RECORD OF DECISION

NYSEG - Ithaca First St. MGP
Ithaca, Tompkins County
Site No. 755006
March 2011

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - RECORD OF DECISION

NYSEG - Ithaca First St. MGP
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Statement of Purpose and Basis

This document presents the remedy for the NYSEG - Ithaca First St. MGP site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the NYSEG - Ithaca First St. MGP site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. A remedial design program would be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. The site is an active industrial building with office spaces open to industrial activities. Because of this setup, soil vapor intrusion sampling had not been completed in the past. An assessment of the potential for soil vapor intrusion at the existing buildings will be included in that pre-design investigation. Green remediation principals and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

a. Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
b. Reducing direct and indirect greenhouse gas and other emissions;
c. Increasing energy efficiency and minimizing use of non-renewable energy;
d. Conserving and efficiently managing resources and materials;
e. Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
f. Maximizing habitat value and creating habitat when possible;
g. Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
h. Integrating the remedy with the end use where possible and encouraging green and sustainable

re-development

2. Enhanced tar recovery will be provided using wells and/or trenches in identified areas of subsurface soil saturated with MGP tar, including discrete seams. “Enhanced recovery” refers to low volume pumping of the well to create an inward gradient. Additional enhancement technologies that could be considered may include the use of surfactants, heating, water-flooding, or pulsing.

3. A barrier wall will be constructed along the northern boundary of the site between the area of MGP subsurface tar and Cascadilla Creek to isolate this inaccessible tar from the Creek. A pre-design investigation will be required to more fully understand the distribution and migration of MGP tar in the vicinity of this barrier

4. The existing IAWTTF buildings, pavement, lawn and paved pedestrian trail at the site form a site cover; there is currently no exposed surface soil. A site cover will be maintained as a component of the site use and any future site development, which will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for industrial use for the IAWTTF; and passive recreational (i.e, commercial use SCOs) for the pedestrian trail. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

5. An institutional control, in the form of an environmental easement will:
a) require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3).
b) allow the use and development of a portion of the controlled property for passive recreation (e.g., the waterfront trail) and the balance of the controlled property for industrial use (the IAWWTF), respectively. Since passive recreation is permitted, the site remedy will consider commercial use cleanup objectives as defined by Part 375-1.8(g), though land use is subject to local zoning laws which would not permit residential use;
c) restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or County DOH;
d) prohibit agriculture or vegetable gardens on the controlled property; and
e) require compliance with the Department approved Site Management Plan.

6. The remedy selected requires a Site Management Plan (SMP). The SMP shall include the following:
a) an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional controls: The Environmental Easement discussed in Paragraph 5 above

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Engineering control: The site cover discussed in Paragraph 4 above.

This plan includes, but may not be limited to: (i) an excavation plan which details the provisions for management of future excavations in areas of remaining contamination; (ii) descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions; (iii) a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion; (iv) maintaining site access controls and Department notification; and (v) the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b) a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to: maintenance of the soil cover in the vicinity of the Waterfront Trail; maintenance of the fence separating the waterfront trail from the remainder of the site; monitoring of groundwater to assess the performance and effectiveness of the remedy; a schedule of monitoring and frequency of submittals to the Department; and monitoring for vapor intrusion for any buildings occupied or developed on the site, as may be required pursuant to item 6.a.iii., above.

c) an Operation and Maintenance Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of for any mechanical or physical components of the remedy (NAPL recovery). The plan includes, but is not limited to:

i. compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;

ii. maintaining site access controls and Department notification; and

iii. providing the Department access to the site and O&M records.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

MAR 3 1 2011

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

RECORD OF DECISION

NYSEG - Ithaca First St. MGP
Ithaca, Tompkins County
Site No. 755006
March 2011

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of hazardous wastes at this site, as more fully described in this document, has contaminated various environmental media. The remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: SITE DESCRIPTION AND HISTORY

Location: The site is located on Third Street in the City of Ithaca, west of NYS Route 13 and south of Cascadilla Creek.

Current Zoning/Use: This 3 acre site is owned by the City of Ithaca and is the location of the Ithaca Area Waste Water Treatment Facility (IAWWTF). The site is zoned P-1 (municipal services). P-1 zoning also encompasses City parks. A waterfront recreational path is located on the northern edge of the property, outside the fence for the IAWWTF but within the definition of the site. A one foot thick soil cover was installed in the vicinity of this trail. A marina is located on the far shore of Cascadilla Creek.

Site Features: The site is dominated by the Ithaca Area Waste Water Treatment Facility, with significant surface and subsurface structures limiting access to much of the site.

Historic Use: This is the site of a former manufactured gas plant (MGP) which produced gas from petroleum and coal using the water gas process from 1927 to 1932. This gas was used for heating and cooking, in much the same way that natural gas is used today. It was also used for lighting, as indicated by the term gaslight era.

The Ithaca Area Waste Water Treatment Facility has under-gone renovation and expansion over the years resulting in the removal of some structures and some contaminated material.

Site Geology and Hydrogeology: The uppermost soil encountered at this site is generally fill material. Where present, the fill material is up to 13 feet thick. In some areas, a low permeability, clayey silt underlies this fill. Underlying this clay and fill is a layer of more permeable material (sand and gravel), approximately 20 feet thick. The hydraulic base at this site is a clayey silt. While this material is present as shallow as 12 feet in some locations, it begins at a depth generally 32 to 39 feet below grade. Bedrock is approximately 430 feet below grade.

Surface water north of the waterfront trail flows directly into the Cascadilla Creek. South of the trail, the water is collected in a storm drainage system and piped into the creek. Groundwater flow appears to be away from Cascadilla Creek. It is possible that the deep subsurface structures and extensive trenching and piping through the site are influencing groundwater flow in some areas of the site.

A site location map is attached as Figure 1.

SECTION 3: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to industrial use as described in Part 375-1.8(g) is/are being evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

NYSEG

The Department and NYSEG entered into a multi-site Consent Order (index number DO-0002-9309) on March 30, 1994, which obligates NYSEG to implement a full remedial program for 33 former MGP sites across the State, including the Ithaca, First Street site.

SECTION 5: SITE CONTAMINATION

5.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

5.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

5.1.2: RI Information

The analytical data collected on this site includes data for:

- groundwater
- surface water
- soil
- sediment

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data.

The contaminant(s) of concern identified at this site is/are:

coal tar	polycyclic aromatic hydrocarbons (PAHs), total
benzene, toluene, ethylbenzene and xylenes (BTEX)	cyanides (soluble cyanide salts)

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil

5.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

IAWWTF Expansion: Disposal of Contaminated Soils

This IRM occurred in 1998 and consisted of removing approximately 8,000 cubic yards (cy) of MGP-contaminated soil during the expansion of the Ithaca Area Waste Water Treatment Facility. The soils were disposed of at an appropriately licensed facility.

Cayuga Waterfront Trail Soil Cover IRM

This IRM was conducted during the fall of 2010. Soil was graded and a one foot soil cover was installed. The soil used for the cover met the soil cleanup objectives for unrestricted use.

5.3: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

People are not drinking the contaminated groundwater because the area is served by a public water supply that obtains water from a different source not affected by this contamination. The site is covered with concrete, asphalt, buildings, vegetation or clean soil; therefore, people will not come into contact with the remaining contamination unless they dig below the ground surface. The adjacent waterfront recreational path is covered by one foot of clean soil. In general, people are not coming into contact with contaminated groundwater or soil unless they dig 8 feet or greater below the ground surface. The potential exists for soil vapor intrusion to occur in the on-site office building.

