NYSEG

NEW YORK STATE ELECTRIC & GAS CORPORATION
James A. Carrigg Center, 18 Link Drive, P.O. Box 5224
Binghamton, New York 13902-5224

Interim Remedial Measures

WORK PLAN

For Removal of Coal Tar Impacted Soil
On Washington Street
Between W. Court and Cascadilla Streets

Associated With

Ithaca Court Street
Former Manufactured Gas Plant Site
City of Ithaca, Tompkins County, New York

March 2005

Prepared By:
NYSEG Environmental Compliance
Site Investigation and Remediation

Reviewed and Approved By:
New York State Department of Conservation
And New York State Department of Health

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Prepared By:

Bert W Finch
Remediation Project Manager

Approved By:

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STATE OF NEW YORK
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EXP. 3/31/05
073728
LICENSED PROFESSIONAL ENGINEER

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List of Acronyms Referred to in the Document

ACGIH	American Congress of Government Industrial Hygienists
ALJ	Administrative Law Judge
ANSI	American National Standards Institute
AQMP	Air-Quality Monitoring Program
ASP	analytical service protocol
ASTM	American Society for Testing and Materials
AWQC	Ambient Water Quality Criteria
BTEX	benzene, toluene, ethylbenzene and xylene
BTU	British thermal unit
cPAH	Carcinogenic Polycyclic Aromatic Hydrocarbons
C	Celsius
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Chain-of-Custody
CPP	Citizen Participation Plan
CPR	cardiopulmonary resuscitation
CQAP	Construction Quality Assurance Plan
CTS	coal tar soils
DI	deionized
DUSR	Data Usability Summary Report
ECL	Environmental Conservation Law
EEI	Edison Electric Institute
ELAP	Environmental Laboratory Approval Program
EMS	Emergency Medical Services
EPA	Environmental Protection Agency
EPRI	Electric Power Research Institute
F	Fahrenheit
FS	feasibility study
GC	gas chromatograph
GCS-DN	gas chromatograph station downwind
GCS-UP	gas chromatograph station upwind
GHF	gas holder foundation
HASP	Health and Safety Plan
HEPA	high efficiency particulate air
HSM	Health & Safety Manager
IARC	International Agency for Research on Cancer
ID	identification
IRMs	interim remedial measures
Kg	kilogram
L	liter

LGAC	liquid-phase granular activated carbon
mg	milligram
MGP	manufactured gas plant
MS	matrix spike
MSD	matrix spike duplicate
MMBTU	million British thermal units
MSDS	material safety data sheet
NCP	National Contingency Plan
NIOSH	National Institute for Occupational Safety and Health
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
NYSEG	New York State Electric & Gas Corporation
OSHA	Occupational Safety and Health Act or Administration
PAHs	polycyclic aromatic hydrocarbons
PC	personal computer
PCBs	polychlorinated biphenyls
PEL	permissible exposure limits
PHSC	Project Health and Safety Coordinator
PID	photo ionization detector
POTW	Public Owned Treatment Works
PM	Project Manager
ppb	part per billion
PPE	personal protective equipment
ppm	parts per million
PSA	preliminary site assessment
QA	quality assurance
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
QC	quality control
O&M	operation and maintenance
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RI/FS	remedial investigation/feasibility study
ROD	record of decision
RTS1	Real-time Station 1
RTS4	Real-time Station 4
SAP	Sampling and Analysis Plan
SCGs	Standards, Criteria, and Guidance
SGC	short-term guideline concentrations
SHSO	Site Health & Safety Officer

SPL	sound pressure level
STEL	short-term exposure limits
SVOCs	semivolatile organic compounds
SW	solid waste
T & A	time and activity
TAGM	technical and administrative guidance memorandum
TCLP	toxicity characteristic leachate procedure
TLVs	threshold limit values
TPAH	total polycyclic aromatic hydrocarbons
UFPO	Underground Facility Protection Organization
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds
VOA	volatile organic analysis

1.0 INTRODUCTION

This *Work Plan* describes the removal and disposal of coal tar impacted soil that exist along the west side of Washington Street, between W. Court and Cascadilla Streets in the City of Ithaca, Tompkins County, New York, This area was contaminated by the subsurface wooden ducts on W. Court Street that transported coal tar from the Ithaca Court Street former manufactured gas plant site to tar wells located at the Cayuga Inlet coal tar transfer site. This project is being proposed in accordance with Section VII of the Order on Consent (Index Number D0-0002-9309, see Appendix J) between NYSEG (New York State Electric & Gas Corporation) and the New York State Department of Environmental Conservation (NYSDEC). To accomplish this project an 18-inch storm sewer and trees between the sidewalk and curb will be removed and replaced.

This *Work Plan* describes the techniques to be utilized for the sampling, community air monitoring, excavation, material handling, waste characterization, transportation and disposal of coal tar impacted soil and materials. This Work Plan will be performed under the approval and oversight of the NYSDEC and the New York state Department of Health (NYSDOH).

1.1 Site location and Description

This remediation project will take place along the west side of Washington Street between W. Court and Cascadilla Streets in the City of Ithaca, New York. Work will be completed within the City Right-of-Way. If additional contamination is evident beyond the City Right-of-Way, NYSEG will remove the contaminated material if feasible, given the limitations of properties and equipment used.

1.2 Site History

The history of coal gas production at the Ithaca Court Street site dates back to 1853. In that year, Ithaca Gas Light Company, founded in October 1852, began distributing gas to the citizens of Ithaca. The company changed ownership in the 1860's and again in 1898. In 1916, the city gas and electric companies were merged to form Ithaca Gas and Electric Company. This company grew rapidly over the next few years through mergers with other gas and electric companies

in the region and in 1918 it was named New York State Gas Electric Company. This company then became part of the Associated Gas and Electric System and in 1929, after several additional mergers, it became New York State Electric & Gas Corporation (NYSEG). Coal gas production continued at Court Street until 1927 when a new water gas plant at First Street in Ithaca became operational. NYSEG subsequently used the site for an electric and gas service center. The property was sold to the Ithaca City School district in 1964.

Figure 2 and 3 depict the layout of the gas plant as it appeared in 1888, 1893, 1910 and 1919. The earliest plan shows the gashouse, purifier house, coal sheds, and one iron gasholder, which was centrally located on the site. By 1893, a second brick gasholder had been built north of the first and the coal shed had been extended along North Plain Street. A storage shed had also been constructed on the corner of North Plain and Cascadilla Streets. Between 1893 and 1904 the gas production building, which housed the retorts, was enlarged and connected to the coal shed. Further changes occurred between 1904 and 1910 (Figure 3). The original gasholder was torn down and a new, larger steel gasholder was constructed in the northeast corner of the site. In addition, the brick gasholder was converted to steel. The plan from 1919 shows only the addition of two iron oil tanks and expansion of the coal shed near the corner of North Plain and Cascadilla Streets.

The subsurface wooden ducts and an 8-inch clay tile pipe transported coal tar from the Ithaca Court Street former manufactured gas plant site to tar wells located at the Cayuga Inlet coal tar transfer site. The coal tar from these tar wells was pumped into either barges or railroad cars and used off-site. In the summer and fall of 1995, to support the New York State Department of Transportation's Ithaca Infrastructure Project for NYS Routes 13, 79, 89 and 96, NYSEG provided oversight for the excavation and disposal of one of the subsurface wooden duct on W. Court Street between the west side of Meadow Street to the east side of Fulton Street. The remaining duct was capped at both Meadow and Fulton Streets. The other subsurface wooden duct and an 8-inch clay tile pipe still remains on W. Court Street between the east side of Meadow Street to the east side of Fulton Street.

In the fall of 1999 an interim remedial measures project was completed by NYSEG at the Ithaca Cayuga Inlet coal tar transfer site. During that interim

remedial measures project the tar wells and piping containing coal tar were removed. In addition, the subsurface wooden duct was removed from the Inlet back to the east side of the Site. The duct was capped at this point. Then in the spring of 2000, NYSEG completed an interim remedial measures project on the properties of the Old Port Harbor restaurant and Watts distributing Company. During that interim remedial measures project the subsurface wooden duct was removed from where it was capped during the previous interim remedial measures project to the east side of Watts Distributing Company. The duct was capped at this point. A section of the duct (capped at both ends) remains from the east side of Fulton Street continuing under Lehigh Valley HSE + HO Corporation railroad tracks to the east side of Watts Distributing Company property.

In the spring 2000, NYSEG also completed an interim remedial measures project at the Court street former manufactured gas plant site. During that interim remedial measures project contents of two subsurface concrete structures were removed and disposed off-site. In addition, a scrubber, wooden tar separator and wooden duct from the wooden tar separator back to the plant building were removed and disposed off-site.

In the fall of 2001 through spring of 2002 NYSEG collected soil and water samples adjacent to the remaining wooden ducts along W. Court Street as part of the *Remedial Investigation.* This sampling was primarily done to determine if the wooden duct had leaked coal tar constituents into the surrounding soil. Such a leak was detected at intersection of W. Court and Washington Streets where the wooden duct had been breached by an underground utility line. Coal tar constituents have been detected in the subsurface soil near the curb along the west side of Washington Street, between W. Court Street and Cascadilla Street.

In the fall of 2003, NYSEG started a remedial design project to remove and dispose off-site the subsurface wooden ducts on W. Court Street between the east side of Meadow Street to the Ithaca Court Street former manufactured gas plant site. During this project, two subsurface wooden ducts, two clay pipes, and surrounding coal tar impacted soil are being removed and disposed off-site. In addition, NYSEG is upgrading installing new infrastructure that includes the following:

- City water mains and services to residents homes
- City sanitary sewer mains and services to residents homes
- NYSEG gas mains and services to residents homes
- Storm sewer, concrete sidewalks, concrete curbs, concrete driveway aprons, and asphalt streets.

The remedial design project to remove the subsurface wooden ducts on W. Court Street between the east side of Meadow Street to the Ithaca Court Street former manufactured gas plant site is planned to be completed by the fall of 2005.

1.3 Nature of Potential Industrial Residues Located at the Site

Nature to the waste encountered during this project includes two classifications. The first would include coal tar soils, a mixture of soil contaminated by coal tar, which contains various concentrations of polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs) and some heavy metals. These soils are typically a non-hazardous waste as defined by Resource Conservation Recovery Act (RCRA). The second is coal tars such as those contained within the wooden duct, these materials are a product from gas manufacturing at a former manufactured gas plant site. The Resource Conservation Recovery Act (RCRA) typically defines coal tars as a hazardous waste due to the leachable concentrations of benzene. These materials contain 10% or more polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs).

1.4 Previous Investigations, Interim Remedial Measures Work Plans and Final Engineering Reports, and Remedial Design Work Plans

NYSEG's consultants and NYSEG completed the following Investigations, Interim Remedial Measures Work Plans and Final Engineering Reports, and Remedial Design Work Plans for the Ithaca Court Street former manufactured gas plant site and Ithaca Cayuga Inlet Coal Tar Site:

- April 1986 — TASK 1 Preliminary Site Evaluation at Ithaca Court Street Site, prepared by E.C. Jordan Company Consulting Engineers
- April 1986 — TASK 1 Preliminary Site Evaluation at Ithaca Cayuga

	Inlet Coal Tar Site, prepared by E.C. Jordan Company Consulting Engineers
• February 1987	TASK 2 Preliminary Site Investigation at Ithaca Court Street Site, prepared by E.C. Jordan Company Consulting Engineers
• June 1987	TASK 2 Initial Field Investigation Program at Ithaca Cayuga Inlet Coal Tar Site, prepared by E.C. Jordan Company Consulting Engineers
• March 1988	TASK 3 Expanded Problem Definition Program at Ithaca Court Street Site, prepared by E.C. Jordan Company Consulting Engineers
• March 1990	TASK 4 Risk assessment at Ithaca Court Street Site, prepared by E.C. Jordan Company Consulting Engineers
• January 1999	Interim Remedial Measures Work Plan for Activities at Ithaca Cayuga Inlet Coal Tar Site, prepared by NYSEG
• June 1999	Interim remedial Measures Final Engineering Report For Activities at the Ithaca Cayuga Inlet Coal Tar Site, Prepared by NYSEG
• February 2000	Interim remedial Measures Work Plan for Activities at Ithaca Court Street Former Manufactured Gas Plant Site, prepared by NYSEG
• February 2000	Interim remedial Measures Work Plan for Activities at Ithaca Court Street former Manufactured Gas Plant Site Subsurface Wooden Duct, prepared by NYSEG
• August 2001	Interim Remedial Measures Final Engineering Report For Activities at Ithaca court Street Former Manufactured Gas Plant Site, prepared by NYSEG
• August 2001	Interim Remedial Measures Final Engineering Report For Activities at Ithaca Court Street Former Manufactured Gas Plant Site Subsurface Wooden Duct, prepared by NYSEG
• September 2001	Work Plan for a Remedial Investigation at Ithaca Court Street Former Manufactured Gas Plant Site, prepared by IT Corporation

- April 2003 — Remedial Investigation Report for Operable Unit 1, prepared by MWH Americas, Inc.
- May 2003 — Focused Feasibility Study Report for Operable Unit 1, prepared by MWH Americas, Inc.
- October 2003 — Remedial Design Work Plan For Removal of the Subsurface Wooden duct Associated With Ithaca Court Street Former Manufactured Gas Plant Site, prepared by NYSEG

Documents associated with previous investigations, work plans, final engineering reports and this *Work Plan* are available for public review at the following document repositories:

- Tompkins County Public Library
  101 East Green Street
  Ithaca, New York
  Phone: (607) 272-4557

- NYSEG
  Ithaca – Dryden Road
  Ithaca, New York
  Attn: Mr. Robert Pass
  Phone: (607) 347-2148
  Monday – Friday, 8 a.m. – 4:30 p.m.

- New York State Department of Environmental Conservation
  Division of Environmental Remediation
  625 Broadway
  Albany, New York
  Attn: Mr. William Ottaway
  Phone: (518) 402-9662
  Monday – Friday, 8 a.m. – 4:30 p.m.

- City of Ithaca
  108 East Green Street
  Ithaca, New York
  Attn: Mayor Carolyn Peterson
  Phone: (607) 274-6501

- Ithaca Coal Tar Advisory Committee
  106 Washington Street
  Ithaca, New York
  Attn: Ms. Jutta Dotterweich
  Phone: (607) 272-1239

2.0 PROJECT OBJECTIVES

The overall objective is to remove and dispose coal tar impacted soil that exists along the west side of Washington Street, between W. Court and Cascadilla Streets. Areas where coal tar may exist beyond the limits of excavation will be documented and addressed in subsequent remedial actions.

This *Work Plan* is scheduled to begin during the third quarter of 2005 (see project schedule in Appendix H).

3.0 ORGANIZATIONAL STRUCTURE AND RESPONSIBILITY

NYSEG and New York State regulatory agencies will participate jointly in this remedial action for Washington Street. NYSEG has the ultimate responsibility for implementing this *Work Plan* for the project, including the community air-monitoring program during the project (see Organization Structure in Appendix G). Approval of this *Work Plan* by NYSDEC and the NYSDOH will be secured prior to site excavation. NYSDEC and NYSDOH personnel are anticipated to be on-site periodically for purposes of general program oversight. NYSEG will be responsible for all on-site construction operations during the project, unless otherwise stated in Section 4.0, including: excavation safety; construction personnel health and safety; implementation of contingency plans for order control; management of waste water and waste handing operations; maintenance of site controls (i.e., run-off, run-on); the construction, excavation, and material handling activities associated with the remedial action; soil sampling program associated with the remedial action; community air monitoring; and documentation of the extent of the removal action.

Communication with regulatory agencies and with members of the surrounding community will be managed by NYSEG. NYSEG has developed a *Citizen Participation Plan* (see Appendix B) for sharing project information with the Community.

Key personnel and their assigned responsibility for implementation of the remedial action include:

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E-mail: hmh01@health.state.ny.us

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4.0 WORK PLAN

This *Work Plan* includes chronological description of anticipated activities together with a schedule for performance of these activities. Documents include a health and safety plan, figures, pre-remediation in situ sampling & analysis plan, citizen participation plan, construction quality assurance plan, quality assurance project plan, transportation of solid and/or liquid waste plan, contingency plan, organization structure, project schedule, and vapor emission response plan.

Actual project data (i.e., community air monitoring, noise, dust control, etc.) obtained from NYSEG's previous remediation efforts at other manufactured gas plant sites, have been used as guidance to design the procedures for the Ithaca Washington Street project and to minimize any potential impacts to the community.

All work will be conducted so that public impact (i.e., traffic, parking, noise, etc.) is minimized, to the extent practicable. Construction operations are planned between the hours of 7 a.m. to 7 p.m., Monday through Friday. Work on weekend and hours after 7 p.m. during the week will only be undertaken as necessary to accommodate businesses and residents. The following sections describe the procedures to be used for remedial activities.

4.0.1 Definitions of Manufactured Gas Plant Site Materials

Manufactured Gas Plant Site Residues – all material, which is contaminated with waste from manufactured gas plant.

Coal Tar – Free phase tar

Coal Tar Impacted Soil – Soil that exhibits evidence of coal tar staining, but no free phase tar. For purposes of this Work Plan, any soil excavated will be disposed as coal tar soil.

4.0.2 Pre-remediation Sampling and Analysis

NYSEG will conduct an in situ sampling event on the west side of Washington Street within the City Right-of-Way. This sampling event will be conducted in accordance with the *Pre-remediation In Situ Sampling & Analysis Work Plan* (see Appendix A) approved by the NYSDEC. Composite samples for waste characterization analysis will be collected and the results of the sampling and analysis will be used to determine the proper disposal of this material.

4.0.3 Cleanup Objectives

The cleanup objective is to remove and dispose coal tar impacted soil that exists along the west side of Washington Street, between W. Court and Cascadilla

Streets. To accomplish this the 18-inch storm sewer will be removed and replaced. If additional contamination is evident beyond the City Right-of-Way, NYSEG will remove the contaminated material if feasible, given the limitations of properties and equipment used. Confirmation samples will be obtained immediately after completing the excavation. Numerical cleanup objectives will not be used during this project. The confirmation sampling analysis will be evaluated as part of the ongoing Remedial Investigation at the Ithaca Court Street Former Manufactured Gas Plant Site (*Remedial Investigation*).

4.0.4 Disposal Protocol

If the analytical results of the pre-remediation in situ soil samples indicate that the analytes are within their specified regulatory limits, the total polycyclic aromatic hydrocarbons (PAHs) do not exceed 1,000 ppm, then its respective soil may be managed as a Resource Conservation Recovery Act (RCRA) non-hazardous waste and sent to a permitted disposal facility to accept it without the need for additional sampling and analysis. If during excavation of this soil coal tar staining is encountered, then this soil will be managed as conditionally exempt manufactured gas plant remediation waste (per NYSDEC – Technical and Administrated Guidance Memorandum TAGM 4061, Management of Coal Tar Wastes and Coal Tar Contaminated Soils and Sediments from Former Manufactured Gas Plants) and sent to a thermal treatment facility permitted to accept it.

If the analytical results of the pre-remediation in situ soil samples indicate that the analytes are within their specified regulatory limits but fail to meet the total PAH limit of 1,000 ppm or the TCLP limit for benzene, then the respective soil may be managed as conditionally exempt manufactured gas plant remediation waste and sent to a thermal treatment facility permitted to accept it.

4.0.5 Confirmation Sampling Requirements

Confirmation sampling and analysis of soils will be collected on the sidewall and bottom of the excavation prior to backfilling. Procedures for confirmation soil sampling are presented in Section 6.2.1 of this Work Plan. Any coal tar soil that is not removed will be thoroughly documented for future investigation.

4.1 Site Set Up

4.1.1 Utility Notification

Prior to any construction activities, Dig Safely New York will be notified, and all on-site underground utilities will be marked in the field. Local police and emergency departments will also be notified. The Citizen Participation Plan addresses notification of adjacent property owners and local officials.

4.1.2 Resident Notification

Prior to any construction activities, NYSEG will meet with each of the residents adjacent to the work area. NYSEG will make residents aware of the availability of temporary daytime relocation during work adjacent to their homes. NYSEG will also consider, on a case-by-case basis, covering windows at the request of the residents. All special provisions for each resident will be documented and the NYSEG construction supervisor will ensure that these special provisions are addressed prior to the start of the work adjacent to their homes.

NYSEG will also complete a pre-work survey for the properties on Washington Street between W. Court and Cascadilla Streets to document (i.e., photographs or video taping) current conditions of the homes and grounds to assist in restoration and repair activities.

4.1.3 Project Office Trailer and Overnight Staging Area

The project office trailer and overnight staging area will be located at the southeast portion of The Tile House property at 312 Fourth Street. The overnight staging area is enclosed with 6-feet high chain link fencing. "NO TREAPASSING" signs will be installed on the fencing.

NYSEG will lease an office trailer (approximately 10 feet wide by 46 feet long) that will serve as a project office. The trailer will be mobilized, blocked and leveled, and equipped with office supplies. Electric, phone service, facsimile capabilities, potable water and portable toilets will be available for all project personnel. The NYSDEC onsite personnel will have an area with a desk, electric outlet, phone and a phone line for computer hookup. Also available will be space

for records storage, personal protective equipment, monitoring equipment, first aid location, a sample preparation and storage. In addition, operations personnel will utilize the space for safety meetings, project office tasks, and changing area.

4.1.4 Exclusion Zone

The work area Exclusion Zone, which is the active work area immediate to the excavation, will change daily as the excavation progresses. Yellow caution tape fastened to tee post will be used to delineate the perimeter of the Exclusion Zone.

4.1.5 Contamination Reduction Zone

The work area Contamination Reduction Zone, which is the area immediately outside the Exclusion Zone, will be used as a primary decontamination area for equipment and personnel. The Contamination Reduction Zone includes the truck loading area. At a minimum the Contamination reduction Zone will be an area three feet outside of the Exclusion Zone. Orange construction fence fastened to tee post will be used to delineate the perimeter of the Contamination Reduction Zone. In addition, a Contamination Reduction Zone will be established at the overnight staging area (312 Fourth Street) that includes the equipment contamination reduction area and wastewater storage area.

4.1.6 Support Zone

The Support Zone is the area where the project personnel can meet without contact with contamination. The Support Zone is located outside the Contamination Reduction Zone.

4.1.7 Erosion and Sedimentation Control

The contractor will have soil, siltation fencing and bales of hay available to control storm water from entering the excavation during inclement weather.

