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SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT
EMERSON POWER TRANSMISSION FACILITY
620 SOUTH AURORA STREET
ITHACA, NEW YORK
SITE NO. 7-55-010

FINAL

PREPARED

BY

WSP ENVIRONMENTAL STRATEGIES LLC

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Acronym List

aMSL	above mean sea level
AOC	area of concern
bgs	below ground surface
BTOC	below the top of casing
CAMP	Community Air Monitoring Program
DCE	dichloroethene
DNAPL	dense non-aqueous phase liquid
DOT	Department of Transportation
DQO	data quality objectives
EPA	Environmental Protection Agency
EPT	Emerson Power Transmission
ER	electrical resistivity
ft/ft	feet per foot
gpm	gallons per minute
GPR	ground penetrating radar
HRAT	high resolution acoustic televiewer
ID	inside-diameter
LNAPL	light non-aqueous phase liquid
mg/kg	milligrams per kilogram
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OPTV	optical televiewer
ORP	oxygen-reduction potential
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PCE	tetrachloroethene
PID	photoionization detector
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
RMS	root mean square
RQD	rock quality designation
SCO	Soil Cleanup Objective
SOP	standard operating procedure
STARS	Spill Technology and Remediation Series
STL	Severn Trent Laboratories, Inc.
SVOCs	semi-volatile organic compounds
TAL	target analyte metals
TCE	trichloroethene
TOGS	Technical and Operational Guidance Series
TPH	total petroleum hydrocarbons
VOC	volatile organic compound
µg/kg	micrograms per kilogram
µg/l	micrograms per liter
µg/m^3	micrograms per cubic meter

1.0 Introduction

On behalf of Emerson Electric Co. and its subsidiary, Emerson Power Transmission Corp. (EPT), WSP Environmental Strategies LLC has prepared this Supplemental Remedial Investigation Report for the EPT site in Ithaca, New York. The scope of the Supplemental Remedial Investigation was detailed in a Final Work Plan dated August 2, 2007, comprised of (1) investigating the 25 Areas of Concern (AOCs) identified in the December 2005 Onsite Assessment Report, (2) investigating the fire water reservoir, (3) evaluating identified structural features within the bedrock both onsite and offsite, (4) evaluating the potential presence of site-related compounds in soil vapor in the Phase VI Expansion area identified by the New York State Department of Environmental Conservation (NYSDEC) in correspondence dated May 31, 2007, as well as above and along the NCR sanitary sewer line, and (5) evaluating potential groundwater discharge areas north of the site. The work plan was approved by NYSDEC in a letter dated July 24, 2007. All investigation activities were completed in accordance with the approved work plan and were consistent with requirements outlined in the July 13, 1987, Consent Order (Index # A7-0125-87-09) entered into by the NYSDEC and EPT.

Section 2.0 of the report presents background information on the site and describes the geology and hydrogeology of the site and surrounding area. Section 3.0 presents the scope of work completed to investigate the 25 AOCs and the results of the investigation. Section 4.0 presents the scope of work and the results of the fire water reservoir investigation. Section 5.0 summarizes the findings of the 2006 geophysical survey and describes the work completed to evaluate identified structural features (vertical fractures, in-filled void, and buried stream channel). Section 5.0 also discusses the results of samples collected to evaluate the identified structural features. Section 6.0 describes the scope of work and the results of samples collected to evaluate the potential for vapor intrusion in the Phase VI Indoor Air Expansion area and within a groundwater discharge area. The conclusions of the Supplemental Remedial Investigation are presented in Section 7.0 followed by references listed in Section 8.0.

2.0 Site Background

2.1 Facility Description

The EPT facility is located at 620 South Aurora Street in Ithaca, New York (Figure 1). The site consists of three main buildings along the northeast and southwest portions of South Hill, one of many relatively steep hills that overlook the city of Ithaca (Figure 1). The facility buildings are located at an elevation of approximately 600 feet above mean sea level. The majority of the floor space is in the main plant building, which extends approximately 1,600 feet near the eastern portion of the 110-acre site. The main building is flanked by a number of smaller buildings to the west and a series of access roads and parking lots that terrace the hillside above the plant to the east. Further uphill and to the east are South Aurora Street and the campus of Ithaca College. Undeveloped woodland borders the site to the southwest along the steep embankments of the hill. West Spencer Street, which runs parallel to the EPT property, marks the western edge of the wooded area and the base of South Hill. Beyond Spencer Street to the west and in areas along the steep northern approach to South Hill and the EPT property are residential areas. These neighborhoods are bordered by Six Mile Creek, which flows north along the base of South Hill and eventually empties into Cayuga Lake approximately 2 miles northwest of the site. Figure 2 shows the facility layout and the surrounding areas.

The original building at the EPT site was built in 1906 by Morse Industrial Corporation, which manufactured steel roller chain for the automobile industry. From approximately 1928 to 1983, Borg-Warner Corporation owned the property and manufactured automotive components and power transmission equipment using similar processes, but not necessarily the same materials, as those currently conducted by EPT. A more detailed description of the site history and construction dates of the various building at the site is detailed in the report entitled “Onsite Assessment of the Former Borg Warner – Morse Chain Facility” (ESC 2005). Up until the late 1970s, Borg-Warner Corporation used trichloroethene (TCE), a widely-used solvent at the time for cleaning and degreasing metal parts. In 1983, Morse Industrial Corporation was purchased from Borg-Warner Corporation by Emerson and, in the late 1980’s, became known as Emerson Power Transmission. EPT manufactures industrial roller chain, bearings, and clutching for the power transmission industry. Under Emerson’s ownership, TCE has not been used at the Ithaca facility. Investigations conducted by Emerson in 1987 revealed onsite groundwater contamination, originating from a fire-water reservoir located on the western portion of the property. Emerson promptly reported these findings to the New York State Department of Environmental Conservation. The remediation of this contamination was the subject of the July 1987 Consent Order (Index # A7-0125-87-09) referenced above.

2.2 Site Geology

The EPT site is located on the northern edge of the Appalachian Plateau Physiographic Province, which is characterized in central New York by deeply dissected hilly uplands and glacially gouged stream valleys. The EPT site lies on the limits of one of the dissected hills and overlooks the Cayuga Lake basin, which is formed in a former stream valley eroded and enlarged by the advance of glaciers. Underlying the site is a thin, discontinuous veneer of glacial till and man-made fill. The soil classified as the "A-zone" in the site conceptual model and hydrogeologic framework presented below, is typically a silty or clayey gravel and ranges from 2.5 to 33 feet thick, though most of the EPT site and the western slope of South Hill are covered by less than 15 feet of soil. Soil depths generally increase with decreasing elevation and eventually merge with glacio-lacustrine silt and clay that lines the bottom of the valley floor below South Hill.

Beneath the overburden lies bedrock of the Ithaca Siltstone, a member of the Genesee Formation. The bedrock is typically well-cemented with generally non-fossiliferous beds ranging in thickness from 0.1 inch to 2.5 feet in thickness. Based on a review of core logs from bedrock boreholes, the bedrock can generally be differentiated into three zones based on the frequency of bedding plane fractures: 1) an upper "stress relief zone" (B-zone), 2) a middle "transitional zone" (C-zone), and 3) a lower "lithologically controlled zone" (D-zone). The uppermost B-zone is weathered bedrock and very highly to highly fractured. Onsite, the B-zone extends to a maximum depth of approximately 22 feet below ground surface (bgs) and has an average thickness of approximately 8 to 10 feet on the western portion of the site where the current remediation system is located.

The transitional zone (C-zone) extends from the base of the B-zone to a maximum depth of approximately 55 feet bgs at the EPT site. The lower lithologically controlled zone (D-zone) extends from the bottom of the C-zone to a minimum depth of 145 feet bgs. According to geologic logs prepared by Radian, fractures are reportedly confined to intervals that are widely spaced, and their occurrence is controlled by lithology. This terminology was developed by Radian Corporation, the previous consultants for the site, and carried forward by WSP Environmental Strategies.

2.2.1 Joint Measurements

The bedrock in the Ithaca area is cut by at least three sets of vertical fractures or joints. Limited geologic mapping performed during the initial RI (Radian 1990) at 16 bedrock outcrop locations on and around the EPT facility identified three consistent joint orientations: N13W to N21W (north-northwest); N70E to N89E (east-northeast); and N45E to N55E (northeast). Two of the three strike orientations measured by Radian are in close agreement with regional joint set measurements of N19W and N7E made at outcrops of the Genesee Group in Tompkins County. All of the joints measured by Radian were within 8 degrees of vertical.

In December 2005, WSP Environmental Strategies measured the orientation of bedrock joints sets at seven bedrock outcrops in the South Hill area northwest of the EPT facility. Two primary joint sets were identified, one oriented north-northwest and another oriented east-northeast. The north-northwest trending joint set was more common and better expressed in the observed bedrock outcrops. A total of 22 measurements were made of the north-northwest trending joint set and three measurements of the east-northeast trending joint set. Measurements were made using a Brunton compass adjusted for magnetic declination of Ithaca, New York at the time of the investigation (12° 12’ W). The mean joint orientation of the 22 north-northwest trending joint set measurements was 342/82 (strike/dip using right-hand rule) or N18W/82E. The mean joint orientation of the 3 north-northeast trending joint set measurements was 252/81 or S72W/81N. These orientations are consistent with published regional trends, as well as previous measurements collected by Radian.

2.3 Site Hydrogeology

Based on groundwater elevation data collected in September and October 2007, the direction of groundwater flow within the shallow bedrock aquifer and the hydraulically connected sand and gravel aquifer is to the northwest. This groundwater flow pattern is consistent with data collected during previous sampling events, and with the overall gradient of flow generally following the gradient of surface topography.

3.0 Identified Area of Concern Investigation

This section details the investigations completed to evaluate soil quality (and groundwater, when encountered) at each of the identified AOCs at the EPT site. The AOCs identified at the site were based on a review of all available records including files available onsite, database reports, NYSDEC and New York State Department of Health (NYSDOH) site files, and historical maps (ESC 2005). The investigation activities were conducted in accordance with the NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation, dated December 25, 2002, and WSP Environmental Strategies' standard operating procedures (SOPs). Additionally, all manufacturer specifications were adhered to for the operation and maintenance of field sampling and monitoring equipment.

The investigations of the 25 AOCs were conducted between August 20 and September 3, 2007 and involved installing soil borings, excavating test pits, and collecting soil and groundwater samples for laboratory analysis. The sampling results for soils were compared to the NYSDEC Subpart 375-6 Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Groundwater or the NYSDEC Subpart 375-6 NYSDEC Restricted Use SCO for protection of public health at industrial facilities. The results for all soil samples collected on the EPT property were compared to the industrial SCOs unless the compound was one of the eight site-related volatile organic compounds (VOCs) previously detected in groundwater. The results for these eight VOCs (tetrachloroethene [PCE], TCE, cis-1,2-dichloroethene [DCE], trans-1,2-DCE, vinyl chloride, 1,1,1-trichloroethane, 1,2-dichloroethane, and methylene chloride) were compared to the NYSDEC restricted use SCO for protection of groundwater. Groundwater results were compared to the New York State Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, Table 1, Ambient Water Quality Standards and Guidance Values, which include the groundwater standards found in 6 New York Codes, Rules, and Regulations, Part 703.5. Photographs taken during the AOC investigation are included in Appendix A and boring logs are included in Appendix B. The laboratory data packages are provided in Appendix C.

3.1 Soil Borings and Test Pits

The locations of soil borings and test pits installed in each AOC were based on engineering diagrams, employee interviews, and historical maps. A total of 66 soil borings were installed and 4 test pits were excavated to assess the 25 identified AOCs (Figures 3 and 4). At each of the soil boring locations, a Geoprobe® unit or hand auger was used to collect continuous soil samples beneath the slab in a building or outside of a building. For soil borings installed inside the buildings, the concrete slab was cored before initiating sampling with the Geoprobe® unit or hand auger. On retrieval, the soil was logged and classified according to the Unified Soil Classification System. Other pertinent soil observations, such as staining, odors, presence of fill, and moisture content, were also recorded in the field logbook.

Soils were screened for organic vapors using a photoionization detector (PID) and visually checked for evidence of staining. The PID screening results and visual observations were recorded in the field log book. The sample interval with either the highest PID reading or the heaviest staining (if staining was observed) was selected for laboratory analysis. If no organic vapors were detected and no evidence of staining was observed, then the sample from the deepest interval in the boring (on top of the bedrock) was collected for laboratory analysis. In addition, at boring locations where groundwater was encountered, a sample was collected by first installing a temporary 1-inch polyvinyl chloride (PVC) pipe in the borehole and then collecting the water sample using polyethylene tubing. The water samples were submitted to the laboratory for analysis of VOCs.

After drilling and sampling were completed, the boreholes were backfilled with bentonite pellets or coarse bentonite chips, the bentonite material was hydrated with tap water, and the concrete floor or asphalt was repaired. All down-hole sampling equipment was decontaminated after each use.

At each of the test pit locations, a backhoe was used to excavate soils and collect soil samples for laboratory analysis. The test pits were extended to approximately 4 feet bgs and pertinent observations (staining and odors) were recorded in the field logbook. Soils were logged according to the Unified Soil Classification System.

The following sections provide a description of each AOC, the sampling activities completed, and the sampling results. Table 1 summarizes the number of samples collected at each AOC, the laboratory analysis conducted on the samples, and the depth of each sample. The validated analytical results for the 2007 supplemental remedial investigation sampling event (AOC Investigation) are summarized in Table 2. It is noted that only compounds detected in at least one soil sample are shown in Table 2; therefore, since no NYSDEC Spill Technology and Remediation Series 8260 (STARS) VOCs were detected in any of the soil samples where this analysis was required, the individual constituents are not shown in Table 2. The data validation quality assurance/quality control review and the laboratory data packages for the soil and groundwater samples are included as part of Appendix C.

3.1.1 AOC 1 - Former Department 507 Degreaser

Solvent degreasing and recovery operations conducted in Department 507, formerly located on the main floor of Building 4, included two conveyor type vapor degreasers and a solvent distillation and recovery unit. Until the late 1970's solvents used in the degreasing operations included TCE and Safe-Tee-Solvent, a mixture of PCE and methylene chloride. According to facility drawing D-118940, the degreasers were located immediately east of column numbers 86 through 93. The degreaser units, which were located in a depressed floor area of Building 4, are no longer present (Figure 3).

Two soil borings (SB-1c and SB-1d) were installed within the formerly depressed area of the floor and two soil borings (SB-1a and SB-1b) were installed along the western exterior wall. Engineering drawings were used to determine the location of the former degreaser area; specifically the location of former equipment was determined based on placement relative to numbered support columns. Each boring was installed to the top of bedrock, approximately 13 feet below top of concrete slab. One soil sample was collected from each boring for laboratory analysis of VOCs and target analyte list (TAL) metals from the top of bedrock or from the area with the highest PID reading. Water samples were collected from both SB-1a and SB-1d using Teflon tubing and a 0.25-inch check valve and analyzed for VOCs.

During drilling activities a solvent odor was noted between 10 and 12 feet bgs in SB-1a, from 2 to 5 feet at SB-1c, and from 12 to 14 feet at SB-1d. Two potentially site-related VOCs, methylene chloride and vinyl chloride, were detected in the soil sample collected from SB-1d at levels above the NYSDEC Restricted Use SCOs for protection of groundwater (50 micrograms per kilogram [µg/kg] and 20 µg/kg, respectively). Methylene chloride was detected at 170 µg/kg and vinyl chloride was detected at 290 µg/kg. Only arsenic was detected above the NYSDEC industrial standard of 16 milligrams per kilogram (mg/kg) in SB-1a (24 mg/kg). However, the arsenic levels are most likely associated with background conditions based on previous sample results for the rock material collected by Radian, which showed arsenic levels up to 14.80 mg/kg (Radian 1990).

The water sample collected from SB-1a contained chloroethane at a concentration above its water quality standard of 5 micrograms per liter (µg/l) while the sample from SB-1d contained cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride above water quality standards (5 µg/l for all but vinyl chloride, 2 µg/l). Chloroethane was detected at 7.1 µg/l (SB-1a only), TCE was detected at 31 µg/l, vinyl chloride at 190 µg/l, cis-1,2-DCE at 1,800 µg/l, and trans-1,2-DCE at 15 µg/l (Table 3).

3.1.2 AOC 2 - Former Solvent Degreaser Building 6A

A solvent degreaser unit was formerly located on the main floor of Building 6A within the chain assembly area (116 Department; Figure 3). According to facility drawing D-118930, the degreaser was located to the east of column numbers 54 through 58. As shown in Figure 3, one boring (SB-2a) was drilled within the location of this former degreaser and one boring (SB-2b) was installed downgradient of the former degreaser location. The borings were drilled to the top of bedrock, which ranged from1.5 to 4 feet below top of concrete slab. One soil sample was collected just above the bedrock surface from each boring for laboratory analysis of VOCs and TAL metals.

A weathered petroleum odor was noted in SB-2b at a depth of 2 feet below top of concrete; however, no VOCs were detected above the NYSDEC SCOs for industrial facilities in the soil sample analyzed from this boring or the sample analyzed from boring SB-2a. Arsenic was the only metal detected in both SB-2a (61.8 mg/kg) and SB-2b (16.9 mg/kg) at levels above the NYSDEC Restricted Use SCO for protection of public health at industrial facilities (16 mg/kg). As stated above, the presence of arsenic is most likely associated with background conditions.

3.1.3 AOC 3 - Former Morse Chain Reservoir/Spray Pond

A former reservoir/spray pond was identified on several Sanborn Fire Insurance maps north of Building 18 across the railroad tracks (Figure 3). According to historic files (facility drawing 27036), the reservoir appears to have been used for storing cooling water. However, no documentation detailing the use and closure of the former spray pond is available.

Three soil borings were installed in and around the former spray pond to characterize the soils. One soil boring was located within the former spray pond (SB-3a) and two borings (SB-3b and SB-3c) were located downgradient (northwest) of the former pond walls. The borings were installed to the top of bedrock, approximately 7 to 12 feet bgs. Two soil samples were collected from each boring in consultation with the NYSDEC onsite representative, Mr. Carl Cuipylo, and analyzed for VOCs, semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and TAL metals.

No PCBs were detected in any of the soil samples. Methylene chloride was the only VOC detected in the samples, and it was detected slightly above the NYSDEC Restricted Use SCO for protection of groundwater (50 µg/kg) in the two soil samples from boring SB-3b (at 55 µg/kg and 56 µg/kg). Certain SVOCs were detected in the sample from SB-3a at 6-7 feet bgs including benzo(a)anthracene at 14,000 µg/kg (SCO of 11,000 µg/kg), benzo(a)pyrene at 10,000 µg/kg (SCO of 1,100 µg/kg, benzo(b)fluroanthene at 14,000 µg/kg (SCO of 11,000 µg/kg), and dibenzo(a,h)anthracene at 2,200 µg/kg (SCO of 1,100 µg/kg), all above their respective NYSDEC Restricted Use SCOs for protection of public health at industrial facilities. Only trace SVOCs at estimated concentrations were detected in the four soil samples collected from the two borings installed downgradient of the spray pond. In addition, no metals were detected in any of the samples at levels exceeding the NYSDEC standards.

3.1.4 AOC 4 - Former Open Reservoir (Stone)

An open stone reservoir was identified on historical site maps west of Building 35 (within Building 6A – Figure 4). The former use of this reservoir is unknown. According to facility drawing 27036, the former reservoir was located immediately west of the south corner of former Building 16A, which is now the east portion Building 6A (structure approximately 100 feet from the south wall and 15 feet from east wall). Two soil borings were installed to the top of bedrock (approximately 13 inches below top of concrete slab at SB-4a and 10 feet below top of concrete slab at SB-4b) to characterize the soils within this area. One boring was installed within the former reservoir (SB-4a) and one boring was installed downgradient (northwest) within 5 feet of the limits of the former reservoir (SB-4b). A strong weathered petroleum odor was observed from 4 to 8 feet below the top of the concrete slab in boring SB-4b and a petroleum product was encountered from 8 to 10 feet bgs. One soil sample was collected from each boring and analyzed for VOCs, SVOCs, PCBs, and TAL metals. The soil sample from SB-4a was collected at the top of bedrock (13 inches below top of concrete slab) and the soil sample from SB-4b was collected from 7 to 8 feet below top of concrete slab, which was the interval exhibiting the highest PID reading. Additionally, groundwater seeped into this borehole and a petroleum product was noted. A sample of the petroleum product was collected and analyzed for VOCs.

No VOCs, SVOCs, PCBs, or metals were detected above the NYSDEC Restricted Use SCOs for protection of public health at industrial facilities in the soil samples from either boring. In addition, no VOCs were detected in the product sample collected from boring SB-4b.

3.1.5 AOC 5 - Former 100,000 Gallon Fuel Oil Tank/Pump House

A former 100,000-gallon aboveground fuel oil tank and associated pump house were located to the south of Building 6A (Figure 4). Building 33 has since been constructed over the location of the former tank and pump house. Based on the size of the former tank and its contents, there is a potential that releases to soil may have occurred during use or decommissioning. This tank was located approximately 55 feet south of Building 6A and 60 feet west of the east wall of Building 33 (facility drawing 27036).

As shown in Figure 4, three soil borings were completed in this area. One soil boring (SB-5a) was installed to the top of bedrock (approximately 13 feet below top of concrete) outside Building 33 on the downgradient (northwest-west) side. In addition, one soil boring (SB-5b) was installed in the location of the former oil tank/pump house and a third boring (SB-5c) was installed in Building 33 on the lower level within 5 feet of the former sub-slab vapor/indoor air testing location where TCE concentrations in the soil vapor above the NYSDOH Soil Vapor/Indoor Air Matrix guidance value. One soil sample was collected at the top of bedrock from each boring for laboratory analysis of STARS VOCs and PAHs, per Table 1.

No STARS VOCs or PAHs were detected in the soil samples above the NYSDEC Restricted Use SCOs for protection of public health at industrial facilities.

3.1.6 AOC 6 - Oil Shed (Building 30)

A shed (Building 30) used for bulk oil storage (both past and present) is located to the south of Building 34 (Figure 4). Facility records indicate that secondary containment was constructed around the building in 1974. In 1995, an investigation was conducted in a specific area southwest of the building. Based on the results of that investigation, which identified TPH impacts, the affected soil within this area was excavated and disposed of offsite.

Soil boring SB-6 was installed outside Building 30 on the downgradient (west-northwest) side to the top of bedrock (approximately 8 feet bgs). The soil sample obtained at 7 to 8 feet bgs exhibited the highest PID reading and was submitted for laboratory analysis of STARS VOCs and PAHs.

No STARS VOCs or PAHs were detected in the soil sample above the NYSDEC Restricted Use SCOs for protection of public health at industrial facilities.

3.1.7 AOC 7 - Former Copper-Cyanide & Cadmium Plating Department

Copper-cyanide and cadmium plating operations were historically conducted in Building 14 (Figure 4). Cadmium plating occurred from approximately 1960 to 1975. Copper plating, which used copper cyanide solutions, occurred from 1972 to approximately 1982. According to a 1968 engineering drawing, the plating department consisted of two pickling tanks, four plating tanks and three rinse tanks. The former plating area was decommissioned and the area remains unused. Notes on a 1968 plant drawing indicate that the drainage trench or drain line carrying effluent from the plating area was leaking and that it was to be plugged and replaced with a new drain line. The leak occurred in the basement of Building 4, which is two levels below Building 14. The drain line in Building 4 is located approximately 68 feet northeast of elevator 5 (facility drawing 81590).

Of the seven borings that were proposed in this AOC, three locations (SB-7a, SB-7b and SB-7f) could not be installed either because the location could not be accessed by the Geoprobe® or the concrete slab was greater than 3 feet thick and could not be cored. The access and slab thickness issues were discussed with the NYSDEC’s onsite representative before moving to the next sample location. Three soil borings (SB-7c, SB-7d, and SB-7e) were installed within the former plating department in the vicinity of the former location of four plating and two pickling and rinse tanks, which were identified based on engineering diagrams. One additional boring (SB-7g) was installed outside the plating room near the location of a former discharge line that reportedly leaked (1968 engineering drawing). The borings were installed to approximately 2 to 5 feet below top of concrete slab One soil sample from each boring was collected from the top of bedrock or area of highest PID readings and analyzed for TAL metals and cyanide based on the type of chemicals used in the plating process.

No TAL metals or cyanide were detected in the soil samples above the NYSDEC Restricted Use SCOs for protection of public health at industrial facilities.

3.1.8 AOCs 8/9 - Former Tank Shed

Two former tank sheds were identified on Sanborn fire insurance maps; one to the south of Building 24 and the other to the southwest of Building 21 (Figure 3). A 15,000-gallon fuel oil tank was housed in the shed south of Building 24 (AOC No. 8) and a hydraulic oil tank of unknown size was housed in the shed southwest of Building 21 (AOC No. 9; Figure 3).

One soil boring was installed to the top of bedrock (approximately 3 to 6 feet bgs) outside both Building 24 (SB-8) and Building 21 (SB-9) on the downgradient (west-northwest) side. One soil sample was collected from just above bedrock at each boring for laboratory analysis of STARS VOCs and PAHs.

No STARS VOCs or PAHs were detected in the soil sample above the laboratory reporting limits.

3.1.9 AOC 10 - Former Drum Area (Woods)

Empty drums have been discovered on the hillside to the west of the facility on various occasions between 1970 and 2004 (Figure 3). Borg-Warner Corporation removed approximately 75 to 100 drums from the hillside southwest of Building 34 between 1980 and 1982 and Emerson removed additional drums and remnants in 1988 and 2004. A limited investigation was conducted during the most recent removal in 2004.

A depression in the wooded area located southwest (Area A – Figure 4) of Building 34 was identified on a 1976 aerial photograph and appears to contain objects that could have been drums. This area was investigated by installing five shallow soil borings (SB-10a, SB-10b, SB-10c, SB-10d, and SB-10e) using a hand auger, to a depth of approximately 0.5 feet bgs. Because rock is exposed at the surface in this area, no soil was present; therefore, hand auger borings could not be advanced greater than 0.5 foot bgs. One surface soil sample was collected at each location and analyzed for VOCs, SVOCs, TAL metals, and PCBs, per Table 1.

No VOCs, SVOCs, or TAL metals were detected in the five soil samples collected from this AOC at concentrations above the NYSDEC Restricted Use SCOs for protection of public health at industrial facilities or the SCOs for protection of groundwater. The PCB Aroclor 1260 was detected at estimated concentrations (less than 9 µg/kg) in three of the soil samples. There is no SCO for this compound; however, the concentrations detected are well below the NYSDEC guidance value of 1,000 µg/kg for total PCBs.

3.1.10 AOC 11 - Former Drum Storage Area (near Building 30)

A 1976 historical aerial photograph shows an apparent outdoor drum storage area to the north of Building 30, south of Building 34 (Figures 4). Several drums appear to have been stored in this area of the site. No additional documentation was available describing the storage area or the drums stored at this location.

Two test pits were excavated to approximately 4 feet bgs approximately 20 feet from the wall that runs along the north side of Building 30 (Figure 4) due to overhead electrical concerns. Visual observations of the soil along sidewalls and base of the test pits were made to identify any evidence of a release. Two soil samples were collected from the bottom (3 or 4 feet bgs) in each test pit (SB-11a, SB-11b, SB-11c, and SB-11d) for laboratory analysis of VOCs, SVOCs, PCBs, and TAL metals. A duplicate soil sample was collected at SB-11b and analyzed for VOCs.

Soil sample SB-11b contained dibenzo(a,h)anthracene at 1,100 µg/kg, which is equal to the NYSDEC Restricted Use SCO for protection to public health at industrial facilities. Benzo(a)pyrene was detected in this same soil sample at 5,600 µg/kg which is above the NYSDEC Restricted Use SCOs (1,100 µg/kg) for protection to public health at industrial facilities. No VOCs or TAL metals were detected at concentrations above the NYSDEC Restricted Use SCOs for protection to public health at industrial facilities. The PCB Aroclor 1254 was detected at an estimated concentration of 14 µg/kg in soil sample SB-11b. There is no SCO for this compound; however, the concentration detected was well below the NYSDEC guidance value of 1,000 µg/kg for total PCBs.

3.1.11 AOC 12 - Former Quench Oil Pits

Four below-grade quench oil pits were formerly located near the center of current Building 9 (Figure 3). The pits were reportedly taken out of service and either filled or covered over. A fifth quench oil pit in this area is currently in use. A review of facility records indicates that holes were identified in the bottom of one of the four pits (Westinghouse furnace quench pit). The former quench oil pits were located approximately 30 feet west of the east wall of Building 9 and 55 feet north of the south wall (facility drawing 27036).

Two soil borings (SB-12a and SB-12b) were installed along the downgradient (west-northwest) sides of the former pits, within approximately 5 feet. A weathered petroleum odor was noted between 2 to 3.8 feet in boring SB-12a and an oily sheen and weathered petroleum odor were noted at 4 feet below top of concrete slab in boring SB-12b. A soil sample was collected from SB-12a at the top of bedrock, 2 to 3.5 feet below top of concrete slab for laboratory analysis. A duplicate sample also was obtained at this location. Soil boring SB-12b was installed to 14.5 feet below top of concrete slab. A soil sample was collected for laboratory analysis from the depth interval exhibiting the highest PID reading, 3.5 to 4.5 feet below top of concrete slab. The samples were analyzed for VOCs, PAHs, and PCBs. Due to a low sample volume, the duplicate sample from boring SB-12a was only analyzed for VOCs. Additionally, groundwater seeped into the borehole for SB-12b and therefore a water sample was collected and analyzed for VOCs.

Methylene chloride and TCE were detected at concentrations less than the comparison criteria in the samples. Soil sample SB-12a (2 to 3.5 feet below top of concrete slab) contained 1,300 µg/kg of benzo(a)pyrene which is above the NYSDEC Restricted Use SCO for protection to public health at industrial facilities of 1,100 µg/kg. No VOCs were detected in the groundwater sample collected from this boring.

3.1.12 AOC 13 - Former 20,000 gallon Fuel Oil Aboveground Tank

A 20,000-gallon fuel oil tank was formerly located northwest of Building 18 (Figure 3). No information related to the closure of this tank was available. One soil boring (SB-13) was installed to the top of bedrock (approximately 7.5 feet bgs) downgradient of the location of the former tank and adjacent to the cinder block containment due to accessibility issues. One soil sample was collected at the bottom of the boring (6.5 to 7.5 feet bgs) for laboratory analysis of STARS VOCs, and PAHs.

No STARS VOCs or PAHs were detected above the laboratory reporting limits in the soil sample collected from this AOC.

3.1.13 AOC 14 - Former 6,000 gallon Lubricating Oil Aboveground Tank

A 6,000-gallon aboveground lubricating oil tank was formerly located in Building 20 (no longer present; Figure 3). No information related to the closure of this tank was available. One soil boring (SB-14) was installed to the top of bedrock (approximately 11.6 feet bgs) in the center of the area where the tank was located. The soil sample collected at the bottom of the boring (10 to 11.6 feet bgs) was submitted for laboratory analysis of STARS VOCs and PAHs.

No STARS VOCs or PAHs were detected above the laboratory reporting limits in the soil sample collected from this AOC.

3.1.14 AOC 15 - Former 500 Gallon Gasoline Aboveground Tank

A 500-gallon gasoline tank was formerly located northwest of Building 4 (Figure 3). No information related to the closure of this tank was available. One soil boring (SB-15) was installed to the top of bedrock (approximately 25 feet bgs) in the center of the area where the tank was stored. Petroleum staining was identified during installation of the boring and a weathered fuel odor and oily product were noted between 20-26 feet bgs. One soil sample from within the stained interval was collected from 20 to 24 feet bgs for laboratory analysis of STARS VOCs and lead.

No STARS VOCs were detected in the soil sample, and the result for lead (22.5 mg/kg) was well below the NYSDEC SCO.

3.1.15 AOC 16 – Former 5,000 Gallon Sulfuric Acid Tanks

Two 5,000-gallon sulfuric acid tanks were located in Building 13A along the western wall (Figure 3). No information related to the closure of these tanks was available. Two soil borings (SB-16a and SB-16b) were installed to a depth of approximately 3 feet in the center of the area where each tank was stored. Two soil samples were collected at 2 feet and 3 feet below the slab at each location for laboratory analysis of pH. The former acid tanks were located approximately 155 feet north of Building 14 and 65 west of the east wall of Building 13A (facility drawing 27036).

The pH results for the four soil samples ranged from 4.43 to 7.28.

3.1.16 AOC 17 - Former 10,000 Gallon Fuel Oil Aboveground Tank

A 10,000-gallon fuel oil tank was formerly located west of Building 18 (Figure 3). No information related to the closure of this tank was available. One hand auger soil boring (SB-17) was installed to the top of bedrock (approximately 4 feet bgs) in the center of the location of the former tank. A soil sample obtained at the top of bedrock was submitted for laboratory analysis of STARS VOCs and PAHs.

No STARS VOCs or PAHs were detected at concentrations above the NYSDEC Restricted Use SCOs for protection to public health at industrial facilities.

3.1.17 AOC 18 - Former Outdoor Area of Disturbance

A review of a 1976 aerial photograph shows an apparent area of disturbance to the north of Building 24 (Figure 3), which was formerly occupied by both NCR and Borg-Warner Corporation. No documentation was available to identify the use of this area.

Two test pits were excavated to a depth of 4 feet bgs within 20 feet of the northeastern wall of Building 24. No visual evidence of staining or odors was noted during excavation of the test pits. Two soil samples were collected from the bottom of each test pit (SB-18a through SB-18d) and analyzed for of VOCs, SVOCs, PCBs, and TAL metals.

Methylene chloride was detected in all four soil samples at concentrations below the NYSDEC Restricted Use SCO for protection of groundwater (50 µg/kg). The PCB Aroclor 1260 was detected in SB-18a at an estimated concentration of 6.2 µg/kg, which is well below the NYSDEC guidance value of 1,000 µg/kg for total PCBs. Several PAHs and TAL metals were detected in the soil samples; however, none were above the NYSDEC Restricted Use SCOs for protection to public health at industrial facilities.

3.1.18 AOC 19 - Drainage Ditches along Railroad Tracks/Oil Traps

A drainage ditch formerly extended along the railroad tracks northwest of Buildings 6A and 34 (Figures 3 and 4). This ditch was approximately 400 feet long and was identified on a site engineering drawing. At various locations along the ditch, oil traps were constructed to collect oil that dripped from rail cars. No information is available on how the former ditch was closed.

Five soil borings (SB-19a through SB-19e) were installed to approximately 4 feet bgs along this former drainage ditch spaced approximately 200 feet apart. Boring SB-19a was installed adjacent to the oil trap on the southernmost end of the ditches. A weathered solvent odor was noted in SB-19b between 0.5 feet and 3.5 feet and a weathered petroleum odor was noted in boring SB-19e between 2 and 4 feet. One soil sample was collected at a depth of approximately 3 to 4 feet bgs from each boring, except in boring SB-19b a sample was collected from 2.5 to 3.5 feet bgs. All samples were analyzed for STARS VOCs, PAHs, and PCBs.

No STARS VOCs were detected in any of the five soil samples. Low concentrations (below the reporting limit) of some PAHs were detected in four of the five soil samples; however, none were above the comparative criteria. Aroclor 1268 was the only PCB detected in any of the samples at 32 µg/kg, well below the NYSDEC guidance value of 1,000 µg/kg for total PCBs.

3.1.19 AOC 20 - Storm Sewer along South Cayuga Street

EPT is permitted to discharge storm water associated with industrial activity through two outfalls (001 and 003) under State Pollutant Discharge Elimination System permit No. NY-000-

2933 (Figure 3). Outfall 001 receives non-contact cooling water, boiler blowdown, storm water runoff, and groundwater from the facility's groundwater treatment system. Outfall 003 receives non-contact cooling water and storm water. Both outfalls discharge to an underground storm sewer line that extends along the east side of South Cayuga Street and discharge to Six Mile Creek. Historical site records indicate that oil and possibly other materials may have been released to the storm sewer. This sewer is set 3 to 4 feet into bedrock along the upper portion of South Cayuga Street. The soil thickness above the sewer is only 2 feet thick. In accordance with the approved work plan, borings were to be installed to approximately 3-4 feet bgs; however, this was not possible as bedrock occurs approximately 2 feet below the surface.

Four soil borings (SB-20a through SB-20d) were installed to a depth of 1 to 2 feet bgs along the first 100 feet of the storm sewer along South Cayuga Street spaced approximately 25 feet apart (Figure 3). The borings were within 4 feet of the storm sewer line in accordance with the utility locating and marking requirements. One soil sample was collected from each boring (4 total) at the top of bedrock and analyzed for VOCs, PCBs, PAHs, TAL metals, and cyanide. In addition, soil vapor sampling points were proposed for installation along the storm sewer line; however, these will be discussed in Section 6.0 below.

Methylene chloride was the only site-related VOC detected in the soil samples at concentrations above the NYSDEC Restricted Use SCO for the protection of groundwater standard (50 µg/kg). Concentrations of methylene chloride ranged from 51 to 56 µg/kg in samples from SB-20a, SB-20c, and SB-20d. Low concentrations (less than the reporting limit) of PAHs were detected in the soil samples. No PCBs were detected in any of the soil samples. Cyanide was detected in one sample (SB-20c) at 3.4 mg/kg, well below the SCO of 10,000 mg/kg for industrial facilities. All detected metals were below the industrial standards and the protection of groundwater standards.

3.1.20 AOC 21 - Sanitary Sewer Lines

EPT discharges sanitary wastewater, process wastewater, non-contact cooling water, boiler blowdown, and miscellaneous wastewater, to the municipal sanitary sewer at two connection points; Turner Place and South Cayuga Street (Figures 3 and 4). Sanitary wastewater, process wastewater, non-contact cooling water, boiler blowdown, and miscellaneous wastewater streams are discharged to the municipal sewer at Turner Place while sanitary wastewater and non-contact cooling water is discharged to the municipal sewer at South Cayuga

Street. The two lines along Turner Place have been investigated and the report summarizing this work was submitted to the NYSDEC in July 2006. In addition, soil gas samples were collected further to the north along South Cayuga Street in July 2004. Elevated levels of VOCs were identified in three of the soil gas samples (VP-6, VP-8, and VP-9, Figure 3). The current supplemental remedial investigation addresses the sewer along South Cayuga Street, further north along Turner Place and down Columbia Street (Figure 3).

Four soil borings (SB-21a through SB-21d) were installed to a depth based on the invert elevation of the sanitary sewer (approximately 5 to 7 feet bgs) that extends from the west side of Buildings 34 and 6a and continues down South Cayuga Street (Figures 3 and 4). The borings were within 4 feet of the sewer line based on concurrence by the City of Ithaca. One soil sample was collected at the top of bedrock in each boring for laboratory analysis of VOCs, PCBs, PAHs, and cyanide. In addition, two soil borings were proposed to be installed within 3 feet of the six previous soil gas sample locations further north on South Cayuga Street. The borings were designated as SB-21e through SB-21j on Figure 3 of the Supplemental Remedial Investigation Work Plan. However, due to the location of relocated utilities along South Cayuga Street and the presence of shallow bedrock, it was not possible to install these borings.

One potentially site-related VOC (methylene chloride) was detected in the sample from SB-21a at a concentration of 61µg/kg which is slightly above the NYSDEC Restricted Use SCO for protection of groundwater (50 µg/kg). Petroleum odors and staining were noted in boring SB-21b at a depth of 2-2.3 feet bgs. Although several PAHs were detected in the four soil samples, only benzo(a)pyrene (3,700 µg/kg) was detected at a concentration above the NYSDEC Restricted Use SCOs for protection of human health at industrial facilities (in SB-21b at 1,100 µg/kg). Cyanide was detected in two samples (SB-21b and SB-21c) at concentrations of 4.6 mg/kg and 17.2 mg/kg, which are well below the NYSDEC SCO. One PCB (Aroclor 1254) was detected in one of the four soil samples (SB-21b) at a concentration of 41 µg/kg, which is well below the NYSDEC guidance value of 1,000 µg/kg for total PCBs.

In addition, 10 soil vapor points (SV-21a through SV-21d) were proposed along the sewer lines on South Cayuga, Turner Place, and Columbia Street. Three additional soil vapor points (SV-21k through SV-21m) were proposed along the upgradient section of the NCR sewer line. Also, as requested by the NYSDEC, five vapor samples and dry weather water samples were to be collected from manholes located along South Hill Terrace, Turner Place, and

Columbia Street (MH-1 through MH-5). The scope and results of the soil vapor sampling are presented in Section 6.0 of this report.

3.1.21 AOC 22 - Former Outdoor Drum Storage Area (SE Building 13B)

Based on a 1991 aerial photograph, a former outdoor drum storage area was present southeast of Building 13B (Figure 3). No information is available regarding the contents of drums stored in this area. The NYSDEC requested that this former drum storage area be considered an AOC (letter dated September 5, 2006). This former storage area was marked out using measurements taken from the aerial photograph and a scaled site map. Two soil borings (SB-22a and SB-22b) were installed to the top of bedrock (approximately 4 feet bgs). A petroleum odor was noted in soil boring SB-22b at 3 feet bgs. One soil sample was collected from the top of bedrock from each boring for laboratory analysis of VOCs, SVOCs, PCBs, and TAL metals.

No SVOCs or PCBs were detected in either soil sample at a concentration above the reporting limits; methylene chloride was detected in both samples and the concentrations were below the NYSDEC Restricted Use SCO for protection of groundwater of 50 µg/kg. Also, no TAL metals were detected in the samples at concentrations above the NYSDEC Restricted Use SCOs for protection to public health at industrial facilities.

3.1.22 AOC 23 - Buildings 1, 2, and 10

Based on a 1910 Sanborn map, Buildings 1 and 2 formerly housed machine shops, and Building 10 housed a former coke operation (Figure 3). Two borings were installed inside each building to the top of bedrock. The boring locations (SB-23a through SB-23d) were selected in the field using historical engineering diagrams or Sanborn maps to focus on areas where equipment was present or raw materials were stored. Two of the borings were installed with a hand auger (SB-23a and SB-23b) to the top of bedrock (1.5 to 2.3 feet below top of concrete slab). Borings SB-23c and SB-23d were installed with a Geoprobe® to the top of bedrock (6 to 7 feet below concrete). One soil sample was collected from each boring at the top of bedrock and analyzed for VOCs, SVOCs, PCBs, and TAL metals. Boring locations SB-23e and SB-23f (Building 10) were not sampled because there was no sample recovery or utility conflicts, respectively.

Methylene chloride was detected in all samples at concentrations below the NYSDEC Restricted Use SCOs for protection to public health at industrial facilities. No other VOCs, SVOCs, or PCBs were detected in any of the soil samples at a concentration above the reporting limits. All detected concentrations of TAL metals were below the NYSDEC Restricted Use SCOs for protection to public health at industrial facilities.

3.1.23 AOC 24 – Fire Water Reservoir

The fire water reservoir, located northwest of Building 3 (Figure 3), was identified as a source of VOCs detected in groundwater. This AOC was investigated under a Consent Order, dated July 13, 1987, entered into by the NYSDEC and Emerson. The NYSDEC requested that the fire water reservoir be considered an AOC (letter dated September 5, 2006).

The scope of work for investigating the area around the firewater reservoir and findings are detailed in Section 4.0 of this report.

3.1.24 AOC 25 – Previous Soil Vapor Sample Locations in Main Building

The following areas of concern were included in the work plan based on the results of the sub-slab soil vapor sampling conducted in the main onsite buildings in December 2005 and January 2006. Locations identified as AOCs are those where levels of VOCs in the sub-slab and associated indoor air samples were above the NYSDOH Soil Vapor/Indoor Air Matrix guidance values for evaluating soil vapor and indoor air. A list of these AOCs follows:

- AOC 25a – Building 3
- AOC 25b – Building 34
- AOC 25c – Building 8
- AOC 25d – Building 24

In addition, soil vapor and associated indoor air samples collected at three other locations (in Buildings 4 [AOC 1], 10 [AOC 23], and 33 [AOC 5]) contained levels of TCE and PCE above the NYSDOH Matrix guidance values. The soil sampling activities for these areas are described in Sections 3.1.1, 3.1.5, and 3.1.22 of this work plan.

At AOC 25a (Figure 3), three soil borings (SB-25a-1 through SB-25a-3) were installed to the top of bedrock (1 to 2.5 feet below top of concrete) within 5 feet of the subslab vapor sampling locations. At AOC 25b (Figure 4), five borings (SB-25b-1 and SB-25b-3 through SB-25b-6) were installed to the top of bedrock (approximately 1.5 feet below top of concrete) in two areas of the building where previous sub-slab soil gas samples were collected. A soil sample could not be collected from boring location SB-25b-2 due to the lack of sample recovery. In

AOC 25c (Figure 2a), two soil borings (SB-25c-1 and SB-25c-3) were installed to the top of bedrock (approximately 2 feet below top of concrete) along the former plating line. A soil sample could not be collected for analysis from boring SB-25c-2 due to the lack of sample recovery and refusal at 13 inches. A petroleum odor was noted in boring SB-25c-3 from 1.5 to 1.7 feet bgs. Finally, at AOC 25d (Figure 2a), two soil borings (SB-25d-1 and SB-25d-2) were installed to the top of bedrock (approximately 2 to 3 feet below top of concrete) within 5 feet of the former sub-slab vapor sample location in the southern portion of the building. At each boring location, a soil sample was collected at the top of bedrock and analyzed for VOCs. The samples from AOC 25c were also analyzed for TAL metals and cyanide.

No VOCs other than methylene chloride were detected in any of the soil samples at concentrations above the respective analyte reporting limits. Methylene chloride concentrations were all below the NYSDEC Restricted Use SCOs for protection of public health at industrial facilities. No TAL metals or cyanide were detected in either of the two soil samples collected in the borings installed in Building 8 above the NYSDEC Restricted Use SCOs for protection of public health at industrial facilities.

3.2 Boring Location Survey

Upon completion of each soil boring, the location was marked with white paint or an orange marking flag. Locations outside the buildings were surveyed by a surveyor licensed in the state of New York. Horizontal measurements were measured to the nearest 0.1 foot and vertical measurements to the nearest 0.01 foot. All locations are included on a scaled site map as presented in Figures 3 and 4. For the boring locations inside the buildings, each was marked with white paint and later surveyed for incorporation on the scaled site drawing.

3.3 AOC Investigation Summary

A total of 66 borings and 4 test pits were installed in the 25 AOCs identified at the EPT site. All borings were installed to the top of bedrock. Soil samples were collected for laboratory analysis from a depth interval corresponding to the highest PID reading. If no organic vapors were detected with the PID, then a soil sample was collected at the top of bedrock. If groundwater or product was encountered at a boring, a sample was collected for laboratory analysis.

The findings of the investigation identified constituents at concentrations above the comparative criteria in seven AOCs which include AOC 1 (Former Department 507 Degreaser), AOC 3 (Former Morse Chain Reservoir/Spray Pond), AOC 4 (Former Open Reservoir [Stone]), AOC 12 (Former Quench Oil Pits), AOC 15 (Former 500 Gallon Gasoline Aboveground Tank), AOC 20 (Storm Sewer along South Cayuga), and AOC 21 (Sanitary Sewer Lines). Also, a petroleum product was identified in soils at AOC 4, AOC 12, and AOC 15. Solvent odors were noted in three of the borings installed in AOC 1, the Former Department 507 Degreaser Area. Soils collected from this area contained site-related VOCs above the NYSDEC Restricted SCOs for the protection of groundwater. In addition, a water sample collected from one of these borings contained TCE, vinyl chloride, cis-1,2-DCE, and trans-1,2-DCE above the NYSDEC TOGS 1.1.1 ambient water quality criteria.

In AOC 3, the former spray pond, soil samples collected from boring SB-3a (within the former spray pond) at a depth of 6-7 feet contained levels of certain PAHs above the NYSDEC SCOs for industrial sites. Soil samples collected outside and downgradient of the former spray pond did not contain any analytes above the industrial criteria.

A petroleum-type product was encountered from 8-10 feet bgs at AOC 4, former open stone reservoir in Building 6A. The analytical results for a product sample collected from this area did not indicate any compounds above the comparative criteria.

In Building 9 (AOC 12), a petroleum odor and oily sheen were identified at a depth of 2 to 4 feet below the concrete surface. No VOCs were detected in the product sample collected from this boring. Also, no VOCs were detected above the comparative criteria in the soil sample collected from above. One PAH (benzo[a]pyrene) was detected at a concentration above the NYSDEC Restricted SCO for industrial sites in this same sample.

In AOC 15 (Former 500 gallon Gasoline Aboveground Tank) petroleum staining and an oily product were encountered between 20-26 feet bgs. No VOCs were detected in the soil sample collected from the stained/oily interval.

At AOC 20 (storm sewer along South Cayuga Street) methylene chloride was the only VOC identified at a concentration slightly above the NYSDEC Restricted SCO for the protection of groundwater.

At AOC 21 (sanitary sewer lines), one boring installed along the sewer on South Cayuga street contained methylene chloride slightly above the NYSDEC Restricted SCO for the protection of groundwater. In addition, one boring installed further south along the sewer contained three PAHs (benzo[a]anthracene, benzo[b]fluoranthene, and chrysene) above the NYSDEC Restricted SCO for protection of groundwater.

4.0 Supplemental Fire Water Reservoir Investigation

The supplemental investigation at the fire water reservoir was designed to further evaluate the distribution of VOC-affected groundwater in bedrock fractures identified beneath the current remediation area, as well as within the uppermost portion of fractured bedrock (B-zone) near the fire water reservoir. The investigation involved installing six exploratory bedrock boreholes, two soil borings, and two shallow B-zone monitoring wells in areas adjacent to the fire water reservoir and the remediation area. In addition, two water samples were collected from the fire water reservoir for analysis of VOCs; one of which was collected from within the internal skimmer, as requested by the NYSDEC. Investigation activities at the fire water reservoir began the week of August 13, 2007 and work was completed on September 14, 2007.

4.1 Fire Water Reservoir Description

Based on available records, the fire water reservoir was constructed in 1906. The reservoir is constructed of concrete, extends from ground surface to approximately 19 feet bgs, and has a capacity of 200,000 gallons. Bedrock in the area is encountered at approximately 12 feet bgs, therefore, the bottom of the reservoir extends into bedrock. Environmental investigations of the fire water reservoir began in 1987 when TCE was detected in the reservoir and in groundwater samples collected from monitoring wells downgradient of the reservoir. The groundwater remediation system was installed beginning in 1994 and is currently composed of 5 extraction wells and a network of 13 surrounding monitoring wells. The well locations are shown on Figure 2.

4.2 2006 Logging and Packer Testing

In January 2006, downhole geophysical logging was conducted in six wells (EW-1, EW-2, EW-3, MW-1, MW-2, and MW-3-31) located within the current remediation area. Mid-Atlantic Geosciences of Lancaster, Pennsylvania conducted the downhole geophysical logging, which included logging of fluid temperature, fluid conductivity, natural gamma radiation, borehole diameter and surface structure using a three-arm caliper, and optical/high resolution acoustic televiewer (OPTV/HRAT) imaging of the borehole walls.

The geophysical logging results showed that open horizontal bedding plane fractures were present in extraction wells EW-1 and EW-3 at approximately 52 feet below the top of casing (BTOC), corresponding to an elevation of 515 feet above MSL. Fluid conductivity and caliper logs also showed deflections at this same interval, indicating that the fractures were contributing groundwater to the open boreholes. The fracture in extraction well EW-1 was associated with an increase in borehole diameter. Partial open fractures were also observed in EW-2, which is located between extraction wells EW-1 and EW-3.

Based on the downhole geophysical logging results, WSP Environmental Strategies completed packer testing to evaluate the hydraulic characteristics of the identified fractures within extraction wells EW-1 and EW-3. In August 2006, inflatable straddle-packer assemblies were installed in extraction wells EW-1 and EW-3. The packer assemblies isolated the horizontal bedding plane fractures at 52 feet BTOC.

During packer testing, approximately 3,100 gallons of groundwater was extracted from the isolated fracture interval. Approximately 1,400 gallons of groundwater was removed from extraction well EW-3 with an average extraction rate of 0.47 gallons per minute (gpm). Approximately 1,700 gallons of groundwater was removed from extraction well EW-1 at an average extraction rate of 0.37 gpm. The packer testing results indicated that the bedding plane fracture identified at 52 feet BTOC is a transport pathway for groundwater below the current remediation area. Groundwater samples collected from the isolated intervals at the end of the packer testing contained elevated concentrations of site-related VOCs (EW-1: TCE at 8,300 µg/l, cis-1,2-DCE at 3,600 µg/l; EW-3: TCE at 100,000 µg/l, cis-1,2-DCE at 12,000 µg/l). The results suggested that the horizontal bedding plane fracture intersects one or more vertical conduits (e.g. vertical joint set) in the vicinity of the fire water reservoir, which allows affected groundwater to migrate downward to the bedding plane fracture.

The 2006 packer testing results also indicated that the bedding plane fractures in extraction wells EW-1 and EW-3 are hydraulically connected. However, shallower monitoring wells, with screened intervals or open boreholes in bedrock above the bedding plane fracture showed no drawdown response during the packer tests.

Because the limits of affected groundwater within the identified open fractures were not fully defined, a supplemental scope of work was developed to further evaluate the significance of the bedding plane fractures and determine how they may affect design upgrades planned for the current remediation system.

4.3 Exploratory Borings

Six exploratory bedrock borings (EXB-1, EXB-2, EXB-5, EXB-6, EXB-7, and EXB-8) were drilled, logged, and sampled in area around the fire water reservoir to further evaluate the identified bedding plane fractures. The exploratory borings were drilled between August 13 and 30, 2007 at the locations shown in Figure 5 in accordance with the approved Supplemental RI Work Plan, dated May 3, 2007. Exploratory borings EXB-1 and EXB-2 were vertical borings drilled on the south and east sides of the fire water reservoir to a total depth of approximately 80 feet bgs. Exploratory boring EXB-8 was a directional boring located on the southwest side of the fire water reservoir and immediately south of an electrical substation. Exploratory boring EXB-8 was drilled at a 30° angle from vertical under the fire water reservoir to a total length of 100 feet BTOC (approximately 80 feet bgs). Exploratory borings EXB-5 and EXB-6 were vertical borings located along the northeast and southwest portion of the current groundwater remediation area and drilled to a total depth of approximately 60 feet bgs. Exploratory boring EXB-7 was a vertical boring located on South Cayuga Street northwest of the current groundwater remediation area. Exploratory boring EXB-7 was drilled to a total depth of approximately 25 feet bgs.

Three of the proposed exploratory borings (EXB-3, EXB-4, and EXB-9) were not completed as proposed in the work plan due to utility conflicts. The proposed location for exploratory boring EXB-3 was between the northern wall of the fire water reservoir and the adjacent boiler house; however, the fire water reservoir abuts the south wall of the boiler house and there was no access for a boring. Upon receiving the NYSDEC approval, EXB-3 was moved to the basement of the adjacent boiler house. The boiler house floor, however, is constructed directly on bedrock and thus, no soil samples could be collected from this boring. The proposed location for exploratory boring EXB-4 was adjacent to the northwest wall of the fire water reservoir and extraction well EW-4. This boring could not be completed due to conflicts with overhead electric lines and weight limitations of the fire water reservoir cover. Following discussions with the NYSDEC, a direct-push soil boring was installed at this location and labeled as EXB-4. The proposed location for directional exploratory boring EXB-9 was in the access road northeast of the fire water reservoir; however, the presence of a high pressure gas main prevented the installation of this boring. The issues which prevented installation of these borings were described in a letter to the NYSDEC dated August 28, 2007.

4.3.1 Drilling Methods

The exploratory borings were installed using hollow-stem auger, air rotary, and rock coring methods. Parratt-Wolff, Inc., of East Syracuse, New York, a driller licensed in the state of New York the drilling in accordance with § 15-1525 of the New York Environmental Conservation Law provided the drilling services. Each borings was drilled through the overburden using 6.25-inch inside-diameter (ID) hollow-stem augers. Continuous soil samples were collected from the ground surface to refusal at bedrock using 2-foot-long, split-spoon samplers. The soils recovered from the split spoons were screened for organic vapors in the field using a PID. Sample descriptions and PID readings were recorded in a field notebook.

Each borehole was advanced through the hollow stem auger rods into competent bedrock using nominal 6-inch air rotary methods, and a 4-inch steel surface casing was installed in the borehole. The annular space was backfilled with a bentonite-cement slurry grout mixture (tremie piped from the bottom to the top as the hollow stem augers were removed) and allowed to set for at least 18 hours. The length of the surface casing varied between 5 feet in exploratory boring EXB-7 to 25 feet in exploratory boring EXB-2.

In accordance with the approved work plan, borings EXB-4, EX-6, and EXB-7 were selected for rock coring. In exploratory borings EXB-6 and EXB-7, the borehole was advanced to the terminal depth using HX rock coring methods. Each section of rock core recovered from the borings was logged (e.g. recovery, lithology, structure, weathering, and fracture characterization) and descriptions were recorded in a field notebook. The total recovery, modified recovery, and Rock Quality Designation (RQD) were also calculated for each coring run. Because a direct-push soil boring was substituted for exploratory boring EXB-4, this location was not cored. In exploratory borings EXB-1, EXB-2, EXB-5, and EXB-8, the boreholes were advanced to the terminal depth using nominal 4-inch air rotary drilling methods.

The exploratory borings were completed as an open borehole with a flush-mount protective steel outer well covering, and the inner surface casing was fitted with a watertight lockable cap. Well construction information was recorded in a field notebook, and boring logs and as-built well construction diagrams were prepared for each exploratory boring after completion of the field activities (Appendix B).

4.3.2 Soil/Rock Sampling Procedures

WSP Environmental Strategies collected soil samples from EXB-1 and EXB-2 which were drilled adjacent to the fire water reservoir. The soil samples were collected from intervals where elevated PID readings or visual observations indicated potential for impacts. At exploratory boring EXB-1 a soil sample was collected from 9 to 9.5 feet bgs and at exploratory boring EXB-2 a soil sample was collected from 10 to 12 feet bgs. At monitoring well MW-7B (See Section 4.4), a soil sample was collected from 6 to 8 feet bgs. All three soil samples were collected from the interval directly above the soil-bedrock interface. Additionally, a rock cuttings sample was collected from approximately 19 feet bgs in exploratory boring EXB-1 and from 19-19.5 feet bgs at exploratory boring EXB-2, as requested by the NYSDEC. These depths correspond to the bottom of the fire water reservoir.

The soil samples were collected from the spilt-spoon sampler which was decontaminated prior to use at each exploratory boring. The rock samples were collected from cuttings generated during drilling. Each sample was collected in a 4-oz. glass jar, labeled, and packed on ice for shipment to Test America Laboratory in Amherst, New York, for analysis of VOCs using EPA Method 8260.

4.3.3 Borehole Development

The exploratory borings were developed by removing groundwater using either a submersible pump, tubing with a bottom check valve, or a bailer to remove sediments, ensure effective communication between the open borehole and fractures in the surrounding formation, and prepare the boreholes for downhole geophysical logging. Exploratory borings EXB-5 and EXB-7 were developed using a submersible pump. Exploratory borings EXB-6 and EXB-8 were developed using tubing fitted with a bottom check valve. Exploratory boring EXB-1 was developed using a bailer. Due to insufficient water, exploratory boring EXB-2 was not developed. Turbidity, pH, temperature, and specific conductance were monitored during the development process. Development continued until the discharge was relatively free of suspended sediments or until the borehole had been purged dry two to three times. Water generated during well development activities was collected in drums and managed in the same manner as other investigation-derived waste. All development activities were conducted with clean equipment to prevent potential cross-contamination between boring locations.

4.3.4 Borehole Geophysical Logging Procedures

Downhole geophysical logging was conducted in each exploratory boring (EXB-1, EXB-2, EXB-5, EXB-6, EXB-7, and EXB-8). Mid-Atlantic Geosciences of Lancaster, Pennsylvania, conducted the logging activities during the week of September 4, 2007, and their report is included as Appendix D. The geophysical logging techniques were the same as those used during the investigation conducted in 2006 in remediation area and included logging of fluid temperature, fluid conductivity, natural gamma radiation, borehole diameter and surface structure using a three-arm caliper, and OPTV/HRAT imaging of the borehole walls.

The purpose of the geophysical logging was to target and locate potential open fracture zones where groundwater was entering or exiting the borehole. A fluid probe was used to measure changes in temperature and conductivity of the undisturbed water column in the well, which may be differentiated depending upon whether the water is relatively stagnant (i.e., adjacent to rock without any fractures) or there is an active exchange of groundwater through openings in the borehole wall. A three-arm caliper provided a mechanical measurement of the borehole wall diameter and to identify the location of fractures along the borehole wall. The natural gamma radiation logs were used to identify lithologic changes in the borehole and for stratigraphic correlation between boring locations.

Both the temperature/conductivity logs and caliper logs were verified by the OPTV/HRAT survey. The OPTV uses a downhole camera equipped with a hyperbolic mirror to examine the borehole walls. Unlike a standard downhole television camera, this device uses successive image scans (0.5 millimeter in length) to build a continuous optical record that is ultimately transferred to a paper log for analysis. In wells with low visibility (due to groundwater with a high particle load), the HRAT is substituted for the OPTV. The HRAT uses an acoustical signal to build a similar log of the borehole. Onboard magnetometers measure the orientation of the OPTV/HRAT during its descent allowing the strike and dip of fractures or bedding planes to be measured directly from the output log. The onboard magnetometers also allow for corrections to fracture orientations in a directional boring such as EXB-8 (Appendix D).

The OPTV/HRAT survey provided for direct visual examination of the potential fracture zones identified by the logs to determine the fracture abundance and their potential for transmitting groundwater. This information was used to select specific open or partially open fractures for collecting discrete interval groundwater samples.

4.3.5 Vertical Profiling Sampling Procedures

Based on the results of the geophysical logging, selected intervals within each borehole were designated for discrete sampling to vertically evaluate groundwater quality. The intervals selected for profiling and the rationale are detailed in Section 4.7.4. During the week of September 10, 2007, WSP Environmental Strategies collected a total of eight groundwater samples from the six exploratory bedrock borings. Two groundwater samples were collected from exploratory borings EXB-6 (as well as a duplicate sample) and EXB-7 and one groundwater sample from each of the four remaining exploratory borings.

Discrete fracture sampling was conducted using a QED SamplePro portable bladder pump powered by compressed CO_2. The pump intake was set within the open borehole at the targeted sample depth. During purging, temperature, pH, specific conductance, dissolved oxygen (DO), turbidity, and oxygen-reduction potential (ORP) were monitored using a flow-through cell, and drawdown was monitored using the electronic water-level indicator. Field parameters, including the water level in the well, were recorded (Appendix E) every 3 to 5 minutes until the parameters stabilized with the two preceding measurements (±10 percent for temperature, turbidity, DO, and ORP; ±0.1 unit for pH; and ± 3 percent for specific conductance) and the drawdown varied less than 0.3 foot. It should be noted that because the targeted sample interval in EXB-2 was not saturated at the time of sampling, low flow sampling could not be employed. A groundwater sample was collected from exploratory boring EXB-2 using a bailer and standard purge and sample techniques. Groundwater samples were collected, labeled, packed on ice, and shipped to TestAmerica Laboratory of Amherst, New York for VOC analysis using U.S. Environmental Protection Agency (EPA) Method 8260B.

4.3.6 Packer Testing

In accordance with the approved RI Work Plan, packer (pump-out) testing was to be conducted of the bedding plane fracture encountered near the 515-foot interval in boreholes EXB-1 and EXB-2 installed near the fire water reservoir. The results of downhole logging identified an open bedding plane fracture at 71.25 feet BTOC in exploratory boring EXB-1 and at 71 feet BTOC in exploratory boring EXB-2. However, the feature was either just below the water table or was unsaturated at both locations. Therefore, packer testing at these locations could not be completed, as discussed with NYSDEC.

4.3.7 Community Air Monitoring Program

Air monitoring was conducted during all intrusive activities according to the Community Air Monitoring Program (CAMP). Air monitoring consisted of continuous PID and particulate dust monitoring in upwind and downwind locations. If PID readings or particulate dust readings exceeded pre-determined action levels, engineering or work practice controls were enacted to protect the health and safety of all onsite workers. Dust control measures were implemented to address particulate action levels that were temporarily exceeded during the initial onsite drilling activities. No VOC action levels were exceeded during the investigation activities. Readings recorded during intrusive work activities are presented in Appendix F.

4.4 Fire Water Reservoir B-Zone Wells

Two monitoring wells (MW-7B and MW-8B) were installed adjacent to the fire water reservoir (Figure 5) to further evaluate groundwater quality within the upper portion of the fractured bedrock (B-zone). Monitoring well MW-7B was installed south of the fire water reservoir and MW-8B was installed to the east. The wells were installed between August 24 and 27, 2007 with a screened interval in the uppermost fractured bedrock, from 10 to 20 feet bgs (1 foot below the reservoir). A third well (MW-9B) was proposed to be installed between the northern wall of the fire water reservoir and the adjacent boiler house; however, this well could not be installed because the fire water reservoir abuts the boiler house wall. The monitoring well construction details are included in Appendix B.

4.4.1 Monitoring Well Installation and Development

Monitoring wells MW-7B and MW-8B were installed using the same drilling techniques used for the exploratory borings as described in Section 4.3.1. At both locations continuous soil samples were collected from ground surface to the top of bedrock using split-spoon samplers. At monitoring well MW-7B, the top of bedrock was encountered at 8 feet bgs, and a soil sample was collected from 6 to 8 feet bgs and submitted for laboratory analysis of VOCs. At monitoring well MW-8B, the top of bedrock was encountered at 12 feet bgs. Since exploratory boring EXB-2 was located within 10 feet of monitoring well MW-8B, and a soil and rock sample were collected at EXB-2 during drilling, no soil samples were collected during the installation of monitoring well MW-8B.

Bedrock was cored at both monitoring well locations to approximately 21 feet bgs. Unlike the rock cores recovered from exploratory borings EXB-6 and EXB-7, the rock cores from monitoring wells MW-7B and MW-8B consisted of intensely to very intensely fractured siltstone with numerous weathered fracture surfaces. Additionally, the rock cores and re-circulated coring water displayed an oily sheen. The observed characteristics of the rock cores are consistent with weathered bedrock of the uppermost B-zone.

