

Transmitted Via Federal Express

March 23, 2006

Mr. Kevin Lynch
Chief, Western New York Remediation Section
United States Environmental Protection Agency
Region 2
290 Broadway
New York, New York 10007-1866

Re: Work Plan for Groundwater Investigation – Revision 1
Groundwater Monitoring Well Installation and Groundwater Sampling Program
AVX Corporation
Olean, New York
BBLES Project #: 07385

Dear Mr. Lynch:

On behalf of AVX Corporation (AVX), BBL Environmental Services, Inc. (BBLES) respectfully submits this revised *Work Plan for Groundwater Investigation* (Work Plan) to the United States Environmental Protection Agency (USEPA) describing the proposed groundwater monitoring well installation and groundwater sampling program at the AVX site located at 1695 Seneca Avenue in Olean, New York (site) (Figures 1 and 2).

This Work Plan was originally submitted to the USEPA on September 22, 2005. On December 23, 2005, the USEPA prepared technical review comments to the Work Plan, to which BBLES responded in a January 27, 2006 letter. The USEPA issued a March 3, 2006 letter to AVX that considered both BBLES' January 27, 2006 response to comments and discussions during a follow-up conference call in which USEPA, AVX, and BBLES representatives participated. Therefore, this revised Work Plan has been modified to incorporate revisions agreed to in the January 27, 2006 response to comments, as modified by the USEPA's March 3, 2006 letter.

The objectives of the proposed work are to:

- further define the horizontal extent of chlorinated volatile organic compounds (VOCs) in groundwater downgradient of monitoring well AVX-17S;
- further define the vertical extent of chlorinated VOCs in the vicinity of the expected downgradient perimeter of the chlorinated VOC plume;
- update our understanding of groundwater quality in onsite deep groundwater monitoring wells (AVX-12D, AVX-13D, AVX-14D, AVX-15D, and AVX-16D), which were last sampled in 2002; and

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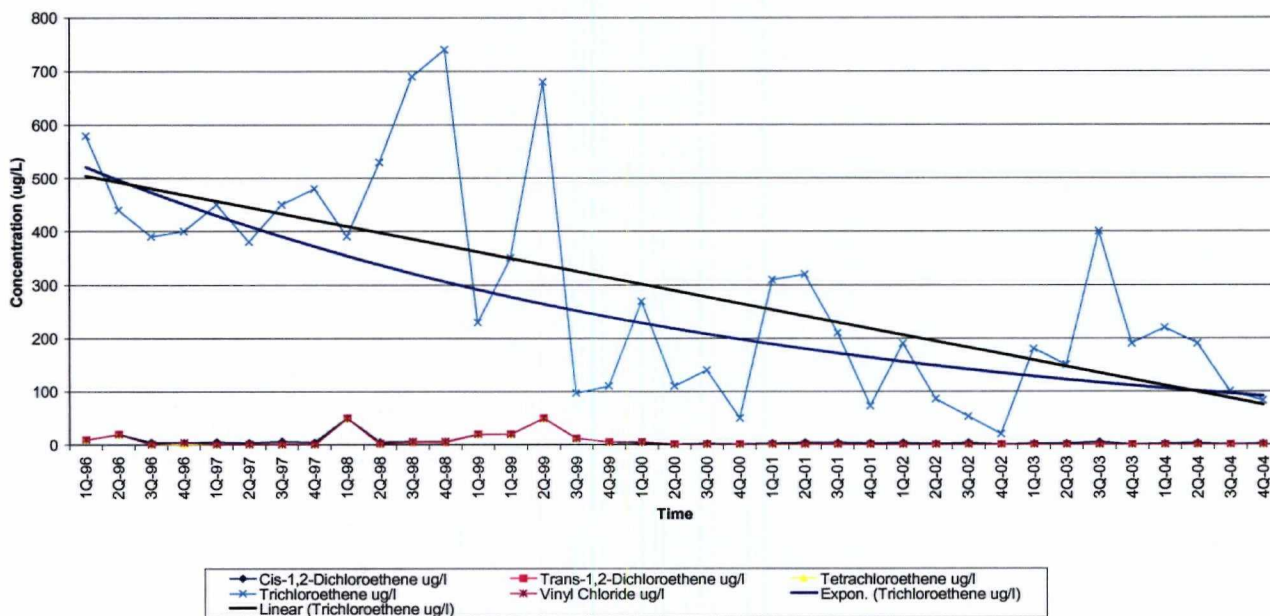
- refine our understanding of groundwater flow in both the till water-bearing zone and the City Aquifer.