4.2 Mobilization

Mobilization to the site will be sequential in nature to accommodate the general requirements and specific operations to be undertaken. Materials and equipment to be mobilized to the site include: excavator, backhoe, front-end loader, liquid vacuum tanker, frac tank, trailer mounted air vacuum system, dump truck and trailer. Equipment and mode of operation will be described in further detail in the following sections.

4.3 Tree Removal and Replacement

Trees located in the lawn between the sidewalk and curb along the west side of Washington Street between W. Court and Cascadilla Streets may need to be removed. Tree removal will take place as work progresses, no more than one block at a time. Before removal each tree will be assessed to determine if it may be sufficient distance from the excavation to allow excavation to take place without removal of the tree. The City of Ithaca's Shade Tree Committee and the City's forester will select and plant new trees during restoration.

4.4 Excavation of Soil

All work will comply with Occupational Safety and Health Administration's (OSHA's), "Hazardous Waste Operations and Emergency Response" (29 CFR 1910.120) and Excavations (29 CFR 1926 Subpart P). The excavation work will start at the intersection of W. Court and Washington Streets and proceed north along the west side of Washington Street. The work will generally be within the City Right-of-Way, which extends to the west side of the sidewalk. If contamination extends beyond the City Right-of-Way, NYSEG will remove the additional soil if feasible. NYSEG will obtain a City of Ithaca Street Permit and "Right of Access Agreement" with property owners affected by remediation activities. The length of daily excavations will vary depending on the number of utilities encountered. It is anticipated that the length of daily excavation will around 20 feet. For the majority of the project, the anticipated the excavation will be around 10 feet wide and 8 feet below ground. The excavation may be wider and deeper in areas where contamination is more extent.

Daily activities will proceed as follows:

- During construction activities, the sidewalk on the west side of Washington Street will be closed between street corners closest to the work area. Orange construction fence will be installed across sidewalk to the curb at each corner. Signs will be installed that read: "SIDEWALK CLOSED USE CROSSWALKS: Posting of sidewalks and other warnings will be carried out as required by the City of Ithaca. Once construction activities have been completed for the day the signs will be taken down and the sidewalk will be reopened.
- The intersections on Washington Street immediately south and north of the work area will be closed to thru traffic. Barricades will be placed in one lane at the intersections. Signs will be installed that read: "ROAD CLOSED NO THRU TRAFFIC". Posting of sidewalks and other warnings will be carried out as required by the City of Ithaca. The street will remain closed to thru traffic overnight and through weekends.
- The day prior to start of work, NYSEG construction supervisor will check the needs of adjacent residents affected by the next days work activities. This may include parking, transportation, any medical requirements or needs, any special deliveries, provisions for temporary daytime relocations, covering windows with polyethylene sheeting, etc.
- The NYSEG construction supervisor in consultation with the NYSDEC or NYSDOH representative will determine the perimeters of the Exclusion Zone, Contamination Reduction Zone and locations where community air monitoring will be conducted.
- The Exclusion Zone, which is the active work area immediate to the excavation, will be delineated with yellow caution tape. The yellow caution tape fastened to tee post will be installed around the perimeter of the excavation. Generally the Exclusion Zone will be an area on the west side of Washington Street between the east side of the sidewalk and a few feet east of the curb.
- At a minimum, the Contamination Reduction Zone will be installed three feet outside the Exclusion zone. Orange construction fencing fastened to tee post or post with stand will be installed around the perimeter of the Exclusion Zone. The truck loading area in the street will be within the Contamination Reduction Zone.

- Daily community air monitoring station will be established upwind and downwind of the Contamination Reduction Zone. In addition, a community air monitoring station will be established between the Contamination Reduction Zone and the nearest residential or commercial structure. Daily community air monitoring will commence prior to start of any excavation of soil and continue until excavation activities have ended for the day.
- A pressure washer, for applying a vapor suppression solution of BioSolve® will be setup to control odors, fugitive vapors and dust that could potentially emanate from the excavation. See Appendix K for BioSolve® product information.
- Polyethylene sheeting will be placed on the asphalt in the truck loading area to prevent tracking of contaminates from the project area. This sheeting will be held in place by sandbags or wooden planks.
- Polyethylene sheeting will be draped over the excavation side of all dump trailers to protect against spillage during loading. Care will be exercised when loading trucks not to spill soil on the outside of the dump trailers.
- A track excavator will be used for removing soil. The soil and the storm sewer will be placed directly in a dump trailer. The tree stumps, roots and large pieces of concrete will be placed in the wheel loader and transported to the overnight storage area where the material will be placed in a roll-off container.
- During excavation the soil will be misted using a pressure washer and a vapor suppression solution of BioSolve®.
- The excavation will be dewatered in the event that any liquid tar or groundwater enters the excavation. A liquid vacuum tanker will be available for dewatering. Liquid from the tanker will be pumped to a frac tank located at the staging area at 312 Fourth Street.
- Care will be taken not to allow contaminated material from impacting adjacent surface soil. If the on-site NYSDEC or NYSEG representative observe a condition that might spread contamination, immediate action will be taken to correct the situation.
- An air vacuum system will be available if necessary to control odors. If the vapor suppression solution of BioSolve® fails to control odors or emissions, then the air vacuum system will be activated. A flexible hose from the air vacuum system will be placed in the excavation and the

excavation will be covered with polyethylene sheeting to the extent practical as not to interfere with soil removal.

- Before an excavator bucket of impacted soil is lifted out of the trench, the outside of the bucket and its contents will be misted with the vapor suppression solution of BioSolve®. The contents in the bucket will be lifted out of the excavation and placed directly in the dump trailer. The inside of the bucket will be misted over the dump trailer before returning to the excavation.
- Prior to leaving the loading area, each truck will be visually inspected (i.e., dump trailer sidewalls, trailer tailgate, and tires, etc.) and cleaned with brushes as required. In addition, the dump trailer will be covered with a cover in the loading area. Before staging another truck, the polyethylene sheeting will be either cleaned by brooms or replaced.
- If coal tar contaminated soil is observed along the sidewall of the excavation, attempts will be made to remove it. If it is determined that excavation of the additional coal tar contaminated soil is not feasible, endpoint confirmation samples will be collected as described in Section 6.2.2. Photographs and ground positioning satellite (GPS) receiver will be used to document the area for future investigation.
- At the conclusion of each day's excavating, the bucket of the excavator will be decontaminated over the last dump trailer load. The decontamination procedures will include the physical/mechanical removal of soil. If the bucket is contaminated with coal tar, then a pressure washer will be used.
- All polyethylene sheeting from the truck loading area, equipment and personal decontamination areas will be placed in the last loaded dump trailer for disposal.
- At the end of each day the excavation will be filled with bank-run gravel.
- The intent is not to leave excavations open overnight unless absolutely necessary. If necessary, the excavation will be barricaded and covered with polyethylene sheeting and wooden planks or steel road plates.

The new storm sewer will be installed after the soil has been removed from Washington Street between W. Court and Cascadilla Streets. The new storm sewer installation will start at the intersection of W. Court and Washington Streets and proceed north along the west side of Washington Street. The bank-

run gravel will be removed to the invert for the new storm sewer. Gravel will be placed and compacted up to the center of the storm sewer. After completing the storm sewer installation, then the tree lawn areas will be filled with topsoil and the area under sidewalks and driveway aprons will be filled with C.U. structural soil.

4.5 Storm Water, Groundwater and Wastewater Management

The excavation will be dewatered in the event that any liquid tar or groundwater enters the excavation. Water from the excavation will be pumped into a liquid vacuum taker. Liquid from the tanker will be pumped to a frac tank located at the staging area at 312 Fourth Street. The frac tanks will have a double wall. If the inter wall of the frac tank fails then the outer wall will be the secondary containment. The wastewater will be sampled and characterized in accordance with acceptable requirements of the facility permitted to accept this water. Upon receipt of analytical results from the laboratory NYSEG will determine if the water meets the facility's profile.

4.6 Waste Transportation and Disposal

A transportation contractor will transport soil or wastewater in accordance with NYSEG specification for *Transportation of Solid or Liquid Materials* (see Appendix E). All truck drivers leaving the site must have either a Hazardous Waste Manifest, a Conditionally Exempt Manufactured Gas Plant Remediation Waste Manifest, or a Non-hazardous Solid Waste Manifest signed by NYSEG and the driver.

Trucks transporting hazardous waste or conditionally exempt manufactured gas plant remediation waste will have the entire box (to top of side boards) lined with polyethylene sheeting per NYSEG's discretion. Trucks transporting non hazardous waste may be lined as previously stated. All trucks will have watertight tailgate that has a gasket between the box and tailgate or driver will apply caulking between the box and tailgate. All trucks must have a solid fabric (i.e., vinyl, reinforced polyethylene) cover that covers the entire load.

Trucks arriving from the north on New York State Routes 13 & 34 will turn left (east) onto Buffalo Street; then turn left (north) on Washington Street. Once loaded the trucks will take a left (west) on either Esty Street or Cascadilla Street.

Trucks will then take either a left (north) or right (south) on New York State Routes 13 & 34.
NYSEG will provide a list of disposal facilities that will accept this soil and wastewater for NYSDEC review and acceptance prior to starting excavation.

4.7 Contingency Plan

A *Contingency Plan* (Appendix F) has been developed to address spills and temporary Stop work.

The City of Ithaca Water and Sewer Department and NYSEG Gas Department will be notified prior to start of excavation activities. The City of Ithaca Water and Sewer Department and NYSEG Gas Department will have workers on call and available for any repairs that may be warranted during the excavation activities. If a water main, water service line, sewer line, or gas line needs repair the following will occur:

- NYSEG's construction supervisor will notify either the City of Ithaca Water and Sewer Department or NYSEG that a line has been damaged or broken and needs to be repaired
- The excavation will be dewatered and the area will be lined with polyethylene sheeting prior to any non-remediation workers entering the excavation.

4.8 Site Restoration

For winter the surface for driveway aprons, street and sidewalk will be cold patch asphalt. Delineators with high visible reflectors will be placed along the edge of street.

NYSEG in conjunction with the City of Ithaca Streets and Facilities Department, Shade Tree Committee and City Forester will develop a Restoration Plan separate from this *Work Plan*. The design of curbing, storm sewer catch basins, driveway aprons and sidewalks will be per City of Ithaca specifications. A detailed drawing will be available prior to final restoration. The final restoration will be completed by the summer of 2006.

4.9 Documentation of Site Activities

4.9.1 Daily Logbook

A designated logbook will be used to document daily on-site activities. The daily logbook will be kept in the field project office until completion of the excavation portion of the project.

4.9.2 Master Sample Log

A laboratory notebook will remain in the field project office to record every sample collected. The field technician will log in all samples collected and those sent to the off-site analytical laboratory. Waybill numbers will be logged at the end of each day.

4.9.3 Chain-of-Custody Record

A Chain-of-Custody form will document custody of all samples from the field to the laboratory.

4.9.4 Waybills

A waybill receipt will be obtained at the time of accepted sample shipment by Federal Express or courier and will be attached to the Master Sample Log.

4.9.5 NYSEG Public Liability Accident Report, NYSEG Report of Employee Injury, and NYSEG Incident Report

The above-mentioned report forms will be used to document any accident occurring on-site during the remedial project. The sheets are attached to the Health and Safety Plan and will be located in the field project office.

4.10 Demobilization

All equipment, materials, construction debris, and personnel will be demobilized from the site at the conclusion of the excavation portion of the project.

4.11 Project Schedule

A Project Schedule is provided in Appendix H.

4.12 Permits

NYSDEC Waste Transporter permits (6NYCRR Part 364) will be obtained by the Transportation Contractor for the vehicles used for transportation of waste as described in Section 4.6.

NYSEG will obtain permits to close sidewalk and Washington Street from the City of Ithaca Engineering Department.

5.0 AIR-QUALITY MONITORING PROGRAM

5.1 Overview

The objective of this *Air-Quality Monitoring Program* is to provide direct measurement of volatile organic compounds (VOCs) and total suspended particulates that could potentially be released during excavation, handling, and transportation of soil and debris at the project site. The air-quality monitoring program consist of (1) Exclusion Zone air monitoring for evaluating project worker health and safety; and (2) community air monitoring to determine the levels of volatile organic compounds (VOCs) and total suspended particulates at the perimeter of the Exclusion Zone.

This *Air-Quality Monitoring Program* meets or exceeds all criteria and guidance provided in the *New York State Department of Health Generic Community Air Monitoring Plan*. Real-time air monitoring and speciated real-time data will be used to guide appropriate action to reduce/minimize air emissions to acceptable levels. NYSEG has developed a *Vapor Emissions Response Plan* (see Appendix I) to address any exceedance of acceptable levels.

5.2 Exclusion Zone Air Monitoring Program

The air-quality in the Exclusion Zone will be monitored by the remediation contractor to ensure worker health and safety in accordance with requirements

specified in Occupational Safety and Health Administration's (OSHA's), "Hazardous Waste Operations and Emergency Response" (29 CFR 1910.120) as described in the NYSEG *Health and Safety Plan.*

5.3 Community Air Monitoring Program

5.3.1 Overview

NYSEG will undertake a community air monitoring program during the project to provide direct measurement of volatile organic compounds (VOCs) and total suspended particulate that may be released during excavation and handling of soil and debris.

This air monitoring program is established to address the following objectives:

- To insure concentrations of volatile organic compounds (VOCs) and total suspended particulate are minimized to protect human health and the environment.
- To provide an early warning plan so engineering controls can be enacted to prevent unnecessary exposure of emissions resulting from project activities.
- To measure and document the concentration of volatile organic compounds (VOCs), speciated BTEX (benzene, toluene, ethylbenzene and xylene) and total suspended particulate for determining compliance with established air monitoring limits.

The *Community Air Monitoring Program* is intended to be a discrete program that will be operated in conjunction with the Exclusion Zone air monitoring program. The community air monitoring will include real-time air quality data that will be collected throughout the duration of all excavation activities and will include upwind, downwind and nearest resident measurements. The daily data will also be submitted at the end of the day in an electronic format to Henriette Hamel, NYSDOH at hmh01@health.state.ny.us; William Ottaway, NYSDEC at wsottaway@gw.dec.state.ny.us; Steve Maybee, Tompkins County Department of Health at smaybee@tompkins-co.org; Mayor Carolyn Peterson, City of Ithaca at mayor@cityofithaca.org; Jutta Dotterweich, Ithaca Coal Tar Advisory Committee

at jd81@cornell.edu; and Bert W Finch, NYSEG at bwfinch@nyseg.com. A hard copy of the data will be maintained at the field project office.

5.3.2 Real-time Air Monitoring – Volatile Organic Compounds

The total volatile organic compounds (VOCs) monitoring will be accomplished using a total volatile organic analyzer equipped with a photo ionization detector (PID) using a 10.2eV lamp. Each day the analyzer will be calibrated to benzene with a 10 ppm isobutylene air standard. The volatile organic analyzer will be capable of calculating a 15-minute running average of the measured volatile organic compounds (VOCs) concentrations. The 15-minute averages will be used to monitor air quality and will be recorded throughout the day.

Real-time volatile organic compounds (VOCs) monitoring will be initiated prior to any excavation or soil handling activities. Wind direction will be determined using a weather vane. The upwind and downwind locations will change as wind direction changes during the day. The upwind measurements will be used for establishing baseline emissions due to natural and anthropogenic sources. The baseline value will be added to the air monitoring limits to compensate for the existing ambient conditions (i.e., VOC limit of 2.5 ppm + 1.2 ppm upwind = 3.7 ppm limit).

The upwind and downwind total volatile organic compounds (VOCs) monitoring will operate continuously at the perimeter of the Exclusion Zone. The nearest residential or commercial structure (irregardless of its relationship to wind) will be an additional monitoring location if it is closer than the down wind location. Readings at each location will be accomplished by pointing the intake tube of the volatile organic analyzer toward the Exclusion Zone, generally at a height of 3 feet above ground. The volatile organic analyzer will measure concentrations continuously and calculate four 15-minute averages per hour throughout the day. Each 15-minute average will be recorded on log sheets along with date, time, sampling location, wind direction, and weather conditions.

Based on data published by OSHA (Occupational Safety and Health Administration), ACGIH (American Congress of Government Industrial Hygienists) and NIOSH (National Institute for Occupational Safety and Health) a short-term air quality action level of 5 ppm for total volatile organic compounds

(VOCs) has been established for air emissions action level in the Exclusion Zone. NYSEG will be more conservative and use an action level of 2.5 ppm above existing ambient conditions (background) in the Exclusion Zone and at the perimeter of the Exclusion Zone. Engineering control measures will be initiated for volatile organic compounds (VOCs) levels greater than 1.5 ppm in the Exclusion Zone. If actions to control total volatile organic compounds (VOCs) emissions are not effective and concentrations continue to increase to 2.5 ppm (above background), then excavation and waste handling activities will be halted and actions will be initiated as specified under the Vapor Emission Response Plan (see Section 5.3.7). Concurrently a portable gas chromatography (GC) will be used to determine speciated BTEX (benzene, toluene, ethylbenzene and xylenes) levels at the location of the exceedance (to insure benzene levels do not exceed 0.5 ppm).

The 2.5 ppm action level (above background) at the perimeter of the Exclusion Zone is based on an estimated concentration for benzene that is one of the volatile organic compounds (VOCs) included in the volatile organic analyzer reading. Since the volatile organic analyzer detects volatile organic compounds other than benzene, the 2.5 ppm action level is considered to be conservative.

In addition, an action level of 2.5 ppm above background will be used in the Exclusion Zone where workers have the potential for continuous exposure. The 2.5 ppm limit is OSHA's (Occupational Safety and Health Administration) short-term exposure limits (STEL) for benzene that was established to insure worker health and safety (29 CFR 1910.1028). If the total volatile organic compounds (VOCs) concentration exceeds 2.5 ppm, the worker personal protective equipment will be upgraded from modified level D to Level C that requires the use of respirators as specified in the Health and Safety Plan.

5.3.3 Speciated Real-time Air Monitoring – BTEX (benzene, toluene, ethylbenzene, and xylenes)

To supplement the real-time volatile organic compounds (VOCs) air monitoring for the community air monitoring program, a portable gas chromatograph (GC) unit will be used to determine the concentration of the individual BTEX (benzene, toluene, ethylbenzene, and xylenes) compounds. The gas chromatograph (GC) will be a Perkin-Elmer Photovac Voyager™. The gas chromatograph (GC)

equipped with a photo ionization detector can accurately determine the BTEX (benzene, toluene, ethylbenzene, and xylenes) compounds with detection limits in the low ppb (parts per billion) range. The purpose in generating this data will be twofold: (1) to supplement the real-time volatile organic compounds (VOCs) readings, aiding in critical path decisions to be made for the Vapor Emission Response Plan (Section 5.3.7) and the Major Vapor Emission Response Plan (Section 5.3.8); and (2) to monitor emissions of BTEX (benzene, toluene, ethylbenzene, and xylenes) to surrounding community during project activities.

The gas chromatograph (GC) will be calibrated daily using gas standards containing BTEX (benzene, toluene, ethylbenzene, and xylenes) compounds. Calibration checks will be conducted twice daily (a.m./p.m.) with a verification gas standard containing the BTEX (benzene, toluene, ethylbenzene, and xylenes) target analytes. Calibration drift of greater than +/- 15% will require recalibration of the gas chromatograph (GC).

An upwind and downwind monitoring station will be established at the perimeter of the Exclusion Zone. The monitoring stations will be designated as GCS-UP (gas chromatograph station upwind) and GCS-DN (gas chromatograph station downwind) respectively. Samples will be collected in a tedlar bag over a 30-minute period and analyzed by the gas chromatograph (GC). One sample will be collected and analyzed at each station according to the following schedule:

- Once every two hours during excavation of soil and debris, commencing at the start of the work day and continuing until excavation activities have ceased.
- As warranted by the Vapor Emission Response Plan (Section 5.3.7).

The results of this sampling and analysis will be data logged into the gas chromatograph (GC) memory and downloaded on a daily basis into a personnel computer (PC). During instances when the total volatile organic compounds (VOCs) action level is exceeded (see Section 5.3.7) or a community member lodges an odor complaint, the results will be provided to the NYSDOH, Tompkins County Health Department, and NYSDEC. Sample results will be compared to the short-term guidance (SGC) values as published in Air-Guide-1 (see Table 5-1).

TABLE 5-1 AIR GUIDE-1 SHORT TERM GUIDEANCE (SGC) CONCENTRATIONS		
Contaminant	**SGC (ug/m^3)**	**SGC (ppm)**
Benzene	30	0.009
Toluene	89,000	24
Ethylbenzene	100,000	23
Xylenes	100,000	23

5.3.4 Odor Monitoring Plan

The nature of manufactured gas plant site residues pose a concern regarding the generation of nuisance odors during excavation and soil handling. As such, an odor control and monitoring plan has been developed for the project. For odor complaint residents may speak with the NYSEG on-site construction supervisor or the NYSDEC on-site representative. To register an odor complaint to NYSEG residents may call 1-800-572-1111 between 7 a.m. – 7 p.m. A NYSEG customer service representative will answer calls. The NYSEG customer service representative will contact NYSEG project manager. The NYSEG project manager will document the caller's concern and contact the appropriate project team members who will assess the reason for concern and apply the appropriate engineering control.

A project fact sheet will be distributed to adjacent property owners explaining the remediation work to occur on Washington Street, the potential for odors and how the phone system works. This will be distributed prior to beginning any excavation work. Additionally, door-to-door contacts of persons living and working immediately adjacent to the active work area will be made regarding planned work activities.

If site personnel detect significant odor or a complaint is received, engineering controls will be implemented as outlined in the *Vapor Emission Response Plan* (Section 5.3.7) to reduce odor-causing emissions. Once odors become non-discernable, normal operations may resume. This determination will be subject to the approval of the on-site NYSDEC representative.

5.3.5 Real-time Air Monitoring – Total Suspended Particulates

In conjunction with the real-time volatile emissions monitoring, direct-reading monitoring equipment for particulate matter will be used to collect real-time airborne particulate data on a 15-minute basis. The instrument to be used for this sampling is a personal DataRam™ (field modified for active sampling) or the Thermo Anderson ADR-1200S Ambient Particulate Monitoring System both operate on the principle of light scattering. Both units respond to particulates in the size range of 0.1 to 10 micrometers and the concentration range of 0.01 to 400 mg/m^3. Particulate measurements will be based on a 30-second, time weighted average. The personal DataRam™ is a passive sampling device that was modified for active sampling by adding a battery operated pump and omni directional inlet. These modifications are in accordance with manufacturers specifications and will allow the unit to be used during windy conditions. These units will be calibrated daily with a filtered air sample. Recorded measurements at the upwind, downwind and nearest residential or commercial structure monitoring locations will be logged by the sampling technician every 15-minutes. Equivalent backup real-time air monitoring equipment will be available on-site in the event of an equipment malfunction.

