SITE CHARACTERIZATION REPORT

REGION 8 DRY CLEANING SITES
FORMER HELWIGS DRY CLEANERS SITE
CORNING, NEW YORK

WORK ASSIGNMENT NO. D003826-20

SITE NO. 8-51-023

Submitted to:

New York State Department of Environmental Conservation
Albany, New York

Submitted by:

MACTEC Engineering and Consulting, P.C.
Portland, Maine
MACTEC No. 3612052036

SEPTEMBER 2006

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Submitted by:	Approved by:
_____	_____
John W. Peterson, P.M.	William J. Weber, P.E.
Project Manager	Program Manager

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ACRONYMS

1,1,1-TCA	1,1,1-tetrachloroethane
ASP	Analytical Services Protocol
ASTM	American Society for Testing and Materials
bgs	below ground surface
Chemtech	Chemtech Consulting Group, Inc.
DUSR	Data Usability Summary Report
EDR	Environmental Resources, Inc.
^{o}F	degrees Fahrenheit
MACTEC	MACTEC Engineering and Consulting, P.C.
msl	mean sea level
NYCRR	New York Codes, Rules, and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	State of New York Department of Health
PCE	tetrachloroethene
PID	photoionization detector
ppm	parts per million
Report	Site Characterization Report
SC	Site Characterization
Site	Former Helwigs Dry Cleaners Site
SVOC	Semi-volatile organic compound
TCE	trichloroethylene
TCL	Target Compound List
TIC	tentatively identified compounds
µg/kg	micrograms per kilogram
µg/L	micrograms per Liter
µg/m^3	micrograms per cubic meter
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
WA	Work Assignment

EXECUTIVE SUMMARY

The Former Helwigs Dry Cleaners is located at 265 West William Street in the center of a residential neighborhood, in the City of Corning, Steuben County, New York (Figure 1.1). The Site, Site No. 8-51-023, is a potential hazardous waste site, currently listed as a Potential or "P" site by the NYSDEC, because insufficient information existed to determine whether wastes were disposed of at the Site and whether, if present, those wastes posed a potential significant threat to public health or the environment (New York State [NYS], 1998). MACTEC Engineering and Consulting, P.C. (MACTEC) conducted field investigations as part of a Site Characterization (SC). The purpose of the SC is to gather sufficient information to evaluate environmental problems present at a Site. The SC seeks to identify whether a source of waste is present at a Site, determine if the waste poses a significant threat to human health or the environment, and evaluate migration routes to the surrounding environment through groundwater, soil gas, or surficial pathways.

The Former Helwigs Dry Cleaners reportedly operated from the mid-1940's to the late-1990's. The Site property consists of two lots, totaling approximately 0.4 acres. Each of the lots contains a residential house on the southern side, and the former dry cleaner building covers the northern section of both lots. The cement block building is one story with no basement. The former dry cleaner is accessed by a driveway past a residential house, where the owner formerly resided. Residential property surrounds the Site on all sides, except to the northeast, where a church exists. The former dry cleaner building is currently vacant.

The Site came to the attention of the NYSDEC after low concentrations (less than 14 micrograms per liter [µg/L]) of chlorinated solvents (specifically tetrachloroethene [PCE] were first detected in the City of Corning supply wells number 1 and 2 in the early 1980's. These wells are located approximately 600 feet and 400 feet from Former Helwig's Dry Cleaners, respectively, along the banks of the Cohocton River (Figure 1.1).

To determine whether the chlorinated solvent contamination detected in the City of Corning's public supply wells originated from the Site and to collect sufficient information to allow re-classification of the Site, MACTEC conducted the following tasks:

- completed a file review of the Site;
- collected 3 direct push soil samples from above the water table at 3 locations;
- collected 10 direct push groundwater samples at 9 locations;
- collected three soil gas samples from around the Site property; and
- collected one sub-slab vapor sample.

A review of physical and chemical data collected during the SC resulted in the following findings:

1) The Site is located in a residential neighborhood that is serviced by public water. Low concentrations of PCE (<14 µg/L) have been detected in the City of Corning's public supply well #2, located approximately 400 feet south, and potentially down gradient of, the Site.

2) PCE was not detected in either soil or groundwater samples collected at the Site property, or in the groundwater samples collected between the Site and the public supply well. This is consistent with the reported information that the former dry cleaner used Stoddard solvent for cleaning and not PCE.

3) Trace concentrations of PCE (34.8 J µg/m^3) and trichloroethylene (TCE) (2.36 J) were detected in the sub-slab soil gas sample collected from below the Site building. These concentrations are below any guidance value requiring mitigation or even monitoring.

4) Trace concentrations of PCE (6.99 µg/m^3) and TCE (0.54) were detected in the soil gas samples collected from around the Site property. The concentrations detected were not indicative of source area concentrations.

5) Based on these results, the Site does not appear to be a source of hazardous waste contamination (specifically chlorinated solvents), and the chlorinated solvents detected in the city supply wells do not appear to be originating from the Site.

1.0 INTRODUCTION

MACTEC Engineering and Consulting, P.C. (MACTEC), is submitting this Site Characterization Report (Report) to the New York State Department of Environmental Conservation (NYSDEC). The Report addresses the Site Characterization (SC) at the Former Helwigs Dry Cleaners site (Site) in Corning, New York (Figure 1.1). This Report was prepared in response to Work Assignment (WA) No. D0003826-20 (NYSDEC, 2005), and in accordance with the requirements of the July 1997 Superfund Standby Contract No. D003826 between the NYSDEC and MACTEC.

This Report is one of five site-specific SC reports for the Region 8 Dry Cleaning Sites multiple site Site Characterizations WA. The other four SC reports address the sites listed below:

- Crystal Cleaners (Site No. 8-51-022)
- Former American Dry Cleaners (Site No. 8-08-036)
- Castle Cleaners (Site No. 8-08-034)
- Loohn's Corning (Site No. 8-51-028 - replaces Former Your Way Cleaners)

The Former Helwigs Dry Cleaners site, Site No. 8-51-023, is currently listed as a potential hazardous waste site, or "P" site, by the NYSDEC, because insufficient information existed to determine whether wastes were disposed of at the Site and whether, if present, those wastes posed a potential significant threat to public health or the environment (New York State [NYS], 1998).

The purpose of the SC is to provide information to be used by the NYSDEC to reclassify the Site to one of the following categories:

Class 1	Hazardous waste constitutes a significant threat to the environment, as described in Title 6 of the New York Codes, Rules, and Regulations (NYCRR) Part 375 (NYS, 1998); and the significant threat to the environment is causing, or presents an imminent danger of causing, either irreversible or irreparable damage to the environment.
Class 2	Hazardous waste constitutes a significant threat to the environment as described in 6 NYCRR Part 375 (NYS, 1998).
Class 3	Hazardous waste does not presently constitute a significant threat to the environment, as described in 6 NYCRR Part 375 (NYS, 1998).

To complete its reclassification, the NYSDEC requires information to establish the following:

- The existence of documented hazardous waste disposal, as defined in 6 NYCRR Part 371 (NYS, 1999a).
- The Site's significance with respect to the threat it poses to public health and the environment as defined in 6 NYCRR Part 375 (NYSDEC, 1998).
- Identification of contaminant source.

MACTEC collected reclassification documentation and is presenting it to the NYSDEC so it can recommend follow up action for the Site (i.e., reclassify, delist, or perform additional investigation).

During Task 1, MACTEC conducted a search of state and county site records, and performed a site inspection to develop information necessary for reclassification or delisting. The information collected is presented in Section 2 of this document. Task 1 activities did not develop adequate data on which to base a delist or reclassification recommendation. Therefore, additional field investigations were conducted under Task 2 – Subsurface Investigations.

Section 3 of this Report presents the work conducted during the field investigations. Section 4 presents results of the field investigation. Section 5 presents an investigation summary.

Task 3 is the preparation of this Report. Resources used to prepare this Report include: (1) information provided in the Work Assignment, (2) appropriate guidelines in the NYSDEC Draft DER-10 Guidance (NYSDEC, 2002), (3) results of previous investigations, if applicable, and (4) results of the SC investigation.

2.0 SITE BACKGROUND AND PHYSICAL SETTING

On September 9 and 10, 2005, MACTEC personnel reviewed available records from the NYSDEC office in Albany, New York, and visited the City of Corning, New York town offices. As part of the review, MACTEC ordered a copy of an Environmental Data Resources, Inc. (EDR) report which provides a listing of federal and state governmental information pertaining to potential and documented environmental impacts, both at the Site and within the American Society for Testing and Materials (ASTM) recommended search radii. Complete lists of all recommended ASTM record searches for standard due diligence requirements are included in the EDR report provided under separate cover. This information was reviewed to support a Site classification, and to help prepare the scope of work for the SC field investigations. The information collected from these sources is summarized below.

2.1 SITE LOCATION

The Former Helwigs Dry Cleaners is located at 265 West William Street in the center of a residential neighborhood, in the City of Corning, Steuben County, New York (Figure 1.1). The Former Helwigs Dry Cleaners property consists of two lots (265 and 269 West William Street), totaling approximately 0.4 acres. Each of the lots contains a residential house on the southern side, and the former dry cleaner building covers the northern section of both lots. The cement block building is one story with no basement.

The former dry cleaner is accessed by a driveway past a residential house, where the owner formerly resided. Residential property surrounds the Site on all sides, except to the northeast, where a church exists.

2.2 SITE HISTORY

The original use of the property is unknown. The 1913, 1920 and 1930 Sanborn Maps show the two existing residences occupying the southern portion of the 265 and 269 West William Street lots. The 1930's Sanborn Map indicates automobile storage on the north side of the two lots. Town records indicated that the Site building was built in 1945. The 1948 Sanborn Map shows a building on the north side of the 265 West William Street lot that appears to be the east half of the

current Site building. The 1968 Sanborn Map shows the Site building (Laundry facility) as is currently configured. The current Site owner stated the building was built to serve as a dry cleaner and his recollection of the construction date was between 1945 and 1948. The dry cleaning operation was run by his wife's family. They rented the facility to an outside operator in the mid 1990s. The location continued to serve as a dry cleaner until the late 1990's (Schaller, 2005).

The building is currently vacant.

Based on sewer and water lines being installed in the vicinity of the Site prior to 1912 (Panton, 2005), as well as the limited space available around the Site building, the Site has likely always been connected to public water and sewer. A reported dry well is located on the south side of the facility, and a sink inside the facility reportedly dead-ended below the current floor slab (it has been dug up and no photoionization detector (PID) hits were reported [Gridley, 2005]).

2.3 PREVIOUS INVESTIGATIONS

Chlorinated solvents were originally detected in the City of Corning supply wells number 1 and 2 in the early 1980's. These wells are located approximately 600 feet and 400 feet from Former Helwigs Dry Cleaners, respectively, along the banks of the Cohocton River (Figure 1.1). These two wells are both screened from approximately 50 to 70 feet below ground surface. Pumping tests indicate that the wells can produce up to one million gallons a day, although they are currently run on an alternating 10 day schedules, with one well producing approximately one million gallons over the ten day period (total running time of approximately 24 hours), and then rotating to the next well for the subsequent ten day period (Panton, 2005).

Tetrachloroethene (PCE) has been detected at low concentrations in both wells. Concentrations typically range from non-detect to 14 micrograms per liter (µg/L), with slightly higher concentrations detected in Well 2 then Well 1. PCE was detected in the samples collected in the 2004 round at concentrations of 1.1 µg/L in Well 1 and 11 µg/L in Well 2. The NYS Class GA standard for PCE is 5 µg/L.

Although no formal investigation reports were available for review by MACTEC, both a Phase I and Phase II Site Assessment have been conducted for the Site owner by United Environmental

Group. The Phase II Investigation focused on sampling groundwater with a Geoprobe®, and collecting soil samples for PID screening, and/or analyses near sink/floor drain outlets, dry wells, and in the vicinity of former solvent tanks. The solvent tanks were reportedly located south of the southwest corner of the Site building. A waste solvent tank was also reportedly located north of the Site building, off the western half of the building. Chlorinated solvents were reportedly not detected in Site media (Gridley, 2005). The Phase II Report had not been published at the time of the Site walkover. During interviews in the area by MACTEC, a local dry cleaner operator mentioned that Helwigs Cleaners used Stoddard solvent and not PCE for a cleaning solvent (Davis, 2005).

2.4 PHYSICAL SETTING

Topography

The Site is located in the Chemung River Valley, which runs east-west. The Site property is located at 930 feet above mean sea level (msl), sloping slightly to the south. The surrounding area slopes slightly down to the south, before reaching the dike at the edge of the Chemung River, located 450 feet from the Site. The Chemung River is located at an elevation of approximately 920 feet above msl, just south of the dike. The topography to the north of the Site is relatively flat for approximately 0.8 miles, and then rises to a ridge at 1600 feet above msl approximately 1.7 miles from the Site.

Climate

The climate of the area is characterized by moderately warm summers and cold winters. Mean monthly temperatures range from 23 degrees Fahrenheit (°F) in January to 68°F in July. Average annual precipitation is 32 inches. Average annual snowfall is 37 inches (National Climatic Data Center, 2004).

Surface Water Hydrology

Surface drainage from the Site generally follows the topography, flowing toward the municipal storm drains located on West William Street. These storm drains flow to a treatment plant located

approximately 2.4 miles east of the Site. The treatment plant discharges to the Chemung River downstream of the Site. The Site is not located within the 100 or 500 year flood zone (EDR 2006).

Groundwater Hydrology

The Chemung River is a local groundwater discharge area. Groundwater at the Site was encountered at approximately 10 feet below ground surface (bgs), and is expected to flow south towards the River. Groundwater contours for the greater Corning area indicate that groundwater at the Site flows in a southerly direction, towards the river (USGS, 1982).

Geology

Overburden soils at the Site consist primarily of fluvial silts, sands and gravels. Surficial geology is mapped as oxidized, non calcareous, fine sand to gravel (Muller et al., 1986). Based on regional geologic mapping (Rickard and Fisher, 1970) bedrock is expected to consist of shale and siltstones associated with the Upper Devonian West Falls Group; specifically, the Gardeau Formation, consisting of shale and siltstone; and/or Roricks Glen shale (Rickard and Fisher, 1970).

Site Walkover

On September 10, 2005 MACTEC and the NYSDEC personnel conducted a walkover of the Site area.

SITE WALKOVER ATTENDEES

NAME	TITLE	AFFILIATION/TELEPHONE
Charles Staples	Site Lead	MACTEC Engineering and Consulting 207-775-5401
Matthew Dunham	Environmental Engineer NYSDEC Project Manager	NYSDEC Division of Environmental Remediation, Albany 518-402-9812
Stephen Gridley, PWS	Environmental Scientist	United Environmental Group, Inc. Elmira, NY
Raymond T. Schaller		Site Owner

The Site walkover consisted of viewing the Former Helwigs Dry Cleaners property, and the surrounding neighborhood to assess possible contamination sources and the logistical concerns for the field program. MACTEC personnel documented the walkover with photographs (Photographs are included in Appendix A).

Potential sources of contamination were noted during the Site walkover, but no positive sources of contamination were observed; however, detailed inspections of potential sources, including site soils were not conducted during the site walkover. Additional information for the purpose of identifying potential sources was collected during Task 2.

2.5 FILE REVIEW

MACTEC reviewed files from various state and local agency offices to develop information to support a reclassification or delisting, and to help prepare the scope of work for the SC field investigations. The Site EDR report was also reviewed in preparation of this Report.

2.6 SUMMARY OF DATA RECORDS SEARCH AND ASSESSMENT FINDINGS

Under federal and state regulations a solid waste may be regulated as a hazardous waste if it is a material included in one of the United States Environmental Protection Agency's (USEPA) or the NYSDEC's lists of hazardous wastes. If a material is regulated because of its inclusion on a federal or state list, it is commonly referred to as a "listed hazardous waste." A waste may also be regulated under the Resource Conservation and Recovery Act as a "characteristic hazardous waste" if it exhibits one of the characteristics of toxicity, corrosivity, reactivity, or flammability.

Results of sampling and analysis of the City of Corning's water supply well No. 1 and 2 indicated the presence of chlorinated solvents (PCE) in groundwater. Spent chlorinated solvents not originating from household sources, including PCE are included on both the USEPA's and the NYSDEC's lists of hazardous wastes. Under 6 NYCRR Part 371.4(a)(1), these spent solvents constitute hazardous waste from non-specified sources. Disposal of these chlorinated solvents has been confirmed by available analytical results form the City's water supply well, but the source area has not been identified.

As defined by 6 NYCRR Part 375, significant threat can be established by documenting a contravention of environmental standards. Surface water and groundwater are the only media for which NYS has promulgated standards. Under NYS Water Quality Regulations (6 NYCRR Parts 700 705) the state has set numeric standards that are the maximum concentration of compounds in groundwater and surface water that protect public health and/or the environment (NYS, 1999b).

Analytical data from the Site was not available for review during Task 1, and therefore it was not known if the Site was the source of the PCE contamination or if the Site posed a significant threat. As a results, Task 2, the SC Field Investigation, was performed to:

- collect the data necessary to verify the likelihood of uncontrolled waste disposal;
- determine if potential contamination is present on the Site and is migrating off-site; and
- provide sufficient information to allow the NYSDEC to re-classify the Site.

3.0 SCOPE OF WORK

To reclassify the Site, the NYSDEC requires data documenting hazardous waste disposal as set forth in 6 NYCRR Part 371, and the potential significant threat to human health and the environment as defined by 6 NYCRR Part 375. Although available analytical data from the city's water supply wells indicate disposal of a listed hazardous waste (specifically PCE), it was not known if these wastes originated from the Site. In addition, it was not known if other potential contaminants present in Site media were migrating off-site and posed a potential significant threat to human health and the environment. Because available data from state and municipal files reviewed during Task 1 was not sufficient to classify the Site, additional field investigations were performed as described below. Task 2 activities included the Field Investigation. The objective of Task 2 activities was to determine if volatile organic compound (VOC) contamination was present in Site media and, if present, was the contamination originating from the Site and migrating off-site. An additional objective was to determine, if possible, whether the VOCs detected in the City supply wells originated from the Site. Task 3 was the preparation and distribution of this Report.

TASK 2 - FIELD INVESTIGATIONS

The following subsections describe the activities conducted during the field investigation portion of the Site SC. The work generally followed the scope of work as outlined in the SC Work Plan (MACTEC, 2005). The field investigation was conducted in accordance with the specifications presented in the Quality Assurance Program Plan (ABB-Environmental Services, 1995) and the Site specific Quality Assurance Project Plan. Laboratory analyses were performed by Chemtech Consulting Group, Inc. (Chemtech), a New York State Department of Health (NYSDOH) approved laboratory. Laboratory analysis complied with the NYSDEC Analytical Services Protocols (ASP) (NYSDEC, 2000).

3.1. GENERAL FIELD ACTIVITIES

General field activities, including mobilization, health and safety, and decontamination, are described in the following subsections.

3.1.1. Mobilization

After receiving the NYSDEC authorization to begin fieldwork, MACTEC and its subcontractors conducted utility clearance, mobilized to the Site and began the field exploration program.

A field team orientation meeting was held on-site with MACTEC personnel to familiarize field workers with Site history, health and safety requirements, equipment calibration procedures, and other field procedures.

3.1.2 Health and Safety

Field investigation activities were conducted at Level D personal protection. Based on PID readings, no upgrades of personal protection were warranted.