The monitoring wells were constructed of 2-inch-ID threaded, flush jointed, Schedule 40 PVC blank casing attached to screens with 0.010-inch horizontal slots. Both monitoring wells were constructed with a 10-foot screen length and screened interval from 10 to 20 feet bgs. A clean sand filter pack was placed from the bottom of the well borehole to approximately 2 feet above the top of the screen. The remaining annular space was backfilled with hydrated bentonite chips from the sand filter pack to one foot bgs. Each monitoring well was completed with a flush-mount protective steel well covering, and the PVC casing for each well was fitted with a watertight expandable plug and padlock. Well construction information was recorded in a field notebook, and boring logs and as-built well construction diagrams were prepared for each monitoring well after completion of the field activities (Appendix B). The monitoring wells were completed and installed by Parratt-Wolff, Inc. of East Syracuse, New York. Following installation, each well was developed in accordance with approved Supplemental RI work plan.

4.4.2 Monitoring Well Sampling Procedures

On September 13, 2007, WSP Environmental Strategies collected samples from monitoring wells MW-7B and MW-8B. A groundwater sample was collected from monitoring well MW-7B using a bailer and standard purge and sampling techniques. Due to the presence of a light aqueous phase liquid (LNAPL) in monitoring well MW-8B, only a product sample was collected. The samples were collected, labeled, packed on ice, and shipped to TestAmerica Laboratory of Amherst, New York for VOC analysis using EPA Method 8260B.

Two grab samples of water were collected from the fire water reservoir on September 6, 2007, using a disposable bailer. In addition, one duplicate sample was collected at this same location.

4.5 Sample Location Survey

Following the field activities, the locations of the six exploratory borings, two replacement soil borings, and two B-zone monitoring wells were surveyed relative to the New York State Plane Coordinate System by Richard Rybinski, L.S. of Manlius, New York. For wells, the northing and easting, ground surface elevation, and top of casing elevations were surveyed while for soil borings, the northing and easting and ground surface elevations were surveyed. The survey data is provided in Table 4, and the locations of the exploratory borings, monitoring wells, and soil borings on all figures reflect the current survey information.

4.6 Management of Investigation Derived Waste

Drill cuttings and water generated during drilling, rock coring, and well installation were contained in Department of Transportation (DOT)-approved, 55-gallon steel drums. The drums were labeled and moved to an onsite staging area. All solid investigation derived waste was characterized for disposal after completion of the field activities. All liquid investigation derived waste was treated in the onsite remediation system.

All drilling, well development, and sampling activities were conducted with clean equipment. The drilling equipment (augers, rods, split-spoon samplers) was decontaminated using a portable steam cleaner in accordance with WSP Environmental Strategies' SOPs. All decontamination fluids generated during the drilling activities were contained in 55-gallon DOT-approved steel drums and managed in the same manner as water generated during the drilling and rock coring.

4.7 Observation and Results

4.7.1 Rock Core Observations

In exploratory boring EXB-6 bedrock was cored from 24 to 61.5 feet bgs. A prominent vertical joint with trace mineralization was observed from 24 to 32.5 feet bgs. Additional high-angle fractures were observed from approximately 38.5 to 40 feet bgs. The bedding plane fracture at approximately 515 feet above mean sea level (aMSL) was not apparent in the rock core at EXB-6. Bedrock was cored from 5 to 25 feet bgs in exploratory boring EXB-7. Several natural bedding plane joints were observed in the rock core. The most notable one was at approximately 11.5 feet bgs (518 ft aMSL). One high-angle vertical joint with calcite mineralization was also noted at approximately 18 feet bgs.

4.7.2 Soil and Rock Sampling Results

The analytical results of the soil and rock samplings collected from the exploratory borings are included in Table 5. Six VOCs were detected above laboratory reporting limits in one or more samples. Concentrations of cis-1,2,-DCE (4,100 µg/kg), TCE (76,000 µg/kg), vinyl chloride (25 µg/kg), and acetone (52 µg/kg) in the rock sample from 19 to 19.5 feet bgs in EXB-2 were above the NYSDEC Restricted Use SCOs for protection of groundwater. The NYSDEC Restricted Use SCOs for protection of groundwater are 250 µg/kg (cis-1,2-DCE), 470 µg/kg TCE, 20 µg/kg (vinyl chloride), and 50 µg/kg (acetone). EXB-2 is located just east of the fire water reservoir and the depth of the sample corresponds to the interval below the reservoir. None of the other soil or rock sample contained VOCs at concentrations above the SCOs.

4.7.3 Borehole Geophysical Logging Results

In exploratory boring EXB-1, the water level at the time of the geophysical logging was 70.25 feet BTOC. Several bedding plane parallel features were identified in the open borehole above the water column. No high-angle features were identified. Within the water column at 71.25 feet BTOC (516 feet aMSL), an open bedding plane fracture was identified where an associated increase in the borehole diameter was observed. This directly correlates to the bedding plane fracture observed beneath the remediation area. The bedding plane fracture was targeted for groundwater sampling as described in Section 4.7.4.

In exploratory boring EXB-2, the water level at the time of the geophysical logging was 75 feet BTOC. Several bedding plane parallel features and high-angle features were identified in the open borehole above the water column. At 71 feet BTOC, a bedding plane parallel feature and associated borehole diameter increase was identified. This feature is the same bedding plane fractures identified in exploratory boring EXB-1 and correlates directly with the bedding plane fracture below the remediation area. Exploratory boring EXB-2 was the only location where this bedding plane fracture was not saturated.

In exploratory boring EXB-5, the water level at the time of the borehole geophysical logging was 34 feet BTOC. Two prominent bedding plane parallel features were identified within the water column. The geophysical logs at 48.90 feet BTOC show a thin highly fractured zone with associated borehole diameter increase. A larger fractured zone occurs at 57 to 58 feet

BTOC. The thin zone at 48.90 feet BTOC corresponds to an elevation of 517 feet aMSL and directly correlates to the bedding plane fractures identified elsewhere in the remediation area and around the fire water reservoir. This zone was targeted for groundwater sampling as described in Section 4.8.4.

In exploratory boring EXB-6, the water level at the time of the borehole geophysical logging was 30.34 feet BTOC. The prominent vertical joint observed in the rock core from 24 to 32.5 feet bgs is visible in the geophysical log; however, the quality of the OPTV image is not as high above the water column as it is within the water column. This is in part due to the interference from the steel surface casing on the magnetometer-based orientation of the OPTV scan. High-angle fractures identified between 38 and 40 feet BTOC correspond to those seen in the rock core. A prominent bedding plane parallel fracture and associated borehole diameter increase is identified at 46.25 feet BTOC (516 feet aMSL) that directly correlates to the open bedding plane fracture identified elsewhere in the remediation area and around the fire water reservoir. This zone was targeted for groundwater sampling as described in Section 4.8.4.

In exploratory boring EXB-7, the water level at the time of the borehole geophysical logging was 3.88 feet BTOC. Two prominent, closely spaced bedding plane fractures and an associated borehole diameter increase were identified at 11 feet BTOC (518 feet aMSL). The feature correlates with the bedding plane fracture identified in the upgradient remediation area and around the fire water reservoir. A high-angle fracture observed in the rock core was also identified in the geophysical logging from 17 to 18 feet BTOC. The bedding plane fracture at 11 feet BTOC and the high-angle fracture at 17.5 feet BTOC were both targeted for groundwater sampling as described in Section 4.8.4.

In directional exploratory boring EXB-8, the water level at the time of the borehole geophysical logging was 61.25 feet BTOC (approximately 54 feet bgs). Several bedding plane parallel features and high-angle features were identified in the open borehole above the water column. A thin bedding plane parallel fracture zone with an associated borehole diameter increase was identified at 82.25 feet BTOC (approximately 71 feet bgs, 516 feet aMSL). This feature directly correlates to the bedding plane fracture identified in the remediation area and in other exploratory borings around the fire water reservoir. The bedding plane fracture was targeted for groundwater sampling as described in Section 4.8.4.

To show the distribution of the bedding plane fracture and to conceptualize the vertical and horizontal movement of groundwater in the fire water reservoir area, a generalized geologic cross section and a three dimensional conceptual site model are presented in Figure 6 and Figure 7. As shown in these figures, the bedding plane fractures between the 515 foot and 518 foot intervals are significant pathways for groundwater movement beneath the fire water reservoir area.

4.7.4 Vertical Groundwater Profiling

4.7.4.1 Sampling Intervals

Based on observations made during drilling, examination of rock cores, and the results of the downhole geophysical logging, seven bedding plane or high-angle fractures were selected for discrete interval groundwater sampling using low-flow purging and sampling techniques (EPA 1996). As detailed in Section 4.3.6, the bedding plane fracture encountered at the 515-foot interval in borehole EXB-2 was unsaturated at the time of sampling, thus discrete sampling of the fracture could not be performed. A groundwater sample was collected at EXB-2 below the elevation of the bedding plane fracture using a bailer and standard purge and sample techniques. The depths selected for discrete interval groundwater sampling (vertical profiling) are listed below.

- EXB-1 – 71.25 feet BTOC (bedding plane fracture)
- EXB-5 – 48.90 feet BTOC (bedding plane fracture)
- EXB-6 – 39.50 feet BTOC (high-angle fractures) and
  46.25 feet BTOC (bedding plane fracture)
- EXB-7 – 11.00 feet BTOC (bedding plane fracture) and
  17.50 feet BTOC (high-angle fracture)
- EXB-8 – 82.25 feet BTOC (bedding plane fracture)

4.7.4.2 Exploratory Boring Sampling Results

The analytical results for the discrete interval groundwater samples are presented in Table 6 and depicted in Figure 8. VOCs were detected in all groundwater samples at concentrations above the laboratory reporting limits. TCE was detected in each of the eight samples, at concentrations ranging from 2,700 µg/l in EXB-7 to 17,000 µg/l in EXB-5 and EXB-6. Exploratory boring EXB-7 is located downgradient of the fire water reservoir along South

Cayuga Street while exploratory borings EXB-5 and EXB-6 are located within the current remediation area. The compound cis-1,2-DCE was also detected in all eight samples at concentrations ranging from 2,500 µg/l in EXB-2 to 13,000 µg/l in EXB-6. Vinyl chloride was detected in all of the exploratory boring samples with concentrations ranging from 10 µg/l in EXB-7 to 320 µg/l in EXB-8. The New York State Ambient Water Quality Standards for both TCE and cis-1,2-DCE is 5 µg/l, while the standard for vinyl chloride is 2 µg/l. PCE was detected above the New York State Ambient Water Quality Standard of 5 µg/l in exploratory borings EXB-2, EXB-5, and EXB-6. The PCE levels at these locations ranged from 5.6 µg/l (EXB-2) to 7.8 µg/l (EXB-6). Trans-1, 2-DCE was detected above the New York State Ambient Water Quality Standard of 5 µg/l in each of the exploratory borings with concentrations ranging from 8.5 µg/l (EXB-2) to 130 µg/l (EXB-6).

Three other VOCs were detected in the groundwater samples from the exploratory borings at concentrations above the New York State Ambient Water Quality Standards and Guidance values. Benzene was detected above its standard of 1 µg/l in borings EXB-1 and EXB-2. Samples from all borings contained 1,1-DCE (5.2 to 24 µg/l) at levels above the standard of 5 µg/l, except for the sample collected from EXB-2. Concentrations of toluene were above the standard of 5 µg/l in samples collected from borings EXB-1, EXB-2, and EXB-6.

The vertical profiling groundwater results indicate that the bedding plane fractures identified at each exploratory boring are affected by releases associated with the fire water reservoir and although the feature is discrete, it is a migration pathway for affected groundwater.

4.7.4.3 Monitoring Well B-zone Results

PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride were detected in the groundwater samples collected from monitoring well MW-7B (Table 6). The concentrations of TCE (1,900 µg/l), cis-1,2-DCE (1,200 µg/l), trans-1,2-DCE (7.2 ug/l), and vinyl chloride (230 µg/l) were above the New York State Ambient Water Quality Standards and Guidance Values of 5 µg/l and 2 µg/l (vinyl chloride only). A sample of the LNAPL collected from monitoring well MW-8B, located adjacent to the eastern side of the fire water reservoir, contained methylene chloride at 1,800 µg/kg and TCE at 2,600 µg/kg (Table 6). The laboratory determined that this sample should be considered a sludge and therefore analyzed as a solid; hence the results are reported in µg/kg.

The B-zone results indicate that releases from the fire water reservoir have affected the upper portion (approximately 8 to 10 feet) of highly fractured bedrock immediately around the reservoir and that LNAPL is also present in the upper section of saturated fractured bedrock.

4.7.4.4 Fire Water Reservoir Sampling Results

As requested by NYSDEC, two water samples plus a duplicate were collected from the fire water reservoir on September 6, 2007 and analyzed for VOCs (Table 3). Samples FWR-1 and FWR-2 (duplicate of FWR-1) were collected from the oil skimmer within the south tank. FWR-3 was collected from the north tank. Chloroform was detected in all three samples above the ambient water quality standard of 7 µg/l. The concentrations ranged from18 µg/l to 41 µg/l.

4.8 Quality Assurance/Quality Control Procedures and Analytical Results

Quality assurance/quality control (QA/QC) samples collected during the investigation, including trip blanks, equipment blanks, and field duplicates were collected in accordance with WSP Environmental Strategies' SOPs. Analytical results for the QA/QC samples are included in the summary tables and the complete laboratory reports are included in Appendix C.

Trip blanks are samples used to identify possible sample contamination originating from sample transport, shipping, or site conditions. The two trip blank samples (Trip Blank and TB091107) consisted of three preserved 40-milliliter glass vials, which had been filled in the laboratory with organic-free water. They were shipped with the sample containers to the field, stored with the field samples, and returned to the laboratory for VOC analysis. Trip blanks were labeled, documented, and handled in the same manner as other field samples. No VOCs were detected in the trip blank samples.

Two equipment blanks were collected during groundwater sampling. These samples are used as a QC check of the decontamination procedures for the sampling devices. The equipment blanks (EB091107 and EB091307) were collected from the QED® SamplePro bladder pump, which had been used and decontaminated in the field. The equipment blanks were collected by rinsing the cleaned equipment with analyte-free water, collecting the rinsate in the appropriate sample containers, and submitting to the laboratory for analysis of the same parameters as the groundwater samples. The equipment blanks were labeled, documented, and handled in the same manner as the other field samples. Acetone was detected at 7.7 µg/l in one of the equipment blank samples.

Field duplicate samples were collected to evaluate sample variability. One duplicate groundwater sample, EXB091107 (duplicate of EXB-6-463) was submitted to the laboratory for analysis of the same parameters as the associated field sample. The analytical results of the field duplicate samples were consistent with the results of the associated field sample.

All samples were sealed, labeled, and placed in a cooler with ice for shipment to the laboratory. Appropriate chain-of-custody procedures were followed, and the laboratory data sheets with signed chains-of-custody are provided in Appendix C.

4.9 Fire Water Reservoir Investigation Summary

All six bedrock exploratory borings intersected the bedding plane fracture that correlates with the fracture observed in extraction wells EW-1 and EW-3. The groundwater sampling results show that elevated VOC concentrations (predominantly TCE and its associated degradation compounds) are present in exploratory borings EXB-5, EXB-6, and EXB-7 and that the bedding plane fracture zone at approximately 515 feet aMSL is a significant transport pathway. The lateral extent of VOC-affected groundwater associated with the bedding plane fracture has not been defined.

A separate phase dense non-aqueous phase liquid (DNAPL) was not observed in the directional boring (EXB-8) which was installed beneath the fire water reservoir. Also, DNAPL was not observed in the borings installed to the south (EXB-1) and east (EXB-2) of the fire water reservoir.

The groundwater sampling results for the new B-zone monitoring wells MW-7B and MW-8B show that site-related VOCs are present in groundwater within the uppermost zone of fractured bedrock immediately around the fire water reservoir and that a LNAPL is present in the area to the east. The VOC results are consistent with B-zone wells installed immediately downgradient of the reservoir area and indicate that historic release from the reservoir discharged into this zone.

5.0 Bedrock Evaluation

The objective of the bedrock evaluation was to confirm the nature of the structural features identified in the 2006 Supplemental Geophysical Survey, to ascertain whether the identified structural features are migration pathways for affected groundwater, and to characterize groundwater quality within the features. The three types of structural features evaluated included five possible vertical water-bearing fractures, an in-filled void, and a possible buried stream channel. The scope of work involved conducting supplemental surface geophysics to identify drilling locations, drilling and logging exploratory (confirmation) borings to confirm the existence of the structural features, and if confirmed construct a monitoring well to assess groundwater quality within the structural feature.

The bedrock evaluation was initiated on August 28, 2007, and completed on October 17, 2007. All investigation activities were conducted in accordance with the NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation, dated December 25, 2002. The targeted structural features evaluated are described below. This is followed by description of the methods employed to evaluate and confirm the targeted feature and discussion of the findings.

5.1 Features Targeted for Further Evaluation

Vertical Fracture Structure 1 extends between Turner Place and East Spencer Street encompassing fracture-like anomalies 41-A2 and 36-6. These anomalies line up along a northwest trend line and appear to follow the same fracture trace as an exposed fracture outcrop located on the west section of Columbia Street (Figure 9)

Vertical Fracture Structure 2 appears to extend parallel with Fracture Structure 1, and intersects Turner Place, South Hill Terrace, and East Spencer Street. This fracture structure encompasses anomalies 31-6 and 36-4, which lie within the same fracture trace. Anomaly 31-6 is located along the southern end of Turner Place and anomaly 36-4 is located along East Spencer Street (Figure 9).

Vertical Fracture Structure 3 extends northwest from the EPT site toward Turner Place and encompasses fracture like anomalies 24-6 and 31-1, which when aligned in parallel trend to the northwest. This fracture structure appears to be discontinuous, however, and was not observed in downgradient ER transect lines. Vertical Fracture Structure 4 extends from the southeast portion of the EPT site to the northwest and encompasses anomalies 37D-1 on the EPT site and 34-10 which is at the intersection of South Hill Terrace and Hillview Place. Fracture–like anomaly 34-10, lines up with two exposed fracture outcrops located along the southern bank of Six Mile Creek and along the southern section of a residential property on South Hill Terrace. Anomaly 37D-1 appears to trend to the northwest and may be hydraulically connected to downgradient anomaly 34-10. These two anomalies appear to trend with the two exposed outcrop fractures observed along South Hill Terrace and along Six Mile Creek. Vertical Fracture Structure 5 extends northwest across the EPT property from anomaly 37B-5 to anomaly 21-6, which is located near the southern limit of the EPT access road. Two exposed fracture outcrops were observed along the north portion of this feature (Figure 9).

In the area of the New York State Electric and Gas substation, large conductive features were identified at anomalies 19-3 and 20-5. Each anomaly is surrounded by resistive bedrock and when placed in parallel they line up to indicate a large conductive area in the subsurface. Survey lines located at the southwest portion of the EPT site (ER-15 through ER-17) showed high variation in the subsurface with very resistive areas interpreted to be competent bedrock. Anomalies identified on the ER profiles for these lines (15-1, 15-3, 16-4, and 17-1) show moderately conductive, vertical fracture-like features that run through the depth of the images (approximately 80 feet deep). A view of the profiles in parallel shows that the anomalies line up to illustrate two fracture-like features with a western trend. Anomalies identified in the profiles for lines 15, 16, and 17 (shown as 15-3/17-1 and 16-4) correspond to a buried intermittent stream identified on historic topographic maps (Figure 8).

5.2 Supplemental Geophysics

Supplemental geophysical surveys were conducted at exploratory borings EB-2, EB-5, and EB-6 to determine the appropriate drilling location. The supplemental ER surveys were performed by Aestus, LLC, of Littleton, Colorado. A total of three supplemental ER profiles were collected (ER-42 to ER-44) to establish exploratory boring locations. The profile locations are shown on Figure 9 and geophysical cross-sections (profiles) are included in Appendix G.

For each ER survey line, specialized electrodes were installed into the ground along a straight line and at a specific interval as described below. The electrodes were connected via geophysical cables and the cables were connected to Aestus' field equipment. This included switch boxes and a Sting R8-brand earth resistivity meter. The electrodes were placed along the designated ER survey line, spaced at approximately 2.5 to 4.9 feet. Each electrode was installed to a depth of approximately 12 - 18 inches bgs using a steel sledgehammer. Where the electrodes passed through concrete, a portable hammer drill was used to core a small hole to allow the electrode to be installed in the subsurface. As many as 56 electrodes were installed along a single line yielding a maximum survey line of approximately 361 feet. During data collection, current was induced into the subsurface through the electrodes and the resistance to the current was measured by other electrodes at set intervals in the survey line. The current induction and the resistance measurement arrangement were prearranged by a command file programmed into the resistivity meter. Once the information was collected from the survey line, the electrodes were removed from the ground and the area was restored with material (e.g., concrete/asphalt) to match the surrounding grade.

Exploratory borings EB-2, EB-5, and EB-6 were drilling in areas based on the results of the supplemental geophysical survey. Following field work, all exploratory boring locations were surveyed by a land surveyor licensed in the state on New York and the locations were placed on the site base map.

5.3 Exploratory Borings

Between August 31 and September 20, 2007, 11 exploratory bedrock borings (EB-2 to EB-8 and EB-10 to EB-13) were installed and developed. The exploratory boring locations are included on Figure 9. Two proposed exploratory borings (EB-1 and EB-9) could not be installed due to both overhead and underground utility conflicts. Attempts were made to relocate EB-1 and EB-9, but accessible alternative locations could not be identified. A description of the exploratory boring depths and corresponding targeted features are presented below:

- EB-2 was installed along Vertical Fracture Structure 1 to a depth of 22 feet bgs. Vertical Fracture Structure 1 included anomalies 41A-2 and 36-2, located along Turner Place and East Spencer and appeared to follow the same fracture trace as an exposed outcrop observed on Columbia Street. Additionally, a conductive feature was identified along supplemental survey line ER-43.

- EB-3, EB-4, and EB-5 were installed along Vertical Fracture Structure 2 to depths of 30, 29, and 15 feet bgs. This structure included anomalies 31-6, 35-2, and 36-4 that appeared to trend northwest. Additionally, the targeted feature was identified at EB-4 on supplemental survey line ER-44.
- EB-6 was installed along Vertical Fracture Structure 3 to a depth of 41 feet bgs. The structure included the anomalies identified as 24-6 on profile ER-24 and 31-1 on ER line 31. Additionally, the targeted feature was identified on supplemental survey line ER-42 at the relocated EB-6 site.
- EB-7 and EB-8 were installed along Vertical Fracture Structure 4 to depths of 60 and 30 feet bgs. The structure included anomalies identified as 37D-1 on profile ER-37D and 34-10 on profile ER-34. Additionally, the targeted feature was identified at EB-8 on supplemental survey line ER-42.
- EB-10 and EB-11 were installed along Vertical Fracture Structure 5 to depths of 48.8 and 35 feet bgs. The structure included anomalies identified as 37B-5 on ER-37B and 21-6 on ER-21.
- EB-12 was installed within a potential void structure at a depth of 50 feet bgs. The structure included anomalies 19.3 form ER-19 and 20-5 from ER-20.
- EB-13 was installed within a potential buried channel to a depth of 30 feet bgs. The structure included anomalies 15-3 from ER-15 and 16-4 from ER-16.

5.3.1 Drilling Methods

The exploratory borings were installed using hollow-stem auger and rock coring methods. The exploratory borings were drilled through the overburden using 6.25-inch ID hollow-stem augers. Continuous soil samples were collected from the ground surface to refusal at bedrock using 2-foot-long, split-spoon samplers. The soils recovered from the split spoons were screened for organic vapors in the field using a PID. Sample descriptions and PID readings were recorded in a field notebook.

Each borehole was advanced to competent bedrock using hollow-stem auger methods, and a 4-inch steel surface casing was then installed in the borehole. The annular space was filled with a bentonite-cement slurry grout mixture (tremie piped from the bottom to the top as the hollow stem augers were removed) and allowed to set for at least 18 hours. The length of the surface casing varied between 4 feet in exploratory boring EB-8 to 15 feet in exploratory boring

EB-10. Due to a high water table and intensely fractured bedrock, EB-5 was completed without surface casing in order to screen the uppermost weathered bedrock.

The exploratory borings, with the exception of EB-5 (B-zone well), were advanced to the terminal depth using HX rock coring methods. Each section of rock core recovered from the borings was logged (e.g., percent recovery, lithology, structure, weathering, and fracture characterization) and descriptions were recorded in a field notebook. The total recovery, modified recovery, and RQD were also calculated for each coring run.

Each exploratory boring was completed with a flush-mount protective steel well covering, and the surface casing was fitted with a watertight lockable cap. Well construction information was recorded in a field notebook, and boring logs and as-built well construction diagrams were prepared for each exploratory boring after completion of the field activities (Appendix B). All exploratory borings were completed by Parratt-Wolff, Inc., of East Syracuse, New York, a driller licensed in the state of New York in accordance with § 15-1525 of the New York Environmental Conservation Law.

5.3.2 Community Air Monitoring Program

Air monitoring during all intrusive activities was conducted according to the CAMP. Air monitoring consisted of continuous PID and particulate dust monitoring in upwind and downwind locations. If PID readings or particulate dust readings exceeded pre-determined action levels, engineering or work practice controls were enacted to ensure the protection of the community. No action levels were exceeded during investigation activities. Readings recorded during intrusive work activities are presented in Appendix F.

5.3.3 Borehole Development

The exploratory borings were developed to remove sediments, to ensure effective communication between the open borehole and fractures in the surrounding formation, and to prepare the boreholes for downhole geophysical logging. The boreholes were developed by removing groundwater using a submersible pump. Development continued until the discharge was relatively free of suspended sediments or until the borehole had purged dry. Water generated during the well development was collected in drums and managed in the same manner as other investigation-derived waste. All development activities were conducted with clean equipment to prevent potential cross-contamination between boring locations.

5.3.4 Borehole Geophysical Logging Procedures

Geophysical logging was performed at 10 of the bedrock exploratory borings during the week of September 24, 2007. The logging served to verify the source of geophysical anomalies within the exploratory borings and determine the construction details to be used for monitoring wells installed within the exploratory boreholes. The logging was conducted in the same manner as detailed in Section 4.3.4 by Mid-Atlantic Geosciences of Lancaster, Pennsylvania. Mid-Atlantic Geoscience's geophysical logging report is included as Appendix H.

5.3.5 Boring Location Survey

Following the field activities, the locations of the 11 exploratory borings/monitoring wells and supplemental ER lines (ER-42 to ER-44) were surveyed by Richard Rybinski, L.S. of Manlius, New York, and located relative to the New York State Plane Coordinate System. For each exploratory boring and monitoring well, the northing and easting, ground surface elevation, and top of casing elevations were surveyed. For the ER lines, the northing and easting elevations were surveyed for the electrodes located at each end of the line. The survey data are included in Table 4, and the locations of the exploratory borings/ monitoring wells and supplemental ER lines on all figures reflect the current survey information.

5.3.6 Management of Investigation Derived Waste

Drill cuttings and water generated during drilling, rock coring, and well installation were contained in DOT-approved, 55-gallon steel drums. The drums were managed and staged as described in Section 4.6.

All drilling, well development, and sampling activities were conducted with clean equipment. The equipment was decontaminated as describe in Section 4.6.

5.4 Downhole Logging Observations and Results

The geophysical logs for each exploratory boring were evaluated in conjunction with the associated rock cores. Anomalies from geophysical surveys performed in 2006 and 2007 were confirmed in all exploratory borings. However, the confirmed anomalies were not always due to the expected structural feature, as discussed below. The anomalies and rock core logs discussed below are included in Appendices G and H.

In exploratory boring EB-2, the water level at the time of the borehole geophysical logging was 3.32 feet BTOC. Within the water column, at approximately 10.2 feet BTOC (401 feet aMSL), a structural feature was identified in the open borehole. The feature was near parallel to bedding plane, with a dip measured at 28° NW and correlates to a fracture or subsurface discharge zone logged in the rock core from 10 to 11.3 feet bgs. No high-angle features were identified. A conductive anomaly on survey ER-43 was identified as a water-bearing zone that begins at approximately 10 feet bgs and continues through the depth of the image. The vertical continuation of the anomaly is most likely a result of continued saturation through the image. It should be noted the saturated alluvial deposits (silt, sand, and gravel) were encountered above bedrock at the EB-2 and EB-5 locations. This suggests that bedrock groundwater is discharging into the alluvial material northwest of East Spencer.

In EB-3, the water level at the time of the borehole geophysical logging was 20.36 feet BTOC. Two parallel bedding plane fractures were identified in the open borehole above the water column. Within the water column, at approximately 23.5 feet BTOC (494 feet aMSL), one high-angle fracture was identified in the open borehole. The log measured the dip angle at 66° SE. This fracture correlates to a vertical fracture logged in the rock core from 23.9 to 24.3 feet bgs. Conductive anomalies at approximately 30 feet bgs on nearby geophysical survey lines ER-31 and ER-34 were identified as a conductive feature.

In EB-4, the water level at the time of the borehole geophysical logging was 15.35 feet BTOC. Several bedding plane parallel fractures were identified in the open borehole above the water column. Two fractures were identified within the water column. One high-angle fracture was identified at approximately 19 feet BTOC (460 feet aMSL), with a dip angle of 68° NW. This fracture correlates to a vertical fracture logged in the rock core from 19.7 to 20.2 feet bgs. Additionally, a thin bedding plane fracture was identified at 21 feet BTOC (458 feet aMSL). EB-4 intersects a conductive anomaly identified on survey ER-44 at approximately 20 feet bgs.

In EB-6, the water level at the time of the borehole geophysical logging was 23.65 feet BTOC. One bedding plane parallel feature was identified in the open borehole above the water column. Several features were identified within the water column. Three bedding plane parallel features were identified at 23.5 feet BTOC (567 feet aMSL), 28 feet BTOC (562 feet aMSL), and 35 feet BTOC (555 feet aMSL). These features correspond to bedding plane fracture features logged in the rock core. One high-angle feature was identified at approximately 35.5 to 37 feet BTOC (555 to 553 feet aMSL), with a dip angle of 76° SE. This feature correlates to a vertical fracture logged in the rock core from 35.4 to 36.6 feet bgs. EB-4 intersects a conductive feature identified as an anomaly on survey ER-42 at approximately 35 feet bgs.

In EB-7, the water level at the time of the borehole geophysical logging was 43.42 feet BTOC. One vertical and several bedding plane parallel fractures were identified in the open borehole above the water column. Two bedding plane parallel fractures were identified within the water column, at 48.2 feet BTOC (593 feet aMSL) and 49.7 feet BTOC (592 feet aMSL). These features correspond to bedding plane fracture features logged in the rock core. EB-7 intersects a conductive feature identified as anomaly 37D-1, at approximately 45 feet bgs. This corresponds to the saturation seen in the boring.

In EB-8, the water level at the time of the borehole geophysical logging was 8.62 feet BTOC. Three bedding plane parallel features were identified within the water column, at 9.3 feet BTOC (584 feet aMSL), 11.2 feet BTOC (582 feet aMSL), and 15 feet BTOC (578 feet aMSL). These features correspond to bedding plane fracture features logged in the rock core. EB-8 intersects a conductive anomaly identified on survey ER-42, at approximately 15 feet bgs.

In EB-10, the water level at the time of the borehole geophysical logging was 32.2 feet BTOC. Two vertical fractures were identified in the open borehole above the water column. Several fractures were identified within the water column. Four bedding plane parallel fractures were identified at 33 feet BTOC (623 feet aMSL), 34.1 feet BTOC (622 feet aMSL), 39.5 feet BTOC (616 feet aMSL),and 43.1 feet BTOC (613 feet aMSL). These features correspond to fractures logged in the rock core. One high-angle fracture was identified at approximately 33.5 to 34.2 feet BTOC (622 to 621 feet aMSL), with a dip angle of 70° NW. This feature correlates to a fracture zone logged in the rock core. EB-10 intersects a conductive feature identified as conductive anomaly 37B-5, at approximately 34 feet bgs. This corresponds to the vertical feature and fracture zone.

In EB-11, the water level at the time of the borehole geophysical logging was 14.1 feet BTOC. Seven bedding plane parallel fractures were identified within the water column, at 14.5 feet BTOC (551 feet aMSL), 18 feet BTOC (547 feet aMSL), 22 feet BTOC (543 feet aMSL), 22.2 feet BTOC (543 feet aMSL), 23 feet BTOC (542 feet aMSL), 28.9 feet BTOC (536 feet aMSL), and 33.2 feet BTOC (532 feet aMSL). These features correspond to fractures logged in the rock core. EB-11 intersects a conductive feature identified as anomaly 21-6, at approximately 14.5 feet bgs. This corresponds to the horizontal feature and saturation in the borehole.

In EB-12, the water level at the time of the borehole geophysical logging was 23.1 feet BTOC. Two bedding plane parallel fractures were identified within the water column, at 29.8 feet BTOC (528 feet aMSL) and 43 feet BTOC (515 feet aMSL). These features correspond to fracture logged in the rock core. EB-12 intersects a highly conductive feature identified as anomaly 19-3, at approximately 43 feet bgs. The bedding plane fracture identified at 43 feet BTOC (515 feet aMSL) also directly corresponds to the targeted bedding plane fracture beneath the current remediation area.

In EB-13, the water level at the time of the borehole geophysical logging was 10.22 feet BTOC. Two slightly vertical fractures were identified in the open borehole above the water column. Several fractures were identified within the water column. Three bedding plane parallel fractures were identified at 11.2 feet BTOC (534 feet aMSL), 14.8 feet BTOC (531 feet aMSL), and 21.8 feet BTOC (524 feet aMSL). These features correspond to fractures logged in the rock core. One slightly vertical fracture was identified at approximately 10.8 feet BTOC (535 feet aMSL), with a dip angle of 30° NW. This feature correlates to a fracture zone logged in the rock core. EB-10 intersects a conductive anomaly (15-3) at approximately 10 feet bgs. This corresponds to the feature and fracture zone.

5.5 Groundwater Monitoring Wells and Targeted Intervals

Between October 1 and 4, 2007, groundwater monitoring wells were installed in the 11 exploratory boreholes using the same methods described in Section 4.3.1. Three permanent monitoring wells (MW-34B, MW-36B and MW-37B) and one temporary monitoring well (MW-35T) were installed in the South Hill neighborhood. Seven temporary monitoring wells (MW-38T to MW-40T and MW-42T to MW-45T) were installed on the EPT property. The monitoring wells were installed with screened intervals set to intersect structural features identified during the geophysical logging and observed in the rock cores. The monitoring well locations are shown on Figure 9, and the construction details are included in Appendix B.

5.5.1 Target Intervals

Based on observations made during drilling, examination of rock cores, and the results from the downhole geophysical logging, structural features were confirmed at each of the exploratory boring locations. Temporary or permanent mentoring wells were competed at each location and the screened intervals designed to intersect the interval at which the structural feature (bedding plane fracture or high angle fracture) was encountered. The intervals targeted for groundwater sampling are listed below. The exploratory boring number and corresponding monitoring well ID are also listed below:

- EB-2/MW-34B - 10.2 feet BTOC (bedding plane fracture)
- EB-3/MW-35T - 23.5 feet BTOC (high angle fracture)
- EB-4/MW-36B - 19 feet BTOC (bedding plane fracture) and
  21 feet BTOC (high angle fracture)
- EB-5/MW-37B - 10 feet bgs (bedding plane fractures)
- EB-6/MW-38T - 28 feet and 35 feet BTOC (bedding plane fractures) and
  35.5 feet BTOC (high angle fracture)
- EB-7/MW-39T - 48.2 feet and 49.7 feet BTOC (bedding plane fractures)
- EB-8/MW-40T - 9.3 feet, 11.2 feet, and 15 feet BTOC (bedding plane fractures)
- EB-10/MW-42T - 33.5 feet BTOC (high angle fracture)
- EB-11/MW-43T - 14.5 feet BTOC (bedding plane fracture)
- EB-12/MW-44T - 43 feet BTOC (bedding plane fracture)
- EB-13/MW-45T - 10.8 feet BTOC (low angle fracture)

5.5.2 Monitoring Well Installation and Development

Monitoring wells were constructed of 2-inch-ID threaded, flush jointed, Schedule 40 PVC blank casing attached to 5- or 10-feet screens with 0.010-inch horizontal slots. The screen length depended on the interval needed to intersect the identified features. A clean sand filter pack was placed from the bottom of the borehole, to approximately 2 feet above the top of the screen. A 3-foot-thick bentonite seal was placed on top of the sand filter pack. The remaining annular space was backfilled with a cement-bentonite grout mixture (tremie piped from the bottom to the top). In cases where the screen was set at an interval above the bottom of the boring, the base of the borehole was filled with bentonite to a depth approximately 1 foot below the screen to isolate the targeted feature. A layer of sand (approximately 1 foot) was added above the bentonite before the remaining components of the well were completed. Each monitoring well was completed with a flush-mount protective steel well covering, and the PVC casing for each well was fitted with a watertight expandable plug and padlock. Well construction information was recorded in a field notebook, and boring logs and as-built well construction diagrams were prepared for each monitoring well after completion of the field activities (Appendix B). Well construction details are also listed in Table 4.

The wells were developed by surging the screened interval to remove sediments and ensure effective communication between the well screens and surrounding saturated zones. Groundwater was then be removed by pumping with a submersible pump and dedicated tubing. Turbidity, pH, temperature, and specific conductance were monitored during the development process to ensure that groundwater representative of the screened portion of the aquifer is entering the well. Development continued until the discharge was relatively free of suspended sediments or the well went dry. In most cases the wells went dry shortly after the removal of one well volume.

5.5.3 Monitoring Well Sampling Procedures

On October 15-17, 2007, groundwater samples were collected from the newly installed monitoring wells using a bailer and standard purge and sample techniques. One round of groundwater samples was collected from the permanent and temporary wells. The wells were initially purged before sample collection. Measurement of pH, conductivity, temperature, and redox potential were obtained at least three times (beginning, middle, and end) during the well purging process. These parameters were allowed to stabilize before samples were collected.

Groundwater samples were collected from each monitoring well using dedicated disposable Teflon or polyethylene bailers. Bailers were lowered slowly into the wells to avoid agitating the water. VOC samples were collected in three pre-cleaned 40-ml vials. The three vials were completely filled to avoid air bubbles in the sample. VOC samples were preserved with hydrochloric acid to a pH of 2 or less. QA/QC samples, including equipment blanks, trip blanks, and duplicates, were collected in accordance with SOPs. All samples were sealed, labeled, and placed in a cooler with ice for shipment to TestAmerica Inc. Laboratory in Amherst, New York. Appropriate chain-of-custody procedures were followed. The groundwater samples were analyzed for VOCs using EPA Method 8260B.

5.6 Results

5.6.1 Bedrock Groundwater Flow

Based on the results of the geophysical logging and water level measurements made during drilling, the uppermost section of bedrock (B-zone) in area of Turner Place is not saturated. Although this zone is jointed and fractured, groundwater was encountered below the B-zone at depths between 15 and 21 feet bgs (MW-36B and MW-35T, respectively). Groundwater was encountered at much shallower depths (3 to 10 feet bgs) north of East Spencer (MW-37B and MW-34B). This is an area where alluvial deposits were encountered near the ground surface to 10 feet bgs and where water-bearing bedding plane fractures and joints within the bedrock appear to discharge into the overburden (unconsolidated) material. As shown in Figure 10 and listed in Table 7, bedrock groundwater flow within the study area is generally to the northwest. Figure 11 shows a conceptual model of the area along Turner Place between Hillview Place and Columbia Street. As shown in Figure 11, the sanitary sewer line was installed within the upper most portion of fractured bedrock (B-zone), which is unsaturated in this area of the site. Bedding plane fractures are depicted as horizontal layered blocks (gray hatching), while the vertical joint sets are depicted as open spaces that intersect the bedding planes. The saturated zone is shown in blue and is present within the jointed and fractured C-zone. Releases from the sanitary sewer line would have migrated within the unsaturated fractures in the B-zone.

5.6.2 Groundwater Results

The results of groundwater samples collected as part of the bedrock evaluation scope of work are presented in Table 8 and shown in Figure 12. Certain VOCs were detected in groundwater at concentrations above the New York State Ambient Water Quality Standards and Guidance Values in 4 of the 11 bedrock wells (MW-37B, MW-39T, MW-40T, and MW-45T). Monitoring well MW-37B, located offsite to the north of East Spencer Street, contained 6.9 µg/l of cis-1,2-DCE and 4.8 µg/l of vinyl chloride, which are above their respective state standards of 5 µg/l and 2 µg/l. A trace concentration of TCE (2.2 µg/l) was also detected at this well location. This well is located within the groundwater discharge area identified north of East Spencer Street.

Well MW-39T is an upgradient (background) well located on the easternmost portion of the EPT property. Chloroform was detected at 9.6 µg/ in the sample from this well, which is above the state standard of 7 µg/l. Low concentrations of chloroform were also detected in six other monitoring wells ranging from 0.86 µg/l in MW-35T to 1.6 µg/l in MW-42T.

The sample collected from monitoring well MW-40T, which is located west of Building 24 on the north portion of the EPT property, contained 15 µg/l of TCE, 62 µg/l of, cis-1,2-DCE, and 11 µg/l of vinyl chloride; all were above New York State Ambient Water Quality Standards and Guidance Values.

Monitoring well MW-45T, which is located on the southwest portion of the EPT site, contained 8.0 µg/l of TCE, which is slightly above the New York State Ambient Water Quality Standards and Guidance Values.

No VOCs were detected in the remaining bedrock wells (MW-34B, MW-36B, MW-35T, MW-38T, MW-42T, MW-43T, and MW-44T) at concentrations above the state standards.

5.7 Quality Assurance/Quality Control Procedures and Analytical Results

QA/QC samples collected during the investigation, including trip blanks, equipment blanks, and field duplicates were collected in accordance with WSP Environmental Strategies' SOPs. Analytical results for the QA/QC samples are included in the summary tables and the complete laboratory reports are included in Appendix C.

One trip blank sample (Trip Blank) was shipped with the sample containers to the field, stored with the field samples, and returned to the laboratory for VOC analysis. Trip blanks were labeled, documented, and handled in the same manner as other field samples. No VOCs were detected in the trip blank samples.

Field duplicate samples were collected to evaluate sample variability. One duplicate groundwater sample, MW-50T (duplicate of MW-45T) was submitted to the laboratory for analysis of the same parameters as the associated field sample. The analytical results of the field duplicate samples were consistent with the results of the associated field sample.

All samples were sealed, labeled, and placed in a cooler with ice for shipment to the laboratory. Appropriate chain-of-custody procedures were followed, and the laboratory data sheets with signed chains-of-custody are provided in Appendix C.

5.8 Bedrock Evaluation Summary

Eleven exploratory borings were drilled within targeted areas to confirm the presence of the structural feature identified in the 2006 Supplemental Geophysical Survey. In all cases, drilling confirmed the presence of a structural feature. However, the geophysical anomalies were not always the expected feature that was encountered. In most cases, the structural feature was discrete and created a large elongated anomaly on the ER profile image corresponding to a zone of saturation. Exploratory borings EB-2, EB-7, EB-8, and EB-11 intersect conductive anomalies corresponding to bedding plane fractures that appeared as vertical features carried through the depth of the ER image. These conductive anomalies are not laterally continuous across the ER images indicating that saturation is confined to preferential pathways controlled by discrete bedding plane fractures. EB-3 has a water-bearing vertical feature along the suspected Vertical Fracture Structure 1. This corresponds to anomalies seen in nearby geophysical surveys ER-31 and ER-44. EB-4 has a water-bearing fracture that corresponds to a conductive feature identified during the supplemental surface geophysics. EB-6 also has a vertical water-bearing fracture that corresponds to a conductive feature identified during the supplemental surface geophysics. A discrete fracture zone was identified in EB-10 that matches the conductive anomaly 37B-5 on ER-37. As seen in other borings, an elongated feature is produced by continued saturation. EB-12 was installed to investigate a potential void structure. The investigation results show two parallel bedding plane fractures that match the conductive anomaly 19-3 in ER-19. EB-13 was installed to investigate a potential buried stream channel. The EB-13 logs show a high degree of weathering and saturation that matches the conductive anomaly 15-3 identified in ER-15.

Wells were constructed within all 11 exploratory boreholes and included three permanent and seven temporary wells. The wells were screened at intervals incorporating the most significant features indicated by the 2006 and 2007 geophysical surveys, rock core logging, and borehole geophysical logging. The screened intervals are intended to provide an evaluation of the discrete groundwater migration pathways beneath the facility and the South Hill neighborhood.

Four of the monitoring wells contained certain VOCs at concentrations slightly above the New York State Ambient Water Quality Standards and Guidance Values.

6.0 Soil Vapor and Manhole Vapor Sampling

The primary objective of the soil vapor and manhole vapor sampling was to evaluate the potential presence of site-related constituents within the Phase VI expansion area identified by the NYSDEC in the May 31, 2007, correspondence. The area is defined by South Aurora Street on the east, Turner Place on the west, Prospect Street on the north, and the entrance to EPT just south of Hillview Place. The area is topographically upgradient of the Turner Place sanitary sewer lines that connect to the EPT facility and topographically downgradient from the South Aurora Street sanitary sewer that connected to the former NCR facility and Ithaca College. This sampling supplemented previous soil vapor sampling conducted above the NCR sewer line on the EPT property in July 2007 and November 2005. In addition, soil vapor sampling was conducted to evaluate the potential presence of VOCs along sewer lines on South Cayuga Street, Turner Place, and Columbia Street and near a potential groundwater discharge area located along the lower portion of Turner Place and East Spencer Street. Soil vapor sampling was initiated the week of August 20, 2007, and completed on August 30, 2007. As discussed with NYSDEC, a follow up round of sampling was conducted on South Aurora Street and Columbia Street on October 26, 2007. The sampling and analysis procedures were conducted in accordance with the NYSDOH soil vapor intrusion guidance, as detailed below and procedures described in the approved work plan and associated correspondence, dated August 2, 2007.

6.1 Scope of Work

A total of 34 soil vapor sample locations and 6 manhole vapor sample locations were originally proposed in the work plan. Samples were not collected at 15 of the proposed locations, as shown on Table 9, for the following reasons:

- At 11 soil vapor sample locations the presence of shallow bedrock (less than 4 feet below ground surface) was present so samples were not collected, in accordance with the work plan.
- The proximity of underground utilities (utility conflicts) inhibited the installation of four sample points.

Soil vapor samples and vapor samples from sewer manholes were collected in the following locations as shown on Figure 13:

Sewers:

- South Cayuga Street (SV-20b)
- Turner Place (SV-21h and SV-21i)
- Columbia Street (SV-21f, SV-21g, SV-42)
- South Aurora Street (SV-39, SV-40, and SV-41)
- Turner Place and Columbia Street manholes (MH1 through MH6)

Phase VI Indoor Air Expansion Area:

- South Aurora Street (SV-22, SV-23, SV-26, SV-28)
- Columbia Street (SV-27)
- Pleasant Street (SV-30)

Potential Groundwater Discharge Area:

- East Spencer (SV32 and SV-33)
- Turner Place (SV-36R and SV-38)

Temporary soil vapor sampling points were installed using direct-push rods equipped with a 1.25-inch OD drive point to a depth of approximately 5 feet bgs at locations in the Phase VI Expansion Area and the Potential Groundwater Discharge Area. For locations above sewer lines, the temporary points were advanced to approximately 3 feet (1 foot above the sewer invert elevation). A 6-inch-long stainless steel screen was attached to 0.25-inch ID Teflon® or Teflon®-lined tubing and lowered to the bottom of the open borehole. Approximately 1 foot of quartz sand was placed in the bottom of the borehole around the screen and tubing to create a 1-foot-thick sample interval. The remainder of the borehole was sealed with a bentonite slurry. The base of the wire mesh screen was then threaded into the top of the drive point by rotating the tubing and screen. The probe rods were then removed from the hole leaving the drive point, screen, and tubing in place.

Before soil vapor samples were collected, a pre-sample purge was conducted to remove dilution air from the tubing and probe assembly. The flow rate of the purging did not exceed 0.2 liter per minute. In accordance with the NYSDOH guidance and the approved work plan, a non-toxic tracer gas (i.e., helium or sulfur hexafluoride) was used during purging and sampling of soil vapor probes in unpaved areas to demonstrate that the sample has not been diluted with ambient air. Samples points installed in grassy areas included SV-22, SV-26, SV-28, and SV-38. At these locations, an approximately 3-foot-by-3-foot piece of polyethylene sheeting was placed on the ground surface around the sample probe with the sample tubing passing through a small opening near the middle of the sheeting. An enclosure was then placed over the vapor probe, and sealed to the plastic sheeting with hydrated bentonite. Sand was placed on top of the sheeting along the edges to fasten/seal it to the ground. The sample tubing was connected to a hose fitting on the inside of the enclosure (i.e., with a corresponding hose fitting on the exterior of the enclosure to allow for sample collection). Once the enclosure was sealed to the plastic the atmosphere inside the enclosure was enriched with the tracer gas and documented with a portable gas detector designed to test for the tracer gas. Next, a pump was used to purge one to three well-volumes of soil vapor from the probe and the air was contained in a Tedlar® bag. After the purge was complete, the Tedlar® bag was closed and disconnected from the sample tubing, removed from the structure, and the contents of the bag tested with a tracer gas detector. None of the purged air contained greater than 10 percent tracer gas.

Samples were collected at manholes by lowering a 2 foot section of 0.25-inch ID Teflon® or Teflon®-lined tubing into the manhole lid opening. The tubing was secured with tape and purged as detailed above.

At all sample locations, an Entech flow regulator was connected directly to the sample tubing, or to a fitting on the enclosure using Teflon® or Teflon®-lined tubing. The flow regulator was attached to an evacuated 1-liter Entech canister to initiate sample collection. The flow regulator was pre-set by the laboratory to collect the soil vapor sample over a 1-hour period at a flow rate not to exceed 0.2 liter per minute. After 1 hour, the flow regulator was disconnected from the canister to complete the sample collection. The sample name, location, time and date of sample collection, regulator and canister number, and the analytical method were recorded on the chain-of-custody form and in the field log book. At the sample points installed in grassy areas, a second tracer gas test was performed to document that short circuiting did not occur during sample collection. Following collection of the soil vapor samples, the tubing was removed from the ground and the boreholes were backfilled and capped.

In accordance with Section 2.7.1 of the NYSDOH guidance, site conditions were documented during the soil vapor sampling activities.

6.1.1 Sample Analysis

All samples were shipped, or transported by courier, under strict chain of custody to Centek Laboratories, a New York State Department of Health Environmental Laboratory Approval Program-approved laboratory. The samples were analyzed for the complete list of VOCs specified in U.S. EPA Method TO-15. Analytical results for all VOCs detected by EPA Method TO-15 were reported to the NYSDEC. The minimum detection limits using EPA Method TO-15 for all sample types was 0.25 microgram per cubic meter ($\mu g/m^3$) for TCE and vinyl chloride and the lowest achievable laboratory detection limit (approximately 1.0 $\mu g/m^3$) for all other VOCs.

6.1.2 Quality Assurance/Quality Control

Each Entech canister used for the sampling activities was certified-clean by the laboratory. A duplicate soil vapor sample was collected from soil vapor point SV-21 and manhole MH-4 using a “T” connect device. In addition, a laboratory-prepared trip blank accompanied the sample canister for one of the vapor samples from the laboratory to the field and from the field to the laboratory. The trip blank was used to evaluate the potential for sample cross-contamination during shipment or during sample collection.

In accordance with the NYSDOH Soil Vapor Intrusion Guidance, the reliability and representativeness of the sampling data and associated QA/QC information was verified by WSP Environmental Strategies QA/QC Chemist (qualified person) to ensure the following:

- The data package is complete.
- Holding times are met.
- The QC data fall within the required limits and specifications.
- The data have been generated using established and agreed upon analytical protocols.
- The raw data confirm the results provided in data summary tables and QC verification forms.
- Correct data qualifiers have been used.

The data deliverables comply with the most recent NYSDEC Analytical Services Protocol B (2005).

6.2 Soil Vapor and Manhole Sampling Results

The soil vapor and manhole vapor sampling results are presented in Figure 13 and summarized in Table 10. The discussion of results focuses on the two primary compounds of concern (TCE and PCE). In addition, because the sewer lines are the primary pathway of concern at the site and the fact that sample points were collected along street right of ways, the findings are presented by street name below.

6.2.1 Turner Place

The soil vapor samples collected between the two sewer lines extending along Turner Street from the EPT facility down to Columbia Street (Figure 13) contained TCE concentrations ranging from 239 µg/m^3 (SV-21h) to 644 µg/m^3 (SV-21i). PCE concentrations ranged from 695 µg/m^3 at location SV-21i to 3,690 µg/m^3 at location SV-21h. The samples were collected approximately 7 feet laterally away from each line. The results show that historical releases have occurred from the sewer lines that serve the EPT facility.

The soil vapor results for samples collected along the Turner Street sewer lines at the intersection of Columbia Street and to the north (Figure 11) contained TCE concentrations ranging from 1,130 µg/m^3 (SV-36R) to 1,820 µg/m^3 (SV-38). PCE concentrations ranged from 28.3 µg/m^3 to 2,890 µg/m^3. The locations of these samples are downgradient of where the NCR sewer line connects with the sanitary sewer line on Turner Place. The NCR sewer line extends in a northerly direction across the eastern portion of the EPT property then continues along South Aurora Street to Columbia Street where it extends west one block to Turner Place. The results show that historical releases have occurred from the sewer lines on Turner Place at and to the north of the Columbia Street intersection.

6.2.2 South Aurora Street

Low concentrations of TCE and PCE were detected in the soil vapor samples collected west of the sanitary sewer line located along South Aurora Street (SV-22, SV-23, SV-26, and SV-28). TCE concentrations ranged from 1.09 µg/m^3 to 10.2 µg/m^3 in these samples. PCE concentrations ranged from non-detect levels to 4.90 µg/m^3.

Because the initial soil vapor samples collected along South Aurora Street were over 20 feet laterally away from the sewer line, NYSDEC requested and Emerson agreed to install additional soil vapor points directly over the sewer line. Samples (SV-39, SV-40, and SV-41) were collected directly over the sewer line along South Aurora Street between Columbia Street and Hillview Place.

TCE was detected at concentrations ranging from 23.2 µg/m^3 (SV-39) to 730 µg/m^3 (SV-40) at sample locations directly above and near the sewer line on South Aurora Street. Similarly, PCE was detected at concentrations ranging from 1.59 µg/m^3 (SV-39) to 105 µg/m^3 (SV-41). As expected, soil vapor samples collected closer to the sewer line generally exhibited higher VOC levels. The sampling results are consistent with the findings of previous soil vapor sampling conducted above the NCR sewer line on the EPT property in July 2007 and November 2005. As shown in Figure 14, TCE and PCE were detected in all 13 soil vapor samples collected above or near the NCR sewer line. The sample results show that historical releases have occurred from the NCR sewer line. The EPT facility has never had a connection to the sewer line along South Aurora Street.

6.2.3 Columbia Street

TCE concentrations detected in soil vapor samples collected near the sewer line along Columbia Street were 1,950 µg/m^3 to 2,480 µg/m^3 in samples SV-21f and SV-21g. PCE concentrations at these locations were 129 µg/m^3 and 232 µg/m^3. These samples were collected approximately 7 feet from the sewer line. At sample point SV-27, which was collected approximately 15 feet from the sewer line, TCE was detected at 457 µg/m^3 and PCE at 26.4 µg/m^3. An additional soil vapor sample, SV-42, collected directly above the sewer line near the intersection of Columbia Street and South Aurora contained 264 µg/m^3 of TCE of and 32.4 µg/m^3 of PCE.

The results of the sampling conducted along Columbia Street and South Aurora Street show that releases have occurred along the sewer line which connects to the former NCR facility. The highest VOC levels were found in samples collected closest to the sewer line and the VOCs detected are the same as previously found in samples collected further upstream at sample locations set directly above the NCR sewer line on the EPT property. Figure 14 shows the results of all soil vapor samples collected directly above or adjacent to the NCR sewer line. The sampling results demonstrate that the sewer line which extends from the former NCR facility across the east portions of the EPT property and along South Aurora Street and Columbia Street is a source of VOCs. Results for samples previously collected above the NCR sewer line on the south portion of the EPT property contained TCE ranging from 214 µg/m^3 to 2,010 µg/m^3, while PCE concentrations ranged from 3.93 µg/m^3 to 66.9 µg/m^3. Soil vapor samples previously collected directly above the NCR sewer line on the east-central portion of the EPT property contained TCE at concentrations ranging from 39.3 µg/m^3 to 536 µg/m^3 and PCE concentrations ranging from 2.28 µg/m^3 to 15.9 µg/m^3. Based on the previous sampling, this sewer line was identified as a source of VOCs and the results of the current sampling provide additional confirmation.

6.2.4 East Spencer Street - Potential Groundwater Discharge Area

The soil vapor samples collected along East Spencer Street, which is near the location of a potential groundwater discharge area, contained TCE concentrations ranging from 511 µg/m^3 (SV-33) to 3,040 µg/m^3 (SV-32). PCE was detected at levels ranging from 36.5 µg/m^3 to 52.4 µg/m^3. These samples were collected upgradient of a potential groundwater discharge area that is approximately 250 feet downgradient of the point where the sewer originating from the former NCR facility joins the Turner Place sewer line.

The results of soil vapor collected near the groundwater discharge area indicate that historical releases from these sanitary sewer lines likely have migrated into the surrounding unsaturated soils and shallow bedrock, flowed through fractures and joints, and discharged to alluvial deposits observed northwest of East Spencer Street.

6.2.5 South Cayuga Street

Sample point SV-20B, which was installed at the south end of South Cayuga Street, contained 3,010 µg/m^3 of TCE and 237 µg/m^3 of PCE. This sample was collected between the sanitary sewer and the storm sewer on South Cayuga (approximately 5 feet off each sewer line). These results are consistent with previous soil vapor samples collected in this area and indicate that historical releases have occurred.

6.2.6 Manhole Sampling Results

TCE and PCE were detected in vapor samples collected from all six manholes located on Turner Place, South Hill Terrace, and Columbia Street. TCE concentrations ranged from 31.7 µg/m^3 (MH-6) to 18,900 µg/m^3 (MH-4). PCE concentrations ranged from 7.03 µg/m^3 (MH-5) to 31.7 µg/m^3 (MH-4). The highest concentrations of TCE and PCE were detected in the sample collected from Manhole 4 which is located on Turner Place downgradient of the Columbia Street junction. The duplicate sample collected from Manhole 4 contained 50.8 µg/m^3 of TCE and 11.4 µg/m^3 of PCE. This variation cannot be explained.

6.3 Vapor Sampling Results Summary

The results of the soil vapor sampling in combination with previous soil vapor sampling show that the sewer extending from the former NCR facility is a source of VOCs in the South Hill area. Soil vapor samples collected over and near this sewer line contained elevated concentration of VOCs. The results also show that historic releases have occurred from the sewer lines along Turner Place and South Cayuga Street, which connect to EPT's facility.

7.0 Conclusions

In accordance with the approved Supplemental Remedial Investigation Work Plan, a series of investigations were completed to determine the nature and extent of contamination related to the EPT site in Ithaca, New York. The investigations, which included five main components, were designed to evaluate specific areas of the site. The five main components of the Supplemental Remedial Investigation included (1) investigating 25 AOCs within and around the EPT facility; (2) investigating the fire water reservoir area; (3) evaluating groundwater quality within bedrock structural features; (4) evaluating soil vapor in the Phase VI Indoor Air Expansion area; and (5) evaluating potential groundwater discharge areas north of the EPT site. The major conclusions of the Supplemental Remedial Investigation are discussed below.

7.1 AOC Investigation

The investigations completed to evaluate soil quality (and groundwater, when encountered) at each of the 25 identified AOCs at the EPT site did not identify any significant sources of impacts by VOC, SVOCs, metals, or PCBs. Constituents of potential concern were identified in seven AOCs; the findings and conclusions for each are as follows.

7.1.1 AOC 1 – Former Department 507 Degreaser

Four soil borings were installed in this AOC; two of which were within the formerly depressed area of the floor where the degreaser was located and two were along the western exterior wall (downgradient direction). One soil sample was collected from each boring and analyzed for VOCs and target analyte metals. Methylene chloride and vinyl chloride were detected at concentrations above the NYSDEC Restricted Use SCOs for protection of groundwater in one sample collected below the location of the former degreaser while the three other samples contained trace levels of methylene chloride and non-detectable levels of vinyl chloride. Arsenic was detected above the NYSDEC Restricted Use SCO for industrial facilities in one sample but not the other three samples. Two groundwater samples were collected; one below the location of the former degreaser and one downgradient to the west and analyzed for VOCs and target analyte metals. The sample collected below the location of the former degreaser contained cis-1,2-DCE, trans-1,2-DCE and vinyl chloride above the ambient water quality standards; however, no site-related VOCs were detected in the downgradient groundwater sample. Based on the investigation results, VOC impacts appear to be limited to the area of the former degreaser. No further assessment activities are considered necessary.

7.1.2 AOC 3 Former Reservoir/Spray Pond

Three borings were installed in this AOC; one within the walls of the former spray pond and two immediately to the west (downgradient). Seven SVOCs were detected in the sample collected within the former spray pond but none were detected in the two samples collected immediately to the west. No VOCs or PCBs were detected in any of the samples. The results of the sampling demonstrate that there is no source of contamination emanating from the former spray pond. The SVOCs detected are likely associated with material used to fill the former spray pond; possibly coal fragments. Sanborn Fire Insurance maps show that coal was historically stored around this AOC. No additional investigation is warranted at this AOC.

7.1.3 AOC 4 Former Open Reservoir

Two borings were installed in this AOC; one within the location of the former open reservoir and one to the west (downgradient). A petroleum product was encountered in the downgradient boring at a depth of 8-10 feet below the concrete slab. One soil sample was collected from each boring and analyzed for VOCs, SVOCs, PCBs and target analyte metals. No constituents were detected at concentrations above the NYSDEC restricted use standards for industrial facilities. Also, no VOCs were detected in the petroleum product sample. Based on the results of the sampling, the former open reservoir is not a concern for VOCs, SVOCs, PCBs, or target analyte metals. To fill the data gaps related to the extent of the petroleum product, additional investigation is appropriate.

7.1.4 AOC 12 Former Quench Oil Pits

Two soil borings were installed at the location of four former quench oil pits; one to the south and one to the west. These pits which are located on the second level of Building 9 were taken out of service and filled or covered over. Oil staining was noted in the borings to the west at 4 feet below the concrete slab. One soil sample was collected from each boring and analyzed for VOCs, PAHs, and PCBs. Methylene chloride and TCE were detected in each sample, and the PCB Aroclor 1254 (170 µg/kg) was detected in one sample. Benzo(a)pyrene was detected in the western sample at a level above the NYSDEC Restricted Use SCO for industrial facilities; however, since a concrete slab covers this AOC there is not concern for current exposure. A groundwater sample collected from the boring to the west of the former quench oil pits contained no VOCs. The results of the sampling show that the former quench oil pits are not a source of concern for VOCs or PCBs. There is no groundwater impact in this AOC and no migration pathway for any oil in the subsurface as the east wall of the first level of the building is present further to the west of the location of the former quench oil pits. No further investigations are considered necessary in this AOC.

7.1.5 AOC 15 Former 500 Gallon Gasoline Aboveground Tank

One soil boring was installed at the location of a former 500 gallon gasoline aboveground storage tank which was located northwest of Building 14. Petroleum staining and a weathered petroleum product were identified during installation of the boring. A soil sample collected from the interval with product did not contain any STARS VOCs or naphthalene. To fill the data gaps related to the extent of the petroleum product, additional investigation is appropriate.

7.1.6 AOC 20 Storm Sewer Along South Cayuga Street

Four soil borings were installed along the storm sewer line along South Cayuga Street (initial 100 feet) and one soil sample from each was analyzed for VOCs, PCB, PAHs, target analyte metals, and cyanide. Methylene chloride was the only VOC detected in the four samples at concentrations above the NYSDEC Restricted Use SCO for protection of groundwater. The highest concentration was 56 μg/kg compared to the SCO of 50 μg/kg. Cis-1,2-DCE and TCE were also detected at a concentration well below the NYSDEC Restricted SCOs for the protection of groundwater (250 μg/kg and 470 μg/kg, respectively). No PCBs and only trace concentrations of SVOCs were detected. All detected metals were below the protection of groundwater standards. The results of the investigation show that the soils along the storm sewer along South Cayuga Street are not a significant concern. The metals identified appear to be associated with background conditions. No further investigation of soil along the storm sewer line is necessary.

7.1.7 AOC 21 Sanitary Sewer Lines

Four soil borings were installed along the sanitary sewer that extends from the west side of Buildings 34 and 6a and continues down South Cayuga Street. Methylene chloride was detected in one boring at a concentration (61μg/kg) that is slightly above the NYSDEC Restricted Use SCO for protection of groundwater (50 μg/kg). Petroleum odors and staining were noted in boring SB-21b at a depth of 2-2.3 feet bgs. While three PAHs were detected above the NYSDEC protection of groundwater standard, only benzo(a)pyrene (3,700 μg/kg) was detected at a concentration above the NYSDEC Restricted Use SCOs for protection of human health at industrial facilities. The metals identified appear to be associated with background conditions. The results for VOCs and SVOCs in soils along the sanitary sewer line on the west side of the buildings and down South Cayuga Street do not indicate a concern. The groundwater beneath the site and surrounding area has not been impacted by PAHs or SVOCs. No further investigation of soil along the sanitary sewer line is necessary.

7.2 Fire Water Reservoir Investigation

The results of the Fire Water Reservoir Investigation confirmed the presence of a bedding plane fracture at an elevation of approximately 515 feet aMSL in each of the six exploratory borings installed at the fire water reservoir, within the remediation area, and along South Cayuga Street. This bedding plane fracture is a major migration pathway for groundwater.

The results of groundwater samples collected from exploratory borings installed around the fire water reservoir indicate that TCE, cis-1,2-DCE, and vinyl chloride are the primary compounds affecting groundwater in this area of this site. TCE was detected in each of the eight samples, at concentrations ranging from 2,700 µg/l in EXB-7 to 17,000 µg/l in EXB-5 and EXB-6. Cis-1,2-DCE was also detected in all eight samples at concentrations ranging from 2,500 µg/l in EXB-2 to 13,000 µg/l in EXB-6. Vinyl chloride was detected in all of the exploratory boring samples with concentrations ranging from 10 µg/l in EXB-7 to 320 µg/l in EXB-8. The New York State Ambient Water Quality Standards for both TCE and cis-1,2-DCE is 5 µg/l, while the standard for vinyl chloride is 2 µg/l.

The groundwater results indicate that the bedding plane fractures identified at each exploratory boring are affected by releases associated with the fire water reservoir and although the feature is discrete, it is a migration pathway for affected groundwater. The extent of affected groundwater within the bedding plane fracture to the north, south, and west of the remediation area has not been fully defined. To fill the data gaps related to the extent of the bedding plane fracture, additional investigation is appropriate.

