigation. The other two structures sampled in 2005 were not re-sampled as they had received sub-slab depressurization systems as a result of the 2005 sampling (typically, mitigated structures are not re-sampled). In addition to these four structures, seven structures were sampled for the first time. An additional seven structures were pursued but were not sampled either because the owner declined or did not respond to sampling requests. Results indicated that chlorinated solvents were present in the sub-slab vapor, basement air, and air in living areas. The highest reported concentrations of chlorinated solvents were detected in basement sub-slab samples

collected south and west of the site. In addition, chlorinated fluorocarbons (CFCs) were detected in basement sub-slab, basement air, and air in living areas in most samples collected. Soil and groundwater samples were not collected or analyzed.

2.0 ENVIRONMENTAL SAMPLING

Twenty Geoprobe soil borings and ten groundwater monitoring wells are proposed as part of the Remedial Investigation. Proposed locations are presented and Figures 2 and 3, respectively.

2.1 Mobilization

Staging

An equipment lay-down area will be established on-site. Contractor equipment, a decontamination area, drums and other pertinent equipment will be staged for later use. The decontamination area will be large enough to allow equipment and materials to be cleaned, as well as the staging of drums of contaminated material. Drums of decontamination fluids and investigation-derived wastes (IDW) will be stored in the decontamination area, pending disposition as approved by the NYSDEC. At the end of each working day, all items will be removed from the decontamination area and moved to the staging area.

2.2 Utility Clearance

All proposed soil borings and groundwater monitoring well locations will be identified and marked with paint or flagging prior to installation. The Drilling Subcontractor will clear public utilities in areas designated for intrusive activities. This includes, but is not limited to, contacting the Dig-Safe number (800-962-7962) for New York State.

Vehicle access routes to drilling and boring locations shall be determined and cleared by the URS field representative prior to any field activities.

2.3 Direct Push Soil Investigation

A direct push drilling system (GeoProbe® 5400 drilling rig (or equivalent) will be used to complete the 20 soil borings. Soil borings will be advanced and overburden soil samples will be obtained continuously to the clay confining layer to verify the geologic profile. One soil sample will be collected from each boring for offsite analysis of target compound list (TCL) volatile organic compounds (VOCs). Samples will be selected based upon field screening methods, ro at eth water table interface if there are indicators of contamination.

Field Equipment

Some or all of the following equipment will be used during soil sampling:

- Field boring log sheet and field notebook;
- Photo-ionization detector (PID);
- Stainless-steel knife, trowels, spoons, scoops, and bowls;
- Personal protective equipment (PPE);
- Disposable gloves;
- Distilled/deionized water;
- Cleaning detergents and decontamination chemicals;
- Five-gallon pails for decontamination;
- Brushes;
- Sample bottles;
- Cooler;
- Sufficient ice or freezer packs to maintain the samples at four degrees Celsius; and
- Chain of Custody (COC) forms.

2.3.1 Soil Sampling Using Direct Push Drilling Equipment

Discrete samplers will be used to collect samples obtained with a direct push (Geoprobe™) drill rig. These samplers have an open tube design and measure approximately two-inches in diameter (outer) by 44-inches long. The samplers will be fitted with a removable cutting shoe. The sampler will be advanced to the desired depth. Each of the samplers will be fitted with a new acetate liner prior to collection of a sample. The acetate liner will be split open to collect the soil. The soil samples from the zero to four foot below ground surface (bgs) interval will be collected using

MacroCore™ open samplers. Soil samples collected deeper than four feet bgs will be collected using the MacroCore™ equipped with a discrete sampling device. This device prevents any collapsed material from entering the sampler.

The length of sample recovery, percent recovery, and soil description, including odors, will be recorded on the boring log. A copy of a field boring log sheet is provided in Attachment A.

If an environmental sample is to be collected for analysis, then immediately upon retrieval of the sampler, an aliquot of soil will be transferred to the VOC sample containers. The VOC sample containers will be completely filled in order to minimize headspace in the containers. The filled VOC sample container will be placed in a cooler with sufficient ice to maintain a temperature of 4 degrees Celsius.

Field personnel will wear disposable nitrile gloves for the collection and handling of all samples and the disposable gloves will be changed between each sample. A stainless-steel scoop or trowel may be used to fill the sample containers. The samples will be packed into sample coolers containing sufficient bags of ice or freezer packs to maintain the samples at 4 degrees Celsius.

All acetate liners will be discarded after use. Upon completion of sampling at each location, all sampling equipment will be decontaminated in accordance with the procedures described in Section 7.0. Quality assurance samples, including duplicate samples and equipment rinseate blanks will be collected as necessary in accordance with the procedures described in Section 2.3.3 and the *QAPP*. The sample custody procedures are described in Section 5.0.

2.3.2 Quality Control

The number of Quality Control samples (duplicates and ambient blanks) to be taken during soil sampling may be found on Table 1. A list of the volume and preservation requirements, and holding times is provided in Table 2.

2.4 Groundwater Monitoring Well Installation and Sampling

At least one soil sample will be collected at each groundwater monitoring well location. The rationale for soil sample selection is described in Section 2.3. Groundwater samples will be collected from each monitoring well on two occasions spaced approximately three months apart.

2.4.1 Shallow Well Hollow Stem Auger Drilling Procedures

Groundwater monitoring wells will be installed using hollow-stem augers; the following procedures will be used.

1. Inspect the equipment to ensure proper working condition.

2. Thoroughly decontaminate the down-hole equipment prior to and between locations using soap and water.

3. Advance the boring by rotating and advancing 4 ¼-inch hollow-stem augers the desired distance into the subsurface. The borings will be advanced incrementally to permit continuous or intermittent split spoon sampling as required.

4. Remove the center plug from the augers and sample the subsurface soil as required to locate the groundwater table or saturated soil conditions. Split spoon sampling methods are discussed below.

2.4.2 Deep Well Hollow Stem Auger Drilling Procedures

Groundwater monitoring wells will be installed using hollow-stem augers; the following procedures will be used.

1. Inspect the equipment to ensure proper working condition.

2. Thoroughly decontaminate the down-hole equipment prior to and between locations using soap and water.

3. Advance the boring by rotating and advancing 4 ¼-inch hollow-stem augers (HSAs) the desired distance into the subsurface (i.e., 2-3 feet into the silt clay confining layer). The borings will be advanced incrementally to permit continuous or intermittent split spoon sampling as required.

4. Remove the center plug from the augers and sample the subsurface soil as required to locate the groundwater table or saturated soil conditions. Split spoon sampling methods are discussed below.

5. After the 4 ¼-inch HSA pilot hole is advanced to the target depth they will be left in place and overdrilled with 12 ¼-inch HSAs.

6. The pilot string will then be pulled, and a 9-inch permanent steel casing will be tremie grouted in place as the 12 ¼-inch HSAs are pulled.

7. After 24 to 48 hours, the contractor will return to the boring and advance the hole deeper using, 4 ¼-inch HSAs while continuously split spoon sampling, until a depth of approximately 10 feet into a sand unit which underlies the clay confining layer. The estimated total depth in these borings is 40 to 50 feet bgs.