3.1.3 Decontamination

Sampling methods and equipment for this field program were chosen to minimize investigation derived waste and minimize possibility of cross contamination. Disposable sampling equipment was used as much as practical to minimize decontamination time and water disposal.

Non disposable sampling equipment was decontaminated by 1) scrubbing the sample collection equipment with potable water and Liquinox, rinsing with potable water, rinsing with deionized water, and then allowing the equipment to air dry, or 2) steam cleaning the equipment and then allowing the equipment to air dry. Decontamination fluids did not exhibit visual or olfactory evidence of contamination and were released to the ground surface in the area of the exploration, so as to allow the liquids to infiltrate into the soil.

3.1.4 Investigation Derived Wastes

The field investigation did not result in the generation of wastes that were considered hazardous (i.e., no visual or olfactory signs of contamination, and no PID readings above 5 parts per million (ppm) were detected). Therefore drill cuttings and purge water resulting from the investigation were placed on the ground surface in the area of exploration, or used as backfill for the borings, and personal protective equipment and disposable sampling equipment were double bagged and disposed of as non-hazardous refuse.

3.2 GEOPROBE® BORINGS AND SAMPLING

Field investigation activities included the completion of Geoprobe® borings, the collection and analysis of groundwater, soil, and soil gas samples. The purpose of the activities was to provide groundwater data for comparison to NYS Class GA Groundwater Quality Standards set forth under 6 NYCRR Parts 700-705 (NYS, 1999b), and to assist the NYSDEC in evaluating significant threat to public health and the environment as defined by 6 NYCRR Part 375 (NYS, 1998). Soil sample analyses were used to assess whether hazardous waste constituents were present in site soils, and, if possible, confirm a source of chlorinated solvents. Soil gas sample results were used to evaluate whether VOCs present in soil and/or groundwater are migrating towards occupied buildings via vapor migration.

MACTEC used a Geoprobe® sampling device to collect groundwater, soil, and soil gas samples to identify potential chlorinated solvents. Geoprobe sampling was conducted on February 6 and 7, 2006. The Geoprobe® pushes and/or hammers rods and probe tips into the subsurface for sample collection. A total of nine borings, including three soil gas borings, were completed over the two days. Borings included the collection of 10 groundwater samples, 3 soil samples, and 3 soil gas samples.

MACTEC worked closely with the NYSDEC, the Former Helwigs Dry Cleaners owner, the neighboring property owners, and utility companies to obtain access to the exploration locations. Boring locations are shown on Figure 3.1. Locations were chosen to determine groundwater conditions upgradient and downgradient of, as well as adjacent to, the Site building.

Soil Sampling. Soil samples were collected using a 4-foot long 2 inch diameter core sampler with an acrylic liner for the collection of discrete subsurface soil samples. Soil samples were collected continuously from the ground surface to the top of the groundwater table. PID headspace readings were used to screen soil samples for the presence of VOCs as each soil sample was removed from the sample collection tube. Samples were described using the Unified Soil Classification System. The sample description and classification, VOC headspace reading, and boring observations were recorded on the Field Data Record, included in Appendix B. Based on the PID readings and physical evidence such as color or odor, three unsaturated soil samples were submitted to the laboratory for analysis. Samples exhibiting the highest PID readings and physical evidence of contamination were selected for analysis. Soil samples were shipped to Chemtech for analyses of target compound list (TCL) VOCs using USEPA OLM04.2 Methods as described in the NYSDEC ASP of June 2000. Laboratory analysis included Category B deliverables.

Groundwater Sampling. Groundwater samples were collected using a small diameter stainless steel wire wound screen that was exposed to the aquifer, after being pushed to the desired depth interval. A peristaltic pump was used for the collection of discrete groundwater samples. One tubing volume of water was purged and one set of parameters including temperature, conductivity, pH, and turbidity was collected before sampling. VOC samples were collected at a low purge rate (approximately 100 milliliters per minute) to minimize potential volatilization.

To assess vertical extent of contamination, MACTEC attempted to collect groundwater samples from two locations in each boring, the water table and 10 feet into the water table (10 feet below the first sample). Each boring was completed to at least 10 feet into the water table, encountered at approximately 10 feet bgs. Due to some overburden soils with low porosity, only one deep sample (approximately 20 feet bgs) was collected from two of the borings (GW-3 and GW-6). Groundwater samples were shipped to Chemtech for analyses of TCL VOCs using USEPA OLM04.2 Methods as described in the NYSDEC ASP of June 2000. Two groundwater samples were also collected for semi-volatile organic compound (SVOC) analyses using USEPA OLM04.2 Methods as described in the NYSDEC ASP of June 2000. Laboratory analysis included Category B deliverables.

Microwell Installation. Microwells were not installed during this investigation. The purpose of microwells would be to determine groundwater flow direction. Based on the number and location

of Geoprobe® borings across the Site, and the groundwater flow previously mapped in the area, as well as the information gathered from microwells at the Crystal Cleaners Site, no microwells were deemed necessary.

Soil Gas Sampling. Based on proximity to nearby residences and/or businesses, and discussions with the NYSDEC, three soil gas samples were collected (GV-1, GV-2, GV-3) to evaluate the potential vapor migration of contaminants from the groundwater (Figure 3.1). Soil gas samples were collected using a Geoprobe® sampling device.

The Geoprobe® rods were pushed to between 6 and 8 feet bgs (expected to be below the rain infiltration line, but above the water table fringe zone). Soil gas collected just above the water table gives an indication of the possible vapor migration from potentially contaminated groundwater.

Soil gas samples were collected from the Geoprobe® points. Upon reaching the target depth, the Geoprobe® rods were pulled back slightly, exposing the bottom of the open rods to the soil. The soil vapor sample was then collected from the desired depth with a sealed tubing system. In addition, the outside of the rods were sealed at the ground surface with pre-hydrated bentonite. Approximately 2 liters of soil gas, plus the volume of the tubing, was purged at a rate of 400 ml/min using 580B OVM PID pump before collecting samples. During the soil gas purge, vapors were screened using a PID. In addition, helium leak tests were conducted on a subset of the Region 8 Dry Cleaners Sites soil gas samples to ensure samples were representative of sub-surface conditions and not outdoor ambient air. Helium tests were conducted by encapsulating the sample point with a bucket sealed to the ground surface with bentonite and filled with helium. The helium was then tested for during purging of the sample tubing, prior to collecting the soil gas sample. The soil gas samples were collected with one-liter SUMMA®-type canisters with flow valves (set to approximately 20 minutes per sample). Flow into the canisters was less than 0.1 liters per minute, as requested by the NYSDOH. Samples were sent to Chemtech for VOC analysis by USEPA Method TO-15.

3.3 Sub-Slab Soil Vapor Sampling

One sub-slab soil vapor sample (SV-1) was collected from below the Site building concrete slab on 2/6/06. To complete the sampling, a one-inch diameter hole was drilled with a hammer drill two inches into the building floor. The hole was continued with a 3/8-inch drill bit, until the building slab was penetrated. The hole was continued approximately 3-inches below the slab. The hole was then swept to remove drill cuttings/dust from the area. A ¼-inch piece of Teflon tubing was inserted through a 1" diameter rubber stopper, and placed into the hole, so that the bottom of the tubing was below the slab floor and the stopper rested inside the one-inch hole, forming a seal. The stopper was then covered with bees wax to provide an impenetrable seal for the migration of indoor air into the sub-slab. Approximately 400 ml was purged from the tubing using a 580B OVM PID pump before collecting the sample. A 6-liter SUMMA®-type canister with a 24-hour flow valve was connected to the tubing with swagelok fittings. The time of sample collection, canister vacuum (in inches Hg), weather conditions, and barometric pressure were recorded in the field log book.

Approximately 24 hours after sample collection, the flow valves were shut off. The time, remaining vacuum in the canister, and barometric pressure were noted in the field log book. The samples were shipped to Chemtech laboratories for analyses of VOCs via USEPA Method TO-15. Laboratory analysis included Category B deliverables.

Upon completion of the sampling, the tubing and stopper was removed from the building floor and the holes were filled completely with a fast drying hydraulic concrete (i.e. Quickcrete).

3.4 Building Soil Sample

Based on discussions with the property owner's consultant, and the NYSDEC project manager, one sample (SS-99) was collected by United Environmental Group., Inc. from beside/below the underground fuel/solvent storage tank located in the northeast corner of the Site building. MACTEC submitted the sample to Chemtech for analyses of VOCs and SVOCs by USEPA Method OLM04.2 Methods.

3.5 Site Survey

Since no microwells were installed, and therefore no accurate elevations were necessary, no formal survey of the Site was conducted. Geoprobe® sample locations were located using a Trimble global positioning system and plotted on aerial photographs of the Site (Figure 3.1).

4.0 DATA ASSESSMENT

This section presents results of the laboratory analyses for soil, groundwater, and air samples collected during Task 2.

Soil, groundwater, and sub-slab soil gas analytical results were compared to appropriate standards or guidelines. Reported concentrations of individual analytes indicating contravention of standards or guidelines, if applicable, are summarized in the following sections, and noted on Tables 4.1, 4.2, and 4.3.

A Data Usability Summary Report (DUSR) was completed in accordance with the NYSDEC's Guidance for the Development of Data Usability Summary Reports (NYSDEC, 1997). This report and complete analytical results including tentatively identified compounds (TIC) are presented in Appendix C. TICs were not evaluated as part of the DUSR.

Based on laboratory or data usability review, some of the data was qualified with a J, B, R and/or an D. Compounds were qualified J if the concentration listed was an estimated value, which was less than the specified minimum reporting limit but greater than the instrument detection limit. Compounds qualified J were analyzed for and determined to be present in the sample and the mass spectrum of the compound met the identification criteria of the method. The reporting limits for most target VOCs using the OLM04.2 Methods, including the target chlorinated solvents compounds were 10 µg/L. This is above most of the NYS Class GA groundwater standards; however, the actual instrument detection limit was below the NYS Class GA groundwater standards. A list of Chemtech's instrument reporting limits for the OLM04.2 Method is included in Appendix C.

Compounds qualified B indicate that the compound was found in the trip blank, or laboratory blank, and in the sample. It indicates possible sample contamination and warns the data user to use caution when applying the results of this analyte.

Compounds qualified D indicate that the compound was reported from an analytical run that required a dilution due to concentrations greater than the highest calibration standard.

Compounds qualified R indicate that the result was rejected during data validation. Data was deemed unusable due to gross deviations from validation criteria.

Analytical results were compared to the standards or guidelines described below.

Soil Samples. Analytical results were compared to the Recommended Soil Cleanup Objectives in the NYSDEC Technical and Administrative Guidance Memoranda No. 94-4046 (NYSDEC, 1994).

Groundwater Samples. Analytical results were compared to: (1) the NYS Class GA Groundwater Quality Standards from 6 NYCRR Parts 700-706 (NYS, 1999b) or, where applicable, (2) the NYS Class GA Groundwater Quality Guidance Values from the Division of Water Technical and Operational Guidance Series 1.1.1 "Ambient Water Quality Standards and Guidance Values" (NYSDEC, 1998).

Soil Gas Samples. The Geoprobe soil gas results were looked at to evaluate potential human exposure. The sub-slab sample results were compared to the NYSDOH guideline for trichloroethene (TCE), 1,1,1-tetrachloroethane (1,1,1-TCA) and PCE in sub-slab soil gas (NYSDOH, 2005).

4.1 Soil Sample Results

A summary of target VOCs and SVOCs detected in soil samples is presented in Table 4-1.

Chlorinated solvents were not detected in soil samples and VOCs were not detected at concentrations above the NYSDEC Soil Cleanup Objectives.

2-Butanone was detected at three of the five sample locations with detections ranging from 3.6 J µg/Kg (GS-3) to 21 J µg/Kg (GS-2). In addition to 2-butanone, trace concentrations (<4 µg/Kg) of benzene, carbon disulfide, ethyl benzene, o-xylene, toluene, and m/p-xylene were detected at sample location GS-4. Trace concentrations of toluene and m/p-xylene (<5 µg/Kg) were detected at sample location GS-2 and a trace concentration (21 J µg/Kg) of methylene chloride at sample location GS-5.

By request of the NYSDEC, one soil sample (SS-99) collected from beside/below an underground storage tank was also analyzed for SVOCs. SVOCs were not detected in this sample. Several VOC TICs were detected in this sample. The TICS are presented in Appendix C.

4.2 Groundwater Sample Results

A summary of target VOCs and SVOCs detected in groundwater samples are presented in Table 4-2.

VOCs were not detected in groundwater samples at concentrations above the NYS groundwater standards or guidance values.

A trace concentration (0.87 J µg/L) of methyl cyclohexane was detected at sample location GW-1. A trace concentration (1.4 J µg/L) of cis-1,2-dichloroethene was detected at sample location GW-3 and a trace concentration (1.4 J µg/L) of isopropylbenzene was detected at sample location GW-5.

SVOCs were not detected in the two groundwater samples (plus one duplicate) collected from GW-2 and GW-5.

Concentrations of primarily fuel related TICs were also identified in the VOC and SVOC sample results. TIC results are presented in Appendix C.

4.3 Soil Gas Sample Results

A summary of target VOCs detected in soil gas samples collected from the Geoprobe and sub-slab sampling is presented in Table 4-3.

There are no standards or guidance values for exterior soil gas samples, only sub-slab soil gas samples. The only compounds for which sub-slab draft guidance numbers have been calculated are PCE, TCE, and 1,1,1-TCA. 1,1,1-TCA was not detected in the sub-slab soil gas sample. Although PCE and TCE were detected in the soil gas sample collected from below the Site building's concrete slab, the concentrations (PCE of 34.8 J µg/m^3 and TCE of 2.36 µg/m^3) were well below the guidance concentration requiring mitigation (1000 µg/m^3 and 250 µg/m^3, respectively), or even monitoring (>100 µg/m^3 and >50 µg/m^3, respectively).

The highest concentrations of PCE and TCE detected in the Geoprobe soil gas samples were 6.99 µg/m^3 and 0.54 µg/m^3, respectively.

5.0 INVESTIGATION FINDINGS

A review of physical and chemical data collected during the SC resulted in the following findings:

1) The Site is located in a residential neighborhood that is serviced by public water. Low concentrations of PCE (<14 µg/L) have been detected in the City of Corning's public supply well #2, located approximately 400 feet south, and potentially down gradient of, the Site.
2) PCE was not detected in either soil or groundwater samples collected at the Site property, or in the groundwater samples collected between the Site and the public supply well. This is consistent with the reported information that the former dry cleaner used Stoddard solvent for cleaning and not PCE.
3) Trace concentrations of PCE (34.8 J µg/m^3) and TCE (2.36 J) were detected in the sub-slab soil gas sample collected from below the Site building. These concentrations are below any guidance value requiring mitigation or even monitoring.
4) Trace concentrations of PCE (6.99 µg/m^3) and TCE (0.54) were detected in the soil gas samples collected from around the Site property. The concentrations detected were not indicative of source area concentrations.
5) Based on these results, the Site does not appear to be a source of hazardous waste contamination (specifically chlorinated solvents), and the chlorinated solvents detected in the city supply wells do not appear to be originating from the Site.

6.0 REFERENCES

ABB Environmental Services, 1995. Program Quality Assurance Program Plan. Prepared for the New York State Department of Environmental Conservation, Albany, New York. June 1995.

Davis, 2005. Discussions between MACTEC and Richard Davis, Manager of Crystal Dry Cleaners Site, on September 9, 2005.

Gridley, 2005. Discussions between MACTEC and Stephen Gridley of United Environmental Group, Inc. September 10, 2005.

Muller, et al., 1986. Surficial Geologic Map of New York, Finger Lakes Sheet, New York State Museum Geologic Survey, Map and Chart Series #40. 1986.

National Climactic Data Center (NCDC), 2004. Comparative Climactic Data for the United States-1971-2000. February, 2004.

New York State (NYS), 1999a. New York Codes, Rules, and Regulations, Title 6, Part 371 Identification and Listing of Hazardous Wastes. Amended November 1999.

New York State (NYS), 1999b. New York Codes, Rules, and Regulations, Title 6, Part 700-705 Water Quality Regulations Surface Water and Groundwater Classifications and Standards. Amended August 1999.

New York State (NYS), 1998. New York Codes, Rules, and Regulations, Title 6, Part 375 Inactive Hazardous Waste Disposal Sites Remedial Program. Amended January 1998.

New York State Department of Environmental Conservation (NYSDEC), 2005. Work Assignment #D003826-20 Region 8 Dry Cleaning Sites- letter dated August 17, 2005.

New York State Department of Environmental Conservation (NYSDEC), 2002. Draft DER-10, Technical Guidance for Site Investigation and Remediation. December 2002.

New York State Department of Environmental Conservation (NYSDEC), 2000. *"Analytical Services Protocols"*; 6/00 Edition; June 2000.

New York State Department of Environmental Conservation (NYSDEC), 1994. Revised Technical and Administrative Guidance Memorandum HWR 94-4046: Determination of Soil Cleanup Objectives and Cleanup Levels. January 1994.

New York State Department of Health (NYSDOH), 2005. *"Guidance for Evaluating Soil Vapor Intrusion in the State of New York"*, Public Comment Draft, February 2005.

Panton, 2005. Telephone discussions between Steven Panton, Corning Public Works Water Superintendent and MACTEC. September 9, 2005.

Rickard and Fisher, 1970. Geologic Map of New York, Finger Lakes Sheet, New York State Map and Chart Series 15. by L.V. Richard and D.W. Fisher. March, 1970.

Schaller, 2005. Discussions between MACTEC and Former Helwigs Dry Cleaners property owner, Raymond Schaller. September 10, 2005.

United States Environmental Protection Agency (USEPA), 1987. "Data Quality Objectives for Remedial Response Activities"; Office of Emergency and Remedial Response and Office of Waste Programs Enforcement; Washington DC; EPA/540/G-87/003; March, 1987.

United States Geological Survey 1982. Geohydrology of the Valley-Fill Aquifer in the Corning Area, Steuben County, New York. 1982.