The results of the a rock cuttings samples collected from exploratory boring EXB-2 at 19 to 19.5 feet bgs indicate that cis-1,2,-DCE, TCE, vinyl chloride, and acetone were detected at levels above the NYSDEC Restricted Use SCOs for protection of groundwater.

In addition, a petroleum product was encountered in B-zone monitoring well MW-8B located east of the fire water reservoir. No product was encountered in any of the other five B-zone monitoring wells located to the south and west of the reservoir. The extent of the petroleum product to the north of MW-8B is uncertain. To fill the data gaps related to the extent petroleum product near the reservoir area, additional investigation is appropriate.

7.3 Bedrock Evaluation

The results of the Bedrock Evaluation, which included the installation of exploratory borings, rock coring, and downhole geophysics, confirmed the presence of the structural features identified in the 2006 Supplemental Geophysical Survey. Monitoring wells were constructed within the confirmed features and sampled to assess groundwater quality. The sampling results show that there is no plume of affected groundwater migrating within the structural bedrock features identified beneath the EPT facility to offsite areas or within the structural bedrock features identified below the sanitary sewer lines along Turner Place and Columbia Street. Furthermore, there is no plume of affected groundwater in bedrock (both B-zone and C-zone) in the area to the north of the EPT site.

Two VOCs were detected at concentrations slightly above the state ambient water quality standards in one offsite bedrock monitoring well (MW-37B) located northwest of East Spencer Street. The source of the VOCs detected in this well is most likely attributable to historic releases from the sanitary sewer lines on Turner Place and Columbia Street. Such historic released would have migrated within the unsaturated fractured bedrock and ultimately discharged into the upper section of fractured bedrock which is saturated in the area to the north of East Spencer Street (MW-37B), Given the low concentrations of VOCs detected, no additional groundwater investigation is considered necessary.

VOCs at concentrations above ambient water quality standards were detected in three bedrock wells on the EPT property (MW-39T, MW-40T, and MW-45T). At monitoring well location MW-39T, which is an upgradient (background) well located on the easternmost portion of the EPT property, chloroform was detected at 9.6 µg/l which is above the state ambient water quality standard of 7 µg/l. It should be noted that chloroform was detected in all soil vapor samples collected above the NCR sewer line on the EPT property. The source of the chloroform detected in well MW-39T is most likely attributable to historic releases from the NCR sewer line. Monitoring well MW-40T, which is located northwest of Building 24, contained levels of TCE (15 µg/l), cis-1, 2 DCE (62 µg/l) and vinyl chloride (11 µg/l) above the ambient water quality standards. Given that the structural feature identified in the area of MW-40T is discontinuous, no additional investigation is considered necessary. Monitoring Well MW-45T, which is located on the western portion of the EPT site, contained 8 µg/l of TCE compared to the state standard of 5 µg/l. No additional investigation is considered necessary for this area.

7.4 Soil Vapor Sampling

The soil vapor sampling was designed to evaluate the potential presence of site-related constituents within the Phase VI expansion area identified by NYSDEC. This area is defined by South Aurora Street on the east, Turner Place on the west, Prospect Street on the north, and the EPT site on the south. In addition, soil vapor sampling was conducted to evaluate: 1) the presence of VOCs along a sanitary sewer line extending from the former NCR facility which extends across the south and east portion of the EPT site and then along South Aurora Street, 2) a sanitary sewer line along South Cayuga Street, and 3) near a potential groundwater discharge area located along the lower portion of Turner Place and East Spencer Street.

The results of the soil vapor sampling demonstrate that the sewer extending from the former NCR facility is a source of VOCs to soil gas. Soil vapor samples collected above and near this sewer line on the EPT property, along South Aurora Street and along Columbia Street contained elevated concentrations of VOCs. The EPT facility is topographically and hydrogeologically downgradient of the sewer line extending from the former NCR facility and along South Aurora Street. Also, the EPT facility has never been connected to this sewer line. Historic releases from the sewer line on South Aurora Street and Columbia Street would have migrated downgradient within the surrounding unsaturated fractured bedrock. Based on the results of the sampling, it can be concluded that the sewer lines emanating from the NCR site may be acting as preferential pathways for the migration of VOCs in the soil vapor.

The soil vapor results also show that historical releases have occurred from the two sewer lines along Turner Place that serve the EPT facility. The highest soil vapor concentrations were found to the north of the manhole connecting the sewer line extending from the NCR facility to the sewer line on Turner Place. Releases from the sewer line on Turner Place would have migrated downgradient within the surrounding unsaturated fractured bedrock and ultimately discharge into the alluvial deposits northwest of East Spencer Street. Given that the sewer lines on Turner Place are topographically and hydrogeologically downgradient of the Phase VI area, it can be concluded that releases from these sewer lines would not be a potential source of VOCs beyond the location homes already sampled by EPT in the Phase VI area. The results of the soil vapor survey sufficiently identified the extent of potential impacts and no additional investigation is considered necessary.

Finally, the soil vapor sampling results show that historical releases have occurred from the sanitary sewer along South Cayuga Street. Based on the lack VOCs above the ambient water quality standards in B-zone monitoring wells located downgradient of the sewer line along South Cayuga Street, the extent of impacts appear to be limited to areas immediately around this sewer line. No further assessment of the sewer line is considered necessary.

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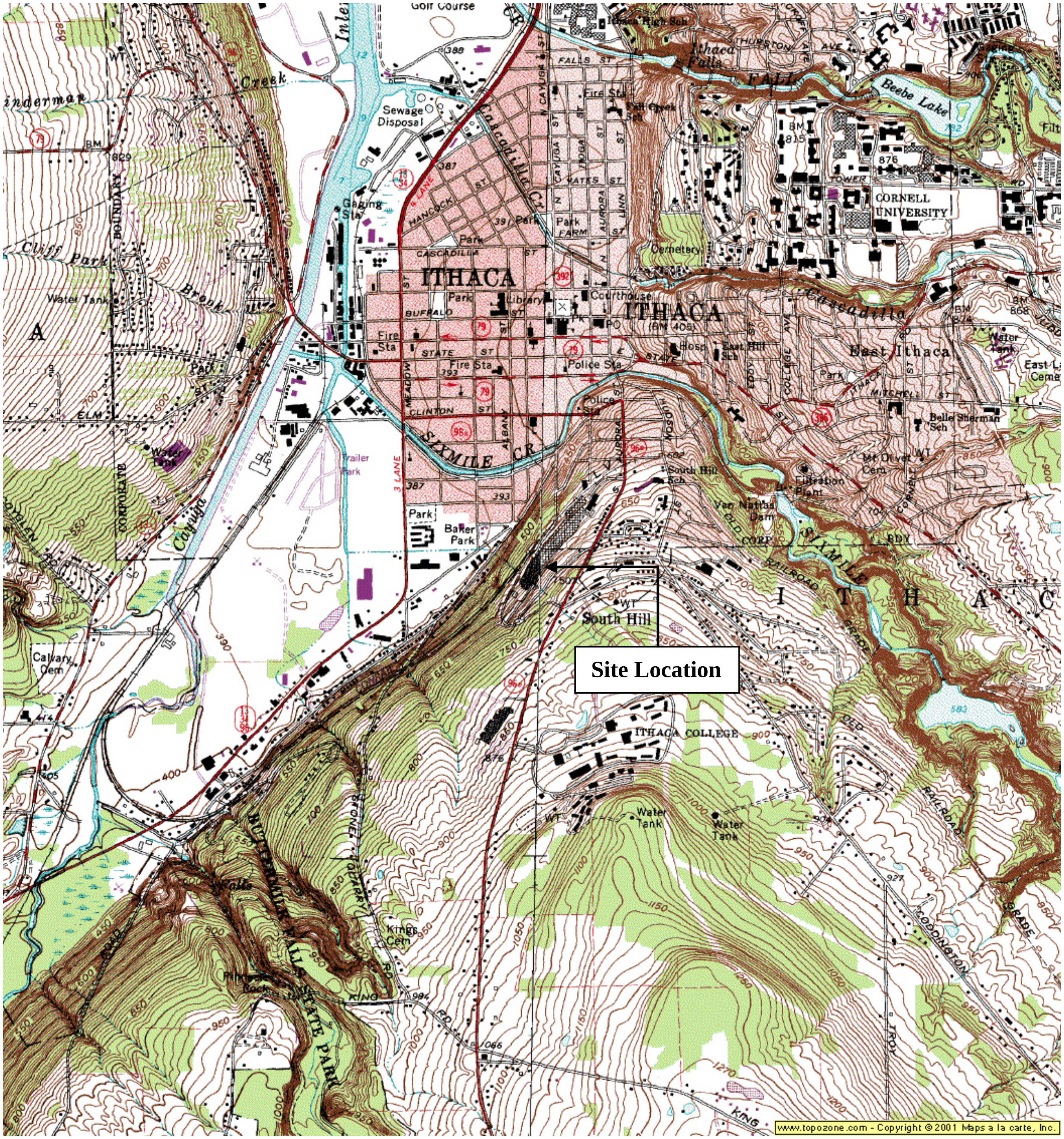
U.S. Environmental Protection Agency. 1996. Low-stress (low-flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells.

WSP Environmental Strategies, 2006, Supplemental Geophysical Survey Report, Emerson Power Transmission, Ithaca, New York). September.

Figures



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Reference

7.5 Minute Series Topographic Quadrangle
Ithaca East, New York
Photorevised 1976 Scale 1:25,000 Metric

Quadrangle Location

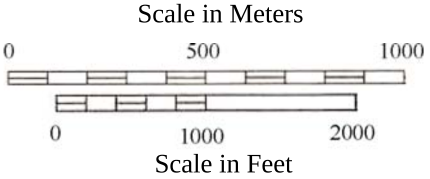

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Figure 1
Site Location
Emerson Power Transmission
Ithaca, New York

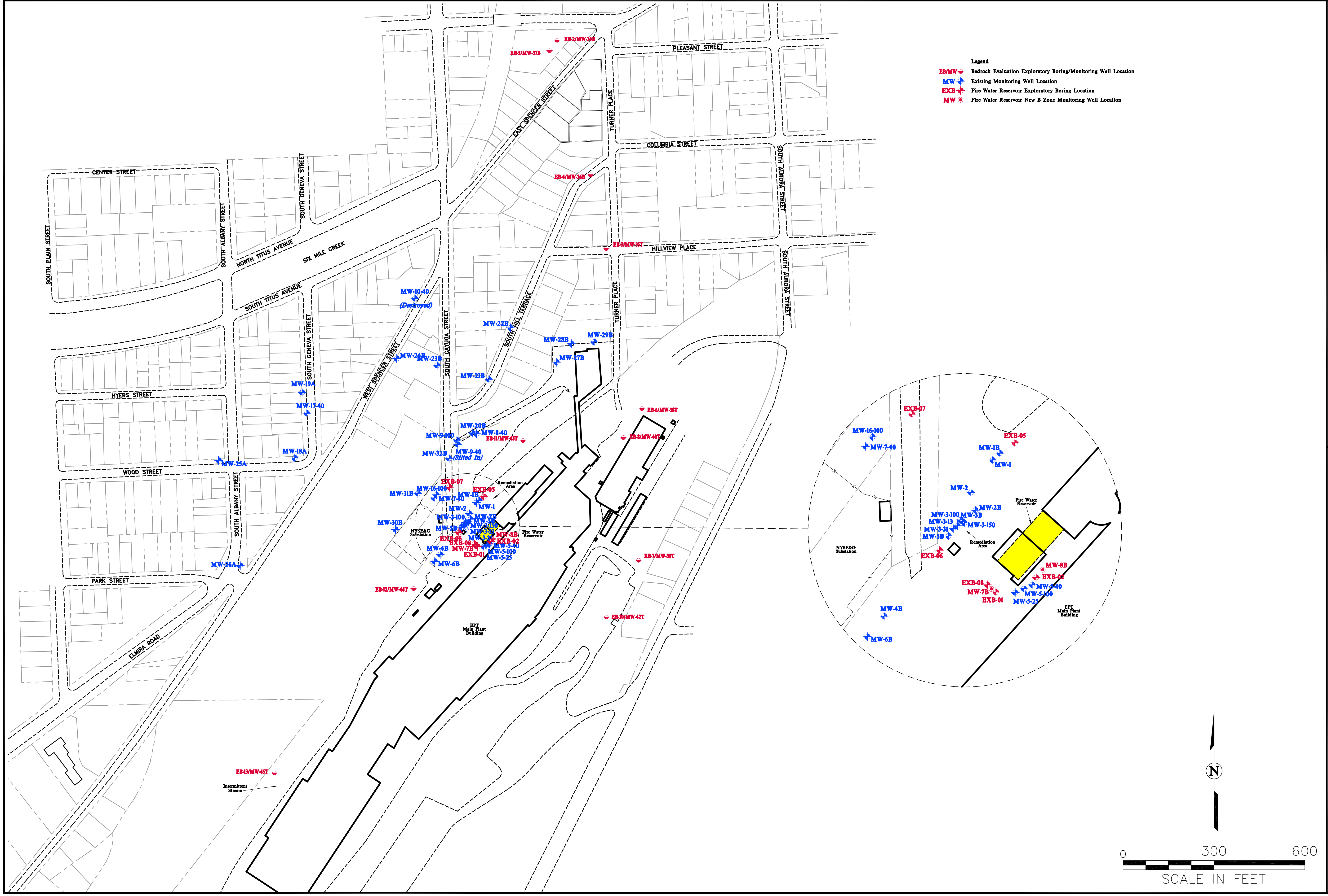

Figure 2
Exploratory Boring/Monitoring Well Locations
Emerson Power Transmission
Ithaca, New York

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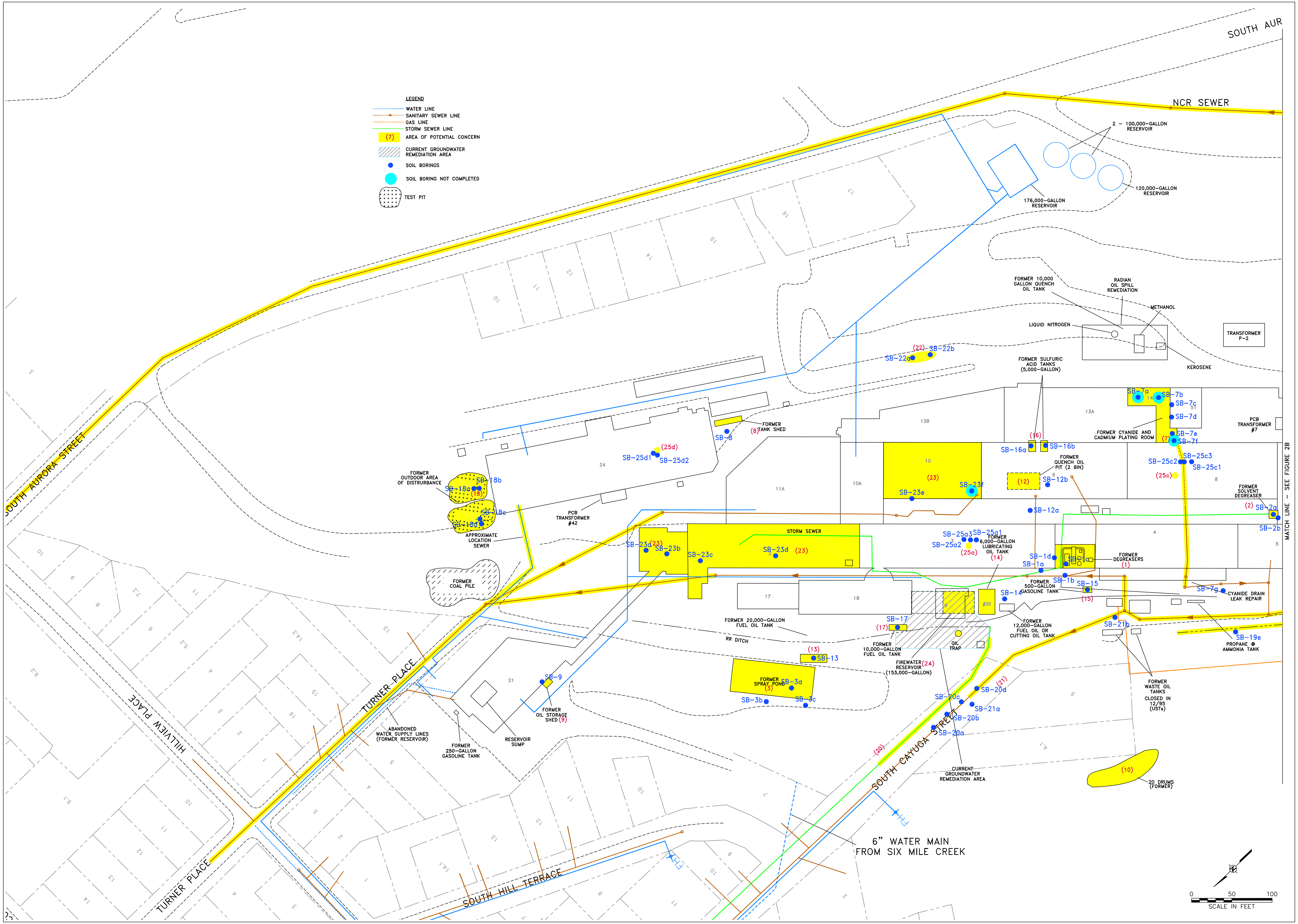

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FIGURE 3

Drawing Number
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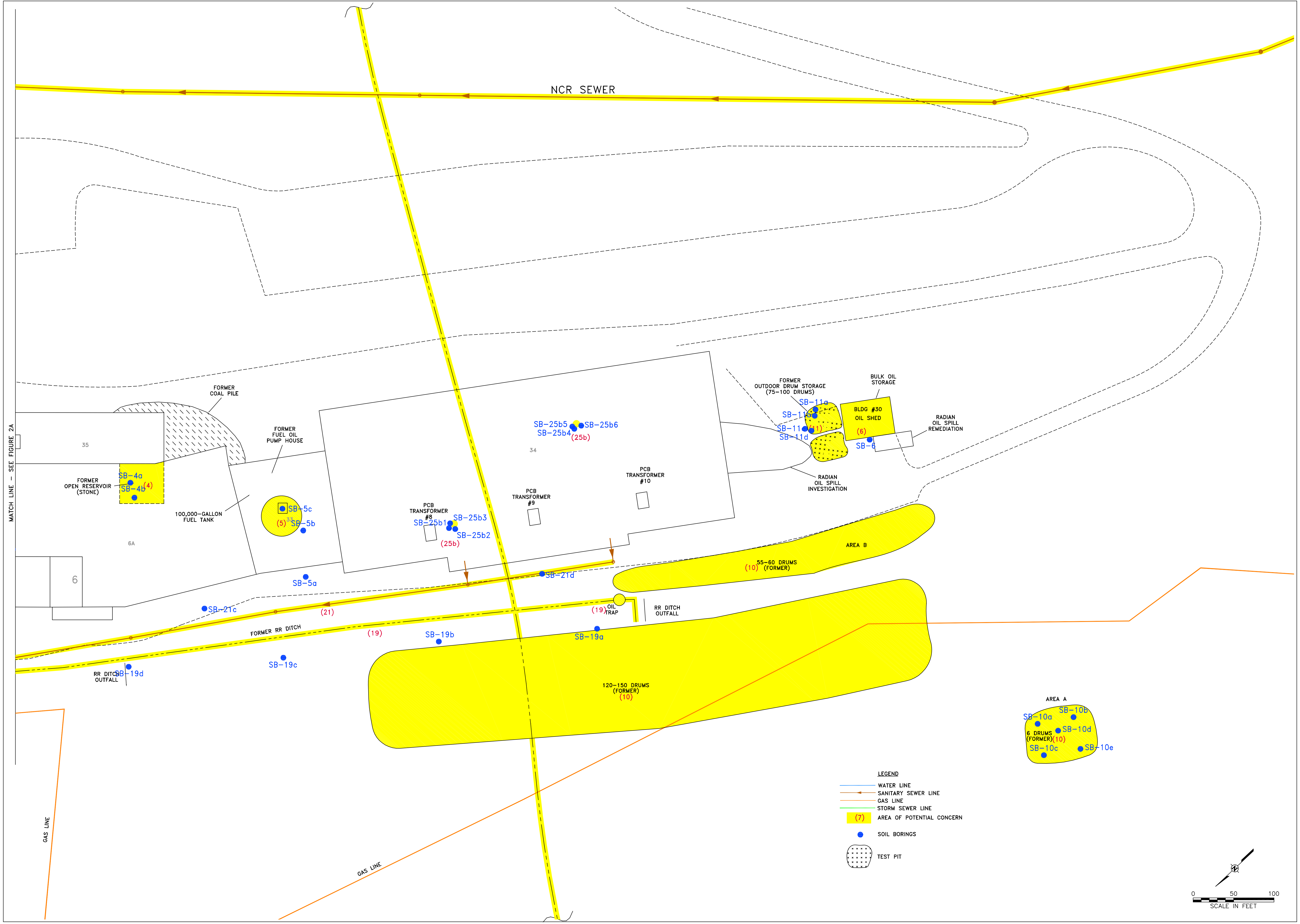

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FIGURE 4

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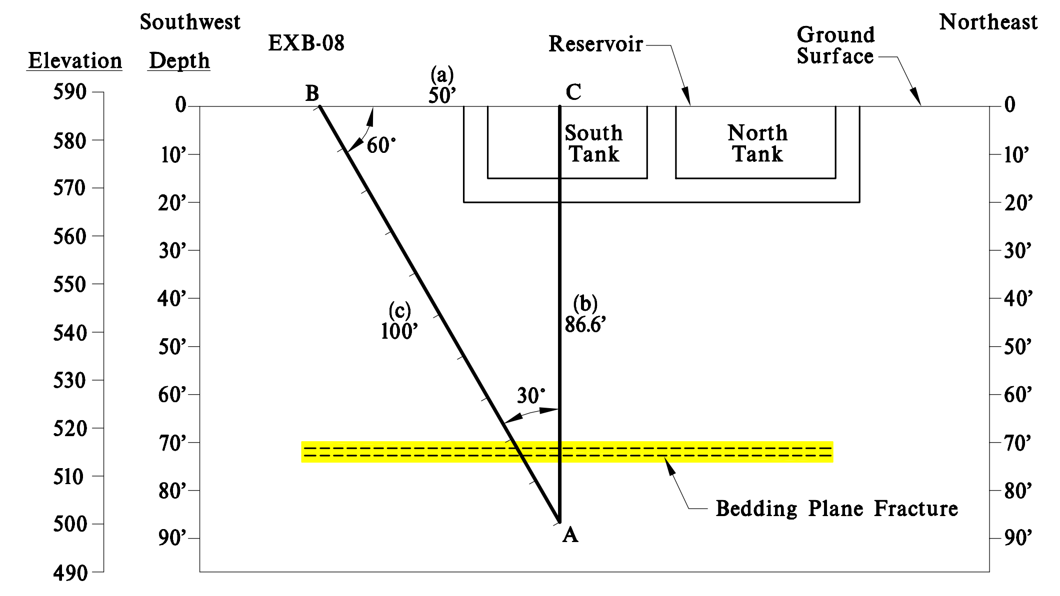

Fire Water Reservoir Section - Directional Boring Detail

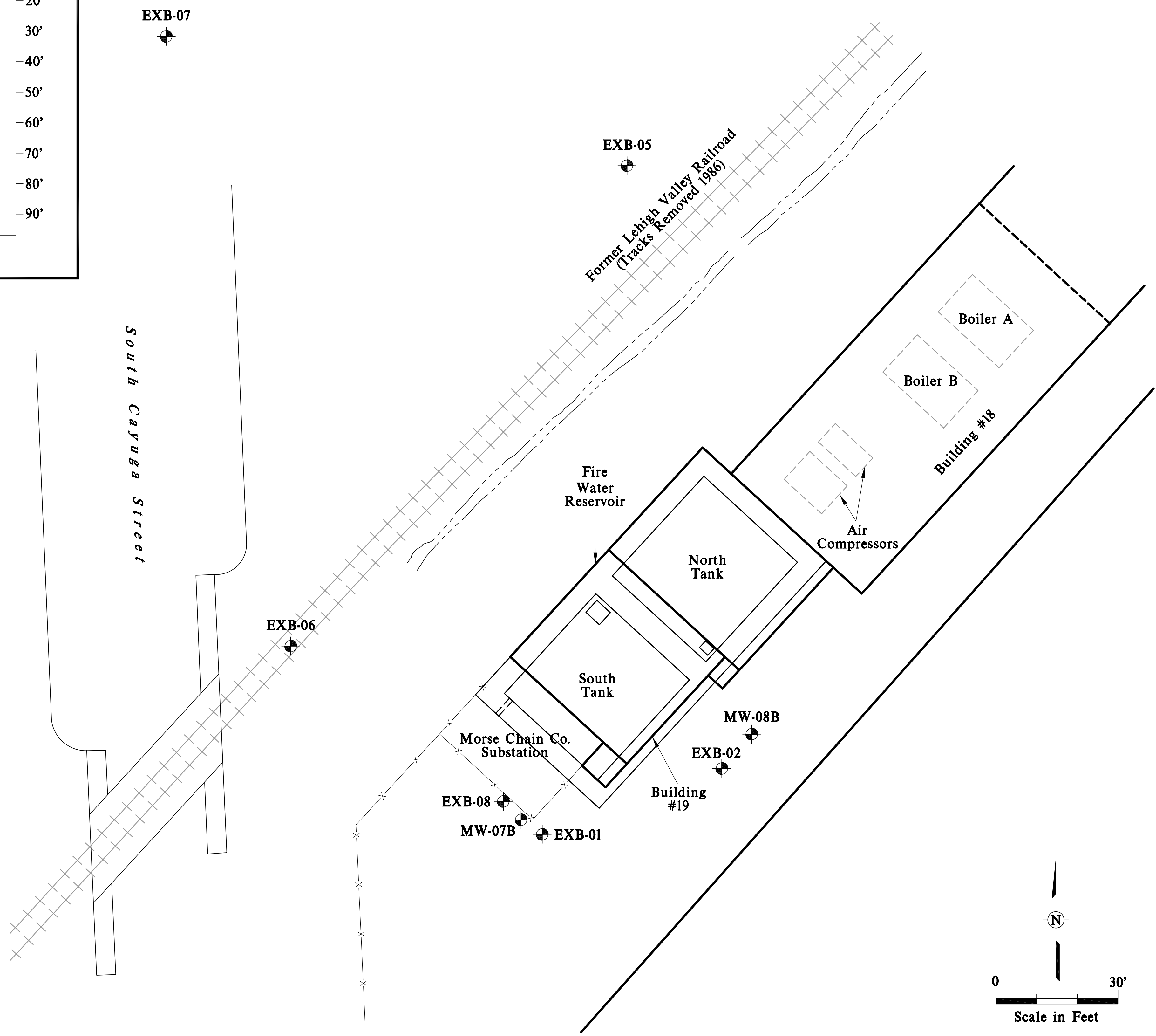

Figure 5
Exploratory Boring and Monitoring Well Locations - Fire Water Reservoir
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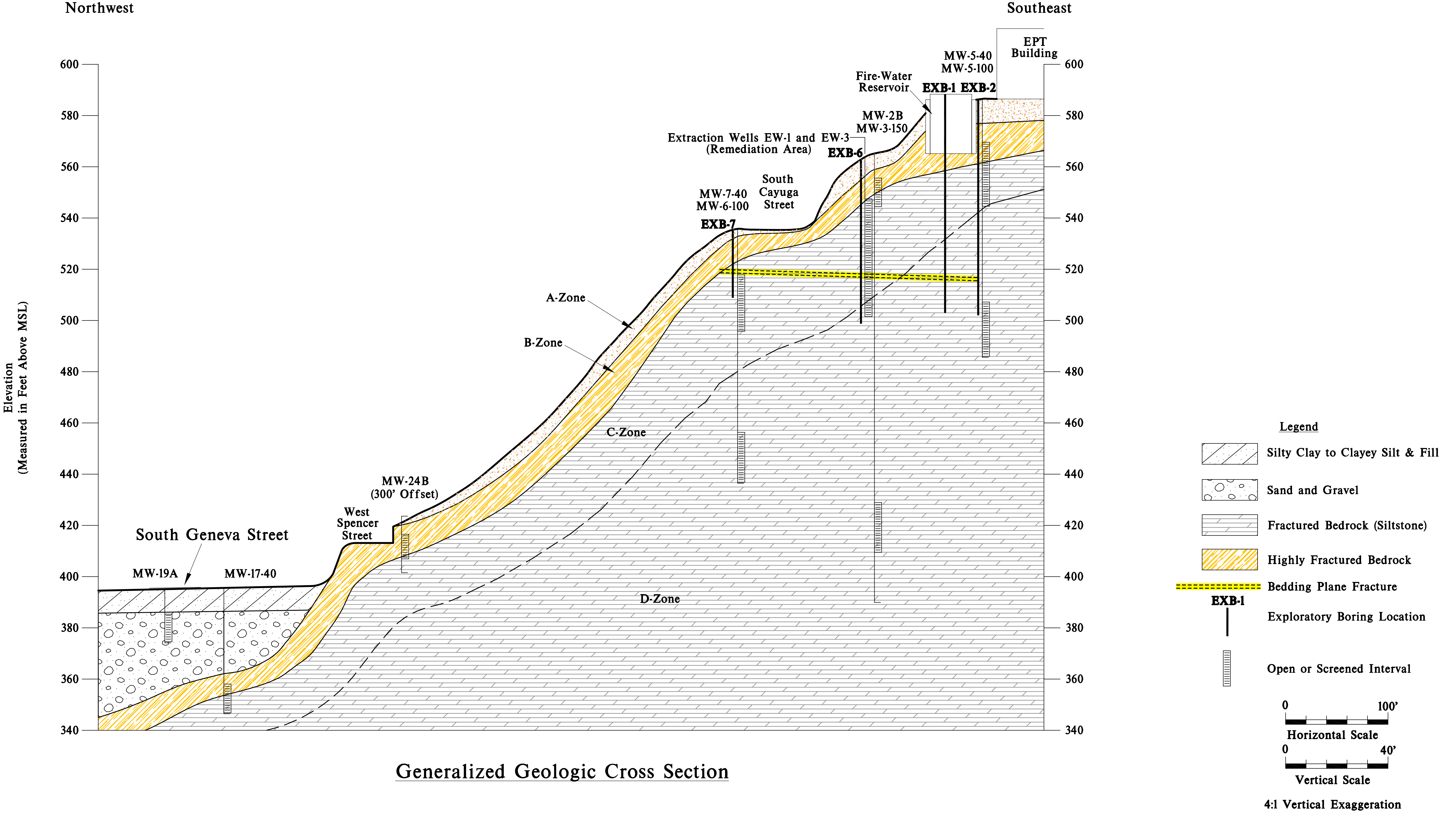

Generalized Geologic Cross Section

Figure 6
Site Conceptual Model and Generalized Geologic Cross-Section
Emerson Power Transmission
Ithica, New York

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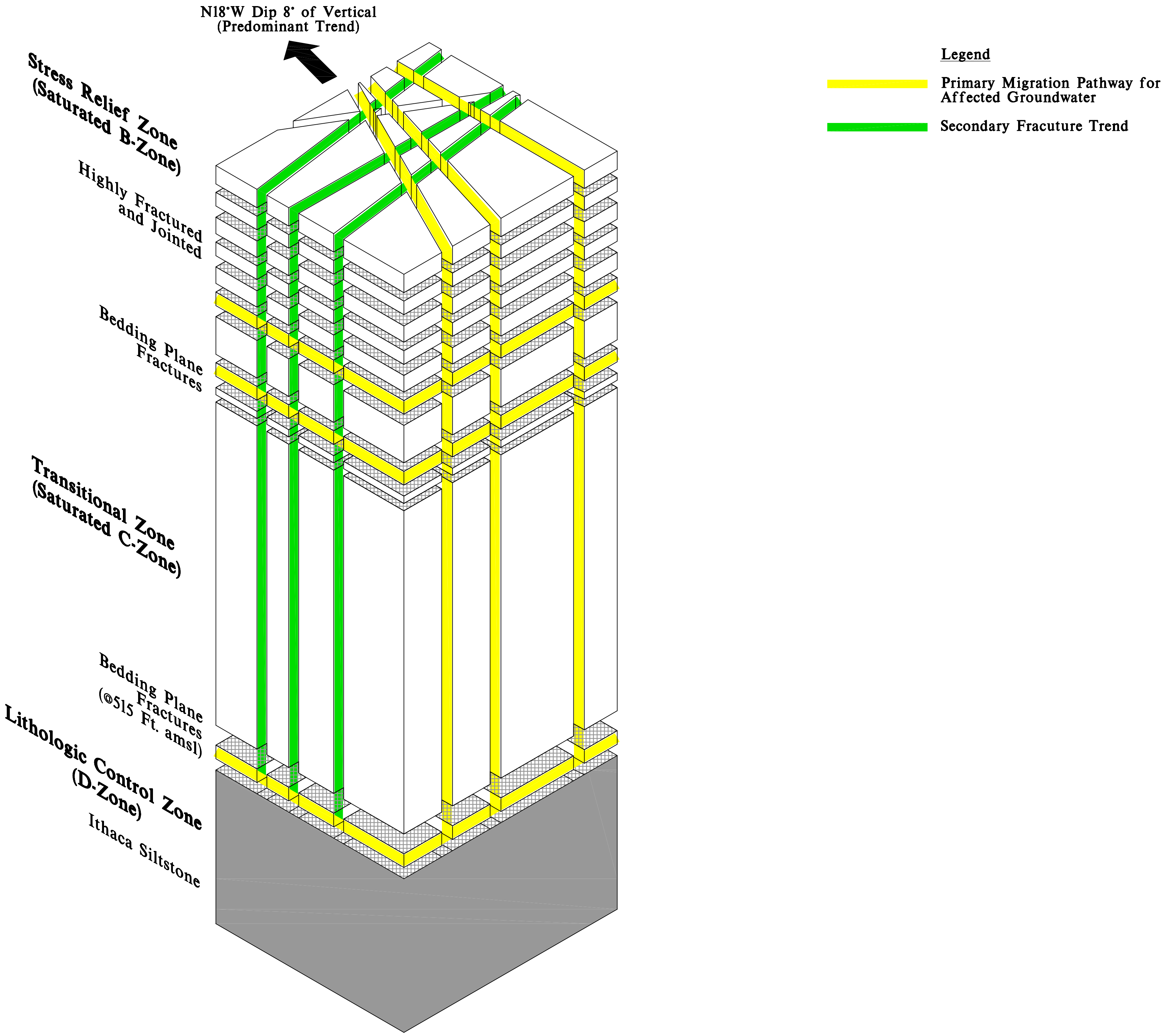

Conceptual Block Diagram
Groundwater Transport Mechanisms
(Vertical Joints and Horizontal Bedding Plane Fractures)

Figure 7
Fire Water Reservoir Area Conceptual Model
Groundwater Transport Mechanisms
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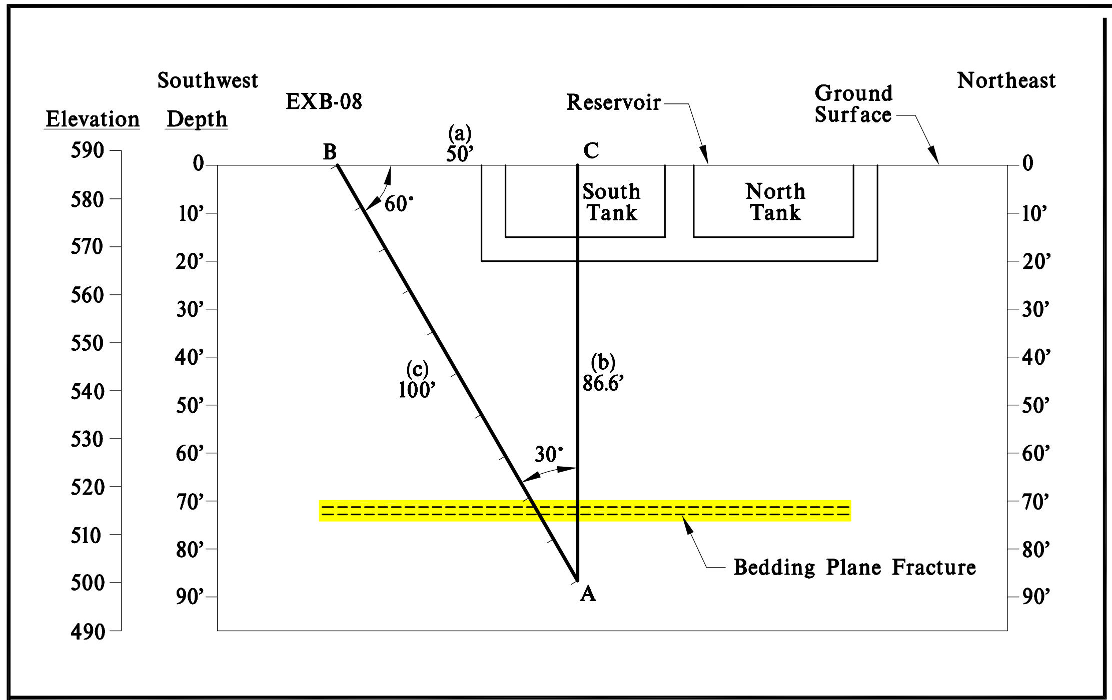
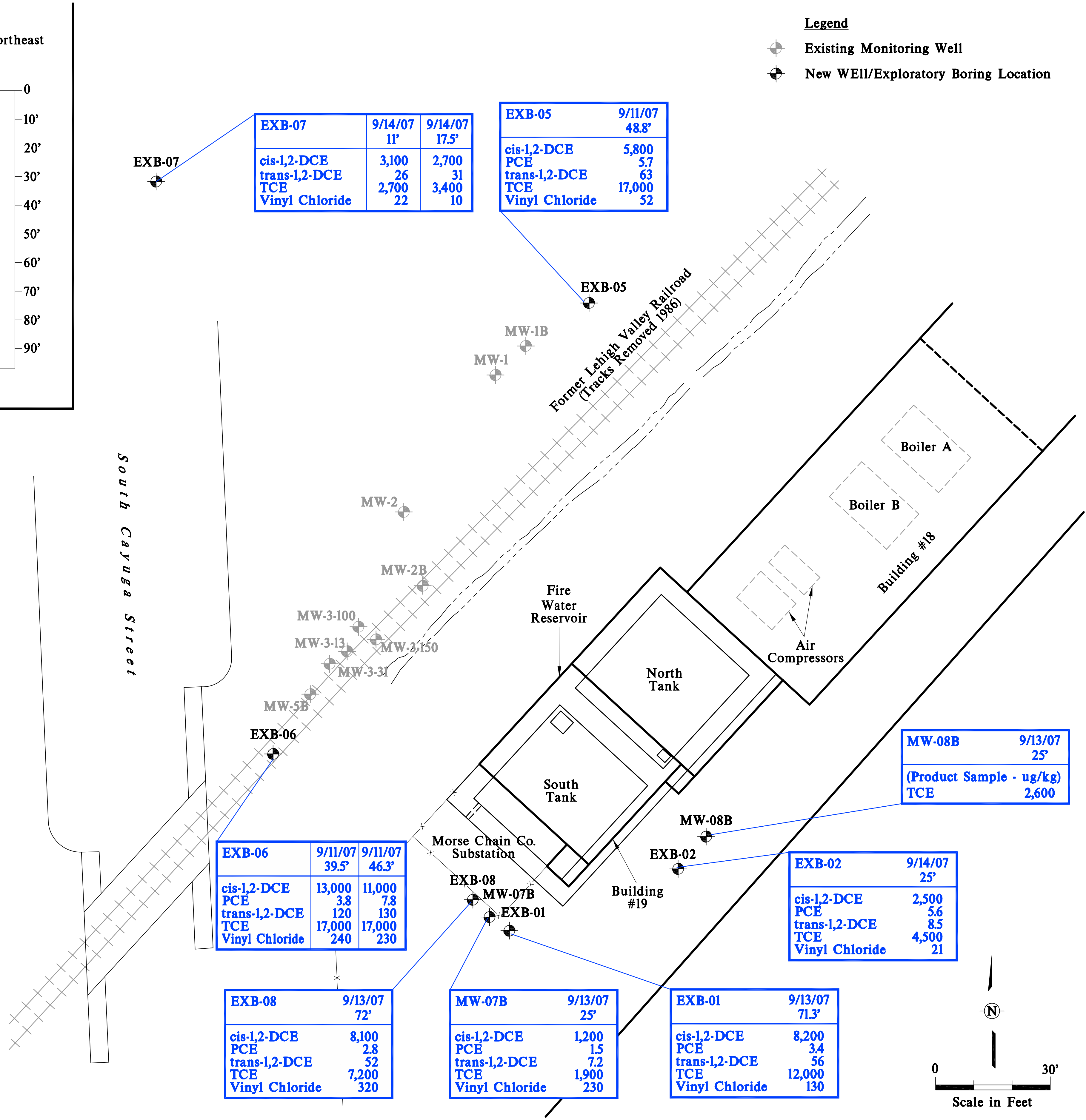


Fire Water Reservoir Section - Directional Boring Detail

Notes: 1. EXB-08 Groundwater Sample Collected at 82.25' btoc, Which Corresponds to a Depth of 72 Feet bgs.

2. Groundwater Results Reported in ug/L.



EXB-07	9/14/07 11'	9/14/07 17.5'
cis-1,2-DCE	3,100	2,700
trans-1,2-DCE	26	31
TCE	2,700	3,400
Vinyl Chloride	22	10

EXB-05	9/11/07 48.8'
cis-1,2-DCE	5,800
PCE	5.7
trans-1,2-DCE	63
TCE	17,000
Vinyl Chloride	52

MW-08B	9/13/07 25'
(Product Sample - ug/kg)	
TCE	2,600

EXB-06	9/11/07 39.5'	9/11/07 46.3'
cis-1,2-DCE	13,000	11,000
PCE	3.8	7.8
trans-1,2-DCE	120	130
TCE	17,000	17,000
Vinyl Chloride	240	230

EXB-02	9/14/07 25'
cis-1,2-DCE	2,500
PCE	5.6
trans-1,2-DCE	8.5
TCE	4,500
Vinyl Chloride	21

EXB-08	9/13/07 72'
cis-1,2-DCE	8,100
PCE	2.8
trans-1,2-DCE	52
TCE	7,200
Vinyl Chloride	320

MW-07B	9/13/07 25'
cis-1,2-DCE	1,200
PCE	1.5
trans-1,2-DCE	7.2
TCE	1,900
Vinyl Chloride	230

EXB-01	9/13/07 71.3'
cis-1,2-DCE	8,200
PCE	3.4
trans-1,2-DCE	56
TCE	12,000
Vinyl Chloride	130

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Figure 8
Fire Water Reservoir Groundwater Sampling Results
Emerson Power Transmission
Ithaca, New York

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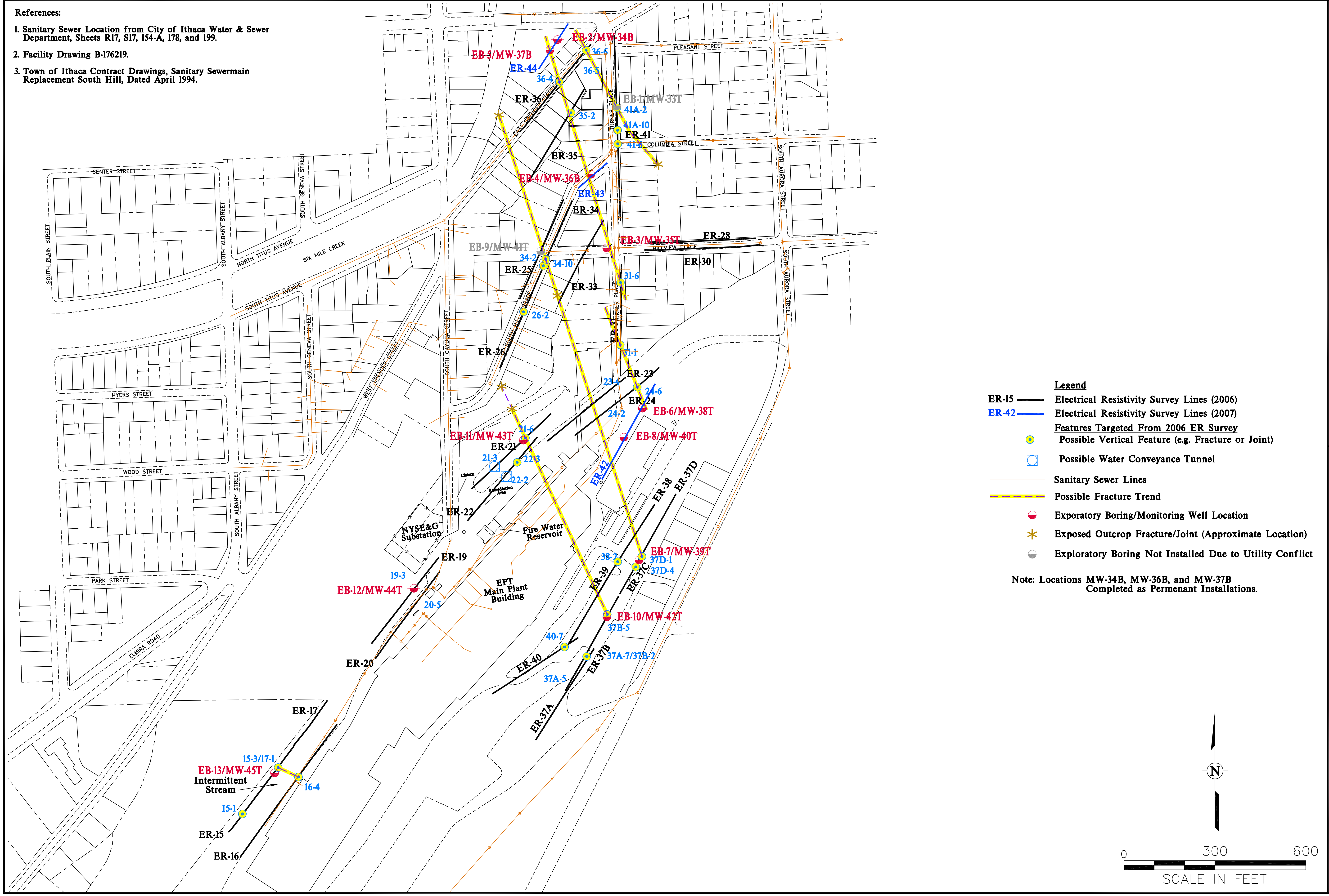
References:

1. Sanitary Sewer Location from City of Ithaca Water & Sewer Department, Sheets R17, S17, 154-A, 178, and 199.
2. Facility Drawing B-176219.
3. Town of Ithaca Contract Drawings, Sanitary Sewermain Replacement South Hill, Dated April 1994.



Legend

ER-15 ▬	Electrical Resistivity Survey Lines (2006)
ER-42 ▬	Electrical Resistivity Survey Lines (2007)
	Features Targeted From 2006 ER Survey
◉	Possible Vertical Feature (e.g. Fracture or Joint)
▢	Possible Water Conveyance Tunnel
─	Sanitary Sewer Lines
‒ ‒ ‒	Possible Fracture Trend
●	Exporatory Boring/Monitoring Well Location
✳	Exposed Outcrop Fracture/Joint (Approximate Location)
●	Exploratory Boring Not Installed Due to Utility Conflict

Note: Locations MW-34B, MW-36B, and MW-37B Completed as Permenant Installations.

Figure 9

Exploratory Boring/Monitoring Well Locations
Emerson Power Transmission
Ithaca, New York

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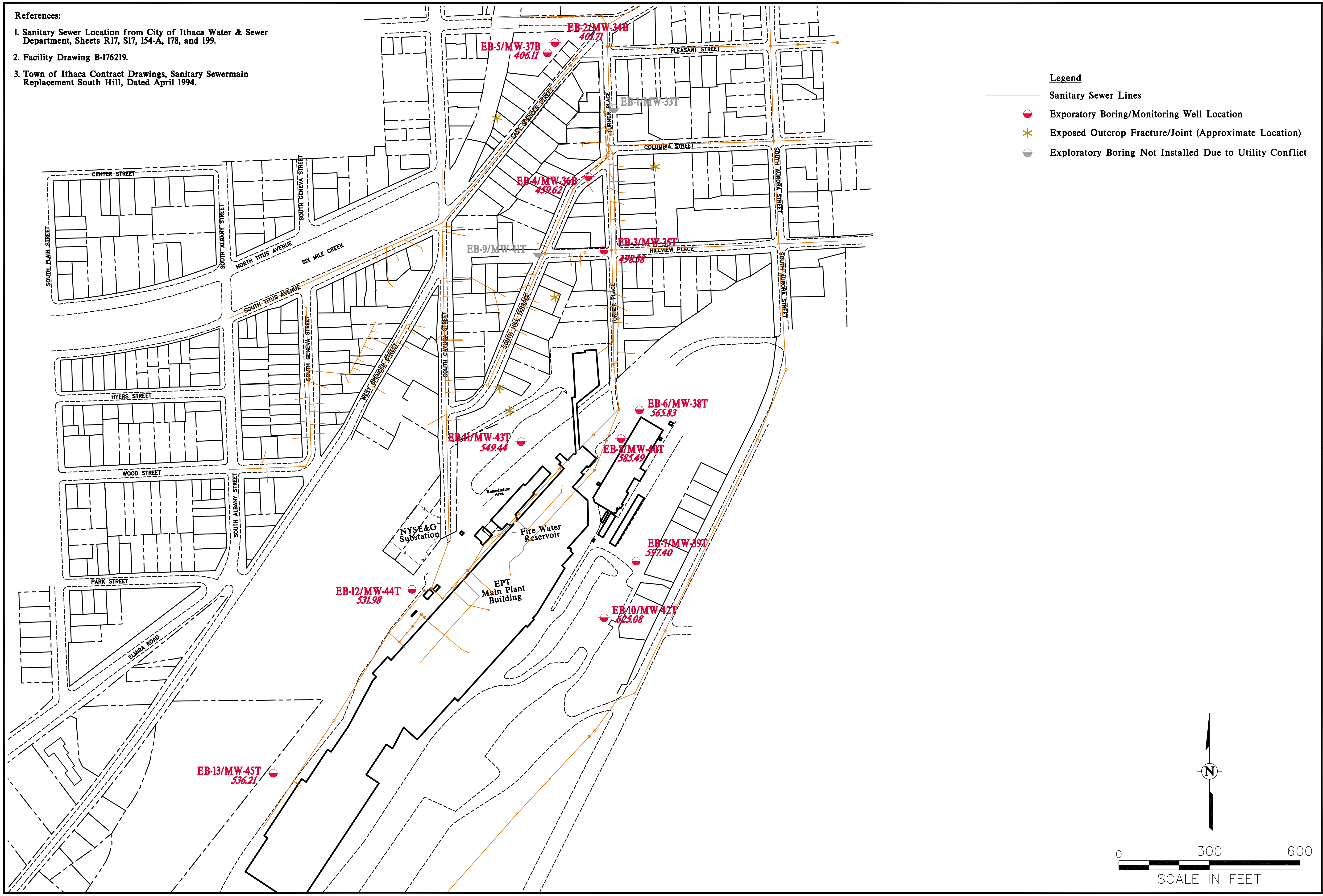

References:

1. Sanitary Sewer Location from City of Ithaca Water & Sewer Department, Sheets R17, S17, 154-A, 178, and 199.
2. Facility Drawing B-176219.
3. Town of Ithaca Contract Drawings, Sanitary Sewermain Replacement South Hill, Dated April 1994.

Legend

—	Sanitary Sewer Lines
●	Exporatory Boring/Monitoring Well Location
✳	Exposed Outcrop Fracture/Joint (Approximate Location)
●	Exploratory Boring Not Installed Due to Utility Conflict

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Figure 10
Groundwater Elevation Map (October 2007)
Emerson Power Transmission
Ithaca, New York

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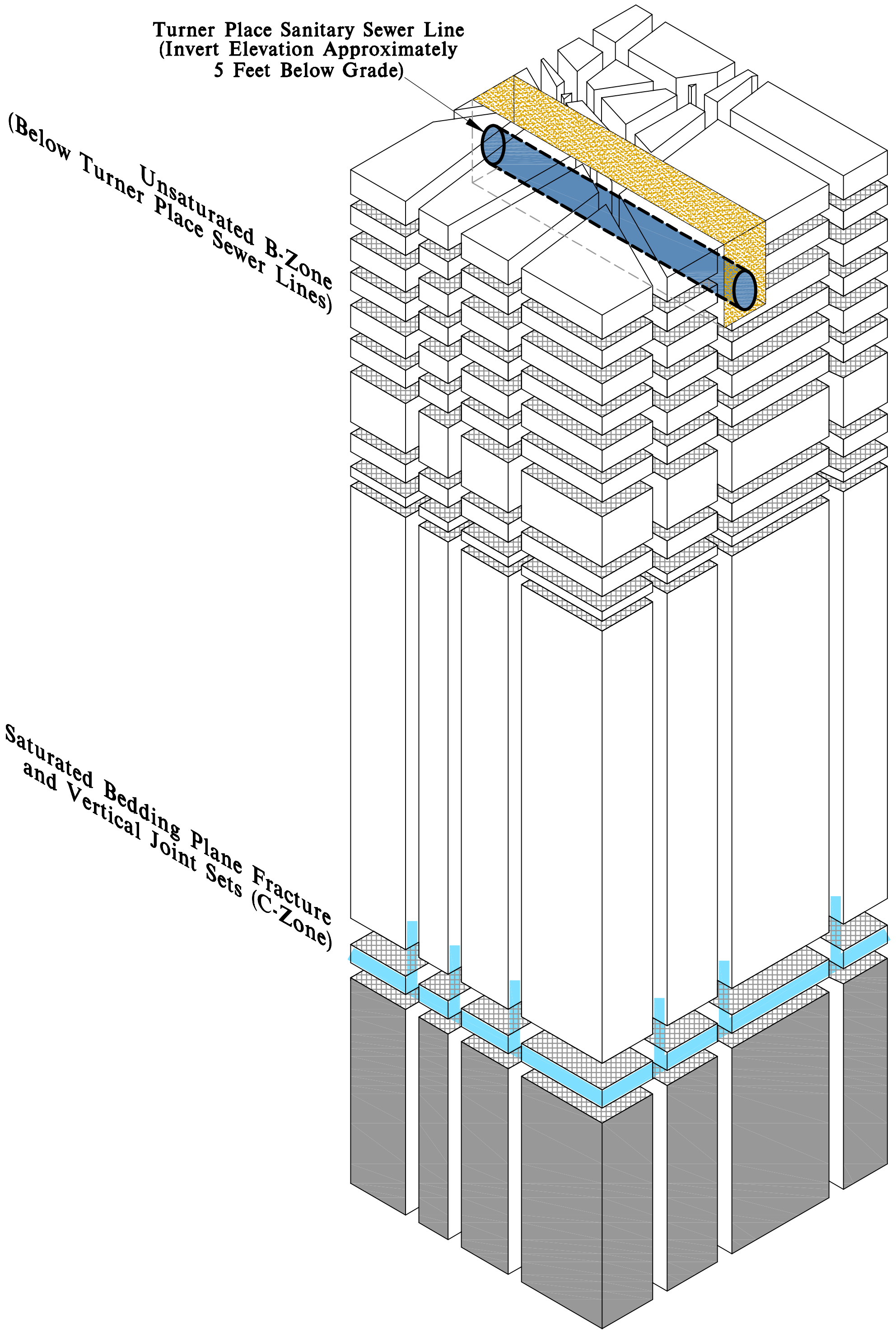

Conceptual Block Diagram

Sanitary Sewer and Transport Pathways Between
Hillview Place and Columbia Street

Legend

🟦 Saturated Conditions Encountered During Drilling

Figure 11
Turner Place (South Hill) Conceptual Model
Sanitary Sewer Transport Pathways
Emerson Power Transmission
Ithica, New York

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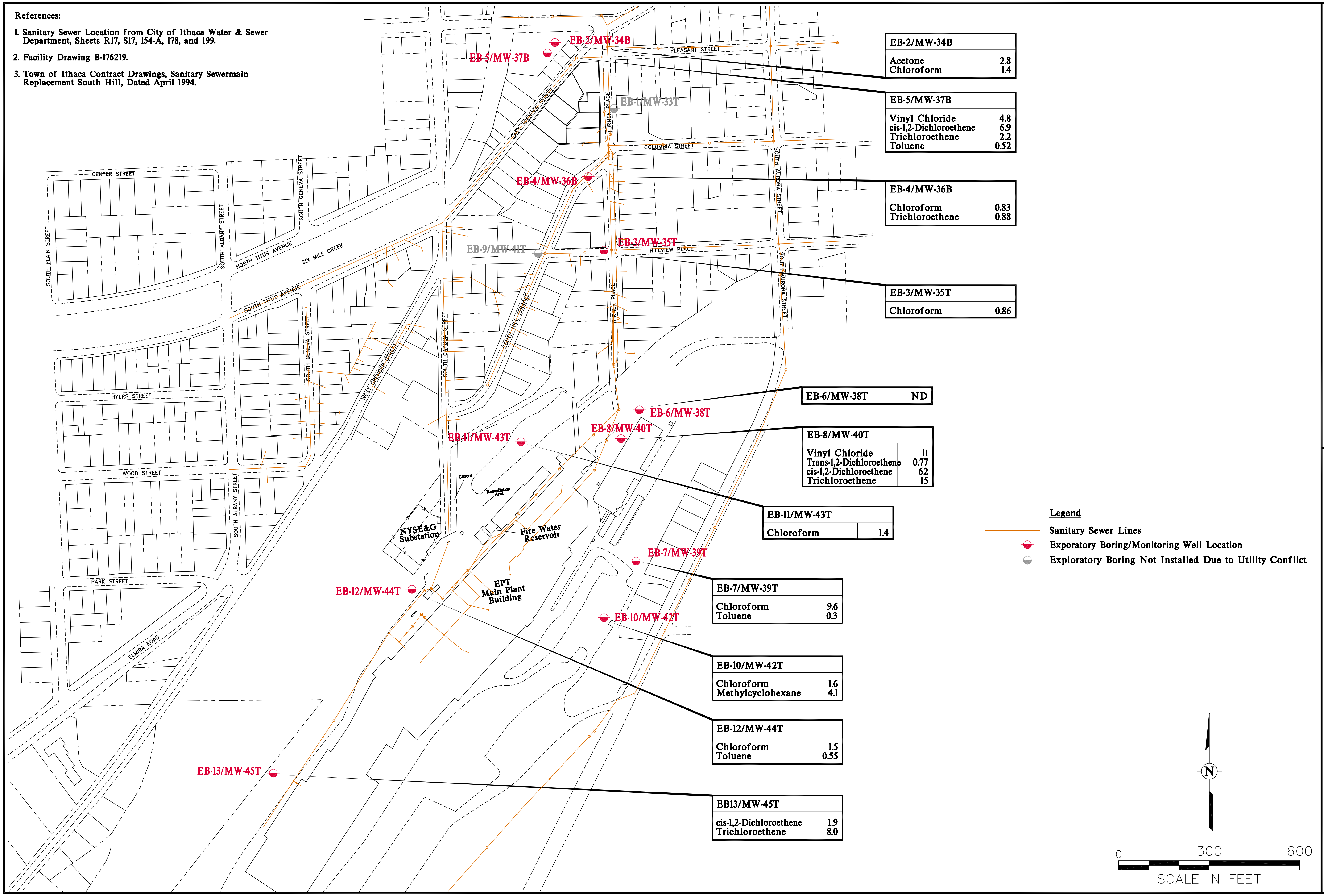
127491299.DWG

References:

1. Sanitary Sewer Location from City of Ithaca Water & Sewer Department, Sheets R17, S17, 154-A, 178, and 199.
2. Facility Drawing B-176219.
3. Town of Ithaca Contract Drawings, Sanitary Sewermain Replacement South Hill, Dated April 1994.



EB-2/MW-34B	
Acetone	2.8
Chloroform	1.4

EB-5/MW-37B	
Vinyl Chloride	4.8
cis-1,2-Dichloroethene	6.9
Trichloroethene	2.2
Toluene	0.52

EB-4/MW-36B	
Chloroform	0.83
Trichloroethene	0.88

EB-3/MW-35T	
Chloroform	0.86

EB-6/MW-38T	ND

EB-8/MW-40T	
Vinyl Chloride	11
Trans-1,2-Dichloroethene	0.77
cis-1,2-Dichloroethene	62
Trichloroethene	15

EB-11/MW-43T	
Chloroform	1.4

EB-7/MW-39T	
Chloroform	9.6
Toluene	0.3

EB-10/MW-42T	
Chloroform	1.6
Methylcyclohexane	4.1

EB-12/MW-44T	
Chloroform	1.5
Toluene	0.55

EB13/MW-45T	
cis-1,2-Dichloroethene	1.9
Trichloroethene	8.0

Legend

—	Sanitary Sewer Lines
●	Exporatory Boring/Monitoring Well Location
●	Exploratory Boring Not Installed Due to Utility Conflict

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Figure 12
Exploratory Boring/Monitoring Well Sample Results (October 2007)
Emerson Power Transmission
Ithaca, New York

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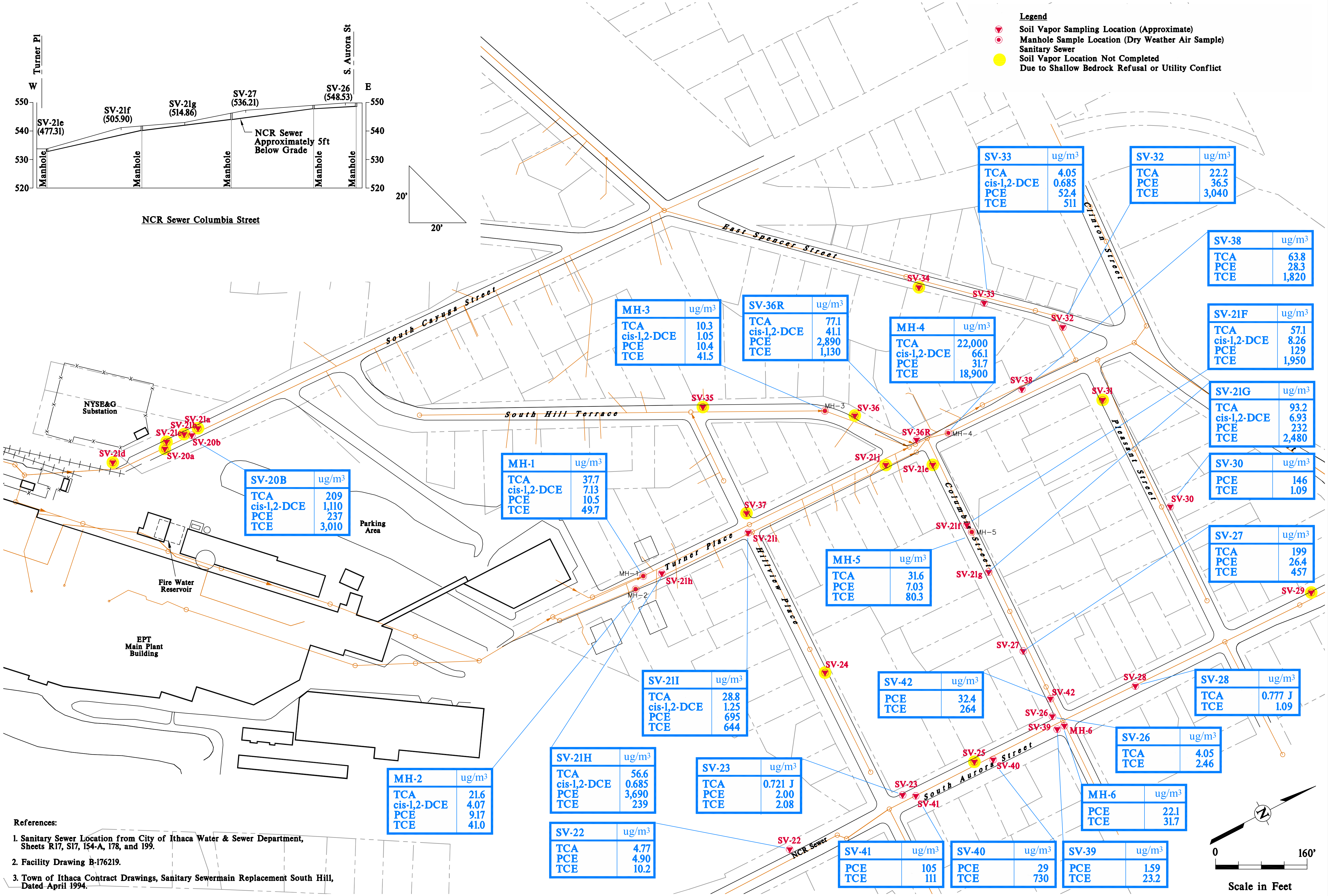

SV-33	ug/m3
TCA	4.05
cis-1,2-DCE	0.685
PCE	52.4
TCE	511

SV-32	ug/m3
TCA	22.2
PCE	36.5
TCE	3,040

SV-38	ug/m3
TCA	63.8
PCE	28.3
TCE	1,820

SV-21F	ug/m3
TCA	57.1
cis-1,2-DCE	8.26
PCE	129
TCE	1,950

SV-21G	ug/m3
TCA	93.2
cis-1,2-DCE	6.93
PCE	232
TCE	2,480

SV-30	ug/m3
PCE	146
TCE	1.09

SV-27	ug/m3
TCA	199
PCE	26.4
TCE	457

MH-3	ug/m3
TCA	10.3
cis-1,2-DCE	1.05
PCE	10.4
TCE	41.5

SV-36R	ug/m3
TCA	77.1
cis-1,2-DCE	41.1
PCE	2,890
TCE	1,130

MH-4	ug/m3
TCA	22,000
cis-1,2-DCE	66.1
PCE	31.7
TCE	18,900

SV-20B	ug/m3
TCA	209
cis-1,2-DCE	1,110
PCE	237
TCE	3,010

MH-1	ug/m3
TCA	37.7
cis-1,2-DCE	7.13
PCE	10.5
TCE	49.7

MH-5	ug/m3
TCA	31.6
PCE	7.03
TCE	80.3

SV-21I	ug/m3
TCA	28.8
cis-1,2-DCE	1.25
PCE	695
TCE	644

SV-42	ug/m3
PCE	32.4
TCE	264

SV-28	ug/m3
TCA	0.777 J
TCE	1.09

SV-26	ug/m3
TCA	4.05
TCE	2.46

MH-2	ug/m3
TCA	21.6
cis-1,2-DCE	4.07
PCE	9.17
TCE	41.0

SV-21H	ug/m3
TCA	56.6
cis-1,2-DCE	0.685
PCE	3,690
TCE	239

SV-23	ug/m3
TCA	0.721 J
PCE	2.00
TCE	2.08

MH-6	ug/m3
PCE	22.1
TCE	31.7

SV-22	ug/m3
TCA	4.77
PCE	4.90
TCE	10.2

SV-41	ug/m3
PCE	105
TCE	111

SV-40	ug/m3
PCE	29
TCE	730

SV-39	ug/m3
PCE	1.59
TCE	23.2

References:

1. Sanitary Sewer Location from City of Ithaca Water & Sewer Department, Sheets R17, S17, 154-A, 178, and 199.
2. Facility Drawing B-176219.
3. Town of Ithaca Contract Drawings, Sanitary Sewermain Replacement South Hill, Dated April 1994.