2.4.3 Soil Sampling Using Split-Spoons

Soil samples will be collected using two-inch diameter by two-foot long split-spoons in accordance with ASTM D-1586-84: *Standard for Penetration Test and Split-Barrel Sampling of Soils*. The split-spoons will be driven into the overburden materials using a 140-pound hammer-drop system until the desired depth of the boring is reached. The blow counts for each six-inch increment of penetration will be recorded on the boring log. The hollow stem augers (HSAs) will be advanced two feet after each split spoon is collected to avoid borehole cave-in. Furthermore, a plug inside of

the HSAs will be advanced during drilling. The soil samples obtained from the split-spoon samplers will be collected and handled in a similar manner as the soil samples obtained from MacroCore™ samplers, described in Section 2.3.1. Upon completion of sampling at each location, all sampling equipment will be decontaminated in accordance with the procedures described in Section 7.0. Quality assurance samples, including duplicate samples and equipment rinseate blanks will be collected as necessary in accordance with the procedures described in the *QAPP* and at the frequencies presented on Table 1. The sample custody procedures for the soil samples are described in Section 5.0.

2.4.4 Groundwater Monitoring Well Construction Procedures

Summary: A method for construction of groundwater monitoring wells within unconsolidated material that enables monitoring of groundwater elevation and acquisition of groundwater samples for laboratory testing. All groundwater wells will be constructed of 2-inch diameter, Schedule 40, PVC screen and riser. Wells screens will be placed across the water table and be of 0.010-inch slot size and 10 feet in length. The groundwater monitoring wells will be installed during this investigation using the procedures described below.

Groundwater Monitoring Well Procedure:

1) Advance subsurface boring to the desired depth by means of hollow-stem auger drilling.

2) While boring, collect split spoons on a continuous basis to geologically log the boring.

3) Remove center plug from augers and verify borehole depth using weighted measuring tape.

4) Add washed and graded medium sand as needed to base of borehole.

5) Insert the well and riser pipe into borehole through the hollow stem augers. Cap the riser to prevent well construction materials from entering the well.

6) Add appropriate sized sand pack to screen section of well while slowly removing augers. Sand pack should extend at least two feet above the top of the screen section. Measure with a tape.

7) Slowly add bentonite pellet seal to borehole as augers are slowly removed. The bentonite seal should extend at least two feet above the top of the sand pack section. Measure with tape. Note: The rate of removal of the auger from the borehole should closely follow the rate that the sand pack and bentonite pellets fill the borehole.

8) If bentonite seal is placed above the groundwater level within the borehole, add water to the borehole to hydrate the bentonite pellets. Allow pellets to hydrate for at least 30 minutes.

9) Mix cement/bentonite grout per Manufacturer's specifications.

10) Add grout to borehole through tremie pipe or hose from the top of the bentonite seal to the ground surface.

11) Remove remaining augers from the borehole.

12) Top off grout in borehole. Grout should extend to approximately two feet below ground surface.

13) Cut well-riser pipe to about three feet above the ground surface for stickup type wells. Flush-mount well risers should be cut off just below surface grade.

14) Backfill the remaining two feet of the borehole with concrete.

15) Install a protective casing or roadbox over the well riser pipe and set it into the concrete backfill.

16) Lock the protective casing cover.

17) Document well construction in the field notebook and later on a Well Construction Detail diagram (Appendix A).

Reference: ASTM Standard Practice for Design and Installation of Groundwater Monitoring Wells in Aquifers D5092-90.

2.4.5 Groundwater Monitoring Well Development Procedures

Summary: Following completion of groundwater monitoring well installation, each monitoring well will be developed by pumping until the discharged water is relatively sediment free and the indicator parameters (pH, temperature, and specific conductivity) have reached steady state. Developing the monitoring well not only removes any sediment but also may improve the hydraulic properties of the formation. The effectiveness of the development measures will be closely monitored in order to keep the volume of discharged water to the minimum necessary to obtain sediment-free samples. A portable turbidimeter and water quality meter capable of reading pH, temperature, and specific conductivity will be used to monitor effectiveness of development. A turbidity reading of < 50 Nepheliomatic Turbidity Units (NTU) and steady state pH, temperature, and specific conductivity readings will be used as a guide for discontinuing well development.

Procedure**:**

1. An appropriate monitoring well development method should be selected, depending on water level depth, well productivity, and sediment content of water. Monitoring well development options include: (a) manual pumping; and (b) powered suction-lift or hydrolift pumping.

2. Equipment should be assembled, decontaminated (if necessary), and installed in the well. Care should be taken not to introduce contaminants to the equipment during installation.

3. Monitoring well development should proceed by repeated surging and removal of water from the well or prolonged pumping until the discharged water is relatively sediment-free. All development waters will be containerized. Effectiveness of development should be monitored at regular intervals using a portable turbidimeter

and water quality meter. Volume of water removed and turbidity, pH, temperature, and conductivity measurements will be recorded on a Well Development/Purging Log form (Appendix A).

4. Monitoring well development will be discontinued when the turbidity of the discharged water is below 50 NTU and the other indicator parameters have stabilized.

Reference: ASTM Standard Practice for Design and Installation of Groundwater Monitoring Wells in Aquifers D5092-90.

2.4.6 Monitoring Well Purging Procedures

The following well purging procedures will be used for new or existing monitoring wells prior to sampling:

1. The well cover will be unlocked and carefully removed to avoid having any foreign material enter the well. The interior of the riser pipe will be monitored for organic vapors using PID. If a reading of greater than 5 ppm is recorded, the well will be vented until levels are below 5 ppm before purging begins.

2. Using an electronic water level detector, the water level below top of casing will be measured. Knowing the total depth of the well, it will be possible to determine the volume of water in the well. The end of the probe will be soap-and-water-washed and deionized-water-rinsed between wells.

3. Calibrate field instruments (e.g., pH, specific conductance, PID, turbidity).

4. Purge the required water volume using a suction lift pump (i.e., ISCO peristaltic pump or equivalent) at a rate of less than one liter per minute (L/min). A bailer will

be used for purging and sampling if the capacity of the suction lift pump is exceeded. New dedicated equipment will be used for each well.

5. Purge well until the water quality parameters have stabilized. The stabilization criteria are: specific conductivity - 3% full scale range; pH - 0.10 pH unit; temperature - 0.2°C, and turbidity <50 NTU.

6. Purging of three well volumes is not necessary if the indicator parameters are stable. However, at least one (1) well volume must be purged before sampling can begin. During purging, it is permissible to by-pass the flow cell (if used) until the groundwater has cleared.

7. Indicator parameters of pH, conductivity, turbidity, and temperature must be measured continuously using the flow cell.

8. Well purging data are to be recorded in the field notebook and on the Well Purge Log (Appendix A).

9. Dispose of sampling equipment as per Section 8.0.

2.4.7 Groundwater Sampling Procedures

Groundwater samples will be analyzed by EPA Method 8260. The following groundwater sampling procedures will be used for new or existing monitoring wells after purging has been conducted as described in Section 2.4.6:

Procedures

1. After well purging is completed, a sample will be collected into the appropriate laboratory supplied containers.

2. Direct water flow toward the inside wall of the sample container to minimize volatilization. Fill volatile sample containers so no headspace (air bubbles) is present. If containers are pre-preserved, do not overfill sample containers. Note if effervescence is observed.

3. All sample bottles will be labeled in the field using a waterproof permanent marker.

4. Samples will be collected into sample bottles (Table 2) (containing required preservatives) and placed on ice in coolers for processing (preservation and packing) prior to shipment to the analytical laboratory. A chain-of-custody record will be initiated. The analytical laboratory will certify that the sample bottles are analyte-free prior to shipping.