TABLES

Table 4.1: Soil Analytical Results

Location		BUILDING		GS-2		GS-3		GS-4		GS-4		GS-5	
Field Sample ID		HCGS09900901XX		HCGS00200701XX		HCGS00300601XX		HCGS00400501XD		HCGS00400501XX		HCGS00500701XX	
Sample Depth (ft bgs)		9-11		7-9		6-8		5-7		5-7		7-9	
Field Sample Date		2/6/2006		2/7/2006		2/6/2006		2/6/2006		2/6/2006		2/7/2006	
QC Code		FS		FS		FS		FD		FS		FS	
Parameter	**Criteria**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
VOCs													
2-Butanone	300	58	U	21	J	3.6	J	4.3	J	3.8	J	310	UJ
Benzene	60	12	U	62	UJ	11	U	1.6	J	1.6	J	62	UJ
Carbon disulfide	2700	12	U	62	UJ	11	U	0.85	J	11	U	62	UJ
Ethyl benzene	5500	12	U	62	UJ	11	U	0.86	J	1.3	J	62	UJ
Methylene Chloride	100	12	U	62	UJ	11	U	12	U	11	U	21	J
o-Xylene	1200	12	U	62	UJ	11	U	0.88	J	1	J	62	UJ
Toluene	1500	12	U	3.4	J	11	U	1.9	J	2.7	J	62	UJ
Xylene, m/p	1200	12	U	4.8	J	11	U	1.4	J	1.7	J	62	UJ
SVOCs													
All Compounds		ND		NA		NA		NA		NA		NA	

Table Created by: ASZ 6/1/06
Table Checked by: CRS 6/19/06

Notes:

Results in microgram per kilogram (µg/kg)

Only detected compounds are shown. Samples were analyzed for VOCs by EPA Method OLM04.2

ft bgs = feet below ground surface

QC Code:

FS = Field Sample

FD = Field Duplicate

Criteria = Values from Technical Administrative Guidance Memorandum (TAGM) 94-4046, "Determination of Soil Cleanup Objectives and Cleanup Levels" (NYSDEC, 1994)

Qualifiers:

U = Not detected at a concentration greater than the reporting limit

J = Estimated value

ND = Not Detected

NA = Not Analyzed

Table 4.2: Groundwater Analytical Results

	Location	GW-1		GW-1		GW-2		GW-2		GW-2		GW-3		GW-4	
	Field Sample ID	HCGW00101401XA		HCGW00102201XX		HCGW00201401XA		HCGW00201401XD		HCGW00202201XX		HCGW00302201XX		HCGW00401001XA	
	Sample Depth (ft bgs)	14		22		14		14		22		22		10	
	Field Sample Date	2/6/2006		2/6/2006		2/7/2006		2/7/2006		2/7/2006		2/6/2006		2/6/2006	
	QC Code	FS		FS		FS		FD		FS		FS		FS	
Parameter	**Criteria**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
VOCs															
Cis-1,2-Dichloroethene	5*	10	U	10	U	10	U	NA		10	U	1.4	J	10	U
Isopropylbenzene	5*	10	U	10	U	10	U	NA		10	U	10	U	10	U
Methyl cyclohexane	--	10	U	0.87	J	10	U	NA		10	U	10	U	10	U
SVOCs															
All Compounds		NA		NA		ND		ND		NA		NA		NA	

Notes:

Table Created by: ASZ 6/1/06
Table Checked by: CRS 6/19/06

Results in microgram per liter (µg/L)

Only detected compounds are shown. Samples were analyzed for VOCs by EPA Method OLM04.2 and a subset were analyzed for SVOCs by EPA Method OLM04.2.

ft bgs = feet below ground surface

QC Code:

FS = Field Sample

FD = Field Duplicate

Criteria = Values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998).

Qualifiers:

U = Not detected at a concentration greater than the reporting limit

J = Estimated value

* = New York State Standard

-- = not available

NA = Not Analyzed

ND = Not Detected

Table 4.2: Groundwater Analytical Results

	Location	GW-4		GW-5		GW-5		GW-5		GW-6	
	Field Sample ID	HCGW00401801XX		HCGW00501401XA		HCGW00502201XD		HCGW00502201XX		HCGW00602201XX	
	Sample Depth (ft bgs)	18		14		22		22		22	
	Field Sample Date	2/6/2006		2/7/2006		2/7/2006		2/7/2006		2/6/2006	
	QC Code	FS		FS		FD		FS		FS	
Parameter	**Criteria**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
VOCs											
Cis-1,2-Dichloroethene	5*	10	U	10	U	10	U	10	U	10	U
Isopropylbenzene	5*	10	U	1.4	J	10	U	10	U	10	U
Methyl cyclohexane	NA	10	U	10	U	10	U	10	U	10	U
SVOCs											
		NA		ND		NA		NA		NA	

Table Created by: ASZ 6/1/06
Table Checked by: CRS 6/19/06

Notes:

Results in microgram per liter (µg/L)

Only detected compounds are shown. Samples were analyzed for VOCs by EPA Method OLM04.2

ft bgs = feet below ground surface

QC Code:

FS = Field Sample

FD = Field Duplicate

Criteria = Values from Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, 1998).

Qualifiers:

U = Not detected at a concentration greater than the reporting limit

J = Estimated value

* = New York State Standard

-- = not available

NA = Not Analyzed

ND = Not Detected

Table 4.3 Soil Vapor VOC Results

Location	GV-01		GV-02		GV-03		SV-01	
Field Sample ID	HCGV00100601XX		HCGV00200601XX		HCGV00300601XX		HCSV00100101XX	
Sample Depth (ft bgs)	6-7		6-7		6-7		1-2	
Field Sample Date	2/6/2006		1/26/2006		1/26/2006		2/6/2006	
QC Code	FS		FS		FS		FS	
Parameter	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.76	U	0.76	U	0.92		3.06	U
1,2,4-Trimethylbenzene	2.85		0.83		1.47		1.96	UJ
1,3,5-Trimethylbenzene	0.49	U	0.49	U	0.59		1.96	UJ
2-Butanone	1.94		2.68		7.1		3.89	
2-Propanol	63.8	D	7.02		9.33		5.4	
4-Ethyltoluene	0.49	U	0.49	U	0.49		1.96	U
Acetone	32.5		21.8		48	D	58.2	
Benzene	3.09		12.2		8.36		5.36	
Bromodichloromethane	0.67	U	2.48		0.67	U	2.68	U
Bromoform	1.03	U	1.03	U	1.66		4.14	U
Butadiene, 1,3-	11.2	J	R		R		R	
Carbon disulfide	1.12		3.67		6.4		7.34	
Chloroform	0.49	UJ	0.49	U	0.49	U	3.5	
Chloromethane	0.2	UJ	0.45		0.39		0.82	U
Cyclohexane	3.25		28.2		16.9		29.5	
Dichlorodifluoromethane	3.86	J	3.12		3.17		3.37	J
Ethyl acetate	1.87	J	7.2		24		5.76	
Ethyl benzene	0.56	J	1		1.56		1.73	U
Heptane	1.76		32.1		17.8		85.7	
Hexane	4.22		61.7		37.4		105	
Methylene chloride	0.7	U	1.11		1.67		7.51	
o-Xylene	0.56	J	1.17		2.9		1.73	U
Propylene	31.1		203	D	92.1	D	21.9	
Styrene	0.43	UJ	0.43	U	1.23		1.7	U
Tetrachloroethene	0.54	J	5.09		6.99		34.8	J
Toluene	3.95	J	16.4		22.4		14	
Trichloroethene	0.54		0.23	U	0.43		2.36	J
Trichlorofluoromethane	5.32	J	2.8		1.62		4.26	
Xylene, m/p	1.3	J	3.69		7.07		3.47	U

Table Created by: ASZ 6/1/06
Table Checked by: CRS 6/19/06

Notes:

Results in microgram per cubic meter ($\mu g/m^3$)

Only detected compounds are shown. Samples were analyzed for VOCs by Method TO-15

ft bgs = feet below ground surface

QC Code:

FS = Field Sample

Qualifiers:

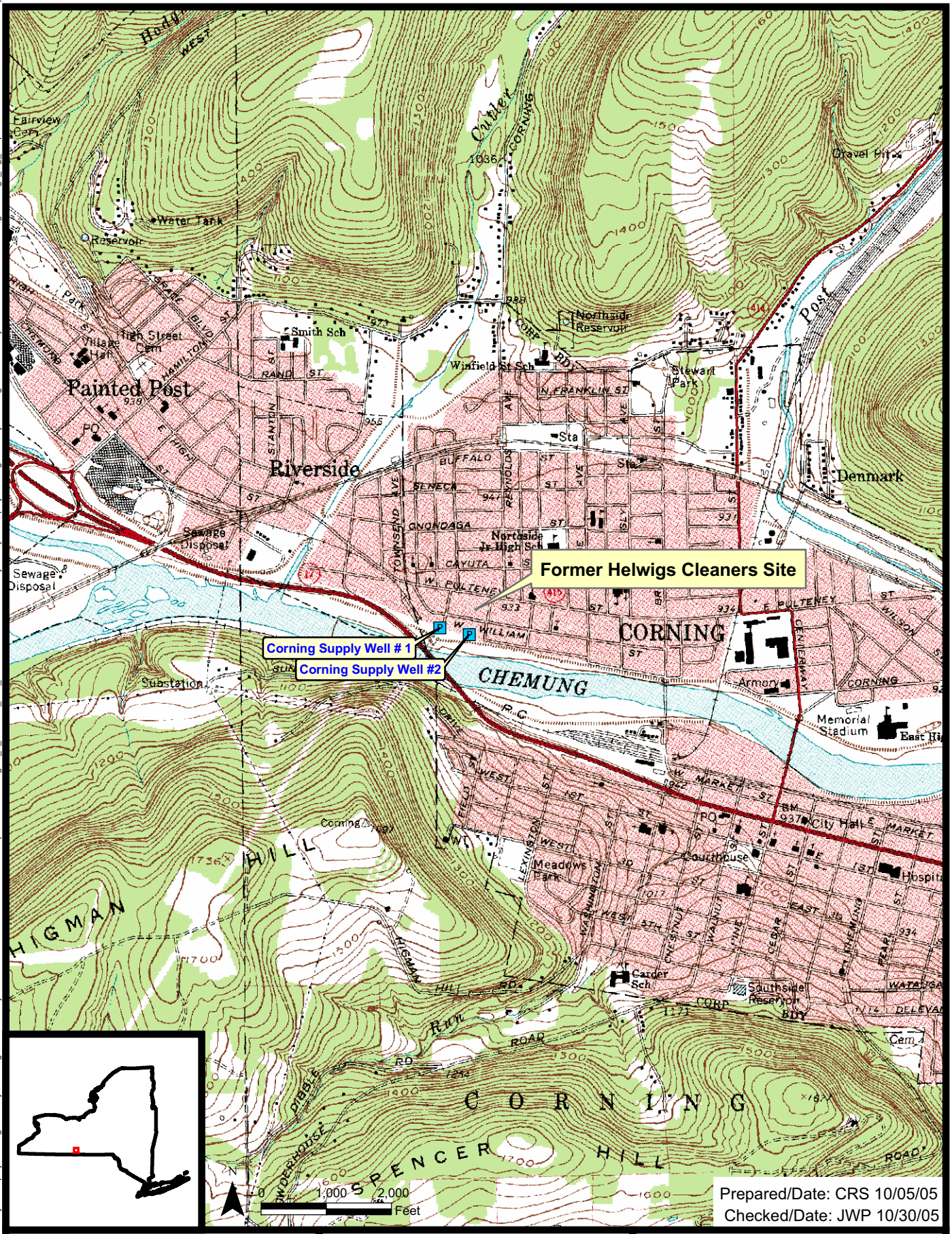
U = Not detected at a concentration greater than the reporting limit

J = Estimated value

D = Result was reported from a diluted analytical run

R = Result was rejected

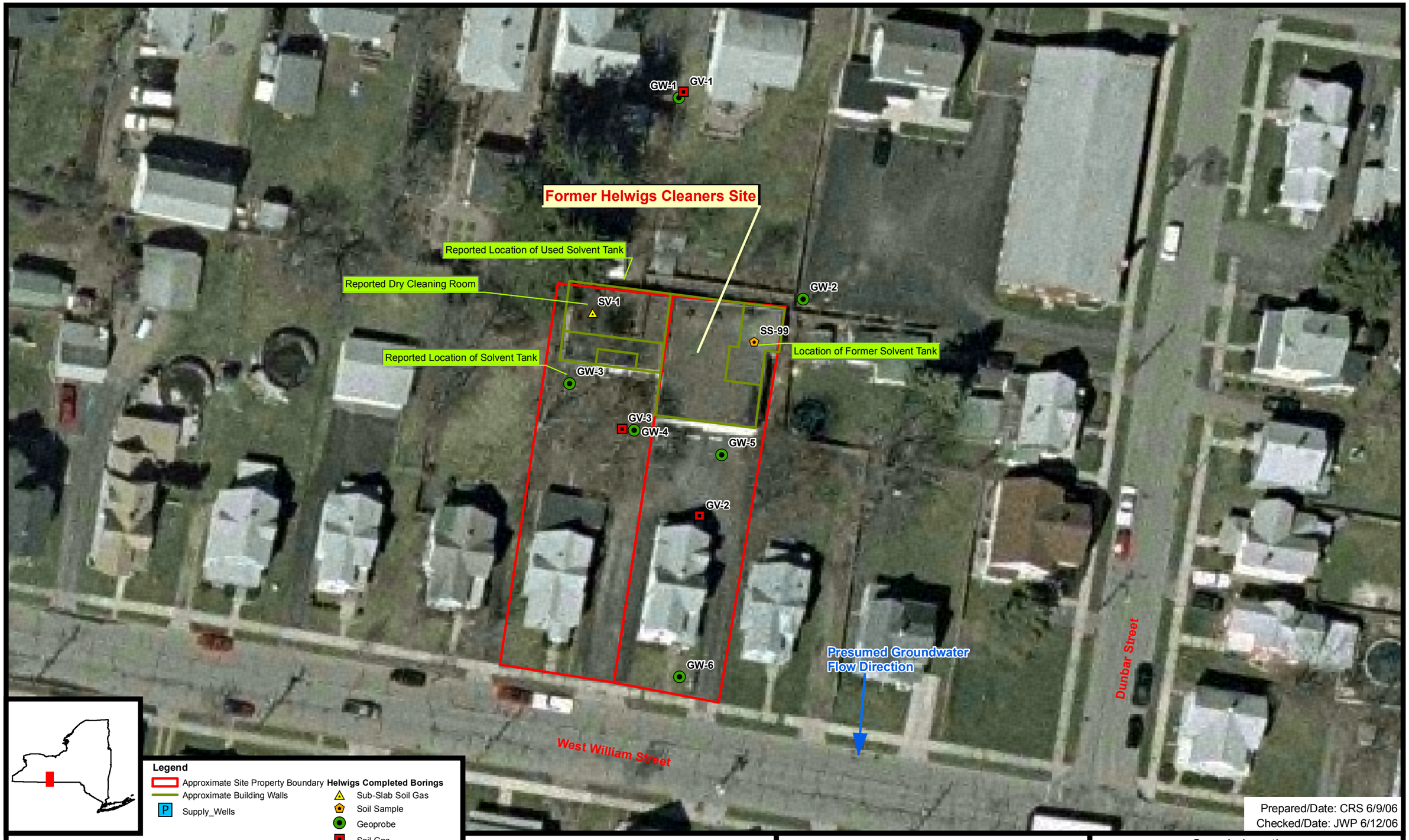
FIGURES



NYSDEC
Former Helwigs Cleaners Site
Corning, New York

MACTEC

Site Location
Project 3612052036
Figure 1.1



NYSDEC
Former Helwigs Cleaners Site
Corning, New York

MACTEC

Sample Locations

Project 3612052036 Figure 3.1

Document: P:\Projects\nysdec1\projects\Region 8 Dry Cleaning Sites\4.0 Project Deliverables\4.5 Databases\GIS\Map documents\Helwig.mxd PDF: P:\Projects\nysdec1\projects\Region 8 Dry Cleaning Sites\4.0 Project Deliverables\4.1 Reports\Helwigs\Figure_3.1.pdf 09/07/2006 5:33 PM CRSTAPLES

APPENDIX A

SITE PHOTOGRAPHS

FORMER HELWIG'S DRY CLEANERS SITE PHOTOGRAPHS

Southwest side of Site building – main door to work space.

Southeast side of Site building – former laundry drop off location.

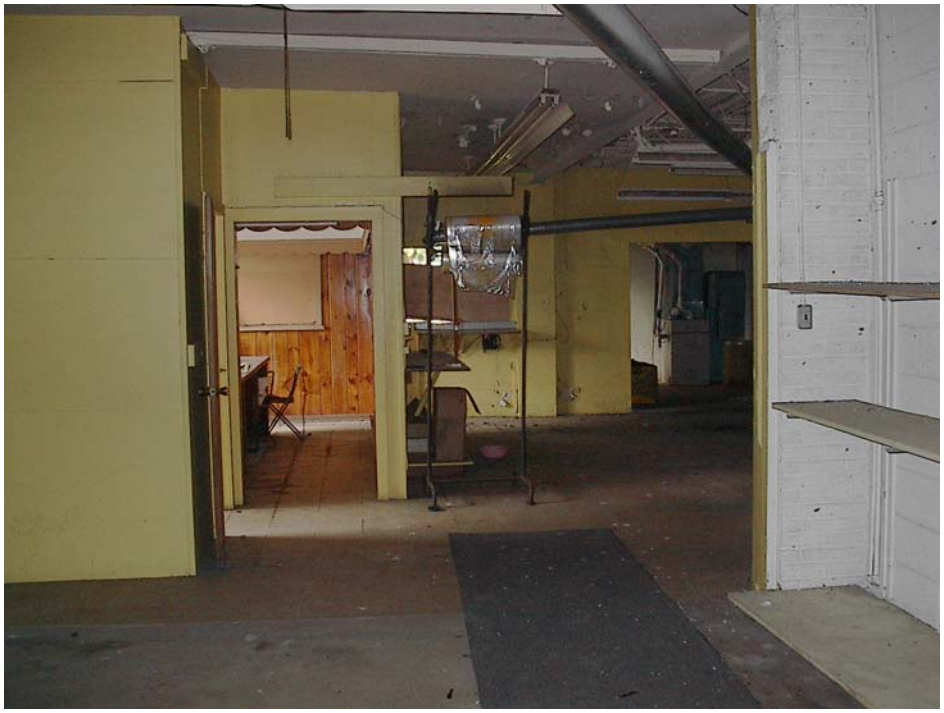
FORMER HELWIG'S DRY CLEANERS SITE PHOTOGRAPHS

Former dry-cleaning room in northeast corner of Site building (picture facing west). (with Summa can and sub-slab sample)

Main/center room of Site building (looking east, towards northeast corner).

FORMER HELWIG'S DRY CLEANERS SITE PHOTOGRAPHS

Looking north at northeast corner of Site Building.
(Hole for excavation/sampling of former solvent/fuel tank by United Environmental Group, Inc.). Building soil sample collected from below this underground tank.



Looking west into customer area and center room of Site Building.