Figure 13
Soil Vapor Point Locations
Emerson Power Transmission
Ithaca, New York

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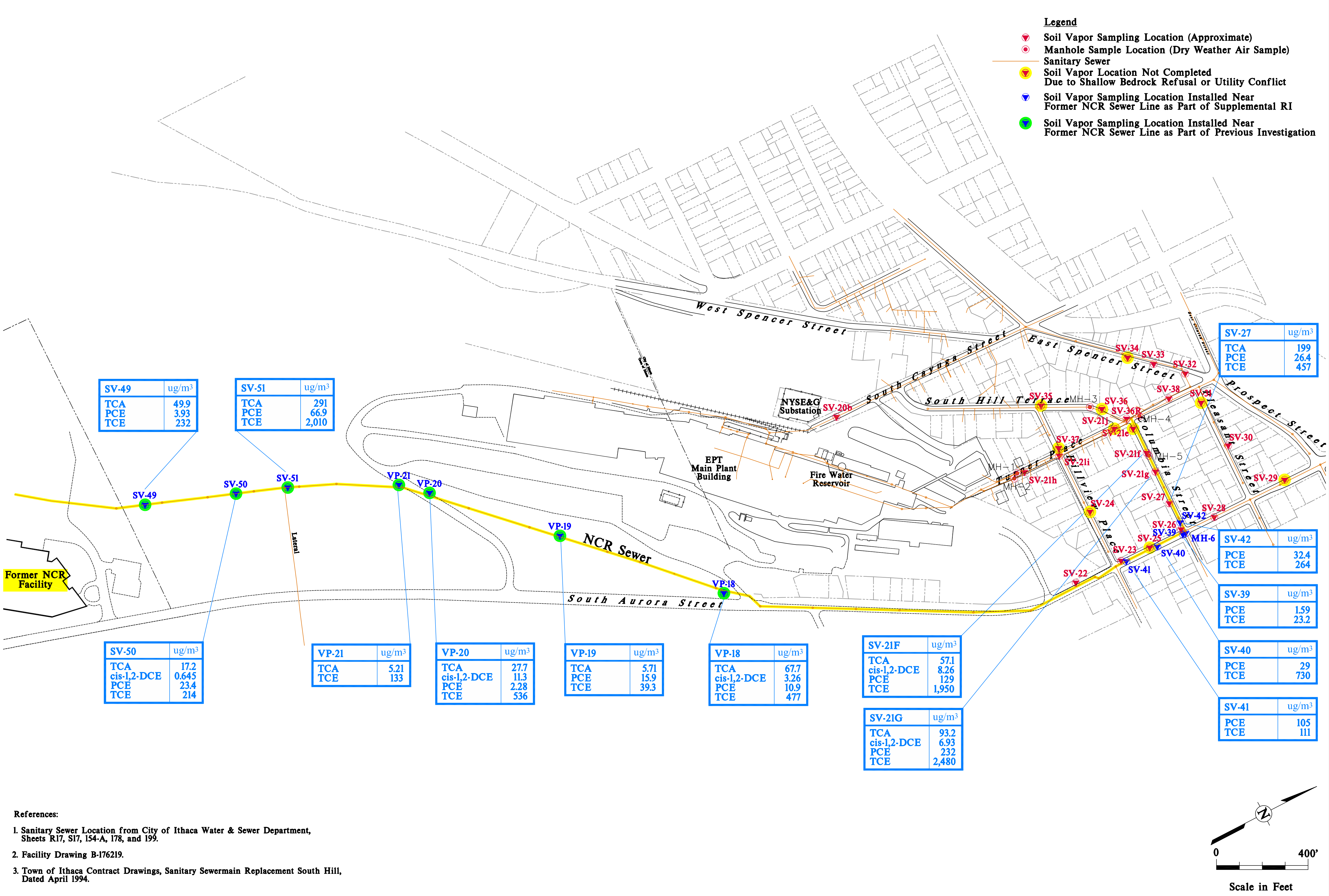

SV-49	ug/m3
TCA	49.9
PCE	3.93
TCE	232

SV-51	ug/m3
TCA	291
PCE	66.9
TCE	2,010

SV-50	ug/m3
TCA	17.2
cis-1,2-DCE	0.645
PCE	23.4
TCE	214

VP-21	ug/m3
TCA	5.21
TCE	133

VP-20	ug/m3
TCA	27.7
cis-1,2-DCE	11.3
PCE	2.28
TCE	536

VP-19	ug/m3
TCA	5.71
PCE	15.9
TCE	39.3

VP-18	ug/m3
TCA	67.7
cis-1,2-DCE	3.26
PCE	10.9
TCE	477

SV-21F	ug/m3
TCA	57.1
cis-1,2-DCE	8.26
PCE	129
TCE	1,950

SV-21G	ug/m3
TCA	93.2
cis-1,2-DCE	6.93
PCE	232
TCE	2,480

SV-27	ug/m3
TCA	199
PCE	26.4
TCE	457

SV-42	ug/m3
PCE	32.4
TCE	264

SV-39	ug/m3
PCE	1.59
TCE	23.2

SV-40	ug/m3
PCE	29
TCE	730

SV-41	ug/m3
PCE	105
TCE	111

References:

1. Sanitary Sewer Location from City of Ithaca Water & Sewer Department, Sheets R17, S17, 154-A, 178, and 199.
2. Facility Drawing B-176219.
3. Town of Ithaca Contract Drawings, Sanitary Sewermain Replacement South Hill, Dated April 1994.

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Figure 14
Soil Vapor Point Locations - NCR Sewer Line Data
Emerson Power Transmission
Ithaca, New York

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Tables

Table 1

AOC Sampling Summary
Emerson Power Transmission Facility
Ithaca, New York

	Depth (ft)	VOCs	VOCs (STARS)	SVOCs	PAHs	PCBs	TAL metals	Cyanide	pH	Comments
AOC 1										
SB-1a	8-10	✓					✓			Total depth: 13.5'; sample above H20 at 8-10'
SB-1a		✓								*Water sample*
SB-1b	12-13.3	✓					✓			Total depth: 13.3'
SB-1c	8-9	✓					✓			Total depth: 13'; highest PID at 8-9'
SB-1d	11-12	✓					✓			Total depth: 14.2'; highest PID at 11-12'
SB-1d		✓								*Water sample*
AOC 2										
SB-2a	1.2-1.5	✓					✓			Only 1 jar submitted, enough sample??
SB-2b	3-4	✓					✓			
AOC 3										
SB-3a (4.5-5.5 ft)	4.5-5.5	✓		✓		✓	✓			
SB-3a (6-7 ft)	6-7	✓		✓		✓	✓			
SB-3b (7-8 ft)	7-8	✓		✓		✓	✓			
SB-3b (10-11 ft)	10-11	✓		✓		✓	✓			
SB-3c (7-8 ft)	7-8	✓		✓		✓	✓			Total depth: 12'; highest PID at 7-8'
SB-3c (11-12 ft)	11-12	✓		✓		✓	✓			Top of bedrock
AOC 4										
SB-4a	0.5-1	✓		✓		✓	✓			Only 1 jar submitted, enough sample??
SB-4b	7-8	✓		✓		✓	✓			Total depth 10'; highest unsaturated PID at 7-8'; free product
SB-4b		✓								*Water sample*
AOC 5										
SB-5a	13-13.5		✓		✓					
SB-5b	3-4		✓		✓					

Table 1

AOC Sampling Summary
Emerson Power Transmission Facility
Ithaca, New York

	Depth (ft)	VOCs	VOCs (STARS)	SVOCs	PAHs	PCBs	TAL metals	Cyanide	pH	Comments
SB-5c	4-4.5		✓		✓					
AOC 6										
SB-6	7-8		✓		✓					Total depth: 13'; highest PID at 7-8'
AOC 7										
SB-7a										Unable to access, did not sample
SB-7b										Unable to access, did not sample
SB-7c	1-2						✓	✓		
SB-7d	3-4						✓	✓		Total depth: 5'; highest PID at 3-4'
SB-7e	4-5						✓	✓		
SB-7f										Unable to access, did not sample
SB-7g	2.5-3						✓	✓		Total depth: 4'
AOC 8/9										
SB-8	3-3.5		✓		✓					
SB-9	5-6		✓		✓					
AOC 10										
SB-10a	0-0.5	✓		✓		✓	✓			hand augered
SB-10b	0-0.5	✓		✓		✓	✓			hand augered
SB-10c	0-0.5	✓		✓		✓	✓			hand augered
SB-10d	0-0.5	✓		✓		✓	✓			hand augered
SB-10e	0-0.5	✓		✓		✓	✓			hand augered
AOC 11 (test pits)										
SB-11a	3	✓			✓	✓				
SB-11b	3	✓			✓	✓				
SB-11c	4	✓			✓	✓				
SB-11d	4	✓			✓	✓				

Table 1

AOC Sampling Summary
Emerson Power Transmission Facility
Ithaca, New York

	Depth (ft)	VOCs	VOCs (STARS)	SVOCs	PAHs	PCBs	TAL metals	Cyanide	pH	Comments
AOC 12										
SB-12a	2-3.5	✓			✓	✓				
SB-12b	3.5-4.5	✓			✓	✓				Total depth: 14'; highest odor at 3.5-4.5'
SB-12b		✓								*Water sample*
AOC 13										
SB-13	6.5-7.5		✓		✓					
AOC 14										
SB-14	10-11.6		✓		✓					
AOC 15										
SB-15	20-24		✓				✓			Napthalene only; lead only, free product
AOC 16										
SB-16a (2 ft)	2								✓	
SB-16a (3 ft)	3								✓	
SB-16b (2 ft)	2								✓	
SB-16b (3 ft)	3								✓	
AOC 17										
SB-17	3.3-4		✓		✓					hand augered
AOC 18 (test pits)										
SB-18a	3.5-4	✓		✓		✓	✓			
SB-18b	3.5-4	✓		✓		✓	✓			
SB-18c	3.5-4	✓		✓		✓	✓			
SB-18d	3.5-4	✓		✓		✓	✓			

Table 1

AOC Sampling Summary
Emerson Power Transmission Facility
Ithaca, New York

	Depth (ft)	VOCs	VOCs (STARS)	SVOCs	PAHs	PCBs	TAL metals	Cyanide	pH	Comments
AOC 19										
SB-19a	3-4		✓		✓	✓				
SB-19b	3.5-4		✓		✓	✓				
SB-19c	3-4		✓		✓	✓				
SB-19d	3-4		✓		✓	✓				
SB-19e	3-4		✓		✓	✓				
AOC 20										*plus 2 soil vapor points @ AOC 20
SB-20a	1-1.5	✓			✓	✓	✓	✓		
SB-20b	0.5-1.3	✓			✓	✓	✓	✓		
SB-20c	0.8-1.3	✓			✓	✓	✓	✓		
SB-20d	0.5-1.5	✓			✓	✓	✓	✓		
AOC 21										
SB-21a	0.5-1.5	✓			✓	✓		✓		*plus soil vapor points
SB-21b	1.5-2.3	✓			✓	✓		✓		
SB-21c	5-7	✓			✓	✓		✓		Total depth: 8'
SB-21d	4-6	✓			✓	✓		✓		Total depth: 8'
AOC 22										
SB-22a	3-4	✓		✓		✓	✓			
SB-22b	3-4	✓		✓		✓	✓			
AOC 23										
SB-23a	1-1.7	✓		✓		✓	✓			hand augered
SB-23b	1-2.4	✓		✓		✓	✓			hand augered
SB-23c	3	✓		✓		✓	✓			

Table 1

AOC Sampling Summary
Emerson Power Transmission Facility
Ithaca, New York

	Depth (ft)	VOCs	VOCs (STARS)	SVOCs	PAHs	PCBs	TAL metals	Cyanide	pH	Comments
AOC 23 (continued)										
SB-23d	3	✓		✓		✓	✓			
SB-23e										No recovery, did not sample
SB-23f										Utility conflict, did not sample
AOC 24										*Fire water reservoir
n/a										
AOC 25										
SB-25a-1	1	✓								
SB-25a-2	2.5	✓								
SB-25a-3	1	✓								
SB-25b-1	0.8-1.5	✓								
SB-25b-2										No recovery, did not sample
SB-25b-3	0.8-1.2	✓								
SB-25b-4	0.5-1.2	✓								
SB-25b-5	0.8-1.5	✓								
SB-25b-6	0.5-1.2	✓								
SB-25c-1	1-2	✓					✓	✓		
SB-25c-2										No recovery, did not sample
SB-25c-3	1.2-1.7	✓					✓	✓		
SB-25d-1	1.5-2	✓								
SB-25d-2	2-3	✓								

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**	**SB-1a**	**SB-1b**	**SB-1c**	**SB-1d**	**SB-2a**	**SB-2b**	**SB-3a**	**SB-3a**	**SB-3b**	**SB-3b**	**SB-3c**	**SB-3c**
Sample Type														
Sampling Date			**08/21/07**	**08/21/07**	**08/21/07**	**08/21/07**	**08/29/07**	**08/29/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/27/07**
Depth (feet)			**8-10**	**12-13.3**	**8-9**	**11-12**	**1.2-1.5**	**3-4**	**4.5-5.5**	**6-7**	**7-8**	**10-11**	**7-8**	**11-12**
VOCs (µg/Kg) (a)														
Acetone	50	1,000,000	30 U (b)	25 U	11 J	710 U	23 J	8 J	27 U	25 U	27 U	27 U	28 U	26
2-Butanone	120	1,000,000	30 UJ	25 U	25 U	710 UJ	28 U	26 U	27 U	25 U	27 U	27 U	28 U	26
Carbon disulfide	NT	NT	2 J	1 J	2 J	150	2 J	2 J	5 U	5 U	5 U	5 U	6 U	5
cis-1,2-Dichloroethylene	250	1,000,000	6 U	2 J	5 U	130 J	6 U	5 U	5 U	5 U	5 U	5 U	6 U	5
Methyl Acetate	NT	NT	6 U	5 U	5 U	210	6 U	5 U	5 U	5 U	5 U	5 U	6 U	5
Methylene chloride	50	1,000,000	27	23	11	170 (c)	18	18	32	30	56	55	42	36
Tetrachloroethene	1,300	300,000	1 J	2 J	2 J	140 U	6 U	5 U	5 U	5 U	5 U	5 U	6 U	5
Trichloroethene	470	400,000	12	28	6	73 J	6 U	5 U	5 U	5 U	5 U	5 U	6 U	5
Trichlorofluoromethane	NT	NT	6 UJ	5 U	5 U	140 UJ	6 U	5 U	5 U	5 U	5 U	5 U	6 U	5
Vinyl chloride	20	27,000	12 U	10 U	10 U	290	11 U	10 U	11 U	10 U	11 U	11 U	11 U	10
SVOCs/PAHs (µg/Kg)														
Acenaphthene	98,000	1,000,000	NA	NA	NA	NA	NA	NA	190 U	2,100	210 U	200 U	190 U	180
Acenaphthylene	107,000	1,000,000	NA	NA	NA	NA	NA	NA	190 U	100 J	210 U	200 U	190 U	180
Anthracene	1,000,000	1,000,000	NA	NA	NA	NA	NA	NA	14 J	5,600	210 U	200 U	190 U	180
Benzo(a)anthracene	1,000	11,000	NA	NA	NA	NA	NA	NA	110 J	**14,000**	16 J	20 J	19 J	8
Benzo(a)pyrene	22,000	1,100	NA	NA	NA	NA	NA	NA	86 J	**10,000**	13 J	13 J	16 J	180
Benzo(b)fluoranthene	1,700	11,000	NA	NA	NA	NA	NA	NA	170 J	**14,000**	17 J	16 J	24 J	180
Benzo(ghi)perylene	1,000,000	1,000,000	NA	NA	NA	NA	NA	NA	80 J	8,300	12 J	12 J	21 J	180
Benzo(k)fluoranthene	1,700	110,000	NA	NA	NA	NA	NA	NA	190 U	4,400	210 U	200 U	11 J	180
Biphenyl	NT	NT	NA	NA	NA	NA	NA	NA	190 U	120 J	210 U	200 U	190 U	180
Bis(2-ethylhexyl)phthalate (BEHP)	NT	NT	NA	NA	NA	NA	NA	NA	87 J	1,900 U	210 U	190 J	190 U	78
Carbazole	NT	NT	NA	NA	NA	NA	NA	NA	8 J	3,600	210 U	200 U	190 U	180
Chrysene	1,000	110,000	NA	NA	NA	NA	NA	NA	100 J	12,000	210 U	10 J	14 J	180
Di-n-octyl phthalate	NT	NT	NA	NA	NA	NA	NA	NA	190 U	1,900 U	210 U	200 U	190 U	180
Dibenzo(a,h)anthracene	1,000,000	1,100	NA	NA	NA	NA	NA	NA	26 J	**2,200**	210 U	200 U	190 U	180
Dibenzofuran	210,000	1,000,000	NA	NA	NA	NA	NA	NA	190 U	1,300 J	210 U	200 U	190 U	180
Fluoranthene	1,000,000	1,000,000	NA	NA	NA	NA	NA	NA	150 J	27,000	16 J	32 J	26 J	8
Fluorene	386,000	1,000,000	NA	NA	NA	NA	NA	NA	190 U	2,200	210 U	200 U	190 U	180
Indeno(1,2,3-cd)pyrene	8,200	11,000	NA	NA	NA	NA	NA	NA	66 J	7,200	11 J	10 J	15 J	180
2-Methylnaphthalene	NT	NT	NA	NA	NA	NA	NA	NA	16 J	440 J	210 U	200 U	190 U	180
Naphthalene	12,000	1,000,000	NA	NA	NA	NA	NA	NA	8 J	730 J	210 U	200 U	190 U	180
Phenanthrene	1,000,000	1,000,000	NA	NA	NA	NA	NA	NA	81 J	22,000	210 U	21 J	14 J	180
Pyrene	1,000,000	1,000,000	NA	NA	NA	NA	NA	NA	120 J	23,000	15 J	25 J	24 J	180
Total PAHs	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	NYSDEC Subpart 375-6 Protection of Groundwater	NYSDEC Subpart 375-6 Industrial	SB-1a	SB-1b	SB-1c	SB-1d	SB-2a	SB-2b	SB-3a	SB-3a	SB-3b	SB-3b	SB-3c	SB-3c
Sample Type														
Sampling Date			**08/21/07**	**08/21/07**	**08/21/07**	**08/21/07**	**08/29/07**	**08/29/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/27/07**
Depth (feet)			**8-10**	**12-13.3**	**8-9**	**11-12**	**1.2-1.5**	**3-4**	**4.5-5.5**	**6-7**	**7-8**	**10-11**	**7-8**	**11-12**
PCBs (µg/Kg)														
Aroclor 1254	NT	NT	NA	NA	NA	NA	NA	NA	18 U	19 U	20 U	19 U	19 U	18
Aroclor 1260	NT	NT	NA	NA	NA	NA	NA	NA	18 U	19 U	20 U	19 U	19 U	18
Aroclor 1268	NT	NT	NA	NA	NA	NA	NA	NA	18 U	19 U	20 U	19 U	19 U	18
Metals (mg/kg)														
Aluminum	NT	NT	13,500	11,600	10,400	9,900	10,700	8,240	11,200 E	8,090 E	9,280 E	10,700 E	8,090 E	10,600
Arsenic	16	16	**24**	10	7.9	4.8	**61.8**	**16.9**	5.5	13.6	5.7	4.6	4.9	4.4
Barium	820	10,000	108	109	131	55.1	109	119	93 EN	118 EN	83.1 EN	59.6 EN	54.6 EN	57.7
Beryllium	47	2,700	0.64	0.47	0.48	0.51	0.62	0.5	0.49	0.39	0.34	0.36	0.44	0.45
Calcium	NT	NT	1,390	1,560	3,840	1,170	47,600	51,700	29,000 *	11,300 *	1,470 *	861 *	1,390 *	1,170
Chromium	NT	NT	90.1	26.9	17.9	14.8	53.1	25.8	15.1 E	32 E	12.8 E	16.4 E	12.5 E	14.7
Cobalt	NT	NT	12.9	13.4	13.3	10	17.9	9.8	8.6 E	10.3 E	7.5 E	8.3 E	7.2 E	10.3
Copper	1,720	10,000	30.4	21.4	20.2	15.6	530	66	40.3 N	66.5 N	15.9 N	16 N	12.8 N	14.1
Iron	NT	NT	63,800	29,400	32,800	20,900	30,100	20,400	19,000 E	47,400 E	16,600 E	20,000 E	14,100 E	18,700
Lead	450	3,900	50	28.4	18.1	11.3	110	55.6	23.8 EN*	147 EN*	42.1 EN*	8.7 EN*	116 EN*	13
Magnesium	NT	NT	4,540	4,030	3,910	3,040	5,790	3,810	3,530 E	2,920 E	2,350 E	3,200 E	2,080 E	2,980
Manganese	2,000	10,000	352	525	458	1150	471	373	477 E	662 E	544 E	310 E	446 E	526
Mercury	0.73	5.7	0.206	0.021	0.153	0.029	0.078	0.025	0.049	0.123	0.045	0.026	0.025	0.02
Nickel	130	10,000	56.3	47.2	30.1	20.7	394	49.1	19 E	45.6 E	15.8 E	20.5 E	14.2 E	17.8
Potassium	NT	NT	1,040	690	769	709	1,140	1,100	958 EN	694 EN	614 EN	805 EN	701 EN	753
Vanadium	NT	NT	21.2	16.1	15.4	17.6	17.7	15.8	19.6 E	18.6 E	14.9 E	18.2 E	14.7 E	18.3
Zinc	2,480	10,000	69	58.2	50.3	46.4	72	95.3	55.7 EN	119 EN	51.7 EN	58.7 EN	46.3 EN	49.4
Wet Chemistry (mg/kg)														
Cyanide	40	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Leachable pH	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**		**SB-4a**	**SB-4b**	**SB-5a**	**SB-5b**	**SB-5c**	**SB-6**	**SB-7c**	**SB-7d**	**SB-7e**	**SB-7g**	**SB-8**	**SB-9**
Sample Type															
Sampling Date				**08/29/07**	**08/29/07**	**08/22/07**	**08/22/07**	**08/22/07**	**08/22/07**	**08/23/07**	**08/23/07**	**08/23/07**	**08/22/07**	**08/23/07**	**08/27/07**
Depth (feet)				**0.5-1**	**7-8**	**13-13.5**	**3-4**	**4-4.5**	**7-8**	**1-2**	**3-4**	**4-5**	**2.5-3**	**3-3.5**	**5-6**
VOCs (µg/Kg) (a)															
Acetone	50	1,000,000	U	12 J	26 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	120	1,000,000	U	25 U	26 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NT	NT	U	5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	250	1,000,000	U	5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	NT	NT	U	5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	50	1,000,000		39	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1,300	300,000	U	1 J	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	470	400,000	U	5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NT	NT	U	5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	20	27,000	U	10 U	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs/PAHs (µg/Kg)															
Acenaphthene	98,000	1,000,000	U	11 J	900 U	200 U	960 U	170 U	1200 U	NA	NA	NA	NA	200 U	200 U
Acenaphthylene	107,000	1,000,000	U	170 U	900 U	200 U	960 U	170 U	1200 U	NA	NA	NA	NA	200 U	200 U
Anthracene	1,000,000	1,000,000	U	32 J	900 U	8 J	71 J	27 J	81 J	NA	NA	NA	NA	200 U	200 U
Benzo(a)anthracene	1,000	11,000	J	92 J	67 J	19 J	350 J	90 J	95 J	NA	NA	NA	NA	200 U	11 J
Benzo(a)pyrene	22,000	1,100	U	78 J	59 J	10 J	280 J	70 J	92 J	NA	NA	NA	NA	200 U	8 J
Benzo(b)fluoranthene	1,700	11,000	U	100 J	96 J	16 J	300 J	120 J	200 J	NA	NA	NA	NA	200 U	11 J
Benzo(ghi)perylene	1,000,000	1,000,000	U	54 J	120 J	200 U	210 J	50 J	100 J	NA	NA	NA	NA	200 U	200 U
Benzo(k)fluoranthene	1,700	110,000	U	40 J	900 U	200 U	140 J	170 U	76 J	NA	NA	NA	NA	200 U	9 J
Biphenyl	NT	NT	U	150 J	900 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate (BEHP)	NT	NT	J	130 J	310 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NT	NT	U	21 J	900 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1,000	110,000	U	78 J	50 J	13 J	340 J	78 J	220 J	NA	NA	NA	NA	200 U	9 J
Di-n-octyl phthalate	NT	NT	U	34 J	900 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1,000,000	1,100	U	18 J	900 U	200 U	66 J	13 J	1,200 U	NA	NA	NA	NA	200 U	200 U
Dibenzofuran	210,000	1,000,000	U	8 J	900 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	1,000,000	1,000,000	J	150 J	84 J	33 J	530 J	190	180 J	NA	NA	NA	NA	200 U	11 J
Fluorene	386,000	1,000,000	U	13 J	900 U	200 U	960 U	170 U	1,200 U	NA	NA	NA	NA	200 U	200 U
Indeno(1,2,3-cd)pyrene	8,200	11,000	U	53 J	61 J	200 U	150 J	42 J	76 J	NA	NA	NA	NA	200 U	200 U
2-Methylnaphthalene	NT	NT	U	170 U	900 U	200 U	960 U	170 U	1,200 U	NA	NA	NA	NA	200 U	200 U
Naphthalene	12,000	1,000,000	U	7 J	900 U	200 U	960 U	170 U	1,200 U	NA	NA	NA	NA	200 U	200 U
Phenanthrene	1,000,000	1,000,000	U	120 J	900 U	29 J	450 J	100 J	520 J	NA	NA	NA	NA	200 U	8 J
Pyrene	1,000,000	1,000,000	U	130 J	82 J	26 J	650 J	160 J	160 J	NA	NA	NA	NA	200 U	11 J
Total PAHs	NT	NT		NA	NA	160 J	3,500	940	1,800 J	NA	NA	NA	NA	400 U	79 J

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**		**SB-4a**	**SB-4b**	**SB-5a**	**SB-5b**	**SB-5c**	**SB-6**	**SB-7c**	**SB-7d**	**SB-7e**	**SB-7g**	**SB-8**	**SB-9**
Sample Type															
Sampling Date				**08/29/07**	**08/29/07**	**08/22/07**	**08/22/07**	**08/22/07**	**08/22/07**	**08/23/07**	**08/23/07**	**08/23/07**	**08/22/07**	**08/23/07**	**08/27/07**
Depth (feet)				**0.5-1**	**7-8**	**13-13.5**	**3-4**	**4-4.5**	**7-8**	**1-2**	**3-4**	**4-5**	**2.5-3**	**3-3.5**	**5-6**
PCBs (µg/Kg)															
Aroclor 1254	NT	NT	U	17 U	18 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	NT	NT	U	17 U	18 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	NT	NT	U	17 U	18 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals (mg/kg)															
Aluminum	NT	NT	E	11,300	14,900	NA	NA	NA	NA	9,810	9,880	5,500	6,950	NA	NA
Arsenic	16	16		8.6	12.9	NA	NA	NA	NA	6.3	5.4	8.8	10.4	NA	NA
Barium	820	10,000	EN	58.2	83.2	NA	NA	NA	NA	1180	92.9	2910	316	NA	NA
Beryllium	47	2,700		0.41	0.65	NA	NA	NA	NA	0.52	0.4	0.25 U	0.58	NA	NA
Calcium	NT	NT	*	4,920	1,540	NA	NA	NA	NA	127,000	1,050	15,800	4,180	NA	NA
Chromium	NT	NT	E	18	22	NA	NA	NA	NA	79.2	32.9	671	18.1	NA	NA
Cobalt	NT	NT	E	12.4	15	NA	NA	NA	NA	9.3	6.7	3.6	11	NA	NA
Copper	1,720	10,000	N	7.1	16.8	NA	NA	NA	NA	56.4	12.8	36.3	60	NA	NA
Iron	NT	NT	E	23,900	31,400	NA	NA	NA	NA	29,000	21,800	35,000	33,300	NA	NA
Lead	450	3,900	EN*	8.2	29.8	NA	NA	NA	NA	65.7	30.8	268	49.7	NA	NA
Magnesium	NT	NT	E	4,550	5,390	NA	NA	NA	NA	8,080	3,270	2,450	1,890	NA	NA
Manganese	2,000	10,000	E	321	299	NA	NA	NA	NA	452	155	274	361	NA	NA
Mercury	0.73	5.7	U	0.017 U	0.096	NA	NA	NA	NA	0.033	0.018 U	0.162	0.197	NA	NA
Nickel	130	10,000	E	22.1	31.8	NA	NA	NA	NA	62.5	21.8	39.8	82.1	NA	NA
Potassium	NT	NT	EN	1,130	905	NA	NA	NA	NA	1,600	810	1,410	541	NA	NA
Vanadium	NT	NT	E	14.3	20.3	NA	NA	NA	NA	14.3	14	8.6	19	NA	NA
Zinc	2,480	10,000	EN	46.6	79	NA	NA	NA	NA	70.7	43.5	31.3	65	NA	NA
Wet Chemistry (mg/kg)															
Cyanide	40	10,000		NA	NA	NA	NA	NA	NA	1.2 U	1 U	1.1 U	1.2 U	NA	NA
Leachable pH	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	NYSDEC Subpart 375-6 Protection of Groundwater	NYSDEC Subpart 375-6 Industrial	SB-10a	SB-10b	SB-10c	SB-10d	SB-10e	SB-11a	SB-11b	SB-11c	SB-11c	SB-11d	SB-12a	SB-12a	SB-12b
Sample Type											**DUP**			**DUP**	
Sampling Date			**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**08/30/07**	**08/30/07**	**08/30/07**
Depth (feet)			**0-0.5**	**0-0.5**	**0-0.5**	**0-0.5**	**0-0.5**	**3**	**3**	**4**	**4**	**4**	**2-3.5**	**2-3.5**	**3.5-4.5**
VOCs (µg/Kg) (a)															
Acetone	50	1,000,000	26 U	26 U	25 U	29 U	28 U	6 J	26 U	30 U	28 U	26 U	27 U	25 U	24
2-Butanone	120	1,000,000	26 U	26 U	25 U	29 U	28 U	27 U	26 U	30 U	28 U	26 U	27 U	25 U	24
Carbon disulfide	NT	NT	5 U	5 U	5 U	6 U	6 U	5 U	5 U	6 U	6 U	5 U	5 U	5 U	1
cis-1,2-Dichloroethylene	250	1,000,000	5 U	5 U	5 U	6 U	6 U	5 U	1 J	6 U	6 U	5 U	5 U	5 U	5
Methyl Acetate	NT	NT	5 U	5 U	5 U	6 U	6 U	5 U	5 U	6 U	6 U	5 U	5 U	5 U	5
Methylene chloride	50	1,000,000	7	6	11	7	6	28	26	24	30	23	14	19	14
Tetrachloroethene	1,300	300,000	5 U	5 U	5 U	6 U	6 U	2 J	3 J	6 U	6 U	5 U	5 U	5 U	5
Trichloroethene	470	400,000	5 U	5 U	5 U	6 U	6 U	16	66	5 J	6	1 J	16	10	5
Trichlorofluoromethane	NT	NT	5 U	5 U	5 U	6 U	6 U	5 U	5 U	6 U	6 U	5 U	5 U	5 U	5
Vinyl chloride	20	27,000	10 U	10 U	10 U	12 U	11 U	11 U	10 U	12 U	11 U	10 U	11 U	10 U	10
SVOCs/PAHs (µg/Kg)															
Acenaphthene	98,000	1,000,000	200 U	190 U	180 U	190 U	180 U	200 U	1,200	200 U	NA	190 U	9,300 U	NA	180
Acenaphthylene	107,000	1,000,000	17 J	190 U	11 J	30 J	12 J	200 U	93 J	200 U	NA	190 U	9,300 U	NA	180
Anthracene	1,000,000	1,000,000	14 J	190 U	8 J	28 J	10 J	200 U	3,300	200 U	NA	190 U	290 J	NA	180
Benzo(a)anthracene	1,000	11,000	84 J	37 J	44 J	110 J	60 J	200 U	6,800	200 U	NA	190 U	1,400 J	NA	180
Benzo(a)pyrene	22,000	1,100	96 J	36 J	46 J	120 J	62 J	200 U	**5,600**	200 U	NA	190 U	**1,300** J	NA	180
Benzo(b)fluoranthene	1,700	11,000	140 J	56 J	70 J	230	130 J	200 U	9,600	200 U	NA	190 U	2,100 J	NA	180
Benzo(ghi)perylene	1,000,000	1,000,000	90 J	35 J	42 J	95 J	53 J	200 U	3,900	200 U	NA	190 U	1,800 J	NA	5
Benzo(k)fluoranthene	1,700	110,000	49 J	20 J	25 J	190 U	180 U	200 U	950 U	200 U	NA	190 U	800 J	NA	180
Biphenyl	NT	NT	200 U	190 U	180 U	190 U	180 U	200 U	82 J	200 U	NA	190 U	NA	NA	NA
Bis(2-ethylhexyl)phthalate (BEHP)	NT	NT	260	400	97 J	120 J	200	200 U	950 U	200 U	NA	190 U	NA	NA	NA
Carbazole	NT	NT	12 J	190 U	180 U	22 J	180 U	200 U	1,800	200 U	NA	190 U	NA	NA	NA
Chrysene	1,000	110,000	100 J	37 J	46 J	130 J	70 J	200 U	5,600	200 U	NA	9 J	1,200 J	NA	180
Di-n-octyl phthalate	NT	NT	18 J	20 J	16 J	190 U	22 J	200 U	950 U	200 U	NA	8 J	NA	NA	NA
Dibenzo(a,h)anthracene	1,000,000	1,100	28 J	11 J	14 J	30 J	16 J	200 U	1,100	200 U	NA	190 U	430 J	NA	180
Dibenzofuran	210,000	1,000,000	200 U	190 U	180 U	190 U	180 U	200 U	810 J	200 U	NA	190 U	NA	NA	NA
Fluoranthene	1,000,000	1,000,000	180 J	65 J	71 J	220	120 J	200 U	13,000	200 U	NA	21 J	1,900 J	NA	4
Fluorene	386,000	1,000,000	200 U	190 U	180 U	190 U	180 U	200 U	1,300	200 U	NA	190 U	9,300 U	NA	180
Indeno(1,2,3-cd)pyrene	8,200	11,000	81 J	31 J	40 J	86 J	49 J	200 U	3,600	200 U	NA	9 J	1,300 J	NA	180
2-Methylnaphthalene	NT	NT	200 U	190 U	180 U	10 J	180 U	200 U	420 J	200 U	NA	190 U	9,300 U	NA	180
Naphthalene	12,000	1,000,000	200 U	190 U	180 U	8 J	180 U	200 U	830 J	200 U	NA	190 U	250 J	NA	180
Phenanthrene	1,000,000	1,000,000	96 J	36 J	34 J	98 J	59 J	200 U	13,000	200 U	NA	12 J	1,200 J	NA	180
Pyrene	1,000,000	1,000,000	150 J	58 J	61 J	180 J	100 J	200 U	12,000	200 U	NA	17 J	2,000 J	NA	5
Total PAHs	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16,000 J	NA	350

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	NYSDEC Subpart 375-6 Protection of Groundwater	NYSDEC Subpart 375-6 Industrial	SB-10a	SB-10b	SB-10c	SB-10d	SB-10e	SB-11a	SB-11b	SB-11c	SB-11c	SB-11d	SB-12a	SB-12a	SB-12b
Sample Type											**DUP**			**DUP**	
Sampling Date			**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**09/05/07**	**08/30/07**	**08/30/07**	**08/30/07**
Depth (feet)			**0-0.5**	**0-0.5**	**0-0.5**	**0-0.5**	**0-0.5**	**3**	**3**	**4**	**4**	**4**	**2-3.5**	**2-3.5**	**3.5-4.5**
PCBs (µg/Kg)															
Aroclor 1254	NT	NT	20 U	22	18 U	18 U	18 U	20 U	14 J	19 U	NA	19 U	170	NA	18
Aroclor 1260	NT	NT	7.3 J	8.9 J	18 U	6.2 J	18 U	20 U	19 U	19 U	NA	19 U	18 U	NA	18
Aroclor 1268	NT	NT	20 U	18 U	18 U	18 U	18 U	20 U	19 U	19 U	NA	19 U	18 U	NA	18
Metals (mg/kg)															
Aluminum	NT	NT	12,100	11,100	11,700	9,250	5,240	13,000	12,000	5,610	NA	13,700	NA	NA	NA
Arsenic	16	16	9.5	6.2	7.6	5.8	2.1 U	7.5	7.3	3.6	NA	5.9	NA	NA	NA
Barium	820	10,000	132	123	94.6	68.5	45.1	84.6 N	75.5 N	39.9 N	NA	75.9 N	NA	NA	NA
Beryllium	47	2,700	0.54	0.41	0.45	0.37	0.21 U	0.69	0.55	0.25	NA	0.6	NA	NA	NA
Calcium	NT	NT	2,830	2,570	2,430	2,240	736	1,380	1,640	1,240	NA	1,250	NA	NA	NA
Chromium	NT	NT	17.4	14.4	17	14.3	7.7	19.6	17.7	6.5	NA	16.6	NA	NA	NA
Cobalt	NT	NT	11.7	7.5	11.5	9.2	7.1	11.4	12.5	3.5	NA	8.9	NA	NA	NA
Copper	1,720	10,000	66.4	11.9	15.4	16.9	5	23	13.3	5	NA	9.9	NA	NA	NA
Iron	NT	NT	29,700	17,900	24,100	19,900	14,300	29,100	23,600	9,770	NA	26,500	NA	NA	NA
Lead	450	3,900	61.2	44.2	29	29.1	9.3	11.2	16.7	5.3	NA	12.6	NA	NA	NA
Magnesium	NT	NT	3,570	2,670	3,860	3,390	2,470	4,250	3,640	1,210	NA	3,680	NA	NA	NA
Manganese	2,000	10,000	1,050	482	525	664	631	388 *	356 *	137 *	NA	351 *	NA	NA	NA
Mercury	0.73	5.7	0.124	0.051	0.043	0.048	0.077	0.022 U	0.032	0.019 U	NA	0.02 U	NA	NA	NA
Nickel	130	10,000	23.7	16.8	22.8	20.2	12.5	31	24.4	9.3	NA	23	NA	NA	NA
Potassium	NT	NT	663	572	583	494	320	841 E	647 E	371 E	NA	547 E	NA	NA	NA
Vanadium	NT	NT	18.1	17.1	18.6	13.1	11	21.6	17.4	8.2	NA	19.5	NA	NA	NA
Zinc	2,480	10,000	78.2	57.7	67.1	55.2	27.5	68.1	54.3	24	NA	51.2	NA	NA	NA
Wet Chemistry (mg/kg)															
Cyanide	40	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Leachable pH	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**		**SB-13**	**SB-14**	**SB-15**	**SB-16a**	**SB-16a**	**SB-16b**	**SB-16b**	**SB-17**	**SB-18a**	**SB-18b**	**SB-18c**	**SB-18d**
Sample Type															
Sampling Date				**08/27/07**	**08/24/07**	**08/21/07**	**08/23/07**	**08/23/07**	**08/23/07**	**08/23/07**	**08/28/07**	**09/04/07**	**09/04/07**	**09/04/07**	**09/04/07**
Depth (feet)				**6.5-7.5**	**10-11.6**	**20-24**	**2**	**3**	**2**	**3**	**3.3-4**	**3.5-4**	**3.5-4**	**3.5-4**	**3.5-4**
VOCs (µg/Kg) (a)															
Acetone	50	1,000,000	UJ	NA	NA	NA	NA	NA	NA	NA	NA	25 U	26 U	26 U	27 U
2-Butanone	120	1,000,000	U	NA	NA	NA	NA	NA	NA	NA	NA	25 U	26 U	26 U	27 U
Carbon disulfide	NT	NT	J	NA	NA	NA	NA	NA	NA	NA	NA	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethylene	250	1,000,000	U	NA	NA	NA	NA	NA	NA	NA	NA	5 U	5 U	5 U	5 U
Methyl Acetate	NT	NT	U	NA	NA	NA	NA	NA	NA	NA	NA	5 U	5 U	5 U	5 U
Methylene chloride	50	1,000,000	J	NA	NA	NA	NA	NA	NA	NA	NA	22	22	22	26
Tetrachloroethene	1,300	300,000	U	NA	NA	NA	NA	NA	NA	NA	NA	5 U	5 U	5 U	5 U
Trichloroethene	470	400,000	U	NA	NA	NA	NA	NA	NA	NA	NA	5 U	5 U	5 U	5 U
Trichlorofluoromethane	NT	NT	U	NA	NA	NA	NA	NA	NA	NA	NA	5 U	5 U	5 U	5 U
Vinyl chloride	20	27,000	U	NA	NA	NA	NA	NA	NA	NA	NA	10 U	10 U	10 U	11 U
SVOCs/PAHs (µg/Kg)															
Acenaphthene	98,000	1,000,000	U	190 U	170 U	NA	NA	NA	NA	NA	150 J	880 U	190 U	200 U	200 U
Acenaphthylene	107,000	1,000,000	U	190 U	170 U	NA	NA	NA	NA	NA	70 J	880 U	190 U	8 J	34 J
Anthracene	1,000,000	1,000,000	U	190 U	170 U	NA	NA	NA	NA	NA	480 J	51 J	190 U	200 U	29 J
Benzo(a)anthracene	1,000	11,000	U	190 U	170 U	NA	NA	NA	NA	NA	1,400	880 U	190 U	200 U	220
Benzo(a)pyrene	22,000	1,100	U	190 U	170 U	NA	NA	NA	NA	NA	960	880 U	190 U	200 U	320
Benzo(b)fluoranthene	1,700	11,000	U	190 U	170 U	NA	NA	NA	NA	NA	1,200	880 U	190 U	200 U	530
Benzo(ghi)perylene	1,000,000	1,000,000	J	190 U	170 U	NA	NA	NA	NA	NA	760 J	880 U	190 U	200 U	260
Benzo(k)fluoranthene	1,700	110,000	U	190 U	170 U	NA	NA	NA	NA	NA	520 J	880 U	190 U	200 U	170 J
Biphenyl	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	880 U	190 U	200 U	200 U
Bis(2-ethylhexyl)phthalate (BEHP)	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	880 U	190 U	200 U	200 U
Carbazole	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	880 U	190 U	200 U	14 J
Chrysene	1,000	110,000	U	190 U	170 U	NA	NA	NA	NA	NA	1,100	880 U	190 U	200 U	240
Di-n-octyl phthalate	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	880 U	190 U	200 U	200 U
Dibenzo(a,h)anthracene	1,000,000	1,100	U	190 U	170 U	NA	NA	NA	NA	NA	210 J	880 U	190 U	200 U	97 J
Dibenzofuran	210,000	1,000,000		NA	NA	NA	NA	NA	NA	NA	NA	880 U	190 U	200 U	200 U
Fluoranthene	1,000,000	1,000,000	J	190 U	170 U	NA	NA	NA	NA	NA	2,900	320 J	27 J	36 J	250
Fluorene	386,000	1,000,000	U	190 U	170 U	NA	NA	NA	NA	NA	240 J	880 U	190 U	200 U	200 U
Indeno(1,2,3-cd)pyrene	8,200	11,000	U	190 U	170 U	NA	NA	NA	NA	NA	670 J	880 U	190 U	200 U	240 U
2-Methylnaphthalene	NT	NT	U	190 U	170 U	NA	NA	NA	NA	NA	140 J	880 U	190 U	200 U	200 U
Naphthalene	12,000	1,000,000	U	190 U	170 U	140 U	NA	NA	NA	NA	210 J	880 U	190 U	200 U	200 U
Phenanthrene	1,000,000	1,000,000	U	190 U	170 U	NA	NA	NA	NA	NA	2,400	230 J	17 J	12 J	76 J
Pyrene	1,000,000	1,000,000	J	190 U	170 U	NA	NA	NA	NA	NA	2,400	260 J	24 J	41 J	270
Total PAHs	NT	NT	U	370 U	340 U	NA	NA	NA	NA	NA	16,000	NA	NA	NA	NA

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**		**SB-13**	**SB-14**	**SB-15**	**SB-16a**	**SB-16a**	**SB-16b**	**SB-16b**	**SB-17**	**SB-18a**	**SB-18b**	**SB-18c**	**SB-18d**
Sample Type															
Sampling Date				**08/27/07**	**08/24/07**	**08/21/07**	**08/23/07**	**08/23/07**	**08/23/07**	**08/23/07**	**08/28/07**	**09/04/07**	**09/04/07**	**09/04/07**	**09/04/07**
Depth (feet)				**6.5-7.5**	**10-11.6**	**20-24**	**2**	**3**	**2**	**3**	**3.3-4**	**3.5-4**	**3.5-4**	**3.5-4**	**3.5-4**
PCBs (µg/Kg)															
Aroclor 1254	NT	NT	U	NA	NA	NA	NA	NA	NA	NA	NA	17 U	19 U	19 U	19 U
Aroclor 1260	NT	NT	U	NA	NA	NA	NA	NA	NA	NA	NA	6.2 J	19 U	19 U	19 U
Aroclor 1268	NT	NT	U	NA	NA	NA	NA	NA	NA	NA	NA	17 U	19 U	19 U	19 U
Metals (mg/kg)															
Aluminum	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	12,200	11,500	14,500	12,900
Arsenic	16	16		NA	NA	NA	NA	NA	NA	NA	NA	8.4	6	11.1	8.3
Barium	820	10,000		NA	NA	NA	NA	NA	NA	NA	NA	91.2 N	90.4 N	59.9 N	91.9 N
Beryllium	47	2,700		NA	NA	NA	NA	NA	NA	NA	NA	0.61	0.54	0.57	0.58
Calcium	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	4,460	2,180	1,500	2,160
Chromium	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	15.4	14.3	20.5	17.4
Cobalt	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	9.9	8.4	11.6	10.1
Copper	1,720	10,000		NA	NA	NA	NA	NA	NA	NA	NA	12.6	11.6	10.5	14.7
Iron	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	25,900	19,700	31,900	23,300
Lead	450	3,900		NA	NA	22.5	NA	NA	NA	NA	NA	23.5	22	17	22.4
Magnesium	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	3,150	2,860	4,570	3,420
Manganese	2,000	10,000		NA	NA	NA	NA	NA	NA	NA	NA	594 *	372 *	264 *	470 *
Mercury	0.73	5.7		NA	NA	NA	NA	NA	NA	NA	NA	0.032	0.02 U	0.019 U	0.129
Nickel	130	10,000		NA	NA	NA	NA	NA	NA	NA	NA	22.5	18	26.6	21.4
Potassium	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	602 E	655 E	655 E	681 E
Vanadium	NT	NT		NA	NA	NA	NA	NA	NA	NA	NA	18.1	17.1	19.8	20.2
Zinc	2,480	10,000		NA	NA	NA	NA	NA	NA	NA	NA	62.3	65.2	72.7	88.5
Wet Chemistry (mg/kg)															
Cyanide	40	10,000		NA	NA	NA	NA	NA	NA	NA	1.1 U	NA	NA	NA	NA
Leachable pH	NT	NT		NA	NA	NA	4.68	4.43	7.28	5.03	NA	NA	NA	NA	NA

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**	**SB-19a**	**SB-19b**	**SB-19c**	**SB-19d**	**SB-19e**	**SB-20a**	**SB-20b**	**SB-20c**	**SB-20d**	**SB-21a**	**SB-21b**	**SB-21c**
Sample Type														
Sampling Date			**08/22/07**	**08/22/07**	**08/22/07**	**08/22/07**	**08/22/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/22/07**	**08/22/07**
Depth (feet)			**3-4**	**2.5-3.5**	**3-4**	**3-4**	**3-4**	**1-1.5**	**0.5-1.3**	**0.8-1.3**	**0.5-1.5**	**0.5-1.5**	**1.5-2.3**	**5-7**
VOCs (µg/Kg) (a)														
Acetone	50	1,000,000	NA	NA	NA	NA	NA	30 U	25 U	24 U	28 U	30 U	10 J	27 U
2-Butanone	120	1,000,000	NA	NA	NA	NA	NA	30 U	25 U	24 U	28 U	30 U	25 U	27 U
Carbon disulfide	NT	NT	NA	NA	NA	NA	NA	6 U	5 U	5 U	6 U	6 U	5 U	5 U
cis-1,2-Dichloroethylene	250	1,000,000	NA	NA	NA	NA	NA	2 J	3 J	24	10	6 U	5 U	5 U
Methyl Acetate	NT	NT	NA	NA	NA	NA	NA	6 U	5 U	5 U	6 U	6 U	5 U	5 U
Methylene chloride	50	1,000,000	NA	NA	NA	NA	NA	51	47	56	54	61	10	27
Tetrachloroethene	1,300	300,000	NA	NA	NA	NA	NA	6 U	3 J	5 U	6 U	6 U	5 U	5 U
Trichloroethene	470	400,000	NA	NA	NA	NA	NA	17	22	41	23	6 U	5 U	5 U
Trichlorofluoromethane	NT	NT	NA	NA	NA	NA	NA	6 U	5 U	5 U	6 U	6 U	5 U	5 U
Vinyl chloride	20	27,000	NA	NA	NA	NA	NA	12 U	10 U	10 U	11 U	12 U	10 U	11 U
SVOCs/PAHs (µg/Kg)														
Acenaphthene	98,000	1,000,000	180 U	180 U	190 U	180 U	190 U	170 U	170 U	170 U	190 U	190 U	160 J	NA
Acenaphthylene	107,000	1,000,000	180 U	180 U	190 U	180 U	190 U	170 U	170 U	170 U	190 U	190 U	480 J	1900 U
Anthracene	1,000,000	1,000,000	180 U	180 U	190 U	180 U	190 U	170 U	170 U	170 U	190 U	190 U	810 J	160 J
Benzo(a)anthracene	1,000	11,000	180 U	17 J	12 J	180 U	190 U	22 J	7 J	14 J	10 J	28 J	3,800	240 J
Benzo(a)pyrene	22,000	1,100	180 U	12 J	8 J	180 U	190 U	16 J	170 U	9 J	190 U	17 J	**3,700**	290 J
Benzo(b)fluoranthene	1,700	11,000	180 U	13 J	18 J	180 U	190 U	25 J	170 U	12 J	7 J	20 J	6,200	350 J
Benzo(ghi)perylene	1,000,000	1,000,000	180 U	10 J	10 J	180 U	190 U	16 J	170 U	170 U	190 U	10 J	2,200	210 J
Benzo(k)fluoranthene	1,700	110,000	180 U	180 U	190 U	180 U	190 U	14 J	170 U	170 U	9 J	190 U	870 U	150 J
Biphenyl	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate (BEHP)	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1,000	110,000	180 U	8 J	9 J	180 U	190 U	20 J	170 U	9 J	7 J	17 J	3,200	290 J
Di-n-octyl phthalate	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1,000,000	1,100	180 U	180 U	190 U	180 U	190 U	9 J	170 U	170 U	190 U	190 U	740 J	1,900 U
Dibenzofuran	210,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	1,000,000	1,000,000	180 U	19 J	10 J	180 U	13 J	26 J	170 U	15 J	9 J	39 J	5,700	410 J
Fluorene	386,000	1,000,000	180 U	180 U	190 U	180 U	190 U	170 U	170 U	170 U	190 U	190 U	300 J	1,900 U
Indeno(1,2,3-cd)pyrene	8,200	11,000	180 U	9 J	8 J	180 U	190 U	14 J	170 U	170 U	190 U	9 J	2,200	91 J
2-Methylnaphthalene	NT	NT	180 U	180 U	190 U	180 U	190 U	8 J	170 U	170 U	190 U	190 U	70 J	78 J
Naphthalene	12,000	1,000,000	180 U	180 U	190 U	180 U	190 U	7 J	170 U	170 U	190 U	190 U	92 J	1,900 U
Phenanthrene	1,000,000	1,000,000	180 U	9 J	190 U	180 U	11 J	23 J	7 J	14 J	8 J	21 J	1,300	470 J
Pyrene	1,000,000	1,000,000	180 U	20 J	11 J	180 U	12 J	32 J	170 U	22 J	11 J	48 J	5,200	330 J
Total PAHs	NT	NT	350 U	120 J	87 J	340 U	37 J	230 J	340 U	94 J	62 J	210 J	36,000	3,100 J

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**	**SB-19a**	**SB-19b**	**SB-19c**	**SB-19d**	**SB-19e**	**SB-20a**	**SB-20b**	**SB-20c**	**SB-20d**	**SB-21a**	**SB-21b**	**SB-21c**
Sample Type														
Sampling Date			**08/22/07**	**08/22/07**	**08/22/07**	**08/22/07**	**08/22/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/27/07**	**08/22/07**	**08/22/07**
Depth (feet)			**3-4**	**2.5-3.5**	**3-4**	**3-4**	**3-4**	**1-1.5**	**0.5-1.3**	**0.8-1.3**	**0.5-1.5**	**0.5-1.5**	**1.5-2.3**	**5-7**
PCBs (µg/Kg)														
Aroclor 1254	NT	NT	17 U	18 U	18 U	18 U	19 U	17 U	17 U	17 U	19 U	18 U	41	19 U
Aroclor 1260	NT	NT	17 U	18 U	18 U	18 U	19 U	17 U	17 U	17 U	19 U	18 U	17 U	19 U
Aroclor 1268	NT	NT	17 U	18 U	18 U	18 U	32	17 U	17 U	17 U	19 U	18 U	17 U	19 U
Metals (mg/kg)														
Aluminum	NT	NT	NA	NA	NA	NA	NA	12,200 E	13,500 E	14,000 E	9,960 E	12,300 E	NA	NA
Arsenic	16	16	NA	NA	NA	NA	NA	5.3	8.7	7.6	9.5	7	NA	NA
Barium	820	10,000	NA	NA	NA	NA	NA	48.5 EN	76.1 EN	27.2 EN	96.8 EN	46.3 EN	NA	NA
Beryllium	47	2,700	NA	NA	NA	NA	NA	0.3	0.48	0.28	0.32	0.29	NA	NA
Calcium	NT	NT	NA	NA	NA	NA	NA	870 *	1,060 *	887 *	1,290 *	1,350 *	NA	NA
Chromium	NT	NT	NA	NA	NA	NA	NA	21.6 E	20.1 E	30 E	23.9 E	18.5 E	NA	NA
Cobalt	NT	NT	NA	NA	NA	NA	NA	10.8 E	19.6 E	9.4 E	7.4 E	9.7 E	NA	NA
Copper	1,720	10,000	NA	NA	NA	NA	NA	6.6 N	14.5 N	8 N	16.1 N	5.8 N	NA	NA
Iron	NT	NT	NA	NA	NA	NA	NA	27,800 E	29,700 E	36,200 E	29,200 E	26,400 E	NA	NA
Lead	450	3,900	NA	NA	NA	NA	NA	15.5 EN*	15.5 EN*	6.6 EN*	33.9 EN*	3.5 EN*	NA	NA
Magnesium	NT	NT	NA	NA	NA	NA	NA	4,390 E	4,280 E	5,250 E	3,050 E	4,110 E	NA	NA
Manganese	2,000	10,000	NA	NA	NA	NA	NA	326 E	639 E	193 E	242 E	303 E	NA	NA
Mercury	0.73	5.7	NA	NA	NA	NA	NA	0.017 U	0.025	0.018 U	0.042	0.018 U	NA	NA
Nickel	130	10,000	NA	NA	NA	NA	NA	25.7 E	28.3 E	24.5 E	23.6 E	24.7 E	NA	NA
Potassium	NT	NT	NA	NA	NA	NA	NA	735 EN	769 EN	632 EN	776 EN	701 EN	NA	NA
Vanadium	NT	NT	NA	NA	NA	NA	NA	15.7 E	20.3 E	18.4 E	16.5 E	17 E	NA	NA
Zinc	2,480	10,000	NA	NA	NA	NA	NA	61.7 EN	73.6 EN	47.9 EN	51.5 EN	54.8 EN	NA	NA
Wet Chemistry (mg/kg)														
Cyanide	40	10,000	NA	NA	NA	NA	NA	0.95 U	0.76 U	3.4	1 U	1 U	4.6	17.2
Leachable pH	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**	**SB-21d**	**SB-22a**	**SB-22b**	**SB-23a**	**SB-23b**	**SB-23c**	**SB-23d**	**SB-25a-1**	**SB-25a-2**	**SB-25a-3**	**SB-25b-1**	**SB-25b-3**
Sample Type														
Sampling Date			**08/22/07**	**08/23/07**	**08/23/07**	**08/28/07**	**08/28/07**	**08/20/07**	**08/20/07**	**08/20/07**	**08/20/07**	**08/20/07**	**08/29/07**	**08/29/07**
Depth (feet)			**4-6**	**3-4**	**2.5-3**	**1-1.7**	**1-2.4**	**3**	**3**	**1**	**2.5**	**1**	**0.8-1.5**	**0.8-1.2**
VOCs (µg/Kg) (a)														
Acetone	50	1,000,000	25 U	26 U	28 U	12 J	28 U	28 U	12 J	20 J	7 J	11 J	7 J	11 J
2-Butanone	120	1,000,000	25 U	26 U	28 U	25 U	28 U	28 U	26 U	27 U	25 U	24 U	27 U	26 U
Carbon disulfide	NT	NT	5 U	1 J	2 J	5 U	6 U	1 J	1 J	1 J	1 J	1 J	1 J	1 J
cis-1,2-Dichloroethylene	250	1,000,000	5 U	5 U	6 U	5 U	6 U	6 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl Acetate	NT	NT	5 U	5 U	6 U	5 U	6 U	6 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylene chloride	50	1,000,000	27	28	31	50	49	21	28	29	26	24	18	16
Tetrachloroethene	1,300	300,000	5 U	5 U	6 U	5 U	6 U	6 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	470	400,000	5 U	5 U	6 U	5 U	6 U	6 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	NT	NT	5 U	5 U	6 U	5 U	6 U	6 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	20	27,000	10 U	10 U	11 U	10 U	11 U	11 U	10 U	11 U	10 U	10 U	11 U	11 U
SVOCs/PAHs (µg/Kg)														
Acenaphthene	98,000	1,000,000	890 U	180 U	200 U	190 U	190 U	170 U	180 U	NA	NA	NA	NA	NA
Acenaphthylene	107,000	1,000,000	890 U	180 U	200 U	190 U	190 U	170 U	180 U	NA	NA	NA	NA	NA
Anthracene	1,000,000	1,000,000	890 U	180 U	200 U	190 U	190 U	170 U	180 U	NA	NA	NA	NA	NA
Benzo(a)anthracene	1,000	11,000	120 J	180 U	200 U	10 J	190 U	15 J	8 J	NA	NA	NA	NA	NA
Benzo(a)pyrene	22,000	1,100	83 J	180 U	200 U	190 U	190 U	12 J	180 U	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1,700	11,000	100 J	180 U	200 U	10 J	190 U	13 J	12 J	NA	NA	NA	NA	NA
Benzo(ghi)perylene	1,000,000	1,000,000	53 J	180 U	200 U	190 U	190 U	7 J	17 J	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	1,700	110,000	48 J	180 U	200 U	190 U	190 U	7 J	180 U	NA	NA	NA	NA	NA
Biphenyl	NT	NT	NA	180 U	200 U	190 U	190 U	170 U	180 U	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate (BEHP)	NT	NT	NA	180 U	200 U	130 J	97 J	59 J	180 U	NA	NA	NA	NA	NA
Carbazole	NT	NT	NA	180 U	200 U	190 U	190 U	170 U	180 U	NA	NA	NA	NA	NA
Chrysene	1,000	110,000	91 J	180 U	200 U	190 U	190 U	7 J	180 U	NA	NA	NA	NA	NA
Di-n-octyl phthalate	NT	NT	NA	180 U	200 U	10 J	8 J	15 J	12 J	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1,000,000	1,100	890 U	180 U	200 U	190 U	190 U	170 U	12 J	NA	NA	NA	NA	NA
Dibenzofuran	210,000	1,000,000	NA	180 U	200 U	190 U	190 U	170 U	180 U	NA	NA	NA	NA	NA
Fluoranthene	1,000,000	1,000,000	150 J	180 U	200 U	10 J	190 U	7 J	180 U	NA	NA	NA	NA	NA
Fluorene	386,000	1,000,000	890 U	180 U	200 U	190 U	190 U	170 U	180 U	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	8,200	11,000	53 J	180 U	200 U	190 U	190 U	7 J	8 J	NA	NA	NA	NA	NA
2-Methylnaphthalene	NT	NT	890 U	180 U	200 U	190 U	190 U	170 U	180 U	NA	NA	NA	NA	NA
Naphthalene	12,000	1,000,000	890 U	180 U	200 U	190 U	190 U	170 U	180 U	NA	NA	NA	NA	NA
Phenanthrene	1,000,000	1,000,000	78 J	180 U	200 U	190 U	190 U	170 U	180 U	NA	NA	NA	NA	NA
Pyrene	1,000,000	1,000,000	140 J	12 J	200 U	190 U	190 U	170 U	180 U	NA	NA	NA	NA	NA
Total PAHs	NT	NT	920 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**	**SB-21d**	**SB-22a**	**SB-22b**	**SB-23a**	**SB-23b**	**SB-23c**	**SB-23d**	**SB-25a-1**	**SB-25a-2**	**SB-25a-3**	**SB-25b-1**	**SB-25b-3**
Sample Type														
Sampling Date			**08/22/07**	**08/23/07**	**08/23/07**	**08/28/07**	**08/28/07**	**08/20/07**	**08/20/07**	**08/20/07**	**08/20/07**	**08/20/07**	**08/29/07**	**08/29/07**
Depth (feet)			**4-6**	**3-4**	**2.5-3**	**1-1.7**	**1-2.4**	**3**	**3**	**1**	**2.5**	**1**	**0.8-1.5**	**0.8-1.2**
PCBs (µg/Kg)														
Aroclor 1254	NT	NT	17 U	18 U	20 U	19 U	19 U	17 U	18 U	NA	NA	NA	NA	NA
Aroclor 1260	NT	NT	17 U	18 U	20 U	19 U	19 U	17 U	18 U	NA	NA	NA	NA	NA
Aroclor 1268	NT	NT	17 U	18 U	20 U	19 U	19 U	17 U	18 U	NA	NA	NA	NA	NA
Metals (mg/kg)														
Aluminum	NT	NT	NA	17,500	12,000	8,770 E	7,820 E	10,600	12,100	NA	NA	NA	NA	NA
Arsenic	16	16	NA	7.2	11	3.8	3.3	6.2	4.7	NA	NA	NA	NA	NA
Barium	820	10,000	NA	75.5	57.2	103 EN	53.4 EN	66.7	157	NA	NA	NA	NA	NA
Beryllium	47	2,700	NA	0.8	0.73	0.29	0.23	0.41	0.5	NA	NA	NA	NA	NA
Calcium	NT	NT	NA	1,410	1,400	31,300 *	1,160 *	1,360	74,800	NA	NA	NA	NA	NA
Chromium	NT	NT	NA	24.6	17.5	11.9 E	11.3 E	14.9	15.1	NA	NA	NA	NA	NA
Cobalt	NT	NT	NA	24.7	12	20.2 E	6.5 E	8.5	8	NA	NA	NA	NA	NA
Copper	1,720	10,000	NA	23.6	18	8.1 N	9.2 N	10.1	17.4	NA	NA	NA	NA	NA
Iron	NT	NT	NA	37,000	25,800	14,600 E	14,500 E	21,900	19,500	NA	NA	NA	NA	NA
Lead	450	3,900	NA	14.2	19.7	8.4 EN*	7.8 EN*	7.8	7.5	NA	NA	NA	NA	NA
Magnesium	NT	NT	NA	6,060	2,900	3,360 E	2,220 E	3,240	5,860	NA	NA	NA	NA	NA
Manganese	2,000	10,000	NA	1140	452	524 E	295 E	365	640	NA	NA	NA	NA	NA
Mercury	0.73	5.7	NA	0.019 U	0.039	0.033	0.033	0.024	0.232	NA	NA	NA	NA	NA
Nickel	130	10,000	NA	36.8	19.3	12.8 E	13.4 E	18.3	18.4	NA	NA	NA	NA	NA
Potassium	NT	NT	NA	1,160	1,100	708 EN	538 EN	630	1,120	NA	NA	NA	NA	NA
Vanadium	NT	NT	NA	22.1	24.3	13.2 E	14 E	15.7	17.7	NA	NA	NA	NA	NA
Zinc	2,480	10,000	NA	78.4	54.6	34.5 EN	35.9 EN	40.5	44.6	NA	NA	NA	NA	NA
Wet Chemistry (mg/kg)														
Cyanide	40	10,000	0.99 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Leachable pH	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**	**SB-25b-4**	**SB-25b-5**	**SB-25b-6**	**SB-25c-1**	**SB-25c-3**	**SB-25d-1**	**SB-25d-1**	**SB-25d-2**
Sample Type									**DUP**	
Sampling Date			**08/28/07**	**08/28/07**	**08/28/07**	**08/29/07**	**08/29/07**	**08/23/07**	**08/23/07**	**08/23/07**
Depth (feet)			**0.5-1.2**	**0.8-1.5**	**0.5-1.2**	**1-2**	**1.2-1.7**	**1.5-2**	**1.5-2**	**2-3**
VOCs (µg/Kg) (a)										
Acetone	50	1,000,000	10 J	8 J	9 J	14 J	47	27 U	28 U	28 U
2-Butanone	120	1,000,000	25 U	25 U	24 U	25 U	6 J	27 U	28 U	28 U
Carbon disulfide	NT	NT	1 J	1 J	2 J	1 J	3 J	1 J	6 U	2 J
cis-1,2-Dichloroethylene	250	1,000,000	5 U	5 U	5 U	5 U	6 U	5 U	6 U	6 U
Methyl Acetate	NT	NT	5 U	5 U	5 U	5 U	6 U	5 U	6 U	6 U
Methylene chloride	50	1,000,000	17	16	18	12	17	37	28	47
Tetrachloroethene	1,300	300,000	5 U	5 U	5 U	5 U	6 U	5 U	6 U	6 U
Trichloroethene	470	400,000	5 U	5 U	5 U	5 U	6 U	5 U	6 U	6 U
Trichlorofluoromethane	NT	NT	5 U	5 U	5 U	5 U	6 U	1 J	6 U	6 U
Vinyl chloride	20	27,000	10 U	10 U	10 U	10 U	11 U	11 U	11 U	11 U
SVOCs/PAHs (µg/Kg)										
Acenaphthene	98,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	107,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	1,000,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	1,000	11,000	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	22,000	1,100	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1,700	11,000	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	1,000,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	1,700	110,000	NA	NA	NA	NA	NA	NA	NA	NA
Biphenyl	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate (BEHP)	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1,000	110,000	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octyl phthalate	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	1,000,000	1,100	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	210,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	1,000,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	386,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	8,200	11,000	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	12,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	1,000,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,000,000	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
Total PAHs	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA

Table 2

AOC Soil Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**	**SB-25b-4**	**SB-25b-5**	**SB-25b-6**	**SB-25c-1**	**SB-25c-3**	**SB-25d-1**	**SB-25d-1**	**SB-25d-2**
Sample Type									**DUP**	
Sampling Date			**08/28/07**	**08/28/07**	**08/28/07**	**08/29/07**	**08/29/07**	**08/23/07**	**08/23/07**	**08/23/07**
Depth (feet)			**0.5-1.2**	**0.8-1.5**	**0.5-1.2**	**1-2**	**1.2-1.7**	**1.5-2**	**1.5-2**	**2-3**
PCBs (µg/Kg)										
Aroclor 1254	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1268	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA
Metals (mg/kg)										
Aluminum	NT	NT	NA	NA	NA	15,000	11,100	NA	NA	NA
Arsenic	16	16	NA	NA	NA	13.2	6.9	NA	NA	NA
Barium	820	10,000	NA	NA	NA	50.1	3,300	NA	NA	NA
Beryllium	47	2,700	NA	NA	NA	0.6	0.5	NA	NA	NA
Calcium	NT	NT	NA	NA	NA	2,620	52,900	NA	NA	NA
Chromium	NT	NT	NA	NA	NA	23	23.4	NA	NA	NA
Cobalt	NT	NT	NA	NA	NA	16	8.8	NA	NA	NA
Copper	1,720	10,000	NA	NA	NA	6.3	35.6	NA	NA	NA
Iron	NT	NT	NA	NA	NA	34,500	25,400	NA	NA	NA
Lead	450	3,900	NA	NA	NA	13.3	28.3	NA	NA	NA
Magnesium	NT	NT	NA	NA	NA	7,170	8,400	NA	NA	NA
Manganese	2,000	10,000	NA	NA	NA	374	757	NA	NA	NA
Mercury	0.73	5.7	NA	NA	NA	0.017 U	0.059	NA	NA	NA
Nickel	130	10,000	NA	NA	NA	33.8	60.3	NA	NA	NA
Potassium	NT	NT	NA	NA	NA	1,110	1,010	NA	NA	NA
Vanadium	NT	NT	NA	NA	NA	18.6	15.7	NA	NA	NA
Zinc	2,480	10,000	NA	NA	NA	54.1	64.6	NA	NA	NA
Wet Chemistry (mg/kg)										
Cyanide	40	10,000	NA	NA	NA	17.7	10.8	NA	NA	NA
Leachable pH	NT	NT	NA	NA	NA	NA	NA	NA	NA	NA

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a/ Compounds listed in *italics* are site-related VOCs
If no STARs VOCs were detected, they are not included in this table.

b/ U - not detected NA - not analyzed NT - no standard available J - estimated value
E - exceeds calibration limit N - spike recovery outside control limit * - spike recovery outside control limit
PCB - polychlorinated biphenyl PAH - polycyclic aromatic hydrocarbon VOC - volatile organic compound
SVOC - semi-volatile organic compound

c/ Boxed value exceeds Protection of Groundwater Standard
Bold value exceeds Industrial Standard

Table 3

Water Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York (a)

Sample ID:	TOGS 1.1.1, Table 1, Ambient Water Quality Standards and Guidance Values	FWR-1	FWR-2	FWR-3	MH-1	MH-2	MH-3	MH-4
Sampling Date:		09/06/07	09/06/07	09/06/07	09/06/07	09/06/07	09/06/07	09/06/07
Depth (feet):								
Site-Related VOCs (µg/L)								
cis-1,2-Dichloroethylene	5	1 U	1 U	1 U	1 U	4 U	1 U	1 U
trans-1,2-Dichloroethene	5	1 U	1 U	1 U	1 U	4 U	1 U	1 U
Trichloroethene	5	1 U	1 U	1 U	1 U	4 U	1 U	1 U
Vinyl chloride	2	1 U	1 U	1 U	1 U	4 U	1 U	1 U
Other VOCs (µg/L)								
Acetone	50	5 UJ	5 UJ	5 UJ	**240** J	**65** J	5 UJ	**70** J
Bromodichloromethane	50 *	2	3.1	10	5.9	4 U	9	2.9
Carbon disulfide	NT	1 U	1 U	1 U	1 U	4 U	1 U	1 U
Chloroethane	5	1 U	1 U	1 U	1 U	4 U	1 U	1 U
Chloroform	7	**18**	**26**	**41**	**16**	5.8	**25**	5
Dibromochloromethane	NT	1 U	1 U	2.2	1.4	4 U	2	1.8
1,1-Dichloroethane	5	1 U	1 U	1 U	1 U	4 U	1 U	1 U
1,1-Dichloroethene	5	1 U	1 U	1 U	1 U	4 U	1 U	1 U
Methylcyclohexane	NT	1 U	1 U	1 U	1 U	4 U	1 U	1 U

Table 3

Water Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York (a)

Sample ID:	**TOGS 1.1.1, Table 1, Ambient Water Quality Standards and Guidance Values**	**MH-5**	**SB-1a**	**SB-1d**	**SB-4b**	**SB-12b**
Sampling Date:		**09/06/07**	**08/21/07**	**08/21/07**	**08/29/07**	**08/30/07**
Depth (feet):			**8-10**	**11-12**	**8-10**	**3.5-4.5**
					Product	
Site-Related VOCs (µg/L)						
cis-1,2-Dichloroethylene	5	1 U	1 U	**1,800** D	5 U	2 U
trans-1,2-Dichloroethene	5	1 U	1 U	**15**	5 U	2 U
Trichloroethene	5	1 U	1 U	**31**	5 U	2 U
Vinyl chloride	2	1 U	1 U	**190** D	5 U	2 U
Other VOCs (µg/L)						
Acetone	50	**990** JD	16	7	25 U	10 U
Bromodichloromethane	50 *	3.1	1 U	1 U	5 U	2 U
Carbon disulfide	NT	1 U	1.3	1.2	5 U	2 U
Chloroethane	5	1 U	**7.1**	1 U	5 U	2 U
Chloroform	7	5.4	1 U	1 U	5 U	2 U
Dibromochloromethane	NT	2	1 U	1 U	5 U	2 U
1,1-Dichloroethane	5	1 U	1.7	2.1	5 U	2 U
1,1-Dichloroethene	5	1 U	1 U	3.3	5 U	2 U
Methylcyclohexane	NT	1 U	1 U	1.6	5 U	2 U

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a/ U - not detected * - denotes guidance value J - estimated value
NT - no standard available D - result is from secondary dilution

Bold values exceed the New York State Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, Table 1: New York State Ambient Water Quality Standards and Guidance Values (June 1998).