5. Remove pump and disconnect valves and tubing, as necessary. If a submersible pump was used, it must be decontaminated prior to and between each use. Clean pump with alconox and then flush a minimum of 10 gallons of potable water through the pump. Rinse with deionized water after flushing the pump.

6. Well sampling data are to be recorded in the field notebook and on the Well Purging Log (Appendix A).

2.4.8 Water Level Monitoring Procedures

Summary: Determination of groundwater depths in monitoring wells is necessary to calculate required purge volumes prior to groundwater sampling. Water levels in monitoring wells scheduled to be sampled during the field work will be measured using an electronic water level indicator. Initially, measurements will be taken following well development until the well has recovered to anticipated static conditions. Water level measurement procedures are presented below.

Procedure:

1. Clean the water level probe and the lower portion of cable following standard decontamination procedures (Section 7.0) and test water level meter to ensure that the batteries are charged.

2. Lower the probe slowly into the monitoring well until the audible alarm indicates water.

3. Read the depth to the nearest hundredth of a foot from the graduated cable using the V-notch on the riser pipe as a reference.

4. Repeat the measurement for confirmation and record the water level.

5. Remove the probe from the well slowly, drying the cable and probe with a clean "Chem Wipe" or paper towel.

6. Replace the well cap and lock protective cap in place.

7. Decontaminate the water level meter (Section 7.0) if additional measurements are to be taken.

3.0 INDOOR AIR INVESTIGATION

The indoor air study (the study) will focus on determining the potential presence of indoor air contamination resulting from vapor intrusion and determine to the extent practical, the nature and degree of soil gas contamination in the vicinity of the Campagnolo Property. The study will include sampling of indoor air, outdoor air and soil vapor to evaluate the potential exposure to site related contaminants. The NYSDEC and the NYSDOH will review the results of the proposed study. The NYSDOH will make recommendations at that time as to whether or not the area buildings need further indoor air investigation or mitigation systems.

The indoor air investigation program will generally include the following: (1) conducting interviews with the buildings' owner and tenants using air quality questionnaires developed by the NYSDOH (Appendix A), (2) conducting a survey of household chemicals present and evaluating their potential to affect air sample results, (3) collect one air sample each from the breathing zones of the first floor in each tenants' space (up to three samples), (4) collect one vapor sample from beneath the concrete slab of each buildings' foundation(s) (up to two samples) and (5) collect one outdoor ambient air sample from an upwind location.

All samples will be collected using six liter Summa® canisters equipped with flow regulators that have been batch certified clean by the laboratory prior to re-use. The sample canisters will be deployed after completion of the pre-sampling survey and will be retrieved approximately 24-hours later. Fourteen sampling locations have already been selected by the NYSDOH.

The samples will be analyzed for VOCs using the EPA Method TO-15. Analyses will be performed by Con-Test, a laboratory with current Environmental Laboratory Approval Program (ELAP) certification. The indoor and ambient outdoor summa canisters will be analyzed by an off-site laboratory using EPA method TO-15, with a minimum-reporting limit of 0.25 ug/m^3 for TCE. The sub-slab summa canisters will be analyzed by an off-site laboratory using EPA method TO-15, with a minimum-reporting limit of 1.0 ug/m^3

The samples will be labeled and shipped following procedures outlined in Sections 4.0 and 5.0 and analyzed for the parameters indicated in Table 1. A list of the volume and preservation requirements, and holding times is provided in Table 2. A Summa Canister Sampling Field Data Sheet shall be completed for each sample collection location (Appendix A).

3.1 Indoor Air Quality Survey and Questionnaire

Once the buildings' owner and the tenants have been contacted by the NYSDEC and/or NYSDOH, appointments will be made to conduct tenant interviews and building inventory of household chemicals. Questionnaire and Building Inventory forms developed by the NYSDOH (Appendix A) will be used. Once the questionnaires have been completed, perform the building inventory (first floor in each of the tenants' areas) for household chemicals. Areas that may be inspected include kitchen and bathroom cabinets, storage rooms, and any other area commonly used for storage of household chemicals. The general procedures to be followed are summarized below:

- Identify all areas on the first floor and basement levels that may be used for storage of chemical containers.

- Identify and record each container likely to contain chemicals that may affect air quality. These may include any of the following: cleaning products, cosmetic products, aerosol cans, paint or stain products, deodorants/air fresheners, solvents, glue or epoxy containers, caulks, petroleum based soils and penetrants, sealants, fuel containers, scented natural products (e.g., Christmas trees, wreaths, potpourri, scented wood), and pesticide products.

- Other potential sources that may influence air quality testing that should be noted and scanned with field instrumentation include: new construction/remodeling/painting, new carpeting, freshly dry-cleaned clothing, and the presence of tobacco smokers.

- On the product inventory form provided in the Questionnaire/Building Inventory, record each container/potential source on the product inventory form. For each container, note the product description, container size, the condition of the container, and the chemical ingredients.

- For each container, check the areas around the lids or other openings for the presence of VOCs using a low-level field photoionization detector (e.g., ppb RAE). Move the tip of the PID around the entire area and record the highest reading measured. For aerosol cans with a slot in the cap, insert the PID in the slot.

3.2 Indoor Air and Outdoor Ambient Air Sampling Procedure

During the collection of indoor air samples, the intake will be placed at breathing zone heights of approximately 3 to 5 feet above the floor. As practical, based on the buildings features, the sample will typically be collected in a central location away from outside windows or doors. At the time of retrieval any noticeable changes in the condition of the sampling area, such as open windows or doors, operation of the heating/ventilation system, or condition or location of items in proximity to the canister will be noted on the sampling form.

The outdoor ambient air samples will be collected starting after completion of the building survey and in conjunction with the start of indoor air sampling. The collection of the outdoor ambient air sample will be attempted to be collected from an area upwind of the building. It is estimated that one outdoor ambient air sample will be collected daily. The intake of the sample will be placed at breathing heights of approximately 3 to 5 feet above grade.

The indoor air for the first floor and outdoor ambient air sampling procedures are summarized below.

1) Place indoor air Summa canister inlet at breathing height in the approximate center of the structure, or, for the ambient air sample, elevated on a table or other object in a location upwind of the samples collected that day. The breathing height is defined as four to six feet above the floor or ground. As an option, a length of ¼-inch Teflon tubing can be attached to the Summa canister inlet and raised to breathing zone height.

2) Record the canister and flow controller serial numbers on the Summa Canister Sampling Field Data Sheet (Appendix A) and the canister identification tag.

3) Assign sample identification to the canister identification tag and record on COC and the Summa Canister Sampling Field Data Sheet (Appendix A).

4) Remove brass plug from canister fitting and save.

Using Flow Controllers Without a Built-in Pressure Gauge

1) Attach the pressure gauge provided by the laboratory to the Summa canister, open valve completely, record reading on the Summa Canister Sampling Field Data Sheet (Appendix A), close valve completely, and remove the pressure gauge. If the canister does not show a vacuum, do not use.

2) Attach a pre-calibrated/certified 24-hour flow controller, and particulate filter to the Summa canister. Note: Some laboratories provide a built-in filter within the regulator apparatus.

3) Open canister valve to initiate sample collection and record start time and date on the canister identification tag and on the Summa Canister Sampling Field Data Sheet (Appendix A).

4) Take a photograph (digital or film photography) of canister setup and surrounding area.

