

# FINAL ENGINEERING CERTIFICATION REPORT

DOCUMENT 1 OF 2008

PROPOSED COLLEGE PARK DEVELOPMENT SITE  
1510 - 1520 MAXON ROAD  
SCHENECTADY, NEW YORK  
BROWNFIELDS CLEANUP PROGRAM  
(BCP No. C447037)

## PREPARED FOR:

**NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
REGION 4 OFFICE**

1130 NORTH WESCOTT RD.  
SCHENECTADY, NEW YORK 12306

**AND**

**BN PARTNERS ASSOCIATES, LLC**  
695 ROTTERDAM INDUSTRIAL PARK  
SCHENECTADY, NEW YORK 12306



## PREPARED BY:


**NORTHEASTERN ENVIRONMENTAL TECHNOLOGIES CORP.**

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## DATED:

**December 12, 2008**

  
Jeffrey T. Wink, President NETC

  
Keith D. Rupert, P.E.  
Lic. No. 066843

*".....providing integrated environmental and geotechnical services...."*

**GEO-ENVIRONMENTAL CONSULTING & PROPERTY MANAGEMENT SERVICES -  
SITE ASSESSMENTS - GEOTECHNICAL DRILLING & DIRECT PUSH SAMPLING  
SERVICES - TANK CLOSURES - EXCAVATION SERVICES - SOIL &  
GROUNDWATER REMEDIATION - EXPERT TESTIMONY - WASTE BROKERAGE**



## CERTIFICATIONS

I, Keith D. Rupert, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that the Remedial Action Work Plan was implemented and that all construction activities were completed in substantial conformance with the Department-approved Remedial Action Work Plan.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Action Work Plan and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established in for the remedy.

I certify that all use restrictions, Institutional Controls, Engineering Controls, and/or any operation and maintenance requirements applicable to the Site are contained in an environmental easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by the Department.

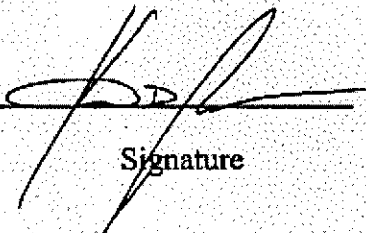
I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal law. I, Keith D. Rupert, of CRK Engineering 1577 Route 40 Schaghticoke, NY 12154 am certifying as Owner's Designated Site Representative for the site.

Lic. No. 066843

NYS Professional Engineer #

12-7-09

Date



Signature

Note: include PE stamp



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## 1.0 INTRODUCTION

This Final Engineering Report (FER) has been prepared to document the remedial construction activity at the College Park Development Site in accordance with the requirements of the NYS Brownfield Cleanup Program ("BCP"), Article 27, Title 14 of the Environmental Conservation Law (ECL). The enclosed Site Location Map (**Appendix A, Figure 1**) identifies the location of the College Park redevelopment site. This site was investigated under the Brownfield Cleanup Program, in accordance with Department of Environmental Conservation ("DEC") approved work plans, during the period 2005 through 2007, culminating in the DEC approved Remedial Measures Work Plan Schedule dated December 12, 2007. Remedial construction on the site, in accordance with the DEC approved Remedial Work Plan, took place from January 2008 to October 2008 with substantial completion of contaminant removal determined in February 2008. Remedial construction activities were provided under a general contract to J.H. Maloy Inc., Capitol Environmental Services, and BCI Construction Inc., by B/N Partners Associates, LLC, the BCP Volunteer. An additional removal zone (removal zone 8) was investigated and delineated in April of 2008 that resulted in further impacted soil removal activities during May of 2008. This activity was conducted pursuant to a DEC approved scope of work and was reported in monthly progress reports. Thereafter, the soil management plan (SMP) was implemented, where necessary, to conduct any additional soil removal measures.

Remediation consisted of excavation and removal of petroleum impacted (i.e., non virgin – mixed waste) soil with disposal at permitted landfill facilities. Excavations were filled to pre-existing grades or parking lot sub grade with imported granular soil. Groundwater encountered during the excavation services was treated on site prior to discharge to the City of Schenectady sewer system. Institutional and Engineering controls will be implemented at the site after construction of the commercial building. The institutional and engineering controls will include the installation of a sub-slab depressurization system and asphalt cover. An environmental easement will be filed with the County Clerk.

DEC work plan approved activities conducted to date included: (i) the removal and disposal of 4,678.84 tons of petroleum impacted soil (i.e., non virgin – mixed waste), (ii) the removal and disposal of 528.7 tons of soil impacted by the dry cleaning solvent Tetrachloroethene (PCE), (iii) the collection, treatment and discharge of 87,410 gallons of groundwater, (iv) end point soil quality testing, (v) UST and transformer removal (vi) site security and (vii) community air monitoring. As a result of the ongoing site redevelopment work, an additional 4,763.89 tons of soil was removed and disposed of, as well as the collection, treatment and discharge of an additional 319,038 gallons of groundwater. As part of the redevelopment work an additional 254.46 tons of soil was removed and disposed of from the down gradient contiguous Maxon Road Parcel.

The Remedial Alternatives Work Plan was prepared on the basis of the Final Site Investigation Report and Remedial Alternatives Selection Report prepared by NETC, dated December 2006 and January 2007, respectively. Construction proceeded in accordance with the Remedial Measures Work Plan Schedule dated December 12, 2007. A site plan presenting the work to be completed in the area removal zones is included in **Appendix A, Figure 2**.

The selected Alternative C "Focused Soil Removal Program" presented in the Remedial Alternative Selection Report called for the following cleanup goals:

- Remove impacted soil from the southern and eastern portion of the site (AOC#1) that exceeds the Part 375-6.8 (b) restricted commercial SCOs.
- Remove impacted soil from the southern portion of the proposed future YMCA facility (AOC#2) that exceed the Part 375-6.8 (a) unrestricted commercial SCOs.
- The underground storage tank (UST) located on the eastern portion of the site would be closed according to the DER-10 guidelines.
- The pad mounted and pole mounted transformers located in the southeast corner of the site will be removed and disposed of off-site.

The redevelopment program provides that the property will be developed for commercial use. To that end, the selected Alternative C "Focused Soil Removal Program" presented in the Remedial Alternative Selection Report called for the following institutional controls:

- A site wide soil management plan will be implemented during the construction of the College Park site to properly manage on site, or dispose off site, soils that contain impacts below the applicable AOC# 1 and 2 SCOs.;
- Post construction monthly groundwater / LNAPL removal and quarterly groundwater monitoring to be performed using a network of wells to achieve a sheen-less groundwater condition and to maintain total dissolved phase VOC and SVOC concentrations of less than 1000 ppb.;
- Engineering control measures in the form of the installation and voluntary operation of sub slab vapor mitigation systems, for proposed commercial structures.;
- Deed restriction on groundwater use, the maintenance of improved / protective surfaces and a property wide soil management plan.



These remediation cleanup goals were achieved at each of the area removal zones and the institutional and engineering controls will be implemented during and after the redevelopment of the site.

Changes to the completed remedial design and Project description included:

- The YMCA facility (AOC#2) was eliminated from the proposed College Park redevelopment design. The entire site was treated as AOC#1, with the removal of soil that exceeded the Part 375-6.8 (b) restricted commercial SCOs.
- The 500Kva pad mounted transformer and three 75Kva pole mounted transformers were removed by National Grid during the period from September - October 2007. Correspondence from National Grid to BCI construction state (1) non PCB containing pad mounted transformer removed from the site is "*.....presently located at National Grid's Albany, New York yard and is on an investment recovery list for bid or purchase.*" National Grid also stated that the exact location of the three pole mounted transformers could not be determined and that "*..... approximately 80-100 units are disposed of weekly and these transformer were part of the trash inventory*". These activities occurred prior to initiating Alternative C – "Focused Soil Removal Program" in December 2007.
- The amount of excavated impacted material decreased from the estimated 8,000 tons to 4,000 tons since the soils that exceed the Part 375-6.8 (a) unrestricted commercial SCOs (AOC#2) no longer needed to be removed from the site due to the change in the development plans.
- The amount of removed and handled construction water increased from the estimated 50,000 gallons to > 87,410 gallons due to a combination of increased sizes of area removal zones, increased duration of project completion schedule, and periods of heavy precipitation.
- An additional soil removal zone (Area 8) was added to the Focused Soil Removal Program based on PCE chlorinated solvent soil impacts identified during a geotechnical soil boring program. A total of 528.7 tons were removed from Area 8.
- Petroleum impacts attributed to ALCO were identified along the down gradient contiguous Maxon Road parcel. With notice to the DEC and with DEC's authorization, the material was excavated and later stockpiled on the College Park site. After field screening consistent with the SMP, the impacted soils were handled in accordance with the SMP. A total of 254.46 tons of soil was removed and disposed of off site.