Table 4

Exploratory Boring amd Monitoring Well Details
Emerson Power Transmission
Ithaca, New York

Well ID	Easting Coordinate (ft)	Northing Coordinate (ft)	Top of Casing Elevation (ft aMSL)	Ground Surface Elevvation (ft aMSL)	Total Depth (ft bgs)	Top of Open Interval (ft bgs)	Bottom of Open Interval (ft bgs)	Top of Screened Interval (ft bgs)	Bottom of Screened Interval (ft bgs)	Source for Elevation Data (a)	Comments
EXB-1	843138.99	886121.54	587.05	587.45	81	19.5	81	NA	NA	WSP	Open borehole
EXB-2	843190.49	886146.18	586.47	587.05	80	25	80	NA	NA	WSP	Open borehole
EXB-5	843159.83	886285.85	565.88	566.59	62	18	62	NA	NA	WSP	Open borehole
EXB-6	843077.17	886167.81	562.67	563.1	61.5	23.5	61.5	NA	NA	WSP	Open borehole
EXB-7	843046.56	886317.64	529.07	529.19	25	5	25	NA	NA	WSP	Open borehole
EXB-8	843129.42	886129.65	587.32	587.56	100	20	100	NA	NA	WSP	Open borehole
MW-7B	843133.80	886125.12	587.26	587.53	21	NA	NA	10	20	WSP	
MW-8B	843183.14	886137.72	586.64	587.12	21.3	NA	NA	10	20	WSP	
MW-34B	843401.54	887793.73	411.21	411.28	22	NA	NA	9.5	14.5	WSP	
MW-36B	843511.90	887349.68	478.58	478.91	29	NA	NA	17	22	WSP	
MW-37B	843376.63	887759.70	408.46	408.97	15	NA	NA	10	15	WSP	
MW-35T	843564.09	887105.95	516.95	517.27	30.2	NA	NA	21	26	WSP	
MW-38T	843681.60	886577.30	590.18	590.39	41	NA	NA	27	37	WSP	
MW-39T	843670.41	886076.19	641.33	641.7	60	NA	NA	44	54	WSP	
MW-40T	843620.56	886481.76	592.97	593.3	30.6	NA	NA	9	19	WSP	
MW-42T	843564.43	885888.68	655.98	656.35	48.8	NA	NA	33	43	WSP	
MW-43T	843289.03	886471.74	565.18	565.55	35	NA	NA	14.5	24.5	WSP	
MW-44T	842927.90	885982.86	558.22	558.67	50	NA	NA	41	46	WSP	
MW-45T	842468.45	885373.78	545.64	545.92	30	NA	NA	10	15	WSP	

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a/ NA = not applicable; WSP = WSP boring logs.

Table 5

Exploratory Boring Soil Sample Results
Fire Water Reservior Investigation
Supplemental RI
Emerson Power Transmission
Ithaca, New York (a)

Sample ID	**NYSDEC Subpart 375-6 Protection of Groundwater**	**NYSDEC Subpart 375-6 Industrial**	**EXB-1**	**EXB-1** (c)	**EXB-2** (b)	**EXB-2** (b)	**EXB-2** (c,d)	**EXB-4**	**MW-7B**
Sampling Date			**08/15/07**	**08/15/07**	**08/14/07**	**08/21/07**	**08/14/07**	**08/24/07**	**08/24/07**
Depth (feet)			**9-9.5**	**19**	**10-12**	**10-12**	**19-19.5**	**10-11**	**6-8**
Site-Related VOCs (µg/Kg)									
cis-1,2-Dichloroethylene	250	1,000,000	6 U	39	5 U	6 U	$\boxed{4,100}$ D	6 U	5 U
Methylene chloride	50	1,000,000	7 U	6 U	11 U	14	46 U	36	40
Tetrachloroethene	1,300	300,000	6 U	5 U	5 U	6 U	41	6 U	5 U
Trichloroethene	470	400,000	6 U	5 U	5 U	6 U	$\boxed{76,000}$ D	6 U	5 U
Vinyl chloride	20	27,000	12 U	13	11 U	11 U	$\boxed{25}$ J	12 U	10 U
Other VOCs (µg/Kg)									
Acetone	50	1,000,000	32	9 J	35	26 J	$\boxed{52}$ J	30 U	7 BJ
Carbon disulfide	NT	NT	3 J	5 U	5 U	2 J	28 U	1 J	1 J
1,1-Dichloroethene	330	1,000,000	6 U	5 U	5 U	6 U	9 J	6 U	5 U
Toluene	700	1,000,000	6 U	5 U	4 J	6 U	28 U	6 U	5 U
Trichlorofluoromethane	NT	NT	6 U	5 U	5 U	6 U	28 U	1 J	1 J

---

a/ U - not detected D - diluted sample result
J - estimated value

b/ Sample collected on 8/14/07 was from drill cuttings while sample collected on 8/21/07 was from the split spoon

c/ Sample of rock cuttings

d/ Box - result exceeds Protection of Groundwater Standard

Table 6

Exploratory Boring Water and Product Sample Results
Fire Water Reservoir Investigation
Supplemental RI
Emerson Power Transmission
Ithaca, New York (a)

Sample ID	**TOGS 1.1.1, Table 1, Ambient Water Quality Standards and Guidance Values**	**EXB-1**	**EXB-2**	**EXB-5**	**EXB-6**	**EXB-6**	**EXB-6**	**EXB-7**	**EXB-7**	**EXB-8**	**MW-7B**	**MW-8B-P**
Sample Type							**DUP**				**oundwater**	**Product**
Sampling Date		**09/13/07**	**09/14/07**	**09/11/07**	**09/11/07**	**09/11/07**	**09/11/07**	**09/14/07**	**09/14/07**	**09/13/07**	**09/13/07**	**09/13/07**
Depth (feet)		**71.3**	**75**	**48.8**	**39.5**	**46.3**	**46.3**	**11**	**17.5**	**82.3**		
Site-Related VOCs (µg/L)												**(ug/kg)**
cis-1,2-Dichloroethylene	5	**8,200** D	**2,500** D	**5,800** D	**13,000** D	**11,000** D	**11,000** D	**3,100** D	**2,700** D	**8,100** D	**1,200** D	2,400 UR
Methylene chloride	5	1 U	1 UJ	1 UJ	1 UJ	1 UJ	1 U	1 UJ	1 UJ	1 UJ	1 U	**1,800** J
Tetrachloroethene	5	3.4	**5.6**	**5.7**	3.8	**7.8**	**7.7**	1 U	1 U	2.8	1.5	2,400 UR
trans-1,2-Dichloroethene	5	**56**	**8.5**	**63**	**120** D	**130** D	**130** D	**26**	**31**	**52**	**7.2**	2,400 UR
Trichloroethene	5	**12,000** D	**4,500** D	**17,000** D	**17,000** D	**17,000** D	**17,000** D	**2,700** D	**3,400** D	**7,200** D	**1,900** D	**2,600** J
Vinyl chloride	2	**130** E	**21**	**52**	**240** E	**230** E	**230** E	**22**	**10**	**320** D	**230** D	4,700 UR
Other VOCs (µg/L)												
Acetone	50	5 U	24	5 U	5.1	5 U	5 U	5 U	5 U	5 U		
Benzene	1	**1.2**	**12**	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Chloroform	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1		
Cyclohexane	NT	1.1	1.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
1,1-Dichloroethane	5	1 U	1.1	1 U	1.2	1 U	1 U	1 U	1 U	1 U		
1,1-Dichloroethene	5	**12**	3.1	**14**	**24**	**23**	**23**	**6.6**	**5.2**	**23**	3.4	2,400 UR
Ethylbenzene	5	1 U	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U		
Methylcyclohexane	NT	2.1	2.9	1 U	1.2	2.5	2.2	1 U	1 U	1 U		
Toluene	5	**6.7**	**38**	1 U	**12**	**6.5**	**6.3**	3.4	1.5	1.4		
Xylene, (total)	NT	3 U	7.6	3 U	3 U	3 U	3 U	3 U	3 U	3 U		

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a/ U - not detected DUP - duplicate sample R - result unusable due to low surrogate recovery
NT - no standard available J - estimated value E - results exceeds calibration range
Bold values exceed the New York State Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, Table 1: New York State Ambient Water Quality Standards and Guidance Values (June 1998).

Table 7

Bedrock Evaluation - Water Level Elevation Data
Emerson Power Transmission
Ithaca, New York
Data from October 2007 (a)

Well ID	Exploroatory Boring ID	Eastings	Northings	Top of Casing Elevation (ft aMSL)	Oct-07	
					Depth to Groundwater (ft)	Groundwater Elevation (ft aMSL)
MW-34B	EB-2	843190.49	886146.18	586.47	9.50	576.97
MW-35T	EB-3	843564.09	887105.95	516.95	18.57	498.38
MW-36B	EB-4	843511.90	887349.68	478.58	18.96	459.62
MW-37B	EB-5	843159.83	886285.85	408.46	2.35	406.11
MW-38T	EB-6	843077.17	886167.81	590.18	24.35	565.83
MW-39T	EB-7	843046.56	886317.64	641.33	43.93	597.40
MW-40T	EB-8	843129.42	886129.65	592.97	7.48	585.49
MW-42T	EB-10	843620.56	886481.76	655.98	30.90	625.08
MW-43T	EB-11	843564.43	885888.68	565.18	15.74	549.44
MW-44T	EB-12	842927.90	885982.86	558.22	26.24	531.98
MW-45T	EB-13	842468.45	885373.78	545.64	9.43	536.21

a/ Abbreviations: ft = feet; btoc = below top of casing; aMSL = above

Table 8

Exploratory Boring Groundwater Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID:	**TOGS 1.1.1, Table 1, Ambient Water Quality Standards and Guidance Values**	**MW-34B**	**MW-35T**	**MW-36B**	**MW-37B**	**MW-38T**	**MW-39T**	**MW-40T**	**MW-42T**	**MW-43T**	**MW-44T**	**MW-45T (b)**	**MW-45T (b)**
Sample Type:													**DUP**
Sampling Date:		**10/15/07**	**10/16/07**	**10/16/07**	**10/17/07**	**10/16/07**	**10/16/07**	**10/16/07**	**10/16/07**	**10/16/07**	**10/16/07**	**10/16/07**	**10/16/07**
Site-Related VOCs (µg/L)													
1,1,1-Trichloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	0.6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethylene	5	5 U	5 U	5 U	**6.9**	5 U	5 U	**62**	5 U	5 U	5 U	1.9 J	1.8 J
Methylene chloride	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	0.77 J	5 U	5 U	5 U	5 U	5 U
Trichloroethene	5	5 U	5 U	0.88 J	2.2 J	5 U	5 U	**15**	5 U	5 U	5 U	**8**	**8.2**
Vinyl chloride	2	**5** U	**5** U	**5** U	**4.8** J	**5** U	**5** U	**11**	**5** U	**5** U	**5** U	**5** U	**5** U
Other VOCs (µg/L)													
Acetone	50	2.8 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	NT	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Bromofluorobenzene	NT	28	27	27	28	28	28	28	28	28	28	28	29
Bromoform	NT	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	NT	5 U	5 U	5 U	5 U	5 U	5 U	5	5 U	5 U	5 U	5 U	5 U
2-Butanone	NT	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	NT	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	NT	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5	5 U	5 U	5 U	5 U	5 U
Chloroform	7	1.4 J	0.86 J	0.83 J	5 U	5 U	**9.6**	5 U	1.6 J	1.4 J	1.5 U	5 U	5 U
Chloromethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	NT	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibromofluoromethane	NT	18	19	18	19	18	19	19	19	17	18	19	19
1,1-Dichloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl isobutylketone	NT	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

Table 8

Exploratory Boring Groundwater Sample Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID:	**TOGS 1.1.1, Table 1, Ambient Water Quality Standards and Guidance Values**	**MW-34B**	**MW-35T**	**MW-36B**	**MW-37B**	**MW-38T**	**MW-39T**	**MW-40T**	**MW-42T**	**MW-43T**	**MW-44T**	**MW-45T (b)**	**MW-45T (b)**
Sample Type:													**DUP**
Sampling Date:		**10/15/07**	**10/16/07**	**10/16/07**	**10/17/07**	**10/16/07**	**10/16/07**	**10/16/07**	**10/16/07**	**10/16/07**	**10/16/07**	**10/16/07**	**10/16/07**
Other VOCs (µg/L)													
1,1,2,2-Tetrachloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	5	5 U	5 U	5 U	0.52 J	5 U	0.3 J	5 U	5 U	5 U	0.55 J	5 U	5 U
1,1,2-Trichloroethane	1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	NT	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

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a/ U - not detected J - estimated concentration
DUP - duplicate sample NT - no standard
b/ MW-45T was identified as MW-45B on the chain of custody

Bold values exceed the New York State Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, Table 1: New York State Ambient Water Quality Standards and Guidance Values (June 1998).

Table 9

Soil Vapor Sampling Intervals
Supplemental Remedial Investigation
Emerson Power Transmission Facility
Ithaca, New York

Sample ID	Sample Interval (ft)	Refusal (ft)	Canister#	Regulator#	Start Vacuum, inches of Hg	Final Vacuum, inches of Hg	Date Sampled	Time, Hrs
SV32	2.1-3.1	4.1	161	256	29	0	8/22/07	1436-1536
SV21f	3-4	-- (a)	462	263	30	6	8/22/07	1502-1602
SV21fR	3-4	--	474	402	29	0	8/22/07	1502-1602
TB	--	--	--	--	--	--	8/22/07	--
SV21g	3-4	--	329	299	28	0	8/22/07	1522-1622
SV27	2.5-3.83	4.83	457	453	28.5		8/22/07	1555-1655
SV20b	2-3	3	487	59	30	0	8/22/07	1643-1743
SV21h	2-3	--	418	63	30	0	8/23/07	1345-1445
SV21i	2-3	--	468	300	28.5	0	8/23/07	1355-1455
SV33	2.1-3.1	4.1	221	375	28	0	8/23/07	1410-1510
SV22	5-6	7	193	186	30	0	8/28/07	1455-1555
SV26	2.3-3.3	4.3	334	346	29	0	8/28/07	1605-1705
SV28	2.5-3.5	4.5	407	394	27	0	8/29/07	0904-1104
SV30	2.1-3.1	4.1	90	148	29.5	0	8/29/07	0957-1057
SV38	2.75-5.25	6.25	99	309	29	0	8/29/07	1059-1159
SV23	4.5-5.5	6.5	493	251	30	0	8/29/07	1411-1511
SV36R	2.25-3.25	4.25	425	397	28	0	8/30/07	1025-1125
MH2	2	--	480	152	29	0	8/30/07	0928-1028
MH1	2	--	425	397	28	0	8/30/07	0931-1031
MH5	2	--	108	256	26	0	8/30/07	1347-1447
MH3	2	--	100	302	29	0	8/30/07	1359-1459
MH4	2	--	347	392	30	1	8/30/07	1412-1512
MH4D	2	--	73	120	30	1	8/30/07	1412-1512
SV34	--	2.1	--	--	--	--	--	--
SV36	--	Utility Conflict	--	--	--	--	--	--
SV35	--	2.66	--	--	--	--	--	--
SV37	--	Utility Conflict	--	--	--	--	--	--
SV24	--	Utility Conflict	--	--	--	--	--	--

Table 9

Soil Vapor Sampling Intervals
Supplemental Remedial Investigation
Emerson Power Transmission Facility
Ithaca, New York

Sample ID	Sample Interval (ft)	Refusal (ft)	Canister#	Regulator#	Start Vacuum, inches of Hg	Final Vacuum, inches of Hg	Date Sampled	Time, Hrs
SV20a	--	1.5	--	--	--	--	--	--
SV21c	--	1	--	--	--	--	--	--
SV21b	--	1.75	--	--	--	--	--	--
SV21a	--	1.5	--	--	--	--	--	--
SV21d	--	2.08	--	--	--	--	--	--
SV21e	--	1.08	--	--	--	--	--	--
SV21j	--	Utility Conflict	--	--	--	--	--	--
SV31	--	2.58	--	--	--	--	--	--
SV25	--	3	--	--	--	--	--	--
SV29	--	1.5	--	--	--	--	--	--
SV-39	3.2-4.2	--	202	450	27	0	10/26/2007	1425-1525
SV-39R	3.2-4.2	--	137	403	29	2.5	10/26/2007	
SV-40	3.1-4.1	--	487	65	29.5	0	10/26/2007	1440-1540
SV-41	3.0-4.2	--	320	449	29	0.5	10/26/2007	1451-1551
SV-42	2.0-3.0	--	225	372	27	0	10/26/2007	1459-1559
MH6	2	--	335	433	29.5	1	10/26/2007	1255-1355

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a/ -- denotes Not Applicable

Table 10

Soil Vapor and Manhole Vapor Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID:	**MH-1**	**MH-2**	**MH-3**	**MH-4**	**MH-4**	**MH-4**	**MH-5**	**MH-5**	**MH-6**	**SV-20B**	**SV-21F**	**SV-21F**	**SV-21G**	**SV-21H**	**SV-21I**	**SV-22**
Sample Type:					**DUP**							**DUP**				
Sampling Date:	**08/30/07**	**08/30/07**	**08/30/07**	**08/30/07**	**08/30/07**	**10/17/07**	**08/30/07**	**10/17/07**	**10/26/07**	**08/22/07**	**08/22/07**	**08/22/07**	**08/22/07**	**08/23/07**	**08/23/07**	**08/28/07**
Depth:	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2-3**	**3-4**	**3-4**	**3-4**	**2-3**	**2-3**	**5-6**
Site-Related VOCs (µg/m3)																
1,1,1-Trichloroethane	37.7	21.6	10.3	22,000	10.4	4.22	31.6	3.33	2.55	209	57.1	65.4	93.2	56.6	28.8	4.77 I
1,2-Dichloroethane	0.617 U	0.617 U	0.617 U	0.699	0.617 U	0.15 U	0.617 U	0.15 U	0.617 U	0.411 UJ	0.617 U	0.617 U	0.617 U	0.617 UI	0.617 UI	0.617 U
cis-1,2-Dichloroethylene	7.13	4.07	1.05	66.1	0.604 U	1.13	0.604 U	1.29	1.69	1110	8.26	7.82	6.93	0.685	1.25	0.604 U
Methylene chloride	22.2	20.8	6.18	6.29	2.61	6.14	6.74 J	6.32	7.24	1.09	0.777	0.706	0.565	1.45	3.39	0.424 U
Tetrachloroethene	10.5	9.17	10.4	31.7	11.4	3.65	7.03	12.5	22.1	237	129	160	232	3,690	695	4.9 I
trans-1,2-Dichloroethene	0.604 UC	0.604 UC	0.604 UC	0.604 UC	0.604 U	0.15 U	0.604 UC	0.15 U	0.604 U	6.85	0.604 U	0.604 U	0.604 U	0.604 UI	0.604 UI	0.604 UC
Trichloroethene	49.7	41	41.5	18,900	50.8	39.3	80.3	55.7	31.7	3,010	1,950	2,420	2,480	239	644	10.2 I
Vinyl chloride	0.234	0.156	0.104 U	0.468	0.104 U	0.04 UC	0.104 U	0.04 UC	0.104 U	0.104 U	0.104 U	0.104 U	0.104 U	0.104 UI	0.104 UI	0.104 U
VOCs (µg/m3)																
Acetone	211	284	31.4	151	162	0.3 U	290	86.4	40.8	42.7	28	32.4	36.2	52.2	108	145 I
Allyl chloride	0.477 UC	0.477 UC	0.477 UC	0.477 UC	0.477 UC	0.15 U	0.477 UC	0.15 U	0.477 U	0.477 U	0.477 U	0.477 U	0.477 U	0.477 UI	0.477 UI	0.477 UC
Benzene	1.62	2.79	0.877	1.36	0.909	2.18	1.69	2.79	0.584	5.2	2.63	2.44	2.11	6.33	61.7	1.36
Bromodichloromethane	289	351	234	106	106	85.8	158	70.8	124	32 C	1.84 C	1.98	1.02 UC	15.5 C	13.9 C	1.02 U
Bromoform	1.16 UJ	1.26 UJ	2	1.58 J	1.58 U	0.15 UC	2	0.15 UC	4.62	1.58 UC	1.58 UC	1.58 U	1.58 UC	1.58 UC	1.58 UC	1.58 U
2-Butanone	0.899 U	0.899 U	0.899 U	0.839 UJ	0.899 U	0.3 U	0.899 U	3.33	0.899 U	5.22	0.899 U	0.899 U	0.899 U	5.43	21	0.899 U
Carbon disulfide	1.87	1.8	1.08	1.08	0.443 UJ	1.17	1.01	1.3	1.46	9.5	2.63	2.56	3.1	5.82	24.1	23.4 I
Carbon tetrachloride	1.15	1.15	1.02	4.09	3.26	1.73 C	3.84	1.73 C	4.8	2.62 C	1.15 C	1.15	1.47 C	2.3 C	2.75 C	0.256 U
Chloroethane	0.268 UJ	0.402 U	0.402 U	0.402 U	0.402 U	0.15 U	0.402 U	0.15 U	0.402 U	0.402 U	0.402 U	0.402 U	0.402 U	0.402 UI	0.402 UI	0.402 U
Chloroform	2,380	2,620	1,220	532	528	400	663	361	611	326	59.6	66	210	509	433	5.91 I
Chloromethane	0.315 U	0.315 U	0.315 U	0.315 U	0.315 U	0.15 U	0.315 U	0.15 U	0.315 U	0.315 U	0.315 U	0.315 U	0.315 U	0.315 UI	0.315 UI	0.63 I
Cyclohexane	0.525 U	0.525 U	0.525 U	0.525 U	0.525 U	0.63	0.525 U	0.91	0.595	23.8	7.35	8.05	0.525 U	5.88	44.1	1.5 I
Dibromochloromethane	72.7	68.4	53.7	33.8	36.4	3.29	60.6	2.34	58.9	1.3 U	1.3 U	1.3 U	1.3 U	1.3 UI	1.3 UI	1.3 U
1,3-Dichlorobenzene	0.917 U	0.917 U	0.917 U	0.917 U	0.917 U	0.15 U	0.917 U	0.15 U	0.917 U	0.917 U	0.917 U	0.917 U	0.917 U	0.917 UI	0.917 UI	0.917 U
1,4-Dichlorobenzene	0.917 U	0.917 U	1.22	1.59	0.917 U	0.15 U	4.77	0.15 U	8.19	0.917 U	0.917 U	0.795 UJ	0.795 UJ	0.917	0.795 UI	0.917 U
Dichlorodifluoromethane	1.36	1.26	1.51	1.76	0.704 UJ	1.21	1.66	1.36	1.46	2.61	0.754 U	2.71	3.02	4.52	0.754 UI	2.06 I
1,1-Dichloroethane	1.93 C	1.03 C	0.617 UC	60.1	0.617 UC	0.15 U	0.617 UC	0.15 U	0.617 U	0.617 U	0.617 U	0.617 U	0.617 U	0.617 UI	0.617 UI	0.617 UC
1,1-Dichloroethene	0.605 U	0.605 U	0.605 U	2,460	0.605 U	0.15 U	0.403 UJ	0.15 U	0.605 U	0.645	0.605 U	0.605 U	0.605 U	0.605 UI	0.605 UI	0.605 U
Ethyl acetate	0.916 U	0.916 U	0.513 UJ	8,910	7,640	0.25 U	12,800	0.25 U	0.916 U	0.916 U	0.916 U	0.916 U	0.916 U	0.916 UI	0.916 UI	0.916 U
Ethylbenzene	3.05	3.18	1.41	3.09	2.74	4.85	2.52	5.83	177	34.4	4.37	4.28	1.9	12.4 UI	84.7	15.4 I
4-ethyltoluene	3.9	3.9	0.899	1.35	0.899	1.2	1.1	1.55	8.49	61.5	2.9	2.8	1.05	3.5	25	9.99 I
Freon 113	1.17 U	1.17 U	1.87	548	1.17 U	0.15 U	1.25	0.15 U	1.17 U	1.48	2.18	2.18	3.58	5.14	3.82	1.17 U
n-Heptane	0.625 U	0.625 U	0.625 U	0.625 U	0.625 U	1.58	0.625 U	2.21	0.75	52.9	8.33	8.33	7.37	7.54	95	0.833 I
n-Hexane	1.04	0.824	0.537 U	0.86	0.537 U	2.22	0.537 U	2.04	1.07	22.9	35.1	37.6	14.3	10.7	83.8	0.537 U
2-Hexanone	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	0.3 U	1.25 U	0.3 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 UI	1.25 UI	1.25 U
Isopropanol	224	340	0.375 U	0.375 U	0.375 U	0.15 U	0.375 U	0.15 U	0.375 U	8	0.375 U	0.375 U	0.375 U	0.375 UI	0.375 UI	0.375 U
Methyltert-butylether	0.55 UC	0.55 UC	0.55 UC	0.55 UC	0.55 UC	0.15 U	0.55 UC	0.15 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 UI	5.31	2.75 C
Styrene	0.649 U	2.47	0.649 U	0.649 U	0.649 U	0.15 U	0.649 U	0.15 U	33.8	3.55	0.649 U	0.649 U	0.649 U	0.649 UI	0.649 UI	0.649 U
Tetrahydrofuran	0.45 U	0.45 U	0.24 UJ	0.719	0.869	0.15 U	1.05	0.15 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 UI	0.45 UI	0.45 U
Toluene	29.9	35.2	8.81	15.3	14.2	17.6	28	20.7	6.47	34.9	82.4	88.9	13.4	59.8	583	30.6 I
Trichlorofluoromethane	0.742 UJ	0.685 UJ	0.857 U	0.742 UJ	0.857 U	0.15 U	0.8 UJ	0.15 U	0.8 UJ	1.66	1.66	1.6	1.88	2.23	2.11	1.77 I
1,2,4-trimethylbenzene	15	18	3.4	6.5	3.15	4.95	3.85	6.9	8.49	1,700	16	18.5	5.6	15	90.9	44 I
1,3,5-trimethylbenzene	4.05	4.65	1.1	1.95	1.35	1.65	1.55	2.3	6.9	248	5.85	6.05	3.4	5.8	28	11.5 I
2,2,4-trimethylpentane	0.522 UJ	0.712 U	0.712 U	0.617 UJ	0.712 U	0.855	0.712 J	1.09	0.76	15.7	0.522 UJ	0.712 U	0.712 U	1.23	7.31	0.855 I
o-Xylene	5.12	6.44	1.46	3.13	2.74	4.15	2.25	5.47	279	136	5.91	6.18	3.4	15	95.3	17.7 I
m&p Xylenes	19	21.2	5.78	10.6 UJ	9.71 UJ	14.7	12.8 UJ	17.8	1,150	159	17.7	22.1	14.2	51.2	352	61.3 I

Table 10

Soil Vapor and Manhole Vapor Results
Supplemental RI
Emerson Power Transmission
Ithaca, New York

Sample ID:	**SV-23**	**SV-26**	**SV-27**	**SV-28**	**SV-30**	**SV-32**	**SV-33**	**SV-36**	**SV-38**	**SV-39**	**SV-39R**	**SV-40**	**SV-41**	**SV-42**
Sample Type:											**DUP**			
Sampling Date:	**08/29/07**	**08/28/07**	**08/22/07**	**08/29/07**	**08/29/07**	**08/22/07**	**08/23/07**	**08/30/07**	**08/29/07**	**10/26/07**	**10/26/07**	**10/26/07**	**10/26/07**	**10/26/07**
Depth:	**4.5-5.5**	**2.3-3.3**	**2.5-3.83**	**2.5-3.5**	**2.1-3.1**	**2.1-3.1**	**2.1-3.1**	**2.25-5.25**	**0**	**3.2-4.2**	**3.2-4.2**	**3.1-4.1**	**3.0-4.2**	**2.0-3.0**
Site-Related VOCs (µg/m3)														
1,1,1-Trichloroethane	0.721 UJ	4.05 I	199	0.777 UJ	0.832 U	22.2	4.05	77.1	63.8 I	0.832	0.777 UJ	63.2 I	49.9	22.2
1,2-Dichloroethane	0.617 U	0.617 U	0.617 UI	0.617 U	0.617 U	0.617 U	0.617 U	0.617 U	0.617 U	1.17 U	1.17 U	1.17 U	1.17 U	1.17 U
cis-1,2-Dichloroethylene	0.604 U	0.604 U	0.604 UI	0.604 U	0.604 U	0.604 U	0.685	41.1	0.604 I	4.39	3.67	0.766	1.73	0.927
Methylene chloride	0.671	0.53 U	0.53 UI	2.9 I	0.918 I	0.53	0.53	0.636	8.83 I	1.73	1.41	14.1	0.53 U	0.53 U
Tetrachloroethene	2	1.03 U	26.2	0.758 UJ	146 I	36.5	52.4	2,890	28.3 I	1.59 I	1.59 I	29 I	105 I	32.4 I
trans-1,2-Dichloroethene	0.604 U	0.604 U	0.604 UI	0.604 U	0.604 U	0.604 U	0.604 U	0.604 U	0.604 U	0.604 U	0.604 U	0.604 U	0.604 U	0.604 U
Trichloroethene	2.08	2.46 I	457	1.09 I	1.09 I	3040	511	1,130	1,820 I	23.2	20.5	730 I	111	264
Vinyl chloride	0.104 U	0.104 U	0.104 UI	0.104 U	0.104 U	0.104 U	0.104 U	0.104 U	0.104 U	0.104 U	0.104 U	0.104 U	0.104 U	0.104 U
VOCs (µg/m3)														
Acetone	37.2	0.724 U	0.724 UI	122 I	47.3 I	28.7	69.5	96.6	265 I	43.7	42	54.1	63.7	115
Allyl chloride	0.477 U	0.477 UC	0.477 UI	0.477 UC	0.477 UC	0.477 U	0.477 U	0.477 U	0.477 UC	0.477 U	0.477 U	0.477 U	0.477 U	0.477 U
Benzene	8.44	0.487 U	53.3	7.53 I	2.6 I	1.56	1.53	32.8	1.01 I	3.47	3.57	5.55 I	12	12.7
Bromodichloromethane	1.02 U	1.02 U	23.2 C	1.02 U	2.04 I	1.02 UC	2.32 C	1.43	4.02 I	1.98	1.77	12.4 I	2.66	3.54
Bromoform	1.58 U	1.58 U	1.58 UC	1.58 U	1.58 U	1.58 UC	1.58 UC	1.58 U	1.58 U	1.58 U	1.58 U	1.58 U	1.58 U	1.58 U
2-Butanone	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	0.899 U	2.22	25.2	1.56 I	8.69	8.39	19.8	24.6	19.8
Carbon disulfide	16.1	50 I	90.5	13.4 I	2.75 I	44.9	2.25	6.24	29.4 I	3.67	3.51	28.5	3.89	5.76
Carbon tetrachloride	0.256 U	0.256 U	0.256 UC	0.256 U	0.256 U	2.37 C	3.07 C	7.42	3.9 I	0.256 U	0.256 U	1.79	1.85	0.256 U
Chloroethane	0.402 U	0.402 U	0.402 UI	0.402 U	0.402 U	0.402 U	0.402 U	0.402 U	0.402 U	0.402 U	0.402 U	0.402 U	0.402 U	0.402 U
Chloroform	42.2	7.1 I	167	14.7 I	46.1 I	6.45	44.7	286	969 I	10.2	9.78	476	884	167
Chloromethane	0.945	0.315 U	0.315 UI	1.15 I	0.315 U	0.315 U	0.315 U	0.315 U	0.315 U	0.315 U	0.315 U	1.24	0.315 U	0.315 U
Cyclohexane	5.14	0.525 U	171	5.11 I	0.84 I	42	1.64	3.29	0.525 U	4.83	4.72	14 I	62.3	23.8
Dibromochloromethane	1.3 U	1.3 U	1.3 UI	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
1,3-Dichlorobenzene	0.917 U	0.917 U	0.917 UI	0.917 U	0.917 U	0.917 U	0.917 U	0.917 U	0.917 U	2.57 I	2.45 I	0.917 U	0.917 U	0.917 U
1,4-Dichlorobenzene	0.917 U	0.917 U	0.795 UI	0.917 U	0.917 U	0.917 U	0.856 UJ	0.917 U	0.917 U	3.82	3.62	3.12	4.32	3.72
Dichlorodifluoromethane	2.16	1.96 I	2.36	2.21 I	2.16 I	2.71	2.66	6.79	4.32 I	0.617 U	0.617 U	0.617 U	0.617 U	0.617 U
1,1-Dichloroethane	0.617 U	0.617 UC	0.617 UI	0.617 UC	0.617 UC	0.617 U	0.617 U	2.26	0.494 UC	0.411 UJ	0.617 U	0.617 U	0.617 U	0.617 U
1,1-Dichloroethene	0.605 U	0.605 U	0.605 UI	0.605 U	0.605 U	0.605 U	0.605 U	0.605 U	0.645 I	0.605 U	0.605 U	0.605 U	0.605 U	0.605 U
Ethyl acetate	0.916 U	0.916 U	0.916 UI	0.916 U	0.916 U	0.916 U	0.916 U	0.916 U	0.916 U	0.916 U	0.916 U	0.916 U	0.916 U	0.916 U
Ethylbenzene	43.7	15 I	2620	30.4 I	50.5 I	1.46	1.32	14.1	0.75 I	5.3 I	4.55 I	17.2 I	6.8 I	4.72 I
4-ethyltoluene	21.5	5.15 I	54	13.2 I	52.4 I	0.7 UJ	0.6 UJ	4.9	0.55 U	1.3 I	1.3 I	5.8 I	3.9 I	3.05 I
Freon 113	1.17 U	0.857 UJ	9.43	1.17 U	1.17 U	1.32	2.49	7.09	0.857 U	0.857 UJ	0.779 UJ	1.48	1.56	1.32
n-Heptane	19.6	2,030 I	270	48.7 I	1.29 I	236	2.46	23.3	0.625 U	5.58	5.21	14.2 I	46.7	21.2
n-Hexane	41.6	1180 I	397	15.8 I	3.4 I	193	2.54	25.4	0.537 U	3.3	2.97	24.7	96.7	30.8
2-Hexanone	1.25 U	1.25 U	1.25 UI	1.25 U	1.25 U	1.25 U	1.25 U	2.54	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U
Isopropanol	0.375 U	0.375 U	0.375 UI	0.375 U	0.375 U	0.375 U	0.375 U	0.375 U	0.375 U	0.375 U	0.375 U	0.375 U	0.375 U	0.375 U
Methyltert-butylether	2.68	0.55 UC	3.85	2.93 C	24.6 C	0.55 U	0.55 U	0.55 U	0.55 UC	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U
Styrene	0.649 U	0.649 U	0.649 UI	0.649 U	0.649 U	0.649 U	0.649 U	0.649 U	0.649 U	4.5 I	3.77 I	0.649 U	1.43 I	0.649 U
Tetrahydrofuran	0.45 U	0.45 U	0.45 UI	5.6 I	0.45 U	0.45 U	0.45 U	3.33	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Toluene	81.2	34.5 I	486	113 I	70.5 I	6.4	18.4	78.1	4.94 I	8.5 I	8.08 I	14.9 I	67.4 I	26 I
Trichlorofluoromethane	1.6	1.54 I	1.88	2.4 I	1.43 I	1.66	1.6	2.11	3.2 I	1.48	1.48	1.43	1.66	1.31
1,2,4-trimethylbenzene	95.9	31.5 I	145	62.4 I	172 I	3.95	2.85	30.5	2.1 I	5.25 I	6.2 I	32.5 I	14.5 I	9.99 I
1,3,5-trimethylbenzene	28.5	13.5 I	84.9	18 I	41.6 I	2.65	2.2	7	0.75 U	1.3 I	2.7 I	10.1 I	9.19 I	5.9 I
2,2,4-trimethylpentane	2.33	0.712 U	21.8	5.27 I	1.28 I	0.712 U	0.712 U	9.02	0.712 U	0.855	0.855	0.712	1.38	1.04
o-Xylene	48.1	12.4 I	1,910	36.4 I	65.3 I	2.3	1.5	13.2	0.75 I	4.19 I	3.44 I	26.9 I	10 I	5.61 I
m&p Xylenes	124	34 I	9,580	113 I	210 I	6.36	6.18	30.9	3.18 I	13.7 I	11.4 I	75.9 I	29.6 I	17.2 I

a/ U - not detected J - estimated value I - estimated results due to internal standard recovery
C - estimated results due to exceedences in calibration criteria DUP - duplicate sample

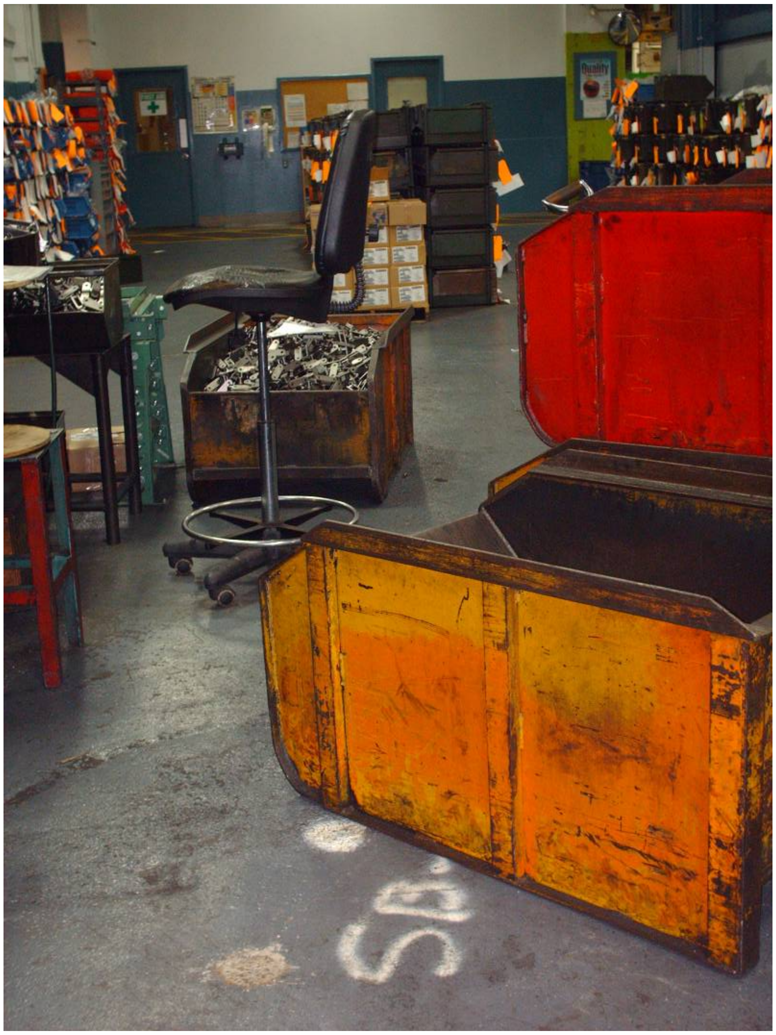
Appendix A – Site Photographs

Photograph 1: AOC 1; Former Department 507 Degreaser Area; Soil Boring SB-1a.

Photograph 2: AOC 1; Former Department 507 Degreaser Area; Soil Boring SB-1b.

Photograph 3: AOC 1; Former Department 507 Degreaser Area; Soil Boring SB-1c.

Photograph 4: AOC 2; Former Solvent Degreaser Building 6A; Soil Boring SB-2a.



Photograph 5: AOC 2; Former Solvent Degreaser Building 6A; Soil Boring SB-2b.

Photograph 6: AOC 3; Former Morse Chain Reservoir/Spray Pond; Soil Boring SB-3a.

Photograph 7: AOC 3; Former Morse Chain Reservoir/Spray Pond; Soil Boring SB-3b.

Photograph 8: AOC 3; Former Morse Chain Reservoir/Spray Pond; Soil Boring SB-3c.

Photograph 9: AOC 4; Former Open Stone Reservoir; Soil Boring SB-4a.

Photograph 10: AOC 4; Former Open Stone Reservoir; Soil Boring SB-4b.

Photograph 11: AOC 5; Former 100,000 Gallon Fuel Oil Tank/Pump House; Soil Boring SB-5a.

Photograph 12: AOC 5; Former 100,000 Gallon Fuel Oil Tank/Pump House; Soil Boring SB-5b.

Photograph 13: AOC 5; Former 100,000 Gallon Fuel Oil Tank/Pump House; Soil Boring SB-5c.

Photograph 14: AOC 6; Oil Shed (Building 30); Soil Boring SB-6.

Photograph 15: AOC 7; Former Cyanide & Copper Plating Area; Soil Boring SB-7c.

Photograph 16: AOC 7; Former Cyanide & Copper Plating Area; Soil Boring SB-7d.

Photograph 17: AOC 7; Former Cyanide & Copper Plating Area; Soil Boring SB-7e.

Photograph 18: AOC 7; Former Cyanide & Copper Plating Area; Soil Boring SB-7g.

Photograph 19: AOC 8; Former Tank Shed; Soil Boring SB-8.

Photograph 20: AOC 9; Former Tank Shed; Soil Boring SB-9.

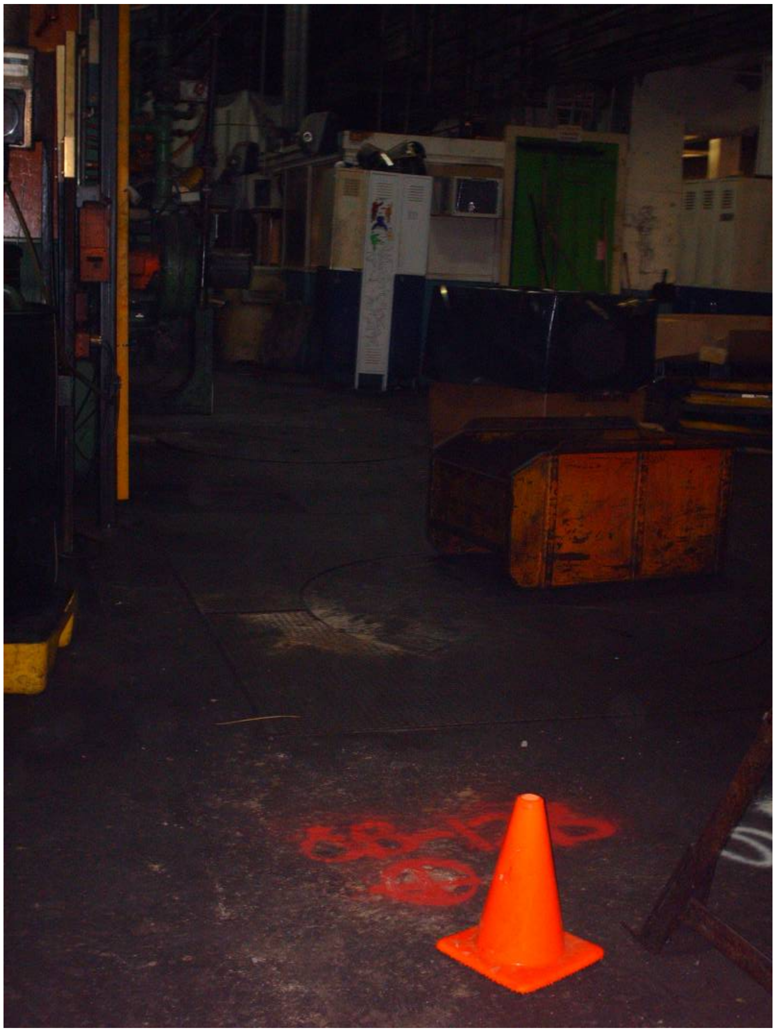
Photograph 21: AOC 10; Former Wooded Drum Area; Drum Dumping Area.

Photograph 22: AOC 10; Former Wooded Drum Area; Sample Collection Area.

Photograph 23: AOC 11; Former Drum Storage Area (Near Building 30); Test Pit 11 A/B.

Photograph 24: AOC 11; Former Drum Storage Area (Near Building 30); Test Pit 11 C/D.

Photograph 25: AOC 12; Former Quench Oil Pits; Soil Boring SB-12a.



Photograph 26: AOC 12; Former Quench Oil Pits; Soil Boring SB-12b.

Photograph 27: AOC 13; Former 20,000 Gallon Fuel Oil Aboveground Tank; Soil Boring SB-13.

Photograph 28: AOC 14; Former 6,000 Gallon Lubricating Oil Aboveground Tank; Soil Boring SB-14.

Photograph 29: AOC 15; Former 500 Gallon Gasoline Aboveground Tank; Soil Boring SB-15.

Photograph 30: AOC 15; Former 500 Gallon Gasoline Aboveground Tank; Soil Sample from SB-15.

Photograph 31: AOC 16; Former 5,000 Gallon Sulfuric Acid Tanks; Soil Boring SB-16a.

Photograph 32: AOC 16; Former 5,000 Gallon Sulfuric Acid Tanks; Soil Boring SB-16b.

Photograph 33: AOC 17; Former 10,000 Gallon Fuel Oil Aboveground Tank; Soil Boring SB-17.

Photograph 34: AOC 18; Former Outdoor Area of Disturbance; Test Pit 18 A/B.

Photograph 35: AOC 18; Former Outdoor Area of Disturbance; Test Pit 18 C/D.

Photograph 36: AOC 19; Drainage Ditches along Railroad Tracks/Oil Traps; Soil Boring SB-19a.

Photograph 37: AOC 19; Drainage Ditches along Railroad Tracks/Oil Traps; Soil Boring SB-19b.

Photograph 38: AOC 19; Drainage Ditches along Railroad Tracks/Oil Traps; Soil Boring SB-19c.

Photograph 39: AOC 19; Drainage Ditches along Railroad Tracks/Oil Traps; Soil Boring SB-19d.

Photograph 40: AOC 19; Drainage Ditches along Railroad Tracks/Oil Traps; Soil Boring SB-19e.

Photograph 41: AOC 20; Storm Sewer along South Cayuga Street.

Photograph 42: AOC 21; Sanitary Sewer Lines; Soil Boring SB-21b.

Photograph 43: AOC 21; Sanitary Sewer Lines; Soil Boring SB-21c.

Photograph 44: AOC 21; Sanitary Sewer Lines; Soil Boring SB-21d.

Photograph 45: AOC 22: Former Outdoor Drum Storage Area; Soil Boring SB-22a.

Photograph 46: AOC 22: Former Outdoor Drum Storage Area; Soil Boring SB-22b.

Photograph 47: AOC 23; Buildings 1, 2, and 10; Soil Boring SB-23a.

Photograph 48: AOC 23; Buildings 1, 2, and 10; Soil Boring SB-23b.

Photograph 49: AOC 23; Buildings 1, 2, and 10; Soil Boring SB-23c.

Photograph 50: AOC 23; Buildings 1, 2, and 10; Soil Boring SB-23d.

Photograph 51: AOC 23; Buildings 1, 2, and 10; Soil Boring SB-23e.

Photograph 52: AOC 23; Buildings 1, 2, and 10; Soil Boring SB-23f.

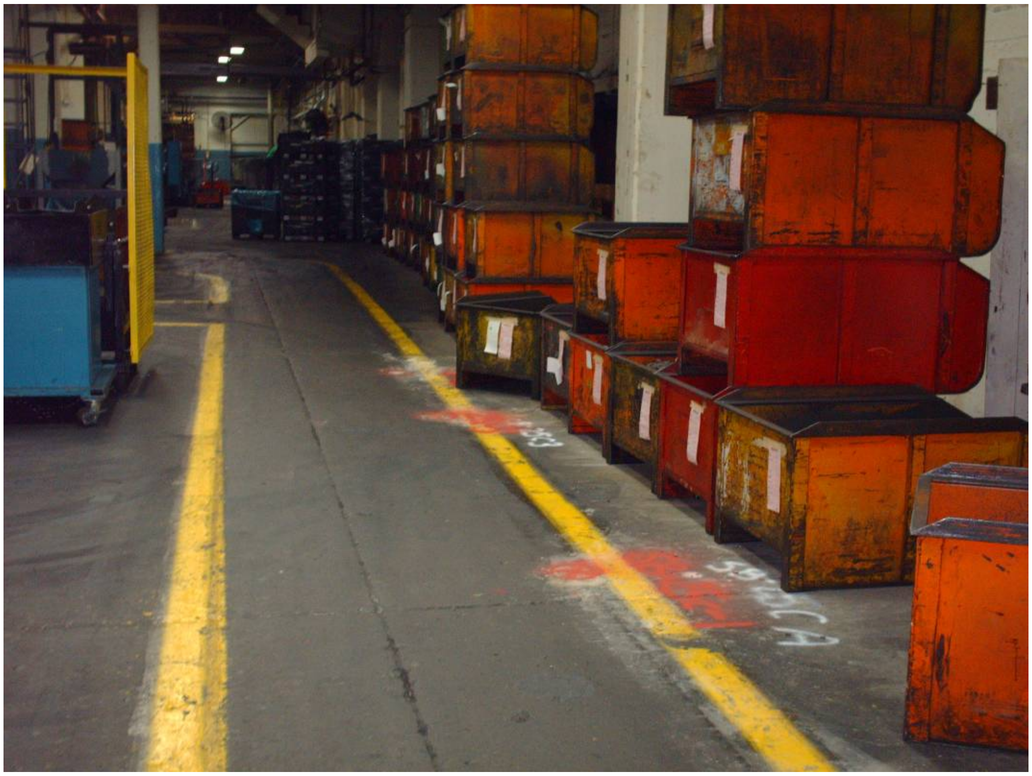
Photograph 53: AOC 25; Previous Indoor Soil Vapor Locations; Soil Boring SB-25a-1.

Photograph 54: AOC 25; Previous Indoor Soil Vapor Locations; Soil Boring SB-25a-2.

Photograph 55: AOC 25; Previous Indoor Soil Vapor Locations; Soil Boring SB-25a-3.

Photograph 56: AOC 25; Previous Indoor Soil Vapor Locations; Soil Borings SB-25b-1, SB-25b-2 and SB-25b-3.

Photograph 57: AOC 25; Previous Indoor Soil Vapor Locations; Soil Borings SB-25b-4, SB-25b-5 and SB-25b-6.



Photograph 58: AOC 25; Previous Indoor Soil Vapor Locations; Soil Borings SB-25c-1, SB-25c-2, and SB-25c-3.

Photograph 59: AOC 25; Previous Indoor Soil Vapor Locations; Soil Borings SB-25d-1 and SB-25d-2.

Photograph 60: Fire Water Reservoir Investigation – Air Monitoring at Downwind Location.

Photograph 61: Fire Water Reservoir Investigation – Dust Suppression Engineering Controls.

Photograph 62: Fire Water Reservoir Investigation – Angled Exploratory Boring EXB-8 (angle measurement).

Photograph 63: Fire Water Reservoir Investigation – Angled Exploratory Boring EXB-8 (air hammer drilling method).

Appendix B – Soil Boring Logs and Well Construction Diagrams

Boring Log: SB-1a

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 13.5

Borehole Diameter (inches): 2.25

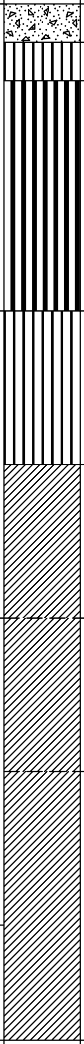
**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
0–4	X	4.0 0.0		70
4–8	X	0.0		65
8–12	X	0.0		80
12–13.5	X	NM		100

Subsurface Profile

Lithology



Description

Ground Surface

Concrete

Sandy Silt (ML)
Dark brown (10YR 3/3) sandy silt; some dark gray (10YR 4/1) weathered shale fragments; moist.

Elastic Silt (MH)
Dark greenish gray (GLEY1 4/5G) to yellowish brown (10YR 5/4) clayey silt; some dark gray (10YR 4/1) weathered shale fragments; medium soft to stiff; dry to moist.

Sandy Silt (ML)
Very dark gray (10YR 3/1) sandy silt; some angular shale fragments; few dark greenish gray (GLEY1 4/5G) mottling; dry.

Lean Clay (CL)
Yellowish brown (10YR 5/4) medium plasticity clay; some dark greenish gray (GLEY1 4/5G) mottling; some very dark gray (10YR 3/1) shale fragments; soft; moist.

Lean Clay (CL)
Very dark grayish brown (10YR 3/2) silty clay with brownish yellow (10YR 6/8) to olive (5Y 5/3) mottling; stiff; moist.

Soil sample SB-1a collected from 8 to 10 feet bgs for VOCs, TAL Metals.
Water sample SB-1a collected for VOCs.

Lean Clay (CL)
Gray (2.5Y 5/1) medium plasticity clay with some shale fragments; solvent odor; shiny luster; soft; wet.

Bottom of Boring at 13.5 feet
Refusal at 13.5 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log: SB-1b

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 13.2

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
2		0.0		30		***Concrete*** ***Shale*** Dark gray (2.5Y 4/1) shale; dry. ***Sandy Silt (ML)*** Very dark grayish brown (2.5Y 3/2) sandy silt; some angular shale fragments; white (2.5Y 8/1) mottling at 3.5 feet bgs; wet.
4						
6		0.0		25		***Silt (ML)*** Dark gray (10YR 4/1) silt with gray (10YR 6/1) mottling; some very dark brown (10YR 2/2) rock fragments; wet.
8						
10		0.0		50		***Shale*** Grayish brown (2.5Y 5/2) shale fragments; dry. Soil sample SB-1b collected from 12 to 13.3 feet bgs for VOCs, TAL Metals.
12		NM		90		
14						Bottom of Boring at 13.2 feet Refusal at 13.2 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-1c

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 13

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete
2		0.0		50		***Shale*** Very dark grayish brown (10YR 3/2) to very dark gray (10YR 3/1) shale; few fossil fragments; black (10YR 2/1) staining and solvent odor from 2 to 5 feet bgs; dry.
4						
6		0.0		75		***Lean Clay (CL)*** Brown (10YR 4/3) medium plasticity clay; very soft to medium soft; some very dark gray (10YR 3/1) angular shale fragments; trace mottling; moist.
8						
		3.7				***Shale*** Dark grayish brown (10YR 4/2) highly weathered shale; dry.
		0.0				Soil sample SB-1c collected from 8 to 9 feet bgs for VOCs, TAL Metals.
10				75		
		0.0				***Lean Clay (CL)*** Brown (10YR 4/3) to yellowish brown (10YR 5/6) medium plasticity clay; very soft; some very dark gray (10YR 3/1) angular shale fragments; moist to wet.
		0.0				
12						
		0.0		95		
						Bottom of Boring at 13 feet Refusal at 13 feet bgs.
14						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-1d

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 14.2

Borehole Diameter (inches): 2.25

*AMSL = Above Mean Sea Level

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
					▒	***Concrete***
					░	***Well-Graded Sand (SW)*** Very dark grayish brown (10YR 3/2) medium- to coarse-grained sand; loose; dry.
2		0.0		50	▥	***Silt with Gravel (ML)*** Dark gray (10YR 4/1) silt with gravel and highly weathered shale fragments; little brownish yellow (10YR 6/6) mottling; dry.
4					▥	
6		0.0		50	▥	
8					▥	
		0.0			▥	
10				80	▨	***Lean Clay (CL)*** Dark yellowish brown (10YR 4/6) silty clay; soft; solvent odor at 12 to 14.2 feet bgs; moist to wet. Soil sample SB-1d collected from 11 to 12 feet bgs for VOCs, TAL Metals. Water sample SB-1d collected for VOCs.
		12.0			▨	
12					▨	
		3.0			▨	
				100	▨	
		10.0			▨	
14		22.0			▨	
						Bottom of Boring at 14.2 feet Refusal at 14.2 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-2a

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
	☒					***Concrete***
1		0.0		45		***Poorly-Graded Sand (SP)*** Very dark brown (10YR 2/2) coarse-grained sand; some strong brown (10YR 5/8) staining; medium dense; wet. Soil sample SB-2a collected from 1.2 to 1.5 feet bgs for VOCs, TAL Metals.
2 3 4 5						Bottom of Boring at 1.5 feet

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-2b

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 4.2

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete
1						***Poorly-Graded Sand (SP)*** Very dark gray (10YR 3/1) coarse-grained sand; petroleum odor; dense; dry.
2 3 4		0.0		20		***Siltstone*** Grayish brown (10YR 4/2) pulverized siltstone; dry. Soil sample SB-2b collected from 3 to 4 feet bgs for VOCs, TAL Metals.
5						Bottom of Boring at 4.2 feet Refusal in bedrock at 4.2 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-3a

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 7

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

WSP

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
	☒				▩	***Asphalt***
2		0.0		50	▨	***Lean Clay (CL)*** Light olive brown (2.5Y 5/4) silty clay; some very dark gray (2.5Y 3/1) mottling; stiff; dry.
4 6	☒	0.0		40	░	***Poorly-Graded Sand with Gravel (SP)*** Very dark gray (10YR 3/1) coarse-grained sand with gravel; medium dense; moist. Soil samples SB-3a (4.5 to 5.5 feet bgs) and SB-3a (6 to 7 feet bgs) collected for VOCs, SVOCs, TAL Metals, PCBs.
8 10 12 14						Bottom of Boring at 7 feet Refusal at 7 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-3b

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 11

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
2		0.0		70		***Asphalt*** ***Poorly-Graded Sand (SP)*** Brown (10YR 4/3) and black (10YR 2/1) medium-grained sandy fill; some gravel; loose; dry to moist.
						Concrete
4						
6		0.0		90		***Lean Clay (CL)*** Yellowish brown (10YR 5/4) silty clay; some gravel; some dark yellowish brown (10YR 4/4) mottling; soft to stiff; moist. Soil samples SB-3b (7 to 8 feet bgs) and SB-3b (10 to 11 feet bgs) collected for VOCs, SVOCs, TAL Metals, PCBs.
8						
10		0.0		100		
12						Bottom of Boring at 11 feet Refusal at 11 feet bgs.
14						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-3c

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 12
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description Ground Surface
2		0.0		50	▥	***Silt with Gravel (ML)*** Very dark gray (2.5Y 3/1) silt with gray (2.5Y 6/1) gravel; dry.
4 6		0.0 4.4		60	▨	***Lean Clay (CL)*** Olive brown (2.5Y 4/4) silty clay with some olive brown (2.5Y 4/3) mottling; some gravel; stiff; dry. Soil samples SB-3c (7 to 8 feet bgs) and SB-3c (11 to 12 feet bgs) collected for VOCs, SVOCs, TAL Metals, PCBs.
8 10		0.0		95	▨	
12 14						Bottom of Boring at 12 feet Refusal in concrete at 12 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-4a

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
	☒				▩	***Concrete***
	☒	0.0		10	░	***Poorly-Graded Sand (SP)*** Dark gray (10YR 4/1) coarse-grained sand; dense; dry. Soil sample SB-4a collected from 0.5 to 1 feet bgs for VOCs, SVOCs, TAL Metals, PCBs.
1						Bottom of Boring at 1 feet Refusal in bedrock at 1 foot bgs.
2						
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-4b

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 10
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Description
					Ground Surface
					Concrete
2		0.0		100	***Poorly-Graded Sand (SP)*** Grayish brown (2.5Y 5/2) medium-grained sand; some clay; some coarse gravel; petroleum odor from 4 to 10 feet bgs; liquid product at 8 to 10 feet bgs; moist to wet. Soil sample SB-4b collected from 7 to 8 feet bgs for VOCs, SVOCs, TAL Metals, PCBs. Water sample SB-4b collected for VOCs.
4					
6		0.0		40	
8					
		0.0		50	
10					Bottom of Boring at 10 feet Refusal in bedrock at 10 feet bgs.
12					
14					

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-5a

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 13.5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Asphalt
						Poorly-Graded Sand with Gravel (SP) Brown (10YR 4/3) medium- to coarse-grained sand with white (10YR 8/1) shale fragments and gravel; loose; dry to moist.
2		0.0		60		
4						
6		0.0		50		
8						
						Silty Gravel with Sand (GM) Dark gray (10YR 4/1) to very dark gray (10YR 3/1) shaley gravel with silt and some fine-grained sand; loose; dry to moist.
10		0.0		50		
12						
		0.0		100		
						Lean Clay (CL) Yellowish brown (10YR 5/4) low plasticity clay, trace mottling; little gravel; very soft; moist. Soil sample SB-5a collected from 13 to 13.5 feet bgs for STARS VOCs, PAHs.
14						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-5a

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 13.5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Bottom of Boring at 13.5 feet Refusal at 13.5 feet bgs.
16						
18						
20						
22						
24						
26						
28						
30						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-5b

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 4

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
						Concrete
1						***Poorly-Graded Sand (SP)*** Olive brown (2.5Y 4/3) coarse-grained sand; loose; dry.
2		0.0		60		***Well-Graded Sand (SW)*** Very dark gray (2.5Y 3/1) fine- to medium-grained sand; some silt; some olive yellow (2.5Y 6/6) mottling; loose; dry. Soil sample SB-5b collected from 3 to 4 feet bgs for STARS VOCs, PAHs.
3						
4						Bottom of Boring at 4 feet Refusal at 4 feet bgs.
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-5c

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 4.5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete
1						***Silty Sand (SM)*** Grayish brown (2.5Y 5/2) fine-grained sand and silt; loose; dry. Soil sample SB-5c collected from 3.5 to 4.5 feet bgs for STARS VOCs, PAHs.
2		0.0		90		
3						
4		0.0		100		
						Bottom of Boring at 4.5 feet Refusal at 4.5 feet bgs.
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-6

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 13

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
2		0.6		85
4				
		0.0		
		0.0		
6		0.0		80
		0.0		
		26.0		
8				
10		0.0		80
12				
		0.0		100
14				

Subsurface Profile

Lithology

Description

Ground Surface

Asphalt

Silty Sand with Gravel (SM)
Grayish brown (10YR 5/2) silty sand with gravel; loose; dry.