5.4: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU 01.

Significant quantities of MGP tar were observed in the subsurface soils at this site. Groundwater in close proximity to the tar contains volatile and semi-volatile contaminants at levels above SCGs. There does not appear to be any widespread impacts from this site to the adjacent Cascadilla Creek or other wildlife resources.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Exhibit B. Potential remedial alternatives for the Site were identified, screened and evaluated in the feasibility study (FS) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit C. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit D.

6.1: Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed

remedy, notices to the public will be issued describing the differences and reasons for the changes.

6.2: Elements of the Remedy

The basis for the Department's remedy is set forth at Exhibit E.

The estimated present worth cost to implement the remedy is $3,200,000. The cost to construct the remedy is estimated to be $2,200,000 and the estimated average annual cost is $75,000.

The elements of the selected remedy are as follows:

1. A remedial design program would be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. The site is an active industrial building with office spaces open to industrial activities. Because of this setup, soil vapor intrusion sampling had not been completed in the past. An assessment of the potential for soil vapor intrusion at the existing buildings will be included in that pre-design investigation. Green remediation principals and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:
a. Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
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h. Integrating the remedy with the end use where possible and encouraging green and sustainable re-development

2. Enhanced tar recovery will be provided using wells and/or trenches in identified areas of subsurface soil saturated with MGP tar, including discrete seams. “Enhanced recovery” refers to low volume pumping of the well to create an inward gradient. Additional enhancement technologies that could be considered may include the use of surfactants, heating, water-flooding, or pulsing.

3. A barrier wall will be constructed along the northern boundary of the site between the area of MGP subsurface tar and Cascadilla Creek to isolate this inaccessible tar from the Creek. A pre-design investigation will be required to more fully understand the distribution and migration of MGP tar in the vicinity of this barrier

4. The existing IAWTTF buildings, pavement, lawn and paved pedestrian trail at the site form a site cover; there is currently no exposed surface soil. A site cover will be maintained as a

component of the site use and any future site development, which will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for industrial use for the IAWTTF; and passive recreational (i.e, commercial use SCOs) for the pedestrian trail. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

5. An institutional control, in the form of an environmental easement will:

a) require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3).

b) allow the use and development of a portion of the controlled property for passive recreation (e.g., the waterfront trail) and the balance of the controlled property for industrial use (the IAWWTF), respectively. Since passive recreation is permitted, the site remedy will consider commercial use cleanup objectives as defined by Part 375-1.8(g), though land use is subject to local zoning laws which would not permit residential use;

c) restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or County DOH;

d) prohibit agriculture or vegetable gardens on the controlled property; and

e) require compliance with the Department approved Site Management Plan.

6. The remedy selected requires a Site Management Plan (SMP). The SMP shall include the following:

a) an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional controls: The Environmental Easement discussed in Paragraph 5 above

Engineering control: The site cover discussed in Paragraph 4 above.

This plan includes, but may not be limited to: (i) an excavation plan which details the provisions for management of future excavations in areas of remaining contamination; (ii) descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions; (iii) a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion; (iv) maintaining site access controls and Department notification; and (v) the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b) a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to: maintenance of the soil cover in the vicinity of the Waterfront Trail; maintenance of the fence separating the waterfront trail from the remainder of the site; monitoring of groundwater to assess the performance and effectiveness of the remedy; a

schedule of monitoring and frequency of submittals to the Department; and monitoring for vapor intrusion for any buildings occupied or developed on the site, as may be required pursuant to item 6.a.iii., above.

c) an Operation and Maintenance Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of for any mechanical or physical components of the remedy (NAPL recovery). The plan includes, but is not limited to:

i. compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;

ii. maintaining site access controls and Department notification; and

iii. providing the Department access to the site and O&M records.

Exhibit A

Nature and Extent of Contamination

The principal waste product produced at the former MGP site was coal tar, which is an oily, dark colored liquid with a strong, objectionable odor. Unlike most materials labeled as "tar", this is not a semi-solid, viscous material. Rather, it has a physical consistency similar to motor oil, which enables it to move through the subsurface. Coal tar is referred to as a dense non-aqueous phase liquid or DNAPL since it is slightly heavier than water and will not readily dissolve in water. When released into the subsurface, it will sink through the groundwater until it reaches some less permeable material which it cannot penetrate. It can, under certain conditions, move laterally away from the point where it was initially released.

The tar contains high levels of volatile and semi-volatile organic compounds (VOCs and SVOCs). The principal VOCs are benzene, toluene, ethylbenzene, and xylenes. These compounds, collectively known as BTEX, are slightly soluble in water. Groundwater which comes into contact with tar or tar-contaminated soils will become contaminated with BTEX compounds. This contaminated groundwater can then move through the subsurface along with the ordinary groundwater flow. Volatile organic compounds in the groundwater and soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings.

The principal SVOCs in the tar are a group of compounds known as polycyclic aromatic hydrocarbons, commonly abbreviated as PAHs. PAH compounds are generally less soluble than BTEX, and are consequently less likely to dissolve in groundwater. This makes PAH compounds less mobile in the subsurface, so the highest levels of PAHs are normally found in close proximity to the tar from which they are derived. The specific semivolatile organic compounds of concern in soil and groundwater are the following polycyclic aromatic hydrocarbons (PAHs):

acenaphthene	acenaphthylene	anthracene	benzo(a)anthracene
benzo(a)pyrene	benzo(b)fluoranthene	benzo(g,h,i)perylene	benzo(k)fluoranthene
dibenzo(a,h)anthracene	chrysene	fluoranthene	fluorene
indeno(1,2,3-cd) pyrene	2-methylnaphthalene	naphthalene	phenanthrene
pyrene			

In this document, PAH concentrations are referred to as total PAHs (TPAHs). The TPAH concentration is the sum of the concentrations of each PAH listed above.

All of the BTEX and PAH contaminants that dissolve in groundwater are subject to degradation by natural processes. Common soil bacteria are capable of using these chemical compounds as a food source, converting them to carbon dioxide and water. This degradation process takes place more rapidly when abundant oxygen is present in the groundwater, and can in many cases be expedited by the introduction of additional oxygen. However, contaminants which still remain in the tar itself, undissolved in water, remain beyond the reach of bacteria and can remain in their undegraded state indefinitely.

Figures 2 through 6 summarize the degree of contamination for the contaminants of concern in soil, groundwater, sediment and surface water and compare the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Waste/Source Areas

Wastes are defined in 6 NYCRR Part 375-1.2 (aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375 (au). Source areas are areas of concern at a site where substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. The two wastes and source areas identified at the site are near the former gas plant (Area 1) and near the proposed septic receiving building expansion (Area 2). Most source material in Area 1 was already removed during the construction of the Ithaca Area Waste Water Treatment Facility (IAWWTF). The origin of the MGP tar in Area 2 is not clear, but this is the area where the most significant amount of MGP tar was found at this site. The nature and extent of the tar impacts in these 2 areas are shown in Figures 2 and 3.

The waste/source areas identified will be addressed in the remedy selection process.