The *New York State Department of Health Generic Community Air Monitoring Plan* (CAMP) recommended action level of 0.15 mg/m^3 for particulate matter less than 10 micrometers in size (PM-10) above background will be used to determine whether modifications to site activities are required. If the downwind particulate measurement of less than 10 micrometers in size (PM-10) is greater than 0.15 mg/m^3 above the upwind background level, or if dust is observed leaving the project area, dust suppression techniques (i.e., misting surface with water or covering open soil piles) will be implemented to reduce the generation of fugitive dust. If the action level of 0.15 mg/m^3 (above background) is exceeded, the NYSEG project manager and the NYSDEC on-site representative will be notified. The NYSEG project manager will notify the Division of Air Resources in writing within five working days per NYSDEC Technical and Administrative Guidance Memorandum (TAGM): Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites, October 1989.

5.3.6 Documentation for Air Quality Monitoring

As essential part of any sampling/analytical scheme is ensuring the integrity of the sample from collection to data reporting. Sample integrity includes the possession and handling of a sample that is traceable from the time collection, through analysis and final disposition.

Sample Labels: Unique sample identification codes will be assigned at the time of collection to prevent misidentification of samples. The identification codes will include the following:

- Project/name/number;
- Sample location;
- Date of collection;
- Time of collection;
- Sampling technician's initials; and
- Analytical method.

Field Logbook: All information pertinent to sampling will be recorded in a bound logbook. It is imperative that sufficient information be recorded so that the sampling event can be reconstructed without reliance on the sampling technician's memory. As a minimum entries will include the following:

- Location of sampling location;
- Sampling collection date and time;
- Sample identification code;
- Sample methodology;
- Sample analysis;
- Sampling technician's initials;
- Field observations, if any; and
- Field measurements, if any.

Dedicated field logbooks will be maintained on-site to document the daily calibration of the real-time and speciated real-time air monitoring equipment.

5.3.7 Vapor Emission Response Plan

The *Vapor Emission Response Plan* (see Appendix I) will be triggered by either an exceedance of the 15-minute average volatile organic compounds (VOCs) concentration of 2.5 ppm (above background) within the Exclusion Zone or perimeter of the Exclusion Zone or benzene concentration of 0.5 ppm as measured at the perimeter of the Exclusion Zone with the portable gas chromatograph (GC). If Vapor Emission Response Plan is triggered all excavation activities will be stopped and the following actions will be taker:

- Continue total volatile organic compounds (VOCs) monitoring within the Exclusion Zone and perimeter of the Exclusion Zone. If the total volatile organic compounds (VOCs) level drops below 2.5 ppm (above background) then excavation activities can resume with the addition of engineering controls or modifications to the excavation process to minimize volatile organic compounds (VOCs) emissions. However if the volatile organic compounds (VOCs) level persists above 2.5 ppm, based on continual observance of the total volatile organic analyzer, then the NYSEG construction supervisor will immediately implement engineering controls such as misting the area with a vapor suppression solution of BioSolve®, covering excavation, backfilling, etc. required to reduce emissions and at the same time notify NYSEG project manager.
- If after the implementation of additional engineering controls the total volatile organic compounds (VOCs) levels drop below 2.5 ppm (above background) within the Exclusion Zone and at the perimeter of the Exclusion Zone, then the excavation activity can resume provided process and work activities were adjusted to reduce emission levels. If work stoppage was due to a high benzene level (greater than 0.5 ppm) at the perimeter of the Exclusion Zone, then work will not resume until the benzene level is documented to be less than 0.5 ppm at the perimeter of the Exclusion Zone.
- If the total volatile organic compounds (VOCs) levels continue to be greater than 2.5 ppm (above background) at the perimeter of the Exclusion Zone than all site activities must be discontinued. When the work is shut down, downwind air monitoring as directed by NYSEG construction supervisor in consultation with the NYSDEC or NYSDOH

representative will be implemented to ensure that the emission does not impact the nearest residential of commercial structure at levels exceeding those specified in the Major Vapor Emission response Plan (Section 5.3.8).

Primary engineering controls that may be implemented to reduce emission levels include:

- Adding a vapor suppression solution of BioSolve® to impacted media (application in excavated areas will be a light mist as to avoid increasing solubility of wastes leading to increased groundwater contamination).
- Limiting excavation size and the surface area of exposed contaminated soil.
- Using an air vacuum system and covering the excavation with polyethylene sheeting to the extent practical as not to interfere with soil removal.

5.3.8 Major Vapor Emission Response Plan

If after the cessation of the work activities and implementation of engineering controls, benzene levels exceed 0.5 ppm or total volatile organic compounds (VOCs) levels exceed 2.5 ppm (above background) at the perimeter of the Exclusion Zone, then the following action will be immediately taken:

- Cover the excavation with polyethylene sheeting or clean soil.
- Notify Steve Maybee with Tompkins County Health Department at (607) 274-6688, city of Ithaca Police Bureau at (607) 272-32-45, William Ottaway with the NYSDEC at (518) 402-9662 and Henriette Hamel with the NYSDOH at (315) 477-8163.
- Continue real-time volatile emission monitoring and speciated BTEX (benzene, toluene, ethylbenzene, and xylenes) monitoring at the upwind, downwind and nearest residential or commercial structure until volatile organic compounds (VOCs) level drop below 2.5 ppm.
- If total volatile organic compounds (VOCs) levels persist above the 2.5 ppm (above background), the NYSEG project manager, NYSEG construction supervisor, NYSDEC or NYSDOH on-site representative will

consult with each other and the emergency response agencies to determine the appropriate actions to be implemented. NYSEG project management personnel have ultimate authority during major vapor emission emergencies. The NYSDEC must approve any action to continue work following such an event.

6.0 SAMPLING AND ANALYSIS PLAN

This *Sampling and Analysis Plan* has been developed to describe the objectives and procedures for the sampling and analysis of manufactured gas plant site residues, soil and wastewater that will be produced during this project. In addition, the *Quality Assurance Project Plan* (see Appendix D) and *Pre-remediation Sampling and Analysis Work Plan* (see Appendix A) should be referred to where specific sampling and analysis procedures and methods are referenced.

The environmental media to be sampled during the project and the purpose for collecting and analyzing environmental samples, include the following:

TABLE 6-1
ENVIRONMENTAL SAMPLING MEDIA AND OBJECTIVES

Sampling Media	Sampling Objective
Soil:	
- Waste Characterization Samples	To characterize soil for proper waste disposal
- Confirmation Samples	To document residual soil quality after completion of remedial excavation
Wastewater:	To characterize wastewater to be transported and disposed of at a permitted facility

The following sections of *Sampling and Analysis Plan* provide specific information regarding the rationale and methods for sampling and analyzing manufactured gas plant site residues, soil, and wastewater.

6.1 Quality Assurance/Quality Control Requirements/Data Quality Objectives

Quality Assurance/Quality Control/Data Quality Objectives requirements are specified in the *Quality Assurance Project Plan* (see Appendix D).

6.2 Soil Sampling and Analysis Plan

6.2.1 Soil Sampling Field Protocols

6.2.1.1 Soil Sampling Field Procedures

Samples will be placed into the appropriate containers specified in the *Quality Assurance Project Plan* using decontaminated stainless steel trowels or spoons. Organic debris (i.e., leaves, roots, twigs, bark) along with large pieces of gravel will be avoided. Sampling containers will be filled completely to avoid creating a head space where volatiles may escape. After each jar is filled, the threads will be wiped clean so the cap can be threaded on without creating an air gap.

As a minimum, all filled jars will be labeled with the following information:

- Project Number;
- Sampling Date and time;
- Sample number;
- Sample location;
- Analysis; and
- Sampling technician's initials.

The location, depth of sample, sample type, time of sample, and other associated data (i.e., color of soil, odors, texture, etc.) will be documented in field logbook when the sample is taken. Once all the soil samples are collected, the samples will be maintained at 4° Celsius until the samples are delivered off-site for analyses.

All used sampling devices will be kept together, separate from clean tools, so that they can be cleaned according to appropriate decontamination and cleaning

procedures as specified in the *Quality Assurance Project Plan*. In no event will a sampling device be used without full cleaning between samples.

6.2.1.2 Soil Sampling Field Equipment List

The following items constitute a minimum listing of required field equipment for collecting soil samples:

- Chemical resistant boots, nitril gloves, chemical resistant gloves and the appropriate level pf personal protection for working conditions as described in the *Health and Safety Plan* Section 4.2;
- Sample containers shall be glass jars with Teflon-lined caps;
- Teflon-coated or stainless steel sample spoons and bowls;
- Wooden stakes and spray paint (highly visible).
- Field logbook;
- Sample bottle labels, water resistant tape; and
- Ice cooler for sample storage.

6.2.2 Confirmation Soil Sampling and Analysis Plan

6.2.2.1 Sampling Plan Rationale

A confirmation *Soil Sampling and Analysis Plan* will be implemented to determine the concentration of compounds remaining on the site following excavation. These data will be used to determine if future remedial investigation or remedial action is necessary.

6.2.2.2 Laboratory Analytical Protocols

Confirmation soil samples will be analyzed for total BTEX (benzene, toluene, ethylbenzene, and xylenes) and total polycyclic aromatic hydrocarbons (PAHs) using Environmental Protection Agency (EPA) Laboratory Methods 8240 and 8270, respectively. Samples collected to verify conformance with the cleanup objectives would be subject to NYSDEC ASP (Analytical Services Protocol) Category B deliverables. Target compound list (TCL) volatile and semi-volatile

compounds for post remediation confirmation samples will be determined at a minimum rate of 1 per group of 10 confirmation samples or portion thereof.

The laboratory chosen for this project will be certified, and maintain certification, under the NYSDOH Environmental Laboratory Approval Program (ELAP) and NYSDOH Environmental Laboratory Approval Program (ELAP) Contract Laboratory Protocol (CLP) for analyses of solid and hazardous waste. Only analytical laboratories that have experience in manufactured gas plant site projects or similar projects will be used. NYSEG will provide a list of laboratories for NYSDEC review and acceptance.

6.2.2.3 Soil Sampling Protocol

In the excavated areas, confirmation samples will be obtained at a maximum sidewall horizontal interval of 50 feet. Sidewall samples will be collected from a depth that coal tar impacted soils are seen. Confirmation samples will also be collected at the bottom of the excavation at intervals of 50 feet. In addition, samples will be obtained to characterize and delineate any coal tar soils that remain in the sidewalls and/or bottom of the excavation. A ground positioning satellite (GPS) receiver will be used to document all confirmation sample locations.

A sample representing the first 3 to 6 inches of soil encountered will be taken from each sampling point. This means that in case of a sidewall sample, the first 3 inches of a sample point in the sidewall will be discarded and the remaining soil at that point, to a lateral depth of approximately 6 inches, will be collected. In the case of a bottom sample, the first 3 inches of a sample point in the excavation floor will be discarded and the remaining soil at that point, to a vertical depth of approximately 6 inches, will be collected. The first 3 inches are discarded to avoid collecting soil sample at the surface of the excavation because volatile compounds at the excavation surface may have been released. Discarding the first 3 inches of soil will help to ensure that a sample representing the volatile compounds present in the excavation are more accurately profiled. The sample will be representative of the area soil based upon visual and olfactory observations and volatile organic analyzer readings.

Confirmation samples obtained from excavations extending 4 feet below ground surface may be collected via a stainless steel remote sampler or a hydraulically activated sampling device. A drawing depicting confirmation sample locations along with information concerning sample identifications, depth below original ground surface, and dates of collection will be maintained by the field sampling technician throughout the project.

6.2.3 Pre-remediation In Situ Sampling and Analysis for Waste Characterization/Site Characterization

6.2.3.1 Pre-remediation In Situ Sampling Rationale *(*see *Pre-remediation In Situ Sampling and Analysis Work Plan,* Appendix A, "Introduction")

6.2.3.2 Laboratory Analytical Protocols (see *Pre-remediation In Situ Sampling and Analysis Work Plan,* Appendix A, "Analytical Protocol")

6.2.3.3 Soil Sampling Protocol Protocols (see *Pre-remediation In Situ Sampling and Analysis Work Plan,* Appendix A, "Sampling Protocol")

6.3 Wastewater Sampling and Analysis Plan

6.3.1 Sampling Plan Rationale

Wastewater resulting from dewatering of the excavation and decontamination of equipment will be generated during the project. This wastewater will be transferred from a liquid vacuum tanker into a frac tank. A sampling and analysis plan will be implemented to properly characterize the wastewater for disposal at a disposal facility permitted to accept it.

6.3.2 Laboratory Analytical Protocols

Analytical requirements will be determined by facility permitted to accept wastewater.

6.3.3 Wastewater Sampling Protocol

A sample will be collected from the frac tank and analyzed for parameters specified by a facility permitted to accept wastewater.

6.3.4 Wastewater Field Sampling Procedures

Wastewater will be sampled directly from the frac tank prior to shipment off-site. Latex gloves will be worn to protect the sampling technician and to avoid cross contamination through handling. Wastewater will be sampled by lowering a stainless steel or disposable polyethylene bailer into the tank using a polyethylene cord. The sample contents will be immediately transferred into the appropriate sized container for each analysis as specified in the Quality Assurance Project Plan (see appendix D). Vials for volatile analyses will be filled completely so as to avoid creating a head space where volatiles may escape, and must be checked to ensure that no air gap or bubbles are present.

As a minimum, all filled jars must be labeled with the following information:

- Project Number;
- Sampling date and time;
- Sample number;
- Analysis; and
- Sampling technician's initials.

The sample chain-of-custody form will then be immediately filled out and kept with the sample. The sample will be maintained at 4° Celsius until delivered to off-site analytical laboratory.

6.3.5 Wastewater Sampling Field Equipment List

The following items constitute a minimum listing of required field equipment for collecting wastewater samples.

- Latex gloves, chemical resistant gloves and appropriate level of personal protection for working conditions as described is in NYSEG *Health and Safety Plan* Section 4.2;
- Sample containers: two 40-ml VOA vials; two one-liter amber containers; 500-mil acid-washed containers;
- Stainless steel or disposable polyethylene bailer;
- Field logbook; sample bottle labels; and
- Chain-of-Custody forms.

FIGURES

BASE MAP DIGITIZED FROM AERIAL PHOTOS DATED APRIL, 1992 BY MICHAEL BAKER JR. BEAVER, PA.

0 100 200 300
Scale Feet
SCALE REFERENCE

CITY OF ITHACA

NYSEG	ENGINEERING SERVICES BINGHAMTON, N.Y.	
TITLE	LOCATION MAP	
	ITHACA COURT STREET MGP SITE	
	CITY OF ITHACA	
	TOMPKINS COUNTY, NEW YORK	
SCALE : AS SHOWN DATE : 11/09/99	DWG NO FIGURE 1	REV

Date/Time Plotted: 24 FEB 2005

ESTY STREET

APPROX. SITE BOUNDARY

OIL PUMP

OIL TANK

OIL TANK

STEEL GASOMETER

STEEL GASOMETER

COAL SHED

PURIFIERS

WASH ROOM

OXIDE ROOM

METER ROOM

PURIFYING HOUSE

COALTAR STORAGE VESSEL

SCRUBBER

TAR SEPARATOR

COALTAR STORAGE VESSEL

ENGINE ROOM

RETORTS

WAREHOUSE

TRANSFORMER HOUSE

APPROX. SITE BOUNDARY

NORTH PLAIN STREET

NORTH ALBANY STREET

N

WEST MILL STREET

(NOW COURT STREET)

0 20 40 60

Scale SCALE REFERENCE Feet

CADD DRAWING DO NOT REVISE MANUALLY

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			/ /			

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DRAFTING:	/ /	DESIGN:	/ /
ENGRG:			/ /
RELEASE APPROVAL:			/ /
AUTHORIZED BY:			/ /
MATERIAL OR SPEC:			

NYSEG ENGINEERING SERVICES BINGHAMTON, N.Y.

TITLE FORMER OPERATIONS LAYOUT CIRCA 1919

ITHACA COURT STREET MGP SITE

CITY OF ITHACA

TOMPKINS COUNTY, NEW YORK

SCALE: AS SHOWN DWG NO FIGURE 2 REV

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Date/Time Plotted: 24 FEB 2005

PARK PLACE

CASCADILLA STREET

ESTY STREET

WASHINGTON STREET

COURT STREET

MADISON AVENUE

B BALL

DECK

POOL

AREA 6 120'

AREA 5 120'

AREA 4 120'

AREA 3 120'

AREA 2 120'

AREA 1 120'

GEOPROBE POINT

0 60 120 180

Scale Feet

SCALE REFERENCE

CADD DRAWING DO NOT REVISE MANUALLY	SYM	ZONE	REVISION	DATE	BY	CHK	APP

DWN BY: SCW	02/23/05	DSGN BY:	/ /
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ENGRG:			/ /
RELEASE APPROVAL:			/ /
AUTHORIZED BY:			/ /
MATERIAL OR SPEC:			

NYSEG ENGINEERING SERVICES BINGHAMTON, N. Y.

TITLE PRE-REMEDIATION IN SITU SAMPLING PLAN CITY OF ITHACA COURT STREET MGP SITE TOMPKINS COUNTY, NEW YORK

SCALE

DWG NO FIGURE 3

REV

Date/Time Plotted: 03 MAR 2005

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PARK PLACE

CASCADILLA STREET

MADISON

B BALL

DECK

POOL

DECK

ESTY STREET

DECK

DECK

COURT STREET

AREA TO BE REMEDIATED

WASHINGTON STREET

DECK

DECK

DECK

0 60 120 180

Scale

Feet

SCALE REFERENCE

CADD DRAWING DO NOT REVISE MANUALLY

SYM	ZONE	REVISION	DATE	BY	CHK	APP
			/ /			

DWN BY: SCW	02/23/05	DSGN BY:	/ /
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DRAFTING:	/ /	DESIGN:	/ /
ENGRG:			/ /
RELEASE APPROVAL:			/ /
AUTHORIZED BY:			/ /
MATERIAL OR SPEC:			

NYSEG ENGINEERING SERVICES BINGHAMTON, N.Y.

TITLE PROJECT LAYOUT

ITHACA COURT STREET MGP SITE

CITY OF ITHACA

TOMPKINS COUNTY, NEW YORK

SCALE

DWG NO FIGURE 4

REV

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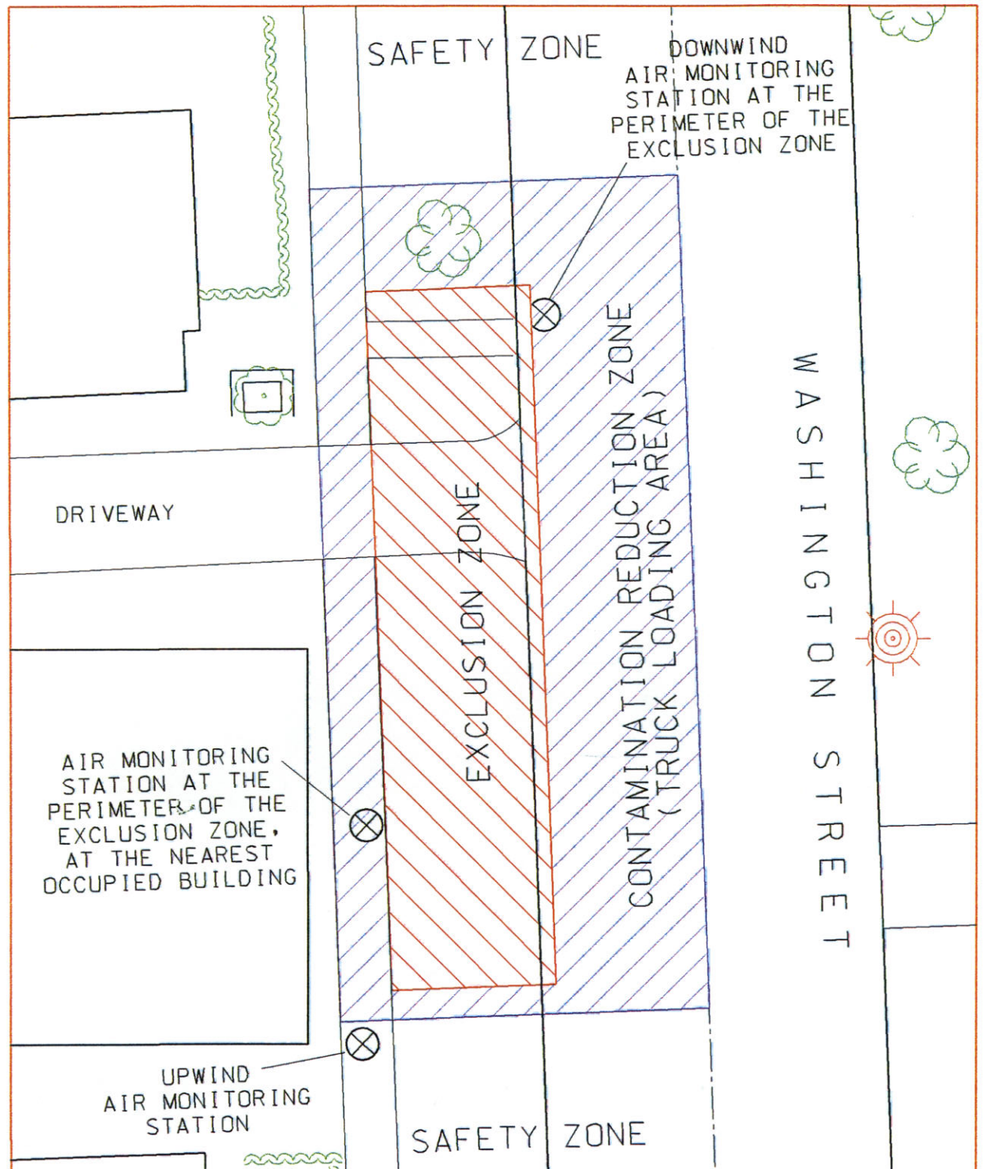
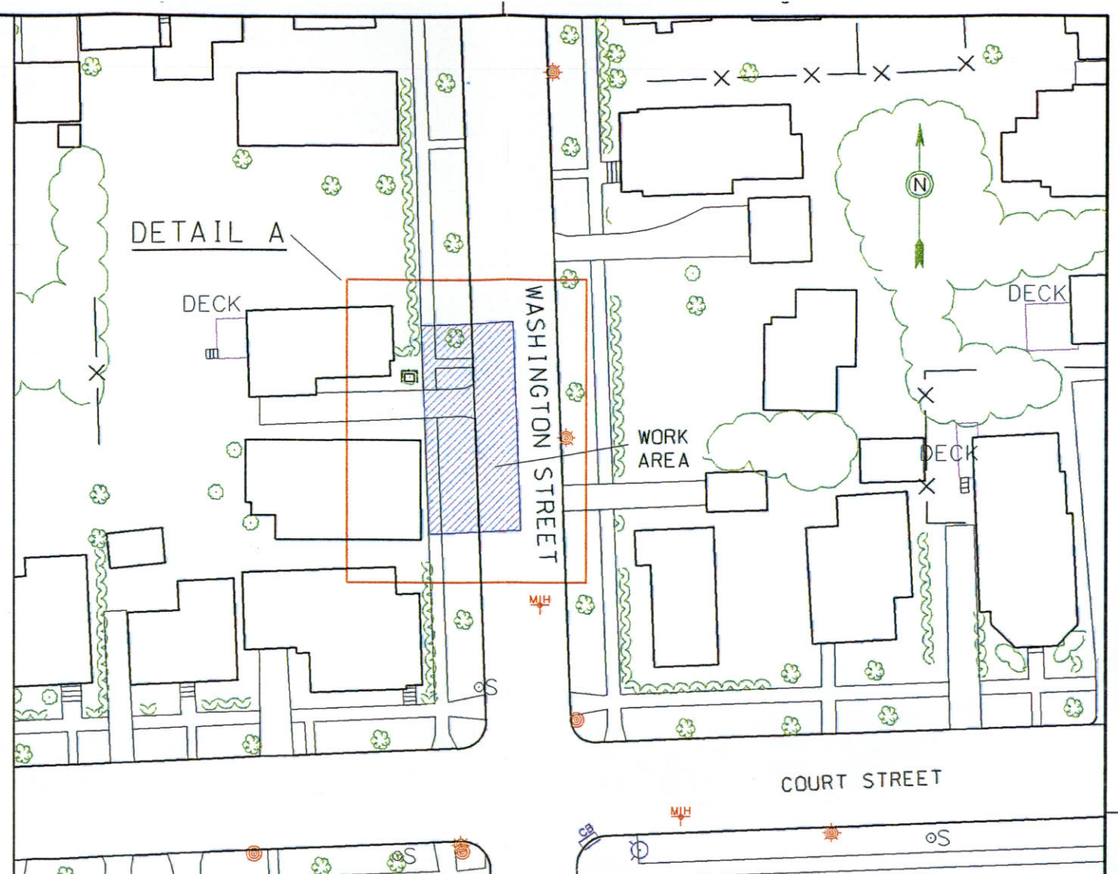
Date/Time Plotted: 24 FEB 2005



DETAIL A – TYPICAL WORK AREA



SCALE: 1"= 50'

KEY MAP

NOTES:

1. WORK AREAS WILL CHANGE DAILY. EXCAVATION LENGTH WILL BE DETERMINED BY THE NUMBER OF UTILITIES (I.E. GAS. WATER. SEWER) ENCOUNTERED. NO EXCAVATION WILL BE LEFT OPEN OVERNIGHT. WORK WILL START ON THE WEST SIDE OF WASHINGTON STREET NEAR WEST COURT STREET AND PROCEED NORTH TO CASCADILLA STREET.