Poorly-Graded Sand (SP)
Black (10YR 2/1) medium- to coarse-grained sand; some gravel; some reddish yellow (5YR 6/8) mottling at 4 to 8 feet bgs; few tree roots at 8 to 9 feet bgs; loose; dry.

Soil sample SB-6 collected from 7 to 8 feet bgs for STARS VOCs, PAHs.

Lean Clay (CL)
Very dark gray (5YR 3/1) medium plasticity clay; some brown (10YR 4/3) interbedded shale fragments at 10 to 11 feet bgs; soft; moist.

Fat Clay (CH)
Grayish brown (10YR 5/2) medium to high plasticity clay; some yellow (10YR 7/8) mottling; moist becoming wet.

Bottom of Boring at 13 feet
Refusal at 13 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-7c

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 2

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
1	☒	0.6		70	▨	***Poorly-Graded Sand (SP)*** Dark olive brown (2.5Y 3/3) medium-grained sand; medium dense; some light yellowish brown (2.5Y 6/3) mottling; dry to moist. Soil sample SB-7c collected from 1 to 2 feet bgs for cyanide, TAL Metals.
2						Bottom of Boring at 2 feet Refusal at 2 feet bgs.
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-7d

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete Grayish brown (2.5Y 5/2) concrete fragments; dry.
1						
		0.8				
2				70		
		2.7				
3						***Lean Clay (CL)*** Light olive brown (2.5Y 5/4) medium plasticity clay; some gravel; hard; moist. Soil sample SB-7d collected from 3 to 4 feet bgs for cyanide, TAL Metals.
		16.0				
4						***Poorly-Graded Sand (SP)*** Very dark grayish brown (2.5Y 3/2) fine-grained sand; little clay; little gravel; medium dense; some olive yellow (2.5Y 6/6) mottling; moist.
		2.2		100		
5						

Bottom of Boring at 5 feet
Refusal at 5 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-7e

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
1 2		2.5		20		***Poorly-Graded Sand (SP)*** Dark grayish brown (2.5Y 4/2) to light gray (2.5Y 7/2) coarse-grained sand and broken up concrete; loose; dry.
3						***Sandy Lean Clay (CL)*** Light olive brown (2.5Y 5/3) sandy clay; soft; moist.
4		7.2		100		***Silt with Sand (ML)*** Dark grayish brown (2.5Y 4/2) shaley silt and sand; some gravel; loose; dry. Soil sample SB-7e collected from 4 to 5 feet bgs for cyanide, TAL Metals.
5						

Bottom of Boring at 5 feet

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-7g

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 4

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Asphalt
1						***Concrete***
2		0.0		80		***Sandy Silt (ML)*** Black (2.5Y 2.5/1) sandy silt; loose; moist. Soil sample SB-7g collected from 2.5 to 3 feet bgs for cyanide, TAL Metals.
3						***Shale*** Dark gray (2.5Y 4/1) shale fragments; dry.
4						Bottom of Boring at 4 feet
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-8

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 3.5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
						Topsoil
1 2		0.0		100		***Silty Sand (SM)*** Dark yellowish brown (10YR 4/4) silty sand; little clay; dense; some yellowish brown (10YR 5/8) mottling; moist.
3						***Poorly-Graded Gravel (GP)*** Gray (10YR 6/1) gravelly shale fragments; dense; dry to moist. Soil sample SB-8 collected from 3 to 3.5 feet bgs for STARS VOCs, PAHs.
4 5						Bottom of Boring at 3.5 feet Refusal at 3.5 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-9

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 6

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
					▨	***Asphalt***
2	☒	0.0		80	▥	***Sandy Silt with Gravel (ML)*** Olive brown (2.5Y 4/4) sandy silt with gravel; dense; dry.
4	☒	NM		100	▥	***Elastic Silt (MH)*** Light olive brown (2.5Y 5/4) clayey silt; some gravel; some gray (2.5Y 5/1) mottling; moist. Soil sample SB-9 collected from 5 to 6 feet bgs for STARS VOCs, PAHs.
6						Bottom of Boring at 6 feet Refusal in shale/concrete at 6 feet bgs.
8						
10						
12						
14						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-10

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 5, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 0.5
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
		0.0				***Topsoil*** Dark grayish brown (2.5Y 4/2) topsoil with shale fragments; loose; dry. Samples collected from 0 to 0.5 feet bgs (SB-10a through SB-10e) for VOCs, SVOCs, TAL Metals, PCBs. Bottom of Boring at 0.5 feet Refusal at 0.5 feet bgs.
1						
2						
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-12a

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 30, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 3.8

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					**Subsurface Profile**	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete
1		0.0		80		***Lean Clay (CL)*** Olive brown (2.5Y 4/3) silty clay with gravel; some olive yellow (2.5Y 6/6) mottling.
2 3						***Poorly-Graded Sand (SP)*** Black (10YR 2/1) fine- to medium-grained sand; petroleum odor and oily sheen; moist to dry. Soil sample SB-12a collected from 2 to 3.5 feet bgs for VOCs, PAHs, PCBs.
4 5						Bottom of Boring at 3.8 feet Refusal in bedrock at 3.8 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-12b

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 30, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 14.5

Borehole Diameter (inches): 2.25

*AMSL = Above Mean Sea Level

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
2		0.0		45
4				
6		0.0		60
8				
10		0.0		60
12				
		NM		100
14				

Subsurface Profile

Lithology

Description

Ground Surface

Concrete

Poorly-Graded Sand with Gravel (SP)
Olive brown (2.5Y 4/3) and dark gray (2.5Y 4/1) coarse-grained sand; little clay; some reddish brown (5YR 4/4) gravels; loose; petroleum odor from 5 to 14.5 feet bgs; dry becoming wet at 5 feet bgs.

Soil sample SB-12b collected from 3.5 to 4.5 feet bgs for VOCs, PAHs, PCBs.
Water sample SB-12b collected for VOCs.

Bottom of Boring at 14.5 feet
Refusal at 14.5 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-13

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 7.5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
	☒					***Topsoil***
					⁙	***Poorly-Graded Sand with Gravel (SP)*** Dark grayish brown (2.5Y 4/2) sand with gravel; medium dense; dry.
2		0.0		100	▨	***Lean Clay (CL)*** Light olive brown (2.5Y 5/4) silty clay with gravel; hard; some gray (2.5Y 6/1) mottling; dry to moist. Soil sample SB-13 collected from 6.5 to 7.5 feet bgs for STARS VOCs, PAHs.
4	☒				▨	
6		NM		100	▨	
8						Bottom of Boring at 7.5 feet Refusal in shale at 7.5 feet bgs.
10						
12						
14						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-14

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 24, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 11.6
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Asphalt
2		0.0		80		***Poorly-Graded Gravel with Sand (GP)*** Black (2.5Y 2.5/1) shaley gravel with sand; loose; dry to moist. Soil sample SB-14 collected from 10 to 11.6 feet bgs for STARS VOCs, PAHs.
4						
6		0.0		60		
8						
10		0.3		100		
12						Bottom of Boring at 11.6 feet Refusal in concrete and wood at 11.6 feet bgs.
14						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-15

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 26

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
2		0.0		60
4				
6		0.0		50
8				
10		0.0		60
12				
14		0.0		50

Subsurface Profile

Lithology / **Description**

Ground Surface

Concrete

Well-Graded Sand with Gravel (SW)
Grayish brown (2.5Y 5/2) and very dark grayish brown (2.5Y 3/2) coarse-grained sand with gravel; loose; some olive yellow (2.5Y 6/6) mottling; dry to moist.

Shale
Black (5YR 2.5/1) shale fragments; some yellowish red (5YR 5/8) staining; dry.

Fuel Ash Conglomerate
Black (10YR 2/1) medium- to coarse-grained sand and gravel; dry to moist.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-15

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 26

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
16	☒				▨	***Lean Clay (CL)*** Yellowish brown (10YR 5/4) low plasticity silty clay with gray (10YR 5/1) shale fragments; soft to medium soft; moist. Soil sample SB-15 collected from 14 to 20 feet bgs for STARS VOCs, lead. *(continued)*
18	☒	0.0		60	▨	
20	☒				☰	***Weathered Shale*** Dark brown (10YR 3/3) weathered shale with heavy petroleum staining and petroleum odor; black (5Y 2.5/2) liquid product encountered between 20 to 26 feet bgs; wet.
22	☒	0.0		50	☰	
24	☒	0.0		100	☰	
26						Bottom of Boring at 26 feet Refusal at 26 feet bgs.
28						
30						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: ***SB-16a***

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 3.5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
1	☒	0.0		100	░	***Poorly-Graded Sand (SP)*** Black (10YR 2/1) coarse-grained sand; some dark yellowish brown (10YR 4/6) mottling; dense; moist.
2					▨	***Lean Clay (CL)*** Gray (10YR 5/1) medium plasticity clay; hard; moist. Soil samples SB-16a (2 feet bgs) and SB-16a (3 feet bgs) collected for pH.
3					☰	***Shale*** Dark grayish brown (10YR 4/2) shale fragments; dry.
4 5						Bottom of Boring at 3.5 feet Refusal at 3.5 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-16b

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 3

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
0–1	☒				░	***Poorly-Graded Sand (SP)*** Very dark gray (2.5Y 3/1) sand; medium dense; moist.
1–2	☒	0.0		100	▨	***Sandy Lean Clay (CL)*** Grayish brown (2.5Y 5/2) sandy clay with olive yellow (2.5Y 6/6) mottling; moist.
2–3	☒				▨	***Lean Clay (CL)*** Light yellowish brown (2.5Y 6/3) medium plasticity clay; soft; moist. Soil samples SB-16b (2 feet bgs) and SB-16b (3 feet bgs) collected for pH.
3						Bottom of Boring at 3 feet
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-17

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 28, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 4

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
0–4		0.0		NA		***Fill Material*** Soil sample SB-17 collected from 3.3 to 4 feet bgs with hand auger for STARS VOCs, PAHs.
4–5						Bottom of Boring at 4 feet Refusal at 4 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: ***SB-19a***

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 4

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
						Topsoil and Plant Roots
1						***Silt (ML)*** Light olive brown (2.5Y 5/3) silt with highly weathered shale fragments; dry. Soil sample SB-19a collected from 3 to 4 feet bgs for STARS VOCs, PAHs, PCBs.
2		0.0		80		
3						
4						Bottom of Boring at 4 feet
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-19b

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 3.5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
0	⊠				⁘	***Topsoil and Plant Roots***
1		0.0		85	⁘	***Poorly-Graded Sand with Gravel (SP)*** Black (2.5Y 2.5/1) medium- to coarse-grained sand with gravel; medium dense; wet.
2 3					▨	***Lean Clay (CL)*** Grayish brown (2.5Y 5/2) low plasticity clay with large shale fragments; solvent odor; hard; dry. Soil sample SB-19b collected from 2.5 to 3.5 feet bgs for STARS VOCs, PAHs, PCBs.
4 5						Bottom of Boring at 3.5 feet Refusal at 3.5 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-19c

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 4

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
1						***Topsoil***
2 3		0.0		95		***Silt (ML)*** Light olive brown (2.5Y 5/4) silt with highly weathered shale fragments; dry. Soil sample SB-19c collected from 3 to 4 feet bgs for STARS VOCs, PAHs, PCBs.
4 5						Bottom of Boring at 4 feet

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-19d

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 4
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
0–1						***Topsoil***
1–4		0.0		90		***Silt (ML)*** Olive brown (2.5Y 4/3) silt with highly weathered shale fragments; loose; dry. Soil sample SB-19d collected from 3 to 4 feet bgs for STARS VOCs, PAHs, PCBs.
4–5						Bottom of Boring at 4 feet

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-19e

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 4

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Topsoil
1						***Poorly-Graded Sand with Gravel (SP)*** Black (2.5Y 2.5/1) coarse-grained sand with gravel; medium dense; wet.
2		0.0		75		***Silt (ML)*** Dark gray (2.5Y 4/1) silt with weathered shale; slight petroleum odor; dry. Soil sample SB-19e collected from 3 to 4 feet bgs for STARS VOCs, PAHs, PCBs.
3						
4						Bottom of Boring at 4 feet
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-20a

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
0–0.5	☒	NM		100	▩	***Asphalt***
0.5–1.5					▥	***Silty Sand with Gravel (SM)*** Gray (10YR 5/1) silty sand and gravel; some highly weathered shale fragments; loose; dry. Soil sample SB-20a collected from 1 to 1.5 feet bgs for VOCs, PAHs, PCBs, TAL Metals, cyanide.
1.5						Bottom of Boring at 1.5 feet Refusal at 1.5 feet bgs.

Depth scale: 1, 2, 3, 4, 5

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: ***SB-20b***

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.3

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Asphalt
1		0.0		100		***Poorly-Graded Sand with Gravel (SP)*** Dark yellowish brown (10YR 4/4) coarse-grained sand and gravel; some weathered shale fragments; loose; dry. Soil sample SB-20b collected from 0.5 to 1.3 feet bgs for VOCs, PAHs, PCBs, TAL Metals, cyanide.
2 3 4 5						Bottom of Boring at 1.3 feet Refusal at 1.3 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-20c

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 1.25
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
	☒				▒	***Asphalt***
1	☒	0.0		100	▥	***Silt (ML)*** Light olive brown (2.5Y 5/3) silt and highly weathered shale; dry. Soil sample SB-20c collected from 0.8 to 1.25 feet bgs for VOCs, PAHs, PCBs, TAL Metals, cyanide.
2 3 4 5						Bottom of Boring at 1.25 feet Refusal at 1.25 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: ***SB-20d***

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.5

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
1	☒	0.0		80	▥	***Sandy Silt (ML)*** Brown (10YR 4/3) sandy silt with clay; hard; dry. Soil sample SB-20d collected from 0.5 to 1.5 feet bgs for VOCs, PAHs, PCBs, TAL Metals, cyanide.
2 3 4 5						Bottom of Boring at 1.5 feet Refusal at 1.5 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-21a

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
	☒	0.0		100	▩	***Asphalt***
					▥	***Silt (ML)*** Light olive brown (2.5Y 5/3) silt and weathered shale fragments; dry. Soil sample SB-21a collected from 0.5 to 1.5 feet for VOCs, PAHs, PCBs, cyanide.
1						Bottom of Boring at 1 feet Refusal at 1 foot bgs.
2						
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-21b

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 2.3

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
	☒				▒	***Topsoil***
1 2	☒	0.0		100	▥	***Silt (ML)*** Very dark grayish brown (2.5Y 3/2) to black (2.5Y 2.5/1) silt and highly weathered shale fragments; little olive yellow (2.5Y 6/8) staining and petroleum odor at 2 to 2.3 feet bgs; dry. Soil sample SB-21b collected from 1.5 to 2.3 feet bgs for VOCs, PAHs, PCBs, cyanide.
3 4 5						Bottom of Boring at 2.3 feet Refusal at 2.3 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-21c

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 8

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Asphalt
						Shale Grayish brown (2.5Y 5/2) shale fragments; dry.
2		0.0		100		***Poorly-Graded Sand (SP)*** Black (2.5Y 2.5/1) to dark brown (7.5YR 3/4) coarse-grained sand; loose; dry.
						Silt (ML) Strong brown (7.5YR 4/6) and grayish brown (2.5Y 5/2) silt and gravelly shale; some pale yellow (2.5Y 8/4) and yellow (2.5Y 7/8) mottling; dry.
4						***Well-Graded Sand (SW)*** Very dark gray (2.5Y 3/1) fine- to medium-grained sand with silt; some gravel; little clay; some strong brown (7YR 5/8) mottling; dry to moist.
6		0.0		70		Soil sample SB-21c collected from 5 to 7 feet bgs for VOCs, PAHs, PCBs, cyanide.
8						Bottom of Boring at 8 feet
10						
12						
14						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-21d

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 22, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 8

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Asphalt
2		0.0		75		***Poorly-Graded Sand with Gravel (SP)*** Dark olive brown (2.5Y 3/3) medium- to coarse-grained sand; some gravel; some olive yellow (5Y 6/6) cobbles; loose; dry.
4						***Poorly-Graded Gravel (GP)*** Gray (2.5Y 6/1) gravelly shale fragments; loose; dry. Soil sample SB-21d collected from 4 to 6 feet bgs for VOCs, PAHs, PCBs, cyanide.
6		0.0		50		***Poorly-Graded Sand (SP)*** Dark yellowish brown (10YR 3/6) coarse-grained sand; loose; dry.
8						Bottom of Boring at 8 feet
10						
12						
14						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-22a

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 4.2

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
	⊠				▩	***Asphalt***
1 2 3 4		0.0		100	▨	***Lean Clay with Gravel (CL)*** Dark gray (7.5YR 4/1) low plasticity clay with gravel; hard; some reddish yellow (7.5YR 6/6) and gray (7.5YR 6/1) mottling; dry to moist. Soil sample SB-22a collected from 3 to 4 feet bgs for VOCs, SVOCs, PCBs, TAL Metals.
5						Bottom of Boring at 4.2 feet Refusal at 4.2 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-22b

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 3
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
					■	***Asphalt***
1 2		0.0		100	░	***Poorly-Graded Sand with Gravel (SP)*** Dark gray (7.5YR 4/1) coarse-grained sand and gravel; loose; some weathered shale fragments; fuel odor at 3 feet; moist to wet. Soil sample SB-22b collected from 2.5 to 3 feet bgs for VOCs, SVOCs, PCBs, TAL Metals.
3 4 5						Bottom of Boring at 3 feet Refusal at 3 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-23a

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 28, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.9

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
				100		***Concrete***
1		0.2		NA	▨	***Lean Clay (CL)*** Dark olive brown (2.5Y 3/3) low plasticity clay; some silt; some gravel; soft; moist. Soil sample SB-23a collected from 1 to 1.7 feet bgs for VOCs, SVOCs, TAL Metals, PCBs.
2 3 4 5						Bottom of Boring at 1.9 feet Refusal in shale at 1.9 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-23b

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 28, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 2.4

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
		NM		100		***Concrete***
1		0.0		NA		***Poorly-Graded Gravel with Sand (GP)*** Dark grayish brown (2.5Y 4/2) gravel and sand fill; dry.
						Lean Clay with Gravel (CL) Dark grayish brown (2.5Y 4/2) silty clay with gravel; medium soft; dry.
2						***Elastic Silt with Gravel (MH)*** Dark grayish brown (2.5Y 4/2) clayey silt with gravel; moist. Soil sample SB-23d collected from 1 to 2.4 feet bgs for VOCs, SVOCs, PCBs, TAL Metals.
3						Bottom of Boring at 2.4 feet Refusal in hard rock at 2.4 feet bgs.
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-23c

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 20, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 3
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
0						***Concrete***
		0.0		90		***Shale*** Light yellowish brown (2.5Y 6/3) to grayish brown (2.5Y 5/2) weathered shale; loose; dry. Soil sample SB-23c collected from 3 feet bgs for VOCs, SVOCs, PCBs, TAL Metals.
1						
2						
3						Bottom of Boring at 3 feet Refusal at 3 feet bgs.
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-23d

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 20, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 3

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete
1		0.0		50		***Silt (ML)*** Olive brown (2.5Y 4/4) silt and weathered shale; dry.
2						***Concrete*** Gray (2.5Y 6/1) concrete with medium- to coarse-grained angular rock fragments; dry. Soil sample SB-23d collected from 3 feet bgs for VOCs, SVOCs, PCBs, TAL Metals.
3						Bottom of Boring at 3 feet Refusal at 3 feet bgs.
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-23e

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 30, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.2

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					**Subsurface Profile**	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
	☒	0.0		100	▨	***Concrete***
1					▤	***Siltstone*** Pulverized siltstone; dry.
						Bottom of Boring at 1.2 feet Refusal in bedrock at 1.2 feet bgs.
2						
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: ***SB-25a-1***

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 20, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete
		0.0		100		***Elastic Silt (MH)*** Olive brown (2.5Y 4/3) silt with little clay; soft; damp.
						Silt (ML) Grayish brown (2.5Y 5/2) silt; dry.
1						Soil sample SB-25a-1 collected from 1 foot bgs for VOCs.
						Bottom of Boring at 1 feet Refusal at 1 foot bgs.
2						
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-25a-2

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 20, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 2.5
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
					▒	***Concrete***
1 2		0.0		80	▥	***Silt (ML)*** Light yellowish brown (2.5Y 6/3) silt and highly weathered shale; dry. Soil sample SB-25a-2 collected from 2.5 feet bgs for VOCs.
3 4 5						Bottom of Boring at 2.5 feet Refusal at 2.5 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-25a-3

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 20, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
		0.0		95		***Concrete***
						Silt (ML) Grayish brown (2.5Y 5/2) to dark grayish brown (2.5Y 4/2) silt and weathered shale; dry.
1						Soil sample SB-25a-3 collected from 1 foot bgs for VOCs.
						Bottom of Boring at 1 feet Refusal at 1 foot bgs.
2						
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-25b-1

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.4

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete
1		0.0		90		***Poorly-Graded Sand (SP)*** Dark grayish brown (2.5Y 4/2) sand and pulverized siltstone; loose; dry. Soil sample SB-25b-1 collected from 0.8 to 1.4 feet bgs for VOCs.
2 3 4 5						Bottom of Boring at 1.4 feet Refusal in bedrock at 1.4 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-25b-2

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 2
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
0–2	☒	0.6		10	▨	***Concrete*** Broken up concrete and shale fragments.
2						Bottom of Boring at 2 feet Refusal at 2 feet bgs.
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-25b-3

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.3

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete
1		NM		80		***Poorly-Graded Sand (SP)*** Dark grayish brown (2.5Y 4/2) medium-grained sand; some large gravels and siltstone fragments; loose; dry. Soil sample SB-25b-3 collected from 0.75 to 1.2 feet bgs for VOCs.
2 3 4 5						Bottom of Boring at 1.3 feet Refusal in bedrock at 1.3 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-25b-4

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.2

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete
		NM		100		***Poorly-Graded Sand (SP)*** Olive brown (2.5Y 4/3) coarse-grained sand; loose; dry. Soil sample SB-25b-4 collected from 0.5 to 1.2 feet bgs for VOCs.
1						
						Bottom of Boring at 1.2 feet Refusal at 1.2 feet bgs.
2						
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-25b-5

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 28, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 1.5
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
	☒				▩	***Concrete***
1	☒	NM		100	░	***Poorly-Graded Sand (SP)*** Olive brown (2.5Y 4/3) coarse-grained sand; loose; dry. Soil sample SB-25b-5 collected from 0.8 to 1.5 feet bgs for VOCs.
2 3 4 5						Bottom of Boring at 1.5 feet Refusal in shale at 1.5 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-25b-6

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 28, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.2

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
	☒				▨	***Concrete***
	☒	0.0		100	░	***Poorly-Graded Sand (SP)*** Olive brown (2.5Y 4/3) coarse-grained sand; loose; dry. Soil sample SB-25b-6 collected from 0.5 to 1.2 feet bgs for VOCs.
1						
						Bottom of Boring at 1.2 feet Refusal in shale at 1.2 feet bgs.
2						
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-25c-1

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): Not Determined
Total Depth (feet): 2
Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete
						Poorly-Graded Sand (SP) Grayish brown (2.5Y 5/2) medium-grained sand with siltstone gravel; loose; dry.
1		1.0		80		***Silty Gravel (GM)*** Dark grayish brown (2.5Y 4/2) silty gravel and pulverized siltstone; loose; dry. Soil sample SB-25c-1 collected from 1 to 2 feet bgs for VOCs, TAL Metals, cyanide.
2						Bottom of Boring at 2 feet Refusal in bedrock at 2 feet bgs.
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log:* *SB-25c-2

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
	☒	0.0		10		***Concrete***
						Poorly-Graded Sand with Gravel (SP) Grayish brown (2.5Y 5/2) coarse-grained sand and gravel.
1						Bottom of Boring at 1 feet
2						
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-25c-3

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.7

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
						Ground Surface
	☒				▨	***Concrete***
1		3.0		100	░	***Poorly-Graded Sand (SP)*** Dark grayish brown (2.5Y 4/2) coarse-grained sand; some gravel; pulverized siltstone; black (2.5Y 2.5/1) staining and petroleum odor at 1.5 to 1.7 feet bgs. Soil sample SB-25c-3 collected from 1.2 to 1.7 feet bgs for VOCs, TAL Metals, cyanide.
2 3 4 5						Bottom of Boring at 1.7 feet

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-25d-1

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 2

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
					░	***Concrete***
1		0.0		100	▨	***Lean Clay with Gravel (CL)*** Pale brown (10YR 6/3) medium plasticity clay with gravel; some sand; soft; some brownish yellow (10YR 6/6) mottling; moist to wet. Soil sample SB-25d-1 collected from 1.5 to 2 feet bgs for VOCs.
2						Bottom of Boring at 2 feet Refusal at 2 feet bgs.
3						
4						
5						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: SB-25d-2

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 3

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
	☒				▦	***Concrete***
1 2		0.0		100	▨	***Lean Clay (CL)*** Grayish brown (10YR 5/2) medium plasticity clay; some gravel; some yellowish brown (10YR 5/6) mottling; stiff; wet. Soil sample SB-25d-2 collected from 2 to 3 feet bgs for VOCs.
3 4 5						Bottom of Boring at 3 feet Refusal at 3 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: EB-2/ MW-34B

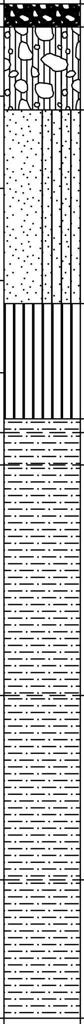
Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 18, 2007

Surface Elevation (feet AMSL*): 411.28
TOC Elevation (feet AMSL): 411.21
Total Depth (feet): 22
Borehole Diameter (inches): 10/4
**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	1		-	0
	2	9.5	- - -	13
	3	0	- 4 5 7	50
5	4	0	4 4 5 5	20
	5	0	3 2 5 9	100
	6	0	33 16 8	100
	7		8	0
10	8		7 29 50 - - - - - - - - -	100
15	9		- - - - - -	100
20	10		- - - -	100
25				

Subsurface Profile



Description

Ground Surface

Asphalt
Asphalt and gravel base.

Silty Gravel (GM)
Brown (10 YR 4/3) silt with gravel; medium dense; dry; fill.

Poorly-Graded Sand with Silt and Gravel (SP-SM)
Brown (10 YR 4/3) fine- to coarse-grained sand; little silt, gravel; medium dense; dry becoming wet at 4 feet bgs; fill.

Silt (ML)
Brown (10 YR 4/3) silt; little clay; dense; moist.

Weathered Siltstone
Gray (10 YR 5/1) siltstone; brittle; highly weathered; laminated; friable; dry.

Siltstone
Gray siltstone - no sample.

Siltstone
Gray (10 YR 5/1) siltstone; moderate becoming strong at 11.3 feet bgs; fine-grained; laminated; slightly to moderately decomposed; intensely fractured to moderately fractured at 11.3 feet bgs.

Fracture Classification:
Fracture zone at 10-11.3 feet bgs; dry with staining.
Horizontal bedding plane joints (possibly mechanical) at 12.2, 13.4 and 13.7 feet; very narrow; not healed; smooth; dry with staining.

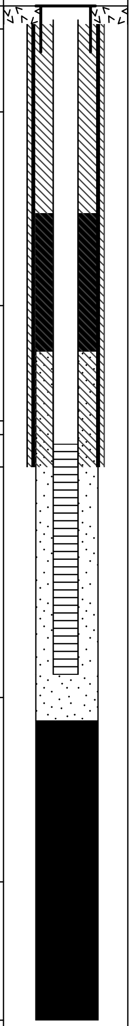
RQD: 58%

Water sample MW-34B collected for VOCs.

Siltstone
Gray (10 YR 5/1) siltstone; strong to very strong; fine-grained; laminated; fresh; competent; slightly fractured.

Fracture Classification:
Horizontal bedding plane joints (possibly mechanical) at 16.2 and

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log: *EB-2/ MW-34B*

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 18, 2007

Surface Elevation (feet AMSL*): 411.28

TOC Elevation (feet AMSL): 411.21

Total Depth (feet): 22

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile		
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**	**Well Details**
						17.6 feet; very narrow; not healed; smooth; dry with staining. RQD: 100%	
						Siltstone Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fresh; competent; moderately fractured.	
30						Fracture Classification: Horizontal bedding plane joints (possibly mechanical) at 19.4, 19.6, 20.3, 20.6 and 20.9 feet; very narrow; not healed; smooth; dry with staining. RQD: 60%	
						Bottom of Boring at 22 feet	
35							
40							
45							
50							

Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log: EB-3/ MW-35T

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 20, 2007

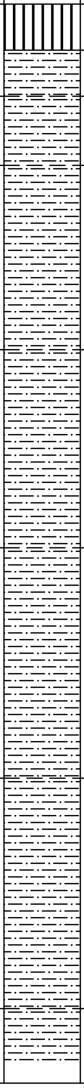
Surface Elevation (feet AMSL*): 517.27
TOC Elevation (feet AMSL): 516.95
Total Depth (feet): 30.2
Borehole Diameter (inches): 10/4
**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	1	0	25 13 13 10	0
	2	1.9	15 20 11 50	20
5	3		- - - -	0
	4		- - - -	100
10	5		- - - -	93
15	6		- - - -	100
20	7		- - - -	100
25				

Subsurface Profile

Lithology



Description

Ground Surface

No Recovery

Silt (ML)
Dark brown (10 YR 3/3) silt; little sand, gravel, and rock fragments; dense; non-plastic; moist.

Weathered Siltstone
Gray (10 YR 5/1) siltstone; fragmented; dry.

Siltstone
Gray siltstone - no sample.

Siltstone
Gray (10 YR 5/1) siltstone; weak; fine-grained; laminated; moderately decomposed; very intensely fractured.

Fracture Classification:
Fracture zone throughout sample (some mechanical breaks possible); very narrow to narrow; not healed; staining and decomposition; rough; dry with staining.

RQD: 45%

Siltstone
Gray (10 YR 5/1) siltstone; moderate; fine-grained; laminated; slightly decomposed; slightly disintegrated; intensely fractured.

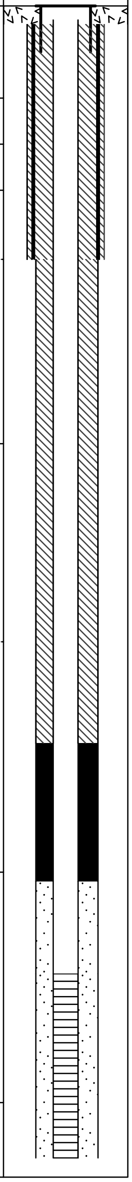
Fracture Classification:
Fracture zone throughout sample (many mechanical breaks possible); non-cohesive sediment infilling, rough and damp at 9.5-11.5 feet; clean and dry with staining at 11.5-13.8 feet.

RQD: 30%

Siltstone
Gray (10 YR 5/1) siltstone; moderate; fine-grained; laminated; slightly decomposed; slightly disintegrated; intensely fractured.

Fracture Classification:
Fracture zone throughout sample (many mechanical breaks possible); not healed; clean; rough; dry with staining.

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log:* *EB-3/ MW-35T

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 20, 2007

Surface Elevation (feet AMSL*): 517.27
TOC Elevation (feet AMSL): 516.95
Total Depth (feet): 30.2
Borehole Diameter (inches): 10/4
**AMSL = Above Mean Sea Level*

Sample Data / Subsurface Profile

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	8		- - - -	100
30	9		- - - -	100
35				
40				
45				
50				

Description

RQD: 38%

Siltstone
Gray (10 YR 5/1) siltstone; moderate; fine-grained; laminated; slightly decomposed; slightly disintegrated; intensely fractured to moderately fractured at 21.6 feet bgs.

Fracture Classification:
Fracture zone at 18.8-21.6 (many mechanical breaks possible).
Mechanical breaks at 22, 22.3, and 23.5; horizontal; very narrow; not healed; clean; smooth; dry.

RQD: 44%

Water sample MW-35T collected for VOCs.

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; competent; moderately fractured.

Fracture Classification:
Predominantly mechanical breaks throughout sample.
Vertical joint at 23.9-24.3; 70 degree dip; narrow; not healed; staining; smooth; dry with staining.

RQD: 78% *(continued)*

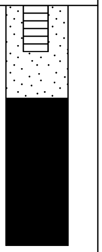
Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; competent; moderately fractured.

Fracture Classification:
Mechanical breaks at 29.5 and 29.8 feet; horizontal; narrow; not healed; clean; smooth; dry.

RQD: 71%

Bottom of Boring at 30.2 feet

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
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Boring Log: EB-4/ MW-36B

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 19, 2007

Surface Elevation (feet AMSL*): 478.91
TOC Elevation (feet AMSL): 478.58
Total Depth (feet): 29
Borehole Diameter (inches): 10/4
**AMSL = Above Mean Sea Level*

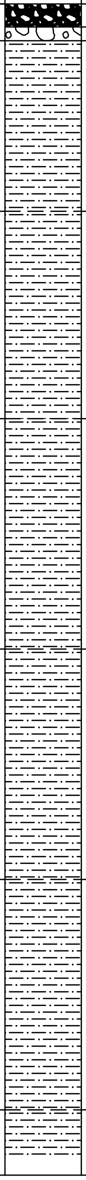
Sample Data

Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
1	0	37 50 - -	100
2		- - - - -	0
3		- - - -	100
4		- - - -	100
5		- - - -	100
6		- - - -	100

Depth: 5, 10, 15, 20, 25

Subsurface Profile

Lithology



Description

Ground Surface

Asphalt
Asphalt and gravel base.

Poorly-Graded Gravel (GP)
Gray gravel and rock fragments; loose angular; dry.

Siltstone
Gray Siltstone - no sample.

Siltstone
Gray (10 YR 5/1) siltstone; weak; fine-grained; laminated; moderately decomposed; competent; intensely fractured.

Fracture Classification:
Fracture zone throughout sample (some mechanical breaks possible); very narrow; not healed; staining; rough; dry with staining.

RQD: 8%

Siltstone
Gray (10 YR 5/1) siltstone; weak to moderate; fine-grained; laminated; moderately decomposed; competent; intensely fractured.

Fracture Classification:
Fracture zone throughout sample (some mechanical breaks possible); horizontal with 80 degree dip at 11 feet bgs; very narrow; not healed; staining; rough; dry with staining.

RQD: 36%

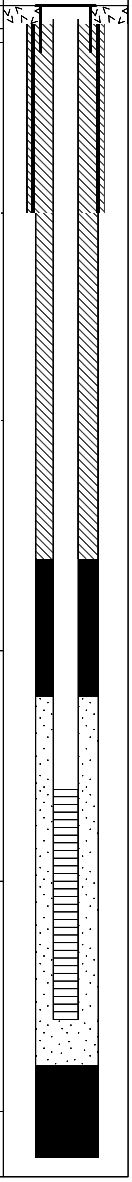
Siltstone
Gray (10 YR 5/1) siltstone; moderate to strong; fine-grained; laminated; moderately decomposed; competent; moderately fractured.

Fracture Classification:
Predominantly mechanical throughout sample.
Vertical joint at 16.9-17 feet; 70 degree dip; extremely narrow; not healed; clean; smooth; dry.

RQD: 36%

Water sample MW-36B collected for VOCs.

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log:* *EB-4/ MW-36B

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 19, 2007

Surface Elevation (feet AMSL*): 478.91
TOC Elevation (feet AMSL): 478.58
Total Depth (feet): 29
Borehole Diameter (inches): 10/4
**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile		
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**	**Well Details**
	7		- - - -	100		***Siltstone*** Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fresh; competent; moderately fractured. Fracture Classification: Predominantly mechanical throughout sample. Vertical joint at 19.7-20.2 feet; 70 degree dip; extremely narrow; not healed; clean; smooth; dry. RQD: 74%	
30						***Siltstone*** Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fresh; competent; moderately fractured. Fracture Classification: Predominantly mechanical throughout sample. Vertical joint at 24.6-25.4 feet; 70 degree dip; extremely narrow; not healed; clean; smooth; dry. RQD: 78% *(continued)*	
35						Bottom of Boring at 29 feet	
40							
45							
50							

Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

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Reston, VA 20190
703-709-6500

Boring Log: EB-5/ MW-37B

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 14, 2007

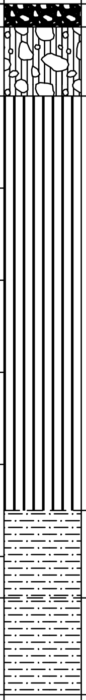
Surface Elevation (feet AMSL*): 408.97
TOC Elevation (feet AMSL): 408.46
Total Depth (feet): 15
Borehole Diameter (inches): 10
**AMSL = Above Mean Sea Level*

Sample Data

Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
1		-	0
2	2.2	- - -	30
3	2	- 6 7 6	25
4	0	7 5 5 2	25
5	0	1 3 4 5	50
6	0	6 6 5 4	20
7	0	3 4 6 8	50
8	0	8 10 11 12	50
9		18 50 - -	0
		- - - -	

Depth: 5, 10, 15, 20, 25

Subsurface Profile



Description

Ground Surface

Asphalt
Asphalt and gravel base.

Silty Gravel (GM)
Dark gray (10 YR 3/1) to brown (10 YR 4/3) silt with gravel; non-plastic; moist; fill.

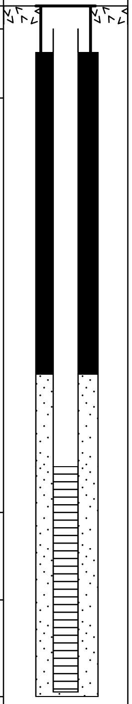
Silt (ML)
Dark gray (10 YR 3/1) to brown (10 YR 4/3) silt; some clay; little gravel; non-plastic; stiff to soft; moist becoming wet at 6 feet bgs; fill.

Water sample MW-37B collected for VOCs.

Weathered Siltstone
Gray (10 YR 5/1) to yellowish brown siltstone; brittle; highly weathered; easily broken; fragmented; wet.

Siltstone
Gray (10 YR 5/1) to yellowish brown siltstone - no sample.

Bottom of Boring at 15 feet



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log: EB-6/ MW-38T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 10, 2007

Surface Elevation (feet AMSL*): 590.39

TOC Elevation (feet AMSL): 590.18

Total Depth (feet): 41

Borehole Diameter (inches): 10/4

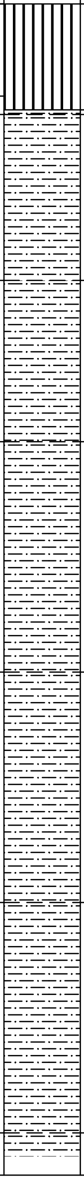
**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	1	0	5 9 8 5	50
	2	0	50	75
5	3		- - - - - - -	0
	4		- - - -	100
10	5		- - - -	100
15	6		- - - -	100
20	7		- - - -	100
25				

Subsurface Profile

Lithology



Description

Ground Surface

Silt with Gravel (ML)
Yellowish-brown silt; some angular gravel and rock fragments; stiff; non-plastic; moist.

Weathered Siltstone
Gray weathered siltstone; brittle; dry.

Siltstone
Gray siltstone - no sample.

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fossils; slightly decomposed; intensely fractured.

Fracture Classification:
Mechanical fractures throughout sample.
Horizontal bedding plane joints at 6.2, 6.4 and 7.5 feet; very narrow; clean; rough; dry with staining.

RQD: 0%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fossils; slightly decomposed to fresh; intensely fractured.

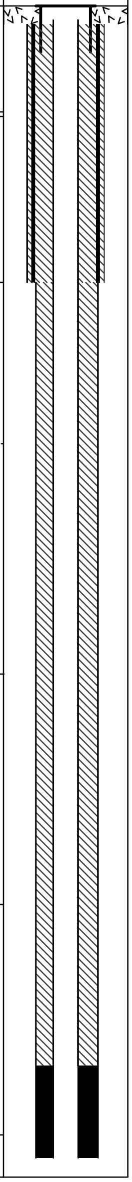
Fracture Classification:
Mechanical fractures throughout sample.
Horizontal bedding plane joints at 10, 12.4 and 13.7 feet; very narrow; clean; rough; dry.
Vertical joints at 11-11.5 feet; joint; extremely narrow; clean; dry.

RQD: 51%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed to fresh; intensely fractured.

Fracture Classification:
Mechanical fractures throughout sample.
Horizontal bedding plane joints at 15.7 and 17.9 feet; extremely narrow; clean; smooth; dry.
Vertical joints at 16-17.2 feet; 70 degree dip; very narrow; partly healed with non-cohesive sediment; smooth; damp.

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log:* *EB-6/ MW-38T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 10, 2007

Surface Elevation (feet AMSL*): 590.39

TOC Elevation (feet AMSL): 590.18

Total Depth (feet): 41

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	8		- - - -	100
30	9		- - - -	100
35	10		- - - -	100
40	11		- - - -	100
45				
50				

Subsurface Profile

Lithology

Description

RQD: 48%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; moderately fractured.

Fracture Classification:
Mechanical fractures throughout sample.
Horizontal bedding plane joints at 20.2, 21.1, 21.6, 23 and 24.5 feet; very narrow; clean; smooth; dry.

RQD: 61%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; intensely fractured.

Fracture Classification:
Mechanical fractures throughout sample.
Horizontal bedding plane joints at 25.8, 26.3, 27, 27.4, 27.7, 27.9, 28.3, and 29.2 feet; very narrow; clean to slightly decomposed; rough; dry.
Vertical joints at 26.5 (45 degree dip) and 28.5-29 (80 degree dip); very narrow; clean; smooth; dry.

RQD: 33% *(continued)*

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; moderately fractured.

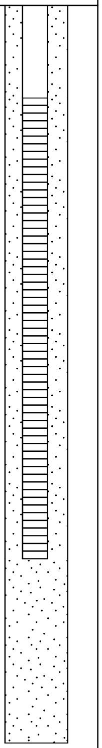
Fracture Classification:
Horizontal bedding plane joints at 30.3, 31.1, 31.3, 31.6, 31.9, 32.1, 33, 33.9, and 34.4 feet; very narrow; clean; rough; dry.
Vertical joint at 30.5 feet; 25 degree dip; very narrow; clean; rough; dry.

RQD: 71%

Water sample MW-38T collected for VOCs.

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log: EB-6/ MW-38T

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 10, 2007

Surface Elevation (feet AMSL*): 590.39
TOC Elevation (feet AMSL): 590.18
Total Depth (feet): 41
Borehole Diameter (inches): 10/4
*AMSL = Above Mean Sea Level

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						decomposed; moderately fractured. Fracture Classification: Horizontal bedding plane joints (possibly mechanical) at 34.9, 36.2, 36.5 and 36.6 feet; very narrow; not healed; clean; smooth; dry. Vertical joints at 35.4-36.6 and 38.1-39.5 feet; extremely narrow; partly healed; rough; dry. RQD: 42%	
55						***Siltstone*** Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; slightly fractured. Fracture Classification: Mechanical break at 40.5 feet. RQD: 100%	
60						Bottom of Boring at 41 feet	
65							
70							
75							

Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

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703-709-6500

Boring Log:* *EB-7/ MW-39T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 12, 2007

Surface Elevation (feet AMSL*): 641.7

TOC Elevation (feet AMSL): 641.33

Total Depth (feet): 60

Borehole Diameter (inches): 10/4

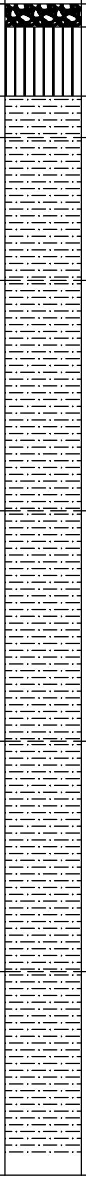
**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	1	0	0 6 7 9	25
	2	0	39 50	50
5	3		- - - - - -	0
10	4		- - - -	100
15	5		- - - -	100
20	6		- - - -	100
25	7		- - - -	100

Subsurface Profile

Lithology



Description

Ground Surface

Asphalt
Asphalt and gravel base.

Silt with Gravel (ML)
Yellowish-brown silt; some angular gravel; dense; dry.

Weathered Siltstone
Light gray (7.5 YR 7/1) weathered shale; brittle; dry.

Siltstone
Gray Siltstone - no sample.

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; intensely fractured.

Fracture Classification:
Predominantly mechanical throughout sample.
Fracture zones at 7.9 - 8.2 and 10.4 -11 feet; narrow; clean; smooth; dry.

RQD: 0%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; intensely fractured.

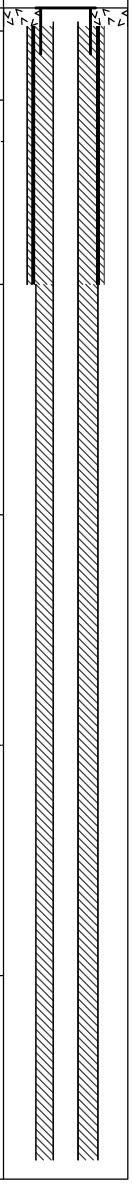
Fracture Classification:
Predominantly mechanical throughout sample.
Vertical fracture joint at 12 feet; 80-90 degree dip; very narrow to narrow; moderately healed; clean; smooth; dry with staining.

RQD: 20%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; moderately fractured.

Fracture Classification:
Predominantly mechanical throughout sample.
Horizontal bedding plane joints at 16.7, 17.4, and 17.6 feet; narrow; not healed; clean; smooth; dry.

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log: EB-7/ MW-39T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 12, 2007

Surface Elevation (feet AMSL*): 641.7

TOC Elevation (feet AMSL): 641.33

Total Depth (feet): 60

Borehole Diameter (inches): 10/4

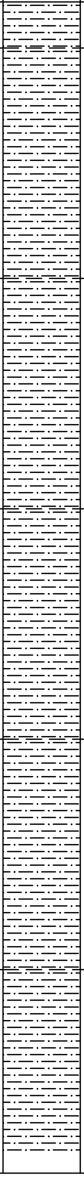
**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	8		- - - -	96
30				
	9		- - - -	100
35				
	10		- - - -	100
40				
	11		- - - -	100
45				
	12		- - - -	100
50				

Subsurface Profile

Lithology



Description

RQD: 50%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine grained; laminated; slightly decomposed; moderately fractured.

Fracture Classification:
Predominantly mechanical throughout sample.
Vertical joint at 21.3 - 23.7 feet; 80-90 degree dip; narrow; clean; smooth; damp; tight and cemented at 23.5-23.7 feet.
Horizontal bedding plane joints at 21.3 feet; narrow; not healed; clean; smooth; damp.

RQD: 60% *(continued)*

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fresh; competent; moderate fracture.

Fracture Classification:
Mechanical fracture at 26.3 feet.
Horizontal bedding plane joints at 26.7, 26.9, 28.6, and 28.8 feet; narrow; not healed; clean; smooth; dry with staining.
Vertical joints at 27.9-28.1 feet; 10 degree dip; narrow; not healed; clean; rough; dry with staining.

RQD: 83%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fresh; competent; slightly to moderately fractured.

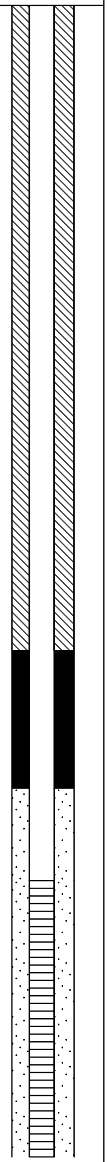
Fracture Classification:
Mechanical fracture at 32 feet.
Horizontal bedding plane joints at 33.6, 33.9, 35.1, and 35.3 feet; narrow; not healed; clean; smooth to rough; dry with staining.

RQD: 97%

Siltstone
Gray (10 YR 5/1) siltstone; very strong; fine-grained; laminated; fresh; competent; slightly fractured.

Fracture Classification:

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

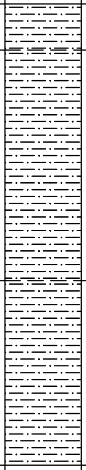
WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log: EB-7/ MW-39T

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 12, 2007

Surface Elevation (feet AMSL*): 641.7
TOC Elevation (feet AMSL): 641.33
Total Depth (feet): 60
Borehole Diameter (inches): 10/4
**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
	13		- - - -	100			
55							
	14		- - - -	100			
60							
65							
70							
75							



Mechanical fractures at 36.5 and 38.5 feet.
Horizontal bedding plane joints at 39.8 and 40.4 feet; very narrow; not healed; clean; smooth ; dry.
Vertical joint at 37.8 feet; very narrow; not healed; clean; rough; dry.

RQD: 100%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fresh; competent; moderately fractured.

Fracture Classification:
Mechanical fractures at 41.2 and 42.2 feet.
Horizontal bedding plane joints at 41.6, 41.7, 43, 43.3, 43.5, 44.4 and 44.6 feet; very narrow; not healed; clean; smooth; dry.
Horizontal joint at 45.1 feet; narrow; not healed; clean; rough; dry.

RQD: 78%

Siltstone
Gray (10 YR 5/1) siltstone; very strong; fine-grained; laminated; slightly decomposed; slightly to moderately fractured.

Fracture Classification:
Mechanical fractures at 47.3, 50 and 52 feet.
Horizontal bedding plane joints at 46.8, 48.2, 48.6, 48.8, and 49.9 feet; narrow; not healed; clean; rough; dry.
Vertical joint at 50.6-51 feet; 80 degree dip; tight; partly healed; clean; smooth ; dry to restricted.

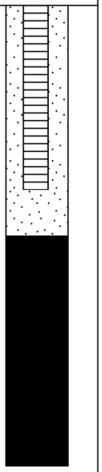
RQD: 92%

Water sample MW-39T collected for VOCs. *(continued)*

Siltstone
Gray (10 YR 5/1) siltstone; very strong; fine-grained; laminated; slightly decomposed; slightly fractured.

Fracture Classification:
Horizontal bedding plane joints at 52.2, 53.8, and 55.5 feet; narrow; not healed; clean; smooth; dry with staining.

RQD: 100%



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log: EB-7/ MW-39T

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 12, 2007

Surface Elevation (feet AMSL*): 641.7
TOC Elevation (feet AMSL): 641.33
Total Depth (feet): 60
Borehole Diameter (inches): 10/4
**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
						Siltstone Gray (10 YR 5/1) siltstone; very strong; fine-grained; laminated; slightly decomposed; slightly fractured. Fracture Classification: Mechanical fracture at 56.9 feet. Horizontal bedding plane joints at 57.5, 58, 59.1, and 59.7 feet; very narrow; not healed; clean; smooth; dry with staining. RQD: 100%	
80						Bottom of Boring at 60 feet	
85							
90							
95							
100							

Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log: EB-8/ MW-40T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 7, 2007

Surface Elevation (feet AMSL*): 593.3

TOC Elevation (feet AMSL): 592.97

Total Depth (feet): 30.6

Borehole Diameter (inches): 10/4

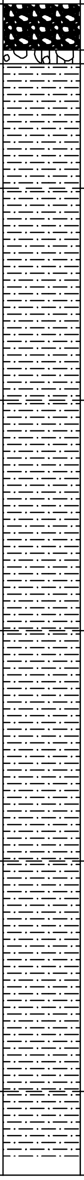
**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
0–1.3	1	0	- - 50	100
1.3–4	2		- - - - -	0
4–9	3		- - - -	98
9–14	4		- - - -	100
14–19	5		- - - -	100
19–24	6		- - - -	100

Subsurface Profile

Lithology



Description

Ground Surface

Asphalt
Asphalt with gravel base.

Poorly-Graded Gravel with Silt and Sand (GP-GM)
Dark gray to dark brown gravel and rock fragments; some sand and silt; loose; wet; fill.

Siltstone
Gray siltstone - no sample.

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fossils; slightly decomposed; moderately fractured.

Fracture Classification:
Horizontal bedding plane joints (possibly mechanical) at 4.9, 5.3, 5.5, 5.8, 6.8, 6.9 and 8.3 feet; very narrow; clean; smooth; dry.

RQD: 50%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fossils; slightly decomposed; intensely fractured.

Fracture Classification:
Horizontal bedding plane joints (possibly mechanical) at 8.9, 9.6, 10.2, 11.4, 11.9, 12.3 and 13.4 feet; very narrow; clean; smooth; dry.

RQD: 31%

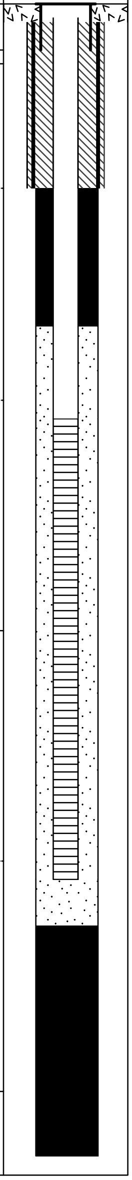
Water sample MW-40T collected for VOCs.

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fossils; slightly decomposed; intensely fractured.

Fracture Classification:
Mechanical breaks throughout sample.
Vertical joints at 15.4 and 15.9 feet; 30-40 degree dip; very narrow; clean; smooth; dry.

RQD: 23%

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

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Reston, VA 20190
703-709-6500

Boring Log: EB-8/ MW-40T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 7, 2007

Surface Elevation (feet AMSL*): 593.3

TOC Elevation (feet AMSL): 592.97

Total Depth (feet): 30.6

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
	7		- - - -	100			
30	8		- - - -	100			
35							
40							
45							
50							

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; intensely fractured.

Fracture Classification:
Mechanical breaks throughout sample.
Horizontal bedding plane joints at 21.5 and 22.1 feet; very narrow; clean; smooth; dry.

RQD: 33%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; intensely fractured.

Fracture Classification:
Mechanical breaks throughout sample.
Horizontal bedding plane joints at 24.3, 25.1, 25.8, 26.3 and 27.3 feet; very narrow; clean; smooth; dry.
Vertical joints at 23.8-24.1 feet; 80 degree dip; very narrow; clean; smooth; dry.

RQD: 43% *(continued)*

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; moderately fractured.

Fracture Classification:
Mechanical breaks throughout sample.
Horizontal bedding plane joint at 29.7 feet; very narrow; clean; smooth; dry.

RQD: 64%

Bottom of Boring at 30.6 feet

Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
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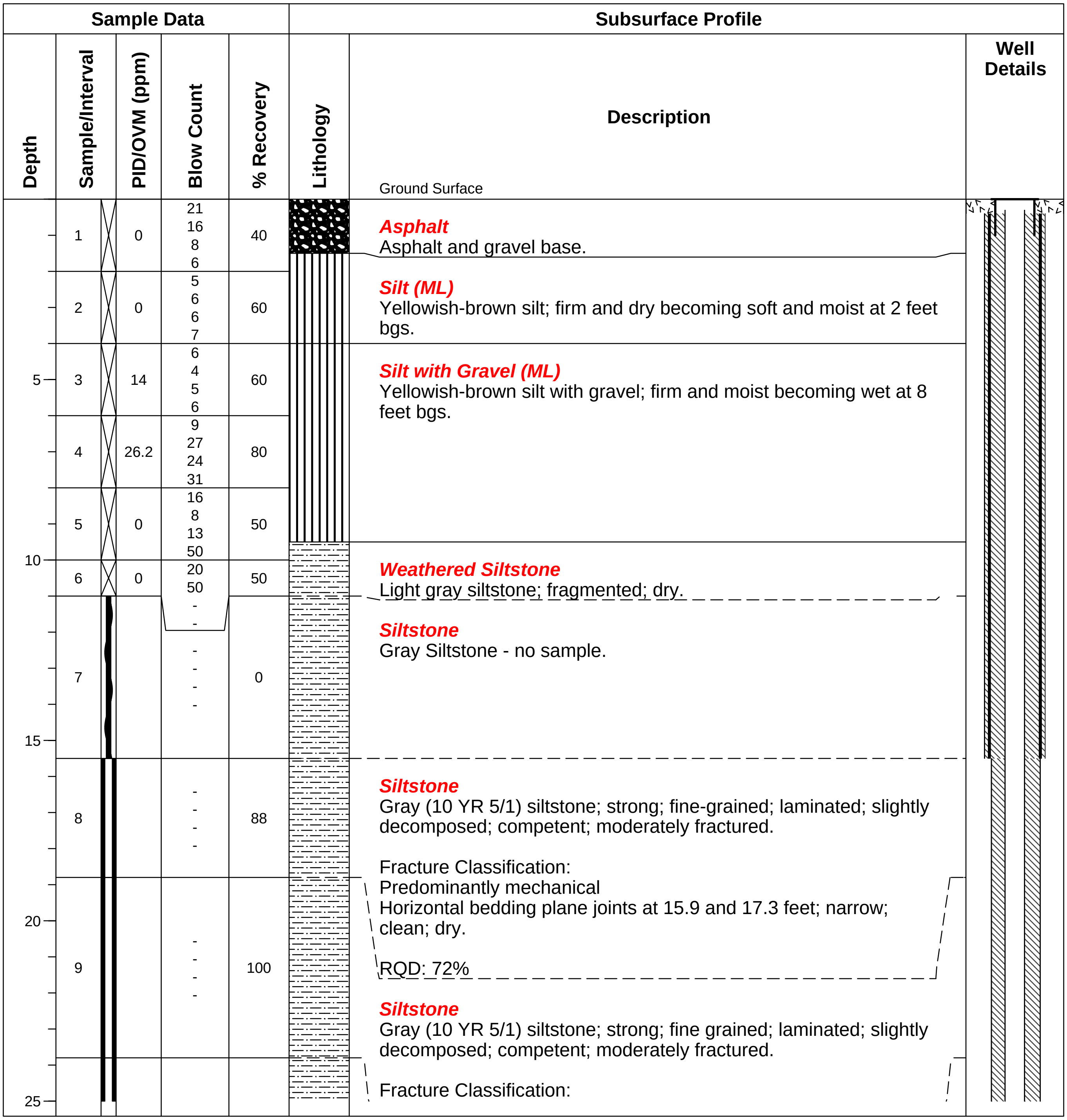
Boring Log:* *EB-10/ MW-42T

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 11, 2007

Surface Elevation (feet AMSL*): 656.35
TOC Elevation (feet AMSL): 655.98
Total Depth (feet): 48.8
Borehole Diameter (inches): 10/4
**AMSL = Above Mean Sea Level*



Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	1	0	21 16 8 6	40
	2	0	5 6 6 7	60
5	3	14	6 4 5 6	60
	4	26.2	9 27 24 31	80
	5	0	16 8 13 50	50
10	6	0	20 50	50
15	7		- - - - - -	0
	8		- - - -	88
20	9		- - - -	100
25				

Description

Ground Surface

Asphalt
Asphalt and gravel base.

Silt (ML)
Yellowish-brown silt; firm and dry becoming soft and moist at 2 feet bgs.

Silt with Gravel (ML)
Yellowish-brown silt with gravel; firm and moist becoming wet at 8 feet bgs.

Weathered Siltstone
Light gray siltstone; fragmented; dry.

Siltstone
Gray Siltstone - no sample.

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; competent; moderately fractured.

Fracture Classification:
Predominantly mechanical
Horizontal bedding plane joints at 15.9 and 17.3 feet; narrow; clean; dry.

RQD: 72%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine grained; laminated; slightly decomposed; competent; moderately fractured.

Fracture Classification:

Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

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11911 Freedom Drive, Suite 900
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Boring Log: EB-10/ MW-42T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 11, 2007

Surface Elevation (feet AMSL*): 656.35

TOC Elevation (feet AMSL): 655.98

Total Depth (feet): 48.8

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	10		- - - -	100
30	11		- - - -	100
35	12		- - - -	100
40	13		- - - -	94
45	14		- - - -	100
50				

Subsurface Profile

Description

Predominantly mechanical
Horizontal bedding plane joints at 19.4, 20.3, 21.1 and 23.8 feet; narrow; clean; dry.

RQD: 96%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; competent; moderately fractured.

Fracture Classification:
Predominantly mechanical
Vertical natural fractures at 24 and 26 feet are joints; 60 degree dip; smooth; very narrow; not healed; clean; dry.
Horizontal natural fractures at 24.9, 25.2, 27, 27.8, and 28.5 are bedding plane joints; smooth, very narrow, not healed; clean; dry.

RQD: 50% *(continued)*

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; competent; moderately fractured.

Fracture Classification:
Predominantly mechanical
Horizontal bedding plane joints at 30.2 and 30.7 feet; smooth, narrow, not healed; clean; dry.

RQD: 92%

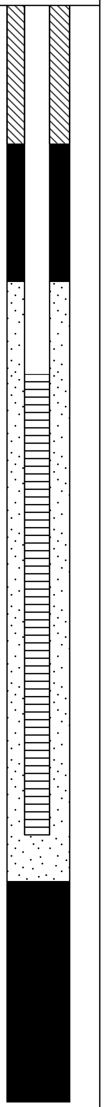
Water sample MW-42T collected for VOCs.

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; competent; moderately fractured.

Fracture Classification:
Predominantly mechanical
35.2 - 35.9 Fracture zone; damp
Horizontal bedding plane joints at 34.5 and 38.5 feet; smooth, narrow, not healed; clean; dry.

RQD: 74%

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
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Reston, VA 20190
703-709-6500

Boring Log: EB-10/ MW-42T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 11, 2007

Surface Elevation (feet AMSL*): 656.35

TOC Elevation (feet AMSL): 655.98

Total Depth (feet): 48.8

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile		
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**	**Well Details**
						Siltstone Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; competent; moderately fractured. Fracture Classification: Horizontal horizontal bedding plane joints at 40, 40.3, 41, 42.6, and 42.9 feet; smooth, narrow, not healed; clean; dry. RQD: 85%	
55						***Siltstone*** Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; slightly decomposed; competent; moderately fractured. Fracture Classification: Predominantly mechanical Horizontal bedding plane joint at 44.8 feet; smooth, narrow, not healed; clean; dry.	
60						RQD: 92% Bottom of Boring at 48.8 feet	
65							
70							
75							

Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
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703-709-6500

Boring Log: EB-11/ MW-43T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 10, 2007

Surface Elevation (feet AMSL*): 565.55

TOC Elevation (feet AMSL): 565.18

Total Depth (feet): 35

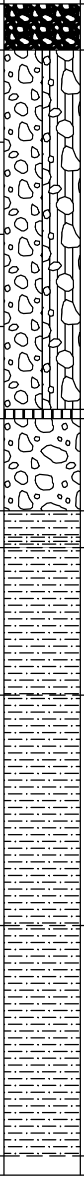
Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	1	0	- -	0
	2	0	- - 37 9	40
	3	0	8 6 7 4	20
5	4	0	3 3 3 4	40
	4	0	5 5 3 3	30
10	5	0	3 3 11 36	50
	6	0	36 22	100
	7		19 50 - - - -	0
15	8		- - - - - -	100
20 25	9		- - - -	100

Subsurface Profile



Description

Ground Surface

Asphalt
Asphalt and gravel base.

Poorly-Graded Gravel with Silt and Sand (GP-GM)
Black to dark gray gravel; some sand and silt; moist becoming wet at 5 feet bgs; fill.

Silt (ML)
Yellowish-brown silt; non-plastic; soft; moist.

Poorly-Graded Gravel (GP)
Gray to dark gray gravel with rock fragments; angular; loose; dry.

Weathered Siltstone
Light gray siltstone; fragmented; dry.

Siltstone
Gray Siltstone - no sample

Water sample MW-43T collected for VOCs.

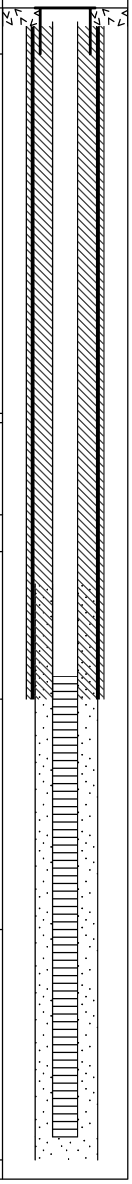
Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fossils; fresh; intensely fractured.

Fracture Classification:
Predominantly mechanical breaks.
Horizontal bedding plane joints at 15.8, 17.5, 17.7 and 18.6 feet; very narrow; non-cohesive sediment; partly healed; rough; dry.

RQD: 51%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fossils; fresh; intensely fractured.