5) After 24 hours, record end time on the Summa Canister Sampling Field Data Sheet (Appendix A), and close valve.

6) Disconnect flow controller/particulate filter assembly from canister.

7) Upon removing the flow controller/particulate filter assembly, record gauge pressure using procedure outlined in "Step 1" and seal canister with brass plug.

8) Ship the samples, with COCs, overnight via FedEx to Con-Test for TO-15 analysis.

Using Flow Controllers With a Built-in Pressure Gauge

1) Attach the flow controller provided by the laboratory to the Summa canister inlet (you must have one for each summa canister). Read the pressure gauge. **Do not reuse flow controllers** between locations.

2) Open canister valve to initiate sample collection and record start time and date on the canister identification tag and on the Summa Canister Sampling Field Data Sheet (Appendix A).

3) Take a photograph (digital or film photography) of canister setup and surrounding area.

4) After 24 hours, record end time on the Summa Canister Sampling Field Data Sheet (Appendix A), and close valve.

5) Disconnect the tubing from the Summa canister.

6) Record the reading on the pressure gauge. There should still be a slight vacuum in the Summa canister. If no vacuum remains in the canister, do not send the canister for analysis. Retake the sample using the same procedure with a fresh canister.

7) Remove the flow controller.

8) If the canister does not show a significant net loss in vacuum after sampling, evaluate and document the problem. If necessary, use another summa canister to recollect the sample and **contact the project manager immediately.**

9) Replace the brass plug on the canister.

10) Ship the samples, with COCs, overnight via FedEx to Con-Test for TO-15 analysis.

3.2.1 Quality Control

The number of Quality Control samples (duplicates and ambient blanks) to be taken during sub-slab, indoor and outdoor sampling may be found on Table 1.

1) Field duplicates for indoor air samples are collected by simply placing a second summa canister adjacent to the primary sample canister with the sample intake point at approximately the same height. The flow controllers should be set at the same flow rate. Both summa canister valves are opened and closed simultaneously.

2) Outdoor ambient air samples are collected by simply opening the summa canister valve for the designated sample time frame upwind from the sample locations.

3) Care should be taken so that no samples are collected during or near an area where vehicle or other equipment exhaust is being discharged.

3.3 Sub-Slab Air Sampling Procedure

The sub-slab air sampling procedures are summarized below.

1) Drill a 5/8-inch diameter hole about one-inch (1") into the concrete basement floor (slab) using an electric hammer drill. Extend the hole through the remaining thickness of the slab using a ½ -inch drill bit. Lengthen the hole about three inches (3") beyond the sub-slab using either a drill bit or a steel probe rod.

2) Insert a 5/8-inch OD by ¼-inch ID rubber stopper onto and 2 inches from the end of a 2.5 feet length of ¼-inch OD by 1/8-inch ID Teflon tubing. Insert the tubing and stopper into the 5/8-inch hole.

3) Seal the annular space above the rubber stopper with white Sculpey Brand modeling clay (or equivalent). Bring the clay above the basement floor's surface and around the Teflon tubing in a volcano-like shape. In order for the clay to adhere to the concrete, remove any dust or debris with wire brushes and dabbing the concrete with clay.

4) Connect the Teflon sample tubing to the inlet side of an air-sampling pump with 3/8 OD silicon tubing. Connect a 1-liter Tedlar bag to the exhaust port of the pump with silicon tubing. Purge approximately one liter of soil vapor from the sampling tube into the Tedlar bag, using the air-sampling pump. Analyze the one-liter Tedlar bag containing the sub-slab purged air with the low-level PID when **outside** the residence.

5) Record the canister's serial number on the Summa Canister Sampling Field Data Sheet (Appendix A).

6) Assign sample identification to the canister identification tag and record on chain of custody (COC), and the Summa Canister Sampling Field Data Sheet (Appendix A).

7) Remove brass plug from canister fitting.

<u>Using Flow Controllers Without a Built-in Pressure Gauge</u>

1) Attach the pressure gauge provided by the laboratory to the Summa canister, open valve completely, record reading on the Summa Canister Sampling Field Data Sheet (Appendix A), close valve completely, and remove the pressure gauge. If the canister does not show a vacuum, do not use.

2) Attach a pre-calibrated/certified 24-hour flow controller, and particulate filter to the Summa canister. Note: Some laboratories provide a built-in filter within the regulator apparatus. **Do not reuse flow controllers** between locations.

3) After purging the hole, remove the sampling pump from the Teflon sampling tube and attach tube to the Summa canister, via the flow controller/particulate filter assembly.

4) Open canister valve to initiate sample collection and record start time and date on the canister identification tag and on the Summa Canister Sampling Field Data Sheet (Appendix A).

5) Take a photograph of canister setup and surrounding area.

6) Clean up any dust/debris with a brush and dustpan. **Do not** use a vacuum based device.

7) After 24 hours, record sampling end time on the Summa Canister Sampling Field Data Sheet (Appendix A), and close valve.

8) Disconnect the Teflon sample tubing and remove flow controller/particulate filter assembly from canister.

9) Upon removing the flow controller/particulate filter assembly, record gauge pressure using procedure outlined in "Step 1" and seal canister with brass plug.

10) Remove the sample tubing, stopper and clay from the hole in the basement slab and seal the hole with hydraulic cement patch.

11) Ship the samples, with COCs, overnight via FedEx to Air Toxics in Folsom, California (or other selected lab) for TO-15 analysis.

Using Flow Controllers With a Built-in Pressure Gauge

1) Attach the flow controller provided by the laboratory to the Summa canister inlet (you must have one for each summa canister). Read the pressure gauge. **Do not reuse flow controllers** between locations.

2) After purging the hole, remove the sampling pump from the Teflon sample tube and attach tube to the Summa canister, via the flow controller/particulate filter assembly.

3) Open canister valve to initiate sample collection and record start time and date on the canister identification tag and on the Summa Canister Sampling Field Data Sheet (Appendix A).

4) After 24 hours, close the Summa canister valve completely and record the time.

5) Disconnect the tubing from the Summa canister.

6) Record the reading on the pressure gauge. There should still be a slight vacuum in the Summa canister. If no vacuum remains in the canister, do not send the canister for analysis. Retake the sample using the same procedure with a fresh canister.

7) Remove the flow controller.

8) If the canister does not show a significant net loss in vacuum after sampling, evaluate and document the problem. If necessary, use another summa canister to recollect the sample and **contact the project manager immediately.**

9) Remove the sample tubing, stopper and clay from the hole in the basement slab and seal the hole with hydraulic cement patch.

10) Ship the samples, with COCs, overnight via FedEx to Con-Test for TO-15 analysis.

Using Helium Tracer Gas to Test Floor Seals.

1) Drill the concrete floor and attach and seal the Teflon sample tubing to the floor as described above.

2) Place a 2-quart (or similar size) bucket over the floor seal after threading the Teflon sample tube through a hole in the top of the bucket. Seal the tube to the bucket with clay.

3) The bucket should also have a hole in the top for the injection of helium gas. An additional hole should be present in the side, near the bottom, to measure the concentration of helium gas in the bucket.

4) Connect helium (99.999%) cylinder tubing to the top port of bucket enclosure and seal with clay or other sealing material. Insert a helium detector probe to the bottom port of the bucket.