The proposed scope of work is based on the following:

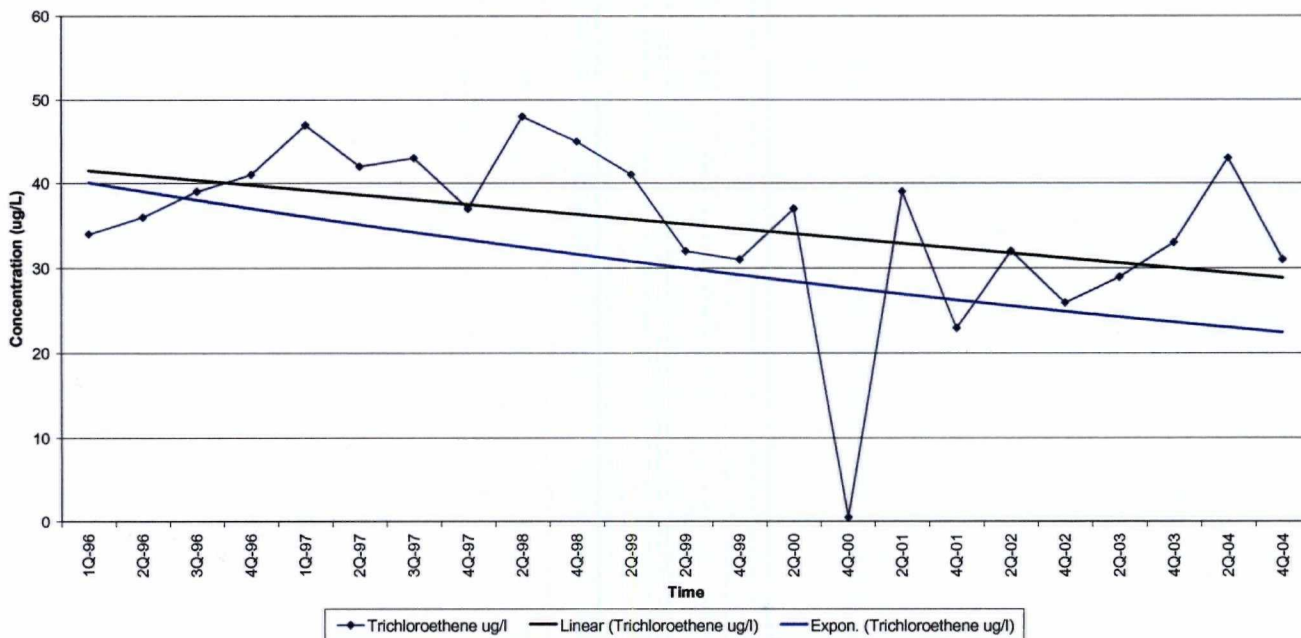
- the results of the October 2003 Geoprobe® investigation described in the January 2004 Monthly Status Report (Nixon Peabody, LLP, January 9, 2004) and follow-up attachments, dated February 20, 2004 (Nixon Peabody, LLP, February 20, 2004), and in BBLES' *Groundwater Sampling Event No. 13 Report*, dated March 4, 2004;
- the results of the December 2004 groundwater investigation described in the April 2005 *Groundwater Investigation Report – AVX-17S Area* (BBLES, 2005);
- the USEPA's June 9, 2005 *Technical Review of the Groundwater Investigation Report for the AVX Property, Olean Well Field Superfund Site, Cattaraugus County, New York*;
- an August 4, 2005 conference call among representatives of the USEPA, AVX, and BBLES;
- historical groundwater quality data from offsite City Aquifer monitoring wells CW-9 and CW-9A;
- the original September 2005 *Groundwater Investigation Work Plan*;
- the USEPA's December 23, 2005 technical review comments to the September 2005 *Groundwater Investigation Work Plan*;
- BBLES' January 27, 2006 response to the USEPA's December 23, 2006 comments; and
- the USEPA's March 3, 2006 conditional approval of the Work Plan.