APPENDIX B

FIELD DATA RECORDS

TEST BORING LOG

Project: NYSDEC - Region 8 Dry Cleaners	Boring/Well No.: GW-2	Project No.: 361205.2036	
Client: NYSDEC	Site: Helwigs	Sheet No.: 1 of 1	
Logged By: Brendan Shaw	Ground Elevation:	Start Date: 02/07/06	Finish Date: 02/07/06
Drilling Contractor: ADT	Driller's Name: Roger Burley	Rig Type: GeoProbe 5400	
Drilling Method: Direct Push	Protection Level: D	P.I.D. (eV):	Casing Size: 1 1/2"	Auger Size: 1 1/2"
Soil Drilled:	Rock Drilled:	Total Depth: 24.	Depth to Groundwater/Date:	Piez ☐ Well ☐ Boring ☑

Depth (Feet)	Sample No. & Penetration/ Recovery (Feet)	Sample Type	SPT Blows/6" or Core Rec./Rqd. %	SPT-N (Blows/Ft.)	Graphic Log	Sample Description	USCS Group Symbol	Notes on Drilling	Monitoring (ppm) PI Meter Field Scan	Monitoring (ppm) PI Meter Head Space	Lab Tests
1	S1 2.0/4.0	Soil				0-0.7 DK Brown organic fine silty Sand, PG, MP, wet, roots	FILL		<1.0		VOAs SVOAs
2						0.7-2 DK olive clay w/ gravel and trace Sand, Stratified lenses of Black and orange streaks, Stiff, WG	GC				
3						2-3.5 white/grey Sandy gravel and rock flour, WG, dry, NP	GP/ML				
4						3.5-4 Lt Brown/orange silty fine Sand and gravel, trace lenses of clay, MP, wet, WG,	GP/GC				
5	S2 1.8/4.0					4-5 Lt Brownish grey Sandy gravel WG, Dry, loose, Some fines, NP/SP,	GW		<1.0		
6						5-8 (composite Sample for volume). Lt Brown/Lt orange, silty fine Sand and gravel, WG, wet, MP roots, organic Smell, MS/MSD here	GM/GC				
7											
8											
9											
10											
11											
12											

BOB @ 24'

Harding Lawson Associates

TEST BORING LOG

Project: NYSDEC - Region 8 Dry Cleaners	Boring/Well No.: GW-3	Project No.: 361205.2036	
Client: NYSDEC	Site: Helwigs	Sheet No.: 1 of 1	
Logged By: Brandon Shaw	Ground Elevation:	Start Date: 02/06.106	Finish Date: 02/06.106
Drilling Contractor: ADT	Driller's Name: Roger Buley	Rig Type: GeoProbe 5400	
Drilling Method: Direct Push	Protection Level: D	P.I.D. (eV):	Casing Size: 1 1/2"	Auger Size: 1 1/2"
Soil Drilled:	Rock Drilled:	Total Depth: 24'	Depth to Groundwater/Date:	Piez ☐ Well ☐ Boring ☑

Depth (Feet)	Sample No. & Penetration/ Recovery (Feet)	Sample Type	SPT Blows/6" or Core Rec./Rqd. %	SPT-N (Blows/Ft.)	Graphic Log	Sample Description	USCS Group Symbol	Notes on Drilling	Monitoring (ppm) PI Meter Field Scan	Monitoring (ppm) PI Meter Head Space	Lab Tests
1	S1 2.1/24.0	SO1				0-0.2' Lt Brown Sandy gravel, WG, MP/SP, Sub angular to w. Rounded, damp	FILL		<1.0		VOA
2						0.2-1' Black fine Gravel, trace Sand-PG, S. Angular - Angular, NP, damp, loose	FILL				
3						1-1.1 Cobble / metal Piece? 1.1-~3 DK olive / Brown, silty fine Sand and gravel, moist, WG, MP/SP @ 3' Tree Roots	GM				
4						3'-4' Lt orange/Brown. Silty Sand + gravel, wet, WG. NP/SP, loose.					
5	S2 0.9/24.0					4-8' Lt Brown/olive silty Sand + gravel WG, Black dense from ~4 to 5', SP, + trace roots	GM		<1.0		
6						* collected sample; composited entire sleeve because of volume of coarse gravel.					
7											
8											
9											
10											
11											
12											

Bomb: 24'

TEST BORING LOG

Project: NYSDEC - Region 8 Dry Cleaners	Boring/Well No.: GW-4	Project No.: 361205.2036	
Client: NYSDEC	Site: Helwigs	Sheet No.: 1 of 1	
Logged By: Brendan Shaw	Ground Elevation:	Start Date: 02/06/06	Finish Date: 02/06/06
Drilling Contractor: ADT	Driller's Name: Roger Bukey.	Rig Type: Geoprobe 5400	
Drilling Method: Direct Push	Protection Level: D	P.I.D. (eV): 190 ppb	Casing Size: 1 1/2"	Auger Size: 1 1/2"
Soil Drilled:	Rock Drilled:	Total Depth: 24'	Depth to Groundwater/Date:	Piez ☐ Well ☐ Boring ☑

Depth (Feet)	Sample No. & Penetration/ Recovery (Feet)	Sample Type	SPT Blows/6" or Core Rec./Rqd. %	SPT-N (Blows/Ft.)	Graphic Log	Sample Description	USCS Group Symbol	Notes on Drilling	Monitoring (ppm) PI Meter Field Scan	Monitoring (ppm) PI Meter Head Space	Lab Tests
1		S1				0-0.5 Blacktop + Bedding; black Sandy gravel.	Fill		11.6		VOA
2	2.4/24.0					0.5-1.5 Black gravel/Sand grey loose @ ~1.2'; damp, loose, WG, NP ~~collected Sample + Dup~~	GC				
3						1.5-2.5 Dk Olive G clay w/ Some gravel, + firm sand, damp mStiff, PG, HP	GM/GC				
4						2.5-4 Lt brown orange gravely clay w/ Sand, wet, NP, WG	GW		190 ppb @4'-5'		
5	1.9/24.0	S2				4'-5' orange/Brown and Black Sandy gravel, NP/SP, trace fines, damp, WG, * collected Soil + Dup here	GP				
6						5-5.5 Lt Brown clayey gravel WG, wet, Stiff	GC		21.0		
7						5.5-6 Brown clean fine gravel, PG, Dry, v. Angular,					
8						6-7 Lt Brn Sandy clay + gravel WG, wet, loose/m Dense,					
9						7-8 LT Brown Sandy clay and gravel, Sat. WG, trace lenses of clay around 8'.					
10											
11											
12											

BGB 24'.

TEST BORING LOG

Project: NYSDEC - Region 8 Dry Cleaners	Boring/Well No.: GW-5	Project No.: 361205.2036	
Client: NYSDEC	Site: Helwigs	Sheet No.: 1 of 1	
Logged By: Brandon Shaw	Ground Elevation:	Start Date: 02/07/06	Finish Date: 02/07/06
Drilling Contractor: ADT	Driller's Name: Roger Bailey	Rig Type: Geoprobe 5400	
Drilling Method: Direct Push	Protection Level: D	P.I.D. (eV):	Casing Size: 1 1/2" Auger Size: 1 1/2"
Soil Drilled:	Rock Drilled:	Total Depth: 32'	Depth to Groundwater/Date: Piez ☐ Well ☐ Boring ☑

Depth (Feet)	Sample No. & Penetration/ Recovery (Feet)	Sample Type	SPT Blows/6" or Core Rec./Rqd. %	SPT-N (Blows/Ft.)	Graphic Log	Sample Description	USCS Group Symbol	Notes on Drilling	Monitoring (ppm) PI Meter Field Scan	Monitoring (ppm) PI Meter Head Space	Lab Tests
1		S1				0-1.5 Black top and bedding, sandy gravel, NP, WG, Dry.	Fill		<1.0		VOA
2	1.6/4.0					1.5-2 Grey Concrete/concrete powder, dry, NP, PG	Fill				SVOAs
3						2-2.5 Brown/Black/olive Fill material Sand, gravel, glass, mortar pieces WG, moist, NP, maybe pieces of fiberglass	Fill				
4						2.5-3.5 olive clay w/ little fine gravel, subrounded, PG, HP, trace sand, wet, stiff	CL				
5		S2				3.5-4 orange/Brown silty sand and gravel, WG, wet, loose, NP/SP	SM/GW	GW	<1.0		
6	0.9/4.0					4-6" Black/DK Brown sandy gravel (fine sand to fine gravel) WG, Dry, NP, loose.	GW				
7						6-8 Lt Brown orange silty Sand and gravel mix, wet/loose, SP. *Sampling soil 6-8'	GM				
8											
9											
10											
11											
12											

BOB @ 32'; very silty/fine sand @ BOB when pulling boring. Lt Brown

TEST BORING LOG

Project: NYSDEC - Region 8 Dry Cleaners	Boring/Well No.: GW-6	Project No.: 361205.2036	
Client: NYSDEC	Site: Helwigs	Sheet No.: 1 of 1	
Logged By: Brandon Shaw	Ground Elevation	Start Date: 02/06/06	Finish Date: 02/06/06
Drilling Contractor: ADT	Driller's Name: Roger Burley	Rig Type: Geoprobe 5400	
Drilling Method: Direct Push	Protection Level: D	P.I.D. (eV)	Casing Size: 1 1/2" / Auger Size: 1 1/2"
Soil Drilled	Rock Drilled	Total Depth: 24'	Depth to Groundwater/Date: Piez ☐ Well ☐ Boring ☑

Depth (Feet)	Sample No. & Penetration/ Recovery (Feet)	Sample Type	SPT Blows/6" or Core Rec./Rqd. %	SPT-N (Blows/Ft.)	Graphic Log	Sample Description	USCS Group Symbol	Notes on Drilling	Monitoring (ppm) PI Meter Field Scan	Monitoring (ppm) PI Meter Head Space	Lab Tests
1						0-1.8' DK Brown fine silty sand w/ roots, PG, MP, moist, m dense	Fill		11.0		
2	S1 1.9/2.0					1.8' to ~3' Dk olive silty fine sand w little fine gravel, wet, stiff, PG, earthworm @ ~2.5', MP, Roots	SM				
3						3-4 Lt Brown orange, clay w/ gravel, wet, HP/MP, WG, roots, organic odor					
4						4 - ~4.5 orange Brown and DK grey Sandy gravel w DK grey loose of silty fine sand., WG, NP/MP, Moist	GC.				
5	S2 1.7/2.0					4.5-5 Pink cobble, rock flour	GM		11.0		
6						5-7 Lt Brown silty fine sand & gravel, WG, wet, SP/NP, granule? cobble @ 7'	ROCK				
7						7-8 same as 5-7 but saturated	GM/GC				
8											
9											
10											
11											
12											

* No soil sample here.

BOG @ 24'

GROUNDWATER SAMPLE FIELD DATA RECORD

Project: NYSDEC - Region 8 Dry Cleaners
Project Number: 361205.2036 / 05.2
Site: Helwigs
Date: February 6, 2006
Time: Start: 1345 End: 1530
Sample Location ID: GW-001
Signature of Sampler:

Water Level/Well Data

Well Depth _____ Ft. ___ Measured ___ Historical
___ Top of Well ___ Top of Protective Casing
Well Riser Stick-up _____ Ft. (from ground)
Protective _____ Ft. Casing/Well Difference
Protective _____ Ft. Casing

Depth to Water _____ Ft.
Well Material: ___ PVC ___ SS _____
Well Locked?: Yes
Well Dia: ___ 2 inch ___ 4 inch ___ 6 inch _____
Water Level Equip. Used: ___ Elect. Cond. Probe ___ Float Activated ___ Press. Transducer _____

Height of Water Column _____ Ft. X ___ .16 Gal/Ft. (2 in.) ___ .65 Gal/Ft. (4 in.) ___ 1.5 Gal/Ft. (6 in.) ___ Gal/Ft. (__in.) = _____ Gal/Vol. _____ Total Gal Purged

Well Integrity: Prot. Casing Secure — Yes ___ No ___
Concrete Collar Intact — Yes ___ No ___
Other _____ — Yes ___ No ___

Equipment Documentation

Purging/Sampling Equipment Used:

(✓ If Used For) Purging	Sampling		Equipment ID
✓	✓	Peristaltic Pump	
		Submersible Pump	
		Bailer	
✓	✓	PVC/Silicon Tubing	
✓		Teflon/Silicon Tubing	
		Airlift	
		Hand Pump	
		In-line Filter	
		Press/Vac Filter	

Decontamination Fluids Used:

(✓ All That Apply at Location)
___ Methanol (100%)
___ 25% Methanol/75% ASTM Type II water
___ Deionized Water
___ Liquinox Solution
___ Hexane
___ HNO_3/D.I. Water Solution
___ Potable Water
___ None
✓ Disp. Tubing

Field Analysis Data

PID: Ambient Air 20.1 ppm Well Mouth 41.0 ppm
Purge Data Collected: ___ In-line ✓ In Container
Sample Observations: ✓ Turbid ___ Clear ✓ Cloudy ___ Colored ___ Odor

Time / Purge Data	@ 1425 Gal.	@ 1455 Gal.	@ _____ Gal.	@ _____ Gal.	@ _____ Gal.
Temperature, Deg. C	10.3	6.9			
pH, units	7.7	7.6			
Specific Conductivity (µmhos/cm)	2.01	0.646			
Turbidity (NTUS)	>1000	>1000			
Oxidation - Reduction, +/- mv	~~62~~	140			
Dissolved Oxygen, ppm	2.42	8.25			
Depth:	20-24'	12-16'			

Sample Collection Requirements

(✓ If Required at this Location)

Analytical Parameter	✓ If Sample Collected	Preservation Method	Volume Required	Sample Bottle ILot Nos.
✓ VOCs	✓	4°C/HCl	2x40 ml	HCGW001022 01 x 4 @ 1430
___ SVOCs		4°C	2x1 liter AG	
___ Metals		HNO_3, 4°C	1x1 liter P	HCGW001014 01 XA @ 1500
___ Cyanide		NaOH, 4°C	1x500mLP	" MD @ 1500
___ Nitrate/Sulfate		H_2SO_4, 4°C	1x1 liter P	" MS @ 1500
___ Nitrate/Phosphate		H_2SO_4, 4°C	1x1 liter P	
___ Pest/PCB		4°C	3x1 liter AG	
___ TPH		H_2SO_4, 4°C	2x1 liter AG	
___ TOC		H_2SO_4, 4°C	1x1 liter P	

Notes: 2 Depth @ 22' and 16'
Collected MS and MSD @ 12-16'
~~SVOCs Also~~
- No water enough to fill volume

FIGURE 4-1
GROUNDWATER SAMPLE DATA RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN
ABB Environmental Services

9404014D L22

GROUNDWATER SAMPLE FIELD DATA RECORD

Project: NYSDEC - Region 8 Dry Cleaners
Project Number: 361205.2036 / 05.2
Site: Helwigs
Date: February 7, 2006
Time: Start: 0750 End: 0945
Sample Location ID: GW-002
Signature of Sampler:

Water Level/Well Data

Well Depth _____ Ft. ___ Measured ___ Historical
___ Top of Well ___ Top of Protective Casing
Well Riser Stick-up _____ Ft. (from ground)
Protective _____ Ft. Casing/Well Difference
Protective _____ Ft. Casing

Depth to Water _____ Ft.
Well Material: ___ PVC ___ SS _____
Well Locked?: Yes
Well Dia: ___ 2 inch ___ 4 inch ___ 6 inch ___ _____
Water Level Equip. Used: ___ Elect. Cond. Probe ___ Float Activated ___ Press. Transducer ___ _____

Height of Water Column _____ Ft. X ___ .16 Gal/Ft. (2 in.) ___ .65 Gal/Ft. (4 in.) ___ 1.5 Gal/Ft. (6 in.) ___ ___ Gal/Ft. (___ in.) = _____ Gal/Vol. _____ Total Gal Purged

Well Integrity: Prot. Casing Secure — Yes ___ No ___
Concrete Collar Intact — Yes ___ No ___
Other _____ — Yes ___ No ___

Equipment Documentation

Purging/Sampling Equipment Used:

(✓ If Used For) Purging	Sampling		Equipment ID
✓	✓	Peristaltic Pump	
		Submersible Pump	
		Bailer	
✓	✓	PVC/Silicon Tubing	
✓		Teflon/Silicon Tubing	
		Airlift	
		Hand Pump	
		In-line Filter	
		Press/Vac Filter	

Decontamination Fluids Used: (✓ All That Apply at Location)

___ Methanol (100%)
___ 25% Methanol/75% ASTM Type II water
___ Deionized Water
___ Liquinox Solution
___ Hexane
___ HNO_3/D.I. Water Solution
___ Potable Water
___ None
✓ Disp. Tubing

Field Analysis Data

PID: Ambient Air 4.0 ppm Well Mouth <1.0 ppm
Purge Data Collected ___ In-line ✓ In Container
Sample Observations: ___ Turbid ___ Clear ✓ Cloudy ___ Colored ___ Odor

Time / Purge Data	@ 0910 Gal.	@ 0920 Gal.	@ ____ Gal.	@ ____ Gal.	@ ____ Gal.
Temperature, Deg. C	10.3	7.0			
pH, units	6.7	6.9			
Specific Conductivity (µmhos/cm)	0.522	0.162			
Turbidity (NTUS)	>1000	>1000			
Oxidation - Reduction, +/- mv	140.	130			
Dissolved Oxygen, ppm	4.97	6.62			
Depth:	20-ft	12-16			

Sample Collection Requirements (✓ If Required at this Location)

Analytical Parameter	✓ If Sample Collected	Preservation Method	Volume Required	Sample Bottle ILot Nos.
✓ VOCs	✓	4°C / HCl	2x40 ml	HCGW00202201KL @ 0915
✓ SVOCs	✓	4°C	2x1 liter AG	
___ Metals		HNO_3, 4°C	1x1 liter P	HCGW00201401XA @ 0930 - VOA, SVOAS
___ Cyanide		NaOH, 4°C	1x500mLP	
___ Nitrate/Sulfate		H_2SO_4, 4°C	1x1 liter P	HCGW00201401XAD @ 0930 - SVOA
___ Nitrate/Phosphate		H_2SO_4, 4°C	1x1 liter P	
___ Pest/PCB		4°C	3x1 liter AG	HCGW00201401MS @ 0930 - SVOA
___ TPH		H_2SO_4, 4°C	2x1 liter AG	
___ TOC		H_2SO_4, 4°C	1x1 liter P	

Notes: 2 Depths @ 12' and 14' VOAs and SVOAs here

FIGURE 4-1
GROUNDWATER SAMPLE DATA RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN
ABB Environmental Services

GROUNDWATER SAMPLE FIELD DATA RECORD

Project: NYSDEC - Region 8 DW Cleanup
Project Number: 361205.2036 / 05.2.
Site: Helrigs
Date: February
Time: Start: 1035 End: 1150
Sample Location ID: GW-003
Signature of Sampler:

Water Level/Well Data

Well Depth _____ Ft. ___ Measured ___ Historical
___ Top of Well ___ Top of Protective Casing
Well Riser Stick-up _____ Ft. (from ground)
Protective _____ Ft. Casing/Well Difference
Protective _____ Ft. Casing

Depth to Water _____ Ft.
Well Material: ___ PVC ___ SS _____
Well Locked?: Yes No
Well Dia: ___ 2 inch ___ 4 inch ___ 6 inch ___ _____
Water Level Equip. Used: ___ Elect. Cond. Probe ___ Float Activated ___ Press. Transducer ___ _____

Height of Water Column _____ Ft. X ___ .16 Gal/Ft. (2 in.) ___ .65 Gal/Ft. (4 in.) ___ 1.5 Gal/Ft. (6 in.) ___ __ Gal/Ft. (__in.) = _____ Gal/Vol. _____ Total Gal Purged

Well Integrity: Yes No
Prot. Casing Secure ___ ___
Concrete Collar Intact ___ ___
Other _____ ___ ___

Equipment Documentation

Purging/Sampling Equipment Used:

(✓ If Used For) Purging	Sampling		Equipment ID
✓	✓	Peristaltic Pump	
		Submersible Pump	
		Bailer	
✓	✓	PVC/Silicon Tubing	
✓		Teflon/Silicon Tubing	
		Airlift	
		Hand Pump	
		In-line Filter	
		Press/Vac Filter	

Decontamination Fluids Used: (✓ All That Apply at Location)
___ Methanol (100%)
___ 25% Methanol/75% ASTM Type II water
___ Deionized Water
___ Liquinox Solution
___ Hexane
___ HNO_3/D.I. Water Solution
___ Potable Water
___ None
___ _____
___ _____

Field Analysis Data

PID: Ambient Air 41.0 ppm Well Mouth 41.0 ppm
Purge Data Collected ✓ In-line ✓ In Container
Sample Observations: ✓ Turbid ___ Clear ___ Cloudy ___ Colored ___ Odor

Time / Purge Data	@ 1125	Gal. @ ____	Gal. @ ____	Gal. @ ____	Gal. @ ____	Gal. @ ____ Gal.
Temperature, Deg. C	9.9					
pH, units	7.4					
Specific Conductivity (µmhos/cm)	1.74					
Turbidity (NTUS)	71000					
Oxidation - Reduction, +/- mv	-10					
Dissolved Oxygen, ppm	<0.1					