5) Release enough helium to displace any ambient air in the bucket until the concentration of helium reaches a minimum of 90%. Maintain this minimum concentration by testing with a helium detector (Mark Helium Detector Model 9822, or equivalent).

6) Connect the sample tubing to a GilAir vacuum pump or equivalent using 3/8-inch silicone tubing. Connect a 1-liter Tedlar bag to the outlet of the pump using silicone tubing and collect a 1-liter sample. Analyze the Tedlar bag for VOCs using a low-level PID and record the results on the Summa Canister Sampling Field Data Sheet.

Also analyze the Tedlar bag for the presence of helium and record the result on the Summa Canister Sampling Field Data Sheet. A concentration of helium 10% or greater indicates a poor seal of the sample tubing to the basement floor. The tubing must be resealed to the floor and another helium sample conducted.

7) Purging flow rates for purging must not exceed 0.2 liters per minute (L/min). Helium cylinder should be open during the purge time to cause a positive pressure within the enclosure.

8) After purging, remove the bucket enclosure and connect the 1/4-inch Teflon OD sample tubing to the summa canister inlet using a ¼-inch Swagelok nut with appropriate ferrules. Open the canister valve to initiate sample collection and record the start time and date and beginning vacuum on the canister identification tag and on the Summa Canister Sampling Field Data Sheet (appendix A).

9) After the required sampling time, close the Summa canister valve and record the time and final vacuum. Remove the flow controller and send the canister to Air Toxics, or other selected lab, for TO-15 analysis as per Table 1. The required QA/QC may also be found in Table 1. Remove the sample tubing, stopper and clay and seal the hole with hydraulic cement patch.

10) Ship the samples, with COCs, overnight via FedEx to Air Toxics in Folsom California (or other selected lab) for TO-15 analysis.

3.3.1 Quality Control

The number of Quality Control samples (duplicates and ambient blanks) to be taken during sub-slab, indoor and outdoor sampling may be found on Table 1.

1) Field duplicates are collected by attaching the stainless steel t-fitting to the end of the tubing from the sub-slab sample location. A summa canister with a flow

controller is attached to each end of the t-fitting. For sampling, both summa canister valves are opened and closed simultaneously.

2) Outdoor ambient air samples are collected by simply opening the summa canister valve for the designated sample time frame upwind from the sample locations.

3) Care should be taken so that no samples are collected during or near an area where vehicle or other equipment exhaust is being discharged.

4.0 DOCUMENTATION AND SAMPLE LABELING

4.1 Documentation

The field sampling team must maintain a sample log sheet summarizing the following data:

1. Sample Identification
2. Date and time of sample collection
3. Sampling depth
4. Identity of samplers
5. Sampling methods and devices
6. Purge volumes
7. Volume of soil vapor extracted (if applicable)
8. The Summa canister vacuum before and after samples collected (if applicable)
9. Chain of custody and shipping information
10. The supervising geologist will log the time and material expenditures for later verification of contractor invoices. Upon completion of daily drilling activities, the geologist will complete the daily drilling record form (Appendix A). Following completion of the program, the geologist will transfer field notes onto standard forms for the investigation report.

On a weekly basis the project geologist will submit a summary report to the project manager containing at a minimum the following: (1) a summary of the daily drilling records; (2) progress report on field activities; and (3) a record of site visitors.

The proper completion of the following forms/logs will be considered correct procedure for documentation during the drilling program:

1. Field Log Book - weatherproof hand-bound field book
2. Daily Drilling Records (Appendix A)
3. Boring Logs (Appendix A)
4. Well Construction Detail Diagrams (Appendix A)

4.2 Soil and Groundwater Sample Labeling

Summary: In order to prevent misidentification and to aid in the handling of environmental samples collected during the field investigation, the following procedures will be used:

Procedure: Each sample will have the following information placed on the laboratory supplied sample label:

- Site name
- Sample identification
- Project number
- Date/time
- Sampler's initials
- Analysis required

Soil Samples

The following terminology shall be used for the soil sample identification:

SITE ID-SB-xx (yy-zz)

Where Site ID is the NYSDEC site identification number (7-55-013), xx is the ascending numerical number assigned to the sample, yy is the top of the sample interval, and zz is the bottom of the sample interval.

Groundwater Samples

SITE ID-GW-xx (for new monitoring wells) or
SITE ID-MW ID (for existing monitoring wells)

Where Site ID is the NYSDEC site identification number (7-55-013) and xx is the ascending numerical number assigned to the sample.

Field duplicate samples will be assigned a unique identification alphanumeric code that specifies the data of collection, the letters FD (for field duplicate) and an ascending number that records the number of duplicate samples collected that day. For example, the first field duplicate collected on February 22, 2007 would be assigned the following sample number using the code shown below:

YYYYMMDD-FD-1 = 20070222-FD-1

Subsequent duplicates collected on the same day would be assigned FD-2, FD-3 etc. Field sampling crew will record the duplicate sample information in the field book.

4.3 Soil Vapor/Indoor Air Sample Labeling

Summary: In order to prevent misidentification and to aid in the handling of environmental samples collected during the field investigation, the following procedures will be used:

Procedure: Each indoor air/outdoor air/soil gas and groundwater sample will have the following information placed on the laboratory supplied sample label:

- Site name
- Sample identification
- Project number
- Date/time
- Sampler's initials
- Analysis required

The serial number of the canister and regulator used during sampling will also be noted on the label and on the COC.

The following terminology shall be used for the structure sample identification:

Structure Air Samples

SITE ID-SS-xx (for sub-slab locations)

SITE ID-BA-xx (for basement indoor ambient air)

SITE ID-FF-xx (for first floor indoor ambient air)

SITE ID-OA-xx (for outdoor ambient air)

Where Site ID is the NYSDEC site identification number (7-55-013) and xx is the assigned structure identification number. Note: If multiple sub-slab samples in a single residence, they are identified as SSA, SSB, SSC, etc.

Field duplicate samples will be assigned a unique identification alphanumeric code that specifies the date of collection, the letters FD (for field duplicate) and an ascending number that records the number of duplicate samples collected that day. For example, the first field duplicate collected on February 22, 2007 would be assigned the following sample number using the code shown below:

YYYYMMDD-FD-1 = 20070222-FD-1

Subsequent duplicates collected on the same day would be assigned FD-2, FD-3 etc. Field sampling crew will record the duplicate sample information on the Summa Canister Sampling Field Data Sheets and also in the field book.

5.0 SAMPLE SHIPPING

Summary: Proper documentation of sample collection and the methods used to control these documents are referred to as chain-of-custody procedures. Chain-of-custody procedures are essential for presentation of sample analytical chemistry results as evidence in litigation or at administrative hearings held by regulatory agencies. Chain-of-custody procedures also serve to minimize loss or misidentification of samples and to ensure that unauthorized persons do not tamper with collected samples.

The procedures used in this study follow the chain-of-custody guidelines outlined in NEIC Policies and Procedures, prepared by the National Enforcement Investigations Center (NEIC) of the U.S. Environmental Protection Agency Office of Enforcement.

Procedure:

1. The chain-of-custody (COC) record (Appendix A) should be completely filled out, with all relevant information.

2. The original COC goes with the samples. It should be placed in a Zip lock bag and placed inside the box containing a summa canister. The sampler should retain a copy of the COC.

3. Summa canisters are shipped in the same boxes the laboratory used for shipping. Groundwater samples will be shipped, on ice, in laboratory-supplied coolers the day they are collected. Ice should be double bagged to prevent leakage.

