



NORTHEASTERN
ENVIRONMENTAL
TECHNOLOGIES CORP.

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September 15, 2005

Mr. Allan N. Geisendorfer, PE
NYS Department of Environmental Conservation
1150 North Westcott Rd.
Schenectady, NY 12306-2014

Dear Mr. Geisendorfer:

RE: FAIRVIEW PLAZA - WASH RITE LAUNDRY (DEC SPILL #02-04750)

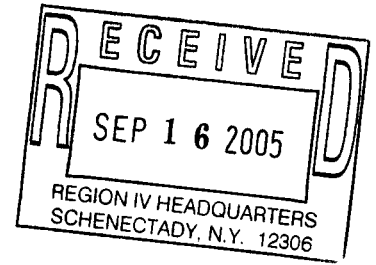
Pursuant to your recent directives Northeastern Environmental Technologies Corporation (NETC) has prepared this technical work plan to further assess the areal extent of chlorinated organic compound tetrachloroethene (PERC) and its associated daughter compounds and the soil vapor intrusion (SVI) potential for PERC at the site. Pursuant to your July 20, 2005 directives this work plan has been developed using on the NYS Department of Health (DOH) guidance document entitled Guidance for Evaluating Soil Vapor Intrusion in the State of New York (Public Comment Draft February 2005; hereinafter termed the guidance document) and the most recent groundwater quality data collected at the site. This work plan represents the level of investigatory work considered appropriate in light of recent regulatory directives received from the DOH and the NYS Department of Environmental Conservation (DEC) regarding PERC impacted sites. This work plan has been prepared to facilitate a base line from which subsequent assessment and / or remedial measures can be implemented, as deemed necessary by the government. The individual services proposed are itemized below for consideration.