The above-referenced historical groundwater quality data for offsite monitoring wells CW-9 and CW-9A has been collected by the Olean Cooperating Industries (OCI) since early 1996 as part of the Olean Wellfield sitewide groundwater monitoring program. Summary graphs and best fit trend lines (both linear and exponential) of this data are provided on the Figures below. Although we cannot conclusively determine the source of the trichloroethene (TCE) in monitoring well CW-9 and CW-9A, we can say that the impact of TCE on groundwater in these wells has been declining significantly since the inception of the OCI groundwater monitoring program.

Trend Plot - Through 4th Quarter, 2004
Well Number - CW-9



Trend Plot - Through 4th Quarter, 2004
Well Number CW-9A



The following lists the proposed tasks that are described in greater detail on the following pages:

- Offsite Access;
- Site Preparation;
- Monitoring Well Installation and Sampling;
- Decontamination and Investigation-Derived Waste Management;
- Surveying; and
- Reporting.

For those tasks in which protocols or procedures are fully detailed in this Work Plan, the work will be performed in accordance with the following supporting documents:

- BBLES. 1999. *Sampling Analysis and Monitoring Plan (SAMP)* contained within the *Remedial Design/Remedial Action Work Plan*, AVX Corporation, Olean, New York (March 1999).
- BBLES. 1999. *Quality Assurance Project Plan* contained within the *Remedial Design/Remedial Action Work Plan*, AVX Corporation, Olean, New York (March 1999).
- Blasland, Bouck & Lee, Inc. 2003. *Health and Safety and Contingency Plan – Revision 1 (HSCP)* (April 2003). This HSCP is similar to the HSCP contained within the *Remedial Design/Remedial Action Work Plan*, AVX Corporation, Olean, New York (BBLES, March 1999), but was modified to include new project team members. A copy of this HSCP will be provided upon request.
- USEPA. 1998. *Standard Operating Procedures for Groundwater Sampling Procedure Low Stress (Low-Flow) Purging and Sampling*.

SCOPE OF WORK

Each Work Plan task is described in greater detail in the following sections. Field activities will be supervised and/or performed by a BBLES geologist.

Offsite Access

Although no currently proposed work requires offsite access, AVX and BBLES have been assessing the potential for offsite access in the event that some future work (i.e., installation of monitoring wells) may be performed on property located south of the site. As discussed with the USEPA, AVX has contacted Norfolk and Southern Corporation (NS) to begin the process of obtaining an access agreement for potential installation of wells and submitted an application for this access. Unfortunately, NS's conditions are very rigid and are unacceptable to AVX. AVX is currently assessing the potential for access to other offsite properties. AVX has begun the process of identifying owners of downgradient offsite properties and has begun drafting legal access agreements.

The scope of future offsite work, if any, will be based on the results of the onsite work proposed herein.

Site Preparation

In preparation for proposed investigation activities, improvements may be required to facilitate access to several of the monitoring well locations. Access improvements may include, but may not be limited to,

clearing of trees and brush, construction of a fixed access road(s), and/or placement of temporary road mats.