4. Place the lab address on top of sample box/coolers. Affix custody seals across box/cooler lids. Cover seals with wide, clear tape.

5. Ship samples via overnight carrier the same day that they are collected if possible. Shipping samples one day after collection is permitted if required.

6.0 FIELD SAMPLING INSTRUMENTATION

URS-owned and rented field sampling equipment will require no maintenance beyond decontamination between sampling locations. The use of disposable filters for the PID is recommended. Calibration procedures for electronic instruments can be found in the equipment operating manuals. Calibration and maintenance procedures for the common instrumentation that will be used during field investigations are discussed in the equipment operating manuals. A copy of the manufacturer's operating manual for each instrument will be kept with the instrument or the operator. All field sampling equipment will be calibrated as recommended by the manufacturer. The calibration procedures and results will be recorded in the field notebook.

Preventative Maintenance

In case of an emergency, the equipment rental vendor, other URS offices, and/or the instrument manufacturer will be contacted. Instrumentation rental vendors, which provide overnight UPS/Federal Express service, are listed below.

Vendor:

Pine Environmental Services, Inc.: Mattydale, NY: 1-877-903-7463
Ashtead Technology Rentals: Rochester, NY: 1-800-242-3910
Field Environmental Instruments: Braddock, PA: 1-800-393-4009

7.0 SAMPLING EQUIPMENT CLEANING PROCEDURES

Summary: To assure that no outside contamination will be introduced into the samples/data, thereby invalidating the samples/data, the following cleaning protocols will apply for all equipment used to collect samples/data during the field investigations. Geoprobe™ equipment and will be brush cleaned between locations.

Procedures:

1. Thoroughly clean equipment with laboratory-grade soap and water, until all visible contamination is gone.

2. Rinse with water, until all visible evidence of soap is removed.

3. Rinse several times with deionized water.

4. Air dry before using.

5. If equipment will not be used immediately, wrap in aluminum foil.

8.0 INVESTIGATION-DERIVED WASTE CHARACTERIZATION AND DISPOSAL

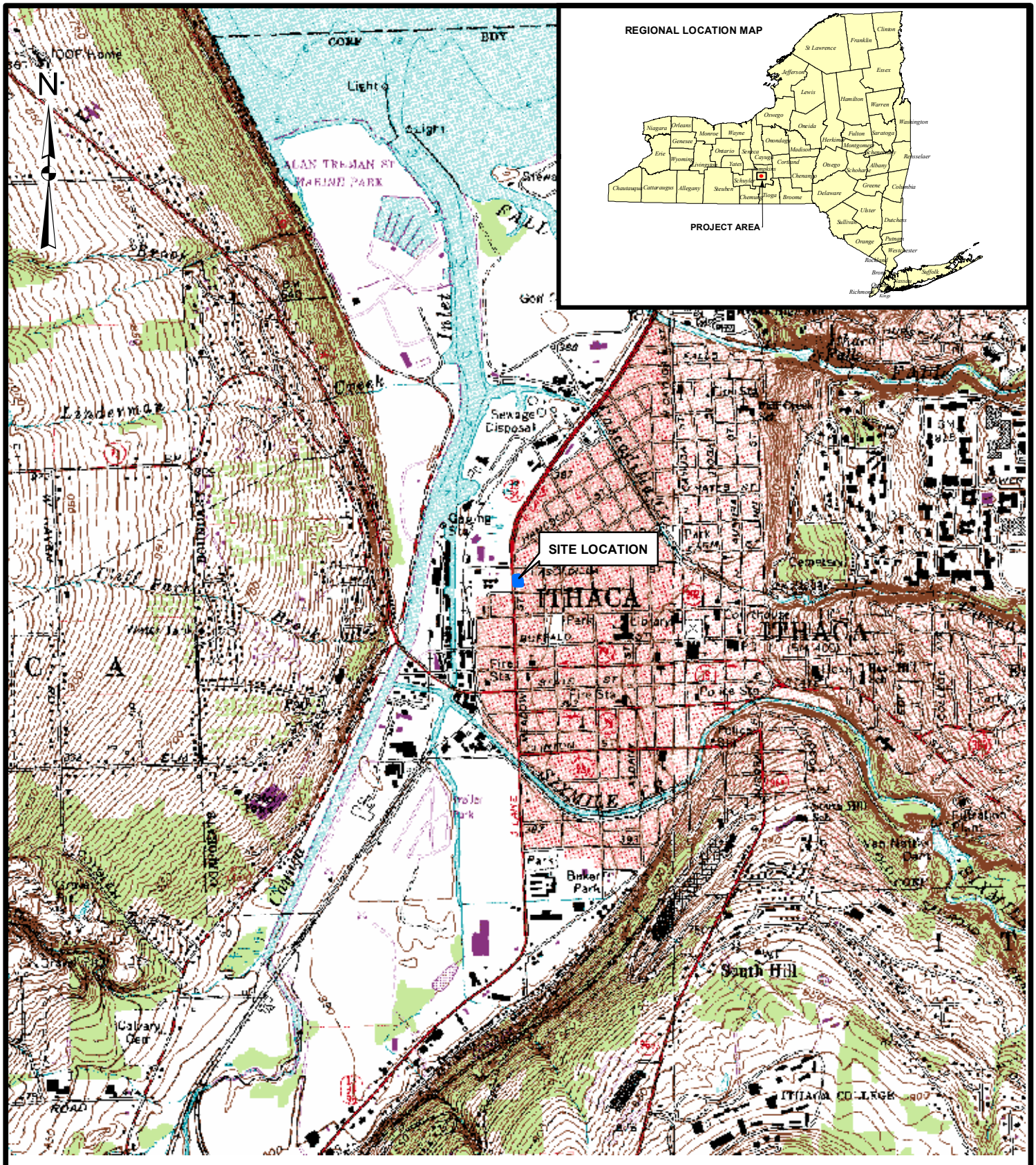
Drill cuttings and other IDW generated during soil sampling and monitoring well installation, and equipment decontamination, will be placed in U. S. Department of Transportation (DOT) 55-gallon 1A2 steel drums. Personal protective equipment and high-density polyethylene (HDPE) sampling equipment will also be drummed for disposal. Purge water and decontamination water will be transferred to a 1,500 gallon poly tank that will be staged onsite. The transportation and disposal (T&D) subcontractor shall be responsible for removing all containers of IDW from the work site as needed. The T&D subcontractor will affix a non-hazardous waste label to each drum of non-hazardous contaminated solid waste and/or a RCRA hazardous waste label, proper DOT shipping name, and proper DOT shipping label to each drum of RCRA hazardous waste. All waste will be profiled and disposed of at a permitted off-site disposal facility by the T&D subcontractor.

9.0 SURVEYING AND MAPPING

Project surveying will provide data necessary to plot soil-gas implant locations on the existing base map. All surveying will be performed under the supervision of a New York State licensed land surveyor, following the requirements of the Project Management Work Plan, and the HASP.

Control for this project shall be based upon site control, which has been established for prior work. Horizontal control is referenced to New York State Plane, North American Datum 1927 (NAD27) east zone coordinate system, vertical control is referenced to National Geodectic Vertical Datum 1929 (NGVD29).