2. WASHINGTON STREET WILL BE CLOSED TO THRU TRAFFIC BETWEEN WORK AREA STREETS. BARRICADES WILL BE PLACED IN THE RIGHT LANE. SIGNS WILL BE INSTALLED THAT READ: "ROAD CLOSED TO THRU TRAFFIC".

3. SIDEWALK WILL BE CLOSED ON THE WEST SIDE OF WASHINGTON STREET BETWEEN WORK AREA STREETS. ORANGE CONSTRUCTION FENCE WILL BE INSTALLED ACROSS SIDEWALK TO CURB. SIGNS WILL BE INSTALLED THAT READ: "SIDEWALK CLOSED USE CROSSWALKS".

4. AN UPWIND AND DOWNWIND AIR MONITORING STATION WILL BE DETERMINED FOR EACH AREA.

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DRAFTING:	/ /	DESIGN:	/ /
ENGRG:			/ /
RELEASE APPROVAL:			/ /
AUTHORIZED BY:			/ /
MATERIAL OR SPEC:			

NYSEG ENGINEERING SERVICES BINGHAMTON, N.Y.

TITLE: WORK AREA DETAIL
ITHACA COURT STREET MGP SITE
CITY OF ITHACA
TOMPKINS COUNTY, NEW YORK

SCALE | DWG NO: FIGURE 5 | REV

CADD DRAWING DO NOT REVISE MANUALLY

SYM	ZONE	REVISION	DATE	BY	CHK	APP

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Data/Time Plotted: 24 FEB 2005

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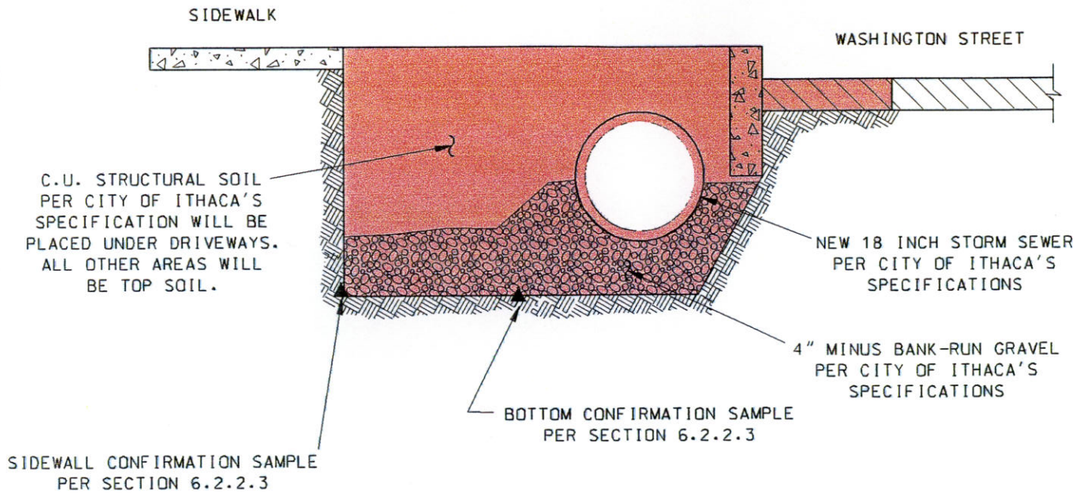
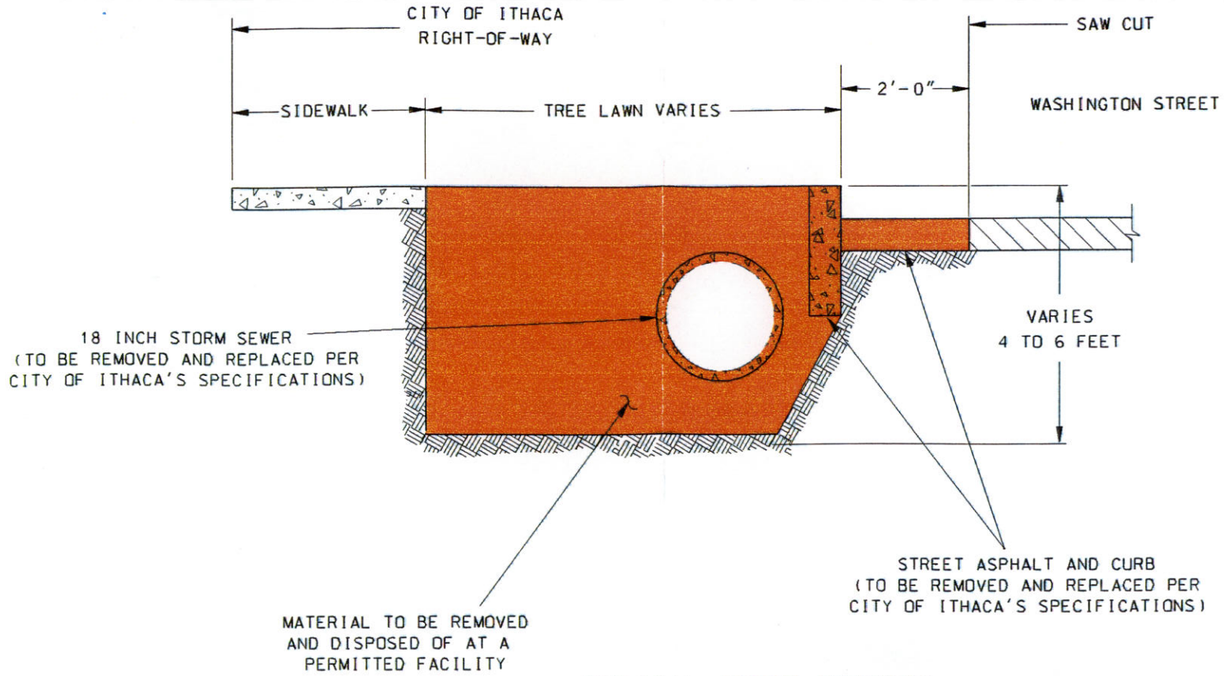
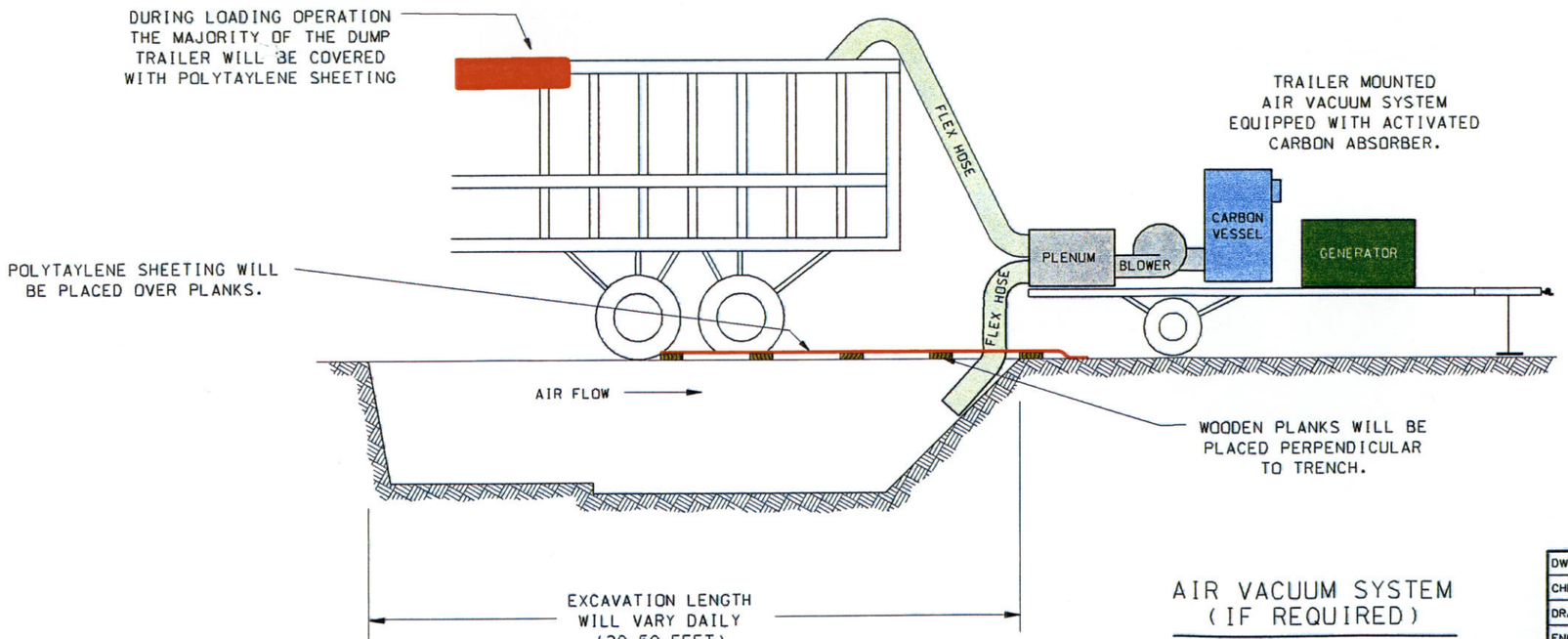


TYPICAL CROSS SECTION
OF TRENCH BACKFILL



TYPICAL CROSS SECTION
OF TRENCH EXCAVATION



AIR VACUUM SYSTEM
(IF REQUIRED)

CADD DRAWING DO NOT REVISE MANUALLY	SYM	ZONE	REVISION	DATE	BY	CHK	APP

DWN BY: SCW	02/24/05	DSGN BY: BWF	/ /
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ENGRG:			/ /
RELEASE APPROVAL:			/ /
AUTHORIZED BY:			/ /
MATERIAL OR SPEC:			

NYSEG ENGINEERING SERVICES BINGHAMTON, N. Y.

TITLE	EXCAVATION DETAILS
	ITHACA COURT STREET MGP SITE
	CITY OF ITHACA
	TOMPKINS COUNTY, NEW YORK
SCALE NONE	DWG NO FIGURE 6 REV

Date/Time Plotted: 24 FEB 2005

d c b a

APPENDIX A

PRE-REMEDIATION IN SITU
SAMPLING & ANALYSIS WORK PLAN

NYSEG

NEW YORK STATE ELECTRIC & GAS CORPORATION
James A. Carrigg Center, 18 Link Drive, P.O. Box 5224
Binghamton, New York 13902-5224

Interim Remedial Measures

PRE-REMEDIATION IN SITU SAMPLING & ANALYSIS WORK PLAN

For Removal of Coal Tar Impacted Soil
On Washington Street
Between W. Court and Cascadilla Streets

Associated With

Ithaca Court Street
Former Manufactured Gas Plant Site
City of Ithaca, Tompkins County, New York

March 2005

Prepared By:
NYSEG Environmental Compliance
Site Investigation and Remediation

Reviewed and Approved By:
New York State Department of Conservation
And New York State Department of Health

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Section **Page**

Tables

1.0 INTRODUCTION

NYSEG (New York State Electric & Gas Corporation) is preparing to conduct a *Interim Remedial Measures* involving the excavation, removal and disposal of coal tar impacted soil and the 18-inch storm sewer that exist along the west side of Washington Street, between W. Court and Cascadilla Streets in the City of Ithaca, Tompkins County, New York. This area was contaminated by the subsurface wooden ducts on W. Court Street that transported coal tar from the Ithaca Court Street former manufactured gas plant site to tar wells at the Cayuga Inlet coal tar transfer site. This *Pre-remediation In Situ Sampling & Analysis Work Plan* describes the sampling and analysis protocol that will be utilized to provide waste characterization data for soils generated during site remediation.

The in situ sampling program will utilize a Geoprobe® sampling system, hydraulic-powered direct push machine, to characterize approximately 2,670 cubic yards (approximately 4,000 tons) of soil. Analytical tests will be performed on the samples to characterize the soil and insure proper treatment or disposal.

NYSEG will conduct the sampling of the in-place soils. A drilling contractor will be hired to provide Geoprobe® sampling of the soil to be excavated during the *Interim Remedial Measures*. A New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) and NYSDOH ELAP Contract Laboratory Protocol (CLP) certified analytical laboratory utilizing the methods and procedures specified to determine if the soil contains contaminants above established levels will analyze all composite samples. All sampling and analyses will be performed in accordance with the Quality Assurance Project Plan (see Appendix D). Analytical results will be submitted to the New York State Department of Environmental Conservation (NYSDEC) and disposal facilities for review and approval prior to final disposition of the soil.

The approved NYSEG *Health and Safety Plan* for activities associated with the Ithaca Court Street former manufactured gas plant site will be used during the pre-remediation sampling event. The *Health and Safety Plan* provides emergency response procedures and appropriate levels of personal protective equipment required for this project. The minimal amount of soil exposed during

sampling event will not require any additional health and safety requirements than already enumerated in the plan.

All subsurface soil obtained during the sampling event will be contained and disposed at an approved disposal facility. Precautions will be taken to prevent the contamination of the surface soil with any subsurface soil. Polyethylene sheeting will be used to minimize the risk of cross contamination and all subsurface soil will be immediately containerized for laboratory analysis or disposal.

2.0 SAMPLING PROTOCOL

The project area is within the City Right-of-Way along the west side of Washington Street between W. Court and Cascadilla Streets. This area has been divided into six 120-foot sections with each section having two Geoprobe® sampling points, approximately 60 feet apart. Each 120 feet section represents approximately 445 cubic yards (approximately 668 tons) of soil to be excavated. Physical obstructions such as trees, driveway aprons, underground utilities will result in adjustment of some sampling points. Care will be taken to insure the sampling is representative of the area and relocations remain in close proximity of the original location. The sample locations as described are depicted on Figure 3.

The soil samples will be 2-inch macrocore cores obtained using a Geoprobe® sampling system. Three samples will be collected from each boring: a soil sample from 0 to 4 foot interval, a soil sample from 4 to 8 foot interval and a sample from 8 to 10 foot interval. Each macrocore will be cut open and screened for volatile organic vapors with a total vapor analyzer equipped with a photo ionization detector (PID). A discrete sample for volatile organic compounds (VOCs) analysis will be collected from the section of the sampling interval with the highest volatile organic vapor concentration, as measured with the total vapor analyzer, and/or distinct coal tar odor or discoloration. Each core sample will be placed in a large stainless steel bowl. Homogeneous core samples will be properly mixed to generate a composite sample that is representative of its respective volume. When collecting samples for toxicity characteristic leachate procedure (TCLP) volatile analysis, volatilization of contaminants will be minimized by keeping each sample in its tube liner until the samples are ready to

be examined and mixed for a composite sample. Since the designated sample locations will undergo remedial excavation, sand and bentonite pellets will be used to seal the borings.

3.0 WASTE CHARACTERIZATION

Waste characterization utilizing the Geoprobe® sampling system will be accomplished to a maximum depth of 10 feet or indications of no further contamination. The sample interval will be adjusted to different depth horizons if field observations indicate that contaminated soil would be more homogeneously grouped using a different depth interval scheme. In no case will a composite sample interval represent a volume of soil greater than 500 cubic yards or 750 tons. Each composite sample will represent a respective volume of soil as presented in Tables 5&6. All composite samples will be submitted to the laboratory for determination of List "A" Analytes as specified in the Analytical Protocol Section 5.0.

4.0 AIR QUALITY MONITORING PROGRAM

The *Air Quality Monitoring Program* will provide direct measurement of volatile organic compounds (VOCs) that are released during the in situ sampling process. The Exclusion Zone is confined to the area within the sidewalk and existing curb with the immediate area outside these bounds to be used for community air monitoring. Real time air monitoring of volatile organic compounds (VOCs) will commence at the start of each workday and will continue until daily activities have ceased. The real time data generated will allow an assessment of the impact of the sampling activities on air quality.

Real time monitoring will be accomplished using a total volatile organic analyzer equipped with a photo ionization detector (PID) and a 10.2eV lamp, that will be calibrated daily to benzene with a 10 ppm isobutylene air standard. The volatile organic analyzer will be capable of calculating 15-minute running average concentrations. Monitoring will be undertaken at the downwind location of the Exclusion Zone will macrocore samples are being collected. Upwind concentrations will be measures at the start of each work day and following a change in wind direction.

Sampling will be accomplished by pointing the intake tube of the analyzer toward the emission source, generally two feet above the Geoprobe® sampling system borehole. After 15 minutes has elapsed, the calculated running average concentration of volatile organic vapors in the air will be measured and recorded on data sheets along with date, time, boring location, wind direction and weather conditions.

Based on data published by Occupational Safety and Health Administration (OSHA), the American Congress of Government Industrial Hygienists (ACGIH), and National Institute for Occupational Safety and Health (NIOSH), short-term air quality action level of 5 ppm for total volatile organic compounds (VOCs) has been established for air emissions within the Exclusion Zone. NYSEG will be more conservative and use an action level of 2.5 ppm above existing ambient conditions (background).

If the action level of 2.5 ppm is exceeded, all boring activities will be ceased with all potential sources of emissions to be contained. If odors are detected in the nearby community, despite the fact that the total volatile organic compounds (VOCs) levels are below 2.5 ppm action level, action will be taken to minimize or eliminate the odors.