Groundwater

Groundwater samples were collected from overburden monitoring wells. The results indicate that the groundwater in the immediate vicinity of MGP tar in Area 2 exceeds SCGs for the volatile organic compounds (VOCs) associated with MGP tar, benzene, toluene, ethylbenzene and xylene (BTEX). Some of the wells with high levels of VOCs also have high semi-volatile organic chemicals present at levels above SCGs. However, since SVOC exceedances are collocated with high VOC levels, discussions regarding organics in groundwater will focus on VOCs. The distribution of groundwater with elevated cyanide levels is not consistent with other site related contamination. At MGP sites, cyanide is most commonly associated with coal carbonization tar or purification of gas produced through coal carbonization. Since this plant was solely a carbureted water gas plant, the source of the cyanide is not clear. The source of the elevated level of cyanide in MW-7S is particularly unclear, since this well is located on the property line, and the hydraulic gradient is into the site, indicating this may be due to an off-site source.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
Benzene	ND-2,200	1	5/29
Toluene	ND-28	5	4/29
Ethylbenzene	ND-710	5	5/29
Xylene (Total)	ND-570	5	5/29
SVOCs			
Naphthalene	ND-1,100	50	4/29

Acenaphthene	ND-130	20	4/29
Benzo(a)anthracene	ND-0.4	0.002	2/29
INORGANICS			
Cyanide	ND-282	200	4/29

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

The primary groundwater contaminants are BTEX and cyanide associated with operation of the MGP. The areal extent of groundwater impacts is shown on Figure 4.

Based on the findings of the RI, the presence of MGP tar has resulted in the contamination of groundwater. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are BTEX and cyanide.

Soil

Surface and subsurface soil samples were collected at the site during the RI. Surface soil samples were collected from a depth of 0-2 inches to assess direct human exposure. Subsurface soil samples were collected from a depth of 2 - 20 feet to assess soil contamination impacts to groundwater. The results indicate that soils at the site exceed the unrestricted SCG for volatile and semi-volatile organics and inorganics.

Table 2 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Industrial Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
VOCs					
Acetone	0-0.88	0.05	46 of 171	1000	46 of 171
Benzene	0-98	0.06	22 of 171	.006[d]	1 of 171
Ethylbenzene	0-550	1	21 of 171	1 [d]	21 of 171
2-Butadone (MEK)	0-0.25	0.12	2 of 171	1000	0 of 171
Methylene Chloride	0-0.11	0.05	1 of 171	1000	0 of 171
Toluene	0-310	0.7	11 of 171	0.7 [d]	11 of 171
Xylene (total)	0-360	.26	21 of 171	.26 [d]	21 of 171
SVOCs					

Acenaphthene	0-740	20	15 of 171	1000	0 of 171
Acenaphthylene	0-640	100	4 of 171	1000	0 of 171
Anthacene	0-410	100	4 of 171	1000	0 of 171
Benzo(a)anthracene	0-230	1	48 of 171	11	18 of 171
Benzo(a)pyrene	0-160	1	46 of 171	1.1	46 of 171
Benzo(b)fluoranthene	0-120	1	46 of 171	11	15 of 171
Benzo(k)fluoranthene	0-72	0.8	27 of 171	110	0 of 171
Chrysene	0-200	1	46 of 171	110	2 of 171
Dibenz(a,h)anthracene	0-14	0.33	28 of 171	1.1	14 of 171
Fluorancene	0-550	100	5 of 171	1000	0 of 171
Fluorene	0-700	30	14 of 171	1000	0 of 171
Indeno(1,2,3-cd)pyrene	0-58	0.5	48 of 171	11	5 of 171
Naphthalene	0-3100	12	21 of 171	1000	2 of 171
Phenanthrene	0-1700	100	12 of 171	1000	2 of 171
Pyrene	0-590	100	6 of 171	1000	0 of 171
Dibenzofuran	0-110	7	12 of 171	1000	0 of 171
Metals and Inorganics					
Arsenic	0.3-105	13	6 of 171	16	4 of 171
Cadmium	0-7.36	2.5	1 of 171	60	0 of 171
Copper	1.6-84.7	50	4 of 171	10,000	0 of 171
Lead	1.4-6,970	63	24 of 171	3900	1 of 171
Mercury	0-4.6	0.18	35 of 171	5.7	0 of 171
Nickel	6.49-78.1	30	5 of 171	10,000	0 of 171
Selenium	0-5.5	3.9	1 of 171	6,800	0 of 171
Silver	0-5.41	2	2 of 171	6,800	0 of 171
Zinc	17.9-320	109	18 of 171	10,000	0 of 171

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Industrial Use, unless otherwise noted.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

The primary soil contaminants are polycyclic aromatic hydrocarbons (PAHs) associated with coal tar from the operation of the former MGP. As noted on Figure 5, areas of elevated PAHs are generally co-located with areas of visible MGP tar contamination. Other contaminants are generally co-located with PAHs.

Based on the findings of the Remedial Investigation, the presence of MGP tar has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are PAHs. Addressing PAH impacted soils will also address soils impacted by BTEX.

Surface Water

Four surface water samples were collected. The only organic chemical detected was toluene, which was found at levels below standards in a sample collected upstream from the site.

No site-related surface water contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for surface water.

Sediments

Sediment samples were collected during the RI from the adjacent Cascadilla Creek at locations upstream, adjacent and downstream of the site. The samples were collected to assess the potential for impacts to the creek sediment from the site. PAH concentrations in 9 shallow sediment samples collected upstream from the site ranged from 0.11 ppm to 28 ppm, while PAHs in 20 shallow sediment samples (0-6inches) collected adjacent and downstream from the site ranged from 3.1ppm to 10 ppm. PAHs in 9 deeper sediment samples collected adjacent to the site ranged from 2 ppm to 38 ppm. In addition to analytical sampling, the area near the site was probed (agitated) in an attempt to generate a sheen or release of NAPL. No sheen or NAPL globules were observed during that investigation. A slight petroleum odor was observed in one of the deeper sediment cores (C3), but no other evidence of petroleum of MGP impacts was observed.

Table 4 - Sediment

Detected Constituents	Concentration Range Detected (ppm)[a]	ER-L[b] (ppm)	Frequency Exceeding ER-L	ER-M[c] (ppm)	Frequency Exceeding Site Derived Value
SVOCs					
Total (14) PAHs	0.11 – 38.46	4.0	30 of 39	45	0 or 39
Metals/Inorganics					
Barium	28.8-64.6	NE	28 of 39	48	28 of 39
Cadmium	ND-2.05	1.2	2 of 39	9.6	0 of 39
Copper	11.5-71.8	34	21 of 39	270	0 of 39
Lead	11.3-296	47	25 of 39	218	2 of 39
Manganese	188-732	NE	35 of 39	260	35 of 39
Mercury	.0106-.776	0.15	19 of 39	0.71	5 of 39
Nickel	16.3-33.1	21	12 of 39	52	0 of 39
Silver	.117-3.41	1	5 of 39	3.7	0 of 39
Zinc	65.3-233	150	12 of 39	410	0 of 39

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment;
b – ERL: Effects Range – Low from the Department's "Technical Guidance for Screening Contaminated Sediments."
c – ERM: Effects Range – Medium from the Department's "Technical Guidance for Screening Contaminated Sediments."

Based on the available information, no site-related sediment contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for sediment.

Exhibit B

SUMMARY OF THE REMEDIATION OBJECTIVES

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Exhibit C

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Exhibit B) to address the contaminated media identified at the site as described in Exhibit A:

Alternative 1: No Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the IRM described in Section 6.2. This alternative leaves the site in its present condition and does not provide any additional protection of the environment.