This Final Engineering Report includes a summary of all remedial construction activities completed as of October 31, 2008, as well as the results of all construction quality control testing measures performed.

The site investigation reports and DEC approved work plans completed from 2005 to 2008, as well as the DEC Monthly status reports completed by NETC along with the DEC correspondence complied throughout the site redevelopment are included as **Appendix B**.

## **2.0 PROJECT PARTICIPANTS & RESPONSIBILITIES**

### **2.1 BCI Construction**

BCI Construction, Inc. of Albany, New York, provided project management and construction oversight under contract with BN Partners Associates, LLC.

### **2.2 BN Partners Associates, LLC**

BN Partners Associates, LLC of Schenectady, New York is the owner of record for the site and is the Volunteer under the Brownfield Cleanup Program.

### **2.3 Buffalo Drilling Company, Inc**

Buffalo Drilling Company of Clarence, New York is a subcontractor to LeChase Construction conducting the geotechnical soil borings and caisson drilling and installation. The work was performed during the building construction phase of the project.

### **2.4 Capitol Environmental Services**

Capitol Environmental Services (CES) of Wilmington, Delaware provided soil disposal brokerage services under a subcontract agreement with BCI Construction, Inc., J.H. Maloy Inc., and BN Partners Associates, LLC. In addition, CES provided oversight and coordination of all off-site soil disposal services.

### **2.5 City of Albany, NY Rapp Road Landfill**

The City of Albany NY Rapp Road Landfill, accepted for disposal impacted soils generated as a result of the soil removal services. The landfill operates under valid permits issued by the NYSDEC and is approved to accept such materials.



## **2.6 CRK Engineering**

CRK Engineering provided engineering oversight and inspection services during this Brownfield Cleanup Program.

## **2.7 Engineer's Certification**

Keith Rupert, P.E. of CRK Engineering certifies, on the basis of on-site observation and documentation as presented herein, that the construction activities completed in the remediation of the College Park Development Site located at 1510, 1520 Maxon Road, site were completed in substantial compliance with the Brownfield Environmental Restoration Program and the DEC approved Remedial Measures Work Plan.

## **2.8 Fuss & O'Neill**

Fuss & O'Neill of Albany New York are the civil and site engineers for the redevelopment of College Park. F&O provided the site plans and specifications for the redevelopment of the site.

## **2.9 Horizon Environmental Inc.**

Horizon Environmental Inc. accepted for disposal hazardous chlorinated impacted soils generated as a result of the soil removal services in Area 8. The landfill operates under valid permits and is approved to accept such materials.

## **2.10 J.H. Maloy Inc.**

J.H. Maloy, Inc. of Loudenville, New York was the prime site contractor and provided remedial construction services under contract with BN Partners Associates during Alternative C "Focused Soil Removal Program". For the site redevelopment work J.H. Maloy, Inc. was the prime site contractor under contract with BCI construction. Work included providing the labor and equipment for all on-site construction activities including site preparation, soil excavation, excavation maintenance and de-watering, backfilling of excavations, site grading and final site restoration.

## **2.11 LeChase Construction**

LeChase Construction of Schenectady, New York is the general contractor providing construction management during the building phase of the site redevelopment. LeChase is under contract with BN Partners Associates. Work included providing over site of all on-site construction activities and coordination of project safety during the building phase of construction.

## **2.12 Mangiardi Brothers Trucking Inc.**

Mangiardi Brothers Trucking Inc. of Castleton, New York provided trucking services for impacted soil disposal under a subcontract to Capitol Environmental Services.

## **2.13 New England Waste Services - Ontario County Landfill**

New England Waste Services of New York, Inc., Ontario County Landfill, accepted for disposal [and as alternate cover material] impacted soils generated as a result of the soil removal services. The landfill operates under valid permits issued by the NYSDEC and is approved to accept such materials.

## **2.14 Northeast Analytical Laboratories**

Northeast Analytical Laboratories (NEA) of Schenectady, New York provide laboratory analysis of soil and groundwater samples collected during the course of the Project as called for in the Remedial Measures Work Plan Schedule, under a subcontract with NETC.

## **2.15 Northeastern Environmental Technologies Corporation**

Northeastern Environmental Technologies Corporation of Ballston Spa, New York, provided oversight, inspection and geo-environmental services by qualified personnel during remedial construction activities which included site preparation and permitting work, impacted soil and environmental media excavation and removal tracking, construction water collection, treatment and disposal via the City of Schenectady Municipal Sewer System, community air monitoring services, verification of media sampling, construction excavation fill and grading as well as all waste disposal accounting and tracking services.

## **2.16 NYS Department of Environmental Conservation (DEC)**

The NYSDEC provided oversight of the project, including part-time on-site inspection by DEC personnel, to ensure compliance of project activities with the approved Remedial Measures Work Plan Schedule.

## **2.17 NYS Department of Health (DOH)**

The NYSDOH provided oversight of the project, including part-time on-site inspection by DOH personnel, to assess compliance of project activities with the approved Remedial Measures Work Plan Schedule.

### **2.18 Page, E.T.C., Inc.**

Page, E.T.C. Inc., of Weedsport, New York provided trucking services for impacted soil disposal under a subcontract to Capitol Environmental Services.

### **2.19 Phoenix Environmental Laboratories, Inc.**

Phoenix Environmental Laboratories, Inc. of Manchester, Connecticut (PEL) provided laboratory analysis of soil and groundwater samples collected during the course of the project as required in the Remedial Measures Work Plan Schedule, under a subcontract with NETC.

### **2.20 Precision Industrial Maintenance Inc.**

Precision Industrial Maintenance, Inc., of Schenectady, New York provided UST closure services under subcontract to CES. In addition, CES provided oversight and coordination of all UST disposal services.

### **2.21 Town of Colonie, NY Landfill**

The Town of Colonie Landfill accepted for disposal impacted concrete generated as a result of the soil removal services. The landfill operates under valid permits issued by the NYSDEC and is approved to accept such materials.

## **3.0 CONSTRUCTION DOCUMENTATION**

During all periods of active earth work and soil-related operations on-site, (including work performed by Maloy and its subcontractors), including all soil disturbance, excavation or disposal, full-time inspection of the contractor activities was provided by NETC. Digital photos of site conditions, soil excavation, and site reclamation progress were taken periodically and are presented in **Appendix C - Exhibit C-1**. Digital photos of the ongoing construction activities are present in **Appendix C - Exhibit C-2**.

The specific activities accomplished during the performance of the Alternative C - "Focused Soil Removal Program" and construction management services are presented in summary discussion as follows.

### **3.1 Project Construction Schedule**

The mile stones, or other significant dates relating to the performance of the Project, are described below. Further information regarding project schedule may be found in the specific sections below that describe each of the phases of the project.