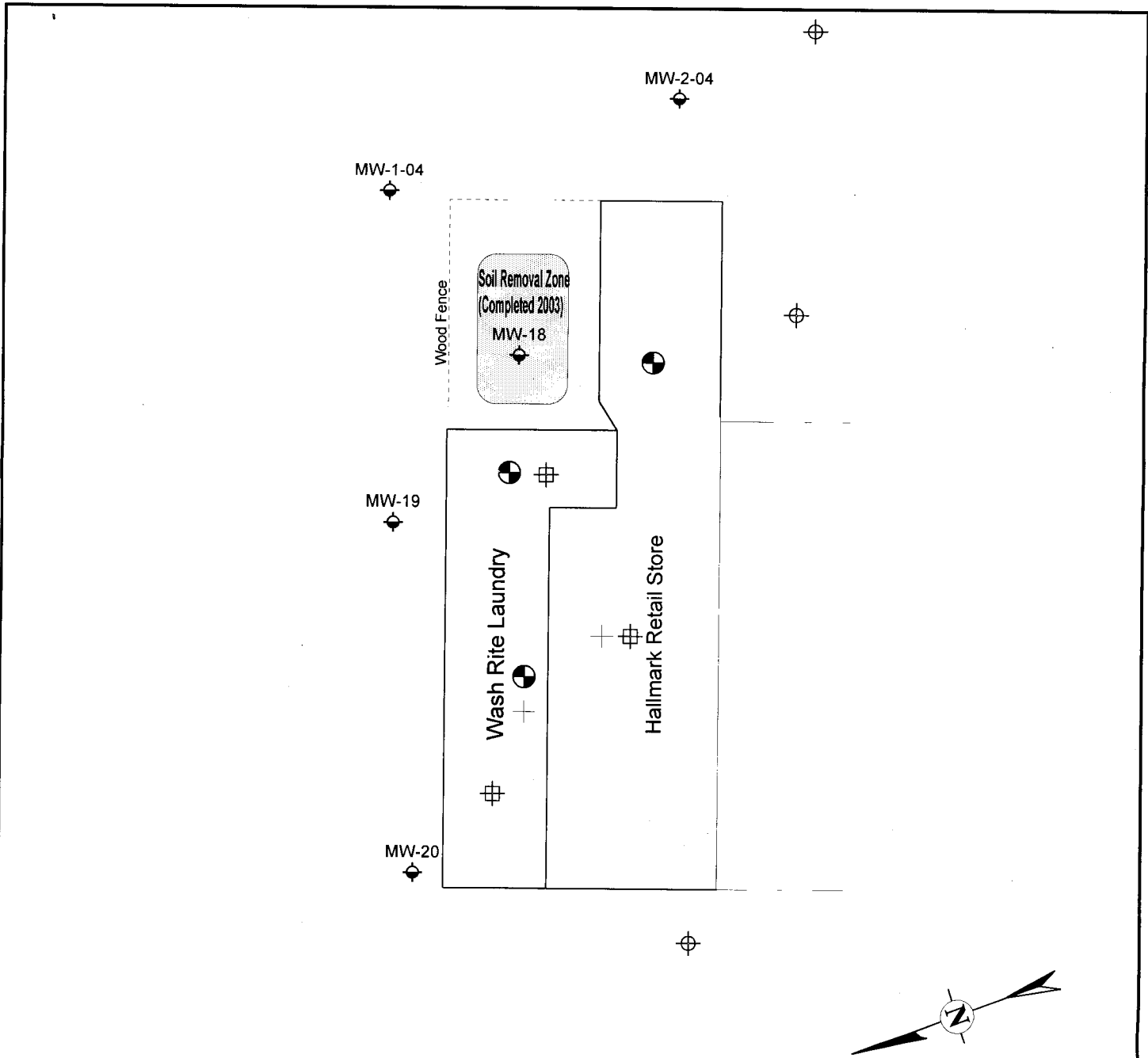
DATA ACQUISITION PROGRAM

TASK 1.0: SOIL BORING SERVICES

The initial work targeted for the site will incorporate further defining the areal and vertical extent of the PERC release below and adjacent to the Wash Rite and Hallmark retail stores. This work will be accomplished through a series of interior and exterior soil borings to be advanced using a combination of direct push (DP) and hollow stem auger (HSA) soil boring methods. The estimated sampling depth for the interior soil borings is 25 feet. Additional soil borings will be advanced east, west and south of the Wash Rite and Hallmark retail stores. Each soil boring will be advanced to a depth 10.0 feet below a shallow groundwater table (See **Figure 1**).

Each of the soil borings will be converted to permanent monitoring wells. Monitoring wells are composed of two basic components; the well screen and the riser or blank. The well screen is the intake portion of the monitoring well. The basic purpose of the riser is to provide storage and a connection to the surface from the well screen. Monitoring wells will be installed individually. The size and materials used in monitoring well construction will be determined on a site-specific basis, in accordance with standard methods / guidelines typical for site investigations of this





Notes:

- Map based on Hershberg & Hershberg map no. 000277 dated 9/27/00, revised 10/5/00.
- Well location based on field measurements.
- Elevations are in feet and based on a datum of 100.0 feet.

LEGEND

- ⊕ Existing Monitoring Well
- ⊕ Proposed HSA Soil Boring / Monitoring Well
- ⊕ Proposed SVI Implant
- ⊕ Proposed DP Soil Boring / Monitoring Well
- + Proposed Indoor Air Sample

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FIGURE 1: Proposed Sampling Plan
PROJECT: 160 Fairview Plaza Hudson, New York

Project # 02.05244	Scale: 1" = 40.0'	Date: Sept. 12, 2005
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nature. Existing data suggests that the proposed monitoring wells will be constructed of 1 and 2-inch flush joint, schedule 40 PVC pipe with 10 feet of slotted well screen. Each monitoring well will be constructed to straddle the upper most groundwater table. A tailpiece will be included below the screen to postpone silting of the well. The annular space around and approximately two feet above the well screen will be filled with a clean filter pack material graded for the slot size of the well. A bentonite seal will be installed above the sand pack with the remainder of the bore-hole will be filled with a cement grout surface seal.

A steel protective manhole cover or protective casing will be installed over each monitoring well to prevent unauthorized access and provide protection for the wells. An experienced NETC geologist will supervise all aspects of the drilling and monitoring well installation program and be responsible for detailed logging of all samples.

As part of the subsurface drilling program, NETC will perform periodic examinations of the ambient air space surrounding the work zone, and the open bore hole to evaluate the presence of volatile organic compounds (VOC). A PhotoVac Model 2020 photoionization detector (PID) will be used to facilitate the testing requirements. The information acquired will be used to determine the level of health and safety equipment necessary to accomplish the proposed work. At this time level "D" conditions are assumed for all drilling services.