Alternative 2: No Further Action with Site Management

The No Further Action with Site Management Alternative recognizes the remediation of the site completed by the IRM described in Section 6.2. Site Management and Institutional and Engineering Controls are imposed to address the significant contamination still remaining in the subsurface at the site. This remedy acknowledges the existing perimeter fence, the soil cover between the perimeter fence and the Cascadilla Creek which was provided to support the development of the waterfront recreational trail, and the existing monitoring well network, and will require that these items are maintained. It also includes institutional controls, in the form of an environmental easement and a site management plan. In particular, the site management plan would address future construction activities at the IAWWTF. Any ground-intrusive work at the IAWWFT would need to be coordinated with the Department to protect workers from exposure to contamination and to ensure contaminated material is handled and disposed of properly. In addition, if excavation is expected to encounter contaminated material, the Department will require an analysis to determine if additional source material can be removed by reasonably modifying the planned excavation.

Present Worth:..... *$350,000*
Capital Cost:..... *$134,000*
Annual Costs:..... *$10,000*

Alternative 3: Restoration to Pre-Disposal or Unrestricted Conditions

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative would include: demolition of the Ithaca Area Wastewater Treatment Facility and excavation and off-site treatment or disposal of all underlying soil contaminated above the unrestricted soil cleanup objectives. The treatment plant would then be rebuilt in its current location. Since no contamination would be left at the site, the remedy would not rely on institutional or engineering controls to prevent future exposure. There would be no Site Management, no restrictions, and no periodic review. This remedy would have no annual cost, only the capital cost. Due to the need to remove and replace the existing wastewater treatment plant, the capital cost would be extraordinarily large.

Present Worth:..... *$165,000,000*
Capital Cost:..... *$165,000,000*
Annual Costs:..... *$0*

Alternative 4: NAPL Recovery, Barrier Wall and IC/ECs

This alternative would include the institutional and engineering controls described in Alternative 2, along with an aggressive, active NAPL collection program which would be engineered to remove a significant volume of source material without negatively impacting the operation and structural integrity of the IAWWTF. It is not anticipated that this collection effort would remove all the NAPL present beneath the site. It would, however, remove the most mobile portion of the NAPL and thus greatly reduce the chance that this material could be remobilized in the future. In the vicinity of Cascadilla Creek, sufficient NAPL is present in the subsurface at a depth where it could potentially impact that environmental resource in the future. To prevent that future impact, a barrier wall would be provided isolating the NAPL impacted soil from the creek.

Present Worth:.....*$3,200,000*
Capital Cost:.....*$1,700,000*
Annual Cost (30 yrs):.....*$55,000*
Annual Cost (10 yrs):.....*$20,000*

Alternative 5: Excavation to 15 Feet with NAPL Recovery with IC/ECs

This alternative would include the institutional and engineering controls described in Alternative 2 and the NAPL collection described in Alternative 4. In addition, it would include excavation of approximately 8,000 cubic yards (cy) of soil which is visibly contaminated by MGP tar (NAPL saturation, NAPL seems, or blebs) or which contains PAHs above 500 ppm or BTEX compounds above the SCOs for protection of groundwater quality down to a depth of 15'. Excavated material would be trucked off-site for treatment or disposal at an appropriately licensed facility. The excavation would be limited to those areas accessible without relocating or damaging infrastructure associated with the IAWWTF. Contamination around these structures would remain.

Present Worth:.....*$9,100,000*
Capital Cost:.....*$6,543,000*
Annual Cost (30 yrs):.....*$55,000*
Annual Cost (10 yrs):.....*$20,000*

Alternative 6: In-Situ Solidification with NAPL Recovery and IC/ECs

This alternative would include the institutional and engineering controls described in Alternative 2. In addition, it would include using in-situ solidification (ISS). ISS is a technology that mixes the impacted soil with cement or other similar materials to form a high strength, low permeability monolith which would isolate the contamination from the environment. This alternative would treat all NAPL impacted material that is accessible without threatening the infrastructure present at the IAWWTF. A geotechnical analysis of the site determined that a 40 foot setback would be required to minimize the potential for remedial action to damage this infrastructure. Soil outside this setback that is visibly contaminated by MGP tar (NAPL saturation, NAPL seems, or blebs) or that contains PAHs above 500 ppm or BTEX compounds above the SCOs for protection of groundwater quality would be excavated. In addition, it would treat NAPL impacted soils accessible without threatening the IAWWTF infrastructure.

Present Worth: *$5,300,000*
Capital Cost: *$3,400,000*
Annual Cost (30 yrs): *$55,000*
Annual Cost (10 yrs): *$20,000*

Exhibit D

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
Alternative 1: No Action	0	0	0
Alternative 2: No Further Action with Site Management	$134,000	$10,000	$350,000
Alternative 3: Restoration to Pre-Disposal or Unrestricted Conditions	$165,000,000	0	$165,000,000
Alternative 4: NAPL Recovery, Barrier Wall and IC/ECs	$1,700,000	$55,000-$75,000	$3,200,000
Alternative 5: Excavation to 15 Feet with NAPL Recovery with IC/ECs	$6,543,000	$55,000-$75,000	$9,100,000
Alternative 6: In-Situ Solidification (Setback) with IC/ECs	$3,400,000	$55,000-$75,000	$5,300,000

Exhibit E

SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative 4, NAPL Recovery, Barrier Wall and IC/ECs as the remedy for this site. The elements of this remedy are described in Section 7.2. The proposed remedy is depicted in Figure 7.

Basis for Selection

The proposed remedy is based on the results of the RI and the evaluation of alternatives.

Alternative 4 is being proposed because, as described below, it satisfies the threshold criteria and provides the best balance of the balancing criteria described in Exhibit C. It would achieve the remediation goals for the site by establishing and maintaining institutional and engineering controls which would protect public health and the environment and by implementing a NAPL recovery program to remove source material and prevent future off-site migration.

Alternative 1 (No Further Action) does not provide any protection to public health and the environment and will not be evaluated further. Alternative 2 would address some of the threshold criteria, but does not adequately address potential future impacts to Cascadilla Creek. Since it does not fully address the threshold criteria, Alternative 2 will not be further evaluated. Alternative 3, by removing all soil contaminated above the unrestricted soil cleanup objective, meets the threshold criteria. Alternatives 4, 5 and 6 also comply with these criteria but to a lesser degree or with lower certainty. Because Alternatives 4, 5 and 6 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site.

Alternative 3 would require replacement of the IAWWTF to allow excavation under that building and the associated infrastructure. The disruption to the community, the challenges in designing, building (and potentially relocating) a new wastewater treatment facility, and the $165,000,000 cost together make this alternative less attractive than alternatives 4, 5, and 6.

The remaining alternatives (4, 5 and 6) each include institutional and engineering controls to prevent exposures to contaminated soils and groundwater. No such exposures currently exist, and the potential exposures can reasonably be addressed with institutional and engineering controls. Alternative 5 includes excavation of contamination above applicable SCOs above 15 feet which includes all contaminated soil above the water table. As such, the possibility of contamination being encountered by future utility workers or IAWWTF staff is greatly reduced, making Alternative 5 the least reliant on institutional controls for protection of human health, and the most reliable.

The current environmental impacts (groundwater and soil) are restricted to the site at this time, and can also be addressed by institutional and engineering controls. If the NAPL present in the subsurface remains mobile, there is the potential for future impacts to Cascadilla Creek. Most of the potentially mobile NAPL is present at a depth below 15 feet. Since Alternative 5 does not remove this material, it relies on NAPL recovery to decrease NAPL mobility. Alternative 6 provides additional protection by immobilizing the reasonably accessible NAPL using ISS. However, it does not treat the NAPL closest to the creek, so this treatment is of limited effectiveness. Alternative 4 includes a barrier wall which provides the greatest degree of protection for this environmental resource.