5.0 ANALYTICAL PROTOCOL

(Refer to *Quality Assurance Project Plan*, Appendix D)

List "A" Analytes: TCLP volatiles, TCLP semivolatiles, TCLP metals, TCLP pesticides/herbicides, reactive cyanide, reactive sulfide, reactive-corrosivity (pH)-ignitability, PCBs, percent solids, total petroleum hydrocarbons (diesel range organics), total VOCs, SVOCs, total metals, total cyanide, percent sulfur (Tables 1,2,3&4)

TABLE 1 COMPOSITE SAMPLE TCLP ANALYTES AND LIMITS	
TCLP Analyte	**Regulatory Limit (mg/L) 6NYCRR Part 371**
Arsenic	5.0
Barium	100.0
Benzene	0.5
Cadmium	1.0
Carbon Tetrachloride	0.5
Chlordane	0.03
Chlorobenzene	100.0
Chloroform	6.0
Chromium	5.0
Cresols (total of o, m, p)	200.0
2,4-D	10.0
1,4-Dichlorobenzene	7.5
1,2-Dichloroethane	0.5
1,1-Dichloroethylene	0.7
2,4-Dinitrotoluene	0.13
Endrin	0.02
Heptachlor	0.008
Hexachlorobenzene	0.13
Hexachlorobutadiene	0.5
Lead	5.0
Lindane	0.4
Mercury	0.2
Methoxychlor	10.0
Methyl ethyl ketone	200.0
Nitrobenzene	2.0
Pentachlorophenol	100.0
Pyridine	5.0
Selenium	1.0
Silver	5.0
Silvex	1.0
Tetrachloroethylene	0.7
Toxaphene	0.5
Trichloroethylene	0.5
2,4,5-Trichlorophenal	400.0
2,4,6-Trichlorophenol	2.0
Vinyl chloride	0.2

TABLE 2 COMPOSITE SAMPLE ANALYTES AND ACTION LIMITS OTHER RCRA CHARACTERISTICS AND LANDFILL ANALYTICAL REQUIREMENTS	
Analyte	**Limit**
Corrosivity (pH)	Non-corrosive (pH must be > 2 or < 12.5)
Ignitability	Must be > 60° Celsius
PCBs (Total)	< 50 mg/Kg
% Solids	Must be > 20%

TABLE 3 COMPOSITE SAMPLE ANALYTES FOR THERMAL TREATMENT
Analyte
TPH Diesel Range Organics (8015 B)
Total VOCs (8260)
Total SVOCs (8270)
Total Metals 14* (6010B)
Total Cyanide (9012)
Percent Sulfur (ASTM D 129-64)
* Total Metals Lit: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium (total), Lead, Mercury, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc

TABLE 4 COMPOSITE SAMPLE ANALYTES FOR AROMATIC HYDROCARBONS (PAHs)
Analyte
Naphthalene
2-Methylnaphthalene
Acenaphthalene
Acenaphthylene
Fluorene
Phenanthrene
Anthracene
Fluoranthene
Dibenzofuran
Pyrene
Benzo (A) Anthracene
Chrysene
Benzo (B) Fluoranthene
Benzo (K) Fluoranthene
Benzo (A) Pyrene
Indeno (1,2,3 CD) Pyrene
Dibenzo (A,H) Anthracene
Benzo (G,H,I) Perylene

TABLE 5
SAMPLING AREA BREAKDOWN

Location	Dimensions (feet)	Area (square feet)	Depth (feet)	Volume (cubic yards)	Number Sample Locations	Number Sample Grabs	Number Sample Composed
Area 1	10 X 120	1,200	10	445	2	6	3
Area 2	10 X 120	1,200	10	445	2	6	3
Area 3	10 X 120	1,200	10	445	2	6	3
Area 4	10 X 120	1,200	10	445	2	6	3
Area 5	10 X 120	1,200	10	445	2	6	3
Area 6	10 X 120	1,200	10	445	2	6	3
	Total	7,200	10	2,670	12	36	18

APPENDIX B

CITIZEN PARTICIPATION PLAN

NYSEG

NEW YORK STATE ELECTRIC & GAS CORPORATION
James A. Carrigg Center, 18 Link Drive, P.O. Box 5224
Binghamton, New York 13902-5224

Interim Remedial Measures

CITIZEN PARTICIPATION PLAN

For Removal of Coal Tar Impacted Soil
On Washington Street
Between W. Court and Cascadilla Streets

Associated With

Ithaca Court Street
Former Manufactured Gas Plant Site
City of Ithaca, Tompkins County, New York

March 2005

Prepared By:
NYSEG Environmental Compliance
Site Investigation and Remediation

Reviewed and Approved By:
New York State Department of Conservation
And New York State Department of Health

TABLE OF CONTENTS

1.0 INTRODUCTION

This *Citizen Participation Plan* will detail citizen participation activities that will be implemented for removal of coal tar impacted soil on Washington Street Between W. Court and Cascadilla Streets associated with Ithaca Court Street former manufactured gas plant site.

An *Interim Remedial Measures Work Plan For Removal of Coal Tar Impacted Soil on Washington Street Between W. Court And Cascadilla Streets Associated with Ithaca Court Street Former Manufactured Gas Plant Site* has been developed. The proposed *Interim Remedial Measures* will involve excavation, removal and disposal of coal tar impacted soil and debris. The *Interim Remedial Measures* will be conducted according to the requirements of an Order on Consent between NYSEG and the New York State Department of Environmental Conservation (NYSDEC). The Order on Consent is a legal document that defines the obligations of each party for conducting site investigations and remediations. The Order of Consent requires that all work by NYSEG at the site be performed under the oversight of the NYSDEC and the New York State Department of Health (NYSDOH).

2.0 PROJECT OBJECTIVE

The cleanup objective is to remove and dispose coal tar impacted soil that exists along the west side of Washington Street, between W. Court and Cascadilla Streets. To accomplish this the 18-inch storm sewer will be removed and replaced. If additional contamination is evident beyond the City Right-of-Way, NYSEG will remove the contaminated material if feasible, given the limitations of properties and equipment used. Locations where coal tar may exist beyond the limits of excavation will be addressed in subsequent remedial actions.

This project is scheduled to begin during the third quarter of 2005.

3.0 BASIC SITE INFORMATION

The history of coal gas production at the Ithaca Court Street site dates back to 1853. In that year, Ithaca Gas Light Company, founded in October 1852, began distributing gas to the citizens of Ithaca. The company changed ownership in the 1860's and again in 1898. In 1916, the city gas and electric companies were

merged to form Ithaca Gas and Electric Company. This company grew rapidly over the next few years through mergers with other gas and electric companies in the region and in 1918 it was named New York State Gas Electric Company. This company then became part of the Associated Gas and Electric System and in 1929, after several additional mergers, it became New York State Electric & Gas Corporation (NYSEG). Coal gas production continued at Court Street until 1927 when a new water gas plant at First Street in Ithaca became operational. NYSEG subsequently used the site for an electric and gas service center. The property was sold to the Ithaca City School district in 1964.

Subsurface wooden ducts and an 8-inch clay tile pipe transported coal tar from the Ithaca Court Street former manufactured gas plant site to tar wells located at the Cayuga Inlet coal tar transfer site. The coal tar from these tar wells was pumped into either barges or railroad cars and used off-site. The subsurface wooden duct that was breached by an underground utility line on W. Court Street contaminated the west side of Washington Street.

In the summer and fall of 1995, to support the New York State Department of Transportation's Ithaca Infrastructure Project for NYS Routes 13, 79, 89 and 96, NYSEG provided oversight for the excavation and disposal of one of the subsurface wooden duct on W. Court Street between the west side of Meadow Street to the east side of Fulton Street. The remaining duct was capped at both Meadow and Fulton Streets. The other subsurface wooden duct and an 8-inch clay tile pipe still remains on W. Court Street between the east side of Meadow Street to the east side of Fulton Street.

In the fall of 1999 an interim remedial measures project was completed by NYSEG at the Ithaca Cayuga Inlet coal tar transfer site. During that interim remedial measures project the tar wells and piping containing coal tar were removed. In addition, the subsurface wooden duct was removed from the Inlet back to the east side of the Site. The duct was capped at this point. Then in the spring of 2000, NYSEG completed an interim remedial measures project on the properties of the Old Port Harbor restaurant and Watts distributing Company. During that interim remedial measures project the subsurface wooden duct was removed from where it was capped during the previous interim remedial measures project to the east side of Watts Distributing Company. The duct was capped at this point. A section of the duct (capped at both ends) remains from

the east side of Fulton Street continuing under Lehigh Valley HSE + HO Corporation railroad tracks to the east side of Watts Distributing Company property.

In the spring 2000, NYSEG also completed an interim remedial measures project at the Court street former manufactured gas plant site. During that interim remedial measures project contents of two subsurface concrete structures were removed and disposed off-site. In addition, a scrubber, wooden tar separator and wooden duct from the wooden tar separator back to the plant building were removed and disposed off-site.

In the fall of 2001 through spring of 2002 NYSEG collected soil and water samples adjacent to the remaining wooden ducts along W. Court Street as part of the *Remedial Investigation*. This sampling was primarily done to determine if the wooden duct had leaked coal tar constituents into the surrounding soil. Such a leak was detected at intersection of W. Court and Washington Streets where the wooden duct had been breached by an underground utility line. Coal tar constituents have been detected in the subsurface soil near the curb along the west side of Washington Street, between W. Court Street and Cascadilla Street.

In the fall of 2003, NYSEG started a remedial design project to remove and dispose off-site the subsurface wooden ducts on W. Court Street between the east side of Meadow Street to the Ithaca Court Street former manufactured gas plant site. During this project, two subsurface wooden ducts, two clay pipes, and surrounding coal tar impacted soil are being removed and disposed off-site. In addition, NYSEG is upgrading installing new infrastructure that includes the following:

- City water mains and services to residents homes
- City sanitary sewer mains and services to residents homes
- NYSEG gas mains and services to residents homes
- Storm sewer, concrete sidewalks, concrete curbs, concrete driveway aprons, and asphalt streets.

The remedial design project to remove the subsurface wooden ducts on W. Court Street between the east side of Meadow Street to the Ithaca Court Street former manufactured gas plant site is planned to be completed by the fall of 2005.

Byproducts of gas manufacturing include coal tars, light oils and spent purifying materials. These products were often left behind when plants closed. Coal tar may exceed Federal Resource Conservation and Recovery Act (RCRA) regulatory limits due to leachable concentrations of benzene and therefore be classified as a "hazardous waste". Coal tar generally contains high levels of volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs).

Purifier wastes are spent materials (i.e., wood chips or other organic material with iron filings) used to remove impurities like hydrogen sulfide and cyanide from the gas produced by the manufactured gas plant. These materials can contain varying concentrations of sulfides and cyanides complexed with iron.
Petroleum products were used on-site as fuel source for the manufactured gas plant and to increase the heat content of the manufactured gas. Although unconfirmed, these products may have been spilled on-site as a result of material handling practices. The petroleum products were heavier fraction of the crude distillate (i.e., diesel, No. 6 bunker C, etc.) and primarily contain polycyclic aromatic hydrocarbons (PAHs).

4.0 PREVIOUS INVESTIGATIONS, INTERIM REMEDIAL MEASURES WORK PLANS AND FINAL ENGINEERING REPORTS, AND REMEDIAL DESIGN WORK PLANS

NYSEG's consultants and NYSEG completed the following Investigations, Interim Remedial Measures Work Plans and Final Engineering Reports, and Remedial Design Work Plans for the Ithaca Court Street former manufactured gas plant site and Ithaca Cayuga Inlet Coal Tar Site:

- April 1986 — TASK 1 Preliminary Site Evaluation at Ithaca Court Street Site, prepared by E.C. Jordan Company Consulting Engineers
- April 1986 — TASK 1 Preliminary Site Evaluation at Ithaca Cayuga

	Inlet Coal Tar Site, prepared by E.C. Jordan Company Consulting Engineers
• February 1987	TASK 2 Preliminary Site Investigation at Ithaca Court Street Site, prepared by E.C. Jordan Company Consulting Engineers
• June 1987	TASK 2 Initial Field Investigation Program at Ithaca Cayuga Inlet Coal Tar Site, prepared by E.C. Jordan Company Consulting Engineers
• March 1988	TASK 3 Expanded Problem Definition Program at Ithaca Court Street Site, prepared by E.C. Jordan Company Consulting Engineers
• March 1990	TASK 4 Risk assessment at Ithaca Court Street Site, prepared by E.C. Jordan Company Consulting Engineers
• January 1999	Interim Remedial Measures Work Plan for Activities at Ithaca Cayuga Inlet Coal Tar Site, prepared by NYSEG
• June 1999	Interim remedial Measures Final Engineering Report For Activities at the Ithaca Cayuga Inlet Coal Tar Site, Prepared by NYSEG
• February 2000	Interim remedial Measures Work Plan for Activities at Ithaca Court Street Former Manufactured Gas Plant Site, prepared by NYSEG
• February 2000	Interim remedial Measures Work Plan for Activities at Ithaca Court Street former Manufactured Gas Plant Site Subsurface Wooden Duct, prepared by NYSEG
• August 2001	Interim Remedial Measures Final Engineering Report For Activities at Ithaca court Street Former Manufactured Gas Plant Site, prepared by NYSEG
• August 2001	Interim Remedial Measures Final Engineering Report For Activities at Ithaca Court Street Former Manufactured Gas Plant Site Subsurface Wooden Duct, prepared by NYSEG
• September 2001	Work Plan for a Remedial Investigation at Ithaca Court Street Former Manufactured Gas Plant Site, prepared by IT Corporation

- April 2003 — Remedial Investigation Report for Operable Unit 1, prepared by MWH Americas, Inc.
- May 2003 — Focused Feasibility Study Report for Operable Unit 1, prepared by MWH Americas, Inc.
- October 2003 — Remedial Design Work Plan For Removal of the Subsurface Wooden duct Associated With Ithaca Court Street Former Manufactured Gas Plant Site, prepared by NYSEG

5.0 DOCUMENT REPOSITORY

Documents associated with previous investigations, work plans, final engineering reports and this *Work Plan* are available for public review at the following document repositories:

- Tompkins County Public Library
  101 East Green Street
  Ithaca, New York
  Phone: (607) 272-4557

- NYSEG
  Ithaca – Dryden Road
  Ithaca, New York
  Attn: Mr. Robert Pass
  Phone: (607) 347-2148
  Monday – Friday, 8 a.m. – 4:30 p.m.

- New York State Department of Environmental Conservation
  Division of Environmental Remediation
  625 Broadway
  Albany, New York
  Attn: Mr. William Ottaway
  Phone: (518) 402-9662
  Monday – Friday, 8 a.m. – 4:30 p.m.

- City of Ithaca
  108 East Green Street
  Ithaca, New York
  Attn: Mayor Carolyn Peterson
  Phone: (607) 274-6501

- Coal Tar Advisory Committee
  106 Washington Street
  Ithaca, New York
  Attn: Ms. Jutta Dotterweich
  Phone: (607) 272-1239

6.0 INTERESTED/AFFECTED PUBLIC

A mailing list has been developed that includes adjacent property owners and businesses, local and State elected officials, local media, and other identified interested parties. Names can be added to the mailing list by contacting any of the individuals listed below in Section 8.0 (Additional Information), or by completing an "interested party mailer" that is included with all NYSEG mailings for this site.

7.0 DESCRITION OF CITIZEN PARTICIPATION ACTIVITIES FOR EACH MAJOR ELEMENT OF THE INTERIM REMEDIAL MEASURES PROJECT

To facilitate the *Interim Remedial Measures* process, NYSEG in cooperation with NYSDEC and NYSDOH, will inform the public and local officials of planned remedial activities. Public participation will include at least the following:

- Distribution to those identified in Section 6.0 of this document of a fact sheet prepared by either NYSDEC or NYSEG describing the planned remedial activities.

- The *Interim Remedial Measures Work Plan* will be available for public review a minimum of 30 days prior to the public availability session.

- A public availability session will session will be held by NYSDEC, in conjunction with NYSDOH and NYSEG, prior to *Interim Remedial Measures Work Plan* finalization, to describe the planned activities at the site.

- Posting by NYSEG a phone number (1-800-572-1111) for public to call, between 7 a.m. – 7 p.m., with any questions or concerns that may arise during the project. A NYSEG customer service representative will answer calls. The NYSEG customer service representative will contact NYSEG project manager.

- Notice of public availability session will be provided either NYSDEC or NYSEG via mailing list and notices through the local media.

8.0 ADDITIONAL INFORMATION

For additional information about this project you may contact any of the following individuals:

NYSEG:

Mr. Robert L. Pass: Community Projects Manager
NYSEG
Ithaca – Dryden Road, P.O. Box 3287
Ithaca, New York 14852-3287
Phone: (607) 347-2148
E-mail: rlpass@nyseg.com

Mr. Bert W Finch: Remediation Project Manager
NYSEG
James A. Carrigg Center, 18 Link Drive, P.O. Box 5224
Binghamton, New York 13902-5224
Phone: (607) 762-8683
E-mail: bwfinch@nyseg.com

NYSDEC:

Mr. William S. Ottaway, P.E.: Project Manager
NYSDEC
625 Broadway
Albany, New York 12233-7013
Phone: (518) 402-9662
E-mail: wsottaway@gw.dec.state.ny.us

NYSDOH:

Ms. Henriette Hamel: Community Health & Safety Oversight
NYSDOH
217 South Salina Street
Syracuse, New York 13202-3592
Phone: (315) 477-8163
E-mail: hmh01@health.state.ny.us

APPENDIX C

CONSTRUCTION QUALITY ASSURANCE PLAN

NYSEG

NEW YORK STATE ELECTRIC & GAS CORPORATION
James A. Carrigg Center, 18 Link Drive, P.O. Box 5224
Binghamton, New York 13902-5224

Interim Remedial Measures

CONSTRUCTION QUAILTY ASSURANCE PLAN

For Removal of Coal Tar Impacted Soil
On Washington Street
Between W. Court and Cascadilla Streets

Associated With

Ithaca Court Street
Former Manufactured Gas Plant Site
City of Ithaca, Tompkins County, New York

March 2005

Prepared By:
NYSEG Environmental Compliance
Site Investigation and Remediation

Reviewed and Approved By:
New York State Department of Conservation
And New York State Department of Health

TABLE OF CONTENTS

1.0 INTRODUCTION

This *Construction Quality Assurance Plan* is designed to assure the quality of the project by monitoring, inspecting, and testing the processes and materials associated with the Interim Remedial Measures Work Plan (*Work Plan)* for removal of coal tar impacted soil on Washington Street between W. Court and Cascadilla Streets in the City of Ithaca, NY. This *Construction Quality Assurance Plan* supplements the *Work Plan.*

1.1. Construction Quality Assurance Plan Objectives

The objective of this *Construction Quality Assurance Plan* is to identify and standardize measures to provide confidence that activities in all phases of the project will be completed in accordance with the *Work Plan,* applicable local, state, and federal regulations and appropriate industry standards. The *Construction Quality Assurance Plan* will be implemented through inspection, sampling, testing, and review of services, workmanship, and materials. Specific objectives of this plan establish protocols and procedures for the following components:

1. **Responsibility and Authority** – The responsibility and authority of the key personnel involved in the completion of the project.

2. **Inspection and Testing Activities** – Establish the observations and implement inspections and tests that will be used to ensure that the construction activities for the project meet or exceed all design criteria, (i.e., *Work Plan,* and local, state, and federal regulations).

3. **Sample Strategies** – Establish responsibility for sampling activities and methods including frequency and acceptance criteria for ensuring that sampling meets criteria in the *Work Plan,* and local, state, and federal regulations).

4. **Documentation and Reporting** – Establish appropriate field documents (i.e., daily field log, photographic log, sampling log, and variances to the *Work Plan).*

2.0 RESPONSIBILITY AND AUTHORITY

Responsibilities of each member of the construction project team are described below.

2.1 Contractor: Sevenson Environmental Services, Inc.

The contractor is responsible for coordinating field operations of the project, including coordination of subcontractors, to comply with the requirements of the *Work Plan* and permitting agencies. The Contractor is responsible for completing and submitting documentation required by the *Construction Quality Assurance Plan* and also has the authority to accept or reject the materials and workmanship of any subcontractors at the site.

The contractor is also responsible to ensure a functional construction quality control organization is active during the project and provide support for the construction quality control system to perform inspections, tests, and retesting in the even of failure of any item of work, including that of the subcontractors, and to assure compliance with the contract provisions. The construction quality control system includes, but is not limited to, the inspections and tests required in the technical provisions of the *Work Plan,* and will cover all project operations.

2.2 Construction Quality Assurance Officer: Bert W Finch
Remediation Project Manager

The responsibility of the construction quality assurance officer is to perform those activities in the *Construction Quality Assurance Plan* deemed necessary to assure the quality of construction and support quality control efforts. The construction quality assurance officer will be on-site as required during construction activities. The responsibility of the construction quality assurance officer is to ensure the quality of construction meets or exceeds that defined by the *Work Plan* and identified in the *Construction Quality Assurance Plan.* Specific responsibilities of the construction quality assurance officer include:

- Directing and supporting the construction quality control representative inspection personnel in performing observations

and tests by verifying that the data are properly recorded, validated, reduced, summarized, and inspected.

- Evaluating the construction activities and the construction quality control representative's efforts.
- Evaluating sampling activities and efforts of the sampling quality assurance officer.
- Educating construction quality control inspection personnel on construction quality control requirements and procedures.
- Scheduling and coordinating construction quality assurance inspection activities.

2.3 Sampling Quality Assurance Officer: (To be determined)
Soil Sampling and Air-Quality Manager

The responsibility of the sampling quality assurance officer is to perform those activities in this *Construction Quality Assurance Plan, Work Plan, and Quality Assurance Project Plan* deemed necessary to assure the quality of sampling and testing and support quality control efforts.

To avoid conflicts of interest, the sampling quality assurance is performed by an entity other than the construction quality control, and provides the regulatory agencies an assurance that all sampling efforts, for both field and laboratory analysis, meet or exceed that defined by the *Work Plan* and identified in the *Construction Quality Assurance Plan.* The sampling quality assurance officer will report directly to the construction quality assurance officer.

Specific responsibilities of the sampling quality assurance officer include:

- Confine that the test data are properly recorded and maintained (this may involve selecting reported results and backtracking them to the original observation and test data sheets);
- Confine that the testing equipment, personnel, and procedures do not change over time or making sure that any changes do not adversely impact the inspection process; and

- Confine that regular calibration of testing equipment occurs and is properly recorded.
- Providing the construction quality control officer with up to date sampling results.

2.4 Construction Quality Control Representative: David M. Budosh
Project Coordinator

A construction quality control representative is to be on the worksite during the construction process, with complete authority to take any action necessary to ensure compliance with the *Work Plan* as necessary to achieve quality during the remediation project. The construction quality control representative will be the project coordinator. Specific responsibilities of the construction quality control representative include:

- *Work Plan* for clarity and completeness so that the construction activities can be effectively implemented.
- Verifying contractor's construction quality is in accordance with this *Construction Quality Assurance Plan.*
- Performing on-site inspection of the work in progress to assess compliance with the *Work Plan.*
- Prepare and log transportation manifest for the transportation of non-hazardous and Hazardous materials (i.e., soil, water, debris).
- Reporting the results of all observations and tests as the work progresses, modify materials and work to comply with the *Work Plan.*

This includes:

1. Providing a logbook for daily field construction, material shipments, and inspection results.
2. Review and interpretation of all data sheets and reports.
3. Identification of work that should be accepted, rejected, or uncovered for observation, or that may require special testing, inspection, or approval.

4. Rejection of defective work and verification that corrective measures are implemented.
5. Make observations and records that will aid in finalization of the *RI* Report.

- Reporting to the construction quality assurance officer results of all inspections including work that is not of acceptable quality or that fails to meet the *Work Plan*.
- Verify that the equipment used in testing meets the test requirements and that the test is conducted according to the proper standardized procedures.
- Verify that materials are installed as specified, except where necessary field modifications were required.
- Serves as the overall Project Emergency Coordinator and have ultimate authority in specifying and facilitating any contingency action during any potential emergencies when the *Contingency Plan* is implemented.

The construction quality control representative will report directly to the quality assurance officer.

2.5 Sampling Representative: Brian Balchikonis
Sampling Technician

A sampling representative, supplemented as necessary by additional personnel, is to be on the work site at all times during the construction process. The sampling representative reports directly to the sampling quality assurance officer. Specific responsibility of the sampling representative include:

- Set up and operation of the weather station. Daily recording of meteorological data.
- Daily calibration and operation of real time total volatile organic compounds (VOCs), suspended particulate and speciated BTEX (benzene, toluene, ethylbenzene, and xylenes) monitoring equipment. Daily records of real time air quality data. Informs project coordinator and on-site New York State Department of Environmental Conservation

(NYSDEC) and New York State Department of Health (NYSDOH) representatives when concentration of air contaminants approaches or exceeds action levels specified in the *Work Plan.* Submit at the end of the day real-time air quality data in an electronic format to Henriette Hamel, NYSDOH at hmh01@health.state.ny.us; William Ottaway, NYSDEC at wsottaway@gw.dec.state.ny.us; Steve Maybee, Tompkins County Department of Health at smaybee@tompkins-co.org; Mayor Carolyn Peterson, City of Ithaca at mayor@cityofithaca.org; and Bert W Finch, NYSEG at bwfinch@nyseg.com.