Depth: 20-24

Sample Collection Requirements

(✓ If Required at this Location)

Analytical Parameter	✓ If Sample Collected	Preservation Method	Volume Required	Sample Bottle ILot Nos.
✓ VOCs	✓	4°C/HCl	2x40 ml	HCGW0030220 01XAC @ 1130
___ SVOCs		4°C	2x1 liter AG	
___ Metals		HNO_3, 4°C	1x1 liter P	
___ Cyanide		NaOH, 4°C	1x500mLP	HCGW0030 01XAC
___ Nitrate/Sulfate		H_2SO_4, 4°C	1x1 liter P	
___ Nitrate/Phosphate		H_2SO_4, 4°C	1x1 liter P	2/10/06
___ Pest/PCB		4°C	3x1 liter AG	
___ TPH		H_2SO_4, 4°C	2x1 liter AG	
___ TOC		H_2SO_4, 4°C	1x1 liter P	

Notes: 1 2 Depths @: 22' and - N/A

FIGURE 4-1
GROUNDWATER SAMPLE DATA RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

GROUNDWATER SAMPLE FIELD DATA RECORD

Project: NYSDEC - Region 8 DW Cleanup
Project Number: 361205.2036 / 05.2
Site: Helwigs
Date: February 6, 2006.
Time: Start: 0800 End: 1010.
Sample Location ID: GW-004
Signature of Sampler:

Water Level/Well Data

Well Depth _____ Ft. ___ Measured ___ Historical
___ Top of Well ___ Top of Protective Casing
Well Riser Stick-up _____ Ft. (from ground)
Protective _____ Ft. Casing/Well Difference
Protective _____ Ft. Casing

Depth to Water _____ Ft.
Well Material: ___ PVC ___ SS _____
Well Locked?: ___ Yes ___ No
Well Dia: ___ 2 inch ___ 4 inch ___ 6 inch ___ _____
Water Level Equip. Used: ___ Elect. Cond. Probe ___ Float Activated ___ Press. Transducer ___ _____

Height of Water Column _____ Ft. X ___ .16 Gal/Ft. (2 in.) ___ .65 Gal/Ft. (4 in.) ___ 1.5 Gal/Ft. (6 in.) ___ __ Gal/Ft. (__in.) = _____ Gal/Vol. _____ Total Gal Purged

Well Integrity: Yes No
Prot. Casing Secure ___ ___
Concrete Collar Intact ___ ___
Other _____ ___ ___

Equipment Documentation

Purging/Sampling Equipment Used:

(✓ If Used For) Purging	Sampling		Equipment ID
✓	✓	Peristaltic Pump	
		Submersible Pump	
		Bailer	
✓	✓	PVC/Silicon Tubing	
✓		Teflon/Silicon Tubing	
		Airlift	
		Hand Pump	
		In-line Filter	
		Press/Vac Filter	

Decontamination Fluids Used: (✓ All That Apply at Location)
___ Methanol (100%)
___ 25% Methanol/75% ASTM Type II water
___ Deionized Water
___ Liquinox Solution
___ Hexane
___ HNO_3/D.I. Water Solution
___ Potable Water
___ None
✓ Disp. Tubing

Field Analysis Data

PID: Ambient Air 4.0 ppm Well Mouth 21.0 ppm
Purge Data Collected ✓ In-line ✓ In Container
Sample Observations: ✓ Turbid ___ Clear ✓ Cloudy ___ Colored ___ Odor

Time / Purge Data	@ 0955 Gal.	@ 1020 Gal.	@ ____ Gal.	@ ____ Gal.	@ ____ Gal.
Temperature, Deg. C	10.6	8.7			
pH, units	7.4	7.0			
Specific Conductivity (µmhos/cm)	1.82	0.389			
Turbidity (NTUS)	>1000	71600			
Oxidation - Reduction, +/- mv	15.	114-			
Dissolved Oxygen, ppm	<0.1	5.57			
Depth:	20'-16'	8'-12'			

Sample Collection Requirements

(✓ If Required at this Location)

Analytical Parameter	✓ If Sample Collected	Preservation Method	Volume Required	Sample Bottle ILot Nos.
✓ VOCs	✓	4°C/HCl	2x40 ml	HCGW00240/801XLC@1000
___ SVOCs		4°C	2x1 liter AG	
___ Metals		HNO_3, 4°C	1x1 liter P	HCGW00401001XA@1030
___ Cyanide		NaOH, 4°C	1x500mLP	
___ Nitrate/Sulfate		H_2SO_4, 4°C	1x1 liter P	
___ Nitrate/Phosphate		H_2SO_4, 4°C	1x1 liter P	
___ Pest/PCB		4°C	3x1 liter AG	
___ TPH		H_2SO_4, 4°C	2x1 liter AG	
___ TOC		H_2SO_4, 4°C	1x1 liter P	

Notes: 2 Depths @: 18' and 10'

FIGURE 4-1
GROUNDWATER SAMPLE DATA RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN
ABB Environmental Services

GROUNDWATER SAMPLE FIELD DATA RECORD

Project: NYSDEC - Region 8 Dry Cleaners
Project Number: 361205203605.2
Site: Telwigs
Date: February 6, 2006
Time: Start: 1315-1015 End: 1300
Sample Location ID: GW-05
Signature of Sampler:

Water Level/Well Data

Well Depth _____ Ft. ___ Measured ___ Historical
___ Top of Well ___ Top of Protective Casing
Well Riser Stick-up _____ Ft. (from ground)
Protective _____ Ft. Casing/Well Difference
Protective _____ Ft. Casing

Depth to Water _____ Ft.
Well Material: ___ PVC ___ SS _____
Well Locked?: ___ Yes ___ No
Well Dia: ___ 2 inch ___ 4 inch ___ 6 inch _____
Water Level Equip. Used: ___ Elect. Cond. Probe ___ Float Activated ___ Press. Transducer _____

push
5.54 GW probe.

Height of Water Column _____ Ft. X ___ .16 Gal/Ft. (2 in.) ___ .65 Gal/Ft. (4 in.) ___ 1.5 Gal/Ft. (6 in.) ___ Gal/Ft. (__in.) = _____ Gal/Vol. _____ Total Gal Purged

Well Integrity: Yes / No
Prot. Casing Secure
Concrete Collar Intact
Other _____

Equipment Documentation

Purging/Sampling Equipment Used:

(✓ If Used For) Purging	Sampling		Equipment ID
	✓	Peristaltic Pump	
		Submersible Pump	
		Bailer	
✓	✓	PVC/Silicon Tubing	
✓		Teflon/Silicon Tubing	
		Airlift	
		Hand Pump	
		In-line Filter	
		Press/Vac Filter	

Decontamination Fluids Used: (✓ All That Apply at Location)
___ Methanol (100%)
___ 25% Methanol/75% ASTM Type II water
___ Deionized Water
___ Liquinox Solution
___ Hexane
___ HNO_3/D.I. Water Solution
___ Potable Water
___ None
✓ Disp. Tubing

Field Analysis Data

PID: Ambient Air <1.0 ppm Well Mouth <1.0 ppm
Purge Data Collected ___ In-line ✓ In Container
Sample Observations: ✓ Turbid ___ Clear ✓ Cloudy ___ Colored ___ Odor

Time / Purge Data	@ 1210 Gal.	@ 1240 Gal.	@ ____ Gal.	@ ____ Gal.	@ ____ Gal.
Temperature, Deg. C	10.1	9.1			
pH, units	7.4	6.9			
Specific Conductivity (µmhos/cm)	1.60	0.54a			
Turbidity (NTUS)	>1000	>1000			
Oxidation - Reduction, +/- mv	26.	-16.			
Dissolved Oxygen, ppm	<0.1	<0.1			
Depth:	20-24.	12-16			

Sample Collection Requirements

(✓ If Required at this Location)

Analytical Parameter	✓ If Sample Collected	Preservation Method	Volume Required	Sample Bottle ILot Nos.
✓ VOCs	✓	4°C/HCl	2x40 ml	HCGW005022012XC@1215 – VOA
✓ SVOCs	✓	4°C	2x1 liter AG	HCGW005022012DC@1245 – VOA.
__ Metals		HNO_3, 4°C	1x1 liter P	
__ Cyanide		NaOH, 4°C	1x500mLP	HCGW005014012XA@1245 – VOA (2)
__ Nitrate/Sulfate		H_2SO_4, 4°C	1x1 liter P	– SVOA (2).
__ Nitrate/Phosphate		H_2SO_4, 4°C	1x1 liter P	
__ Pest/PCB		4°C	3x1 liter AG	
__ TPH		H_2SO_4, 4°C	2x1 liter AG	
__ TOC		H_2SO_4, 4°C	1x1 liter P	

Notes: 2 Depths @: 22' and 14'

FIGURE 4-1
GROUNDWATER SAMPLE DATA RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

GROUNDWATER SAMPLE FIELD DATA RECORD

Project: NYSDEC - Region 8 Dry Cleaners
Project Number: 361205.2036 / 05.2
Site: Hilburgs
Date: February 6, 2006.
Time: Start: 1200 End: 1300
Sample Location ID: GW-006
Signature of Sampler:

Water Level/Well Data

Well Depth _____ Ft. ___ Measured ___ Historical
___ Top of Well ___ Top of Protective Casing
Well Riser Stick-up _____ Ft. (from ground)
Protective _____ Ft. Casing/Well Difference
Protective _____ Ft. Casing

Depth to Water _____ Ft.
Well Material: ___ PVC ___ SS _____
Well Locked?: Yes No
Well Dia: ___ 2 inch ___ 4 inch ___ 6 inch _____
Water Level Equip. Used: ___ Elect. Cond. Probe ___ Float Activated ___ Press. Transducer _____

push
Interface probe.

Height of Water Column _____ Ft. X ___ .16 Gal/Ft. (2 in.) ___ .65 Gal/Ft. (4 in.) ___ 1.5 Gal/Ft. (6 in.) ___ Gal/Ft. (__in.) = _____ Gal/Vol. _____ Total Gal Purged

Well Integrity: Yes No
Prot. Casing Secure ___ ___
Concrete Collar Intact ___ ___
Other _____ ___ ___

Equipment Documentation

Purging/Sampling Equipment Used:

(✓ If Used For) Purging	Sampling		Equipment ID
	✓	Peristaltic Pump	
		Submersible Pump	
		Bailer	
✓	✓	PVC/Silicon Tubing	
✓		Teflon/Silicon Tubing	
		Airlift	
		Hand Pump	
		In-line Filter	
		Press/Vac Filter	

Decontamination Fluids Used:

(✓ All That Apply at Location)
___ Methanol (100%)
___ 25% Methanol/75% ASTM Type II water
___ Deionized Water
___ Liquinox Solution
___ Hexane
___ HNO_3/D.I. Water Solution
___ Potable Water
___ None
___ _____
___ _____

Field Analysis Data

PID: Ambient Air 41.6 ppm Well Mouth 41.0 ppm
Purge Data Collected ___ In-line ✓ In Container
Sample Observations: ✓ Turbid ___ Clear ___ Cloudy ___ Colored ___ Odor

Time / Purge Data	@ 1240 Gal.	@ 1310 Gal.	@ _____ Gal.	@ _____ Gal.	@ _____ Gal.
Temperature, Deg. C	7.3				
pH, units	7.6				
Specific Conductivity (µmhos/cm)	1.51				
Turbidity (NTUS)	>1000				
Oxidation - Reduction, +/- mv	108.				
Dissolved Oxygen, ppm	6.72				

Depth: 20-24 10-14

Sample Collection Requirements

(✓ If Required at this Location)

Analytical Parameter	✓ If Sample Collected	Preservation Method	Volume Required	Sample Bottle ILot Nos.
✓ VOCs	✓	4°C/HCl	2x40 ml	HCGW006022-01X4@1245
___ SVOCs		4°C	2x1 liter AG	
___ Metals		HNO_3, 4°C	1x1 liter P	
___ Cyanide		NaOH, 4°C	1x500mLP	
___ Nitrate/Sulfate		H_2SO_4, 4°C	1x1 liter P	
___ Nitrate/Phosphate		H_2SO_4, 4°C	1x1 liter P	
___ Pest/PCB		4°C	3x1 liter AG	
___ TPH		H_2SO_4, 4°C	2x1 liter AG	
___ TOC		H_2SO_4, 4°C	1x1 liter P	

Notes: 1/2 Depths @ : 22' and 12'

FIGURE 4-1
GROUNDWATER SAMPLE DATA RECORD
NYSDEC QUALITY ASSURANCE PROGRAM PLAN

FIELD DATA RECORD - GROUNDWATER SAMPLING

PROJECT: Region 8 - Dry Cleaners
SITE ID: Helwigs Cleaners
ACTIVITY: START 1250 END 1305
SAMPLE NUMBER: EBGS0001XXXXXR1302
SITE TYPE: NYSDEC
JOB NUMBER: 361205 2036/05.2
STUDY AREA / AOC: Region 8 - NYSDEC
DATE: 02/07/06
FILE TYPE:
WEATHER: 30°F / light snow

WATER LEVEL / WELL DATA

MEASURED WELL DEPTH	FT (TOR)	HISTORICAL WELL DEPTH	FT (TOR)	PROTECTIVE CASING STICKUP (FROM GROUND)	FT	PROTECTIVE CASING / WELL DIFFERENCE	FT
DEPTH TO WATER	FT (TOR)	SCREEN LENGTH	FT	WELL DIAMETER	IN	WELL MATERIAL	
HEIGHT OF WATER COLUMN	FT x ___ GAL/FT (___ INCH WELL) =		GAL/VOL				
PID AMBIENT AIR	PPM	PID WELL MOUTH	PPM	TOTAL VOLUME PURGED	GAL		

WELL INTEGRITY:

	YES	NO	N/A
CAP	___	___	___
CASING	___	___	___
COLLAR	___	___	___
LOCKED	___	___	___

PURGE DATA

TIME:

PURGE VOLUME (gallons)						
PURGE RATE (gpm)						
TEMPERATURE (degreesC)						
pH (units)						
TURBIDITY (ntu)						
SPEC. COND. (uhmos/cm)						
TURBIDITY (ntu)						
REDOX POTENTIAL (+/- mv)						

SAMPLE OBSERVATIONS:

- ☐ CLEAR
- ☐ COLORED _____
- ☐ CLOUDY _____
- ☐ TURBID _____
- ☐ ODOR _____
- ☐ OTHER (see notes)

EQUIPMENT DOCUMENTATION

PURGING

SAMPLING
- ☐ PERISTALTIC PUMP
- ☐ SUBMERSIBLE PUMP
- ☐ BLADDER PUMP
- ☐ PVC/SILICON TUBING
- ☐ TEFLON/SILICON TUBING
- ☐ BAILER
- ☑ IN LINE FILTER S.S. Bowl/Spoon - Sleeve (Soil).

DECON FLUIDS USED
- ☑ ALKINOX
- ☐ LIQUINOX
- ☐ POTABLE WATER
- ☑ DEIONIZED WATER
- ☐ STEAM CLEANING
- ☐ NITRIC ACID
- ☐ _____

WATER LEVEL EQUIPMENT USED
- ☐ ELECTRIC COND. PROBE
- ☐ FLOAT ACTIVATED
- ☐ KECK INTERFACE PROBE
- ☐ _____

NUMBER OF FILTERS USED _____

ANALYTICAL PARAMETERS

	METHOD NUMBER	FRACTION CODE	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID NUMBERS
☑ VOC	OLM04.2		HCL / 4 DEG. C	2 X 40 ML	☑	___/___/___
☐ VOC			HCL / 4 DEG. C	3 X 40 ML	☐	___/___/___
☐ SVOC			4 DEG. C	2 X 1 L AG	☐	___/___/___
☐ PEST / PCBs			4 DEG. C	2 X 1 L AG	☐	___/___/___
☐ HERBICIDES			4 DEG. C	2 X 1 L AG	☐	___/___/___
☐ PAL INORGANICS			HNO3 to pH <2	1 x 1 L P	☐	___/___/___
☐ SULFATE NITRATE/NITRITE	USEPA 300		4 DEG. C	1 X 50 ML P	☐	___/___/___
☐ SULFIDE	USEPA 376.1		NAOH to pH >9	1 X 500 ML P	☐	___/___/___
☐ IRON ONLY			HNO3 to pH <2	1 x 1 L P-Cube	☐	___/___/___
☐ FERROUS IRON	FIELD METHOD		--	--	☐	___/___/___
☐ TOTAL PHOSPHORUS	USEPA-365.4		H2SO4 to pH <2	1 X 50 ML P	☐	___/___/___
☐ MANGANESE ONLY			HNO3 to pH <2	1 X 1 L P	☐	___/___/___
☐ AMMONIA NIROGEN	USEPA-350.1		H2SO4 to pH <2	1 X 400 ML P	☐	___/___/___
☐ TOC	USEPA-415.1				☐	
☐ TSS ONLY	USEPA-160.2		4 DEG. C	1 X 1 L P	☐	___/___/___
☐ OTHER					☐	___/___/___

NOTES

Equipment Blank - This EB is in reference to the soil samples by passing DI water over the S.S. Bowl and Spoon, through the acetate liner of the Soil Sleeve

SIGNATURE: _____

RECEIVED BY: _____

APPENDIX C

DUSR AND LABORATORY ANALYTICAL RESULTS

DATA USABILITY SUMMARY REPORT
2006 SAMPLING EVENT
REGION 8 DRY CLEANERS-FORMER HELWIG'S CLEANERS
CORNING, NEW YORK

Introduction:

Soil, water, and air samples were collected at the former Helwigs Cleaners site in January and February of 2006 and submitted for off-site laboratory analyses. Samples were analyzed by Chemtech located in Mountainside, NJ. A listing of samples included in this investigation is presented in Table 1. A summary of analytical results is presented in Appendix C, Tables 1.1-1.8. Samples were analyzed for the following parameters:

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- Soil: Contract Laboratory Program (CLP) procedures for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs).
- Water: CLP procedures for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs)
- Air: EPA Method TO-15 for VOCs

Deliverables for the off-site laboratory analyses included a Category B deliverable as defined in the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocols (NYSDEC, 1995; NYSDEC, 2000).

A project chemist review was completed based on NYSDEC Division of Environmental Remediation guidance for Data Usability Summary Reports (NYSDEC, 1997). Laboratory QC limits were used during the data evaluation unless noted otherwise. The project chemist review included evaluations of sample collection, data package completeness, holding times, QC data (blanks, instrument calibrations, duplicates, surrogate recovery, and spike recovery), data transcription, electronic data reporting, calculations, and data qualification. With the exception of the items discussed below, results are interpreted to be usable as reported by the laboratory. The following qualifiers are used in the final data presentation.

U = target analyte is not detected at the reported detection limit
J = concentration is estimated
UJ = target analyte is not detected at the reported detection limit and is estimated
R = target analyte was rejected

Results are interpreted to be usable as reported by the laboratory unless discussed in the following sections.

Air - Volatile Organic Compounds

Internal Standards

The internal standard, chlorobenzene-d5, had area counts that were outside of method limits. Compounds associated with this internal standard in sample HCGV00100601XX were qualified as estimated (J/UJ).