Monitoring Well Installation and Sampling

Two monitoring wells will be installed in the till water-bearing zone, and two monitoring wells will be installed in the City Aquifer (Figure 2). The following describes the proposed well drilling and completion methods, well development procedures, and groundwater gauging/sampling/analysis methods. Alternative methods may be substituted, but not without prior discussion with and approval by the USEPA.

Drilling and Well Completion

Till Water-Bearing Zone Wells

The borings drilled for the till water-bearing zone monitoring wells (to be named AVX-19S and AVX-20S) (Figure 2) will be advanced with 4¼-inch-inside-diameter (ID) or smaller hollow-stem augers (HSAs) to depths intercepting the sandy zones observed in adjacent borings advanced during the 2004 groundwater investigation (approximately 15 to 25 feet below ground surface [bgs]) (BBLES, 2005). While the borings are advanced, continuous split-spoon samples will be collected. Soil samples will be geologically logged and will be screened with a photoionization detector for the presence of VOCs.

The till water-bearing zone monitoring wells will be constructed with a 2-inch-diameter, flush-threaded, Schedule 316 stainless steel riser and 10 feet of 0.010-inch slot stainless steel well screen. Sandpack, sized for 0.010-inch slot well screen, will be placed from approximately 6 inches below the bottom of the well screen to a minimum of 2 feet above the top of the well screen. A minimum of 2 feet of noncoated bentonite pellets will be placed above the sandpack. The balance of the annular space will be filled with a cement/bentonite grout to approximately 2 feet bgs. Each monitoring well will be completed as a stickup within a 4-inch-minimum-diameter steel protective casing secured within a concrete surface pad. The top of the wells will be secured with a lockable lid and lock.

City Aquifer Wells

The upper portion of the borings drilled for the City Aquifer monitoring wells (to be named AVX-18D and AVX-19D) will be advanced with 10¼-inch-ID HSAs to an elevation of approximately 1,390 feet above mean sea level (amsl). While the boring is advanced, continuous split-spoon samples will be collected. The samples will be geologically logged and screened with a PID for the presence of VOCs.

After this depth (1,390 feet amsl) has been reached, 8-inch-diameter steel casing will be installed through the HSAs and grouted in with a cement/bentonite grout. The grout will be allowed to cure for 1 day before drilling recommences.

Drilling will proceed through the 8-inch steel casing using 4¼-inch-ID HSAs to an elevation of approximately 1,375 feet amsl. This elevation is approximately 5 feet below the elevation of the bottom of the screened interval of the offsite monitoring well (CW-9A).

The monitoring wells will be constructed with 2-inch-diameter, flush-threaded, Schedule 316 stainless steel riser and 10 feet of 0.010-inch slot stainless steel well screen. Sandpack, sized for 0.010-inch slot well screen, will be placed from approximately 6 inches below the bottom of the well screen to a

minimum of 2 feet above the top of the well screen. A minimum of 2 feet of noncoated bentonite pellets will be placed above the sandpack. The balance of the annular space will be filled with a cement/bentonite grout. Each monitoring well will be completed within an aboveground section of the isolation casing that will be secured within a concrete pad. The top of the wells will be secured with a lockable lid and lock.

Well Development

The primary objectives of well development are to significantly reduce the amount of suspended sediment in the water to reduce the turbidity of the groundwater samples collected from the wells and to improve the communication between the well and the adjacent formation. To achieve these objectives, each well will be developed by surging the well with a surge-block and purging until either 10 well volumes have been purged or the purge-water parameters of turbidity, pH, conductivity, and temperature have stabilized.

Groundwater Gauging

Groundwater levels in all site monitoring wells and the CW-9/9A and CW-10/10A offsite monitoring well pairs will be gauged so that a the groundwater gradient map can be updated.

Groundwater Sampling

The newly installed monitoring wells will be sampled following well development activities. Deep monitoring wells AVX-12D, AVX-13D, AVX-14D, AVX-15D, and AVX-16D will also be sampled to update our understanding of groundwater quality in the City Aquifer. In addition, shallow monitoring well AVX-7S will be sampled.