Alternative C - "Focused Soil Removal Program"

Receipt of Construction Bids	09/10/07
General Contract Date	10/10/07
Notice of Award of General Contract	12/10/07
Area Removal Zones Delineated	12/12/07
Landfill Waste Characterization	12/19/07
Landfill Waste Characterization Report	01/03/08
Project Start-up Meeting	01/04/08
Site Mobilization	01/07/08
Excavation Initiated	01/10/08
Excavation Completed	02/15/08
Backfilling Completed	02/15/08
UST Removal Initiated	02/01/08
UST Removal Completed	02/18/08
Area 8 Excavation Initiated	05/06/08
Area 8 Excavation Completed	05/07/08
Area 8 Excavation Backfilled	05/20/08
Substantial Project Completion	06/03/08
Final Site Inspection (Anticipated)*	12/31/09

Site Development Activities

Receipt of Construction Bids	03/28/08
Notice of Award of General Contract	04/10/08
General Contract Date	04/10/08
Project Start-up Meeting	04/14/08
Site Mobilization	04/28/08
Phase 1 Construction Initiated	04/28/08
Building Construction Initiated	10/13/08
Building Construction Completed (Anticipated)	12/31/09
Substantial Project Completion (Anticipated)	12/01/09
Final Site Inspection (Anticipated)*	12/31/09

\*Note: Final inspection will include inspection of all impermeable surfaces, permeable surfaces, sub-surface depressurization system, and monitoring well condition.

### **3.2 Site Preparation & Pre-Construction Testing, Monitoring Well Installation**

#### ***Alternative C - "Focused Soil Removal Program"***

Site preparation was comprised of installing security fence around the perimeter of the site property, installing silt fence around each work area, clearing of woody vegetative growth that would interfere with remediation activities, construction of site access and haul roads, and construction of truck decontamination pad with spray collection sump. Pre-construction testing included the collection of soils for landfill waste disposal characterization, and Area 8 delineation. A total of three monitoring wells were installed at the DEC's request following the Focused Soil Removal Program.

The objective of the waste characterization work was to enable  $\pm 2,500$  cu yd. (i.e.,  $\pm 4,000$  tons) of soil that exceeded the Track 4 Part 375-6.8(b) "restricted commercial use" soil cleanup objectives (SCO) to be directly loaded into permitted trucks for off-site disposal.

In December 2007, a total of (25) test pit excavations were advanced in the Track 4 area removal zones identified in the Remedial Alternatives work plan dated April 3, 2007. For the purpose of the waste characterization work plan, the area removal zones incorporated (8) soil removal zones. An experienced Northeastern Environmental Technologies Corporation (NETC) geologist directed the test pit excavation services and was responsible for all monitoring, exit sampling and reporting services.

A total of (5) grab soil samples were collected from each test pit location and used to manufacture one composite soil sample for each test pit. The grab soil samples were collected from areas exhibiting visual or olfactory indications of chemical impacts and / or areas that exhibited elevated volatile organic compound (VOC) soil gas levels. Generally, grab soil samples exhibiting similar characteristics (i.e., olfactory, visual, soil type and soil gas readings) were composited into four soil samples.

Four composite soil samples were generated during the test pitting activities and submitted to Phoenix Environmental Laboratories, Inc. The composite soil samples were analyzed for the chemical parameters inherent TCLP Metals, TCLP Volatiles, TCLP Semi-Volatiles, TCLP Herbicides/Pesticides, Reactivity, Ignitability, pH, Paint Filter, and PCBs, as outlined by the Casella Waste Systems, Waste Analysis Guidelines Table for contaminated soils and sediments - "unknown release".

Review of the laboratory results obtained for samples TCLP-1, TCLP-2, TCLP-3, and TCLP-4 identified each of the chemical concentrations to be within Casella Waste Systems, Inc. published maximum chemical parameter concentrations for the Ontario County Landfill. The laboratory results are included in **Appendix D - Exhibit D-1**, for consideration.

On April 23 and 24, 2008 (9) soil borings were advanced at the site for the purpose of delineating the aerial extent of the PCE soil impacts in Area 8 (see **Appendix A - Figure 3**). The soil borings were each completed using the methodologies proposed in NETC's March 3, 2008 status report. The soil borings were completed at depths ranging from 11.0 to 15.0 feet below grade. The unconsolidated deposits encountered during the soil boring work were consistent with that previously encountered at the site. Based on the VOC soil gas concentrations, a total of (18) soil samples were short listed and submitted to Phoenix Environmental Laboratories, Inc. (PEL) for analysis via EPA Method 8260. The soil quality information has identified the Track 4 soil clean up objectives exceedances to be within the limits of the (9) soil borings. The soil quality data was subsequently used to direct additional soil removal measures that are intended to achieve the Track 4 soil clean up objectives established for the site. The PEL laboratory results are included in **Appendix D - Exhibit D-2**.

Pursuant to the Department's directives, (3) additional soil borings (B-1-08, B-2-08, and B-3-08) were completed at the site during the period from April 25 - May 20, 2008. Each of the soil borings were completed with 2-inch PVC monitoring well (see **Appendix A - Figure 4**). The soil borings were installed via hollow stem auger drilling techniques using NETC's Mobile B-53 drilling equipment. The soil borings were advanced to further define the areal extent (if any) of measurable LNAPL impacts in the areas surrounding Area Removal Zone 2. Subsequent groundwater measurements taken at the monitoring wells have found the measurable LNAPL impacts to be limited to monitoring well MW-3-03 (0.02ft.). Based on the favorable data, groundwater and LNAPL removal measures were completed on May 29, 2008 via air lift methods (i.e., drum vac equipment). To date, approximately 20 gallons of groundwater have been removed from MW-3-08. NETC has, on a weekly basis, continued to monitor the groundwater / LNAPL levels through-out the construction activities.

### **3.3 Soil Excavation and Disposal**

#### ***Alternative C - "Focused Soil Removal Program"***

On December 12, 2007 the Track 4 Area Removal Zones were delineated in the field. Excavation of soils began on January 10, 2008 in Soil Removal Zone 1 and progressed, in general, numerically to each of the Soil Removal Zones 1 to 8.

The limit of the Soil removal zones, as well as the end point soil sampling locations, was based on NETC's Remedial Measures Work Plan dated December 12, 2007. Expansion of the Soil Removal Zones beyond the expected limits, were based on end point soil sampling analytical results complying with the Track 4 SCOs.

In circumstances where laboratory reported results did not meet the project cleanup criteria, the excavation at the "failing" test location continued and additional soil samples were taken until satisfactory results were obtained. This process generally involved excavation of soils an additional 5 to 10 feet into the excavation wall and generally from 20 to 30 feet along the excavation wall. This excavation was generally extended to the full depth of the surrounding excavation.

Following "over excavation" services, end point soil samples were taken and submitted to the laboratory for testing. If the cleanup criteria were not achieved, the excavation was carried further in the same manner.

Excavation proceeded in this manner to the limits of the excavations presented in **Appendix A - Figure 2**. The depth of the excavations varied from 4 - 8 feet below grade and terminated either on former ALCO building 28 floor slab or gray glacial till.

Excavation of impacted soil progressed to include the entire defined project Area Removal Zones in the DEC approved Remedial Alternative Selection Report. The total revised plan area subject to removal of additional impacted soil was measured at 2,500 cubic yards, comprising a weight of 4,000 tons.

A comparison of quantities anticipated in the, Remedial Alternatives Selection Report dated January 3, 2007, revised with the Remedial Measures Work Plan Schedule dated December 12, 2007, and the actual areas and volumes excavated are presented below:

	<u>Design Report</u>	<u>Total Excavated</u>
Area 1	800 cy	650 cy
Area 2	200 cy	375 cy
Area 4	800 cy	1,435 cy
Area 5	700 cy	465 cy
Area 8	N/A	550 cy
Total Volume	2,500 cy	3,375 cy

Disposal of Contaminated soil was accomplished by truck to the Ontario County Landfill. A total of 4,678.84 tons of soil was disposed of at the Ontario County Landfill. On August 25, 2008 NETC solicited the DEC for



a regulatory determination from the department with respect to a "contained-in determination" for staged soil generated from the Area 8 removal zone. Based on this determination, a total of 528.7 tons of chlorinated impacted soil was disposed of at Horizon Environmental, Inc. as hazardous waste. The remaining 333.57 tons of Area 8 impacted soil was disposed of along with the soil management impacted soil and included in the total tonnage described below in the *Construction Soil Management* section.