- Daily calibration and operation of the portable gas chromatograph (Perkin-Elmer Voyager) per guidelines specified in the *Quality Assurance Project Plan and Work Plan.* Compiling calibration and results data into spreadsheets. E-mailing compiled data along with chromatograms to Sampling Quality Assurance Officer daily.
- Collection, packaging and shipment soil and water samples per guidelines specified in the *Quality Assurance Plan and Work Plan.* Maintaining master log of all air, water, and soil samples collected. Faxing copies of the chain of custody sheets to the Sampling Quality Assurance Officer daily. Tracking confirmation sample points and construct a map depicting conformation sample point locations.
- Consultation with Sampling Quality Assurance Officer for all technical questions, problems, considerations, or requests for supplies or equipment.
- Maintaining and organizing on-site field specialist equipment and supplies storage area.
- Performing the duties of Assistant Health & Safety Officer.

3.0 FIELD QUALITY CONTROL INSPECTIONS, TESTING, AND SAMPLING REQUIREMENTS.

The definable features of work identified below are described in Section 4 of the *Work Plan.* This section of this *Construction Quality Assurance Plan* describes the anticipated inspection, testing, and sampling requirements of these definable feature works.

3.1 Site Preparation

Elements of the site preparation, including clearing and grubbing will be inspected, as they occur to assure compliance with the *Work Plan.*

3.2 Equipment Set-up

All materials and equipment are designed to meet specific project needs. Each delivery of materials and/or equipment will be inspected upon arrival by the construction quality control representative and stored at a designated area of the site. Equipment will be set-up per the work plan design and drawings.

3.3 Excavation Activities

Excavation activities will comply with Occupational Safety and Health Adminstration's (OSHA's), "Hazardous Waste Operations and Emergency Response" (29 CFR 1910.120) and Excavations (29 CFR 1926 Subpart P). Excavation activities undertaken during the *IRM* will be in accordance with the *Work Plan.* Limits of the excavation will be measured by the construction quality control representative upon completion of the excavation for documentation drawings. Confirmation Sampling is covered in a separate sampling assurance plan.

3.4 Loading of Materials for Transportation

Materials will be loaded with an excavator into dump trailers for transportation to permitted disposal facility. Polyethylene sheeting will be placed between the stockpile or excavation and the truck to retain any material spilled. The spilled material will be added back to the excavation following completion of loading of each truck. The loading area will be visually inspected to confirm that material remains within the bermed stockpile area.

3.5 Stockpiles of Materials

Stockpiles will be inspected a minimum of once per day to assure that covers are in place and intact, and standing water is removed from the liner as needed.

Covers will be replaced as needed to prevent precipitation from contacting the material and dust from being generated by the material.

3.6 Site Restoration

Site restoration will be observed by the construction quality control representative. The escavation noted above will be backfilled with bank-run gravel from a New York State Department of Transportation approved source as specified in the *Work Plan.* The area will be topped with crusher-rum material from a quarry. Backfilling and compacting of the excavation will be observed and documented by the construction quality control representative. No stockpiles will remain on-site at the end of the project. All affected areas will be graded to match existing grades.

4.0 DOCUMENTIATON AND REPORTING REQUIREMENTS FOR CONSTRUCTION QUALITY ASSURANCE PLAN ACTIVITIES

The value of this *Construction Quality Assurance Plan* will be assured by proper documentation techniques. The construction quality assurance plan inspection team will be guided by data sheets, schedules, and checklists. The documentation of the inspection activities will facilitate the adherence to the design documents and maintain the level of reporting required by the parties involved in the project.

4.1 Inspection Reports

In general, documentation may involve daily summary and photographic reports including sketches of a particular section or activity, inspection log, corrective measure summary, or schedule summary. Specific documentation procedures are listed in the following subsections. The construction quality control representative will ensure that one set of full-sized contract drawings, including buried or concealed structures and utilities, which are revealed during the course of site work. The construction quality control representative shall initial each variation or revision. The construction quality control representative shall, upon completion of site work, certify the accuracy of the record drawings, and submit them to the project manager.

4.2 Daily Field Log

The construction quality control representative shall prepare a Daily Field Log identifying work force and their labor hours, location, and description of work performed, lost time accidents, equipment left on job site, equipment/materials received and if applicable, submittal status, non-compliance notices received, errors and/or omission in plans and specifications, visitors to the job site, weather conditions and temperatures, and any other pertinent information.

4.3 Photographic Log

The photographic log is designed to document construction activities by still photos. Photographic log may also be used to photographically record activities recorded in a daily construction log or an as-built sketch log. The construction quality control representative will collect photographs.

4.4 Daily Sampling Log

The daily sampling log is designed to document all sampling activities and how they correspond to the *Work Plan*. All observations, field and/or laboratory tests will be recorded on a daily sampling log. It is important to note recorded field observations may take the form of notes, charts, sketches, or photographs. The sampling technician will complete the daily sampling log.

4.5 Variances to Work Plan

Required changes to the *Work Plan* will be processed through the use of a variance log. Approval form the NYSEG project manager is required to recommend a change to the *Work Plan*. An amendment to the *Work Plan* will be developed for acceptance and the approval by NYSDEC and NYSDOH.

4.6 Final Engineering Report

At the completion of the project the Project Manager/Construction Quality Assurance Officer will prepare and submit a Final Engineering Report to the NYSDEC. This report will include a summary of all of the Daily Field Construction Report's, Photographic Log, Sampling Log, Material Disposition

Log, and Variances to *Work Plan.* The Final Engineering Report will be signed and certified by a professional engineer that all activities that comprised in full accordance with NYSDEC approved *Work Plan* and the NYSDEC Order On Consent Index #DO-0002-9309.

APPENDIX D

QUALITY ASSURANCE PROJECT PLAN

NYSEG

NEW YORK STATE ELECTRIC & GAS CORPORATION
James A. Carrigg Center, 18 Link Drive, P.O. Box 5224
Binghamton, New York 13902-5224

Interim Remedial Measures

QUALITY ASSURANCE PROJECT PLAN

For Removal of Coal Tar Impacted Soil
On Washington Street
Between W. Court and Cascadilla Streets

Associated With

Ithaca Court Street
Former Manufactured Gas Plant Site
City of Ithaca, Tompkins County, New York

March 2005

Prepared By:
NYSEG Environmental Compliance
Site Investigation and Remediation

Reviewed and Approved By:
New York State Department of Conservation
And New York State Department of Health

TABLE OF CONTENTS

1.0 INTRODUCTION

This *Quality Assurance Project Plan* provides a description of the sampling and laboratory procedures/protocols to be used in support of the Interim Remedial Measures Work Plan *(Work Plan)* associated with the Ithaca former manufactured gas plant site, City of Ithaca, Tompkins County, New York. The fundamental purpose of the *Quality Assurance Project Plan* is to ensure that quality analytical data will be generated to support the project in a manner consistent with the Data Quality Objectives as specified herein. This *Quality Assurance Project Plan* is designed to be used in conjunction with a New York State Department of Environmental Conservation (NYSDEC) approved *Work Plan* with regards to specific project objectives and field sampling activities. To the extent that discrepancies exist between this *Quality Assurance Project Plan* and the *Work Plan,* the *Work Plan* shall control.

2.0 DATA QUALITY OBJECTIVES

Data quality objectives are statements, expressed in either qualitative or quantitative terms, which address the appropriate level of data quality for a project. The quality of data generated must be suitable to support the decisions used to achieve the overall goals as delineated in the *Work Plan.* The general project data quality objectives are summarized in this section, with detailed information given throughout this *Quality Assurance Project Plan* and associated sections of the specific project *Work Plan*. The overall data quality objectives of the project are:

- To ensure that samples collected are representative of the sample population.
- To provide detection limits for the selected analytical methods, which are below the established cleanup objectives or regulatory limits.
- To measure and document precision and accuracy using procedures established by the laboratories, the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) and U.W. Environmental Protection Agency (EPA) approved analytical methods.

- To ensure that a NYSDOH ELAP and NYSDOH ELAP CLP certified laboratory will conduct all soil/residues and wastewater analyses.
- To ensure that all final site verification samples (confirmatory samples) are reported with ASP Category B deliverables.

3.0 SAMPLE COLLECTION

3.1 Soils

Soil samples will be collected as described in the appropriate sections of the *Work Plan* or *Pre-remediation In Situ Sampling and Analysis Work Plan.* These sections described the collection procedures, sampling equipment, locations and frequencies for the soil samples. These schedules are based on the requirements for soil disposal or confirmation of excavation endpoint.

All sampling equipment will be properly disposed or decontaminated before being reused (see Section 9.1.1). Samples will be collected and placed in pre-cleaned sample containers provided by the laboratory performing the analysis. All necessary preservatives will be added to the sample containers at the laboratory prior to being shipped to the site (see Section 3.3). Samples will be stored at 4° Celsius until delivered to, and analyzed by the laboratory. This will be accomplished by utilization of an on-site refrigerator and/or coolers with ice. (When collecting composite samples for toxicity characteristic leachate procedure (TCLP) volatile analysis, volatilization will be minimized by covering the sample compositing container and placing it within a cooler filled with ice between grab sample additions.)

3.2 Wastewater Sampling

Wastewater samples will be collected as described in the appropriate sections of the *Work Plan.* These sections describe the collection procedures, sampling equipment, locations and frequencies for the wastewater samples. Samples of wastewater will be analyzed before being transported to a permitted facility for proper treatment and disposal.

Samples will be transferred directly into pre-cleaned sample collection containers, which are supplied, by the laboratory performing the analyses. All

necessary preservatives will be added to the sample containers at the laboratory prior to being shipped to the site (see Section 3.3). Samples will be stored at 4° Celsius until delivered to, and analyzed by the laboratory. This will be accomplished by utilization of an on-site refrigerator and/or coolers with ice.

3.3 Sample Containers and Preservatives

Sample containers and preservatives will be provided by the contracted laboratories and stored on-site in a clean and dry location. Sample containers and preservatives by matrix and analysis are listed in Table A (next page).

TABLE A
SAMPLE CONTAINERS & PRESERVATIVES

Analysis	Matrix	Container	Preservative
TCLP Semivolatiles	Soil	500 ml glass*	4° Celsius
TCLP Metals	Soil	500 ml glass*	4° Celsius
TCPL Pesticides/Herbicides	Soil	500 ml glass*	4° Celsius
Reactive Cyanide	Soil	500 ml glass*	4° Celsius
Reactive Sulfide	Soil	500 ml glass*	4° Celsius
TCLP Volatiles	Soil	20 ml glass	4° Celsius
Total PAHs	Soil	250 ml glass	4° Celsius
Total BTEX (benzene, toluene, ethylbenzene, xylenes)	Soil	125 ml glass	4° Celsius
Total Metals	Soil	250 ml glass**	4° Celsius
Percent Sulfur	Soil	250 ml glass**	4° Celsius
PCBs	Soil	500 ml glass***	4° Celsius
Ignitability	Soil	500 ml glass***	4° Celsius
BTU/lb	Soil	500 ml glass***	4° Celsius
Flashpoint	Soil	500 ml glass***	4° Celsius
Percent Solids	Soil	500 ml glass***	4° Celsius
pH	Soil	500 ml glass***	4° Celsius
Reactivity	Soil/Water	500 ml glass***	4° Celsius
Corrosivity	Soil/Water	500 ml glass***	4° Celsius
Total Metals	Water	500 ml Plastic	HNO_3 to pH < 2
Semivolatiles	Water	1000 ml amber glass	4° Celsius
Pesticides/Herbicides	Water	1000 ml amber glass	4° Celsius
Volatiles	Water	40 ml glass	4° Celsius or HCl to pH > 12
Paint Filter	Water	500 ml glass	4° Celsius
Total Cyanide	Water	500 ml Plastic	4° Celsius NaOH to pH > 12

* May be analyzed from same sample container and/or extract.
** May be analyzed from same container.
*** May be analyzed from same container.
Note: All glass containers will be sealed with Teflon liner caps. All water samples for organic fractions will be collected in duplicate.

3.4 Sampling Holding Times

The following Tables identify samples by type and matrix and theirs related holding times.

TABLE B
WASTE CHARACTERIZATION SAMPLES

Sample Type	Matrix	Holding Time*
TCLP Pesticides/Herbicides	Soil	5 days (extraction) 40 days (after extraction)
TCLP Semivolatiles	Soil	5 days (extraction) 40 days (after extraction)
TCLP Mercury	Soil	5 days (extraction) 28 days (after extraction)
TCLP Metals	Soil	180 days
TCLP Volatiles	Soil	14 days
Reactive Sulfide	Soil	7 days
Reactive Cyanide	Soil	14 days
PCBs	Soil	5 days (extraction) 40 days (after extraction)
Ignitability	Soil	NA
Reactivity	Soil	Cyanide 14 days Sulfide 7 days
Corrosivity	Soil	2 days
Percent solids	Soil	NA

* Samples will be analyzed on a priority basis and reported within 10 days of collection or the maximum holding time, whichever is less.

TABLE C
WASTEWATER SAMPLES

Sample Type	Matrix	Holding Time*
Semivolatiles	Water	5 days to extraction 40 days after extraction
Metals	Water	180 days
Total Cyanide	Water	14 days
Paint Filter	Water	NA
Reactivity	Water	Cyanide 14 days Sulfide 7 days
Corrosivity	Water	Analyze immediately
Volatiles	Water	14 days

* Samples will be analyzed on a priority basis and reported within 5 days or the maximum holding time, whichever is less.

TABLE D
POST REMEDIATION CONFIRMATORY SAMPLES

Sample Type	Matrix	Holding Time
Total Benzene	Soil	7 days
PAHs	Soil	5 days to extraction 40 days after extraction
TCL Volatiles	Soil	5 days to extraction 40 days after extraction
TCL Semivolatiles	Soil	5 days to extraction 40 days after extraction
Total Mercury	Soil	26 days
Total Lead	Soil	26 days

1. Asp Category B deliverables required. Duplicates, matrix spike, and matrix spike duplicate samples will be collected at a rate of ten percent.
2. Samples will be analyzed on a priority basis and reported within 48 hours or the maximum holding time, whichever is less.
3. TCL volatiles and semivolatiles will be determined at a minimum rate of 1 every group of 10 confirmation samples or portion thereof.

4.0 SAMPLE CUSTODY, IDENTIFICATION & TRACKING

4.1 Holding Times and Sample Transport

Since the samples will be analyzed at priority turn around, no exceedance of holding time is expected. Holding times will be calculated from the time the sample is collected to the subsequent extraction, if necessary, or analysis. All samples will be delivered to the laboratory by same day courier or overnight delivery in sealed coolers with ice.

4.2 Chain-of-Custody

A Chain-of-Custody will accompany all samples from the point of sampling to delivery of the samples to the laboratory. The Chain-of-Custody will be a record of the location where the sample was collected, the data and time collected, number of containers collected, type(s) of analyses requested, special remarks or requests, and the signature of each custodian of the samples. The complete Chain-of-Custody will be included in all hard copies of reports. See Attachment 1 for sample Chain-of-Custody Form.

Upon sample receipt, laboratory personnel will be responsible for sample custody. The laboratory sample custodian will verify sample integrity and compare the cooler contents against the field Chain-of-Custody. If a sample container is broken or leaking it will be noted on the Chain-of-Custody form and NYSEG project personnel will be immediately notified. If the sample custodian observes any labeling or descriptive errors, NYSEG project personnel will be contacted immediately to resolve and discrepancies. After all discrepancies (if any) are resolved, the laboratory will acknowledge receipt of the samples (i.e., by signing and dating the Chain-of-Custody) and the completed Chain-of-Custody will be included in all hard copies of reports and become a permanent part of the project records.

4.2.1 Sample Identification

Each sample collected during the project will have a unique identification number. This number, date of collection and type of analysis will be placed on each sample container after the sample is collected. See Attachment 2 for sample identification naming convention for air, water, and confirmatory samples. A Site map will be used throughout the project to denote the area or point that a confirmatory sample represents. Each confirmatory sample will be assigned a sample point number that will appear as characters 9 & 10.

4.3 Laboratory Sample Tracking

Each laboratory has an internal tracking mechanism to ensure that each sample received has a unique identification number and that results generated and reported for each sample correspond to the identification number assigned at the laboratory.

5.0 CALIBRATION PROCEDURES

Each analysis will be performed in accordance with NYSDOH ELAP (environmental Laboratory Approval Program) sanctioned methods or equivalent U.S. EPA analytical procedures. Each procedure specifies the method of frequency of calibration necessary to perform accurate and precise analyses. Each analytical instrument verifies the Minimum Detection Limit at least every six months as prescribed by the NYSDOH ELAP. The calibration of the instruments

is verified at the beginning and end of each auto sampler run. Gas Chromatograph/Mass Spectrometers are tuned and calibrated every 12 hours, at a minimum.

All field equipment, for real time and speciated real time air analyses will be calibrated daily, in accordance with manufacturer's recommendations. All equipment will be calibrated more frequently if conditions warrant. The total organic analyzer equipped with a photo ionization detector (PID) will be used to measure volatile organic vapors will be calibrated to benzene with a 10 ppm isobutylene air standard. The DataRam™ or a Thermo Andersen ADR-1200s used to measure particulates will be calibrated to zero with filtered air sample. The portable gas chromatograph unit will be used to measure the BTEX (benzene, toluene, ethyl benzene and xylenes) compounds and will be calibrated to a BTEX standard.

6.0 ANALYTICAL PROCEDURES

6.1 Laboratory Analyses

The following Table shows the analytical method to be used for each analyte or group of analytes for the Project:

TABLE E
ANALYTICAL METHODS

Analyte	Analytical Method
TCLP Extractions	SW 846 Method 1311
TCLP Volatiles	SW 846 Method 8260
TCLP Semivolatiles	SW 846 Method 8270
TCLP Metals	SW 846 Method 6000/7000 Series
TCLP Pesticides/Herbicides	SW846 Method 8080/8151
Polycyclic Aromatic Hydrocarbons (Table F)	SW 846 Method 8270
Total Volatiles	SW 846 Method 8260
Total Semivolatiles	SW 846 Method 8270
Total Metals	SW 846 Method 6000/7000 Series
PCBs	SW 846 Method 8082
Reactive Sulfide	SW 846 Chapter 7.3.3.2
Reactive Cyanide	SW 846 Section 7.3.3.2
Percent Sulfur	ASTM D-129
BTU/lb	ASTM D-215
Flashpoint	ASTM D-93
Ignitability	SW 846 Method 1030
Reactivity	SW 846 Section 7
Corrosivity	SW 846 Section 7
Percent Solids	ASP Method D-V-Section IX
pH	SW 846 Method 9045
Total Cyanide	SW 846 9012
Paint Filter Test	SW 846 9095

TABLE F POLYCYCLIC AROMATIC HYDROCARBON (PAH) ANALYTE LIST
Parameter
Naphthalene
2-Methylnaphthalene
Acenaphthalene
Acenaphthylene
Fluorene
Phenanthrene
Anthracene
Fluoranthene
Dibenzofuran
Pyrene
Benzo (g,h,i) perylene
Benzo (a) anthracene*
Chrysene*
Benzo (b) fluoranthene*
Benzo (k) fluoranthene*
Benzo (a) pyrene*
Indeno (1,2,3 cd) pyrene*
Dibenzo (a,h) anthracene*
***Carcinogenic PAHs (cPAHs)**

6.2 Laboratory Selection

The laboratory chosen for the project must be certified, and maintain certification, under the NYSDOH ELAP and NYSDOH ELAP CLP for analyses of solid and hazardous waste. Only analytical laboratories that have experience in MGP projects or similar projects will be considered for use. NYSEG has contracted with (To Be Determined) to perform laboratory services for this *Work Plan.*

7.0 DATA REDUCITON VALIDATION AND REPORTING

7.1 Data Reduction

7.1.1 Field Data Collection

Real time field data collected during sampling events will include qualitative information regarding the texture, appearance, odors, and any other observations made while soil and water samples are being collected. Meteorological data and current site activity will be noted while collecting data for real time air monitoring. These observations will be recorded in the field logbook.

7.1.2 Laboratory Data Collection and Reduction

A significant portion of the analyses performed requires the use of automated laboratory instrumentation. Raw data collected from the instruments detectors will be converted to standard units of mg/Kg for solid matrices and mg/L for water. All raw data will be stored in electronic form and in laboratory notebooks, in case the analysis needs to be recreated. Raw data for all analyses will be archived for a minimum of four years.

7.2 Data Review

All analytical data will be verified for precision and accuracy utilizing the laboratory's in-house Quality Assurance/Quality Control programs. In addition, all data packages will be reviewed by NYSEG project personnel to insure that all data deliverables have been properly provided.

7.3 Full Data Validation

The full third party data validation process consists of a formal systematic review of analytical results and quality control documentation with regards to the parameters cited in Section 8.3. On the basis of this review, a third party data validator will make judgments and express concerns on the quality and limitations of the specific data and the validity of the data package as a whole. The data validator prepares documentation of his or her review using the standard USEPA Inorganics Regional Assessment and Organics Regional Assessment forms to summarize deficiencies and general laboratory performance. These forms are accompanied by appropriate supplementary documentation, which identifies specific problems.

Since a full data validation would typically be used for the purposes of litigation, this level of review may surpass the scope of work necessary for the project. Therefore, any full data validation for analytical results of confirmatory samples will be performed at NYSEG's discretion. Confirmatory sampling data will be archived in the event that it becomes necessary to perform a full data validation at a future date.

7.4 Data Usability Summary Report

A Data Usability Summary Report provides a thorough review and evaluation of analytical data without the formality of a full third party data validation. A Data Usability Summary Report for the analytical results of confirmatory samples will be generated in lieu of a full data validation to verify that the proper data deliverables and procedures have been rendered in accordance with the data quality objectives of the *Work Plan.*

7.5 Reporting

Final reports for analytical data will be reviewed and accepted by NYSEG prior to submission to the NYSDEC. Reports for analyses performed under the ELAP protocol will contain results sheets for the sample analyzed. These reports must include a minimum:

- NYSEG Sample ID number;
- Laboratory sample ID number;
- Sample collection date;
- Extraction or digestion date (if applicable);
- Date Analyzed;
- Analytical method;
- Analytical results (with units clearly identified);
- Results of laboratory blank and field blanks;
- Results of spikes, matrix spikes, and duplicates;
- Surrogate recoveries (if applicable);
- Complete Chain-of-Custody forms; and
- File log sheets (if available)

8.0 QUALITY CONTROL CHECKS

8.1 Field Quality Control

8.1.1 Decontamination Procedures for Confirmation Sampling

The following decontamination procedure will be followed for all non-disposal sampling equipment before being reused.