Groundwater samples will be collected by the "micro-purging" or low-flow techniques outlined in the USEPA's *Standard Operating Procedure for Groundwater Sampling Procedure Low Stress (Low-Flow) Purging and Sampling*, dated 1998.

Groundwater Analysis

Groundwater samples will be collected and analyzed for VOCs by USEPA Contract Laboratory Program (CLP) Method OLCO2.1 (low-level CLP volatile method) by Columbia Analytical Services, Inc. of Rochester, New York.

Decontamination

Equipment used during drilling, well development, and sample collection will be decontaminated prior to their use, between uses, and after final use, as outlined in BBLES' SAMP. The drilling equipment (i.e., HSAs and split-spoon samplers) and reusable groundwater sampling equipment (i.e., pumps and bladders) that came into direct contact with subsurface materials during drilling or sampling will be decontaminated.

Investigation-Derived Waste Management

Investigation-derived wastes (IDW) will be segregated according to type of waste generated. The IDW will likely include:

- soil cuttings;
- purge-, development-, and decontamination-derived water; and
- disposable sampling equipment and personal protective equipment.

IDW will be placed in Department of Transportation-approved drums and stored onsite pending offsite disposal. The waste streams will be sampled and analyzed, as necessary, for those waste disposal characteristics required by the disposal facility. The IDW will be disposed offsite in accordance with applicable regulations.

Surveying

A New York State-licensed surveyor will perform a pre-drilling ground surface elevation survey at each proposed monitoring well location. This will allow for very accurate placement of the casing and screened interval of the new wells. Following installation of the wells, a post-construction survey will be performed to establish the location of the newly installed monitoring wells with respect to the existing site coordinate system. Final vertical control will also be established for the ground surface and the top of the riser at each monitoring well.

Report

A summary of the work performed will be submitted in a letter report approximately 60 days following receipt of the analytical data and will include the following:

- geologic and well construction logs and development logs;
- survey data;
- groundwater quality and groundwater elevation data for all wells gauged and/or sampled; and
- conclusions and recommendations.

SCHEDULE

The schedule of the work is as follows:

- Mobilization – May 2006;
- Field Work – completed within approximately 2 weeks of mobilization;
- Laboratory Analytical Results – completed within approximately 1 month of collection of all samples;
- Data Validation – completed within approximately 1 month of receipt of laboratory analytical results; and
- Report – completed within approximately 1 month of completion of data validation.

Upon confirmation of the field schedule, AVX will provide a 2-week notice to the USEPA prior to the commencement of the groundwater investigation field activities.

If you have any questions, please do not hesitate to call me at (412) 231-6624, ext. 562, or Mr. Larry Blue of AVX at (843) 936-0393.

Sincerely,

BBL ENVIRONMENTAL SERVICES, INC.