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log: EB-11/ MW-43T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 10, 2007

Surface Elevation (feet AMSL*): 565.55

TOC Elevation (feet AMSL): 565.18

Total Depth (feet): 35

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	10		- - - -	100
30				
	11		- - - -	96
35				
40				
45				
50				

Subsurface Profile

Lithology | **Description** | **Well Details**

Fracture Classification:
Predominantly mechanical breaks.
Horizontal bedding plane joints at 21.7, 22, 22.6, 22.9, and 23.9 feet; very narrow; non-cohesive sediment; partly healed; rough; dry.

RQD: 50%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fossils; fresh; intensely fractured.

Fracture Classification:
Predominantly mechanical breaks.
Horizontal bedding plane joints at 25.5 and 28.3 feet; very narrow; clean; rough; dry.

RQD: 53%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fossils; fresh; intensely fractured.

Fracture Classification:
Predominantly mechanical breaks.
Horizontal bedding plane joints at 30.8, 31.4, 32.1, 32.5, 33.2 and 34.8 feet; very narrow; clean; smooth; dry.
Vertical joint at 32.1-32.5; very narrow; clean; smooth; dry.

RQD: 50%

Bottom of Boring at 35 feet

Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log:* *EB-12/ MW-44T

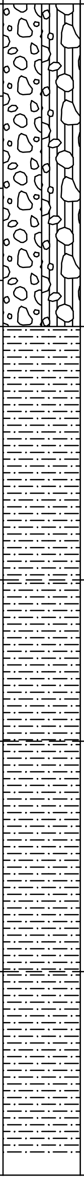
Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 13, 2007

Surface Elevation (feet AMSL*): 558.67
TOC Elevation (feet AMSL): 558.22
Total Depth (feet): 50
Borehole Diameter (inches): 10/4
**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	1	0.8	25 15 15 9	50
	2	1	13 8 8 5	40
5	3	0	4 4 3 2	20
	4	0	5 50	50
10	5		- - - - - -	0
15	6		- - - -	100
20	7		- - - -	100
25	8		- - - -	100

Subsurface Profile



Description

Ground Surface

Poorly-Graded Gravel with Silt and Sand (GP-GM)
Gray to dark gray gravel; some sand and silt; loose; dry becoming wet at 4 feet bgs; fill.

Siltstone
Gray Siltstone - no sample.

Siltstone
Dark Gray (10 YR 3/1) siltstone; weak to moderate; fine-grained; laminated; fresh; competent; intensely to moderately fractured.

Fracture Classification:
Fracture zone at 12.5-13.2 feet bgs; horizontal and vertical; not healed; clean; rough; dry with staining.
Mechanical breaks at 13.2-16 feet bgs; horizontal; extremely narrow; not healed; clean; smooth; dry with staining.

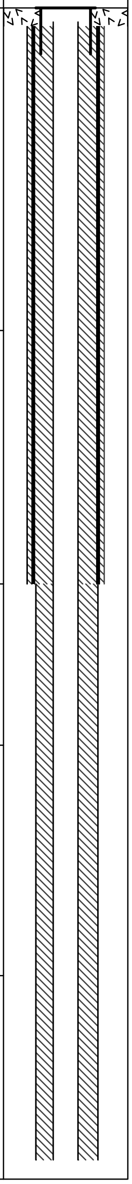
RQD: 29%

Siltstone
Dark Gray (10 YR 3/1) siltstone; weak to moderate; fine-grained; laminated; fresh; competent; intensely to moderately fractured.

Fracture Classification:
Mechanical breaks throughout sample; horizontal; very narrow; not healed; clean; smooth; dry with staining.

RQD: 44%

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

WSP Environmental Strategies
11911 Freedom Drive, Suite 900
Reston, VA 20190
703-709-6500

Boring Log: EB-12/ MW-44T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 13, 2007

Surface Elevation (feet AMSL*): 558.67

TOC Elevation (feet AMSL): 558.22

Total Depth (feet): 50

Borehole Diameter (inches): 10/4

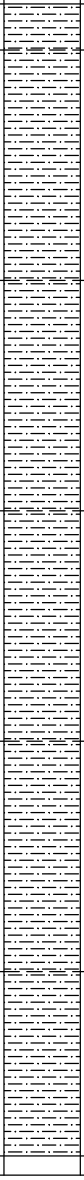
**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
30	9		- - - -	100
35	10		- - - -	100
40	11		- - - -	100
45	12		- - - -	100
50	13		- - - -	100

Subsurface Profile

Lithology



Description

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fresh; slightly decomposed; intensely to moderately fractured.

Fracture Classification:
Mechanical breaks throughout sample; horizontal; very narrow; not healed; clean; smooth; dry.
Horizontal bedding plane joint at 22.8 feet; smooth, narrow, not healed; decomposed; rough; dry.

RQD: 44%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fresh; slightly decomposed; moderately fractured.

Fracture Classification:
Mechanical breaks throughout sample; horizontal; very narrow; not healed; clean; smooth; dry.
Fracture zone at 26.9-27.1 feet; rough; dry with staining.
Horizontal bedding plane joints at 28.7 and 30 feet; very narrow; not healed; clean; rough; dry.

RQD: 60%

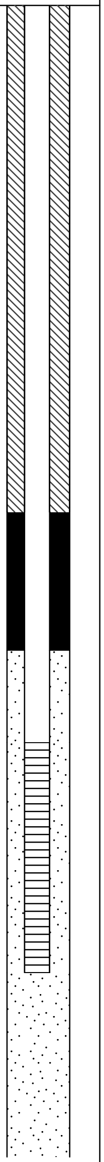
Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fresh; slightly decomposed; moderately fractured.

Fracture Classification:
Mechanical breaks throughout sample; horizontal; very narrow; not healed; clean; smooth; dry.
Vertical joint at 34.1-34.5 feet; 80 degree dip; very narrow; not healed; clean; rough; dry with staining.
Horizontal bedding plane joint at 35.4 feet; narrow; not healed; clean; rough; dry.

RQD: 62%

Siltstone
Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fresh; slightly decomposed; moderately fractured.

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

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Boring Log:* *EB-12/ MW-44T

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: September 13, 2007

Surface Elevation (feet AMSL*): 558.67
TOC Elevation (feet AMSL): 558.22
Total Depth (feet): 50
Borehole Diameter (inches): 10/4
**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile		
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**	**Well Details**
55 60 65 70 75						Fracture Classification: Mechanical breaks throughout sample; horizontal; very narrow; not healed; clean; smooth; dry. Horizontal bedding plane joints at 39.3, 39.8, 39.9 and 40 feet; narrow; not healed; cohesive sediment in fractures; rough; damp. RQD: 62% ***Siltstone*** Gray (10 YR 5/1) siltstone; strong; fine-grained; laminated; fresh; competent; moderately fractured. Fracture Classification: Mechanical breaks throughout sample; horizontal; very narrow; not healed; clean; smooth; dry. Horizontal bedding plane joints (possibly mechanical) at 42.5, 42.7, 43, 43.7, 43.8, 45, and 45.6 feet; very narrow; not healed; clean; rough; dry to dry with staining. RQD: 60% Water sample MW-44T collected for VOCs. ***Siltstone*** Gray (10 YR 5/1) siltstone; very strong; fine-grained; laminated; fresh; competent; slightly fractured. Fracture Classification: Horizontal bedding plane joints (possibly mechanical) at 47, 48.7 and 49.7 feet; very narrow; not healed; clean; smooth; dry. RQD: 100% Bottom of Boring at 50 feet	

Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

Boring Log: EB-13/ MW-45T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 13, 2007

Surface Elevation (feet AMSL*): 545.92

TOC Elevation (feet AMSL): 545.64

Total Depth (feet): 30

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	1	0	5 15 16 22	60
	2	0	31 35 21 20	80
5	3	0	10 5 5 17	30
	4		- -	0
10	5		- - - - - -	95
15				
20	7		- - - -	100
25	8		- - - -	100

Subsurface Profile

Description

Ground Surface

Wood
Wood - section of railroad tie.

Silty Sand with Gravel (SM)
Black to dark gray sand; some silt, trace gravel; fill.

Silt (ML)
Yellowish-brown silt; non-plastic; stiff to hard; dry; gravel and rock fragments at 4 feet bgs.

Weathered Siltstone
Gray siltstone; highly weathered; easily broken; dry.

Siltstone
Gray Siltstone - no sample.

Siltstone
Dark Gray (10 YR 3/1) to brownish gray siltstone; weak; discoloration due to weathering; fine-grained; laminated; moderately decomposed; moderately disintegrated; very intensely fractured.

Fracture Classification:
Fracture zone throughout sample (mechanical and natural) - predominantly horizontal; narrow to very narrow; partly healed; rough; dry with staining to damp.

RQD: 0%

Water sample MW-45T collected for VOCs.

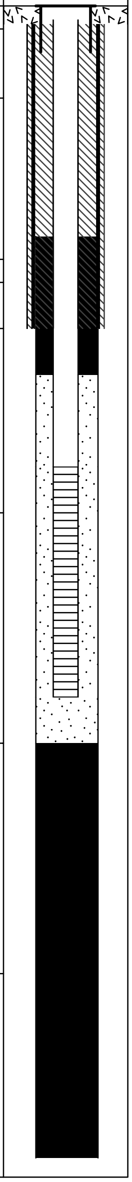
Siltstone
Dark Gray (10 YR 3/1) to gray (10 YR 5/1) siltstone; weak to moderate; fine-grained; laminated; slightly decomposed; slightly disintegrated; intensely fractured.

Fracture Classification:
Fracture zone throughout sample (mechanical and natural) - both horizontal and vertical; narrow to extremely narrow; partly healed; rough; damp at 11 - 12.5 feet to dry with staining at 12.5 - 16 feet.

RQD: 30%

Siltstone

Well Details



Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

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Boring Log: EB-13/ MW-45T

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: September 13, 2007

Surface Elevation (feet AMSL*): 545.92

TOC Elevation (feet AMSL): 545.64

Total Depth (feet): 30

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data / Subsurface Profile

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
	9		- - - -	100			
30							
35							
40							
45							
50							

Dark Gray (10 YR 3/1) to gray (10 YR 5/1) siltstone; weak to moderate; fine-grained; laminated; slightly decomposed; slightly disintegrated; intensely fractured.

Fracture Classification:
Fracture zone throughout sample (mechanical and natural) - both horizontal and vertical; very narrow; partly healed; decomposed infilling; rough; dry with staining.

RQD: 12%

Siltstone
Dark Gray (10 YR 3/1) to gray (10 YR 5/1) siltstone; moderate to strong; fine-grained; laminated; competent; intensely fractured.

Fracture Classification:
Fracture zone throughout sample (mechanical and natural) - predominantly horizontal; very narrow to narrow; clean to stained; rough; dry with staining.

RQD: 40% *(continued)*

Siltstone
Dark Gray (10 YR 3/1) to gray (10 YR 5/1) siltstone; moderate to strong; fine-grained; laminated; competent; intensely to moderately fractured.

Fracture Classification:
Fracture zone throughout sample (predominantly mechanical) - horizontal; very narrow to narrow; clean to stained; smooth; dry with staining.

RQD: 48%

Bottom of Boring at 30 feet

Geologist(s): Jerome D. McSorley
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Core Barrel

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Boring Log: EXB-1

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): 587.45

Total Depth (feet): 81

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					**Subsurface Profile**	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
2	S-1	0	3 6 6 7	10	▨	***Lean Clay (CL)*** Dark brown silty clay, fill.
4	S-2	0	5 5 4 4	15	▨	
6	S-3	0	3 3 3 3	15	▥	***Sandy Silt (ML)*** Dark brown sandy silt; trace clay; trace gravel; some fill; black staining; saturated. Sample collected at 9-9.5 feet bgs.
8	S-4	0	3 2 2 2	50	▥	
	S-5	0	2 2	100	▥	
10 12 14 16 18 20					▤	***Siltstone*** Ithaca Siltstone (Description based on cuttings) Soil sample EXB-1 collected from 9 to 9.5 feet bgs for VOCs. Rock cuttings sample EXB-1 collected from 19 feet bgs for VOCs. Water sample EXB-1 collected from 71.3 feet bgs for VOCs.

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Air Hammer

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Boring Log:* *EXB-1

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): 587.45

Total Depth (feet): 81

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
22 24 26 28 30 32 34 36 38 40						***Siltstone*** Ithaca Siltstone (Description based on cuttings) Soil sample EXB-1 collected from 9 to 9.5 feet bgs for VOCs. Rock cuttings sample EXB-1 collected from 19 feet bgs for VOCs. Water sample EXB-1 collected from 71.3 feet bgs for VOCs. *(continued)*

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Air Hammer

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Boring Log: EXB-1

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): 587.45

Total Depth (feet): 81

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
42					▤	***Siltstone*** Ithaca Siltstone (Description based on cuttings) Soil sample EXB-1 collected from 9 to 9.5 feet bgs for VOCs. Rock cuttings sample EXB-1 collected from 19 feet bgs for VOCs. Water sample EXB-1 collected from 71.3 feet bgs for VOCs. *(continued)*
44						
46						
48						
50						
52						
54						
56						
58						
60						

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Air Hammer

WSP Environmental Strategies
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Boring Log: EXB-1

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): 587.45
Total Depth (feet): 81
Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
62 64 66 68 70 72 74 76 78 80						***Siltstone*** Ithaca Siltstone (Description based on cuttings) Soil sample EXB-1 collected from 9 to 9.5 feet bgs for VOCs. Rock cuttings sample EXB-1 collected from 19 feet bgs for VOCs. Water sample EXB-1 collected from 71.3 feet bgs for VOCs. *(continued)*

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Air Hammer

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Boring Log: EXB-1

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): 587.45
Total Depth (feet): 81
Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
82						Bottom of Boring at 81 feet
84						
86						
88						
90						
92						
94						
96						
98						
100						

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Air Hammer

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Boring Log: EXB-2

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 16, 2007

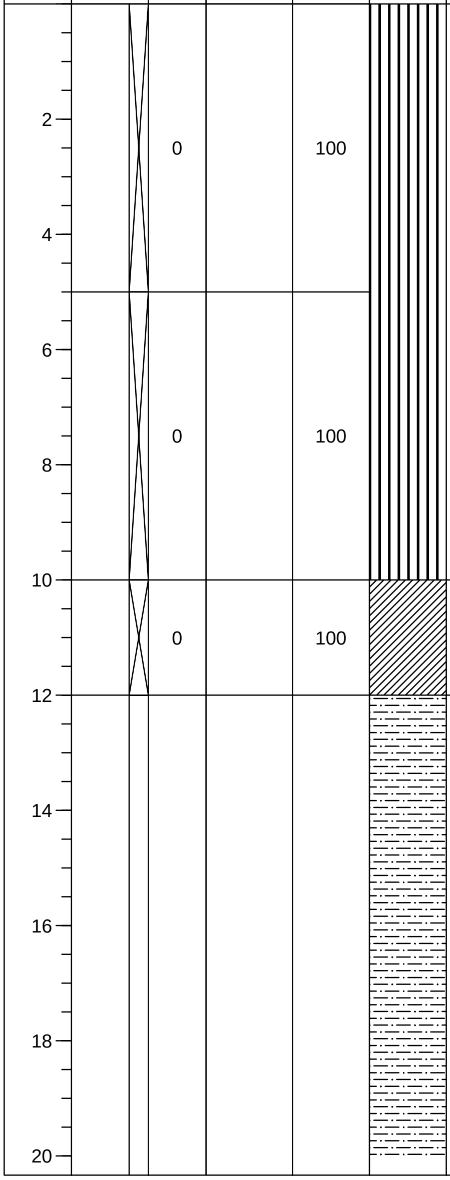
Surface Elevation (feet AMSL*): 587.05

Total Depth (feet): 80

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
0	☒ 0–5	0		100	▥	Ground Surface ***Silt (ML)*** Dark brown clayey silt, moist.
5	☒ 5–10	0		100	▥	
10	☒ 10–12	0		100	▨	***Lean Clay with Sand (CL)*** Brownish gray silty clay; sand; petroleum odor. Soil sample EXB-2 collected from 10 to 12 feet bgs for VOCs.
12					▤	***Siltstone*** Ithaca Siltstone (Description based on cuttings) Rock cuttings sample EXB-2 collected from 19 to 19.5 feet bgs for VOCs. Water sample EXB-2 collected from 75 feet bgs for VOCs.



Geologist(s): Scott P. Haitz
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Lee Penrod
Method: Hollow Stem Auger/Air Hammer

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Boring Log:* *EXB-2

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 16, 2007

Surface Elevation (feet AMSL*): 587.05

Total Depth (feet): 80

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
22 24 26 28 30 32 34 36 38 40					▤	***Siltstone*** Ithaca Siltstone (Description based on cuttings) Rock cuttings sample EXB-2 collected from 19 to 19.5 feet bgs for VOCs. Water sample EXB-2 collected from 75 feet bgs for VOCs. *(continued)*

Geologist(s): Scott P. Haitz
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Lee Penrod
Method: Hollow Stem Auger/Air Hammer

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Boring Log: EXB-2

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 16, 2007

Surface Elevation (feet AMSL*): 587.05

Total Depth (feet): 80

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Siltstone Ithaca Siltstone (Description based on cuttings) Rock cuttings sample EXB-2 collected from 19 to 19.5 feet bgs for VOCs. Water sample EXB-2 collected from 75 feet bgs for VOCs. *(continued)*
42						
44						
46						
48						
50						
52						
54						
56						
58						
60						

Geologist(s): Scott P. Haitz
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Lee Penrod
Method: Hollow Stem Auger/Air Hammer

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Boring Log:* *EXB-2

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 16, 2007

Surface Elevation (feet AMSL*): 587.05

Total Depth (feet): 80

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description
					▤	***Siltstone*** Ithaca Siltstone (Description based on cuttings) Rock cuttings sample EXB-2 collected from 19 to 19.5 feet bgs for VOCs. Water sample EXB-2 collected from 75 feet bgs for VOCs. *(continued)*
62						
64						
66						
68						
70						
72						
74						
76						
78						
80						

Bottom of Boring at 80 feet

Geologist(s): Scott P. Haitz
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Lee Penrod
Method: Hollow Stem Auger/Air Hammer

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Boring Log:* *EXB-2R

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 21, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 12.5

Borehole Diameter (inches): 10

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete Concrete
		0	5 7	50		***Silt (ML)*** Brown and light gray clayey silt; few gravel; soft; moist becoming wet from 2 to 4 feet bgs.
2		0	5 8 5 4	50		
4		0	5 7 7 6	25		***Gravelly Silt (ML)*** Brown and dark gray gravelly silt; coarse-grained angular siltstone gravel; soft; moist to wet.
6		0	5 5 4 5	25		***Silty Gravel (GM)*** Dark gray silty gravel; coarse-grained angular siltstone gravel; moist.
8		0	8 4 5 2	20		***Gravelly Silt (ML)*** Dark gray gravelly silt; siltstone gravel; soft; moist to wet; faint odor at 10 feet bgs.
10		2.1	7 13 7 8	40		
12		0	50/4	0		
						Bottom of Boring at 12.5 feet
14						
16						
18						
20						

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger

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Boring Log: EXB-3

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 28, 2007

Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 1.1

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
						Concrete Concrete; gravel from 0.5 to 0.8 feet bgs.
						Siltstone Ithaca Siltstone
2						
						Bottom of Boring at 1.1 feet
4						
6						
8						
10						
12						
14						
16						
18						
20						

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Concrete Corer

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Boring Log: EXB-4

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 24, 2007

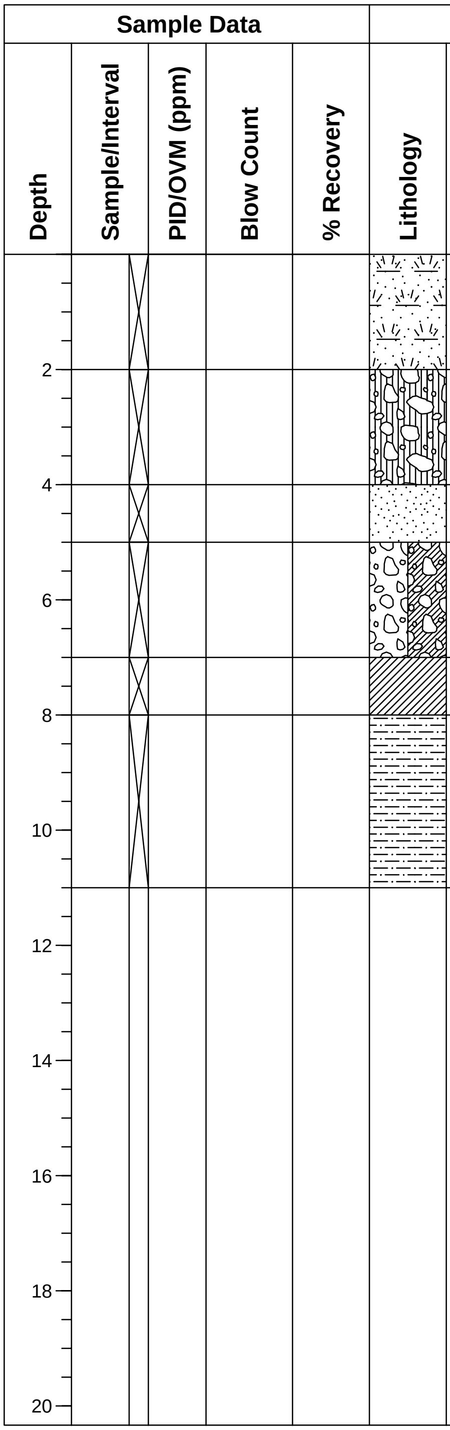
Surface Elevation (feet AMSL*): Not Determined

Total Depth (feet): 11

Borehole Diameter (inches): 2.25

**AMSL = Above Mean Sea Level*

Sample Data | **Subsurface Profile**



Description

Ground Surface

Topsoil.

Silty Gravel (GM)
Shale fragments; silt; loose; dry.

Poorly-Graded Sand (SP)
Sand; loose; dry.

Poorly-Graded Gravel with Silt (GP-GM)
Gravelly shale; some silt; loose; dry.

Lean Clay (CL)
Clay; hard to stiff; dry; some mottling.

Siltstone
Ithaca Siltstone, weathered.

Soil sample EXB-4 collected from 10 to 11 feet bgs for VOCs.

Bottom of Boring at 11 feet
Refusal at 11 feet bgs.

Geologist(s): Rachel Posner
Subcontractor: Zebra Environmental Corporation
Driller/Operator: Dominick Pneo
Method: Direct Push

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Boring Log: EXB-5

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 20, 2007

Surface Elevation (feet AMSL*): 566.59
Total Depth (feet): 62
Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description** Ground Surface
	S-1		10 9	0		***Silty Gravel (GM)*** Fill material; gravel; silt.
2	S-2	0	11 20 6 5	20		
4	S-3	0	4 5 5 4	50		
6	S-4	0	2 2 2 3	50		
8	S-5	0		10		
10 12 14 16 18 20						***Siltstone*** Ithaca Siltstone (Description based on cuttings) Water sample EXB-5 collected from 48.8 feet bgs for VOCs.

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Air Hammer

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Boring Log:* *EXB-5

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 20, 2007

Surface Elevation (feet AMSL*): 566.59

Total Depth (feet): 62

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
					▤	***Siltstone*** Ithaca Siltstone (Description based on cuttings) Water sample EXB-5 collected from 48.8 feet bgs for VOCs. *(continued)*
22						
24						
26						
28						
30						
32						
34						
36						
38						
40						

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Air Hammer

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Boring Log:* *EXB-5

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 20, 2007

Surface Elevation (feet AMSL*): 566.59

Total Depth (feet): 62

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Siltstone Ithaca Siltstone (Description based on cuttings) Water sample EXB-5 collected from 48.8 feet bgs for VOCs. *(continued)*
42						
44						
46						
48						
50						
52						
54						
56						
58						
60						

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Air Hammer

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703-709-6500

Boring Log: EXB-5

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 20, 2007

Surface Elevation (feet AMSL*): 566.59

Total Depth (feet): 62

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
					▤	
62						Bottom of Boring at 62 feet
64						
66						
68						
70						
72						
74						
76						
78						
80						

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Air Hammer

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Boring Log: EXB-6

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): 563.1

Total Depth (feet): 61.5

Borehole Diameter (inches): 10/6

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
2		0	6 5 4 6	10		Asphalt and gravel base.
4		0	7 12 12 15	50		***Gravelly Silt (ML)*** Yellowish brown gravelly silt; medium-stiff to stiff; coarse-grained siltstone gravel; dry.
6		0	9 11 9 6	60		***Poorly-Graded Gravel (GP)*** Yellowish brown silty gravel; coarse-grained siltstone gravel; dry.
8		33.1	17 13 3 3	60		***Gravelly Silt (ML)*** Grayish brown gravelly silt; siltstone gravel; soft; moist from 6 to 7.5 feet bgs, wet from 7.5 to 8 feet bgs, odor.
10		1.0	8 2 2 7	50		
12		22.3	9 5 13 20	40		
14		102	10 12 9 7	50		***Silt (ML)*** Gray clayey silt; few siltstone gravel from 14 to 16 feet bgs; low plasticity; firm; moist to wet; odor.
		64.3	5 41 15 50/2			
16 18 20				0		***Siltstone*** Ithaca Siltstone (Description based on cuttings)

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Air Hammer

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Reston, VA 20190
703-709-6500

Boring Log: EXB-6

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): 563.1

Total Depth (feet): 61.5

Borehole Diameter (inches): 10/6

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
22						***Siltstone*** Ithaca Siltstone (Description based on cuttings) *(continued)*
24 26 28				93		***Siltstone*** Dark gray siltstone; strong; fresh; unweathered; moderately fractured. Fracture Classification: Mechanically broken joints throughout sample. Vertical Joint runs entire length of core run. RQD: 93%
30 32				100		***Siltstone*** Dark gray siltstone; strong; fresh; unweathered; moderately fractured. Fracture Classification: Mechanically broken bedding plane joints throughout sample. Vertical joint continues from 29 to 32.5 feet bgs, cemented at 30.5 to 31 feet bgs.
34 36 38				78		***Siltstone*** Dark gray siltstone; strong; fresh; unweathered; moderately fractured. Fracture Classification: Mechanically broken bedding joints throughout sample. Bedding plane joints at 36, 36.5, and 37.5 feet. Vertical Joint at 38.5 to 39 feet bgs. RQD: 78%
40				83		

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Air Hammer

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Boring Log: EXB-6

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): 563.1

Total Depth (feet): 61.5

Borehole Diameter (inches): 10/6

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
				83		
42				94		
44						
46				76		
48						
50						
52				95		
54						
56				100		
58						
60						

Siltstone
Dark gray siltstone; strong; fresh; unweathered; intensely fractured.

Fracture Classification:
Mechanically broken bedding plane joints throughout sample.
Vertical Joint at 39 to 40 feet bgs.

RQD: 0%

Water sample EXB-6 collected from 39.5 feet bgs for VOCs. *(continued)*

Siltstone
Dark gray siltstone; strong; fresh; unweathered; intensely fractured.

Fracture Classification:
Mechanically broken bedding plane joints throughout sample.

RQD: 0%

Siltstone
Dark gray siltstone; strong; fresh; massive; intensely fractured.

Fracture Classification:
No natural fractures identified.

RQD: 78%

Siltstone
Dark gray siltstone; strong; fresh; thinly bedded; intensely fractured.

Fracture Classification:
Mechanically broken and natural bedding plane joints throughout sample.
Vertical joints at 45 to 45.5 and 47.75 to 48.75 feet bgs; mineralization on fracture surface.

RQD: 50%

Water sample EXB-6 collected from 46.3 feet bgs for VOCs.

Siltstone
Dark gray siltstone; strong; fresh; thinly bedded; fossiliferous; slightly to moderately fractured.

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Air Hammer

WSP Environmental Strategies
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Boring Log: EXB-6

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 29, 2007

Surface Elevation (feet AMSL*): 563.1

Total Depth (feet): 61.5

Borehole Diameter (inches): 10/6

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
				100		Fracture Classification: Mechanically broken bedding plane joints throughout sample. RQD: 96%
62						

Depth scale: 62, 64, 66, 68, 70, 72, 74, 76, 78, 80

Siltstone
Dark gray siltstone; strong; fresh; thinly bedded; fossiliferous; moderately fractured.

Fracture Classification:
Mechanically broken bedding joints throughout sample.

RQD: 100%

Siltstone
Dark gray siltstone; strong; fresh; thinly bedded; fossiliferous; moderately fractured.

Fracture Classification:
Mechanically broken bedding plane joints throughout sample.

RQD: 100% *(continued)*

Bottom of Boring at 61.5 feet

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Layne
Method: Hollow Stem Auger/Air Hammer

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Boring Log:* *EXB-7

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): 529.19

Total Depth (feet): 25

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
						Ground Surface
2 4						**Siltstone** Ithaca Siltstone (Description based on cuttings)
6 8				100		**Siltstone** Dark gray siltstone; thinly-bedded. Fracture Classification: Natural bedding plane joints at 6.8 and 7.5 feet bgs. Vertical fracture joint from 6.8 to 7.7 feet bgs..
10 12 14				92		**Siltstone** Dark gray siltstone; thinly- to medium-bedded; thick black siltstone at 12.5 feet bgs. Fracture Classification: Natural bedding plane joints at 11.5 and 13.4 feet bgs. Water sample EXB-7 collected from 11 feet bgs for VOCs.
16 18				96		**Siltstone** Dark gray siltstone; thinly to medium-bedded. Fracture Classification: Natural bedding plane joint at 22.3 and 23.7 feet bgs. Vertical fracture joints from 23.7 to 24.5 feet bgs; 30 degree dip; moderately decomposed calcite mineralization. Water sample EXB-7 collected from 17.5 feet bgs for VOCs.
20						

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Core Barrel

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703-709-6500

Boring Log: EXB-7

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): 529.19
Total Depth (feet): 25
Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
22	▌▌			100	▤	**Siltstone** Dark gray siltstone; thinly to medium-bedded. Fracture Classification: Few mechanical joints sub-parallel to bedding. Partial natural joint at 22.7 feet bgs. *(continued)*
24	▌▌				▤	
26						Bottom of Boring at 25 feet
28						
30						
32						
34						
36						
38						
40						

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Core Barrel

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703-709-6500

Boring Log:* *EXB-8

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): 587.56

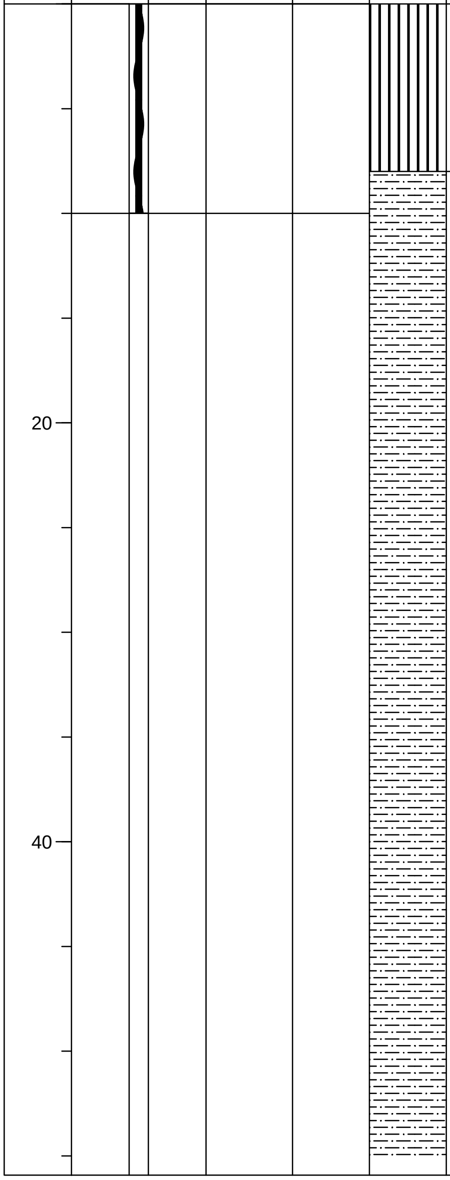
Total Depth (feet): 100

Borehole Diameter (inches): 10/6/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**

Ground Surface



Sandy Silt (ML)
Dark brown sandy silt; trace clay; trace gravel; fill material.

Siltstone
Ithaca Siltstone
(Description based on cuttings)

Water sample EXB-8 collected from 82.3 feet bgs for VOCs.

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Air Rotary/Air Hammer

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Boring Log: ***EXB-8***

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 23, 2007

Surface Elevation (feet AMSL*): 587.56

Total Depth (feet): 100

Borehole Diameter (inches): 10/6/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile	
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**
60 80						***Siltstone*** Ithaca Siltstone (Description based on cuttings) Water sample EXB-8 collected from 82.3 feet bgs for VOCs. *(continued)*
100						Bottom of Boring at 100 feet

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Air Rotary/Air Hammer

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Boring Log: MW-7B

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 24, 2007

Surface Elevation (feet AMSL*): 587.53

TOC Elevation (feet AMSL): 587.26

Total Depth (feet): 21

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
2	1	nm	4 4 4 3	25
4	2	nm	6 6 4 4	25
6	3	nm	5 5 4 2	25
8	4	nm	2 2 3 2	20
	5	nm	50/0.3	0
10	6		- - -	0
12 14	7		- - - - - - - -	43
16 18	8		- - - -	100
20			- -	

Subsurface Profile

Description

Ground Surface

Asphalt

Poorly-Graded Sand with Gravel (SP)
Dark olive brown sand; some gravel and siltstone fragments; loose; moist.

Soil sample MW-7B collected from 6 to 8 feet bgs for VOCs.

Siltstone
Dark gray siltstone - no sample.

Siltstone
Dark gray siltstone; weathered from 10 to 10.5 feet bgs; medium bedded; intensely fractured.

Fracture Classification:
Bedding plane joints throughout sample.

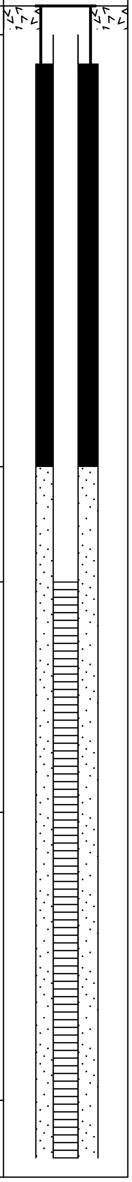
RQD: 0%

Siltstone
Dark gray siltstone; thinly to medium bedded; reddish-brown discoloration on joint surfaces; intensely to very intensely fractured; petroleum sheen on wet areas of core.

Fracture Classification:
Bedding plane joints with staining throughout sample.
Vertical joint at 18-19 feet bgs.

RQD: 17.5%

Well Details



Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Core Barrel

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Boring Log: MW-7B

Project: Emerson Power Transmission
Project No.: 127491
Location: Ithaca, New York
Completion Date: August 24, 2007

Surface Elevation (feet AMSL*): 587.53
TOC Elevation (feet AMSL): 587.26
Total Depth (feet): 21
Borehole Diameter (inches): 10/4
**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile		
Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery	Lithology	Description	Well Details
	9		- -	100		***Siltstone*** Dark gray siltstone; thinly to medium bedded; reddish-brown discoloration on joint surfaces; intensely to very intensely fractured; petroleum sheen on wet areas of core. Fracture Classification: Vertical joint at 19-20 feet bgs. RQD: 21% Water sample MW-7B collected for VOCs. *(continued)*	
22							
24							
26						Bottom of Boring at 21 feet	
28							
30							
32							
34							
36							
38							
40							

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Core Barrel

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Boring Log: MW-8B

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): 587.12

TOC Elevation (feet AMSL): 586.64

Total Depth (feet): 21.3

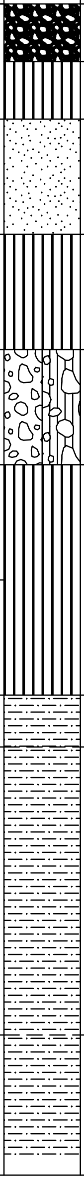
Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data

Depth	Sample/Interval	PID/OVM (ppm)	Blow Count	% Recovery
	1	0.0	- - 10 4	75
2	2	0.0	4 5 10 8	50
4	3	0.0	5 48 15 8	25
6	4	0.0	4 5 9 7	20
8	5	0.0	10 7 9 5	20
10	6	6.5	3 2 4 50	60
12	7		- - - -	0
14 16	8		- - - -	100
18 20	9		- - -	100

Subsurface Profile



Description

Ground Surface

Asphalt
Asphalt / concrete

Silt with Gravel (ML)
Reddish brown silt with gravel; soft; moist.

Poorly-Graded Sand with Gravel (SP)
Yellowish brown silty sand with gravel and siltstone fragments; coarse-grained; wet at 2-3 feet and dry at 3-4 feet.

Silt with Gravel (ML)
Dark brown silt with gravel and siltstone fragments; soft; moist.

Poorly-Graded Gravel with Silt and Sand (GP-GM)
Dark brown silty gravel; coarse-grained; loose; moist.

Silt with Gravel (ML)
Dark brown to grayish brown silt with gravel and siltstone fragments; soft; moist; petroleum odor and sheen from 10 to 12 feet bgs.

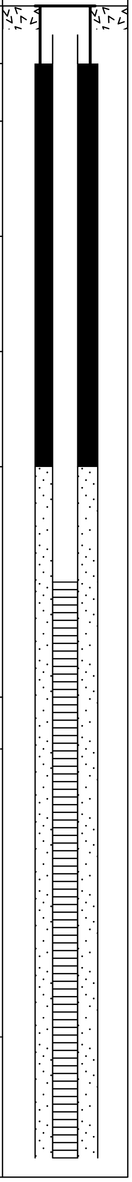
Siltstone
No sample.

Siltstone
Dark gray siltstone; thinly bedded; slightly decomposed with trace discoloration along joint surfaces; intensely fractured; petroleum sheen on wet areas of core.

Fracture Classification:
Mechanical brakes throughout sample.
Bedding plane joints with discoloration at 13, 13.9, and 14.9 feet bgs.

RQD: 57%

Well Details



Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Core Barrel

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Boring Log: MW-8B

Project: Emerson Power Transmission

Project No.: 127491

Location: Ithaca, New York

Completion Date: August 27, 2007

Surface Elevation (feet AMSL*): 587.12

TOC Elevation (feet AMSL): 586.64

Total Depth (feet): 21.3

Borehole Diameter (inches): 10/4

**AMSL = Above Mean Sea Level*

Sample Data					Subsurface Profile		
Depth	**Sample/Interval**	**PID/OVM (ppm)**	**Blow Count**	**% Recovery**	**Lithology**	**Description**	**Well Details**
			-			***Siltstone*** Dark gray siltstone; thinly bedded; breaks easily along bedding planes; intensely fractured. Fracture Classification: Mechanical brakes throughout sample. Bedding plane joint with no discoloration at 20.6 feet bgs. RQD: 100% Product sample MW-8B-P collected for VOCs. *(continued)*	
22							
24							
26						Bottom of Boring at 21.3 feet	
28							
30							
32							
34							
36							
38							
40							

Geologist(s): Timothy Huff
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Glen
Method: Hollow Stem Auger/Core Barrel

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Appendix C – Data Validation Reports and Analytical Data Packages (DUSRs only) - Reports in separate file

Data Usability Summary Report
for Soil and Groundwater Samples Collected at the
EPT facility
Ithaca, New York
August 14 through September 13, 2007

Introduction

This Data Usability Summary Report (DUSR) includes 99 soil samples, 19 groundwater samples, three product samples, two equipment blanks, and six trip blanks collected at the Emerson Power Transmission Facility in Ithaca, New York, August 14 through September 13, 2007. The samples were analyzed by TestAmerica Analytical Laboratories, Inc. (formerly Severn Trent Services, Inc.) of Buffalo, New York, for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), target analyte list (TAL) metals, naphthalene, cyanide, and pH by U.S. Environmental Protection Agency (EPA) SW-846 Methods 8260, 8270, 8082, 6010, 7471, 7470, 9010 and 9045 . The data were reviewed in accordance with the method and chain-of-custody criteria outlined in the National Functional Guidelines of Organic (October 1999) Data Review. The validated analytical results are presented in Tables 2, 3, 5, 6 and 8 of the Supplemental Remedial Investigation Report.

Volatile Organic Compounds

Ninety-nine soil samples, nineteen groundwater samples, three product samples and six trip blanks were analyzed for VOCs by EPA SW-846 Method 8260. Fifteen soil samples were analyzed for the New York State Department of Environmental Conservation STARS list of VOCs. The data were reviewed for surrogate recovery, matrix spike/matrix spike duplicate (MS/MSD) recovery, blank contamination, instrument performance, calibration, and calculation criteria. The data satisfied the criteria for MS/MSD recovery, instrument performance, and calculation.

Methylene chloride and acetone were found in one or more blanks. Methylene chloride and acetone concentrations below the quantitation limits were adjusted to the quantitation limit and qualified "U" as non-detectable. In the samples where the methylene chloride and acetone were detected at concentrations between the quantitation limit and 10 times the concentration in the associated blank, the sample concentrations were qualified "U" as non-detectable. For example, the methylene chloride concentrations in samples EXB–1 and EXB-2 were qualified "U" as non-detectable, since the sample concentrations were between the blank result and 10 times the blank result (allowing for dilution).

Several positive and non-detectable results were qualified “J”, as estimated, because of exceedences in the continuing calibration.

Semivolatile Organic Compounds

Fifty-one soil samples and two equipment blanks were analyzed for SVOCs by EPA SW-846 Method 8270. Twenty-four of the soil samples were analyzed for polycyclic aromatic hydrocarbons only. The data were reviewed for surrogate recovery, matrix spike/matrix spike duplicate (MS/MSD) recovery, blank contamination, instrument performance, calibration, and calculation criteria. The data satisfied the criteria for MS/MSD recovery, instrument performance, and calculation.

Several analytes were found in one or more blanks. Blank contaminant concentrations below the quantitation limits were adjusted to the quantitation limit and qualified "U" as non-detectable. In the samples where the blank contaminants were detected at concentrations between the quantitation limit and five times (ten times for common laboratory contaminants) the concentration in the associated blank, the sample concentrations were qualified "U" as non-detectable.

Several positive and non-detectable results were qualified “J” as estimated because of exceedences in the continuing calibration.

Polychlorinated Biphenyls

Forty-two soil samples and two equipment blanks were analyzed for PCBs by EPA SW-846 Method 8082. The data were reviewed for surrogate recovery, matrix spike/matrix spike duplicate (MS/MSD) recovery, blank contamination, instrument performance, calibration, and calculation criteria. The data satisfied the criteria for MS/MSD recovery, blank contamination, instrument performance, and calculation.

It was not necessary to qualify any of the PCB results.

Metals

Forty-five soil samples and two equipment blanks were analyzed for TAL metals EPA SW-846 Methods 6010 and 7471. The data were reviewed for spike recovery, blank contamination, instrument performance, calibration, and calculation criteria. The data satisfied the criteria listed above.

It was not necessary to qualify any of the metals results.

Overall Assessment of the Data

The data presented are acceptable as qualified for site characterization activities.

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Data Usability Summary Report
for Soil Vapor Samples Collected Near the
EPT facility
Ithaca, New York
August 22 through October 26, 2007

Introduction

This Data Usability Summary Report (DUSR) includes 33 soil vapor samples and 4 trip blanks collected near the Emerson Power Transmission Facility in Ithaca, New York, from August 22 through October 26, 2007. The samples were analyzed by Centek Laboratories, LLC, of Syracuse, New York, for volatile organic compounds (VOCs), by U.S. Environmental Protection Agency (EPA) SW-846 Method TO-15. The data were reviewed in accordance with the method and chain-of-custody criteria outlined in the National Functional Guidelines of Organic (October 1999) Data Review. The validated soil vapor sample analytical results are presented in Table 10 of the Supplemental Remedial Investigation Report.

Volatile Organic Compounds

Thirty-three soil vapor samples and four trip blanks were analyzed for VOCs by EPA SW-846 Method TO-15. The data were reviewed for surrogate recovery, matrix spike/matrix spike duplicate (MS/MSD) recovery, blank contamination, instrument performance, calibration, and calculation criteria. The data satisfied the criteria for MS/MSD recovery, blank contamination, instrument performance, and calculation.

The positive or non-detectable results for several analytes were qualified “C”, as estimated because of exceedences in the continuing calibrations. Several sample results were qualified “I”, as estimated, because of outliers in internal standard recovery criteria. Several sample results were qualified “S”, as estimated, because of outliers in surrogate standard recovery criteria.

Overall Assessment of the Data

The data presented are acceptable as qualified for site characterization activities.

Appendix D – Geophysical Report #1

Appendix E – Groundwater Sampling Logs and Development Logs

WSP Environmental Strategies LLC
11911 Freedom Drive, Suite 900
Reston, VA 20190 (703) 709-6500 • Fax (703) 709-8505

Low-Flow Groundwater Sampling Monitoring Form

Well ID	**EXB-5**	**Site ID:**	**EPT - Ithaca, New York**	**Sample Date:**	9/11/2007
Well Diameter	2 in	**Sampling Event:**	**RI Investigation - Fire Water Reservoir**		
Depth to Water	33.27 ft				
Total Well Depth	~61 ft	**Samplers**	ERS/KCL		
Screen Length	NA ft	**Weather Conditions and Notes:**	Overcast		
Pump Intake	48.75 ft	**Flow Rate**	150 ml/min		

Instrument Calibration Information

pH Meter Calibration			**YSI Model 556 Calibration**
7.00 Stand.	pH 4.01 Stand.	Slope (mV/pH)	Notes on calibration:
			Calibrated to manufacturer's specifications using calibration standard solutions
Air temp 70.00		ºC	

Well Purging Information

Start purge: End purge: Pump Type: QED Sample pro w/ MP-15 and CO2

Time	DTW	Purge Volume (L)	pH	Conductivity (S/cm)	Turbidity (NTU)	D.O. (mg/l) *	T (ºC)	ORP (mV)	Appearance of Purge Water	Flow Rate (mL/min)
1206	33.40	0.00	7.00	0.476	15	2.06	16.91	276	clear	150
1211	33.58	0.75	7.01	0.517	14	0.74	16.22	255	clear	150
1216	33.60	1.50	7.00	0.524	12	0.68	17.03	230	clear	150
1221	33.55	2.25	6.96	0.534	11	1.07	17.46	213	clear	150
1226	33.54	3.00	6.92	0.540	10	1.34	17.65	206	clear	150
1231	33.55	3.75	6.88	0.548	8	1.60	17.74	199	clear	150
1236	33.56	4.50	6.87	0.552	9	1.77	17.56	189	clear	150
1241	33.56	5.25	6.85	0.557	12	1.76	17.91	189	clear	150
1246	33.57	6.00	6.85	0.559	9	1.78	17.73	193	clear	150
1251	33.58	6.75	6.85	0.555	9	1.81	17.87	192	clear	150
1256	33.59	7.50	6.85	0.556	10	1.78	17.59	181	clear	150
1301	33.60	8.25	6.85	0.557	10	1.74	17.23	155	clear	150
1306	33.60	9.00	6.86	0.556	10	1.70	17.20	143	clear	150
1311	33.61	9.75	6.86	0.556	10	1.65	17.18	135	clear	150
1316	33.62	10.50	6.86	0.555	11	1.60	17.11	131	clear	150
1321	33.62	11.25	6.86	0.555	11	1.57	17.11	142	clear	150
1331	33.63	12.00	6.87	0.555	12	1.50	16.87	147	clear	150
1336	33.64	12.75	6.87	0.555	13	1.48	16.90	145	clear	150
1341	End purge.									

Laboratory Analysis Information

# of Bottles	Analytes	Collection Method	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
2	VOCs	pump	HCl	40 ml VOA		Unfiltered	9/11/07 1341	
	Also collected 2 VOAs for MS and 2 VOAs for MSD							

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Low-Flow Groundwater Sampling Monitoring Form

Well ID	**EXB-6**	**Site ID:**	**EPT - Ithaca, New York**	**Sample Date:**	9/11/2007
Well Diameter	2 in	**Sampling Event:**	**RI Investigation - Fire Water Reservoir**		
Depth to Water	23.21 ft				
Total Well Depth	ft	**Samplers**	ERS/KCL		
Screen Length	ft	**Weather Conditions and Notes:**	Overcast, light rain		
Pump Intake	46.25 ft	**Flow Rate**	250 ml/min		

Instrument Calibration Information

pH Meter Calibration			**YSI Model 556 Calibration**
7.00 Stand.	pH 4.01 Stand.	Slope (mV/pH)	Notes on calibration:
			Calibrated to manufacturer's specifications using calibration standard solutions
Air temp 70.00	ºC		

Well Purging Information

Start purge: | End purge: 1601 | Pump Type: QED Sample pro w/ MP-15 and CO2

Time	DTW	Purge Volume (L)	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/l) *	T (ºC)	ORP (mV)	Appearance of Purge Water	Flow Rate (mL/min)
1441	23.20	0.00	8.41	0.191	12	2.13	15.35	186	clear	250
1446	23.21	1.25	8.48	0.189	9	1.56	14.78	176	clear	250
1451	23.21	2.50	8.37	0.191	8	1.30	14.78	148	clear	250
1456	23.21	3.75	8.24	0.188	9	1.08	14.85	59	clear	250
1501	23.21	5.00	8.22	0.187	9	1.07	14.70	18	clear	250
1506	23.21	6.25	8.22	0.187	10	0.73	14.59	6	clear	250
1511	23.21	7.50	8.06	0.187	8	0.23	14.51	-29	clear	250
1516	23.21	8.75	7.89	0.188	10	0.00	14.54	-68	clear	250
1521	23.21	10.00	7.69	0.192	9	0.00	14.52	-86	clear	250
1526	23.21	11.25	7.58	0.199	8	0.00	14.55	-96	clear	250
1531	23.21	12.50	7.50	0.208	8	0.00	14.74	-101	clear	250
1536	23.21	13.75	7.47	0.215	9	0.00	14.90	-103	clear	250
1541	23.21	15.00	7.49	0.222	8	0.00	14.85	-103	clear	250
1546	23.21	16.25	7.66	0.230	9	0.00	14.85	-102	clear	250
1551	23.21	17.50	7.69	0.234	10	0.00	14.79	-102	clear	250
1556	23.21	18.75	7.64	0.235	9	0.00	14.89	-103	clear	250

Laboratory Analysis Information

# of Bottles	Analytes	Collection Method	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
2	VOCs	pump	HCl	40 ml VOA		Unfiltered	9/11/07 1601	
	Also collected 2 VOAs for blind duplicates labeled EXB091107; used false time as 1530							

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Low-Flow Groundwater Sampling Monitoring Form

Well ID	**EXB-7-175**	**Site ID:**	**EPT - Ithaca, New York**	**Sample Date:**	9/14/2007
Well Diameter	2 in	**Sampling Event:**	**RI Investigation - Fire Water Reservoir**		
Depth to Water	3.15 ft				
Total Well Depth	ft	**Samplers**	ERS/KCL		
Screen Length	ft	**Weather Conditions and Notes:**	Overcast		
Pump Intake	17.5 ft	**Flow Rate**	100 ml/min		

Instrument Calibration Information

pH Meter Calibration				**YSI Model 556 Calibration**
7.00 Stand.		pH 4.01 Stand.	Slope (mV/pH)	Notes on calibration:
				Calibrated to manufacturer's specifications using calibration standard solutions
Air temp	70.00		ºC	

Well Purging Information

Start purge:

End purge:

Pump Type: QED Sample pro w/ MP-15 and CO2

Time	DTW	Purge Volume (L)	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/l) *	T (ºC)	ORP (mV)	Appearance of Purge Water	Flow Rate (mL/min)
0843	3.40	0.00	6.62	0.420	30.0	4.40	17.30	19	clear	100
0848	3.60	0.50	6.87	0.430	15.0	1.60	16.50	-24	clear	100
0858	3.91	1.00	6.93	0.430	15.0	0.80	17.00	-56	clear	100
0903	4.20	1.50	6.96	0.430	12.0	0.70	17.10	-61	clear	100
0908	4.42	2.00	6.95	0.430	13.0	0.70	17.10	-66	clear	100
0913	4.63	2.50	6.96	0.430	12.0	0.60	17.20	-66	clear	100
0917										

Laboratory Analysis Information

# of Bottles	Analytes	Collection Method	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
2	VOCs	pump	HCl	40 ml VOA		Unfiltered	9/14/07 0917	

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Low-Flow Groundwater Sampling Monitoring Form

Well ID	**EXB-7-110**	**Site ID:**	**EPT - Ithaca, New York**	**Sample Date:**	9/11/2007
Well Diameter	2 in	**Sampling Event:**	**RI Investigation - Fire Water Reservoir**		
Depth to Water	6.00 ft				
Total Well Depth	ft	**Samplers**	ERS/KCL		
Screen Length	ft	**Weather Conditions and Notes:**	Overcast		
Pump Intake	11 ft	**Flow Rate**	100 ml/min		

Instrument Calibration Information

pH Meter Calibration			**YSI Model 556 Calibration**
7.00 Stand.	pH 4.01 Stand.	Slope (mV/pH)	Notes on calibration:
			Calibrated to manufacturer's specifications using calibration standard solutions
Air temp 68.00	ºC		

Well Purging Information

Start purge:
End purge:
Pump Type: QED Sample pro w/ MP-15 and CO2

Time	DTW	Purge Volume (L)	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/l) *	T (ºC)	ORP (mV)	Appearance of Purge Water	Flow Rate (mL/min)
0938	6.02	0.00	7.10	0.40	44	0.5	18.00	-98	clear	100
0948	6.21	0.50	7.20	0.40	37	0.5	19.00	-115	clear	100
0953	6.29	1.00	7.22	0.40	37	0.5	19.00	-119	clear	100
0958	6.38	1.50	7.23	0.40	34	0.5	19.10	-120	clear	100

Laboratory Analysis Information

# of Bottles	Analytes	Collection Method	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
2	VOCs	pump	HCl	40 ml VOA	TestAmerica	Unfiltered	9/14/07 1005	

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Low-Flow Groundwater Sampling Monitoring Form

Well ID	**EXB-8**	**Site ID:**	**EPT - Ithaca, New York**	**Sample Date:**	9/13/2007
Well Diameter	2 in	**Sampling Event:**	**RI Investigation - Fire Water Reservoir**		
Depth to Water	52.25 ft				
Total Well Depth	ft	**Samplers**	ERS/KCL		
Screen Length	ft	**Weather Conditions and Notes:**	sunny		
Pump Intake	82.25 ft	**Flow Rate**	150 ml/min		

Instrument Calibration Information

pH Meter Calibration				**YSI Model 556 Calibration**
7.00 Stand.		pH 4.01 Stand.	Slope (mV/pH)	Notes on calibration:
				Calibrated to manufacturer's specifications using calibration standard solutions
Air temp	70.00	ºC		

Well Purging Information

Start purge: End purge: Pump Type: QED Sample pro w/ MP-15 and CO2

Time	DTW	Purge Volume (L)	pH	Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/l) *	T (ºC)	ORP (mV)	Appearance of Purge Water	Flow Rate (mL/min)
1435	51.90	0.00	6.75	0.195	3.0	2.20	20.03	196	clear	200
1440	52.32	1.00	6.82	0.195	1.0	1.55	19.46	153	clear	200
1445	52.54	1.90	6.83	0.192	0.0	1.29	20.32	145	clear	180
1450	52.79	2.65	6.86	0.193	1.0	1.35	20.63	136	clear	150
1455	52.98	3.40	6.86	0.193	3.0	1.33	20.48	132	clear	150
1500										

Laboratory Analysis Information

# of Bottles	Analytes	Collection Method	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
2	VOCs	pump	HCl	40 ml VOA	TestAmerica	Unfiltered	9/13/07 1500	

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Groundwater Sampling Monitoring Form

Well ID	**MW-34B**	**Site:**	**EPT - Ithaca, NY**	**Sample Date:**	10/15/2007
Well Diameter	2 in	**Sampling Event**	Supplemental RI Sampling		
Depth to Water (btoc)	9.50 ft	**Samplers**	RNP / KCL		
Total Well Depth (btoc)	14.1 ft	**Weather Conditions:**	Warm and sunny, 55ºF		
Height of Water Column	4.60 ft	**Notes:**	(1). Well purged dry.		
Well Volume	2.254 gal				

Instrument Calibration Information

D.O. Meter Calibration		ORP Meter Calibration	
DO slope =		ORP in stand.	
DO in air =	mg/L	T of stand.	
Air temp =	ºC	Standard used:	

S.C. Meter Calibration		
Expected S.C.	Measured S.C.	Notes

pH Meter Calibration		
pH of Stand. 1	pH of Stand. 2	Slope

Notes on calibration: Horiba U-10 water quality meter calibrated to manufacturer's specifications using auto-cal solution.

Well Purging Information

Purge Volume (gal)	D.O. (mg/L)	T (ºC)	ORP (mV)	S.C. (mS/cm)	Turb. (NTU)	pH	Notes
0.00	10.20	16.3		2.780	1	5.68	Recorded at 16:40 PM
1.00	10.34	15.9		2.760	999	6.51	Recorded at 16:50 PM
1.25	-	15.5		1.860	-	6.87	Recorded at 17:00 PM

Laboratory Analysis Information

# of Bottles	Analytes	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
3	VOCs (EPA 8260B)	HCl	40 ml VOA		Unfiltered	17:00	

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Groundwater Sampling Monitoring Form

Well ID	**MW-35T**	**Site:**	**EPT - Ithaca, NY**	**Sample Date:**	10/16/2007
Well Diameter	2 in	**Sampling Event**	Supplemental RI Sampling		
Depth to Water (btoc)	18.57 ft	**Samplers**	TDD / JRE		
Total Well Depth (btoc)	24.55 ft	**Weather Conditions:**	Warm and sunny.		
Height of Water Column	5.98 ft	**Notes:**	(1). Well purged dry at 2.5 gal.		
Well Volume	2.930 gal				

Instrument Calibration Information

D.O. Meter Calibration		ORP Meter Calibration	
DO slope =		ORP in stand.	
DO in air =	mg/L	T of stand.	
Air temp =	ºC	Standard used:	

S.C. Meter Calibration		
Expected S.C.	Measured S.C.	Notes

pH Meter Calibration		
pH of Stand. 1	pH of Stand. 2	Slope

Notes on calibration: Horiba U-10 water quality meter calibrated to manufacturer's specifications using auto-cal solution.

Well Purging Information

Purge Volume (gal)	D.O. (mg/L)	T (ºC)	ORP (mV)	S.C. (mS/cm)	Turb. (NTU)	pH	Notes
0.5	10.61	15		2.150	979	7.31	Recorded at 12:20 PM
2.0	11.32	15.3		2.780	802	7.41	Recorded at 12:30 PM

Laboratory Analysis Information

# of Bottles	Analytes	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
3	VOCs (EPA 8260B)	HCl	40 ml VOA		Unfiltered	12:40	

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Groundwater Sampling Monitoring Form

Well ID	**MW-36B**	**Site:**	**EPT - Ithaca, NY**	**Sample Date:**	10/16/2007
Well Diameter	2 in	**Sampling Event**	Supplemental RI Sampling		
Depth to Water (btoc)	18.96 ft	**Samplers**	TDD / JRE		
Total Well Depth (btoc)	21.75 ft	**Weather Conditions:**	Cool and cloudy, 55ºF		
Height of Water Column	2.79 ft	**Notes:**	(1). Well purged dry at 0.8 gal.		
Well Volume	1.367 gal				

Instrument Calibration Information

D.O. Meter Calibration		ORP Meter Calibration		S.C. Meter Calibration		
DO slope =		ORP in stand.		Expected S.C.	Measured S.C.	Notes
DO in air =	mg/L	T of stand.				
Air temp =	ºC	Standard used:				

pH Meter Calibration		
pH of Stand. 1	pH of Stand. 2	Slope

Notes on calibration: Horiba U-10 water quality meter calibrated to manufacturer's specifications using auto-cal solution.

Well Purging Information

Purge Volume (gal)	D.O. (mg/L)	T (ºC)	ORP (mV)	S.C. (mS/cm)	Turb. (NTU)	pH	Notes
0.50	12.66	14.4		2.680	999	7.24	Recorded at 16:20 PM
0.75	12.36	14.5		2.780	819	7.23	Recorded at 16:22 PM
0.80	11.78	14.5		2.000	335	7.37	Recorded at 16:25 PM

Laboratory Analysis Information

# of Bottles	Analytes	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
3	VOCs (EPA 8260B)	HCl	40 ml VOA		Unfiltered	16:45	

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Groundwater Sampling Monitoring Form

Well ID	**MW-37B**	**Site:**	**EPT - Ithaca, NY**	**Sample Date:**	17/10/2007
Well Diameter	2 in	**Sampling Event**	Supplemental RI Sampling		
Depth to Water (btoc)	2.35 ft	**Samplers**	TDD / JRE		
Total Well Depth (btoc)	14.26 ft	**Weather Conditions:**	Cool and cloudy, 55ºF		
Height of Water Column	11.91 ft	**Notes:**	(1). Well recharged at moderate to high flow rate. (2). Well not purged dry.		
Well Volume	5.836 gal				

Instrument Calibration Information

D.O. Meter Calibration		ORP Meter Calibration		S.C. Meter Calibration		
DO slope =		ORP in stand.		Expected S.C.	Measured S.C.	Notes
DO in air =	mg/L	T of stand.				
Air temp =	ºC	Standard used:				

pH Meter Calibration		
pH of Stand. 1	pH of Stand. 2	Slope

Notes on calibration: Horiba U-10 water quality meter calibrated to manufacturer's specifications using auto-cal solution.

Well Purging Information

Purge Volume (gal)	D.O. (mg/L)	T (ºC)	ORP (mV)	S.C. (mS/cm)	Turb. (NTU)	pH	Notes
0.5	10.34	16.0		5.530	999	6.17	Recorded at 09:30 AM
3.0	10.17	16.0		4.430	999	6.68	Recorded at 09:35 AM
8.0	9.92	16.0		5.490	999	6.79	Recorded at 09:45 AM
13.0	9.77	15.5		5.410	999	6.86	Recorded at 10:00 AM
18.0	9.76	15.5		5.400	999	6.95	Recorded at 10:05 AM

Laboratory Analysis Information

# of Bottles	Analytes	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
3	VOCs (EPA 8260B)	HCl	40 ml VOA		Unfiltered	10:10	

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Groundwater Sampling Monitoring Form

Well ID	**MW-38T**	**Site:**	**EPT - Ithaca, NY**	**Sample Date:**	10/16/2007
Well Diameter	2 in	**Sampling Event**	Supplemental RI Sampling		
Depth to Water (btoc)	24.35 ft	**Samplers**	TDD / JRE		
Total Well Depth (btoc)	36.25 ft	**Weather Conditions:**	Cool and cloudy, 55ºF		
Height of Water Column	11.90 ft	**Notes:**	(1). Slight organic / sulphurous odour noted (2). Well not purged dry.		
Well Volume	5.831 gal				

Instrument Calibration Information

D.O. Meter Calibration		ORP Meter Calibration	
DO slope =		ORP in stand.	
DO in air =	mg/L	T of stand.	
Air temp =	ºC	Standard used:	

S.C. Meter Calibration		
Expected S.C.	Measured S.C.	Notes

pH Meter Calibration		
pH of Stand. 1	pH of Stand. 2	Slope

Notes on calibration: Horiba U-10 water quality meter calibrated to manufacturer's specifications using auto-cal solution.

Well Purging Information

Purge Volume (gal)	D.O. (mg/L)	T (ºC)	ORP (mV)	S.C. (mS/cm)	Turb. (NTU)	pH	Notes
1.0	12.32	14.2		2.720	284	7.09	Recorded at 17:00 PM
2.0	12.19	14.0		3.080	525	7.05	Recorded at 17:02 PM
5.0	12.22	13.6		2.860	702	7.17	Recorded at 17:10 PM
9.5	12.21	13.5		2.670	333	7.19	Recorded at 17:20 PM
14.0	11.70	13.2		2.520	984	7.31	Recorded at 17:30 PM
17.0	11.65	13.2		2.450	999	7.26	Recorded at 17:40 PM

Laboratory Analysis Information

# of Bottles	Analytes	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
3	VOCs (EPA 8260B)	HCl	40 ml VOA		Unfiltered	17:40	

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Groundwater Sampling Monitoring Form

Well ID	**MW-39T**	**Site:**	**EPT - Ithaca, NY**	**Sample Date:**	10/16/2007
Well Diameter	2 in	**Sampling Event**	Supplemental RI Sampling		
Depth to Water (btoc)	43.93 ft	**Samplers**	TDD / JRE		
Total Well Depth (btoc)	53.39 ft	**Weather Conditions:**	Cool and cloudy, 55ºF		
Height of Water Column	9.46 ft	**Notes:**	(1). Well purged dry at 2.75 gal.		
Well Volume	4.635 gal				

Instrument Calibration Information

D.O. Meter Calibration		ORP Meter Calibration		S.C. Meter Calibration		
DO slope =		ORP in stand.		Expected S.C.	Measured S.C.	Notes
DO in air =	mg/L	T of stand.				
Air temp =	ºC	Standard used:				

pH Meter Calibration		
pH of Stand. 1	pH of Stand. 2	Slope

Notes on calibration: Horiba U-10 water quality meter calibrated to manufacturer's specifications using auto-cal solution.

Well Purging Information

Purge Volume (gal)	D.O. (mg/L)	T (ºC)	ORP (mV)	S.C. (mS/cm)	Turb. (NTU)	pH	Notes
0.5	13.20	12.6		2.060	999	8.41	Recorded at 15:20 PM
2.5	12.79	13.0		1.790	324	8.03	Recorded at 15:30 PM

Laboratory Analysis Information

# of Bottles	Analytes	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
3	VOCs (EPA 8260B)	HCl	40 ml VOA		Unfiltered	15:40	

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Groundwater Sampling Monitoring Form

Well ID	**MW-40T**	**Site:**	**EPT - Ithaca, NY**	**Sample Date:**	
Well Diameter	2 in	**Sampling Event**	Supplemental RI Sampling		
Depth to Water (btoc)	7.48 ft	**Samplers**	RNP / KCL		
Total Well Depth (btoc)	18.7 ft	**Weather Conditions:**	Cool and cloudy. 55ºF		
Height of Water Column	11.22 ft	**Notes:**	(1). Well purged dry.		
Well Volume	5.498 gal				

Instrument Calibration Information

D.O. Meter Calibration		ORP Meter Calibration		S.C. Meter Calibration		
DO slope =		ORP in stand.		Expected S.C.	Measured S.C.	Notes
DO in air =	mg/L	T of stand.				
Air temp =	ºC	Standard used:				

pH Meter Calibration		
pH of Stand. 1	pH of Stand. 2	Slope

Notes on calibration: Horiba U-10 water quality meter calibrated to manufacturer's specifications using auto-cal solution.