- Equipment will be washed thoroughly with a non-phosphate detergent.
- The equipment will then be rinsed with analyte-free water.
- The equipment will be rinsed with a reagent grade methanol solution diluted with analyte-free water.
- If the equipment is being used for the collection of samples for metals analyses it will then be rinsed with a 10% reagent grade nitric acid solution.
- The equipment will be rinsed with analyte-free water.

After decontamination, equipment will be carefully stored to avoid contamination between sampling events.

8.2 Laboratory Quality Control

Each laboratory is NYSDOH Certified for the analyses they will perform. Each analyst must complete a start-up proficiency procedure to demonstrate their capability to perform accurate and precise analyses on each type of instrument they operate. In addition, each laboratory must accurately analyze samples provided by NYSDOH on a semi-annual basis to maintain certification. The laboratories have internal quality control officers that review all methodologies and implement corrective action, including reanalyzing samples, which do not pass, established laboratory quality control criteria.

Laboratory quality control procedures are specified in the analytical methods. These specifications include the type of laboratory quality control check required, compounds, and concentrations to be used, and laboratory quality control acceptance criteria.

Laboratory quality control checks will include (where specified by method):

- Calibration Standards
- Methods Blanks
- Matrix Spike/Matrix Spike Duplicates
- Surrogate Spikes
- Internal Standards
- Laboratory Duplicates
- Calibration Check Standards
- Laboratory Control Samples

9.0 PREVENTATIVE MAINTENANCE

9.1 Field Instruments and Equipment

Equipment instruments, tools, gauges, and other items requiring preventative maintenance will be serviced in accordance with the manufacturer's specified recommendations or written procedures developed by the operators. All field equipment service will be conducted by qualified personnel. Prior to any field sampling, each piece of field equipment will be inspected to ensure that it is operational. If the equipment is not operational, it must be repaired prior to use. All equipment which required charging or batteries will be fully charged or have fresh batteries at the start of the project. An equipment repair/maintenance log will be kept for each field instrument. Any non-operational/non-repairable field equipment will be replaced.

9.2 Laboratory Instruments and Equipment

Each laboratory has an instrument/equipment maintenance program, which includes procedures for daily, weekly, monthly, or annual routine maintenance. In addition, maintenance is performed if the accuracy and/or precision of the instrument are in question.

9.2.1 *Instrument Maintenance*

Preventative maintenance of laboratory instruments will be conducted in accordance with the manufacturer's guidelines or written procedures developed by the operators. All instrument service will be performed by qualified personnel. To minimize potential downtime, the laboratory will maintain a sufficient supply of critical spare parts for its instruments and, where practical, maintain a service contract for rapid instrument repair. Wherever possible, the laboratory will retain backup instrumentation. An instrument repair/maintenance log will be maintained for each instrument.

9.2.2. *Equipment Monitoring*

On a daily basis, the operation of the laboratory equipment (i.e., balances, ovens, refrigerators, water purification systems, etc.) will be checked and documented. Any discrepancies will be immediately reported to the appropriate laboratory personnel for resolution.

ATTACHMENT 1

NYSEG CHAIN OF CUSTODY RECORD

Laboratory_____

Project Location: _____
Samplers: _____
Affiliation: _____

Sample ID Code	Type	Matrix	Collection Date/Time	No. of Con-tainers											Remarks

Matrix Code: L=Liquid; S=Solid; A=Air

Relinquished by:	Loc:	Date:	Time:	Seals Intact
Received by:	Loc:	Date:	Time:	Y N NA
Relinquished by:	Loc:	Date:	Time:	Seals Intact
Received by:	Loc:	Date:	Time:	Y N NA

Special Instructions / Remarks: Return Cooler (s) _____ and Foam (s) _____ or Service Charge will be applied.

Delivery Method: In Person Common Carrier(specify) Lab Courier Other(specify)

ATTACHMENT 2

SAMPLE IDENTIFICATION
NAMING CONVENTION FOR SOIL AND WATER SAMPLES

SYSTEM CODING

First & Second = Site	Ithaca Court Street	IC
Third & Fourth = Source	Excavation	EX
	Stockpile	SP
	Frac Tank	FT
	Poly Container	PC
	Metal Barrel	MB
	Roll Off Container	RO
	Waste Wrangler	WW
	Test Pit	TP
	Boring	BO
	Geoprobe	GP
Fifth & Sixth = Location	Sidewall Sample	SW
	Bottom Sample	BM
	Waste Soil	WS
	Wastewater	WW
	Debris	DB
Seventh & Eighth = Relative Depth	Surface Soil	00
	Depth below Ground	02
	Non-Applicable	NA
Ninth, Tenth & Eleventh =	Sample Number	005

EXAMPLE: Ithaca Court Street; Excavation; Sidewall; 2 ft below ground; and sample number

SAMPLE IDENTIFICATION: ICEXSW02005

FORMER MANUFACTURED GAS PLANT SITE **OR** **FORMER MANUFACTURED GAS PLANT SITE DISPOSAL AREA**	
Site	*Code*
Albion Ingersoll Street	AI
Auburn Clark Street	AC
Auburn Green Street	AG
Auburn McMaster Street	AM
Binghamton Court Street	BC
Binghamton – Johnson City	BJ
Binghamton Washington Street	BW
Clyde Lock Street	CL
Corning Chestnut Street	CC
Cortland/Homer South Main Street	CH
Dansville Ossian Street	DO
Elmira Madison Avenue	EM
Elmira Water Street	EW
Geneva Border City	GB
Geneva Wadsworth Street	GW
Goshen West Main Street	GS
Granville North Street	GR
Ithaca Cayuga Inlet	II
Ithaca Court Street	IC
Ithaca First Street	IF
Lockport State Road	LS
Lockport Transit Street	LT
Lyons Water Street	LW
Mechanicville Central Avenue	MC
Mechanicville Coons Crossing	ME
Mechanicville Willow Glen MGP Disposal Site	MW
Newark Water Street	NW
Norwich Birdsall Street	NB
Oneonta Gas Avenue	OG
Owego East Main Street	OE
Palmyra Park Drive	PP
Penn Yan Jackson Street	PJ
Penn Yan Water Street	PW
Plattsburgh Bridge Street	PB
Plattsburgh Saranac Street	PS
Seneca Falls Fall Street	SF
Warsaw Court Street	WC
Waterloo East Main Street	WE
Waterloo Babbott Street	WB

APPENDIX E

TRANSPORTATION OF SOLID OR LIQUID WASTE

NYSEG

NEW YORK STATE ELECTRIC & GAS CORPORATION
James A. Carrigg Center, 18 Link Drive, P.O. Box 5224
Binghamton, New York 13902-5224

Interim Remedial Measures

TRANSPORTATION OF SOLID OR LIQUID WASTE

For Removal of Coal Tar Impacted Soil
On Washington Street
Between W. Court and Cascadilla Streets

Associated With

Ithaca Court Street
Former Manufactured Gas Plant Site
City of Ithaca, Tompkins County, New York

March 2005

Prepared By:
NYSEG Environmental Compliance
Site Investigation and Remediation

Reviewed and Approved By:
New York State Department of Conservation
And New York State Department of Health

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1.0 SCOPE OF WORK

This Specification is for the transportation of solid or liquid non-hazardous and hazardous waste for removal of coal tar impacted soil on Washington Street between W. Court and Cascadilla Streets associated with Ithaca Court Street former manufactured gas plant site in the City of Ithaca, Tompkins County, New York. All transportation must be in accordance with the Order on Consent Index Number D0-0002-9309 with New York State Department of Environmental Conservation (NYSEDC) and any other applicable Federal, State, and Local Laws.

2.0 WORK BY TRANSPORTATION CONTRACTOR

The transporter contractor shall provide all necessary supervision, training, permits, hazardous waste manifest (when required), labor, personal protective equipment (PPE), tools, equipment, consumable materials, and expendable materials, to transport solid or liquid waste to a disposal facility as detailed herein.

3.0 GENERAL WORK CONDITIONS

3.1 The transporter shall comply with all applicable provisions of NYSDEC Regulation, 6 NYCRR Part 364 "Waste Transporters Permit", Title 6 of the Official Compilation of codes, Rules and Regulations.

3.2 The transporter shall comply with all applicable provisions of NYSDEC Regulation, 6 NYCRR Part 372 "Hazardous Waste Manifest System and Related Standards of Generators, Transporters and Facilities", Title 6 of the Official Compilation of codes, Rules and Regulations.

3.3 The transporter shall comply with all applicable provisions of New York State Department of Transportation (NYSDOT), the New York State Department of Motor Vehicle (NYSDMV), and/or any other applicable Federal, State, and Local Laws.

3.4 The transporter shall comply with all applicable provisions of Occupational Safety and Health Act or Administration (OSHA) 29 CFR 1910.120 "Hazardous Waste Operations Health & Emergency Response".

3.5 The transporter shall develop and implement a written Health & Safety Plan for their drivers that address potential exposure to manufactured gas plant site residuals.

3.6 The transporter shall adhere to the following rules while working on a manufactured gas plant site project and waste disposal facility.

3.6.1 Any truck found unacceptable by NYSEG project coordinator or Contractor health & safety officer will be rejected. Any cost for rejected trucks shall be born by the transporter. If the NYSDEC project oversight finds any truck unacceptable, they should bring it to the attention of NYSEG project coordinator.

3.6.2 The truck drivers will report their arrival to NYSEG project coordinator.

3.6.3 Truck drivers are generally restricted to their trucks and the designated waiting areas. Drivers are not permitted access to the manufactured gas plant site project without express permission from NYSEG project coordinator.

3.6.4 Trucks drivers will don **HARD HATS, SAFETY GLASSES, SAFETY SHOES, and GLOVES,** as a minimum for personal protection.

3.6.5 The drivers of all trucks and roll off containers transporting hazardous solid waste or conditionally exempt manufactured gas plant site remediation waste will line the entire box (to top of side boards) with 6-mil thick polyethylene sheeting. Trucks transporting non-hazardous waste may be lined as previously stated. All trucks will have a watertight tailgate that has a gasket between the box and tailgate or driver will apply caulking between the box and tailgate.

3.6.6 All trucks require working audible and visual backup signals.

3.6.7 When loading or when directed by NYSEG project coordinator, the truck engine should be shut off. Truck may be restarted and driven away only after the "all clear" direction from the loading operator or a site representative.

3.6.8 In residential or other areas where the exhaust and/or noise could be a nuisance the truck engine should be shut off.

3.6.9 No truck will be loaded above the sideboards and no waste will be spilling out of the truck. Before trucks leave the loading areas the truck exterior and tires will be cleaned (by site workers) from waste being loaded.

3.6.10 NYSEG remedial workers will reposition the cover bars over the waste material. **DRIVERS WILL NOT WALK OVER WASTE MATERIAL.**

3.6.11 Drivers will cover loads before leaving the loading area with a solid fabric (i.e., vinyl, reinforced polyethylene) cover that covers the entire load.

3.6.12 Obey traffic signs and notices (obey the posted speed limit).

3.6.13 Obey rules posted on the site and/or any site specific *Health & Safety Plan* for all project personnel.

3.6.14 Report any accidents to the NYSEG project coordinator and cooperate with any subsequent accident investigation.

3.6.15 No children under 16 years of age are allowed on manufactured gas plant site projects.

3.6.16 No passengers are allowing in the Contamination Reduction Zone (loading area).

3.6.17 Slow down and be extra cautious during times of poor weather (i.e., rain, fog, snow).

3.6.18 Take extra care around blind corners (watch for pedestrians and construction equipment).

3.6.19 Smoking, eating, and/or drinking in not permitted within the Contamination Reduction Zone. Smoking, eating, and/or drinking is permitted in designate areas of the Support Zone.

3.6.20 After Disposal of waste, the transporter is responsible for properly decontaminating their truck or trailer, trailer or tanker, and roll off containers.

4.0 TRUCK ROUTE

Trucks arriving from the north on New York State Routes 13 & 34 will turn left (east) onto Buffalo Street; then turn left (north) on Washington Street. Once loaded trucks will take left on either Esty or Cascadilla Streets. Trucks will then take either left (north) or right (south) on New York State Routes 13 & 34.

APPENDIX F

CONTINGENCY PLAN

NYSEG

NEW YORK STATE ELECTRIC & GAS CORPORATION
James A. Carrigg Center, 18 Link Drive, P.O. Box 5224
Binghamton, New York 13902-5224

Interim Remedial Measures

CONTINGENCY PLAN

For Removal of Coal Tar Impacted Soil
On Washington Street
Between W. Court and Cascadilla Streets

Associated With

Ithaca Court Street
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Prepared By:
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Reviewed and Approved By:
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And New York State Department of Health

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1.0 CONTINGENCY PLAN

This *Contingency Plan* is designed to address potential emergencies that may arise as a result of operations during the *Interim Remedial Measures Work Plan For Removal of Coal Tar Impacted Soil on Washington Street Between W. Court and Cascadilla Streets Associated With Ithaca Court Street Former Manufactured Gas plant Site*. This Plan supplements the *Interim Remedial Measures Work Plan* and the *Health and Safety Plan*.

The NYSEG project coordinator and the Contractor health & safety officer will be made aware of the emergencies and coordinate any response activities carried out at the site. The NYSEG project coordinator will serve as the overall Project Emergency Coordinator and have the ultimate authority in specifying and facilitating any contingency action.

If the NYSEG project coordinator is not able to perform these duties, he will specify another senior individual to serve in this capacity. The NYSEG project coordinator will become familiar with contingency plans developed by each contractor and subcontractor.

1.1 Identifying the Hazards and Assessing the Risk

The objectives during and emergency shall be to protect human health and safety and then the environment. The NYSEG project coordinator and the Contractor health & safety officer will identify possible hazards to human health or environment that may result from any emergency situation. The NYSEG project coordinator and the Contractor health & safety officer must take into consideration both direct and indirect effects of the incident.

The NYSEG project coordinator and the Contractor health & safety officer will then access the possible risks to human health or the environment that may result from the emergency (i.e., release, fire, explosion, or severe weather conditions). He will make this assessment by:

- Identifying the materials involved in the incident;

- Consulting the appropriate Occupational Health Guideline or Material Safety Data Sheet (MSDS) to determine the potential effects of exposure/release, and appropriate safety precautions; and
- Identifying the exposure and/or release pathways and the quantities of materials involved.

Based on this information the NYSEG project coordinator and the Contractor health & safety officer will determined the best course of action for dealing with the emergency, and possible follow-up requirements that may result from implementing those actions (i.e., equipment repairs, material disposal, etc.).

If site personnel cannot control the incident without incurring undue risk, the NYSEG project coordinator will implement the Site Evacuation Procedures (Section 2.1). If off-site neighboring population is at risk the Off-site Evacuation Procedures (Section 2.2) will be implemented. The NYSEG project coordinator will notify the NYSEG project manager and the appropriate government agencies and departments that a situation resulting in evacuation has occurred. Should emergency assistance in treating injuries or carrying out the evacuation is required, the NYSEG project coordinator will request assistance of the appropriate parties.

1.2 Conditions for Implementing a Contingency Plan

Some of the conditions under which the *Contingency Plan* would be implemented are:

- Fire or explosion;
- Occurrence of a spill or material release;
- Severe weather conditions; and
- Physical or chemical injury to a worker.

1.2.1 Fire and/or Explosion Conditions

Contingency procedures will immediately be implemented upon notification that any of the following scenarios involving fire and/or explosion is imminent or has occurred:

- A fire that causes, or could cause, the release of toxic fumes;
- A fire that could possible ignite nearby flammable or could cause heat-induced explosions;
- A fire that could possibly spread to off-site areas;
- A danger exists that an explosion could occur causing a safety or health hazard; and
- An explosion has occurred.

1.2.2 Spill or Material Release Conditions

Any of the following scenarios involving a spill or material release, whether imminent or having already occurred, will cause implementation of contingency procedures:

- A spill or material release that could result in the release of flammable liquids or vapors, thus causing a fire or gas explosion hazard;
- A spill or material release that could cause the release of toxic vapors or fumes into the atmosphere in concentrations higher than the Occupational Safety and Health Act or Administration (OSHA) Permissible Exposure Limits (PELs);
- A spill or material release that can be contained on-site where a potential exists for groundwater or surface water contamination; and
- A spill or material release that cannot be contained on-site, resulting in a potential for off-site soil contamination and/or groundwater or surface water pollution.

The NYSEG project coordinator or Contractor health & safety office will immediately identify the character, source, amount, and extent of any release. Spills or material release shall be reported immediately to the NYSEG project coordinator. Initial identification will be based on visual analysis of the material and location of the release. If the release material cannot be identified, samples will be taken for analysis.

1.2.3 Severe Weather Conditions

The following severe weather conditions, whether imminent or having occurred, may cause implementation of contingency procedures:

- A tornado has been sighted in the area;
- A tornado warning is in effect for the area;
- A lightning storm is underway in the area (storm center less than 5 miles away); and
- Other severe weather or weather induced conditions (i.e., hurricane or flood).

1.2.4 Physical or Chemical Injury Conditions

The following worker injuries may cause implementation of the *Contingency Plan*:

- Major physical injuries;
- Chemical injuries; and
- Severe symptoms of chemical overexposure.

1.3 Contingency Procedures

If any of the aforementioned conditions for implementing the *Contingency Plan* are met, the appropriate following contingency procedure(s) shall be performed.

1.3.1 Contingency Procedures for Fire/Explosion

When fire or explosion appear imminent or have occurred, all normal activity in affected areas will cease. The NYSEG project coordinator will make an assessment of the potential risk and severity of the situation to decide whether the emergency event will or will not be readily controllable with existing portable fire extinguishers or site equipment and materials at hand. Fire fighting will not be done at the risk to site workers. Local fire departments will be contacted in all situations in which fires and/or explosions have occurred. The following steps will be taken for localized fire.

- Contact local fire departments;
- Move all personnel to an upwind location at an appropriately safe distance away;
- Determine if fire is within on-site personnel capabilities to attempt initial fire fighting;
- If the fire is within on-site personnel capabilities, utilize most appropriate means of extinguishing fire (i.e., fire extinguishers, water, covering with soil, etc.); and
- Once fire is extinguished, containerize and properly dispose of any spilled material, runoff, or soil.

If the situation appears uncontrollable and poses a direct threat to human life, fire departments will be contacted and the Evacuation Plan will be implemented. If the chances of an impending explosion are high, the entire area within 1,000-foot radius of the fire source will be evacuated. The NYSEG project coordinator will alert personnel when all danger has passed, as determined by the chief fire fighter from the responding fire department. All equipment used in the emergency will be cleaned and refurbished as soon as possible after the emergency has passed so that it will be ready for use in the event of any future emergency.

1.3.2 Contingency Procedures for Spills or Material Releases

If a hazardous waste spill or material release or process upset resulting in probable vapor release is identified, the NYSEG project coordinator will immediately assess the magnitude and potential seriousness of the spill or release based upon:

- MSDS for the material spilled or released;
- Source of the release or spillage of hazardous material;
- An estimate of the quantity released and the rate at which it is being released;
- The direction in which the spill or air release is moving;
- Personnel who may be or may have been in contact with material, or air release, and possible injury or sickness as a result;
- Potential for fire and/or explosion resulting from the situation; and
- Estimates of area under influence of release.

If the spill or release is determined to be within the on-site emergency response capabilities, the NYSEG project coordinator will ensure implementation of the necessary remedial action. If the accident is beyond the capabilities of the site workers, all personnel not involved with emergency response activity will be evacuated from the immediate area and the appropriate emergency response group(s) will be contacted.

1.3.3 Contingency Procedures for Severe Weather

When a tornado is sighted in the area, when a tornado warning has been issued, or when lightning storm occurs, the information will be immediately relayed to the NYSEG project coordinator. In case of a tornado sighting, the NYSEG project coordinator will then institute emergency shutdown procedures, and all personnel will be directed to proceed indoors after completing appropriate shutdown procedures. In the case of a tornado warning, or lightning storm, the NYSEG project coordinator will have operations stopped and direct all personnel to stand by for emergency procedures. Other types of weather or weather inducted conditions (i.e., hurricane or flooding) for which long-range prediction is available may also require positive action as identified herein.

When the severe weather has passed, the NYSEG project coordinator will direct all contractors to inspect on-site equipment to ensure its readiness for operation prior to restarting operations.

If an inspection indicates a fire, explosion or release has occurred as the result of a severe weather condition, the procedures for those events will be followed.

1.3.4 Contingency Procedures for Physical Injury to Workers

Regardless of the nature and degree of the injury, the NYSEG project coordinator and the Contractor health & safety officer will be apprised of all injuries requiring first aid of any kind. A report of the injury or incident will be completed as required by the *Health & Safety Plan*.

Upon notification that worker has been injured, the NYSEG project coordinator and the Contractor health & safety officer will immediately determine the severity

of the accident, and whether the victim can be safety moved from the incident site. Appropriate medical assistance will be summoned immediately.

Minor injuries sustained by workers will be treated on-site using materials from the first aid kits. Whenever possible, such treatment will be administered by trained personnel in the Support Zone. Examples of minor injuries include small scrapes and blisters. Minor injuries would not be expected to trigger implementation of the *Contingency Plan*.

Major injuries sustained by workers will require professional medical attention at a hospital. The NYSEG project coordinator will immediately summon an ambulance and contact the hospital to which the injured worker will be transported. The NYSEG project coordinator will notify NYSEG project manager as soon as practical. The hospital and ambulance should be advised of:

- The nature of the injury;
- Whether the injured worker will be decontaminated prior to transport;
- When and where the injury was sustained; and
- The present condition of the injured worker (i.e., conscious, breathing).

1.3.5 Contingency Procedures for Chemical Injury to Workers

Injuries involving hazardous chemicals or symptoms of severe chemical overexposure will automatically trigger implementation of the *Contingency Plan*. Upon notification that a chemical injury has been sustained or severe symptoms of chemical exposure are being experienced, the NYSEG project coordinator will be notify the hospital and ambulance of the occurrence. The NYSEG project coordinator will provide, to the extent possible, the following information:

- The nature of the injury (i.e., eyes contaminated, skin burned);
- The chemical(s) involved;
- The present condition of the injured worker (i.e., conscious, breathing);
- Whether the injured worker will be decontaminated prior to transport; and
- When and where the injury was sustained.