SOIL SAMPLING

A combination of continuous and discrete soil samples will be collected at each soil boring. A series of macro-core (MC), large bore and / or split spoon soil samplers, consisting of a drive head, barrel and drive shoe, will be used to collect the subsurface soil samples during the drilling program. All soil samples will be logged on site as they are extracted, labeled and retained for additional VOC analysis. All sampling equipment will be pre-cleaned prior to use.

Samples obtained in this manner will be examined and described using the Modified Burmister and Unified Soil Classification Systems. Samples will be retained in glass jars sealed with aluminum foil-lined screw top lids. In compliance with ASTM methods, the sample jars will be labeled with the following information: job designation, boring number, sample number, depth of sample, depth penetration record and length of recovery.

VOLATILE ORGANIC COMPOUND (VOC) FIELD ANALYSIS

As part of the subsurface investigative program, NETC will perform examinations for VOC's on all soil samples obtained. A properly calibrated photoionization detector (PhotoVac Model 2020 or equivalent PID) and a Photo Vac 10S70 gas chromatograph (GC) equipped with a photoionization detector (PID) and an on board computer, will be utilized to analyze a 250 microliter aliquot of head space gas from each soil sample (injected via a pre-cleaned air tight syringe) for a select number of target volatile organic compounds (VOC). The GC will be calibrated prior to the start of fieldwork with a library of the target VOC's chemical standard of known concentration. Based on available historical knowledge of the site (4) chemical parameters will be selected for consideration. These chemicals included PERC, cis-1,2-Dichloroethene (DCE), Trichloroethene (TCE) and Vinyl Chloride (VC). Minimum detection limits (MDL) will be established for these chemicals to assist in the review and

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interpretation of the soil gas data. The GC will be periodically re-calibrated during the course of the day with a known VOC standard. In addition "dry runs" will be performed to evaluate the presence of background contamination within the GC. Efforts will be made to prevent cross contamination between SG sampling points.

In order to minimize this factor, all disposable sampling equipment will be dedicated to each respective sampling location. Also, repeated flushing of the 125 milliliter glass sampling bulbs and syringes will be performed between sampling points using zero grade air. The PID & GC data will be used to short list soil samples for additional laboratory analysis. The laboratory testing services presently under consideration include EPA Methods 8260. It is anticipated that the sampling services will include a minimum of one "grab" soil sample from each soil boring to confirm or refute the field GC data. The combined laboratory and field GC data will be used to profile the vertical extent of PERC impacted soil.

DECONTAMINATION PROCEDURES

Prior to drilling the first boring, the equipment to be used in drilling and sampling will be cleaned to remove possible contaminants encountered during drilling at previous jobs. All equipment, which is to come in contact with the soil or groundwater, will undergo the initial cleaning procedure. While working at the site, the drilling equipment will be decontaminated between soil borings to prevent cross-contamination. The cleaning process will involve the use of a steam cleaner or high-pressure wash. Uncontaminated water, collected at the site, will be used for all decontamination procedures.

All decontamination activities will be performed within an designated decon pad established at the site. Decontamination waters resultant from the proposed work will be containerized in 55 gallon drums upon identification of VOC's in excess of 5 ppm in any of the soil boring locations. Decontamination waters resultant from the proposed work will be containerized in 17 H salvage drums.

TASK 2: WATER SAMPLING SERVICES

Prior to any water sample collection, static water levels will be measured to the nearest one-hundredth of a foot in each monitoring well located at the site. The presence of non-aqueous phase liquids (NAPL) will be evaluated in each monitoring well using an interface probe. Concomitant with the development process temperature, pH, specific conductance, and turbidity will be measured until these parameters show no change, indicating that fresh, representative groundwater is entering the well. Groundwater sampling will occur at each of the existing and proposed monitoring wells. Sampling services will occur at each well when a sufficient volume of water has recovered (i.e., fresh aquifer water has entered the well) in the designated sampling locations. Sampling will be performed using dedicated bottom filled, check valve PVC bailing equipment.

One deep grab groundwater sample will also be collected at the base of each of the interior soil borings using a SP-15 screen point sampling system. Each SP-15 groundwater sample will be used to identify vertical dissolved phase chemical variations in the shallow groundwater table. All sample containers and preservatives will be provided by a NYS approved Laboratory. Field

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quality measurements of pH, specific, conductance, temperature and turbidity will be recorded prior to groundwater sampling. All samples will be maintained at a temperature of 4°C by commercially available (pre-frozen) "ice-packs" and appropriate holding and transportation times were followed. All samples will be collected in such a manner as to minimize agitation and other disturbing conditions, which may cause physio-chemical changes and bring about losses due to volatilization, adsorption, redox changes or degradation. All groundwater samples collected will be analyzed for the parameters inclusive of EPA Methods 8260. All groundwater samples will reflect unfiltered total matrix groundwater chemistry. Formal chain of custody documentation will be maintained throughout the shipment of the NETC samples to the laboratory. Observation will be made and recorded regarding weather and surrounding air/water/soil conditions, non-aqueous components of well water (e.g. "sinkers", surface sheens) and any other pertinent field conditions.