Alternative 3 removes all source material present at the site. Each of the other remaining alternatives (4, 5, and 6) includes NAPL recovery as a component. Although Alternative 5 includes excavation, most of the source material is at a depth greater than 15 feet, so this excavation does not significantly decrease the amount of source material that would remain on site. Alternative 6 would address more source material than Alternatives 4 and 5 by solidifying the source material at least 40 feet from IAWWTF infrastructure. As such, Alternative 6 would be the most effective of these three at addressing source material. However, the resulting monolith would be surrounded on all sides by source material (potentially mobile NAPL), which limits the value of this source treatment.

A wide range of NAPL collection efforts are possible. Passive NAPL collection would capture some of the most mobile fraction of the source material, but would not be expected to remove a significant volume of material. Modest groundwater pumping has proven effective at significantly increasing the amount of NAPL removed. In order for Alternative 4, 5 and 6 to satisfactorily reduce the toxicity, mobility or volume of contaminants and prevent future off-site migration of contamination, the proposed NAPL recovery must make an aggressive effort to remove NAPL from the subsurface. The proposed active NAPL recovery system would also make those alternatives more effective in the long term, and would reduce the toxicity, mobility or volume of contaminants remaining.

An important determining factor in selecting the proposed remedy at this site is the control that the City of Ithaca and other members of the IAWWTF have in relation to the use of this property. Because this property is under municipal ownership and control, the relative advantages of Alternatives 5 and 6 are made less important, and we are able to focus on the increased environmental protection provided by Alternative 4.

It is expected that the infrastructure at the IAWWTF would need to be upgraded and expanded over time, and that some of the work would require subsurface excavation that would encounter remaining contamination. The proposed IC/ECs included for Alternatives 4, 5 and 6 would include a provision that any proposed excavation work would have to be reviewed by the NYSDEC to ensure that it is be conducted in a manner protective of human health and the environment. Depending on the effectiveness of the proposed NAPL recovery, it is possible that some proposed work could change the effectiveness of the remedy at this site. For instance, building over source areas could surcharge the area and increase NAPL mobility. This would have to be considered by the NYSDEC as well, and the Department may require additional provisions (including over excavation, additional NAPL recovery, or barriers) in response to future construction activity.