Blank Contamination

A detection of 1,1,1-trichloroethane (1.09 ug/m^3) was reported in the method blank. An action level was calculated at five times the detection reported in the blank. The detections for 1,1,1-trichloroethane in sample HCSV00100101XX and HCGV00100601XX were less than the action level and were qualified as non-detect (U).

Initial Calibration

The initial calibration associated with samples HCGV00200601XX and HCGV00300601XX had a correlation coefficient that was less than the validation limit of 0.995 for 2,2,4-trimethylpentane (0.990), 4-methyl-2-pentanone (0.993), and 2-hexanone (0.992). Results for these compounds were non-detect in both samples and were qualified as estimated (UJ). The RRF for 1,3-butadiene (0.023) was less than the response limit of 0.05. The results for 1,3-butadiene were non-detect in samples HCGV00200601XX and HCGV00300601XX and were qualified as rejected (R).

The initial calibration associated with sample HCSV00100101XX had a relative percent standard deviation that was greater than the control limit of 30 for 1,1,1-trichloroethane (35.27). In addition, the correlation coefficient associated with 4-methyl-2-pentanone (0.993) was less than the validation limit of 0.995. Results for 1,1,1-trichloroethane and 4-methyl-2-pentanone in sample HCSV00100101XX were both non-detect and were qualified as estimated (UJ). The RRF for 1,3-butadiene (0.021) was less than the control limit of 0.05. The result for 1,3-butadiene in sample HCSV00100101XX was non-detect and was qualified as rejected (R).

The initial calibration had a relative standard deviation that was outside of the validation limit of 30 for 1,1,1-trichloroethane (35.27). In addition, the correlation coefficient for 4-methyl-2-pentanone (0.993) was less than the validation limit of 0.995. Results for 1,1,1-trichloroethane and 4-methyl-2-pentanone in sample HCGV00100601XX were non-detect and were qualified as estimated (UJ). The RRF for 1,3-butadiene (0.021) was less than the control limit of 0.05. The result for HCGV00100601XX was positive and qualified as estimated (J).

Continuing Calibration

The continuing calibration associated with sample HCSV00100101XX had percent differences greater than the validation limit of 25 for vinyl chloride (-27.7), 1,3-butadiene (-33.3), cis-1,2-dichloroethene (-28.2), trichloroethene (-31.9), 1,4-dioxane (30.6), cis-1,3-dichloropropene (-25.7), 4-methyl-2-pentanone (58.0), 2-haxanone (52.7), tetrachloroethene (-27.3), 1,1,2,2-tetrachloroethene (-28.3), 1,3,5-trimethylbenzene (-32.9), 1,2,4-trimethylbenzene (-30.8), 1,4-dichlorobenzene (-30.9), and 1,2-dichlorobenzene (-26.1). Results for trichloroethene and tetrachloroethene in sample HCSV00100101XX were positive and were qualified as estimated (J). The remaining compounds were non-detect in sample HCSV00100101XX and were qualified as estimated (UJ), except for 1,3-butadiene which was previously rejected (R) for a low RRF.

The continuing calibration had percent differences greater than the validation limit of 25 for dichlorodifluoromethane (-51.0), chloromethane (-28.4), trichlorofluoromethane (-34.3), 1,3-butadiene (-48.8), ethyl acetate (26.2), chloroform (-31.9), cis-1,2-dichloroethene (-33.9), 1,4-dioxane (47.2), 4-methyl-2-pentanone (31.8), tetrachloroethene (-31.0), and 1,2-dibromoethane (-25.5). Results for dichlorodifluoromethane, trichlorofluoromethane, 1,3-butadiene, ethyl acetate, and tetrachloroethene in sample HCGV00100601XX were positive and were qualified as estimated (J). The remaining compounds were non-detect in sample HCGV00100601XX and were qualified as estimated (UJ).

Laboratory Control Sample

The LCS had a percent recovery for 1,4-dioxane (10) that was less than the laboratory control limit. The results for 1,4-dioxane in samples HCGV00200601XX and HCGV00300601XX were non-detect and were qualified as estimated (UJ) with a low bias.

The LCS had percent recoveries for dichlorodifluoromethane (140), 1,4-dioxane (35), 4-methyl-2-pentanone (60), and 2-hexanone (55) that were outside of laboratory control limits. The result for dichlorodifluoromethane in sample HCSV00100101XX was positive and was qualified as estimated (J). The results for 1,4-dioxane, 4-methyl-2-pentanone, and 2-hexanone in sample HCSV00100101XX were non-detect and were qualified as estimated (UJ).

The LCS had percent recoveries outside of laboratory control limits for dichlorodifluoromethane (144) and 1,4-dioxane (64). The result for dichlorodifluoromethane was positive in sample HCGV00100601XX and was qualified as estimated (J). The result for 1,4-dioxane was non-detect in sample HCGV00100601XX and was qualified as estimated (UJ).

Soil and Water Samples - Volatile Organic Compounds

Holding Times and Sample Collection

The percent solids for HCGS00200701XX (16) and HCGS00500701XX (RE) (16) were determined to be less than 50%. Since percent solids were less than 50%, non-detect and positive results were qualified as estimated (J) in samples HCGS00200701XX and HCGS00500701XX (RE).

Internal Standards

The area counts associated with all three internal standards were below control limits in sample HCGS00500701XXRE. Results for this sample were qualified estimated (J/UJ).

The internal standard chlorobenzene-d5 had area counts outside of control limits in sample HCGS00400501XD. Results for the compounds associated with this internal standard in sample HCGS00400501XD were qualified as estimated (J/UJ).

Blank Contamination

Detections of acetone (8.9 to 11 ug/L and 17 to 21ug/kg) and methylene chloride (0.88 to 5.9 ug/L and 2.0 to 5.3 ug/kg) were reported in the method blanks. An action level was calculated at ten times the detections reported in the blanks for acetone and methylene chloride. Detections for acetone and methylene chloride were less than the action level and were qualified as non-detect (U) in samples HCGS00200701XX, HCGW00502201XD, HCGW00501401XA, HCGS00300601XX, HCGS00400501XX, HCGS00400501XD, HCGW00102201XX, HCGW00101401XA, HCGW00401801XX, HCGW00401001XA, HCGW00602201XX, HCGS09900901XX, and HCGW00302201XX. The detection for acetone in sample HCGS00500701XXRE was less than the action level and was qualified as non-detect (U).

Detections of the TIC369-Trioxa-2,10-disilaunde were reported in the method and trip blanks. The results for the TIC were detected in samples HCGW00602201XX and HCGW00302201XX and were qualified as rejected (R).

Initial Calibration

The initial calibration associated with samples HCGS00200701XX, HCGS00500701XX (RE), HCGS00300601XX, HCGS00400501XX, HCGS00400501XD, and HCGS09900901XX had a relative standard deviation (RPD) that was greater than the validation limit of 30 for acetone (32.0). Results for acetone were all non-detect and were qualified as estimated (UJ).

Continuing Calibration

The continuing calibration associated with samples HCGW00202201XX, HCGW00201401XA, and HCGW00502201XX had percent differences greater than the control limit of 25 for acetone (456.2), 2-butanone (507.7), 4-methyl-2-pentanone (473.9), 2-hexanone (493.2), and m/p-xylene (112.7). Results for these compounds in samples HCGW00202201XX, HCGW00201401XA, and HCGW00502201XX were all non-detect and were qualified as estimated (UJ).

The continuing calibration associated with sample HCGW00501401XA had percent differences greater than 25 for chloromethane (28.1), vinyl chloride (29.2), and 2-butanone (26.0). Results for these compounds in samples HCGW00501401XA, HCGW00102201XX, HCGW00101401XA, HCGW00401801XX, HCGW00401001XA, HCGW00602201XX, and HCGW00302201XX were non-detect and were qualified as estimated (UJ).

The continuing calibration associated with HCGS00200701XX had a percent difference greater than 25 for trichlorofluoromethane (29.7). The results for trichlorofluoromethane in sample HCGS00200701XX, HCGS00300601XX, HCGS00400501XX, and HCGS00400501XD were qualified estimated (UJ).

The continuing calibration associated with sample HCGS00500701XX (RE) and HCGS09900901XX had percent differences greater than 25 for dichlorodifluoromethane (36.1), chloromethane (27.0), trichlorofluoromethane (50.2), 1,1,2-trichlorotrifluoroethane (35.8), acetone (30.3), 1,1,1-trichloroethane (25.7), 1,2-dichlorobenzene (26.3), and 1,2,4-trichlorobenzene (25.7). Results for these compounds in sample HCGS00500701XX (RE) and HCGS09900901XX were qualified as estimated (UJ).

Matrix Spike/Matrix Spike Duplicate

The MS/MSD associated with sample HCGS00200701XX had a percent recovery for 1,1-dichloroethene (56) that was less than the lower laboratory control limit. In addition, the relative percent difference for 1,1-dichloroethene (68) was greater than laboratory control limits. Results for 1,1-dichloroethene in sample HCGS00200701XX were qualified as estimated (UJ).

Soil and Water Samples - Semivolatile Organic Compounds

Blank Contamination

Detections for bis(2-ethylhexyl)phthalate (5.8 ug/L) and the TICs eicosane, 3-hexen-2-one, squalene, ACP3.58, and octasane. were reported in the method and equipment blanks. An action level was calculated at ten times the blank detection for bis(2-ethyl-hexyl)phthalate. Results for bis(2-ethyl-hexyl)phthalate in samples HCGW00201401XA,

HCGW00501401XA, and HCGW00501401XD were less than the action level and were qualified as non-detect (U). The TICs eicosane, ACP3.58, and octacosane were detected in sample HCGW00501401XA and rejected (R). The TICs 3-hexen-2-one and ACP3.58 were detected in sample HCGW00201401XD and rejected (R). The TIC squalene was detected in sample HCGW00201401XA and was rejected (R).

A detection of acetophenone (31ug/kg) and the TIC ACP3.62 were reported in the method blank associated with sample HCGS09900901XX. An action level was calculated at five times the detection reported in the blank for acetophenone. The detection for acetophenone in sample HCGS09900901XX was less than the action level and was qualified as non-detect (U). The detection for the TIC ACP3.62 in sample HCGS09900901XX was qualified as rejected (R).

Initial Calibration

The initial calibration associated with samples HCGW00201401XA, HCGW00501401XA, HCGW00201401XD, and HCGS09900901XX had a relative standard deviation that was greater than the validation limit of 30 for benzo(b)fluoranthene (30.5). Results for benzo(b)fluoranthene in the samples were non-detect and were qualified as estimated (UJ).

Continuing Calibration

The continuing calibration associated with samples HCGW00201401XD and HCGW00501401XA had percent differences greater than the validation limit of 25 for hexachlorobenzene (36.6), bis(2-ethylhexyl)phthalate (28.1), and benzo(k)fluoranthene (27.7). Results for these compounds in samples HCGW00201401XD and HCGW00501401XA were non-detect and were qualified as estimated (UJ).

TABLE 1

SDG	Sample Name	Date Collected	Method	Parameter	Type
X1519	HCGS00200701XX	2/7/06	OLM 04.2	VOC	FS
X1519	EBGS0001XXXXX	2/7/06	OLM 04.2	VOC	EB
X1519	HCGS00500701XX	2/7/06	OLM 04.2	VOC	FS
X1519	HCGW00202201XX	2/7/06	OLM 04.2	VOC	FS
X1519	HCGW00201401XA	2/7/06	OLM 04.2	VOC	FS
X1519	HCGW00502201XX	2/7/06	OLM 04.2	VOC	FS
X1519	HCGW00502201XD	2/7/06	OLM 04.2	VOC	FD
X1519	HCGW00501401XA	2/7/06	OLM 04.2	VOC	FS
X1519	EBGW0002XXXXX	2/7/06	OLM 04.2	VOC	EB
X1519	HCSV00100101XX	2/7/06	TO-15	VOC	FS
X1519	HCGS00200701MS	2/7/06	OLM 04.2	VOC	MS
X1519	HCGS00200701MD	2/7/06	OLM 04.2	VOC	MD
X1519	HCGW00201401MS	2/7/06	OLM 04.2	SVOC	MS
X1519	HCGW00201401MD	2/7/06	OLM 04.2	SVOC	MD
X1519	HCGW00201401XD	2/7/06	OLM 04.2	SVOC	FD
X1519	HCGS00200701XX	2/7/06	D2216	Percent Moisture	FS

SDG	Sample Name	Date Collected	Method	Parameter	Type
X1519	HCGS00500701XX	2/7/06	D2216	Percent Moisture	FS
X1519	HCGS00200701MS	2/7/06	D2216	Percent Moisture	MS
X1519	HCGS00200701MD	2/7/06	D2216	Percent Moisture	MD
X1519	HCGW00201401XA	2/7/06	OLM 04.2	SVOC	FS
X1519	HCGW00501401XA	2/7/06	OLM 04.2	SVOC	FS
X1519	EBGW0002XXXXX	2/7/06	OLM 04.2	SVOC	EB
X1502	HCGS00300601XX	2/6/06	OLM 04.2	VOC	FS
X1502	HCGS00400501XX	2/6/06	OLM 04.2	VOC	FS
X1502	HCGS00400501XD	2/6/06	OLM 04.2	VOC	FD
X1502	HCGS00300601XX	2/6/06	D2216	Percent Moisture	FS
X1502	HCGS00400501XX	2/6/06	D2216	Percent Moisture	FS
X1502	HCGS00400501XD	2/6/06	D2216	Percent Moisture	FD
X1502	HCGW00102201XX	2/6/06	OLM 04.2	VOC	FS
X1502	HCGW00101401MS	2/6/06	OLM 04.2	VOC	MS
X1502	HCGW00101401MD	2/6/06	OLM 04.2	VOC	MD
X1502	HCGW00101401XA	2/6/06	OLM 04.2	VOC	FS
X1502	HCGW00401801XX	2/6/06	OLM 04.2	VOC	FS
X1502	HCGW00401001XA	2/6/06	OLM 04.2	VOC	FS
X1502	HCGW00602201XX	2/6/06	OLM 04.2	VOC	FS
X1502	HCGV00100601XX	2/6/06	TO-15	VOC	FS
X1502	HCQT001XXX01XX	2/6/06	OLM 04.2	VOC	TB
X1502	HCGS09900901XX	2/6/06	OLM 04.2	VOC	FS
X1502	HCGS09900901XX	2/6/06	D2216	Percent Moisture	FS
X1502	HCGS09900901XX	2/6/06	OLM 04.2	SVOC	FS
X1502	HCGW00302201XX	2/6/06	OLM 04.2	VOC	FS
X1388	HCGV00200601XX	1/26/06	TO-15	VOC	FS
X1284	HCGV00300601XX	1/26/06	TO-15	VOC	FS

Reference:

New York State Department of Environmental Conservation (NYSDEC), 1995. "Analytical Services Protocols"; 10/95 Edition; October 1995.

New York State Department of Environmental Conservation (NYSDEC), 1997. "Guidance for the Development of Data Usability Reports"; Division of Environmental Remediation; September 1997.

Appendix C
Table 1.1: Soil VOC Results

Lab Sample ID	X1502-01		X1502-02		X1502-03		X1502-13		X1519-01		X1519-03RE	
Lab Sample Delivery Group	X1502		X1502		X1502		X1502		X1519		X1519	
Loc Name	GS-3		GS-4		GS-4		BUILDING		GS-2		GS-5	
Field Sample ID	HCGS00300601XX		HCGS00400501XX		HCGS00400501XD		HCGS09900901XX		HCGS00200701XX		HCGS00500701XX	
Field Sample Date	2/6/2006		2/6/2006		2/6/2006		2/6/2006		2/7/2006		2/7/2006	
QC Code	FS		FS		FD		FS		FS		FS	
Parameter	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,1,1-Trichloroethane	11	U	11	U	12	U	12	UJ	62	UJ	62	UJ
1,1,2,2-Tetrachloroethane	11	U	11	U	12	UJ	12	U	62	UJ	62	UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	11	U	11	U	12	U	12	UJ	62	UJ	62	UJ
1,1,2-Trichloroethane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
1,1-Dichloroethane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
1,1-Dichloroethene	11	U	11	U	12	U	12	U	62	UJ	62	UJ
1,2,4-Trichlorobenzene	11	U	11	U	12	U	12	U	62	UJ	62	UJ
1,2-Dibromo-3-chloropropane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
1,2-Dibromoethane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
1,2-Dichlorobenzene	11	U	11	U	12	U	12	U	62	UJ	62	UJ
1,2-Dichloroethane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
1,2-Dichloropropane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
1,3-Dichlorobenzene	11	U	11	U	12	U	12	U	62	UJ	62	UJ
1,4-Dichlorobenzene	11	U	11	U	12	U	12	U	62	UJ	62	UJ
2-Butanone	3.6	J	3.8	J	4.3	J	58	U	21	J	310	UJ
2-Hexanone	54	U	57	U	59	UJ	58	U	310	UJ	310	UJ
4-Methyl-2-pentanone	54	U	57	U	59	UJ	58	U	310	UJ	310	UJ
Acetic acid, methyl ester	11	U	11	U	12	U	12	U	310	UJ	62	UJ
Acetone	54	UJ	57	UJ	59	UJ	58	UJ	310	UJ	310	UJ
Benzene	11	U	1.6	J	1.6	J	12	U	62	UJ	62	UJ
Bromodichloromethane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Bromoform	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Bromomethane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Carbon disulfide	11	U	11	U	0.85	J	12	U	62	UJ	62	UJ
Carbon tetrachloride	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Chlorobenzene	11	U	11	U	12	UJ	12	U	62	UJ	62	UJ
Chlorodibromomethane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Chloroethane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Chloroform	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Chloromethane	11	U	11	U	12	U	12	UJ	62	UJ	62	UJ
Cis-1,2-Dichloroethene	11	U	11	U	12	U	12	U	62	UJ	62	UJ
cis-1,3-Dichloropropene	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Cyclohexane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Dichlorodifluoromethane	11	U	11	U	12	U	12	UJ	62	UJ	62	UJ
Ethyl benzene	11	U	1.3	J	0.86	J	12	U	62	UJ	62	UJ
Isopropylbenzene	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Methyl cyclohexane	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Methyl Tertbutyl Ether	11	U	11	U	12	U	12	U	62	UJ	62	UJ

Appendix C
Table 1.1: Soil VOC Results

Lab Sample ID	X1502-01		X1502-02		X1502-03		X1502-13		X1519-01		X1519-03RE	
Lab Sample Delivery Group	X1502		X1502		X1502		X1502		X1519		X1519	
Loc Name	GS-3		GS-4		GS-4		BUILDING		GS-2		GS-5	
Field Sample ID	HCGS00300601XX		HCGS00400501XX		HCGS00400501XD		HCGS09900901XX		HCGS00200701XX		HCGS00500701XX	
Field Sample Date	2/6/2006		2/6/2006		2/6/2006		2/6/2006		2/7/2006		2/7/2006	
QC Code	FS		FS		FD		FS		FS		FS	
Parameter	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Methylene chloride	11	U	11	U	12	U	12	U	62	UJ	21	J
o-Xylene	11	U	1	J	0.88	J	12	U	62	UJ	62	UJ
Styrene	11	U	11	U	12	UJ	12	U	62	UJ	62	UJ
Tetrachloroethene	11	U	11	U	12	UJ	12	U	62	UJ	62	UJ
Toluene	11	U	2.7	J	1.9	J	12	U	3.4	J	62	UJ
trans-1,2-Dichloroethene	11	U	11	U	12	U	12	U	62	UJ	62	UJ
trans-1,3-Dichloropropene	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Trichloroethene	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Trichlorofluoromethane	11	UJ	11	UJ	12	UJ	12	UJ	62	UJ	62	UJ
Vinyl chloride	11	U	11	U	12	U	12	U	62	UJ	62	UJ
Xylene, m/p	11	U	1.7	J	1.4	J	12	U	4.8	J	62	UJ