FIGURES



N:\11174258.00000\DB\GIS\Site Location Campagnalo Fig 1.mxd Date: 02/15/07 5:00:29 9M Name: Raza_A

URS

CAMPAGNOLO PROPERTY
SITE LOCATION MAP

FIGURE 1

Legend

- Site Boundary
- Proposed Geoprobe Boring Location

NOTES:

(1) 10 Geoprobe borings at approximate locations shown

(2) 10 Discretionary locations to be determined based on observed field conditions and locations of underground utilities / potential pathways

150 75 0 150 Feet

URS

CAMPAGNOLO PROPERTY
PROPOSED GEOPROBE LOCATION MAP

FIGURE 2

N:\11174258.00000\DB\GIS\PROPOSED GEOPROBE LOCATION.mxd

N:\11174258.00000\DB\GIS\PROPOSED MONITORING WELL LOCATION.mxd 06/07/2007

URS

CAMPAGNOLO PROPERTY
PROPOSED MONITORING WELL
LOCATION MAP

FIGURE 3

TABLES

TABLE 1

SUMMARY OF SAMPLES TO BE COLLECTED AND ANALYTICAL PARAMETERS

CAMPAGNOLO PROPERTY RI/FS, SITE NO. 7-55-013

NYSDEC WORK ASSIGNMENT NO. D004433-17

Parameter	Analytical Method	Estimated Number of Samples	Field QA/QC Samples				Total No. of Samples
			Field Duplicates	MS/MSD	Rinsate Blanks	Trip Blanks	
I. Soils - Geoprobe							
TCL VOCs [3]	8260B	20	1	1/1	1	0	24
II. Soils - Monitoring Well							
TCL VOCs [3]	8260B	7	1	1/1	1	0	11
III. Groundwater - Monitoring Well							
TCL VOCs [3]	8260B	20	2	2/2	2	4	32
IV. Soil - Waste Characterization							
TCLP VOCs	1311/8260B	1	0	0/0	0	0	1
TCLP SVOCs	1311/8270C	1	0	0/0	0	NA	1
TCLP Metals	1311/6010B/7470A	1	0	0/0	0	NA	1
PCBs	8082	1	0	0/0	0	NA	1
Ignitability	1030	1	0	0/0	0	NA	1
Corrosivity	9045C	1	0	0/0	0	NA	1
Reactivity	SW-846 Chapter 7, Section 7.3	1	0	0/0	0	NA	1
V. Groundwater - Waste Characterization							
TCLP VOCs	1311/8260B	1	0	0/0	0	0	1
TCLP SVOCs	1311/8270C	1	0	0/0	0	NA	1
TCLP Metals	1311/6010B/7470A	1	0	0/0	0	NA	1
PCBs	8082	1	0	0/0	0	NA	1
Ignitability	1010	1	0	0/0	0	NA	1
Corrosivity	9040B	1	0	0/0	0	NA	1
Reactivity	SW-846 Chapter 7, Section 7.3	1	0	0/0	0	NA	1
VI. Air/Soil Vapor							
VOCs (Soil Vapor, RL 1 ug/m^3)	TO-15	14	2	NA	NA	NA	16
VOCs (Indoor/Outdoor Air, RL 1 ug/m^3, TCE 0.25 ug/m^3)	TO-15	42	6	NA	NA	NA	48

1. NYSDEC Analytical Services Protocol (ASP), June 2000 Edition.
2. USEPA Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, January 1999.
3. Target compound list (TCL) volatile organic compounds (VOCs) as listed in USEPA CLP Staement of Work OLM04.2.

TCLP - Toxicity characterisitic leaching procedure
PCBs - Polychlorinated biphenyls
MS/MSD - Matrix spike/matrix spike duplicate
RL - Reporting limit
TCE - Trichloroethene

TABLE 3
SAMPLE CONTAINER, PRESERVATION, AND HOLDING TIME REQUIREMENTS
CAMPAGNOLO PROPERTY RI/FS, SITE NO. 7-55-013
NYSDEC WORK ASSIGNMENT NO. D004433-17

Analytical Method/Parameter	Container Size/Type	Number of Containers to Be Collected	Preservation	Maximum Holding Time (from VTSR)
Groundwater Samples				
8260B VOCs	40 ml vial	3	4 °C	Analysis: 7 days
Soil Samples				
8260B VOCs	4 oz. wm glass	2	4 °C	Analysis: 7 days
Solid Waste Samples				
1311/8260B TCLP VOCs	4 oz. wm glass	1	4 °C	Leach: 7 days Analysis: 7 days
1311/8270C TCLP SVOCs	16 oz. wm glass*	1	4 °C	Leach: 5 days Extraction: 7 days Analysis: 40 days
1311/6010B/7470A TCLP Metals	16 oz. wm glass*	1	4 °C	Leach: 180 days (Mercury 5 days) Analysis: 180 days (Mercury 28 days)
8082 PCBs	16 oz. wm glass*	1	4 °C	Extraction: 5 days Analysis: 40 days
1010/1030 Ignitability	16 oz. wm glass*	1	4 °C	Analysis: As soon as possible
9045C Corrosivity	16 oz. wm glass*	1	4 °C	Analysis: As soon as possible
SW-846 Ch. 7, Sec. 3 Reactivity	16 oz. wm glass*	1	4 °C	Analysis: As soon as possible
Liquid Waste Samples				
1311/8260B TCLP VOCs	40 ml vial	3	4 °C	Leach: 7 days Analysis: 7 days
1311/8270C TCLP SVOCs	1 liter amber glass	1	4 °C	Leach: 5 days Extraction: 7 days Analysis: 40 days
1311/6010B/7470A TCLP Metals	500 ml plastic*	1	4 °C	Leach: 180 days (Mercury 5 days) Analysis: 180 days (Mercury 28 days)
8082 PCBs	1 liter amber glass	1	4 °C	Extraction: 5 days Analysis: 40 days
1010 Ignitability	500 ml plastic*	1	4 °C	Analysis: As soon as possible
9040B Corrosivity	500 ml plastic*	1	4 °C	Analysis: As soon as possible
SW-846 Ch. 7, Sec. 3 Reactivity	500 ml plastic*	1	4 °C	Analysis: As soon as possible
Air/Soil Vapor				
TO-15 VOCs	6L Summa canister (or equivalent), batch certified/24-hour flow controller	1	None	Analysis: 14 days

*May be combined into 1 container

wm - Widemouth

VTSR - Validated time of sample receipt

APPENDIX A

FIELD ACTIVITY FORMS

DAILY DRILLING RECORD

URS Corporation

PROJECT TITLE: _____ DATE: _____

CLIENT: _____ CONTRACTOR: _____

FROM	TO	PRODUCTIVE HOURS	ACTIVITIES/COMMENTS
TOTAL PRODUCTIVE HOURS			LEVEL B / LEVEL C / LEVEL D (CIRCLE ONE SELCTION)

LABOR:		MATERIALS / SUPPLIES:	
UNITS		UNITS	
WEATHER:			

URS ONSITE COORDINATOR

CONTRACTOR REPRESENTATIVE

WELL DEVELOPMENT LOG

URS Corporation

PROJECT TITLE: _____ WELL NO.: _____

PROJECT NO.: _____

STAFF: _____

DATE(S): _____

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=		1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=		2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	0.0	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.0	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=	0	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=		8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS											
pH											
SPEC. COND. (umhos)											
APPEARANCE											
TEMPERATURE (°C)											

COMMENTS:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: _____ Site: _____ Well I.D.: _____