Figure 1

Location Map

NYSEG Ithaca First Street MGP Site

Ithaca, Tompkins County

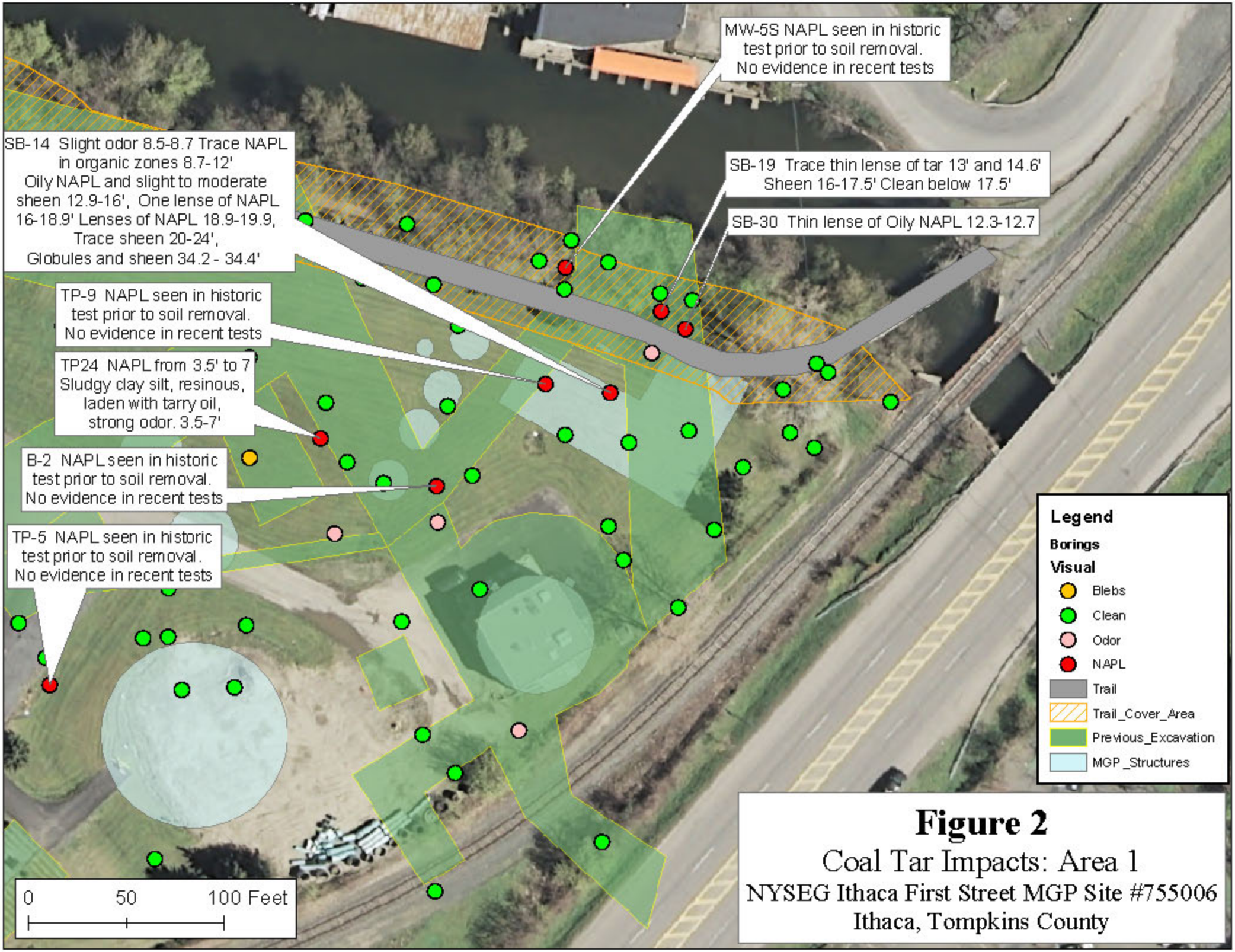

Figure 2

Coal Tar Impacts: Area 1

NYSEG Ithaca First Street MGP Site #755006

Ithaca, Tompkins County

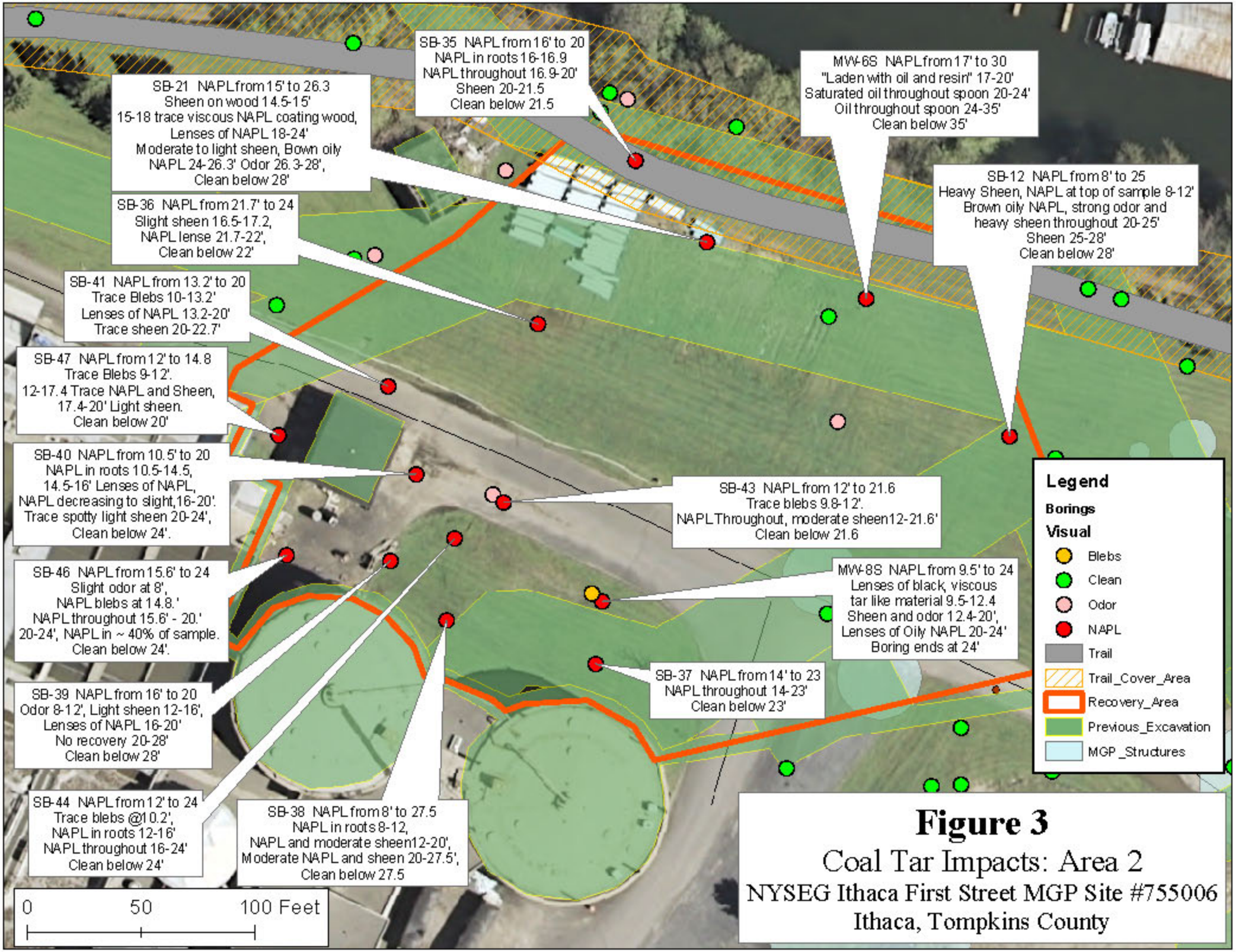

Figure 3

Coal Tar Impacts: Area 2

NYSEG Ithaca First Street MGP Site #755006

Ithaca, Tompkins County

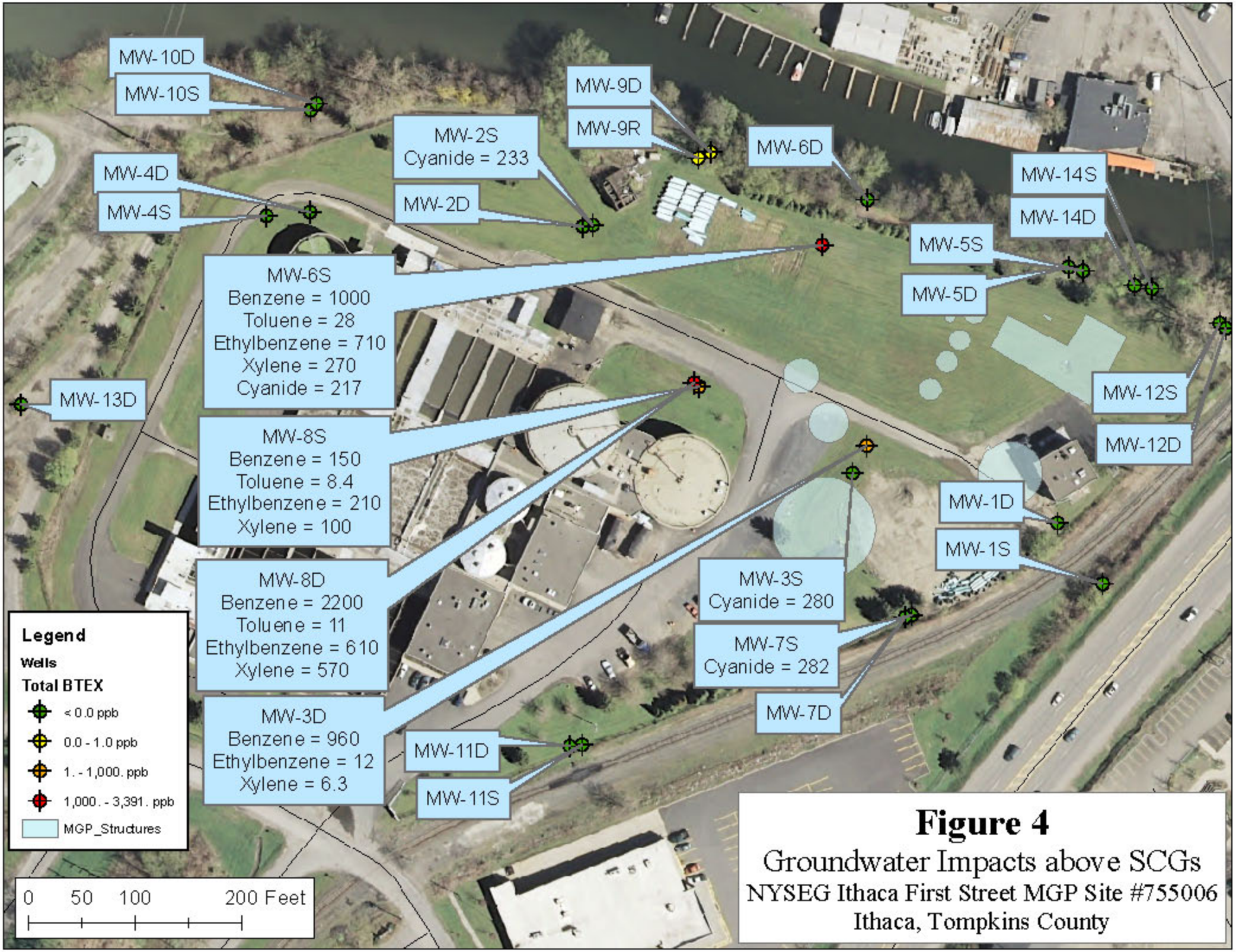

Figure 4

Groundwater Impacts above SCGs

NYSEG Ithaca First Street MGP Site #755006

Ithaca, Tompkins County

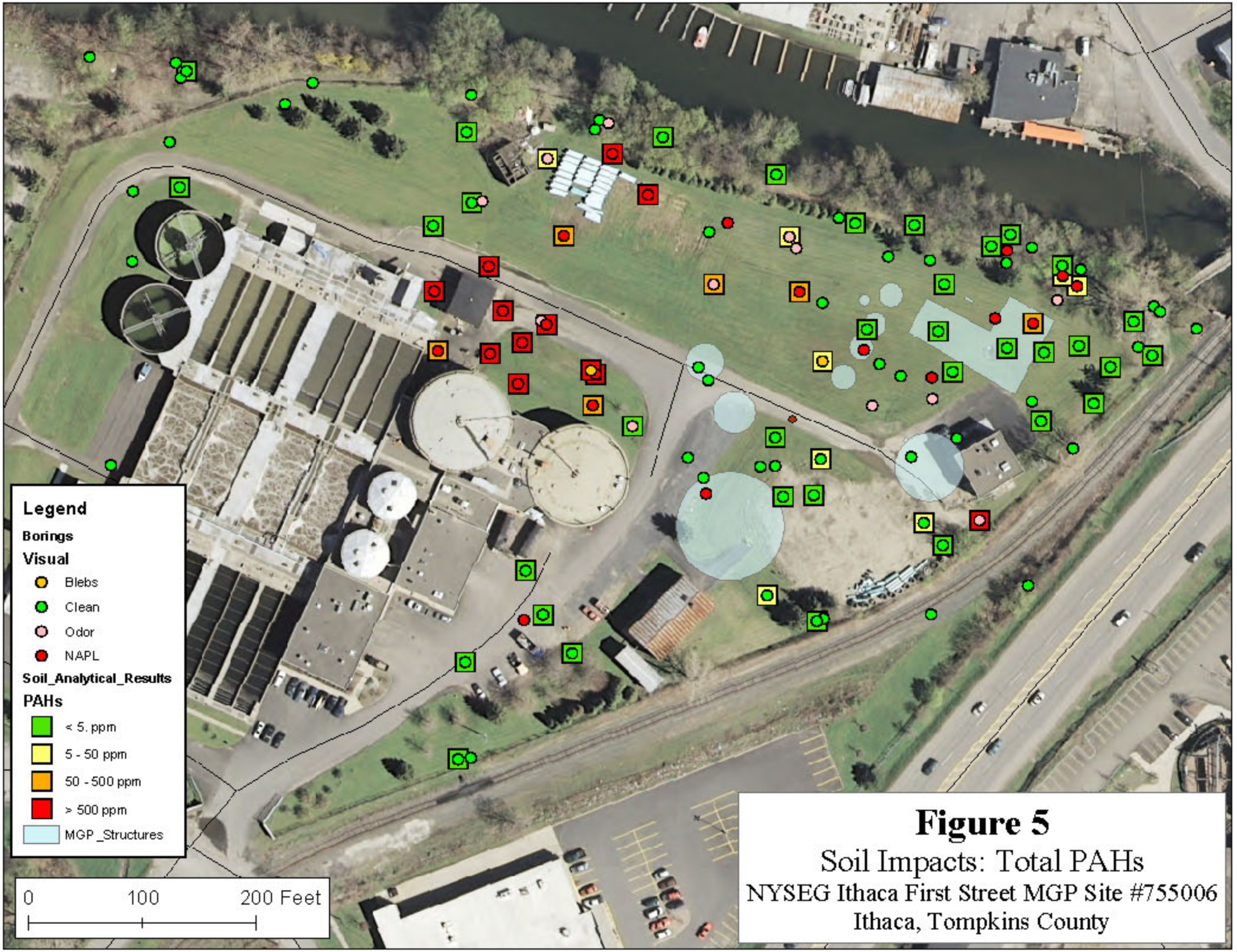

Figure 5

Soil Impacts: Total PAHs

NYSEG Ithaca First Street MGP Site #755006

Ithaca, Tompkins County

Figure 6

Sediment Results: Total PAHs

NYSEG Ithaca First Street MGP Site #755006

Ithaca, Tompkins County

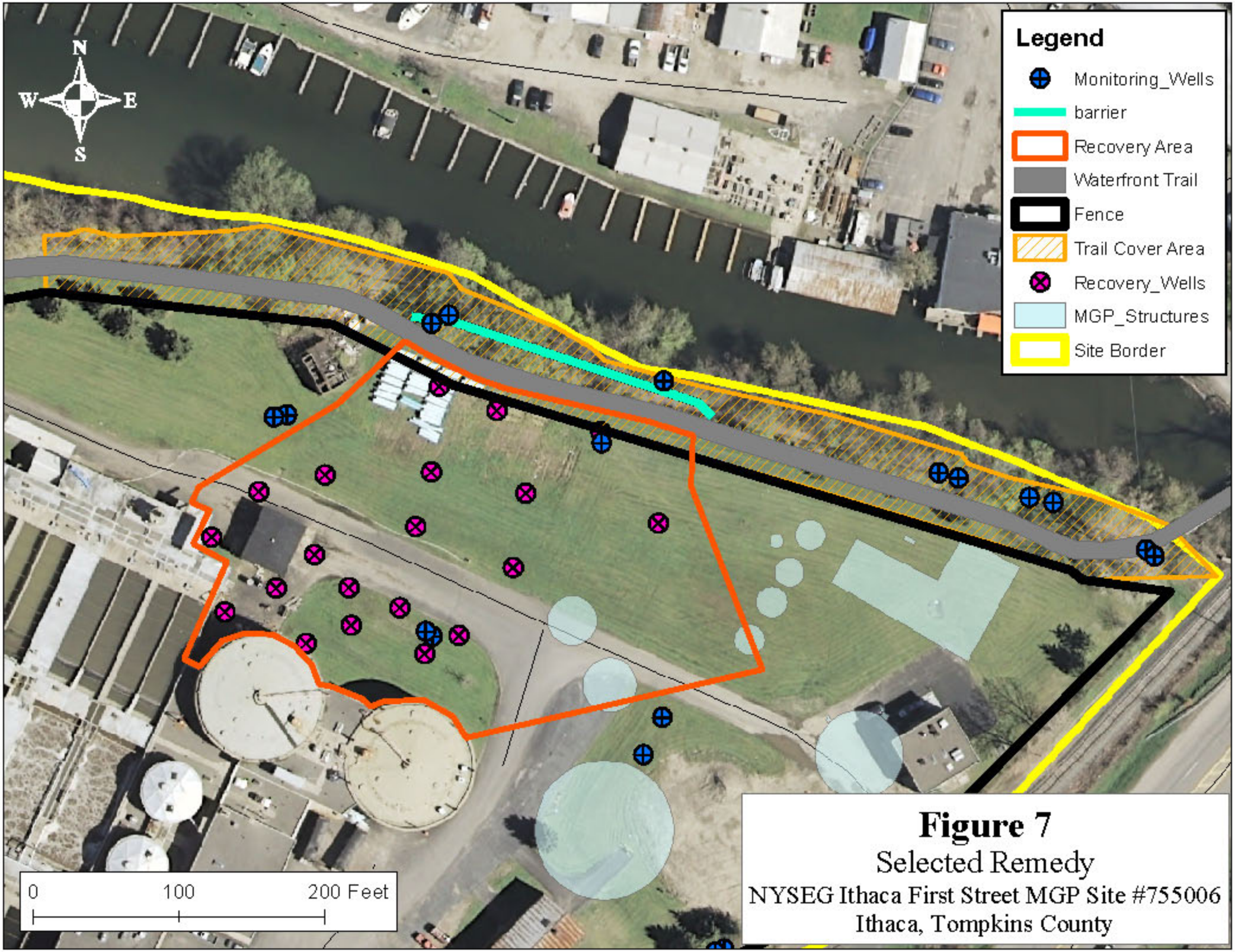

Figure 7

Selected Remedy

NYSEG Ithaca First Street MGP Site #755006

Ithaca, Tompkins County

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

NYSEG - Ithaca First St. MGP
Operable Unit No. 2
Ithaca, Tompkins County, New York
Site No. 755006

The Proposed Remedial Action Plan (PRAP) for the NYSEG - Ithaca First St. MGP Operable Unit No. 2 (OU2), was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on March 31, 2011. The PRAP outlined the remedial measure proposed for the contaminated soil and groundwater at the NYSEG - Ithaca First St. MGP site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on March 14, 2011, which included a presentation of the remedial investigation, feasibility study (RI/FS) for the NYSEG - Ithaca First St. MGP OU2 as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 31, 2011.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1: What is the expected timing for the proposed remedy?