Notes:
Results reported in microgram per kilogram (µg/kg)
Samples analyzed for VOCs by EPA Method OLM04.2
QC Code:
FS = Field Sample
FD = Field Duplicate
Qualifier:
U = Result not detected above the reporting limit
J = Estimated value

Appendix C
Table 1.1: Soil VOC Results

Lab Sample ID	X1502-01		X1502-02		X1502-03		X1502-13		X1519-01		X1519-03RE	
Lab Sample Delivery Group	X1502		X1502		X1502		X1502		X1519		X1519	
Loc Name	GS-3		GS-4		GS-4		BUILDING		GS-2		GS-5	
Field Sample ID	HCGS00300601XX		HCGS00400501XX		HCGS00400501XD		HCGS09900901XX		HCGS00200701XX		HCGS00500701XX	
Field Sample Date	2/6/2006		2/6/2006		2/6/2006		2/6/2006		2/7/2006		2/7/2006	
QC Code	FS		FS		FD		FS		FS		FS	
Parameter	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier

Table Created by: ASZ 6/1/06
Table Checked by: KLT 07/24/06

Appendix C
Table 1.2: Soil SVOC Results

Lab Sample ID	X1502-13	
Lab Sample Delivery Group	X1502	
Loc Name	BUILDING	
Field Sample ID	HCGS09900901XX	
Field Sample Date	2/6/2006	
QC Code	FS	
Parameter	**Result**	**Qualifier**
2,4,5-Trichlorophenol	960	U
2,4,6-Trichlorophenol	380	U
2,4-Dichlorophenol	380	U
2,4-Dimethylphenol	380	U
2,4-Dinitrophenol	960	U
2,4-Dinitrotoluene	380	U
2,6-Dinitrotoluene	380	U
2-Chloronaphthalene	380	U
2-Chlorophenol	380	U
2-Methylnaphthalene	380	U
2-Methylphenol	380	U
2-Nitroaniline	960	U
2-Nitrophenol	380	U
3,3`-Dichlorobenzidine	380	U
3-Nitroaniline	960	U
4,6-Dinitro-2-methylphenol	960	U
4-Bromophenyl phenyl ether	380	U
4-Chloro-3-methylphenol	380	U
4-Chloroaniline	380	U
4-Chlorophenyl phenyl ether	380	U
4-Methylphenol	380	U
4-Nitroaniline	960	U
4-Nitrophenol	960	U
Acenaphthene	380	U
Acenaphthylene	380	U
Acetophenone	380	U
Anthracene	380	U
Atrazine	380	U
Benzaldehyde	380	U
Benzo(a)anthracene	380	U
Benzo(a)pyrene	380	U
Benzo(b)fluoranthene	380	UJ
Benzo(ghi)perylene	380	U
Benzo(k)fluoranthene	380	U
Biphenyl	380	U
Bis(2-Chloroethoxy)methane	380	U
Bis(2-Chloroethyl)ether	380	U
Bis(2-Chloroisopropyl)ether	380	U
Bis(2-Ethylhexyl)phthalate	380	U
Butylbenzylphthalate	380	U
Caprolactum	380	U
Carbazole	380	U
Chrysene	380	U
Di-n-butylphthalate	380	U
Di-n-octylphthalate	380	U
Dibenz(a,h)anthracene	380	U
Dibenzofuran	380	U
Diethylphthalate	380	U
Dimethylphthalate	380	U
Fluoranthene	380	U
Fluorene	380	U
Hexachlorobenzene	380	U
Hexachlorobutadiene	380	U
Hexachlorocyclopentadiene	380	U
Hexachloroethane	380	U
Indeno(1,2,3-cd)pyrene	380	U
Isophorone	380	U
N-Nitrosodi-n-propylamine	380	U
N-Nitrosodiphenylamine	380	U
Naphthalene	380	U
Nitrobenzene	380	U
Pentachlorophenol	960	U
Phenanthrene	380	U
Phenol	380	U
Pyrene	380	U

Notes:
Results reported in microgram per kilogram (µg/kg)
Samples analyzed for SVOCs by EPA Method OLM04.2
QC Code:
FS = Field Sample
Qualifier:
U = Result not detected above the reporting limit
J = Estimated value

Table Created by: ASZ 6/1/06
Table Checked by: KLT 07/24/06

Appendix C
Table 1.3: Groundwater VOC Results

Lab Sample ID	X1502-04		X1502-07		X1502-08		X1502-09		X1502-10		X1502-12		X1502-14	
Lab Sample Delivery Group	X1502		X1502		X1502		X1502		X1502		X1502		X1502	
Loc Name	GW-1		GW-1		GW-4		GW-4		GW-6		QC		GW-3	
Field Sample ID	HCGW00102201XX		HCGW00101401XA		HCGW00401801XX		HCGW00401001XA		HCGW00602201XX		HCQT001XXX01XX		HCGW00302201XX	
Field Sample Date	2/6/2006		2/6/2006		2/6/2006		2/6/2006		2/6/2006		2/6/2006		2/6/2006	
QC Code	FS		FS		FS		FS		FS		TB		FS	
Parameter	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
1,1,1-Trichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2,4-Trichlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dibromo-3-chloropropane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dibromoethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloropropane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,3-Dichlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,4-Dichlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Butanone	50	UJ	50	UJ	50	UJ	50	UJ	50	UJ	50	U	50	UJ
2-Hexanone	50	U	50	U	50	U	50	U	50	U	50	U	50	U
4-Methyl-2-pentanone	50	U	50	U	50	U	50	U	50	U	50	U	50	U
Acetic acid, methyl ester	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Acetone	50	U	50	U	50	U	50	U	50	U	10	JB	50	U
Benzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromoform	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon disulfide	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon tetrachloride	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chlorodibromomethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloroform	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloromethane	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	U	10	UJ
Cis-1,2-Dichloroethene	10	U	10	U	10	U	10	U	10	U	10	U	1.4	J
cis-1,3-Dichloropropene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Cyclohexane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dichlorodifluoromethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Ethyl benzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Isopropylbenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methyl cyclohexane	0.87	J	10	U	10	U	10	U	10	U	10	U	10	U
Methyl Tertbutyl Ether	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene chloride	10	U	10	U	10	U	10	U	10	U	1.8	JB	10	U
o-Xylene	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Appendix C
Table 1.3: Groundwater VOC Results

Lab Sample ID	X1502-04		X1502-07		X1502-08		X1502-09		X1502-10		X1502-12		X1502-14	
Lab Sample Delivery Group	X1502		X1502		X1502		X1502		X1502		X1502		X1502	
Loc Name	GW-1		GW-1		GW-4		GW-4		GW-6		QC		GW-3	
Field Sample ID	HCGW00102201XX		HCGW00101401XA		HCGW00401801XX		HCGW00401001XA		HCGW00602201XX		HCQT001XXX01XX		HCGW00302201XX	
Field Sample Date	2/6/2006		2/6/2006		2/6/2006		2/6/2006		2/6/2006		2/6/2006		2/6/2006	
QC Code	FS		FS		FS		FS		FS		TB		FS	
Parameter	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Styrene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Toluene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
trans-1,2-Dichloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
trans-1,3-Dichloropropene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Trichloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Trichlorofluoromethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Vinyl chloride	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	U	10	UJ
Xylene, m/p	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Notes:
Results reported in microgram per liter (µg/L)
Samples analyzed for VOCs by EPA Method OLM04.2
QC Code:
FS = Field Sample
FD = Field Duplicate
TB = Trip Blank
EB = Equipment Blank
Qualifier:
U = Result not detected above the reporting limit
J = Estimated value
B = Analyte detected in the blank and sample

Table Created by: ASZ 6/1/06
Table Checked by: KLT 07/24/06

Appendix C
Table 1.3: Groundwater VOC Results

Lab Sample ID	X1519-02		X1519-04		X1519-05		X1519-06		X1519-07		X1519-08		X1519-09	
Lab Sample Delivery Group	X1519		X1519		X1519		X1519		X1519		X1519		X1519	
Loc Name	QC		GW-2		GW-2		GW-5		GW-5		GW-5		QC	
Field Sample ID	EBGS001XXX01XX		HCGW00202201XX		HCGW00201401XA		HCGW00502201XX		HCGW00502201XD		HCGW00501401XA		EBGW002XXX01XX	
Field Sample Date	2/7/2006		2/7/2006		2/7/2006		2/7/2006		2/7/2006		2/7/2006		2/7/2006	
QC Code	EB		FS		FS		FS		FD		FS		EB	
Parameter	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
1,1,1-Trichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2,4-Trichlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dibromo-3-chloropropane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dibromoethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloropropane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,3-Dichlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,4-Dichlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Butanone	50	U	50	UJ	50	UJ	50	UJ	50	U	50	UJ	50	U
2-Hexanone	50	U	50	UJ	50	UJ	50	UJ	50	U	50	U	50	U
4-Methyl-2-pentanone	50	U	50	UJ	50	UJ	50	UJ	50	U	50	U	50	U
Acetic acid, methyl ester	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Acetone	50	U	50	UJ	50	UJ	50	UJ	50	U	50	U	50	U
Benzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromoform	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon disulfide	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon tetrachloride	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chlorodibromomethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloroform	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloromethane	10	U	10	U	10	U	10	U	10	U	10	UJ	10	U
Cis-1,2-Dichloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
cis-1,3-Dichloropropene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Cyclohexane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dichlorodifluoromethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Ethyl benzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Isopropylbenzene	10	U	10	U	10	U	10	U	10	U	1.4	J	10	U
Methyl cyclohexane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methyl Tertbutyl Ether	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene chloride	10	U	10	U	10	U	10	U	10	U	10	U	10	U
o-Xylene	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Appendix C
Table 1.3: Groundwater VOC Results

Lab Sample ID	X1519-02		X1519-04		X1519-05		X1519-06		X1519-07		X1519-08		X1519-09	
Lab Sample Delivery Group	X1519		X1519		X1519		X1519		X1519		X1519		X1519	
Loc Name	QC		GW-2		GW-2		GW-5		GW-5		GW-5		QC	
Field Sample ID	EBGS001XXX01XX		HCGW00202201XX		HCGW00201401XA		HCGW00502201XX		HCGW00502201XD		HCGW00501401XA		EBGW002XXX01XX	
Field Sample Date	2/7/2006		2/7/2006		2/7/2006		2/7/2006		2/7/2006		2/7/2006		2/7/2006	
QC Code	EB		FS		FS		FS		FD		FS		EB	
Parameter	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Styrene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Toluene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
trans-1,2-Dichloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
trans-1,3-Dichloropropene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Trichloroethene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Trichlorofluoromethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Vinyl chloride	10	U	10	U	10	U	10	U	10	U	10	UJ	10	U
Xylene, m/p	10	U	10	UJ	10	UJ	10	UJ	10	U	10	U	10	U

Notes:
Results reported in microgram per liter (µg/L)
Samples analyzed for VOCs by EPA Method OLM04.2
QC Code:
FS = Field Sample
FD = Field Duplicate
TB = Trip Blank
EB = Equipment Blank
Qualifier:
U = Result not detected above the reporting limit
J = Estimated value
B = Analyte detected in the blank and sample

Appendix C
Table 1.4: Groundwater SVOC Results

Lab Sample ID	X1519-05		X1519-08		X1519-15	
Lab Sample Delivery Group	X1519		X1519		X1519	
Loc Name	GW-2		GW-5		GW-2	
Field Sample ID	HCGW00201401XA		HCGW00501401XA		HCGW00201401XD	
Field Sample Date	2/7/2006		2/7/2006		2/7/2006	
QC Code	FS		FS		FD	
Parameter	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
2,4,5-Trichlorophenol	10	U	10	U	10	U
2,4,6-Trichlorophenol	10	U	10	U	10	U
2,4-Dichlorophenol	10	U	10	U	10	U
2,4-Dimethylphenol	10	U	10	U	10	U
2,4-Dinitrophenol	20	U	20	U	20	U
2,4-Dinitrotoluene	10	U	10	U	10	U
2,6-Dinitrotoluene	10	U	10	U	10	U
2-Chloronaphthalene	10	U	10	U	10	U
2-Chlorophenol	10	U	10	U	10	U
2-Methylnaphthalene	10	U	10	U	10	U
2-Methylphenol	10	U	10	U	10	U
2-Nitroaniline	10	U	10	U	10	U
2-Nitrophenol	10	U	10	U	10	U
3,3`-Dichlorobenzidine	20	U	20	U	20	U
3-Nitroaniline	10	U	10	U	10	U
4,6-Dinitro-2-methylphenol	20	U	20	U	20	U
4-Bromophenyl phenyl ether	10	U	10	U	10	U
4-Chloro-3-methylphenol	10	U	10	U	10	U
4-Chloroaniline	10	U	10	U	10	U
4-Chlorophenyl phenyl ether	10	U	10	U	10	U
4-Methylphenol	10	U	10	U	10	U
4-Nitroaniline	10	U	10	U	10	U
4-Nitrophenol	20	U	20	U	20	U
Acenaphthene	10	U	10	U	10	U
Acenaphthylene	10	U	10	U	10	U
Acetophenone	10	U	10	U	10	U
Anthracene	10	U	10	U	10	U
Atrazine	10	U	10	U	10	U
Benzaldehyde	10	U	10	U	10	U
Benzo(a)anthracene	10	U	10	U	10	U
Benzo(a)pyrene	10	U	10	U	10	U
Benzo(b)fluoranthene	10	UJ	10	UJ	10	UJ
Benzo(ghi)perylene	10	U	10	U	10	U
Benzo(k)fluoranthene	10	U	10	UJ	10	UJ
Biphenyl	10	U	10	U	10	U
Bis(2-Chloroethoxy)methane	10	U	10	U	10	U
Bis(2-Chloroethyl)ether	10	U	10	U	10	U
Bis(2-Chloroisopropyl)ether	10	U	10	U	10	U
Bis(2-Ethylhexyl)phthalate	10	U	10	UJ	10	UJ
Butylbenzylphthalate	10	U	10	U	10	U
Caprolactum	10	U	10	U	10	U
Carbazole	10	U	10	U	10	U
Chrysene	10	U	10	U	10	U
Di-n-butylphthalate	10	U	10	U	10	U
Di-n-octylphthalate	10	U	10	U	10	U
Dibenz(a,h)anthracene	10	U	10	U	10	U
Dibenzofuran	10	U	10	U	10	U
Diethylphthalate	10	U	10	U	10	U
Dimethylphthalate	10	U	10	U	10	U
Fluoranthene	10	U	10	U	10	U
Fluorene	10	U	10	U	10	U
Hexachlorobenzene	10	U	10	UJ	10	UJ
Hexachlorobutadiene	10	U	10	U	10	U
Hexachlorocyclopentadiene	10	U	10	U	10	U
Hexachloroethane	10	U	10	U	10	U
Indeno(1,2,3-cd)pyrene	10	U	10	U	10	U
Isophorone	10	U	10	U	10	U
N-Nitrosodi-n-propylamine	10	U	10	U	10	U
N-Nitrosodiphenylamine	10	U	10	U	10	U
Naphthalene	10	U	10	U	10	U

Appendix C
Table 1.4: Groundwater SVOC Results

Lab Sample ID	X1519-05		X1519-08		X1519-15	
Lab Sample Delivery Group	X1519		X1519		X1519	
Loc Name	GW-2		GW-5		GW-2	
Field Sample ID	HCGW00201401XA		HCGW00501401XA		HCGW00201401XD	
Field Sample Date	2/7/2006		2/7/2006		2/7/2006	
QC Code	FS		FS		FD	
Parameter	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Nitrobenzene	10	U	10	U	10	U
Pentachlorophenol	20	U	20	U	20	U
Phenanthrene	10	U	10	U	10	U
Phenol	10	U	10	U	10	U
Pyrene	10	U	10	U	10	U

Table Created by: ASZ 6/1/06
Table Checked by: KLT 07/24/06

Notes:
Results reported in microgram per liter (µg/L)
Samples analyzed for SVOCs by EPA Method OLM04.2
QC Code:
FS = Field Sample
FD = Field Duplicate
Qualifier:
U = Result not detected above the reporting limit
J = Estimated value

Appendix C
Table 1.5: Soil Vapor VOC Results

Lab Sample ID		X1388-01		X1388-02		X1502-11		X1519-10	
Lab Sample Delivery Group		X1388		X1388		X1502		X1519	
Loc Name		GV-02		GV-03		GV-01		SV-01	
Field Sample ID		HCGV00200601XX		HCGV00300601XX		HCGV00100601XX		HCSV00100101XX	
Field Sample Date		1/26/2006		1/26/2006		2/6/2006		2/6/2006	
QC Code		FS		FS		FS		FS	
Parameter	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
1,1,1-Trichloroethane	UG/M3	0.54	U	0.54	U	0.98	UJ	4.35	UJ
1,1,2,2-Tetrachloroethane	UG/M3	0.69	U	0.69	U	0.69	UJ	2.75	UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.76	U	0.92		0.76	U	3.06	U
1,1,2-Trichloroethane	UG/M3	0.54	U	0.54	U	0.54	U	2.18	U
1,1-Dichloroethane	UG/M3	0.4	U	0.4	U	0.4	U	1.62	U
1,1-Dichloroethene	UG/M3	0.4	U	0.4	U	0.4	U	1.59	U
1,2,4-Trichlorobenzene	UG/M3	0.74	U	0.74	U	0.74	U	2.96	U
1,2,4-Trimethylbenzene	UG/M3	0.83		1.47		2.85		1.96	UJ
1,2-Dibromoethane	UG/M3	0.77	U	0.77	U	0.77	UJ	3.08	U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	0.7	U	0.7	U	0.7	U	2.8	U
1,2-Dichlorobenzene	UG/M3	0.6	U	0.6	U	0.6	U	2.4	UJ
1,2-Dichloroethane	UG/M3	0.4	U	0.4	U	0.4	U	1.62	U
1,2-Dichloropropane	UG/M3	0.46	U	0.46	U	0.46	U	1.85	U
1,3,5-Trimethylbenzene	UG/M3	0.49	U	0.59		0.49	U	1.96	UJ
1,3-Dichlorobenzene	UG/M3	0.6	U	0.6	U	0.6	U	2.4	U
1,4-Dichlorobenzene	UG/M3	0.6	U	0.6	U	0.6	U	2.4	UJ
1,4-Dioxane	UG/M3	0.72	UJ	0.72	UJ	0.72	UJ	2.88	UJ
2-Butanone	UG/M3	2.68		7.1		1.94		3.89	
2-Hexanone	UG/M3	0.82	UJ	0.82	UJ	0.82	UJ	3.27	UJ
2-Propanol	UG/M3	7.02		9.33		63.8	D	5.4	
4-Ethyltoluene	UG/M3	0.49	U	0.49		0.49	U	1.96	U
4-Methyl-2-pentanone	UG/M3	0.82	UJ	0.82	UJ	0.82	UJ	3.27	UJ
Acetone	UG/M3	21.8		48	D	32.5		58.2	
Allyl chloride	UG/M3	0.31	U	0.31	U	0.31	U	1.26	U
Benzene	UG/M3	12.2		8.36		3.09		5.36	
Benzyl chloride	UG/M3	0.58	U	0.58	U	0.58	U	2.31	U
Bromodichloromethane	UG/M3	2.48		0.67	U	0.67	U	2.68	U
Bromoform	UG/M3	1.03	U	1.66		1.03	U	4.14	U
Bromomethane	UG/M3	0.39	U	0.39	U	0.39	U	1.55	U
Butadiene, 1,3-	UG/M3		R		R	11.2	J		R
Carbon disulfide	UG/M3	3.67		6.4		1.12		7.34	
Carbon tetrachloride	UG/M3	0.63	U	0.63	U	0.63	U	2.52	U
Chlorobenzene	UG/M3	0.46	U	0.46	U	0.46	UJ	1.85	U
Chlorodibromomethane	UG/M3	0.85	U	0.85	U	0.85	U	3.4	U
Chloroethane	UG/M3	0.27	U	0.27	U	0.27	U	1.06	U
Chloroform	UG/M3	0.49	U	0.49	U	0.49	UJ	3.5	
Chloromethane	UG/M3	0.45		0.39		0.2	UJ	0.82	U
Cis-1,2-Dichloroethene	UG/M3	0.4	U	0.4	U	0.4	UJ	1.59	UJ
cis-1,3-Dichloropropene	UG/M3	0.45	U	0.45	U	0.45	U	1.82	UJ
Cyclohexane	UG/M3	28.2		16.9		3.25		29.5	