The anticipated soil disposal amount was initially 4,000 tons. A daily summary of soil disposal recording tons disposed, disposal facility, and disposal facility scale ticket number are presented in **Appendix E - Exhibit E-1**.

### ***Construction Soil Management***

Soil management practices throughout the construction phase of the site development are based on the NETC soil management plan and the DEC letter dated March 16, 2007. NETC personnel performed all volatile organic compound soil gas screening during the construction activities.

To date a total of 4,763.89 tons has been transported off site for disposal at the Albany Rapp Rd. Landfill. Prior to soil disposal, compliance soil sampling was conducted for every 1,000 tons of soil. The compliance soil sampling involved collecting a minimum of 35 grab soil samples per 1,000 tons and generating one composite soil sample. The soil samples were submitted to PEL for analysis via the Albany County Landfill Parameters.

An additional 254.46 tons of soil resulting from the subsurface conditions uncovered along and on the contiguous Maxon Road parcel has been transported off site for disposal at the Albany Rapp Rd. Landfill. The compliance soil sampling involved collecting a minimum of 10 grab soil samples for the estimated 250 tons and generating one composite soil sample. The soil samples were submitted to PEL for analysis via the Albany County Landfill Parameters.

The soil collection summary tables, as well as the analytical results are included in **Appendix D - Exhibit D-3**.

Ongoing construction activities may continue to generate impacted soil for disposal in accordance with the soil management plan. As of October 1, 2008, a daily summary of soil disposal recording tons disposed, disposal facility, and disposal facility scale ticket number are presented in **Appendix E - Exhibit E-2**. A final soil excavation amount will be established upon completion of the project and will be submitted to the DEC.

Soil identified as having characteristics for potential reuse were tested according to the DEC correspondence dated March 16, 2007. A total of (6) soil samples were submitted to PEL for analysis for the chemical of concern (PCBs, Metals, VOCs, and Semi-VOCs). Based on the results, a total of 150 cy were reused at the site for general backfill under the required 1.0ft. soil cover. The analytical data is included in **Appendix D - Exhibit D-4**.

The soil screening summary sheet is included in **Appendix F** for consideration.

### **3.4 Underground Storage Tank (UST) Closure**

UST removal services began on February 6, 2008 and were completed on February 18, 2008. The UST and UST infrastructure was located in the northeast bank at the College Park site (see **Appendix A - Figure 5**). The UST and all associated UST infrastructure was rendered free of liquids and cleaned prior to removal and off site disposal. A total 6,481 gallons of oil and water were removed during the UST closure services. The UST was recycled by Maloy at Albany Metal recycling.

NETC personnel collected (9) end point soil samples according to DER-10 and submitted to PEL for analysis via STARS Method 8260 and 8270 testing criteria. All end point soil samples were found to be below the track 4 Soil Clean Up Objectives (SCOs).

The excavation was backfilled with hard fill (on-site concrete generated during soil removal services) and a minimum of 1.0ft. "clean" soil cover placed over the hard fill.

The petroleum impacted soil removed as part of the UST removal services was later tested for track 4 SCO compliance (as described above in section 3.3 - Construction Soil Management) and reused at the College Park site for general fill.

The bill of lading for UST liquid disposal and the metal waste disposal letter are included in **Appendix E - Exhibit E-3**. The end point soil sample analytical results are included in **Appendix D - Exhibit D-5**. Photos of the UST closure services are included in **Appendix C**.

### **3.5 Debris Disposal**

Debris disposal was comprised of buried concrete foundations, metal pipelines, railroad tracks and UST infrastructure. The stockpiles of concrete foundations were used as hard fill in the northeast embankments at the College Park site. Additional stockpiled concrete generated during

on-site construction activities was processed off site as per DEC correspondence dated June 23, 2008 and NETC letter dated June 17, 2008 and used as parking lot sub-base in the northern parking lot at the College Park site.

Additional concrete generated during the site redevelopment was processed off site as per DEC correspondence dated August 3, 2008 and September 18, 2008 and NETC letters dated July 25, 2008 and September 17, 2008. The processed concrete was later disposed of off site at Colonie Landfill. An estimated total of 2,200 tons was disposed of off site at Colonie Landfill. The concrete transportation receipts and/or disposal receipts are included in **Appendix E - Exhibit E-4**.

Construction debris (i.e., plastics, wood, etc.) generated during the site redevelopment was disposed of at County Waste of Clifton Park, New York. The waste disposal receipts are included in **Appendix E - Exhibit E-5**.

Metal debris stockpiled at the site resultant from the "Focused Soil Removal Program" and ongoing site construction activities was recovered as scrap metal during the implementation of the project. A total of six loads of bulk metal debris was recovered and recycled. The metal disposal letter is included in **Appendix E - Exhibit E-6**.

### **3.6 Excavation Dewatering & Water Management**

#### ***Excavation Dewatering***

Sumps were placed in active excavation areas and moved as required to facilitate excavation activities. The sumps consisted of either a 10ft. length of slot-20 8-inch schedule 40 PVC well screen, installed vertically with a sump pump installed at the bottom or just a sump pump placed in #2 angular stone. Discharge from the pumps was directed into an on-site fractionation tank for storage and treatment.

The sump assembly was relocated and, when necessary, additional sump installations constructed and employed to maintain a dewatered condition as the excavation and soil removal progressed to completion.

From January 14 to February 19, 2008 a total of 87,410 gallons of groundwater was treated using NETC's shallow tray air stripper system equipped with granular activated carbon prior to discharge into the City of Schenectady sewer system. Seven effluent groundwater samples (once per week) were collected during the discharge of treated groundwater. The effluent samples were submitted to NEA and analyzed for the chemical parameters inclusive of EPA Method 8260, 8270 B/N, and 8082

(PCB), metals, pH, biological oxygen demand (BOD), Total Suspended Solids (TSA), total Cyanide, total Phenemic compounds and the oil & grease testing criteria.

### ***Construction Water Management***

The construction water management plan called for storage of all water (storm and excavation dewatering) in "frac" tank(s) for staging prior treatment prior to release to the City of Schenectady. As of October 1, 2008 a total of  $\pm 319,038$  gallons of construction water was collected and treated as describe above. Groundwater collection and treatment is currently ongoing during all construction activities.

Effluent samples are collected monthly as required by the City of Schenectady and submitted to PEL for analysis via the chemical parameters previously described.

Water testing is discussed below in Section 3.7, laboratory summaries are presented in **Appendix D - Exhibit D-5**.

### **3.7 Effluent Water Testing**

As noted in Section 3.6 above, water testing was provided prior to release to verify that collected and treated water met the City of Schenectady acceptance criteria. The criteria included limitations on metals, suspended solids, and organic compounds, and are presented in full with the summary tables in **Appendix D - Exhibit D-6**, all water treatment activities achieved the required City of Schenectady Sewer Ordinance regulations. A summary of all effluent analytical results and the analytical data is included as **Appendix D - Exhibit D-6**.

### **3.8 Community Air Monitoring**

The project Community Air Monitoring Plan (CAMP) was prepared by NETC in accordance with DOH requirements presented in the Remedial Measures Work Plan Schedule and followed throughout the construction period. This CAMP called for continuous monitoring of ambient air at the project perimeter at all times when excavated soil was being excavated, removed, or otherwise handled.

NETC maintained qualified personnel on-site whenever soil excavation and disturbance occurred from the operation and recording of the air monitoring equipment. The CAMP monitoring data, as well as daily field operations are included in **Appendix G - Exhibit G-1 & Exhibit G-2** for consideration.