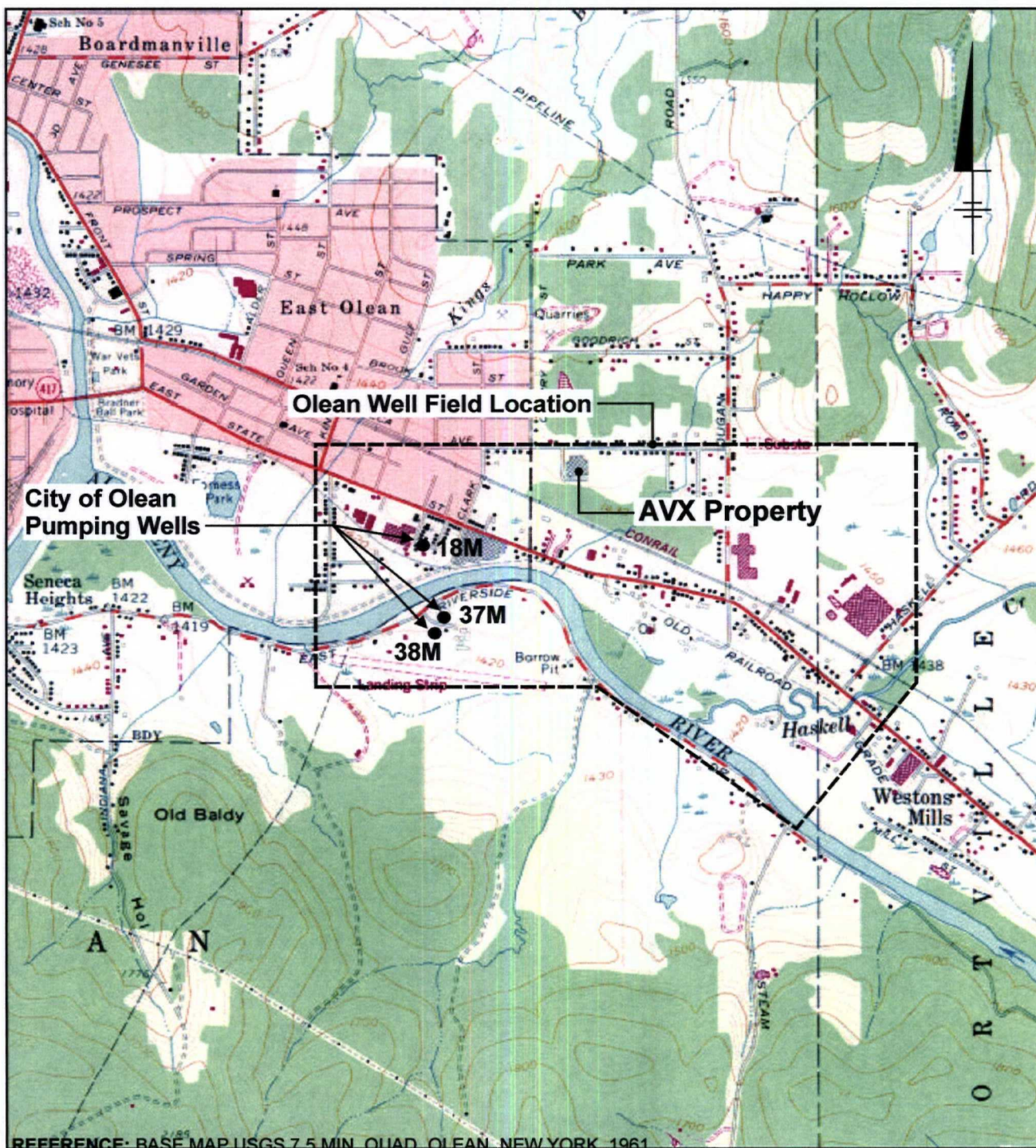


Mark B. Hanish
Project Manager

MBH/mey
Enclosures

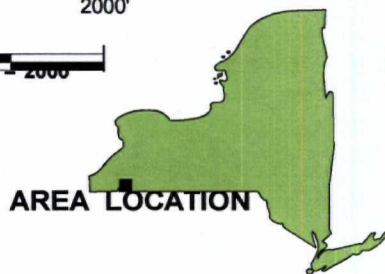
cc: **Mr. Michael Walters**, United States Environmental Protection Agency
Mr. Michael Scorca (for Mr. Andrew Crossland), United States Environmental Protection Agency
Mr. Maurice Moore, New York State Department of Environmental Conservation
Mr. Vivek Nattanmai, New York State Department of Environmental Conservation
Mr. Eric Wohlers, Cattaraugus County Health Department
Mr. Larry Blue, AVX Corporation
Mr. William Popham, BBL Environmental Services, Inc.

Figures



2000' 0 2000'

Approximate Scale. 1" = 2000'



AVX CORPORATION
OLEAN WELL FIELD SUPERFUND SITE
OLEAN, NEW YORK
GROUNDWATER INVESTIGATION WORK PLAN

SITE LOCATION MAP

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE
1