Well Purging Information

Purge Volume (gal)	D.O. (mg/L)	T (ºC)	ORP (mV)	S.C. (mS/cm)	Turb. (NTU)	pH	Notes
0.0	9.58	17.6		1.600	933	7.90	
1.0	9.30	17.9		1.440	610	7.87	
3.0	9.47	17.2		1.430	999	7.89	

Laboratory Analysis Information

# of Bottles	Analytes	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
3	VOCs (EPA 8260B)	HCl	40 ml VOA		Unfiltered	16:53	

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Groundwater Sampling Monitoring Form

Well ID	**MW-42T**	**Site:**	**EPT - Ithaca, NY**	**Sample Date:**	10/16/2007
Well Diameter	2 in	**Sampling Event**	Supplemental RI Sampling		
Depth to Water (btoc)	30.90 ft	**Samplers**	TDD / JRE		
Total Well Depth (btoc)	42.85 ft	**Weather Conditions:**	Cool with sunny spells. 55ºF.		
Height of Water Column	11.95 ft	**Notes:**	(1). Well purged dry. (2). Matrix Spike and Matrix Spike Duplicate samples collected at this location, reference MW-42MS and MW-42MSD, sample time 14:50 PM.		
Well Volume	5.856 gal				

Instrument Calibration Information

D.O. Meter Calibration	
DO slope =	
DO in air =	mg/L
Air temp =	ºC

ORP Meter Calibration	
ORP in stand.	
T of stand.	
Standard used:	

S.C. Meter Calibration		
Expected S.C.	Measured S.C.	Notes

pH Meter Calibration		
pH of Stand. 1	pH of Stand. 2	Slope

Notes on calibration: Horiba U-10 water quality meter calibrated to manufacturer's specifications using auto-cal solution.

Well Purging Information

Purge Volume (gal)	D.O. (mg/L)	T (ºC)	ORP (mV)	S.C. (mS/cm)	Turb. (NTU)	pH	Notes
0.50	13.27	13.80		2.950	946	7.19	Recorded at 14:20 PM
2.50	13.60	13.40		2.950	336	7.25	Recorded at 14:30 PM
3.25	13.60	13.07		2.860	337	7.42	Recorded at 14:40 PM

Laboratory Analysis Information

# of Bottles	Analytes	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
3	VOCs (EPA 8260B)	HCl	40 ml VOA		Unfiltered	14:50	

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Groundwater Sampling Monitoring Form

Well ID	**MW-43T**	**Site:**	**EPT - Ithaca, NY**	**Sample Date:**	16/10/2007
Well Diameter	2 in	**Sampling Event**	Supplemental RI Sampling		
Depth to Water (btoc)	15.74 ft	**Samplers**	RNP / KCL		
Total Well Depth (btoc)	24.17 ft	**Weather Conditions:**	Cool and cloudy, 55ºF		
Height of Water Column	8.43 ft	**Notes:**	(1). Well purged dry.		
Well Volume	4.131 gal				

Instrument Calibration Information

D.O. Meter Calibration		ORP Meter Calibration		S.C. Meter Calibration		
DO slope =		ORP in stand.		Expected S.C.	Measured S.C.	Notes
DO in air =	mg/L	T of stand.				
Air temp =	ºC	Standard used:				

pH Meter Calibration		
pH of Stand. 1	pH of Stand. 2	Slope

Notes on calibration: Horiba U-10 water quality meter calibrated to manufacturer's specifications using auto-cal solution.

Well Purging Information

Purge Volume (gal)	D.O. (mg/L)	T (ºC)	ORP (mV)	S.C. (mS/cm)	Turb. (NTU)	pH	Notes
0.0	10.19	15.5		4.210	10	7.86	
2.5	10.34	15.2		4.220	999	7.87	

Laboratory Analysis Information

# of Bottles	Analytes	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
3	VOCs (EPA 8260B)	HCl	40 ml VOA		Unfiltered	17:05	

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Groundwater Sampling Monitoring Form

Well ID	**MW-44T**	**Site:**	**EPT - Ithaca, NY**	**Sample Date:**	10/16/2007
Well Diameter	2 in	**Sampling Event**	Supplemental RI Sampling		
Depth to Water (btoc)	26.24 ft	**Samplers**	TDD / JRE		
Total Well Depth (btoc)	44.93 ft	**Weather Conditions:**	Cool and cloudy, 55ºF		
Height of Water Column	18.69 ft	**Notes:**	(1). Well purged dry.		
Well Volume	9.158 gal				

Instrument Calibration Information

D.O. Meter Calibration		ORP Meter Calibration		S.C. Meter Calibration		
DO slope =		ORP in stand.		Expected S.C.	Measured S.C.	Notes
DO in air =	mg/L	T of stand.				
Air temp =	ºC	Standard used:				

pH Meter Calibration		
pH of Stand. 1	pH of Stand. 2	Slope

Notes on calibration: Horiba U-10 water quality meter calibrated to manufacturer's specifications using auto-cal solution.

Well Purging Information

Purge Volume (gal)	D.O. (mg/L)	T (ºC)	ORP (mV)	S.C. (mS/cm)	Turb. (NTU)	pH	Notes
0.5	11.49	13.4		2.940	11	5.89	Recorded at 09:20 AM
2.5	11.61	12.5		2.960	299	7.22	Recorded at 09:30 AM
4.5	11.51	12.2		3.120	999	7.47	Recorded at 09:40 AM

Laboratory Analysis Information

# of Bottles	Analytes	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
3	VOCs (EPA 8260B)	HCl	40 ml VOA		Unfiltered	9:40	

WSP Environmental Strategies LLC
11911 Freedom Drive, Suite 900
Reston, VA 20190 (703) 709-6500 • Fax (703) 709-8505

Groundwater Sampling Monitoring Form

Well ID	**MW-45B**	**Site:**	**EPT - Ithaca, NY**	**Sample Date:**	10/16/2007
Well Diameter	2 in	**Sampling Event**	Supplemental RI Sampling		
Depth to Water (btoc)	9.43 ft	**Samplers**	TDD / JRE		
Total Well Depth (btoc)	14.37 ft	**Weather Conditions:**	Cool with sunny spells.		
Height of Water Column	4.94 ft	**Notes:**	(1). Well purged dry. (2). Duplicate sample collected at this location, reference MW-50T, sample time 11:10 AM.		
Well Volume	2.421 gal				

Instrument Calibration Information

D.O. Meter Calibration		ORP Meter Calibration		S.C. Meter Calibration		
DO slope =		ORP in stand.		Expected S.C.	Measured S.C.	Notes
DO in air =	mg/L	T of stand.				
Air temp =	ºC	Standard used:				

pH Meter Calibration		
pH of Stand. 1	pH of Stand. 2	Slope

Notes on calibration: Horiba U-10 water quality meter calibrated to manufacturer's specifications using auto-cal solution.

Well Purging Information

Purge Volume (gal)	D.O. (mg/L)	T (ºC)	ORP (mV)	S.C. (mS/cm)	Turb. (NTU)	pH	Notes
0.50	12.70	13.3		3.580	309	7.10	Recorded at 11:00 AM
1.00	10.49	13.3		3.670	999	7.24	Recorded at 11:05 AM
1.25	10.87	12.7		2.200	316	7.24	Recorded at 11:10 AM

Laboratory Analysis Information

# of Bottles	Analytes	Preservative	Bottle Type	Anal. Lab.	Filtered/ Unfiltered	Sample Time	Comments
3	VOCs (EPA 8260B)	HCl	40 ml VOA		Unfiltered	11:15	

Appendix F – Community Air Monitoring Plan

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ENVIRONMENTAL STRATEGIES

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COMMUNITY AIR MONITORING PROGRAM REPORT
EMERSON POWER TRANSMISSION FACILITY
620 AURORA STREET
ITHACA, NEW YORK
SITE NO. 7-55-010

PREPARED

BY

WSP ENVIRONMENTAL STRATEGIES LLC

NOVEMBER 27, 2007

Introduction

In accordance with the approved Community Air Monitoring Program (CAMP) for the Emerson Power Transmission (EPT) Facility site in Ithaca, New York, air monitoring was performed during intrusive field activities. The New York State Department of Environmental Conservation (NYSDEC) requires the implementation of a CAMP for sites where ground intrusive activities, including the excavation and handling of contaminated soil, are performed. Generally, the activities that were performed as part of the Supplemental Remedial Investigation included installing monitoring wells, drilling soil borings, installing soil vapor probes, and excavating test pits. The majority of these activities were conducted on the EPT property; however, soil drilling work was conducted in the neighborhood north of the facility. This section describes the type and frequency of air monitoring that was performed during the investigation field activities to ensure the protection of the downwind community. This CAMP has been prepared in accordance with the NYSDEC Division of Environmental Remediation (DER) Draft Technical Guidance Number 10 Appendix 1A, as well as New York State Department of Health (NYSDOH) requirements and includes procedures for monitoring organic vapors and particulates during intrusive work activities. The types of monitoring activities that were performed are described below.

Ambient Air Monitoring

For ground intrusive activities conducted in the community, continuous monitoring for organic vapors and airborne particulates was conducted at the perimeter of the work zone established in the site specific health and safety plan. Monitors were placed both upwind and downwind of the perimeter of the work area. For volatile organic compounds (VOCs), a photoionization detector (PID) with an 11.7 electron volt (eV) lamp was used. For airborne particulate monitoring, a MIE Personal MiniRAM particulate monitor was used. As detailed below, every 15 minutes during the ground intrusive activities continuous monitoring measurements for organic vapors and airborne particulates were recorded.

Action and Response Levels

VOCs

VOCs were monitored at the upwind and downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. The VOC monitoring equipment was calibrated daily for the contaminant(s) of concern and the appropriate surrogate. The PID was equipped with an audible alarm set at the action levels described below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeded 5 parts per million (ppm) above background, work activities would be temporarily halted while monitoring continued. If the total organic vapor level readily decreased (per instantaneous readings) below 5 ppm over background, work activities would resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area persisted to levels in excess of 5 ppm over background but less than 25 ppm, work activities were halted while the source of vapors could be identified. Corrective actions were then taken to abate emissions while monitoring continued. After these steps work activities would resume, provided that the total organic vapor level 200 feet downwind of the exclusion zone (or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less – but in no case less than 20 feet) was below 5 ppm over background levels.
- If the organic vapor level was above 25 ppm at the perimeter of the work area, activities would shutdown.

All recorded readings in the field logbook are available for NYSDEC and NSYDOH personnel to review. Instantaneous readings used for decision purposes are also recorded in the field logbook.

Particulate

Particulate concentrations were monitored continuously at the upwind and downwind perimeters of the work zone. The particulate monitoring was performed using real-time monitoring equipment capable of measuring particulate matter from 2.5 to 10 micrometers in size (PM-10). All measurements were recorded in the field logbook. The device was equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration was visually assessed during all work activities and recorded in a field logbook.

- If the downwind PM-10 particulate level was 100 micrograms per cubic meter (µg/m^3) greater than background (upwind perimeter) or if airborne dust was observed leaving the work area, then dust suppression techniques were employed. Work continued with dust suppression techniques, provided that downwind PM-10 particulate levels did not exceed 150 µg/m^3 above the upwind level, and provided that no visible dust was migrating from the work area.
- If dust suppression techniques were applied downwind and PM-10 particulate levels were still greater than 150 µg/m^3 above the upwind level, work would then be stopped and a re-evaluation of activities would be initiated. Work would resume provided that dust suppression measures and other controls were successful in reducing the downwind PM-10 particulate concentration to within 150 µg/m^3 of the upwind level and in preventing visible dust migration.

All recorded readings in the field logbook are available for NYSDEC and NSYDOH personnel to review.

Results

The results of air monitoring completed during the offsite intrusive activities, including the VOC and particulate concentration readings, are shown in the three tables attached. Results were recorded every 15 minutes from the beginning of any ground intrusive activity and were recorded from two stations set up 15 feet upwind and 15 feet downwind of the work area. Table I:1 shows the readings from the exploratory boring activities, Table I:2 shows the readings from the fire water reservoir boring activities, and Table I:3 shows the readings from the soil vapor sampling activities.

The air monitoring results show only one offsite particulate concentration exceedance of the action level of 100 $\mu g/m^3$. The exceedance occurred while drilling through the concrete sidewalk at soil vapor point SV-21 and was not sustained over a continued period of time. No VOC exceedances were measured for any of the offsite locations.

Tables

Table I:1

Exploratory Borings
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EB-3	9/18/2007	1100	JDM	0.0 PPM	0	0.0 PPM	0	
		1115	JDM	0.0 PPM	0	0.0 PPM	0.003	
		1130	JDM	0.0 PPM	0	0.0 PPM	0.003	
		1145	JDM	0.0 PPM	0	0.0 PPM	0.036	
		1200	JDM	0.0 PPM	0	0.0 PPM	0.011	
		1215	JDM	0.0 PPM	0	0.0 PPM	0.003	
		1230	JDM	0.0 PPM	0.001	0.0 PPM	0.046	
		1245	JDM	0.0 PPM	0.001	0.0 PPM	0.009	
	9/19/2007	1315	JDM	0.0 PPM	0	0.0 PPM	0	
	9/20/2007	730	JDM	0.0 PPM	0	0.0 PPM	0.01	
		745	JDM	0.0 PPM	0.002	0.0 PPM	0.016	
		800	JDM	0.0 PPM	0.013	0.0 PPM	0.018	
		815	JDM	0.0 PPM	0.005	0.0 PPM	0.019	
		830	JDM	0.0 PPM	0	0.0 PPM	0.01	
		845	JDM	0.0 PPM	0.002	0.0 PPM	0.014	
		900	JDM	0.0 PPM	0.004	0.0 PPM	0.008	
		915	JDM	0.0 PPM	0.002	0.0 PPM	0.001	
		930	JDM	0.0 PPM	0	0.0 PPM	0.002	
		945	JDM	0.0 PPM	0.001	0.0 PPM	0.01	
		1000	JDM	0.0 PPM	0.001	0.0 PPM	0.003	
		1015	JDM	0.0 PPM	0	0.0 PPM	0	
		1030	JDM	0.0 PPM	0	0.0 PPM	0	
		1045	JDM	0.0 PPM	0.001	0.0 PPM	0	
		1100	JDM	0.0 PPM	0.012	0.0 PPM	0.016	

Table I:1

Exploratory Borings
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EB-4	9/18/2007	1330	JDM	0.0 PPM	0	0.0 PPM	0	
		1345	JDM	0.0 PPM	0.003	0.0 PPM	0	
		1400	JDM	0.0 PPM	0	0.0 PPM	0.024	
		1415	JDM	0.0 PPM	0	0.0 PPM	0.027	
		1430	JDM	0.0 PPM	0	0.0 PPM	0.008	
	9/19/2007	900	JDM	0.0 PPM	0	0.0 PPM	0	
		915	JDM	0.0 PPM	0	0.0 PPM	0	
		930	JDM	0.0 PPM	0	0.0 PPM	0	
		945	JDM	0.0 PPM	0	0.0 PPM	0	
		1000	JDM	0.0 PPM	0	0.0 PPM	0	
		1015	JDM	0.0 PPM	0	0.0 PPM	0	
		1030	JDM	0.0 PPM	0	0.0 PPM	0	
		1045	JDM	0.0 PPM	0	0.0 PPM	0	
		1100	JDM	0.0 PPM	0	0.0 PPM	0	
		1115	JDM	0.0 PPM	0	0.0 PPM	0	
		1130	JDM	0.0 PPM	0	0.0 PPM	0	
EB-2	9/17/2007	1000	ESR	0.0 PPM	0.005	0.0 PPM	0	
		1015	ESR	0.0 PPM	0.004	0.0 PPM	0.005	
		1030	ESR	0.0 PPM	0	0.0 PPM	0	
		1045	ESR	0.0 PPM	0.001	0.0 PPM	0	
		1100	ESR	0.0 PPM	0	0.0 PPM	0	
		1115	ESR	0.0 PPM	0	0.0 PPM	0	
		1130	ESR	0.0 PPM	0	0.0 PPM	0	
		1145	ESR	0.0 PPM	0	0.0 PPM	0	
	9/18/2007	715	ESR	0.0 PPM	0	0.0 PPM	0	
		730	ESR	0.0 PPM	0	0.0 PPM	0	
		745	ESR	0.0 PPM	0	0.0 PPM	0	
		800	ESR	0.0 PPM	0	0.0 PPM	0	
		815	ESR	0.0 PPM	0	0.0 PPM	0	
		830	ESR	0.0 PPM	0	0.0 PPM	0	
EB-5	9/14/2007	800	JDM	0.0 PPM	0	0.0 PPM	0	
		815	JDM	0.0 PPM	0	0.0 PPM	0.01	
		830	JDM	0.0 PPM	0	0.0 PPM	0	
		845	JDM	0.0 PPM	0	0.0 PPM	0	
		900	JDM	0.0 PPM	0	0.0 PPM	0	

Table I:1

Exploratory Borings
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EB-12	9/13/2007	1015	JDM	0.0 PPM	0	0.1 PPM	0	
		1030	JDM	0.0 PPM	0	0.0 PPM	0	
		1045	JDM	0.0 PPM	0	0.0 PPM	0	
		1100	JDM	0.0 PPM	0	0.0 PPM	0	
		1115	JDM	0.0 PPM	0	0.0 PPM	0	
		1130	JDM	0.0 PPM	0	0.0 PPM	0	
		1145	JDM	0.0 PPM	0	0.0 PPM	0	
		1200	JDM	0.0 PPM	0	0.0 PPM	0	
		1215	JDM	0.0 PPM	0	0.0 PPM	0	
		1230	JDM	0.0 PPM	0	0.0 PPM	0	
		1245	JDM	0.0 PPM	0	0.0 PPM	0	
		1300	JDM	0.0 PPM	0	0.0 PPM	0	
		1315	JDM	0.0 PPM	0	0.0 PPM	0	
		1330	JDM	0.0 PPM	0	0.0 PPM	0	
		1345	JDM	0.0 PPM	0	0.0 PPM	0	
		1400	JDM	0.0 PPM	0	0.0 PPM	0	
		1415	JDM	0.0 PPM	0	0.0 PPM	0	
		1430	JDM	0.0 PPM	0	0.0 PPM	0	
		1445	JDM	0.0 PPM	0	0.0 PPM	0	
		1500	JDM	0.0 PPM	0	0.0 PPM	0	
		1515	JDM	0.0 PPM	0	0.0 PPM	0	
		1530	JDM	0.0 PPM	0	0.0 PPM	0	
		1545	JDM	0.0 PPM	0	0.0 PPM	0	
		1600	JDM	0.0 PPM	0	0.0 PPM	0	
		1615	JDM	0.0 PPM	0	0.0 PPM	0	
		1630	JDM	0.0 PPM	0	0.0 PPM	0	
		1645	JDM	0.0 PPM	0	0.0 PPM	0	
		1700	JDM	0.0 PPM	0	0.0 PPM	0	
		1715	JDM	0.0 PPM	0	0.0 PPM	0	
		1730	JDM	0.0 PPM	0	0.0 PPM	0	
	9/5/2007	1130	JDM	0.0 PPM	0.046	0.0 PPM	0	
		1145	JDM	0.0 PPM	0.036	0.0 PPM	0	
		1230	JDM	0.0 PPM	0.168	0.0 PPM	0	
		1245	JDM	0.0 PPM	0.113	0.0 PPM	0.007	
		1300	JDM	0.0 PPM	0.094	0.0 PPM	0.003	
		1315	JDM	0.0 PPM	0	0.0 PPM	0.002	
		1330	JDM	0.0 PPM	0	0.0 PPM	0.001	
		1345	JDM	0.0 PPM	0	0.0 PPM	0	
		1400	JDM	0.0 PPM	0	0.0 PPM	0.001	
		1415	JDM	0.0 PPM	0	0.0 PPM	0	
		1430	JDM	0.0 PPM	0	0.0 PPM	0.001	

Table I:1

Exploratory Borings
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EB-7	9/11/2007	1445	JDM	0.0 PPM	0	0.0 PPM	0	
		1500	JDM	0.0 PPM	0.009	0.0 PPM	0.01	
		1515	JDM	0.0 PPM	0.008	0.0 PPM	0.009	
		1530	JDM	0.0 PPM	0.015	0.0 PPM	0.012	
		1545	JDM	0.0 PPM	0.001	0.0 PPM	0.004	
		1600	JDM	0.0 PPM	0.004	0.0 PPM	0.007	
		1615	JDM	0.0 PPM	0	0.0 PPM	0.01	
		1630	JDM	0.0 PPM	0	0.0 PPM	0.009	
		1645	JDM	0.0 PPM	0.002	0.0 PPM	0	
		1700	JDM	0.0 PPM	0.003	0.0 PPM	0	
		1715	JDM	0.0 PPM	0	0.0 PPM	0	
	9/12/2007	730	JDM	0.0 PPM	0	0.0 PPM	0	
		745	JDM	0.0 PPM	0	0.0 PPM	0	
		800	JDM	0.0 PPM	0	0.0 PPM	0	
		815	JDM	0.0 PPM	0	0.0 PPM	0	
		830	JDM	0.0 PPM	0	0.0 PPM	0	
		845	JDM	0.0 PPM	0	0.0 PPM	0	
		900	JDM	0.0 PPM	0	0.0 PPM	0	
		915	JDM	0.0 PPM	0	0.0 PPM	0	
		930	JDM	0.0 PPM	0	0.0 PPM	0	
		945	JDM	0.0 PPM	0	0.0 PPM	0	
		1000	JDM	0.0 PPM	0	0.0 PPM	0	
		1015	JDM	0.0 PPM	0	0.0 PPM	0	
		1030	JDM	0.0 PPM	0	0.0 PPM	0	
		1045	JDM	0.0 PPM	0	0.0 PPM	0	
		1100	JDM	0.0 PPM	0	0.0 PPM	0	
		1115	JDM	0.0 PPM	0	0.0 PPM	0	
		1130	JDM	0.0 PPM	0	0.0 PPM	0	
		1145	JDM	0.0 PPM	0	0.0 PPM	0	
		1200	JDM	0.0 PPM	0	0.0 PPM	0	
		1215	JDM	0.0 PPM	0	0.0 PPM	0	
		1230	JDM	0.0 PPM	0	0.0 PPM	0	
		1245	JDM	0.0 PPM	0	0.0 PPM	0	
		1300	JDM	0.0 PPM	0	0.0 PPM	0	
		1315	JDM	0.0 PPM	0	0.0 PPM	0	
		1330	JDM	0.0 PPM	0	0.0 PPM	0	
		1345	JDM	0.0 PPM	0	0.0 PPM	0	
		1400	JDM	0.0 PPM	0	0.0 PPM	0	
	9/4/2007	1600	ESR	0.0 PPM	0	0.0 PPM	0	
		1615	JDM	0.0 PPM	0	0.0 PPM	0	
		1630	JDM	0.0 PPM	0	0.0 PPM	0	

Table I:1

Exploratory Borings
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
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Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EB-13	9/12/2007	1615	JDM	0.0 PPM	0	0.9 PPM	0.001	
		1630	JDM	0.0 PPM	0	0.0 PPM	0.005	
		1645	JDM	0.0 PPM	0	0.0 PPM	0.001	
		1700	JDM	0.0 PPM	0	0.0 PPM	0	
	9/13/2007	730	JDM	0.0 PPM	0	0.0 PPM	0.002	
		745	JDM	0.0 PPM	0.002	0.0 PPM	0.001	
		800	JDM	0.5 PPM	0.002	0.4 PPM	0.004	
		815	JDM	0.9 PPM	0.004	0.8 PPM	0.001	
		830	JDM	1.2 PPM	0.002	0.9 PPM	0.016	
		845	JDM	1.2 PPM	0	1.2 PPM	0.01	re-calibrated PID
		900	JDM	0.0 PPM	0	0.0 PPM	0.008	
		915	JDM	0.0 PPM	0	0.0 PPM	0	
	9/5/2007	830	ESR	0.0 PPM	0	0.0 PPM	0	
		845	JDM	0.0 PPM	0	0.0 PPM	0	
		900	JDM	0.0 PPM	0	0.0 PPM	0	
		915	JDM	0.0 PPM	0	0.0 PPM	0	
		930	JDM	0.0 PPM	0	0.0 PPM	0	
		945	JDM	0.0 PPM	0	0.0 PPM	0	
		1000	JDM	0.0 PPM	0	0.0 PPM	0.012	
		1015	JDM	0.0 PPM	0	0.0 PPM	0	
		1030	JDM	0.0 PPM	0	0.0 PPM	0	

Table I:1

Exploratory Borings
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EB-6	9/6/2007	1100	JDM	0.0 PPM	0	0.0 PPM	0.003	
		1115	JDM	0.0 PPM	0	0.0 PPM	0.005	
		1130	JDM	0.0 PPM	0.008	0.0 PPM	0.009	
		1145	JDM	0.0 PPM	0.012	0.0 PPM	0.018	
		1245	JDM	0.0 PPM	0	0.0 PPM	0.003	
		1300	JDM	0.0 PPM	0	0.0 PPM	0.008	
		1315	JDM	0.0 PPM	0.003	0.0 PPM	0.002	
		1330	JDM	0.0 PPM	0.004	0.0 PPM	0.003	
		1345	JDM	0.0 PPM	0	0.0 PPM	0.04	
		1400	JDM	0.0 PPM	0	0.0 PPM	0.005	
	9/7/2007	1230	ESR	0.0 PPM	0	0.0 PPM	0	
		1245	ESR	0.0 PPM	0	0.0 PPM	0	
		1300	ESR	0.0 PPM	0	0.0 PPM	0	
		1315	ESR	0.0 PPM	0	0.0 PPM	0	
		1330	ESR	0.0 PPM	0	0.0 PPM	0	
		1345	ESR	0.0 PPM	0	0.0 PPM	0	
		1400	ESR	0.0 PPM	0	0.0 PPM	0	
		1415	ESR	0.0 PPM	0	0.0 PPM	0	
	9/8/2007	1000	ESR	0.0 PPM	0	0.0 PPM	0	
		1015	ESR	0.0 PPM	0	0.0 PPM	0	
		1030	ESR	0.0 PPM	0	0.0 PPM	0	
		1045	ESR	0.0 PPM	0	0.0 PPM	0	
		1100	ESR	0.0 PPM	0	0.0 PPM	0	

Table I:1

Exploratory Borings
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EB-8	9/6/2007	1415	JDM	0.0 PPM	0	0.0 PPM	0	
		1430	JDM	0.0 PPM	0	0.0 PPM	0.099	
		1445	JDM	0.0 PPM	0.002	0.0 PPM	0.008	
		1500	JDM	0.0 PPM	0.002	0.0 PPM	0.046	
		1515	JDM	0.0 PPM	0	0.0 PPM	0.02	
		1530	JDM	0.0 PPM	0	0.0 PPM	0.068	
		1545	JDM	0.0 PPM	0	0.0 PPM	0.011	
		1600	JDM	0.0 PPM	0.001	0.0 PPM	0.111	
		1615	JDM	0.0 PPM	0.001	0.0 PPM	0	
	9/7/2007	745	JDM	0.0 PPM	0	0.0 PPM	0	
		800	JDM	0.0 PPM	0	0.0 PPM	0	
		815	JDM	0.0 PPM	0	0.0 PPM	0	
		830	JDM	0.0 PPM	0	0.0 PPM	0	
		845	JDM	0.0 PPM	0	0.0 PPM	0	
		900	JDM	0.0 PPM	0	0.0 PPM	0	
		915	JDM	0.0 PPM	0	0.0 PPM	0	
		930	JDM	0.0 PPM	0	0.0 PPM	0	
		945	JDM	0.0 PPM	0	0.0 PPM	0	
		1000	JDM	0.0 PPM	0	0.0 PPM	0	
		1015	JDM	0.0 PPM	0	0.0 PPM	0	
		1030	JDM	0.0 PPM	0	0.0 PPM	0	
		1045	JDM	0.0 PPM	0	0.0 PPM	0	
		1100	JDM	0.0 PPM	0	0.0 PPM	0	

Table I:1

Exploratory Borings
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EB-11	9/10/2007	1245	ESR	0.0 PPM	0	0.0 PPM	0	
		1300	ESR	0.0 PPM	0	0.0 PPM	0	
		1315	ESR	0.0 PPM	0	0.0 PPM	0	
		1330	ESR	0.0 PPM	0	0.0 PPM	0	
		1345	ESR	0.0 PPM	0	0.0 PPM	0	
		1400	ESR	0.0 PPM	0	0.0 PPM	0	
		1415	ESR	0.0 PPM	0	0.0 PPM	0	
		1430	ESR	0.0 PPM	0	0.0 PPM	0	
		1445	ESR	0.0 PPM	0	0.0 PPM	0	
		1500	ESR	0.0 PPM	0	0.0 PPM	0	
		1515	ESR	0.0 PPM	0	0.0 PPM	0	
	9/5/2007	1615	JDM	0.0 PPM	0.002	0.0 PPM	0.004	
		1630	JDM	0.0 PPM	0.001	0.0 PPM	0.001	
		1645	JDM	0.0 PPM	0	0.0 PPM	0.002	
		1700	JDM	0.0 PPM	0	0.0 PPM	0	
		1715	JDM	0.0 PPM	0.003	0.0 PPM	0.001	
	9/6/2007	800	JDM	0.0 PPM	0	0.0 PPM	0	
		815	JDM	0.0 PPM	0	0.0 PPM	0.01	
		830	JDM	0.0 PPM	0	0.0 PPM	0.008	
		845	JDM	0.0 PPM	0	0.0 PPM	0.022	
		900	JDM	0.0 PPM	0	0.0 PPM	0.025	
		915	JDM	0.0 PPM	0	0.0 PPM	0.02	
		930	JDM	0.0 PPM	0	0.0 PPM	0.013	
		945	JDM	0.0 PPM	0	0.0 PPM	0.017	
		1000	JDM	0.0 PPM	0	0.0 PPM	0.018	

Table I:1

Exploratory Borings
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EB-10	9/11/2007	715	JBM	0.0 PPM	0	0.0 PPM	0	
		730	JBM	0.0 PPM	0	0.0 PPM	0	
		745	JBM	0.0 PPM	0	0.0 PPM	0.044	
		800	JBM	0.0 PPM	0	0.0 PPM	0.041	
		815	JBM	0.0 PPM	0	0.0 PPM	0.043	
		830	JBM	0.0 PPM	0.025	0.0 PPM	0.037	
		845	JBM	0.0 PPM	0.02	0.0 PPM	0.033	
		900	JBM	0.0 PPM	0.018	0.0 PPM	0.026	
		915	JBM	0.0 PPM	0.015	0.0 PPM	0.029	
		930	JBM	0.0 PPM	0.01	0.0 PPM	0.024	
		945	JBM	0.0 PPM	0.01	0.0 PPM	0.029	
		1000	JBM	0.0 PPM	0.011	0.0 PPM	0.028	
		1015	JBM	0.0 PPM	0.02	0.0 PPM	0.029	
		1030	JBM	0.0 PPM	0.015	0.0 PPM	0.03	
		1045	JBM	0.0 PPM	0.023	0.0 PPM	0.027	
		1100	JBM	0.0 PPM	0.022	0.0 PPM	0.026	
		1115	JBM	0.0 PPM	0.027	0.0 PPM	0.032	
		1130	JBM	0.0 PPM	0.035	0.0 PPM	0.039	
		1145	JBM	0.0 PPM	0.04	0.0 PPM	0.034	
		1200	JBM	0.0 PPM	0.047	0.0 PPM	0.032	
		1215	JBM	0.0 PPM	0.048	0.0 PPM	0.033	
		1230	JBM	0.0 PPM	0.031	0.0 PPM	0.028	
		1245	JBM	0.0 PPM	0.049	0.0 PPM	0.027	
		1300	JBM	0.0 PPM	0.045	0.0 PPM	0.03	
		1315	JBM	0.0 PPM	0.05	0.0 PPM	0.03	
		1330	JBM	0.0 PPM	0.048	0.0 PPM	0.028	
		1345	JBM	0.0 PPM	0.047	0.0 PPM	0.029	

*** = Measured in ug/m3**

Table I:2

Onsite Fire Water Resevoir Investigation
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EXB-2	8/14/2007	Background	SDD	0.0 PPM	0	0.0 PPM	0.013	
		1300	SDD	0.0 PPM	0	0.0 PPM	0.014	
		1315	SDD	0.0 PPM	0	0.0 PPM	0.011	
		1330	SDD	0.0 PPM	0	0.0 PPM	0.009	
		1345	SDD	0.0 PPM	0	0.0 PPM	0.019	
		1400	SDD	0.0 PPM	0	0.0 PPM	7.255	Wet Method Applied
		1415	SDD	0.0 PPM	0	0.0 PPM	0.043	
		1430	SDD	0.0 PPM	0	0.0 PPM	0.025	
		1445	SDD	0.0 PPM	0	0.0 PPM	0.019	
		1500	SDD	0.0 PPM	0	0.0 PPM	0.016	
		1515	SDD	0.0 PPM	0	0.0 PPM	0.85	
		1530	SDD	0.0 PPM	0	0.0 PPM	0.019	
		1545	SDD	0.0 PPM	0.148	0.0 PPM	0.022	
		1600	SDD	0.0 PPM	0	0.0 PPM	0.017	
	8/15/2007	Background	SDD	0.0 PPM	0.004	0.0 PPM	0.01	
		815	SDD	0.0 PPM	0.009	0.0 PPM	0.019	
		830	SDD	0.0 PPM	0.005	0.0 PPM	0.021	
		845	SDD	0.0 PPM	0.01	0.0 PPM	0.13	
		900	SDD	0.0 PPM	0.009	0.0 PPM	0.009	
		915	SDD	0.0 PPM	0.008	0.0 PPM	0	
		930	SDD	0.0 PPM	0.011	0.0 PPM	0	
	8/16/2007	Background	SDD	0.0 PPM	0	0.0 PPM	0	
		845	SDD	0.0 PPM	0	0.0 PPM	0.03	
		900	SDD	0.0 PPM	0.002	0.0 PPM	0.001	
		915	SDD	0.0 PPM	0.001	0.0 PPM	0.681	
		930	SDD	0.0 PPM	0.003	0.0 PPM	0	
		945	SDD	0.0 PPM	0	0.0 PPM	0	
		1000	SDD	0.0 PPM	0.012	0.0 PPM	0	
		1015	SDD	0.0 PPM	0.024	0.0 PPM	0	
		1030	SDD	0.0 PPM	0.05	0.0 PPM	0	
		1045	SDD	0.0 PPM	0.031	0.0 PPM	3.5	
		1100	SDD	0.0 PPM	0.05	0.0 PPM	0	
		1115	SDD	0.0 PPM	0.009	0.0 PPM	0.001	
		1130	SDD	0.0 PPM	0.031	0.0 PPM	0.335	
		1145	SDD	0.0 PPM	0.035	0.0 PPM	5.7	
		1200	SDD	0.0 PPM	0.026	0.0 PPM	1.8	
		1215	SDD	0.0 PPM	1.8	0.0 PPM	0	

Table I:2

Onsite Fire Water Resevoir Investigation
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EXB-5	8/17/2007	Background	SDD	0.0 PPM	0.016	0.0 PPM	0.023	
		800	SDD	0.0 PPM	0.109	0.0 PPM	0.056	
		815	SDD	0.0 PPM	0.031	0.0 PPM	0.79	
		830	SDD	0.0 PPM	0	0.0 PPM	1.195	
		845	SDD	0.0 PPM	0.022	0.0 PPM	0.001	
		900	SDD	0.0 PPM	0.117	0.0 PPM	0	
		915	SDD	0.0 PPM	0.133	0.0 PPM	0.011	
		930	SDD	0.0 PPM	2.05	0.0 PPM	0	
		945	SDD	0.0 PPM	0.065	0.0 PPM	0.01	
		1000	SDD	0.0 PPM	0.124	0.0 PPM	0.006	
		1015	SDD	0.0 PPM	0.037	0.0 PPM	0.035	
		1030	SDD	0.0 PPM	0	0.0 PPM	0	
	8/16/2007	Background	SDD	0.0 PPM	0	0.0 PPM	0	
		1600	SDD	0.0 PPM	0	0.0 PPM	0.009	
		1615	SDD	0.0 PPM	0	0.0 PPM	0	
		1630	SDD	0.0 PPM	0	0.0 PPM	0	
		1700	SDD	0.0 PPM	0.002	0.0 PPM	0	
	8/20/2007	1206	TAH	0.0 PPM	0.012	0.0 PPM	0	
		1238	TAH	0.0 PPM	0	0.0 PPM	0	
		1333	TAH	0.0 PPM	0	0.0 PPM	1.652	
		1400	TAH	0.0 PPM	0.072	0.0 PPM	0	

Table I:2

Onsite Fire Water Resevoir Investigation
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Well	Date	Time	Sampler	Upwind PID	Upwind DataRam *	Downwind PID	Downwind DataRam *	Notes
EXB-1	8/15/2007	Background	SDD	0.0 PPM	0	0.0 PPM	0.01	
		1345	SDD	0.0 PPM	0.006	0.0 PPM	0.042	
		1400	SDD	0.0 PPM	0.001	0.0 PPM	0.012	
		1415	SDD	0.0 PPM	0.002	0.0 PPM	0	
		1430	SDD	0.0 PPM	0	0.0 PPM	0.003	
		1445	SDD	0.0 PPM	0.004	0.0 PPM	0.007	
		1500	SDD	0.0 PPM	0	0.0 PPM	0	
		1515	SDD	0.0 PPM	0.013	0.0 PPM	0.005	
		1530	SDD	0.0 PPM	0.007	0.0 PPM	0	
		1545	SDD	0.0 PPM	0.001	0.0 PPM	0.044	
		1600	SDD	0.0 PPM	0	0.0 PPM	0	
		1615	SDD	0.0 PPM	0	0.0 PPM	0	
		1630	SDD	0.0 PPM	0.001	0.0 PPM	0	
	8/20/2007	1700	TAH	0.0 PPM	0.036	0.0 PPM	1.688	
		1715	TAH	0.0 PPM	0	0.0 PPM	0.026	
		1735	TAH	0.0 PPM	0	0.0 PPM	0	
		1750	TAH	0.0 PPM	0	0.0 PPM	0.026	
EXB-8	8/20/2007	900	TAH	0.0 PPM	0.065	0.0 PPM	0.098	
		925	TAH	0.0 PPM	0	0.0 PPM	0.06	
		1000	TAH	0.0 PPM	0	0.0 PPM	0	
		1030	TAH	0.0 PPM	0.12	0.0 PPM	0.584	
EXB-6	8/28/2007	750	TAH			0.0 PPM	0	
		805	TAH			0.0 PPM	0.24	
		830	TAH			0.0 PPM	0	
	8/29/2007	834	TAH			0.0 PPM	0.08	
		915	TAH			0.0 PPM	0	
		1305	TAH			0.0 PPM	0	

*** = Measured in ug/m3**

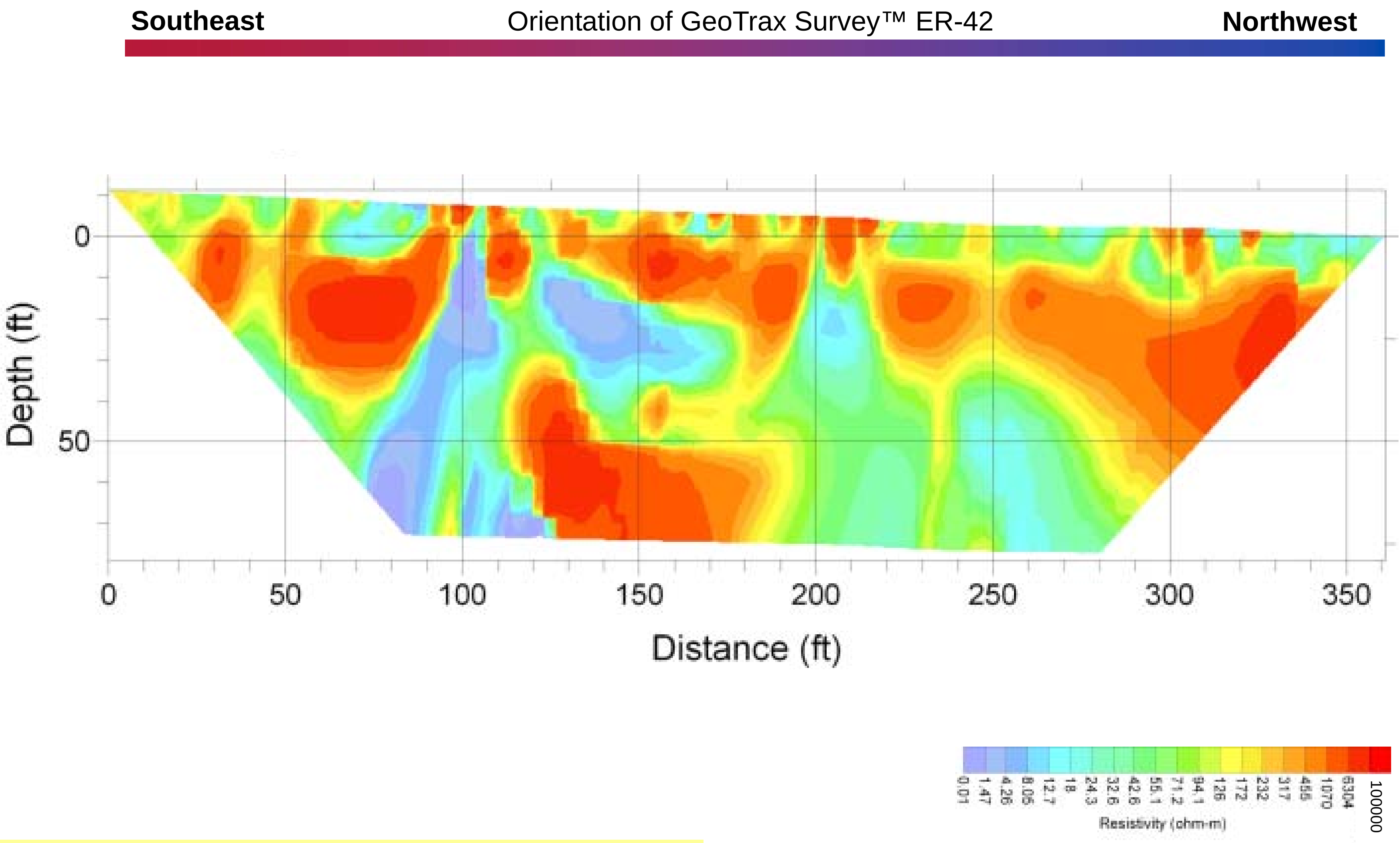
Table I:3

Soil Vapor Sampling
Community Air Monitoring Program
Emerson Power Transmission Facility
620 Aurora Street
Ithaca, New York
Site NO. 7-55-010

Location	Date	Time	Sampler	Upwind PID	Upwind DataRam	Downwind PID	Downwind DataRam	Notes
SV-33	8/21/2007	1015	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.002 ug/m^3	
		1030		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.008 ug/m^3	
		1045		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.002 ug/m^3	
		1100		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
	8/23/2007	1100		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
		1115		0.0 PPM	0.001 ug/m^3	0.0 PPM	0.000 ug/m^3	
SV-34	8/21/2007	1130	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.001 ug/m^3	
SV-32	8/21/2007	1145	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.109 ug/m^3	
		1200		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
		1415		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
		1430		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
SV-38	8/21/2007	1330	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
		1345		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.001 ug/m^3	
		1400		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.045 ug/m^3	
SV35	8/21/2007	1500	Steven Dawson	0.0 PPM	0.009 ug/m^3	0.0 PPM	0.000 ug/m^3	
		1515		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
SV-20b	8/21/2007	1600	Steven Dawson	0.0 PPM	0.009 ug/m^3	0.0 PPM	0.000 ug/m^3	
		1615		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.002 ug/m^3	
	8/22/2007	900		0.0 PPM	0.001 ug/m^3	0.0 PPM	0.014 ug/m^3	
		915		0.0 PPM	0.072 ug/m^3	0.0 PPM	0.000 ug/m^3	
		930		0.0 PPM	0.023 ug/m^3	0.0 PPM	0.002 ug/m^3	
SV-20a	8/21/2007	1630	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.004 ug/m^3	
SV-21b	8/21/2007	1645	Steven Dawson	0.0 PPM	0.023 ug/m^3	0.0 PPM	0.000 ug/m^3	
SV-21f	8/22/2007	1045	Steven Dawson	0.0 PPM	0.002 ug/m^3	0.0 PPM	0.067 ug/m^3	
		1100		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.004 ug/m^3	
		1115		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.003 ug/m^3	
SV-27	8/22/2007	1200	Steven Dawson	0.0 PPM	0.412 ug/m^3	0.0 PPM	0.007 ug/m^3	
		1215		0.0 PPM	0.013 ug/m^3	0.0 PPM	0.026 ug/m^3	
		1230		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.008 ug/m^3	
SV-21h	8/23/2007	930	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
SV-31	8/23/2007	1030	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.129 ug/m^3	
		1045		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.006 ug/m^3	
SV-22	8/23/2007	1215	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
		1230		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
SV-23	8/28/2007	915	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	Downwind DataRam reached max reading of 2.100 at 0922 when probing through the sidewalk.
		930		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
		945		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
SV-25	8/28/2007	1000	Steven Dawson	NR	NR	NR	NR	Refusal
SV-26	8/28/2007	1015	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
		1030		0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
SV-28	8/28/2007	1100	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
SV-29	8/28/2007	1130	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
SV-30	8/28/2007	1145	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.000 ug/m^3	
SV-36 Relocated	8/30/2007	845	Steven Dawson	0.0 PPM	0.000 ug/m^3	0.0 PPM	0.003 ug/m^3	

NR = Not recorded due to early refusal

Appendix G – ER Surveys



Topographic Estimation Performed by Aestus Field Personnel

2605 Dotsero Ct
Loveland, CO 80538

970.278.4090
www.aestusllc.com

Scale: NTS unless specified
Drawn By: MAS
Approved By: SWM
Date: 11-01-07
Project No.: 7-114-05

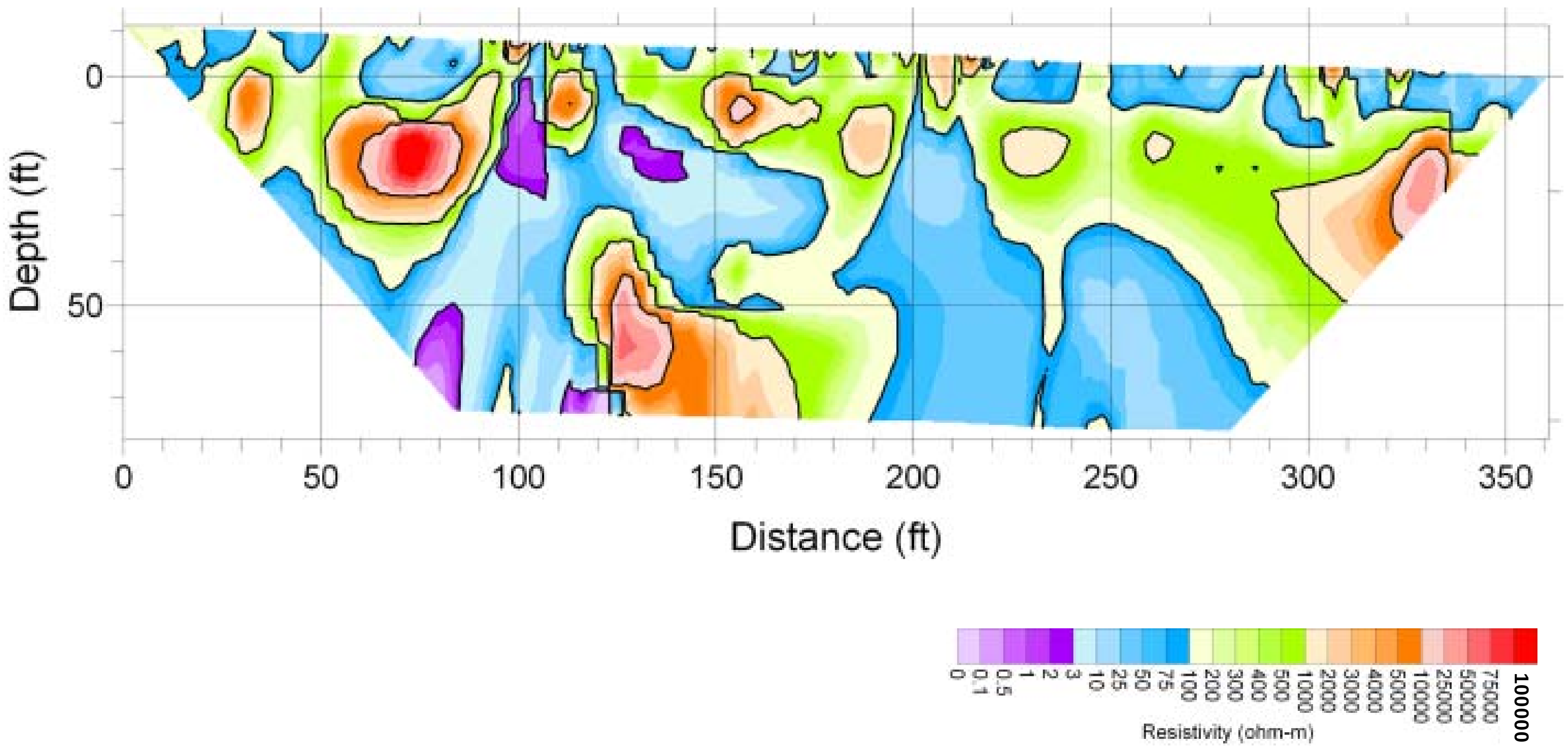
GeoTrax Survey^{TM} Images– Supplemental Investigation
Emerson Power Transmission Site
Ithaca, New York

Prepared for: ***WSP Environmental Strategies***

FIGURE

1A

Southeast Orientation of GeoTrax Survey™ ER-42 **Northwest**



Topographic Estimation Performed by Aestus Field Personnel

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Scale: NTS unless specified

Drawn By:	MAS
Approved By:	SWM
Date:	11-01-07
Project No.:	7-114-05

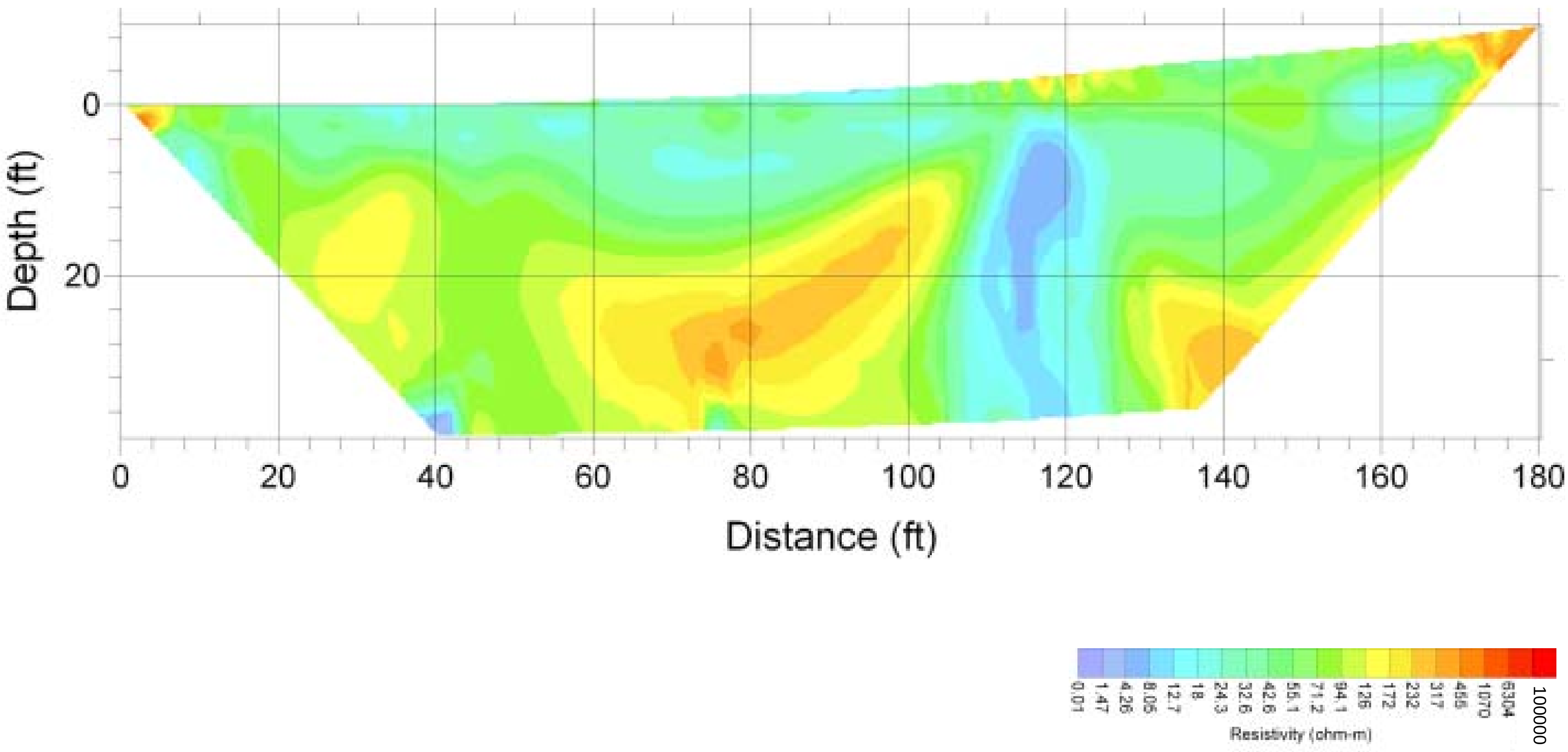
GeoTrax Survey^{TM} Images– Supplemental Investigation
Emerson Power Transmission Site
Ithaca, New York

Prepared for: ***WSP Environmental Strategies***

FIGURE

1B

Southwest Orientation of GeoTrax Survey™ ER-43 **Northeast**



Topographic Estimation Performed by Aestus Field Personnel

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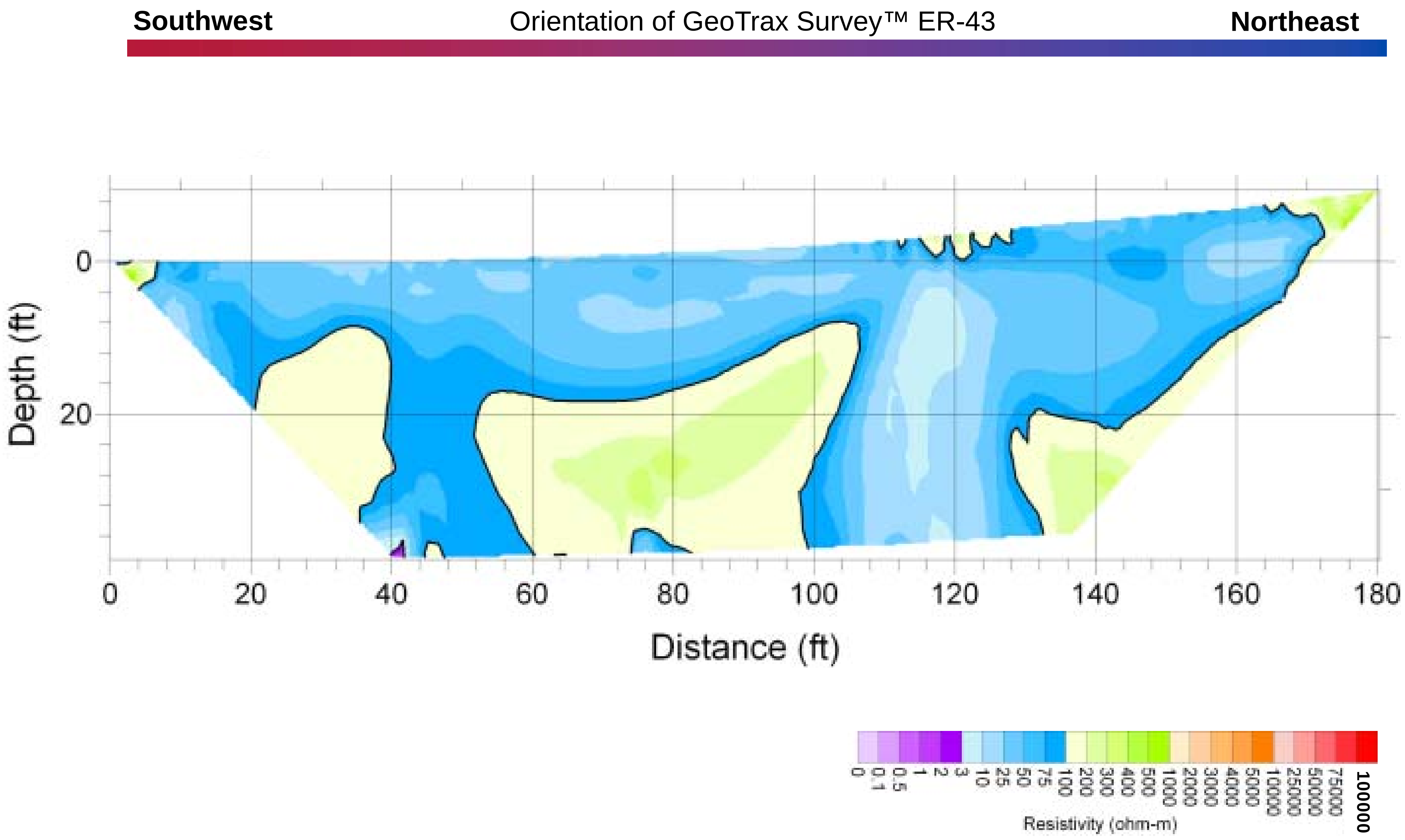
Scale: NTS unless specified
Drawn By: MAS
Approved By: SWM
Date: 11-01-07
Project No.: 7-114-05

GeoTrax Survey^{TM} Images– Supplemental Investigation
Emerson Power Transmission Site
Ithaca, New York

Prepared for: ***WSP Environmental Strategies***

FIGURE

2A



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Scale:	NTS unless specified
Drawn By:	MAS
Approved By:	SWM
Date:	11-01-07
Project No.:	7-114-05

GeoTrax Survey^{TM} Images– Supplemental Investigation
Emerson Power Transmission Site
Ithaca, New York

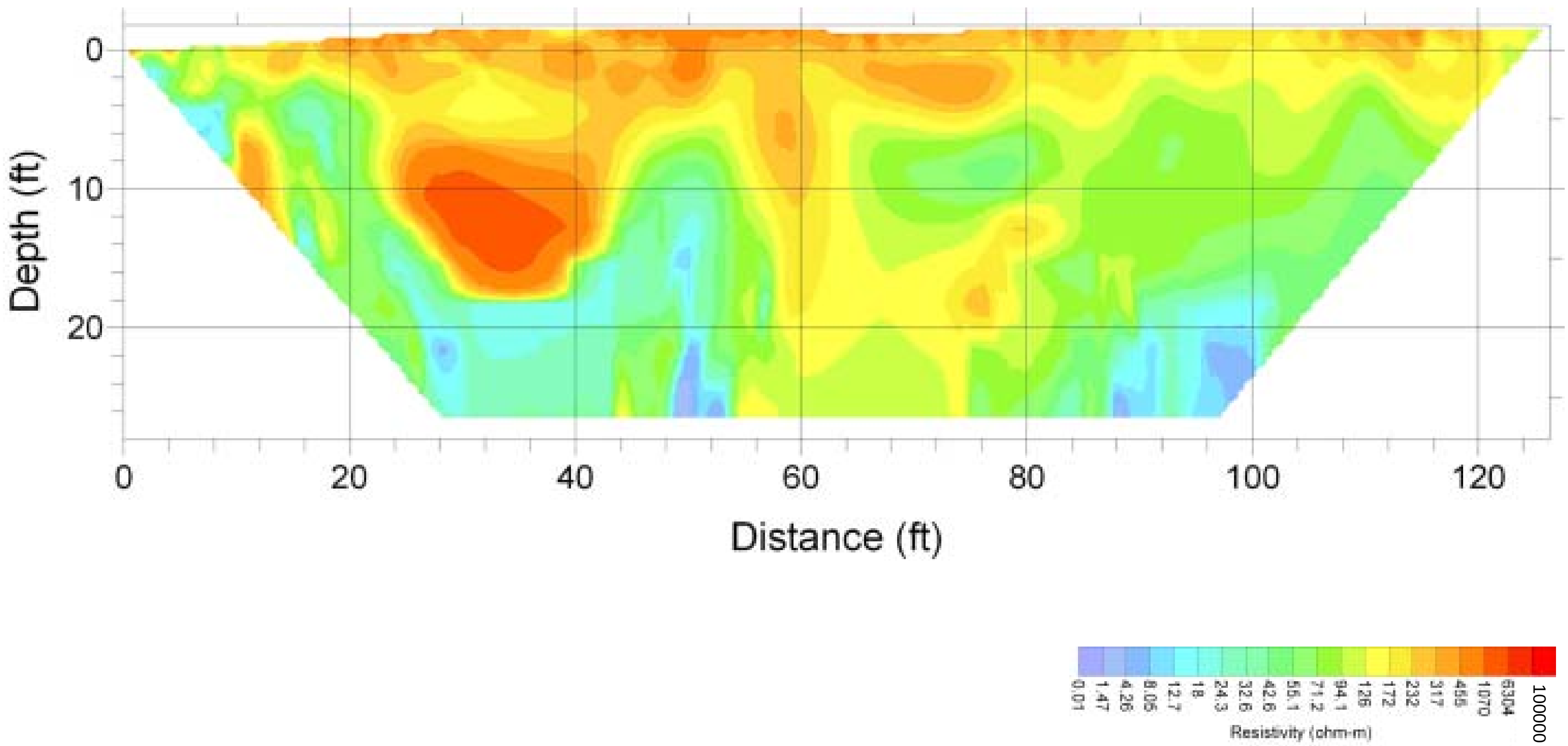
Prepared for: ***WSP Environmental Strategies***

WSP
Environmental Strategies

FIGURE

2B

Southwest Orientation of GeoTrax Survey™ ER-44 **Northeast**



Topographic Estimation Performed by Aestus Field Personnel

Aestus, LLC
2605 Dotsero Ct
Loveland, CO 80538

970.278.4090
www.aestusllc.com

Scale: NTS unless specified
Drawn By: MAS
Approved By: SWM
Date: 11-01-07
Project No.: 7-114-05

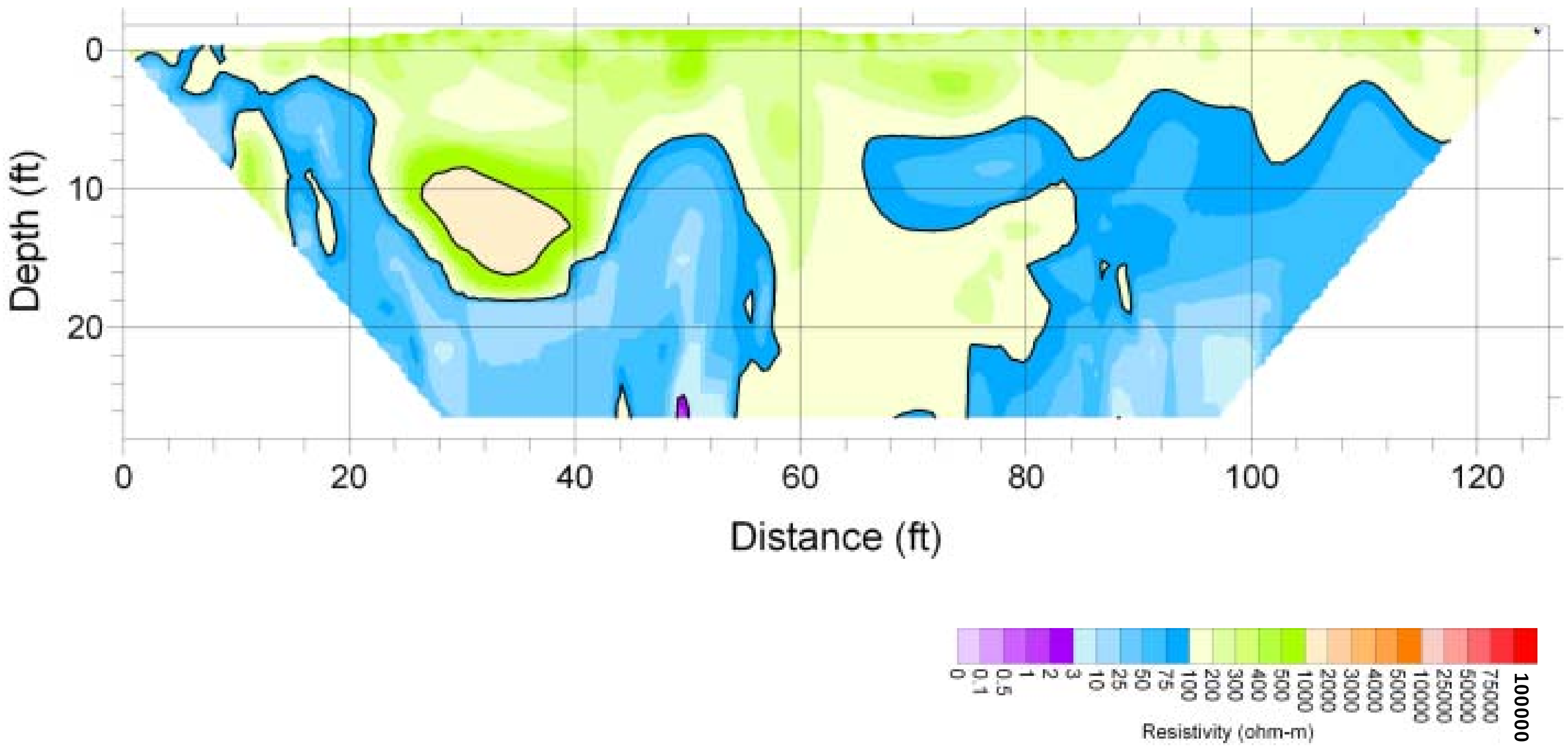
GeoTrax Survey^{TM} Images– Supplemental Investigation
Emerson Power Transmission Site
Ithaca, New York

Prepared for: ***WSP Environmental Strategies***

FIGURE

3A

Southwest Orientation of GeoTrax Survey™ ER-44 **Northeast**



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GeoTrax Survey^{TM} Images– Supplemental Investigation
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FIGURE

3B

Appendix H – Geophysical Report #2