### **3.9 End Point Soil Verification Testing**

End point soil sampling was completed according to the Remedial Measures Work Plan Schedule. Exit soil sampling was performed by NETC staff in each of the proposed Part 375-6.8(b) soil removal areas as outlined by the DEC's Division of Environmental Remediation (DER) Draft DER-10 Technical Guidance for Site Investigation and Remediation. End point soil samples were collected from the base and side walls of each excavation. End point laboratory analysis included one or more of the documented SCO exceedances listed herein (i.e., EPA Methods SW846-8260, 8270 B/N, 8082, and TAL Metals) for each of the area removal zones. Exit side wall and bottom soil samples were obtained on a 30 linear foot and  $\pm$  900 sq. ft. basis, respectively. Bottom exit soil samples were excluded from excavations that are terminated on the buried concrete floor surface of ALCO Building 28.

A total of (63) end point soil samples were collected from the Track 4 Area Removal Zones. Fifty-three of the initial (58) end point soil samples collected (pursuant to DER-10) achieved the required Track 4 SCOs. Three Track 4 Area Removal Zones were expanded beyond the proposed soil removal limits based on (4) end point soil samples that exceeded the Track 4 SCOs. Five additional exit end point soil samples collected from the expanded Track 4 Area Removal Zones later demonstrated compliance with the Track 4 SCOs.

Eight figures illustrating the end point soil sampling locations for each soil removal zone are included in **Appendix H - Figures 6 to 13**. Summary tables and associated analytical results for the end point soil samples collected in each soil removal zone are included in **Appendix H - Exhibits H-1 to H-8**. A copy of the current soil removal zones "as-built" plans provided by Maloy, are included in **Appendix I** for consideration.

### **3.10 Grading Activities**

#### ***Alternative C - "Focused Soil Removal Program"***

Each excavation was backfilled with clean fill from Maloy Gravel Pit located in Halfmoon, NY a permitted commercial mining source and placed in the excavation and compacted utilizing a motored vibratory steel drum roller.

#### ***Construction Earthwork & Grading***

Clean fill soil was imported from various sources throughout the construction activities. A composite soil sample obtained from each imported fill location (and type) was chemically tested according to DER-10

and ongoing DEC directives. The imported fill sources and approximate imported amount are presented below:

<u>Source</u>	<u>Sample ID</u>	<u>Imported Amount</u>
<u>R.J. Valente Gravel Pit</u>		
Pipe Bedding	IF-4, IF-5, IF-6	38 cy
General Fill	IF-7, IF-8, IF-9	950 cy
<u>Maloy Gravel Pit</u>		
General Fill	IF-10, IF-11, IF-12	3,100 cy
Top Soil	IF-13, IF-14, IF-15	350 cy
<u>Niskayuna High School</u>		
General Fill Type 1	IF-1, IF-2, IF-3	3,525 cy
General Fill Type 2	IF-16, IF-17, IF-18	1,000 cy
(tennis court sub-base)		
General Fill Type 3	IF-19, IF-20, IF-21	1,100 cy
(Road sub-base)		
Top Soil	IF-22, IF-23, IF-24	204 cy
(fabricated top soil)		

The analytical results for each imported fill source and type are included in **Appendix D - Exhibit D-7**.

In addition to the above imported fill, parking lot sub-base and "clean" stone was imported from Callanan Industries, Inc. and Larned & Sons, Inc. According to the DER-10 and DEC directives, this material was not analytically tested since less than 10% passed the 200 sieve. The gradation for the imported parking lot sub-base is included in **Appendix D - Exhibit D-7**.

### 3.11 Final Site Condition

Final grading work at each soil removal excavation location was accomplished the week of February 18, 2008 and resulted in demobilization of all equipment and fractionation tank, reestablishing the pre-construction grade or proposed sub-grade for the future construction activities, as well as repairing equipment damaged areas and / or surface damage. All storm water / silt control fence installed during the pre-construction period around each soil removal zone was left in place to provide continued control until the proposed site development work began on April 28, 2008.

### **Site Construction**

The final site condition upon completion of the site construction activities will closely resemble the site plans prepared by Fuss and O'Neill with the latest revision date of June 30, 2008. The anticipated completion date for the site development work is November 30, 2009.

Final site inspection will occur upon final completion of the site development work anticipated for December 31, 2009. The final inspection will include assessment of all impermeable and permeable surfaces, sub-slab depressurization system and monitoring well condition. Based on the status of the monitoring wells; monitoring wells damaged during construction will be repaired or replaced, as well as monitoring wells removed due to site development will be reevaluated and replaced, if needed, based on input from the NYSDEC. Following completion of the monitoring well evaluation and replacement, quarterly groundwater sampling will be conducted.

A disk copy of the current construction "as-built" plans provided by Maloy, are included in **Appendix I** for consideration.

### **3.12 Attainment of Project Goals**

In all cases, the project goals were obtained. All soil identified as exceeding the Track 4 SCO's were removed and disposed of off site and the areas restored to its pre-construction condition or to sub grade for future development. Construction water collected during the construction period was properly characterized and appropriately and properly treated and released to the City of Schenectady Sanitary Sewer system.

The record of removed soils, verification soil testing, and the removal and treated construction water, as well as the institutional controls to be implemented, establishes that the remediation project goals were obtained. The site is suitable for future use characterized as light industrial or commercial consistent with the specified and proposed institutional controls. Residential use will not be allowed. Institutional controls will include the following.

- ♦ Limiting end-use to light industrial or commercial use.
- ♦ Prohibited agricultural or gardening (for consumption) use
- ♦ Prohibited groundwater withdrawal as a potable water source
- ♦ Required conditional testing/monitoring for any groundwater withdrawal
- ♦ Required structure designed/constructed to include basement/floor slab vapor intrusion prevention and/or control
- ♦ Require all construction/excavation/grading to be done in accordance with the Site Management Plan.



A copy of the NYSDEC approved Site Management Plan is included in **Appendix J**. A copy of the executed Environmental Easement is included as **Appendix K**.

The Alternative C - "Focused Soil Removal Program" work was privately bid in December 2007.

Change orders to the original contract scope or increased bid quantities were awarded, including:

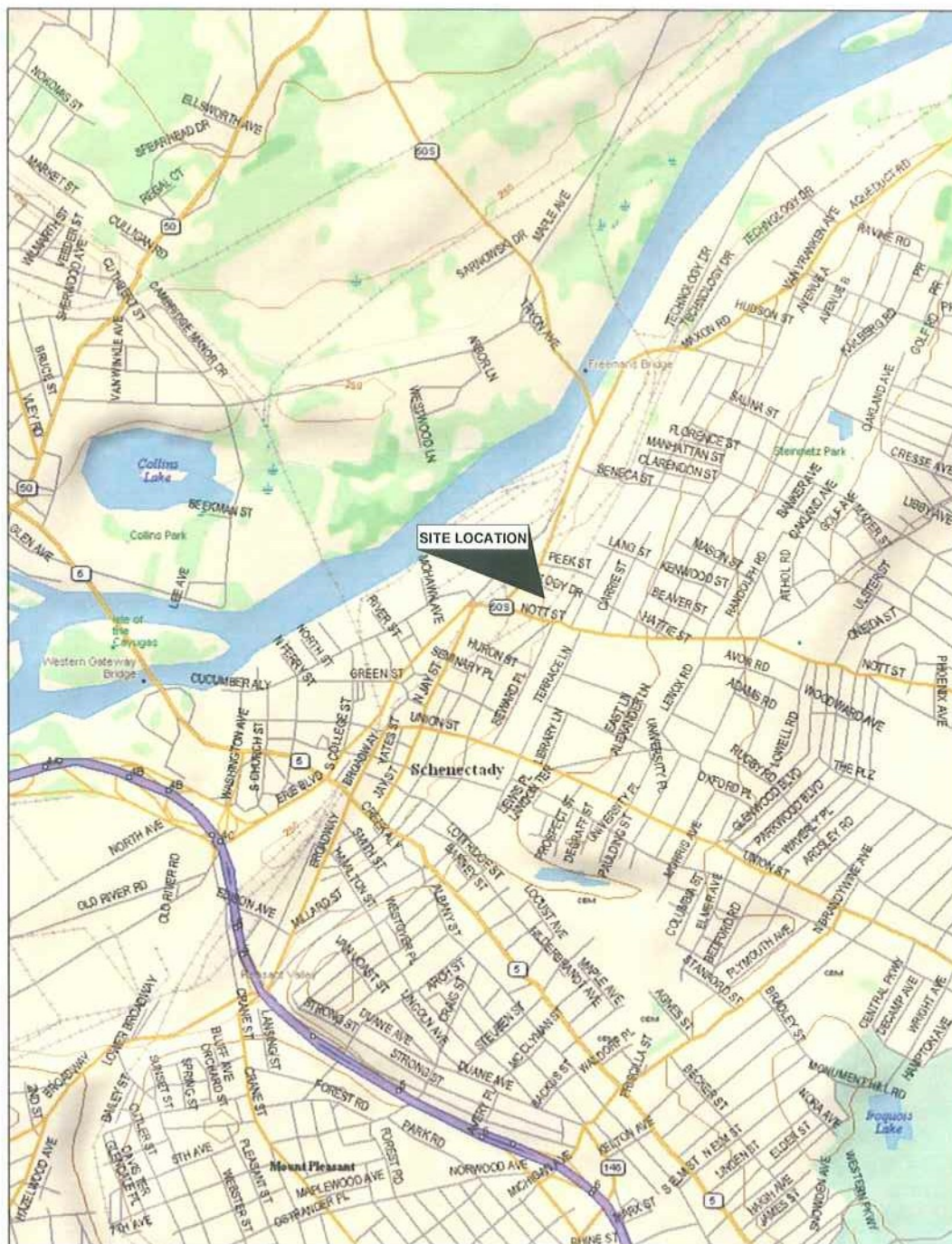
- ♦ Revised laboratory testing methods and requirements.
- ♦ Disposal of Hazardous Soil.
- ♦ Disposal of Concrete debris.
- ♦ Increase in the amounts of contaminated soil excavated, removed and disposed, and backfill placed.
- ♦ Increase in the amounts of construction water handled and discharged.
- ♦ Increase in the total soil and water laboratory analysis
- ♦ Increase in days requiring Health and Safety and Community Air Monitoring.

## **Conclusion**

In accordance with the DEC Approved Remedial Action Work Plan dated April 3, 2007, and as amended by additional approved Work Plans dated December 12, 2007, the contaminant identification and removal portions of the College Park Brownfield Project remediation program have been fully implemented. Remediation consisted of excavation and removal of petroleum impacted (i.e., non virgin - mixed waste) soil with disposal at permitted landfill facilities. Excavations were filled to pre-existing grades or parking lot sub grade with imported granular soil. Groundwater encountered during the excavation services was treated on site prior to discharge to the City of Schenectady sewer system. Institutional and Engineering controls will be implemented at the site after construction of the commercial building, the Golub Corporation headquarters. The institutional and engineering controls, in accordance with the approved Remedial Action Work Plan, will include the installation of a sub-slab depressurization system and asphalt cover. An environmental easement will be filed with the County Clerk, and the soil management plan will be implemented in the event that future intrusive construction activity is carried out at the property.

# APPENDIX A

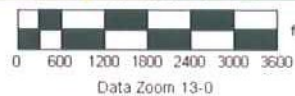
## FIGURES



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**FIGURE 1 - Location Map**  
**Proposed College Park Site**  
**1510 - 1520 Maxon Rd.**  
**Schenectady, New York**

Project # 08.0107024

September 1, 2008



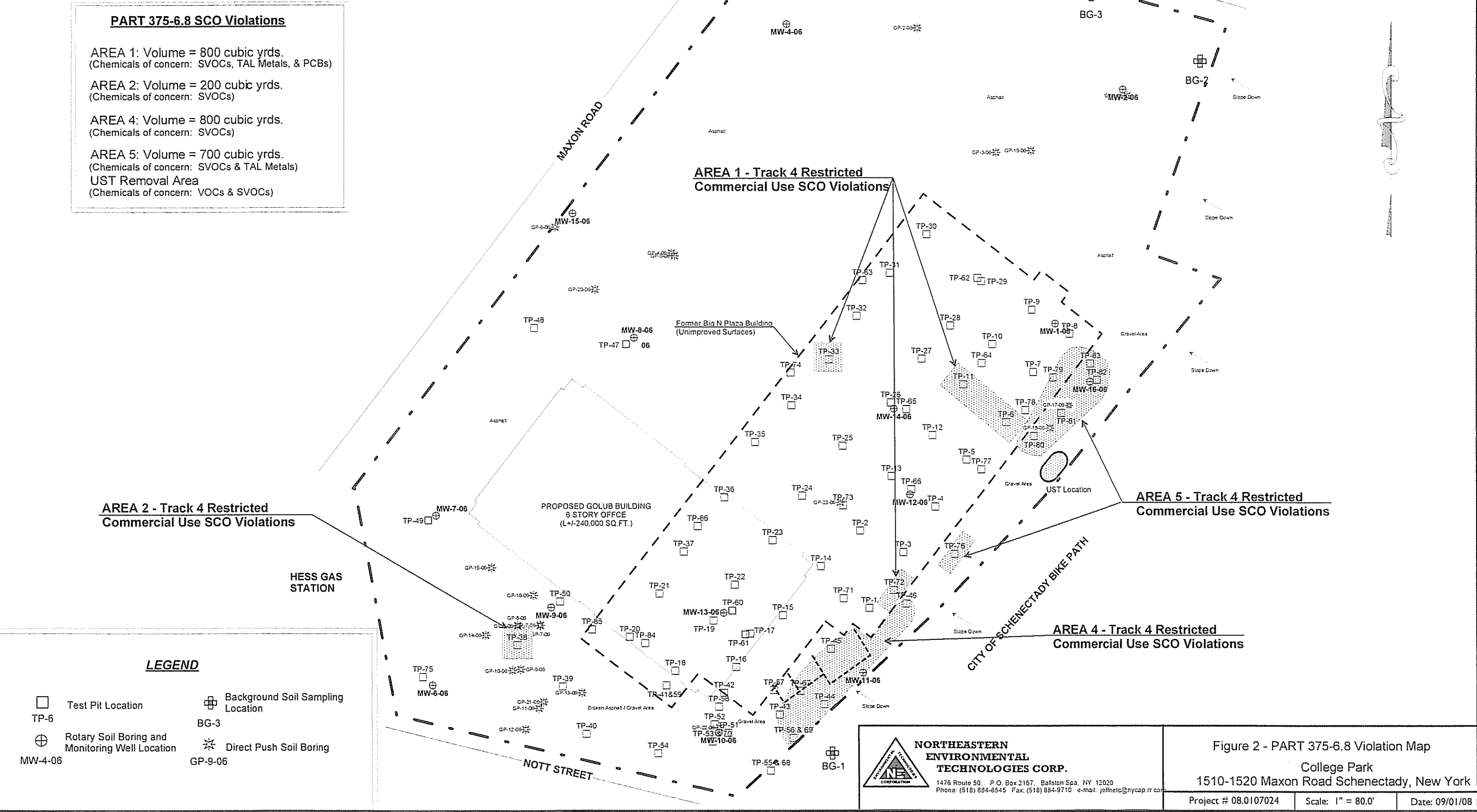
**NORTHEASTERN**  
**ENVIRONMENTAL**  
**TECHNOLOGIES CORP.**

1476 Route 50, P.O. Box 2167, Ballston Spa, NY 12020  
 Phone: (518) 884-8545 Fax: (518) 884-9710 e-mail: jeffnetc@nycap.rr.com