TASK 3: SUB SLAB VAPOR PROBE INSTALLATION SERVICES

Three sub slab vapor probes will be installed below the slab of the structure. Two Sub slab vapor probes will be installed in the space presently occupied by Wash Rite and one slab vapor probe will be installed at the adjacent HallMark store. If possible the vapor probes will be completed adjacent to the areas previously occupied by dry cleaning machine equipment. The proposed vapor probe installations will be completed based on the regulatory criteria specified in the DOH guidance document.

Rotary methods will be used to create (3) 1.0 inch penetrations through the floor slab. The sub slab vapor probes will be installed in the soil or aggregate immediately below the slab (i.e., <2.0 inches). The vapor probe proposed for this evaluation will consist of a poly ethylene or brass tubing. The annular space surrounding the implant will be filled with a #1 morie well sand. The surface of the annular space surrounding the tubing will be filled with a cement bentonite grout. When not in use the tubing will be capped with a non volatile organic compound (VOC) emitting surface seal. All sub slab vapor probe implant equipment will be purchased new for this matter. All installation equipment will be decontaminated prior to use on site.

TASK 4: VAPOR SAMPLING SERVICES

A sub slab vapor sample will be collected from each vapor implant installed at the site. A one to three volumes of the sub slab vapor probe will be removed and transferred into a 1 liter glass sample bulb prior to sampling. Sub slab vapor purge rates of < 0.2 liters per minute will be maintained. The sub slab vapor will be screened (in areas other than the implant site) using a hand held photoionization meter (i.e., PhotoVac Model 2020) for the presence of VOCs. Sub slab vapor samples will be obtained over an 8 hour sampling period using 6L Summa® canister sampling methods.

Simultaneous indoor air sample will also be collected from each of retail space. A simultaneous outdoor air sample will also be collected at an upwind location (free of obstructions) adjacent to the Fairview Plaza structure. Each indoor and outdoor air sample will be obtained from a 3 foot elevated platform via 6L Summa® canisters equipped with 8 hour sample regulators.

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All Summa® canisters will be certified as clean by EMSL Laboratories. A sampling log will be maintained for the sampling event which will document sample ID, date and time of the sample collection, sample height, the names of NETC staff, pertinent weather conditions, sampling methods and devices used, volume of air sampled, applicable pre and post sample vacuum and ambient air temperature data and chain of custody information. All samples will be shipped next day air to EMSL Laboratories for chemical analysis. All samples will be analyzed via Method TO-15. All data sets will be reported in micrograms per cubic meter (ug/m³) with minimum sample reporting limits of 1 ug/m³.

TASK 5: PRODUCT INVENTORY SURVEY

A product inventory survey of both the Washrite and Hallmark retail space will be made (as outlined in Appendix B of the guidance document) to consider other potential contributing sources for VOCs in the structure.

TASK 6: REPORT ASSIMILATION

A report will be prepared and submitted to the DEC for formal consideration. Data collected using the methodologies described in this transmittal will be utilized to develop a program to monitor and / or address areas of the site which remain effected by PERC. The report will document all investigatory activities, discuss the rationale and methods of the investigation and provide recommendations for additional site characterization and / or remedial action work (i.e., sub slab vapor extraction, pump and treatment program, Hydrogen Release Compound insitu treatment, etc.), if appropriate. The final report will include all data, data analysis, methodology, laboratory results, chain-of-custody documentation as well as any pertinent field notes. All information will be presented in a clear and concise manner and substantiate the conclusions and recommendations reached.

Please contact this office once you have reviewed the information contained herein. The NETC organization and I remain available to assist you and the DEC with this important matter, as necessary.

Sincerely,
NORTHEASTERN ENVIRONMENTAL TECHNOLOGIES CORPORATION


Jeffrey T. Wink, President
JTW/epa

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C.c. Mr. Tony Fabiano