Date: _____ Sampling Personnel: _____ Company: URS Corporation

Purging/ Sampling Device: _____ Tubing Type: _____ Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: _____ Depth to Well Bottom: _____ Well Diameter: _____ Screen Length: _____

Casing Type: PVC Volume in 1 Well Casing (liters): _____ Estimated Purge Volume (liters): _____

Sample ID: _____ Sample Time: _____ QA/QC: _____

Sample Parameters: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

WELL DEVELOPMENT LOG

URS Corporation

PROJECT TITLE: _____ WELL NO.: _____

PROJECT NO.: _____

STAFF: _____

DATE(S): _____

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=		1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=		2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	0.0	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.0	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=	0	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=		8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
pH											
SPEC. COND. (umhos)											
APPEARANCE											
TEMPERATURE (°C)											

COMMENTS:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: _____ Site: _____ Well I.D.: _____

Date: _____ Sampling Personnel: _____ Company: URS Corporation

Purging/ Sampling Device: _____ Tubing Type: _____ Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: _____ Depth to Well Bottom: _____ Well Diameter: _____ Screen Length: _____

Casing Type: PVC Volume in 1 Well Casing (liters): _____ Estimated Purge Volume (liters): _____

Sample ID: _____ Sample Time: _____ QA/QC: _____

Sample Parameters: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

URS Corporation									TEST BORING LOG
									BORING NO:
PROJECT:									SHEET: 1 of 1
CLIENT:									JOB NO.:
BORING CONTRACTOR:									BORING LOCATION:
GROUNDWATER:					CAS.	SAMPLER	CORE	TUBE	GROUND ELEVATION:
DATE	TIME	LEVEL	TYPE	TYPE		Macrocore			DATE STARTED:
				DIA.		2"			DATE FINISHED:
				WT.		--			DRILLER:
				FALL		--			GEOLOGIST:
				* POCKET PENETROMETER READING					REVIEWED BY:

DEPTH	SAMPLE					DESCRIPTION				REMARKS	
FEET	STRATA	NO.	TYPE	BLOWS PER 6"	REC% RQD%	COLOR	CONSIST HARD	MATERIAL DESCRIPTION	USCS	PID	Moist
		1	2" MC								
5		2	2" MC								
10		3	2" MC								
15											
20											
25											
30											

COMMENTS: Geoprobe 5400 using 2" macrocore to a depth of	PROJECT NO.
	BORING NO.

URS Corporation									TEST BORING LOG
									BORING NO:
PROJECT:									SHEET: 1 of
CLIENT:									JOB NO.:
BORING CONTRACTOR:									BORING LOCATION:
GROUNDWATER:					CAS.	SAMPLER	CORE	TUBE	GROUND ELEVATION:
DATE	TIME	LEVEL	TYPE	TYPE					DATE STARTED:
				DIA.					DATE FINISHED:
				WT.					DRILLER:
				FALL					GEOLOGIST:
				* POCKET PENETROMETER READING					REVIEWED BY:

	SAMPLE					DESCRIPTION				REMARKS
DEPTH FEET	STRATA SYMBOL	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	MOISTURE PID
5										
10										
15										
20										
25										
30										

COMMENTS:	PROJECT NO.
	BORING NO.

URS Corporation	TEST BORING LOG
	BORING NO:
PROJECT:	SHEET: 2 of
CLIENT:	JOB NO.:
BORING CONTRACTOR:	BORING LOCATION:
GROUNDWATER:	GROUND ELEVATION:
DATE:	DATE STARTED:
TIME:	DATE FINISHED:
LEVEL:	DRILLER:
TYPE:	GEOLOGIST:
* POCKET PENETROMETER READING	REVIEWED BY:

	CAS.	SAMPLER	CORE	TUBE
TYPE				
DIA.				
WT.				
FALL				

SAMPLE						DESCRIPTION				
DEPTH FEET	STRATA SYMBOL	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	REMARKS
40										
45										
50										
55										
60										
65										

COMMENTS:	PROJECT NO.
	BORING NO.

DRILLING SUMMARY

Geologist:

Drilling Company:

Driller:

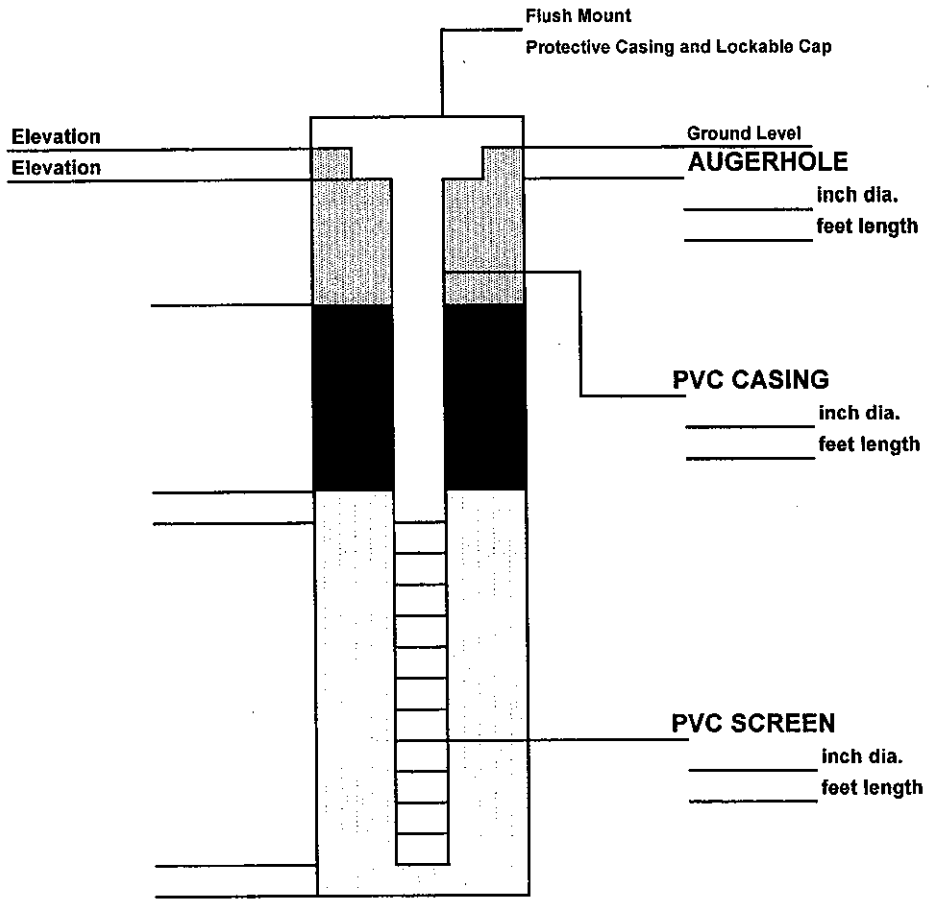
Rig Make/Model:

Date:

GEOLOGIC LOG

Depth(ft.)	Description

D E P T H



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 4" PVC	**Type:** #2 Sand **Setting:**
Monitor: 4" PVC	**Slot Size:** .020"	***SEAL MATERIAL***
		Type: Bentonite **Setting:**

COMMENTS:

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client:	**Location:**	**Project No.:**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:**

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name _____ Date/Time Prepared _____

Preparer's Affiliation _____ Phone No._____

Purpose of Investigation_____

1. OCCUPANT:

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / N

Last Name: _____First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other: _____