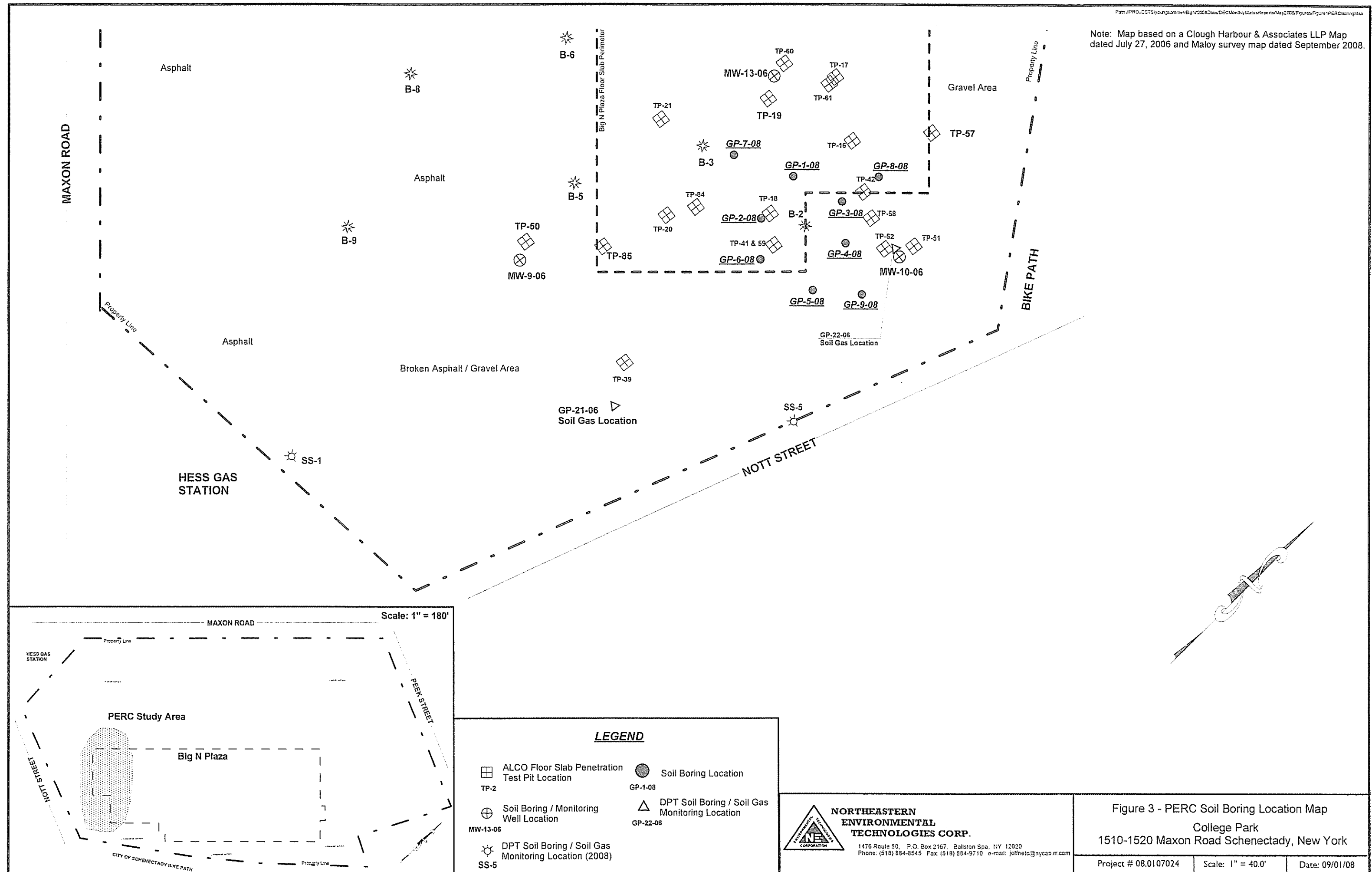
**GEO-ENVIRONMENTAL CONSULTING & PROPERTY MANAGEMENT SERVICES \***  
**SITE ASSESSMENTS \* GEOTECHNICAL DRILLING & DPT PROBE SERVICES \***  
**TANK CLOSURES \* EXCAVATION SERVICES \* SOIL & GROUNDWATER**  
**REMEDICATION \* EXPERT TESTIMONY \* OSHA FIELD CERTIFIED**

Note: Map base on a Clough Harbour & Associates LLP Map dated July 27, 2006.  
SCO Violation areas will be field surveyed. Tire clean off pad, decon pad and concrete rubble location are subject to change.

Part 375-6.8 Violation Map

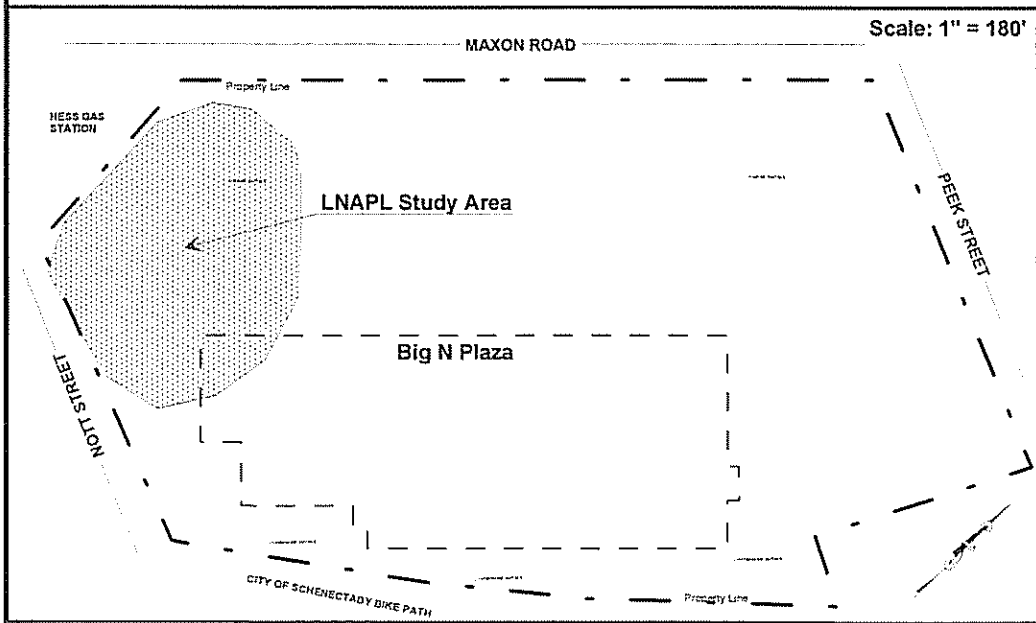
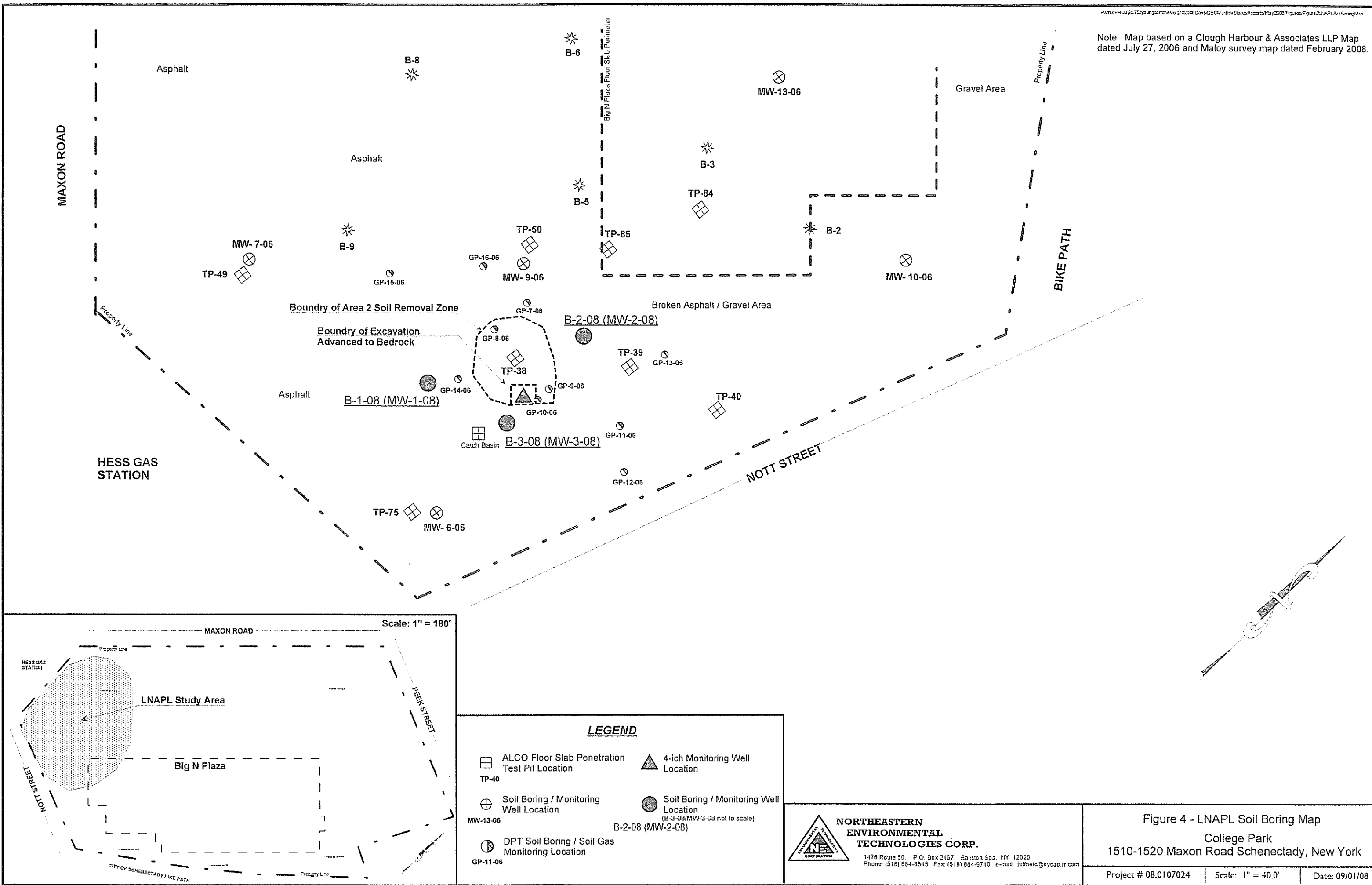