Appendix C
Table 1.5: Soil Vapor VOC Results

Lab Sample ID		X1388-01		X1388-02		X1502-11		X1519-10	
Lab Sample Delivery Group		X1388		X1388		X1502		X1519	
Loc Name		GV-02		GV-03		GV-01		SV-01	
Field Sample ID		HCGV00200601XX		HCGV00300601XX		HCGV00100601XX		HCSV00100101XX	
Field Sample Date		1/26/2006		1/26/2006		2/6/2006		2/6/2006	
	QC Code	FS		FS		FS		FS	
Parameter	**Units**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**	**Result**	**Qualifier**
Dichlorodifluoromethane	UG/M3	3.12		3.17		3.86	J	3.37	J
Ethyl acetate	UG/M3	7.2		24		1.87	J	5.76	
Ethyl benzene	UG/M3	1		1.56		0.56	J	1.73	U
Heptane	UG/M3	32.1		17.8		1.76		85.7	
Hexachlorobutadiene	UG/M3	1.07	U	1.07	U	1.07	U	4.27	U
Hexane	UG/M3	61.7		37.4		4.22		105	
Isooctane	UG/M3	0.47	UJ	0.47	UJ	0.47	U	1.87	U
Methyl Tertbutyl Ether	UG/M3	0.36	U	0.36	U	0.36	U	1.44	U
Methylene chloride	UG/M3	1.11		1.67		0.7	U	7.51	
o-Xylene	UG/M3	1.17		2.9		0.56	J	1.73	U
Propylene	UG/M3	203	D	92.1	D	31.1		21.9	
Styrene	UG/M3	0.43	U	1.23		0.43	UJ	1.7	U
Tetrachloroethene	UG/M3	5.09		6.99		0.54	J	34.8	J
Tetrahydrofuran	UG/M3	0.59	U	0.59	U	0.59	U	2.36	U
Toluene	UG/M3	16.4		22.4		3.95	J	14	
trans-1,2-Dichloroethene	UG/M3	0.4	U	0.4	U	0.4	U	1.59	U
trans-1,3-Dichloropropene	UG/M3	0.45	U	0.45	U	0.45	U	1.82	U
Trichloroethene	UG/M3	0.23	U	0.43		0.54		2.36	J
Trichlorofluoromethane	UG/M3	2.8		1.62		5.32	J	4.26	
Vinyl acetate	UG/M3	0.35	U	0.35	U	0.35	U	1.41	U
Vinyl bromide	UG/M3	0.44	U	0.44	U	0.44	U	1.75	U
Vinyl chloride	UG/M3	0.26	U	0.26	U	0.26	U	1.02	UJ
Xylene, m/p	UG/M3	3.69		7.07		1.3	J	3.47	U

Notes:
Results reported in microgram per cubic meter ($\mu g/m^3$)
Samples analyzed for VOCs by Method TO-15
QC Code:
FS = Field Sample
Qualifier:
U = Result not detected above the reporting limit
J = Estimated value
D = Result reported from diluted analytical run
R = Rejected result

Table Created by: ASZ 6/1/06
Table Checked by: KLT 07/24/06

Appendix C
Table 1.6: Soil VOC TICs

Matrix	**SOIL**	
Lab Id	**X1502-13**	
Sample No	**HCGS09900901XX**	
Samp Date	**2/6/2006**	
Parameter	**Lab Result**	**Lab Qual**
Benzene, 2-ethyl-1,3-dimethyl-	13	J
Decane	170	J
Squalene	280	J
Undecane	92	J

Notes:
Results reported in micrograms per kilogram (µg/kg)
Sample analyzed for VOCs by EPA Method OLM04.2
Qualifiers:
J = Estimated value

Table Created by: ASZ 6/1/06
Table Checked by: KLT 07/24/06

Appendix C
Table 1.7: Groundwater VOC TICs

	Matrix	WATER		WATER		WATER		WATER		WATER	
	Lab ID	X1502-04		X1502-07		X1502-08		X1502-09		X1502-12	
	Sample No	HCGW00102201XX		HCGW00101401XA		HCGW00401801XX		HCGW00401001XA		HCQT001XXX01XX	
	Samp Date	2/6/2006		2/6/2006		2/6/2006		2/6/2006		2/6/2006	
Anal Meth	**Parameter**	**Lab Result**	**Lab Qual**	**Lab Result**	**Lab Qual**	**Lab Result**	**Lab Qual**	**Lab Result**	**Lab Qual**	**Lab Result**	**Lab Qual**
OLM04.2	1-Ethyl-3-methylcyclohexane (c,t)										
OLM04.2	1-Ethyl-4-methylcyclohexane										
OLM04.2	1-Methyl-4-(1-methylethyl)-cyclohe										
OLM04.2	2-Phenyl-1,2-bis(trimethylsilyloxy	14	J								
OLM04.2	3,6,9-Trioxa-2,10-disilaundecane,									5.2	J
OLM04.2	4-Octene, 2,6-dimethyl-, [S-(Z)]-										
OLM04.2	Benzene, 2-ethyl-1,3-dimethyl-										
OLM04.2	Cyclohexane, (2-methylpropyl)-										
OLM04.2	Cyclohexane, 1,3-dimethyl-, trans-										
OLM04.2	Cyclohexane, 1-ethyl-2-methyl-, tr										
OLM04.2	Cyclohexane, 1-methyl-2-propyl-										
OLM04.2	Cyclohexane, propyl-										
OLM04.2	Heptane, 3,3,5-trimethyl-										
OLM04.2	Nonane, 5-(1-methylpropyl)-										
OLM04.2	Octane, 2,6-dimethyl-										
OLM04.2	Octane, 3,6-dimethyl-										
OLM04.2	Undecane, 5,6-dimethyl-										
OLM04.2	unknown18.59										
OLM04.2	unknown22.98	6.1	J								
OLM04.2	unknown22.99										
OLM04.2	unknown23.00										
OLM04.2	unknown27.29										
OLM04.2	unknown27.32					6.4	J	14	J		
OLM04.2	unknown27.33			15	J						
OLM04.2	unknown7.20									5.8	J

Notes:
Results reported in micrograms per liter (µg/L)

Qualifiers:
J = Estimated value

Appendix C
Table 1.7: Groundwater VOC TICs

Matrix	WATER		WATER		WATER		WATER		WATER		WATER	
Lab ID	X1519-02		X1519-04		X1519-05		X1519-06		X1519-08		X1519-09	
Sample No	EBGS0001XXXXX		HCGW00202201XX		HCGW00201401XA		HCGW00502201XX		HCGW00501401XA		EBGW0002XXXXX	
Samp Date	2/7/2006		2/7/2006		2/7/2006		2/7/2006		2/7/2006		2/7/2006	
Parameter	Lab Result	Lab Qual	Lab Result	Lab Qual	Lab Result	Lab Qual	Lab Result	Lab Qual	Lab Result	Lab Qual	Lab Result	Lab Qual
1-Ethyl-3-methylcyclohexane (c,t)			5	J								
1-Ethyl-4-methylcyclohexane							5.6	J				
1-Methyl-4-(1-methylethyl)-cyclohe									76	J		
2-Phenyl-1,2-bis(trimethylsilyloxy												
3,6,9-Trioxa-2,10-disilaundecane,												
4-Octene, 2,6-dimethyl-, [S-(Z)]-									270	J		
Benzene, 2-ethyl-1,3-dimethyl-												
Cyclohexane, (2-methylpropyl)-					5.6	J						
Cyclohexane, 1,3-dimethyl-, trans-					13	J						
Cyclohexane, 1-ethyl-2-methyl-, tr									210	J		
Cyclohexane, 1-methyl-2-propyl-									87	J		
Cyclohexane, propyl-			6.1	J					89	J		
Heptane, 3,3,5-trimethyl-					26	J			300	J		
Nonane, 5-(1-methylpropyl)-					5.4	J						
Octane, 2,6-dimethyl-					11	J						
Octane, 3,6-dimethyl-									170	J		
Undecane, 5,6-dimethyl-									87	J		
unknown18.59					6.4	J						
unknown22.98												
unknown22.99							6.8	J				
unknown23.00											7	J
unknown27.29							13	J				
unknown27.32												
unknown27.33	22	J									10	J
unknown7.20												

Notes:
Results reported in micrograms per liter (µg/L)
Sample analyzed for VOCs by EPA Method OLM04.2
Qualifiers:
J = Estimated value

Table Created by: ASZ 6/1/06
Table Checked by: KLT 07/24/06

Appendix C
Table 1.8 Groundwater SVOC TICs

Matrix	WATER		WATER		WATER		WATER	
Lab ID	X1519-05		X1519-08		X1519-09		X1519-15	
Sample No	HCGW00201401XA		HCGW00501401XA		EBGW0002XXXXX		HCGW00201401XD	
Samp Date	2/7/2006		2/7/2006		2/7/2006		2/7/2006	
Parameter	**Lab Result**	**Lab Qual**	**Lab Result**	**Lab Qual**	**Lab Result**	**Lab Qual**	**Lab Result**	**Lab Qual**
Naphthalene, decahydro-, trans-	2.7	J	130	J				
1-Hexene, 3,3,5-trimethyl-							7.9	J
2-Octene, 2,6-dimethyl-	6.5	J						
3-Hexen-2-one					6.7	JB		
4-Methyl-1,3-pentadiene							3	J
Bicyclo[3.1.1]heptane, 2,6,6-trime			8.4	J				
Cyclohexane, 1-ethyl-2-methyl-			18	J			2.5	J
Cyclohexane, 1-ethyl-2-methyl-, ci	2.3	J						
Cyclohexane, 1-methyl-2-propyl-	2.8	J					2.8	J
Cyclohexane, 2,4-diethyl-1-methyl-							2.3	J
Cyclooctane, 1-methyl-3-propyl-			11	J				
Decane								
Decane, 3,7-dimethyl-			12	J				
Decane, 4-methyl-	5.8	J					5.5	J
Dibenzylidene 4,4-biphenylenediam							5.6	J
Dodecanoic acid					2.4	J		
Eicosane								
Heneicosane					3.1	J		
Heptacosane			8.6	J				
Heptane, 3-ethyl-2-methyl-	3.6	J	21	J			4.2	J
Hexane, 2,4-dimethyl-			12	J				
n-Hexadecanoic acid					5.5	J		
Naphthalene, decahydro-							3.1	J
Naphthalene, decahydro-, trans-	2.7	J	14	J				
Nonadecane					4.8	JB		
Nonane, 3-methyl-	5.7	J						
Octacosane					6.8	J		
Octane, 2,6-dimethyl-			33	J			6.1	J

Appendix C
Table 1.8 Groundwater SVOC TICs

Matrix	WATER		WATER		WATER		WATER	
Lab ID	X1519-05		X1519-08		X1519-09		X1519-15	
Sample No	HCGW00201401XA		HCGW00501401XA		EBGW0002XXXXX		HCGW00201401XD	
Samp Date	2/7/2006		2/7/2006		2/7/2006		2/7/2006	
Parameter	**Lab Result**	**Lab Qual**	**Lab Result**	**Lab Qual**	**Lab Result**	**Lab Qual**	**Lab Result**	**Lab Qual**
Octane, 3,3-dimethyl-			23	J				
Octane, 4-ethyl-	2.6	J						
Octanoic Acid					2.2	J		
Pentadecanoic acid, 14-methyl-, me					2.5	J		
Squalene					3.8	JB		
Undecane								
Undecane, 5,6-dimethyl-			17	J				
unknown22.64					2.6	J		
unknown3.89							6	J
unknown4.85			19	J				
unknown4.90	2.9	J						
unknown4.97			9.9	J				
unknown5.37							3.1	J
unknown5.51			37	J				
unknown5.72							4	J
unknown5.74			19	J				
unknown5.78	3.2	J						
unknown6.34			20	J				
unknown6.60							2.4	J
unknown6.66	2.3	J						
unknown8.11			22	J				

Notes:
Results reported in micrograms per liter (µg/L)
Sample analyzed for SVOCs by EPA Method OLM04.2
Qualifiers:
J = Estimated value
B = Analyte was detected in both the blank and field sample
A = Suspected aldol-condensation product

Table Created by: ASZ 6/1/06
Table Checked by: KLT 07/24/06

Appendix D (cont'd)

Example Form I - Representative Sample Result showing CHEMTECH's OLM04.2 VOC Method Detection Limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908-789-8900 Fax: 908-789-8922

Report of Analysis

Client:	**MACTEC Inc.**	**Date Collected:**	**02/06/06**
Project ID:	**D003826 Region 8 Dry Cleaners-Helwig MEC02060003**	**Date Received:**	**02/07/06**
Customer Sample No.:	**HCGW00102201XX**	**Lab Sample ID:**	**X1502-04**
Test:	**VOC-TCLVOA 4.3-10NP**	**SDG ID:**	**X1502**
Analytical Method:	**EPA OLM04.2 - VOA**	**% Moisture:**	**100.00**
Result Type:		**Datafile:**	**VF000964**

CAS Number	Parameter	Results	Qualifier	Units	DL	Retention Time	DF	DIL/RE
75-71-8	Dichlorodifluoromethane	ND	U	ug/L	0.50		10	1
74-87-3	Chloromethane	ND	U	ug/L	0.50		10	1
75-01-4	Vinyl Chloride	ND	U	ug/L	0.50		10	1
74-83-9	Bromomethane	ND	U	ug/L	0.50		10	1
75-00-3	Chloroethane	ND	U	ug/L	0.50		10	1
75-69-4	Trichlorofluoromethane	ND	U	ug/L	0.50		10	1
76-13-1	1,1,2-Trichlorotrifluoroethane	ND	U	ug/L	0.50		10	1
75-35-4	1,1-Dichloroethene	ND	U	ug/L	0.50		10	1
67-64-1	Acetone	6.7	JB	ug/L	0.50		50	1
75-15-0	Carbon Disulfide	ND	U	ug/L	0.50		10	1
1634-04-4	Methyl tert-butyl Ether	ND	U	ug/L	0.50		10	1
79-20-9	Methyl Acetate	ND	U	ug/L	0.50		10	1
75-09-2	Methylene Chloride	1.5	JB	ug/L	0.50		10	1
156-60-5	trans-1,2-Dichloroethene	ND	U	ug/L	0.50		10	1
75-34-3	1,1-Dichloroethane	ND	U	ug/L	0.50		10	1
110-82-7	Cyclohexane	ND	U	ug/L	0.50		10	1
78-93-3	2-Butanone	ND	U	ug/L	0.50		50	1
56-23-5	Carbon Tetrachloride	ND	U	ug/L	0.50		10	1
156-59-2	cis-1,2-Dichloroethene	ND	U	ug/L	0.50		10	1
67-66-3	Chloroform	ND	U	ug/L	0.50		10	1
71-55-6	1,1,1-Trichloroethane	ND	U	ug/L	0.50		10	1
108-87-2	Methylcyclohexane	0.87	J	ug/L	0.50		10	1
71-43-2	Benzene	ND	U	ug/L	0.50		10	1
107-06-2	1,2-Dichloroethane	ND	U	ug/L	0.50		10	1
79-01-6	Trichloroethene	ND	U	ug/L	0.50		10	1
78-87-5	1,2-Dichloropropane	ND	U	ug/L	0.50		10	1
75-27-4	Bromodichloromethane	ND	U	ug/L	0.50		10	1
108-10-1	4-Methyl-2-Pentanone	ND	U	ug/L	0.50		50	1

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908-789-8900 Fax: 908-789-8922

Report of Analysis

Client:	MACTEC Inc.	**Date Collected:**	02/06/06
Project ID:	D003826 Region 8 Dry Cleaners-Helwig MEC02060003	**Date Received:**	02/07/06
Customer Sample No.:	HCGW00102201XX	**Lab Sample ID:**	X1502-04
Test:	VOC-TCLVOA 4.3-10NP	**SDG ID:**	X1502
Analytical Method:	EPA OLM04.2 - VOA	**% Moisture:**	100.00
Result Type:		**DataFile:**	VF000964

CAS Number	Parameter	Results	Qualifier	Units	DL	Retention Time	DF	DIL/RE
108-88-3	Toluene	ND	U	ug/L	0.50	10	1	
10061-02-6	t-1,3-Dichloropropene	ND	U	ug/L	0.50	10	1	
10061-01-5	cis-1,3-Dichloropropene	ND	U	ug/L	0.50	10	1	
79-00-5	1,1,2-Trichloroethane	ND	U	ug/L	0.50	10	1	
591-78-6	2-Hexanone	ND	U	ug/L	0.50	50	1	
124-48-1	Dibromochloromethane	ND	U	ug/L	0.50	10	1	
106-93-4	1,2-Dibromoethane	ND	U	ug/L	0.50	10	1	
127-18-4	Tetrachloroethene	ND	U	ug/L	0.50	10	1	
108-90-7	Chlorobenzene	ND	U	ug/L	0.50	10	1	
100-41-4	Ethyl Benzene	ND	U	ug/L	0.50	10	1	
126777-61-2	m/p-Xylenes	ND	U	ug/L	0.50	10	1	
95-47-6	o-Xylene	ND	U	ug/L	0.50	10	1	
100-42-5	Styrene	ND	U	ug/L	0.50	10	1	
75-25-2	Bromoform	ND	U	ug/L	0.50	10	1	
98-82-8	Isopropylbenzene	ND	U	ug/L	0.50	10	1	
79-34-5	1,1,2,2-Tetrachloroethane	ND	U	ug/L	0.50	10	1	
541-73-1	1,3-Dichlorobenzene	ND	U	ug/L	0.50	10	1	
106-46-7	1,4-Dichlorobenzene	ND	U	ug/L	0.50	10	1	
95-50-1	1,2-Dichlorobenzene	ND	U	ug/L	0.50	10	1	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	U	ug/L	0.50	10	1	
120-82-1	1,2,4-Trichlorobenzene	ND	U	ug/L	0.50	10	1	
	unknown22.98	6.1	J	ug/L	0	0	1	TIC
294847-15-7	2-Phenyl-1,2-bis (trimethylsilyloxy	14	J	ug/L	0	0	1	TIC