RESPONSE 1: The remedial design is expected to take approximately one year to complete. As the design proceeds, a pilot test to assess NAPL recovery is anticipated. Fully optimizing NAPL recovery at this site could extend the design period. However, this work will not delay the planned Ithaca Area Waste Water Treatment Facility (IAWWTF) expansion.

COMMENT 2: Has any testing been done at Farmers Market?

RESPONSE 2: No, that was not necessary. A “clean line” was established between the source area and the farmers market, eliminating the need to extend investigation work into that area.

COMMENT 3: Why was 15 ft. depth of excavation used?

RESPONSE 3: A depth of 15 feet is identified in Department regulations (6 NYCRR Part 375) for application of use based SCOs in Track 2. As such, it can be a useful yardstick to use in assessing site cleanups. At this particular site, it was determined that an excavation to this depth would not remove the bulk of the contamination, therefore, the Department required additional alternatives be

developed to excavate or treat soils to greater depth. Alternatives were developed for both excavation and in-situ solidification (ISS) in the FS addendum.

COMMENT 4: Regarding the **"**prior excavation," when was that excavation completed?

RESPONSE 4: This refers to excavation work completed during construction and expansion of the wastewater treatment plant. Initial construction started in the 1950s. A major expansion took place in the 1980s, and upgrades and modifications continue to this day.

COMMENT 5: I am concerned that the remedy does not adequately remove contamination from the site and relies too heavily on a barrier wall.

RESPONSE 5: The Department has a regulatory preference for permanent remedies, where appropriate. The evaluation of alternatives in the Feasibility Study showed that removing all the contamination was not a viable alternative due to the presence of the treatment plant and associated infrastructure. Alternatives which removed or treated the most accessible contamination were also evaluated, but those actions would not result in a significant reduction in the potential risk to human health or the environment. The selected remedy was determined by the Department to meet all the remedial action objectives for the Site and to provide the best balance among the evaluation criteria. This process is described in more detail in the Feasibility Study.

John T. Finn P.E., GEI Consultants, submitted a letter dated March 10th, 2011 which included the following comments:

COMMENT 6: The data obtained during the RI indicate that there is a very low potential for soil vapor intrusion at the office building.

RESPONSE 6: The extent of the MGP contamination identified to date indicates a limited potential to create a soil vapor intrusion (SVI) concern However, the extent of MGP tar under the building has not been completely delineated. Further, there is the potential for MGP tar to be present under the building which could impact the indoor air. Accordingly, an appropriate soil vapor intrusion investigation will be required.

COMMENT 7: Table 4 - Sediment provides a summary of results for the detected compounds, which were PAHs and metals. It should be noted that the sediment samples were also analyzed for volatile organic compounds (VOCs) and cyanide. These compounds were not detected and therefore do not appear in Table 4. The absence of detectable VOCs and Total Cyanide further demonstrates that the Cascadilla Creek area has not been impacted by MGP-related compounds of concern.

RESPONSE 7: Yes. We agree that this provides additional evidence that the MGP site has not impacted sediments in Cascadilla Creek.

COMMENT 8: Figure 2 Coal Tar Impacts: Area 1. The PRAP Figure 2 shows isolated NAPL impacts in Area 1. As noted in the figure, some of these impacts were probably removed during previous construction activities. The RI report describes the extensive investigation work that was performed to demonstrate the presence or absence of the impacts in this area which were identified

in the 1985 investigation. In most cases, the 1985 data could not be reproduced. Additional investigation work was performed in 2010 to determine the extent of the impacts observed in 1985 at TP5, B2, TP24, TP9, and MW5S. It appears that the NAPL-impacted soil is no longer present in most of these areas due to the IAWWTF construction activities performed after 1985.

RESPONSE 8: Comment noted.

COMMENT 9: The PRAP figures show the locations of the former MGP features. Based on our review of the available historical information, it is our opinion that the MGP features are located further to the east/northeast of the locations shown in the PRAP. The locations identified from the historical information and their relationship to the IAWWTF construction activities provide additional information indicating that all of the MGP-related features have been removed from the site.

RESPONSE 9: The locations of the MGP structures have been revised based on this comment.

Ken and Regina Deschere, members of the Ithaca City Community Advisory Group (CAG) on Cleanup Sites submitted an e-mail dated March 31, 2011, which included the following comments:

COMMENT 10: As this area is not residential, the installation of a barrier wall to curb infiltration from it into other areas (the primary concern is Cascadilla Creek) seems well-advised. As deep excavation near the IAWWTF would seem likely to imperil both the facility and its underground support system, extensive NAPL recovery throughout the proposed area would appear to be a better solution. On-going Engineering Controls and Institutional Controls will be needed to assure safe future use of this site.

RESPONSE 10: Comments noted.

COMMENT 11: During the recovery process, any discovery of high concentrations of NAPL should prompt consideration of excavation of that specific place, as completely as can be done without risk to the IAWWTF.

RESPONSE 11: If any isolated areas of NAPL contamination are identified that are relatively shallow and accessible, excavation may be considered to address those. However, at this time, no significant areas of NAPL have been identified where excavation is a reasonable remedial option.

Jennifer Dotson, First Ward Alderperson, and member of the Ithaca City Community Advisory Group (CAG) on Cleanup Sites submitted an e-mail dated March 31, 2011, which included the following comments:

COMMENT 12: Since deep excavation near the IAWWTF would likely affect both the facility and its underground support system, extensive NAPL recovery throughout the proposed area seems to be a better solution. And, of course, on-going Engineering Controls and Institutional Controls are necessary into the future, for the site to continue serving as part of the basic infrastructure of the City of Ithaca, Town of Ithaca, and Village of Dryden.

RESPONSE 12: Comments noted.

COMMENT 13: If any high concentrations of NAPL are discovered, specific excavations should be considered as targeted solutions.

RESPONSE 13: Refer to Response 11.

Eric Rosario, a member of the City of Ithaca's Community Advisory Group (CAG) and the Alder person for the 2nd Ward in which the site is located submitted an e-mail dated March 31, 2011, which included the following comments:

COMMENT 14: As this area is not residential, the installation of a barrier wall to curb infiltration from it into other areas (the primary concern is Cascadilla Creek) seems well-advised. As deep excavation near the IAWWTF would seem likely to imperil both the facility and its underground support system, extensive NAPL recovery throughout the proposed area would appear to be a better solution. On-going Engineering Controls and Institutional Controls will be needed to assure safe future use of this site.

RESPONSE 14: Comments noted.

COMMENT 15: During the recovery process, any discovery of high concentrations of NAPL should prompt consideration of excavation of that specific place, as completely as can be done without risk to the IAWWTF.

RESPONSE 15: Refer to Response 11.

APPENDIX B

Administrative Record

Administrative Record

NYSEG Ithaca First Street MGP Site
Ithaca, Tompkins County, New York
Site No. 755006

Proposed Remedial Action Plan for the NYSEG Ithaca First Street site, dated February 2011, prepared by the Department.

Order on Consent, Index No. DO-0002-9309, between the Department and New York State Electric and Gas (NYSEG), executed on March 30, 1994.

"Interim Remedial Measures Final Engineering Report for Activities at Ithaca First Street Former MGP Site, City of Ithaca, Tompkins County, New York" dated June 1999, prepared by NYSEG.

"Remedial Design Work Plan, Ithaca First Street Former MGP Site, Ithaca, NY" dated August 24, 2009, prepared by GEI Consultants.

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Letter dated March 10, 2011, from John T. Finn, P.E., GEI Consultants.