Note: Map based on a Clough Harbour & Associates LLP Map dated July 27, 2006 and Maloy survey map dated September 2008.





Note: Map based on a Clough Harbour & Associates LLP Map dated July 27, 2006 and Maloy survey map dated February 2008.



**LEGEND**

ALCO Floor Slab Penetration Test Pit Location TP-40	4-inch Monitoring Well Location
Soil Boring / Monitoring Well Location MW-13-06	Soil Boring / Monitoring Well Location (B-3-08/MW-3-08 not to scale) B-2-08 (MW-2-08)
DPT Soil Boring / Soil Gas Monitoring Location GP-11-06	

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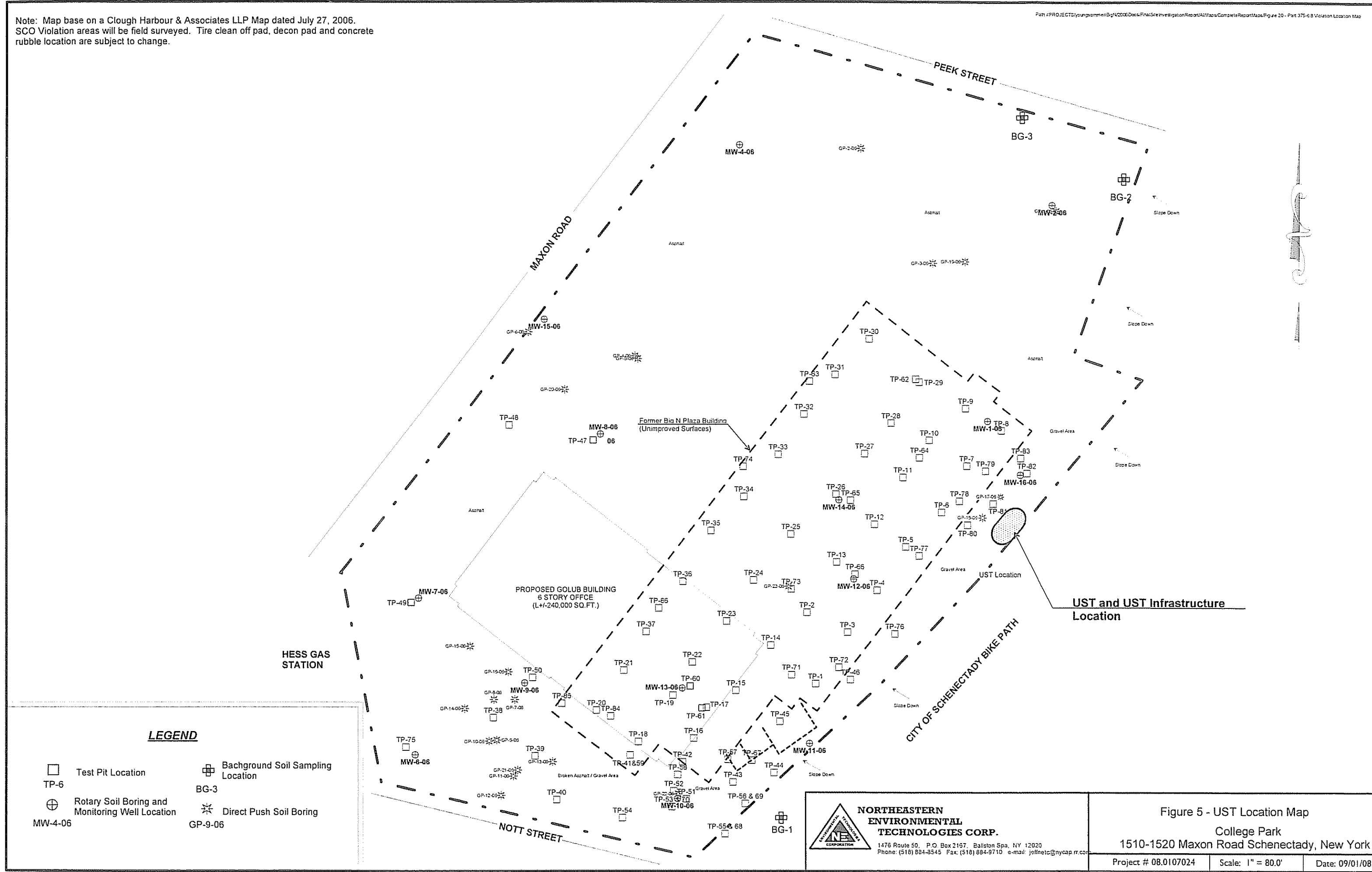
**Figure 4 - LNAPL Soil Boring Map**  
College Park  
1510-1520 Maxon Road Schenectady, New York

Project # 08.0107024	Scale: 1" = 40.0'	Date: 09/01/08
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Note: Map base on a Clough Harbour & Associates LLP Map dated July 27, 2006.  
SCO Violation areas will be field surveyed. Tire clean off pad, decon pad and concrete rubble location are subject to change.

Path: I:\PROJECTS\pennsylvania\Bip1\2006\Docs\Final\SiteInvestigation\Report\AS\Map\CompleteReport\Map\Figure 10 - Part 375-6.8 Violation Location Map



**LEGEND**

- Test Pit Location
- Background Soil Sampling Location
- Rotary Soil Boring and Monitoring Well Location
- Direct Push Soil Boring

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**Figure 5 - UST Location Map**  
College Park  
1510-1520 Maxon Road Schenectady, New York

Project # 08.0107024	Scale: 1" = 80.0'	Date: 09/01/08
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