Steps will immediately be taken to remove the victim from the incident site using whatever personal protective equipment (PPE) and safety equipment necessary. Rescuers will check for vital signs and, if possible, remove contaminated outer clothing of victim. If the victim's eyes have been contaminated, personnel trained in administering first aid will flush the victim's eyes with eyewash solution until the emergency response team arrives.

Details on the nature of the contaminant and methods for treating exposure or injury can be contained from the Material Safety Data Sheets or Occupational Health Guidelines as provided in the *Health & Safety Plan*.

2.0 EMERGENCY EVACUATION PROCEDURES

2.1 Site Evacuation Procedures

If an emergency occurs that requires the evacuation of an area to ensure personnel safety, including (but not limited to) fire, explosion, severe weather or hazardous waste/material spills, or significant release of vapors into the atmosphere, an air horn will be sounded on the site by the nearest person aware of the event. The horn will sound continuously for approximately 15 seconds, signaling that immediate evacuation of all personnel from the area is necessary as a result of some existing or impending danger. In areas where only two or three people are working side by side, and the need to evaluate can be communicated verbally, the air horn will not be necessary by the nearest person to the event.

All heavy equipment in the area will be shutdown. Under no circumstances will incoming visitors (other than emergency response personnel) be allowed to enter any area where an emergency is occurring. Visitors or observers and all non-essential personnel present in the area of an emergency will be instructed to evacuate the area immediately.

Contractor and subcontractor emergency coordinators and/or health & safety officers (as designated) will be responsible for ensuring that emergency response requirements specific to their own operations are carried out. These parties will report their activities to the NYSEG project coordinator. The NYSEG project

coordinator, however, has final authority regarding all emergency response activities.

All non-essential personnel shall evacuate the emergency areas and notify personnel in adjacent areas to evacuate also. The evacuated workers will assemble at the primary assembly area at the northeast corner of the Washington Street Park, where the NYSEG project coordinator will give directions for implementing necessary actions. In the event that the primary assembly area is involved, unapproachable, or unsafe due to the event, evacuated workers shall assemble at the project field office. The NYSEG project coordinator will phone for backup assistance.

Personnel are to avoid encountering smoke/gas plumes as practicable during evacuation and assembling.

The NYSEG project coordinator will take charge of all emergency response activities and dictate the procedures that will be followed until emergency personnel arrive. The NYSEG project coordinator will assess the seriousness of the situation, and direct whatever efforts are necessary until the emergency response units arrive.

After initiating emergency response procedures, the NYSEG project coordinator will assign appropriate personnel to check and attempt to ensure that access roads are not obstructed. If traffic control is necessary, as in the event of a fire or explosion, personnel who have been trained in these procedures and designated at the project safety meeting will take over these duties until emergency units arrive.

The NYSEG project coordinator will remain at the site to provide any assistance requested by emergency-response squads as they arrive to deal with the situation. The NYSEG project coordinator will have the authority to shutdown any part or the entire project after an emergency until he deems it safe to continue operations. The NYSEG project coordinator will dictate any changes in the project safety practices, which are made necessary by the emergency that has occurred, or are required for preventing further emergencies.

2.2 Off-site Evacuation Procedures

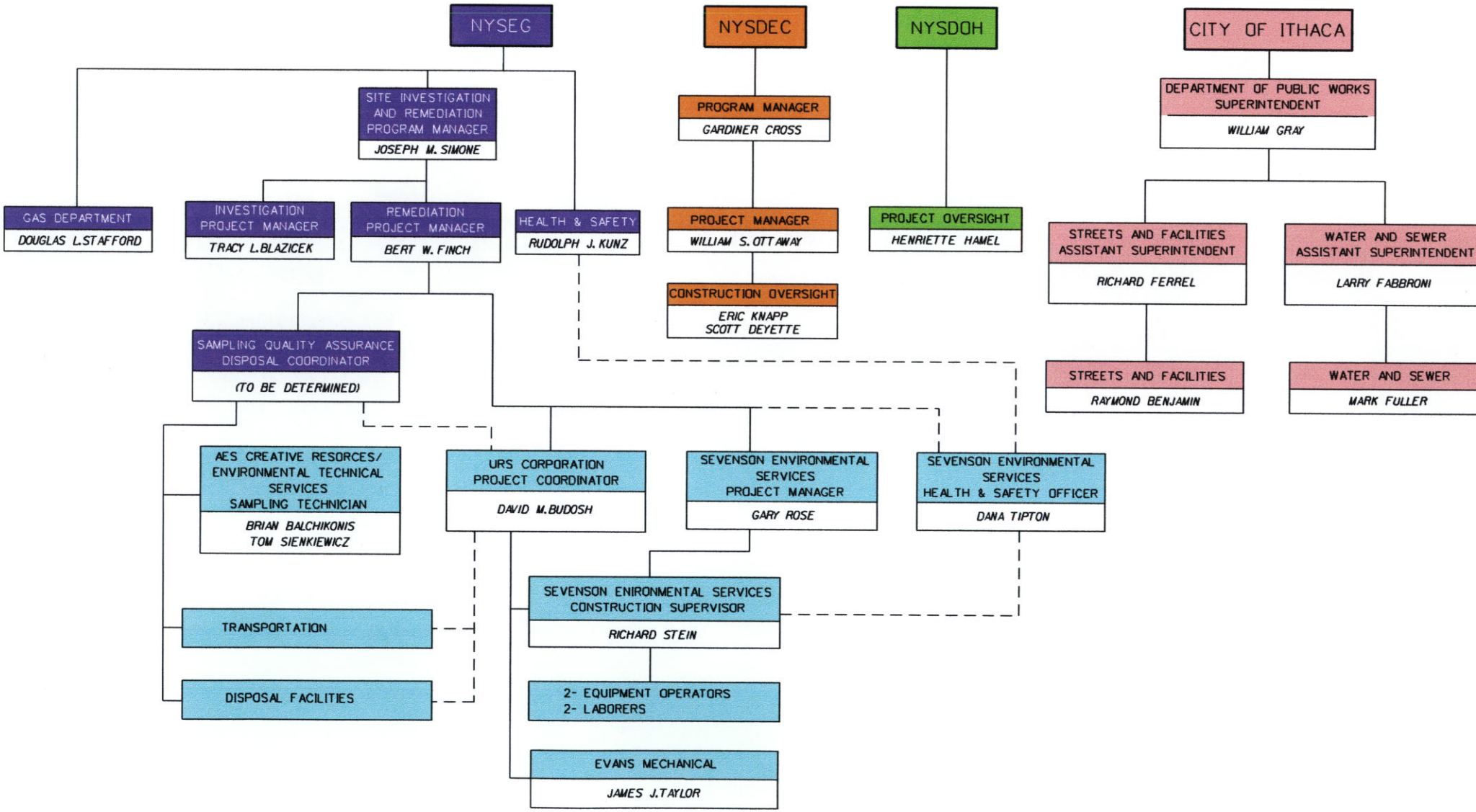
If the NYSEG project coordinator deems that humans outside of the site are at risk, he will notify the appropriate agencies and departments (i.e., NYSEG project manager, Tompkins County Health Department, New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) of the need or potential need to institute off-site evacuation procedures. The NYSEG project coordinator will provide, at a minimum, the following information:

- His or her name and telephone number;
- Name and address of facility;
- Time and type of incident (i.e., release, fire, explosion, etc.);
- Name and quantity of materials involved, to the extent this information is known;
- The extent of injuries, if any; and
- The possible hazards to human health or environment, and cleanup procedures.

APPENDIX G

ORGANIZATION STRUCTURE

ORGANIZATION STRUCTURE
FOR REMOVAL OF COAL TAR INPACTED SOIL
ON WASHINGTON STREET ASSOCIATED WITH
ITHACA COURT STREET
FORMER MANUFACTURED GAS PLANT SITE



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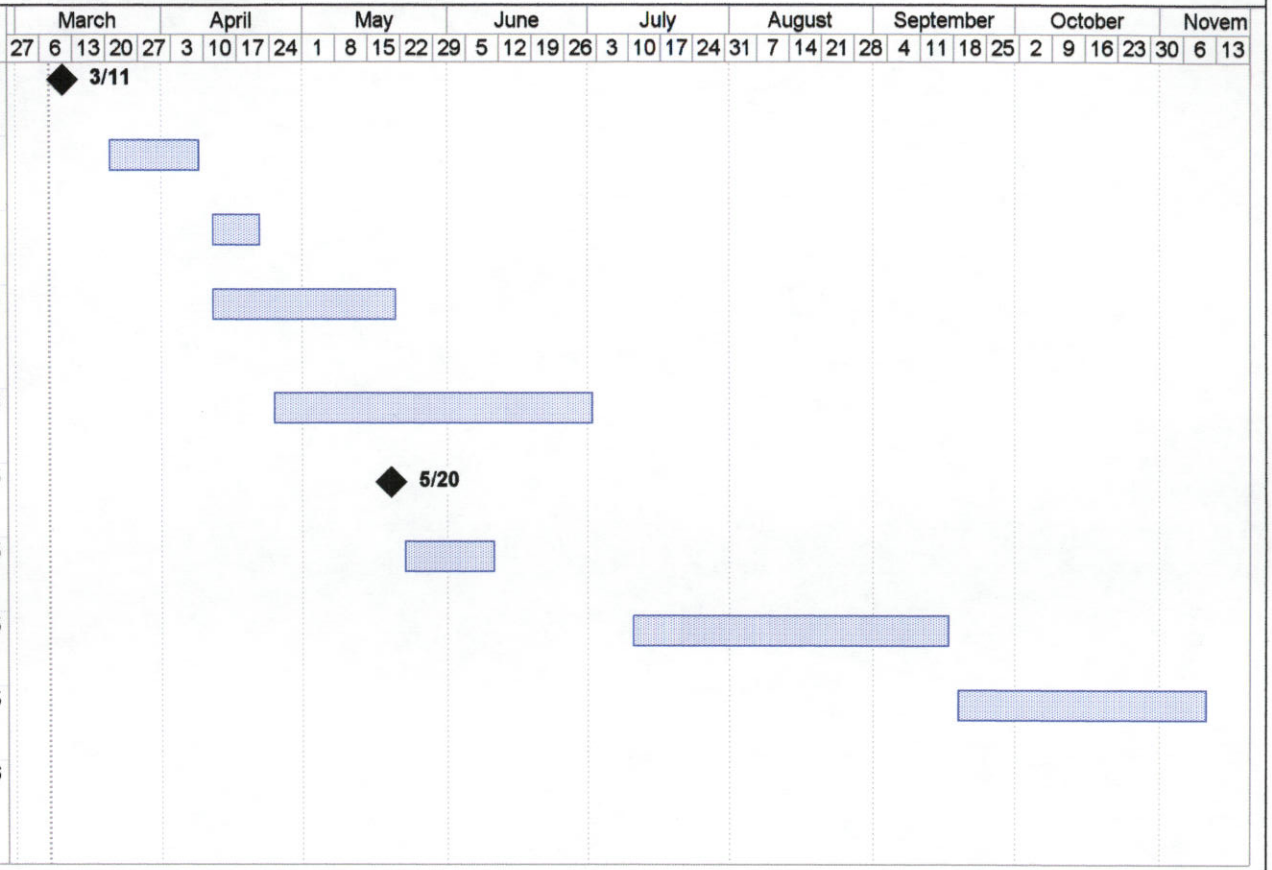
APPENDIX H

PROJECT SCHEDULE

PROJECT SCHEDULE
FOR REMOVAL OF COAL IMPACTED SOIL
ON WASHINGTON STREET ASSOCIATED WITH
ITHACA COURT STREET
FORMER MANUFACTURED GAS PLANT SITE

Task Name	Start	Finish
Draft Work Plan to DEC	Fri 3/11/05	Fri 3/11/05
Fact Sheet Mailing	Mon 3/21/05	Fri 4/8/05
Pulblic Availability Session	Tue 4/12/05	Thu 4/21/05
Access Agreement with Effected Property Owners	Tue 4/12/05	Fri 5/20/05
Remediation W. Court Street	Mon 4/25/05	Fri 7/1/05
Work Plan Approval DEC	Fri 5/20/05	Fri 5/20/05
Pre-Remed. Sampling Event	Mon 5/23/05	Fri 6/10/05
Remediation Washington Street	Mon 7/11/05	Fri 9/16/05
City Street Restoration	Mon 9/19/05	Thu 11/10/05
DRAFT Final Engineering Report to DEC	Mon 3/13/06	Fri 3/31/06



Project:Bert W Finch
Date: Tue 3/8/05

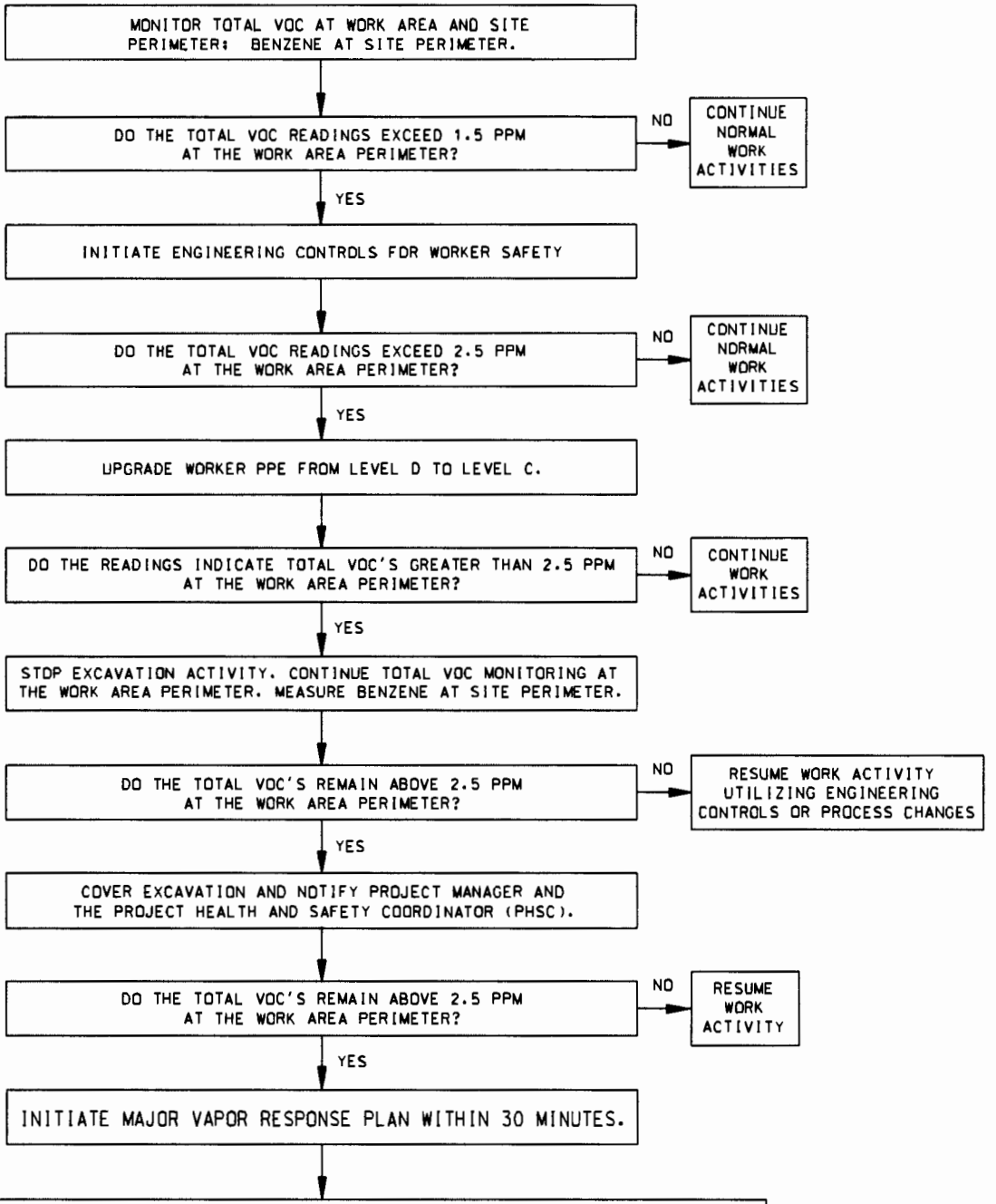
Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

Environmental Compliance-Site Investigation and Remediation

APPENDIX I

VAPOR EMISSION RESPONSE PLAN

VAPOR EMISSION RESPONSE PLAN FOR REMOVAL OF COAL TAR IMPACTED SOIL ON WASHINGTON STREET ASSOCIATED WITH ITHACA COURT STREET FORMER MANUFACTURED GAS PLANT SITE



1. COVER THE EXCAVATED AREA WITH POLYETHYLENE SHEETING.
2. NOTIFY STEVE MAYBEE WITH TOMKINS COUNTY HEALTH AT (607) 274-6688, CITY OF ITHACA POLICE BUREAU AT (607) 272-3245, WILLIAM OTTAWAY WITH THE NYSDEC AT (518) 402-9662, AND HENRIETTE HAMEL WITH THE NYSDOH AT (315) 477-8163.
3. TOTAL VOC LEVELS WILL BE MONITORED WITHIN 20 FEET OF THE NEAREST DOWNWIND RESIDENTIAL OR COMMERCIAL STRUCTURE. (20 FOOT ZONE).
4. CONTINUE AIR MONITORING 15-MINUTE INTERVALS IN THE 20 FOOT ZONE. IF TWO SUCCESSIVE READINGS BELOW ACTION LEVELS ARE MEASURED, AIR MONITORING INTERVALS MAY BE HALTED OR MODIFIED BY THE PHSC, WITH APPROVAL OF THE NYSDEC AND NYSDOH.
5. IF THE TOTAL VOC LEVELS PERSIST ABOVE THE 5.0 PPM WITHIN THE 20 FOOT ZONE, THE CONSTRUCTION SUPERVISOR, PHSC AND NYSEG MANAGER WILL CONSULT WITH EACH OTHER AND THE EMERGENCY REPONSE AGENCIES TO DETERMINE APPROPRIATE ACTIONS TO BE IMPLEMENTED. NYSEG HAS ULTIMATE AUTHORITY DURING MAJOR VAPOR EMISSION EMERGENCIES.

APPENDIX J

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ORDER ON CONSENT

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Development and Implementation of a Former Manufactured Gas Plant (MGP) Sites Investigation and Remediation Program by New York State Electric & Gas Corporation

ORDER ON CONSENT
Index #D0-0002-9309

WHEREAS:

1. The New York State Department of Environmental Conservation (the "Department") is responsible for enforcement of the Environmental Conservation Law, which, inter alia, requires the Department to carry out the environmental policy of the State set forth of the ECL 1-0101. ECL 3-0301.1.

2. The New York State Electric & Gas Corporation ("Respondent") is a business corporation organized under the laws of the State of New York.

3. Respondent is aware of former manufactured gas plant ("MGP") sites at the locations listed in Table "A" of Paragraph I of this Order at which coal tar and associated hazardous substances ("MGP wastes") were, or which may have been, disposed at various times in the past by Respondent or its predecessors or affiliates (individually, "the Site;" collectively, "the Sites"). Respondent also is the owner of other former MGP sites.

4. The Department asserts that its authority to require abatement and remediation of releases of, inter alia, hazardous substances as that term is defined in 42 U.S.C. 9601(14), including MGP wastes, that are in violation of law or that exceed State environmental quality standards (as those set forth in 6 NYCRR Part 703) ("hazardous substances"), is varied, including, but not limited to, ECL 1-0101, 3-0301, 71-1929, 71-2703, and 71-2705. In addition, the Department asserts that it has the power, inter alia, to provide for the prevention and abatement of all water, land, and air pollution caused by, inter alia, the release of hazardous substances into the environment. ECL 3-0301.1.i. Furthermore, the Department asserts that it has authority to require abatement and remediation of significant threats to the public health or the environment caused by threatened releases of hazardous substances that are hazardous wastes as that term is defined in ECL 27-1301.

5. The Department and Respondent agree that the goals of this Order are for Respondent to (i) gather and provide data pertaining to each of the Sites (other than Mechanicville [Central Avenue] and Owego) sufficient to constitute a Preliminary Site Assessment ("PSA") that will enable the Department to characterize hazardous

substances, as that term is defined in 42 USC 9601(14) (including MGP wastes) which are or may be present at the Site and to enable the Department to determine whether such hazardous substances constitute a significant threat to public health or the environment necessitating remediation; (ii) develop and implement a Remedial Investigation ("RI") and prepare a Feasibility Study ("FS") for any Site the Department determines, based upon the results of the PSA, to require the more comprehensive evaluations and assessments that would be provided through the Remedial Investigation/Feasibility Study ("RI/FS") process; (iii) remediate each Site that the Department determines is in need of remediation on a schedule and to an extent acceptable to the Department, including authorizing Respondent to develop and implement Interim Remedial Measures ("IRMs") that the Department determines to be appropriate; (iv) develop and implement acceptable methods of treating and disposing of nonhazardous coal tar soils ("CTS") that minimize any future impacts on public health and the environment and minimize cost, including, as appropriate, the burning of CTS in Respondent's existing utility steam generating facilities including but not limited to Respondent's Hickling and Jennison Stations; and (v) pay for the State's reasonable administrative and oversight costs associated with implementation of this Order.

6. Respondent, without admitting or denying the Department's authority to require investigation and remediation of hazardous substances at the sites listed in Table "A" of Paragraph I of this Order and having waived its right to a hearing herein as provided by law, and having consented to the issuance and entry of this Order, agrees to be bound by its terms. Respondent consents to and agrees not to contest the authority or jurisdiction of the Department to issue or enforce this Order; and agrees not to contest the validity of this Order or its terms. However, should the Department request that this Order be revised, Respondent reserves all of its rights provided by law and the New York Environmental Conservation Law.

7. Respondent and the Department agree that Respondent shall not be responsible under this Order to investigate, gather data concerning, or remediate those hazardous substances that may exist at or originate from any Site listed in Table "A" of Paragraph I of this Order if, respecting that Site, all the following criteria are met:

a. Respondent no longer owns or controls the Site where the hazardous substances are found;

b. the original disposal and release of the hazardous substances occurred after Respondent or its predecessors or affiliates sold or returned control of the Site to its owner;

c. the hazardous substances were not generated, stored, treated, or disposed at the Site while Respondent or its predecessors or affiliates owned or controlled the Site; and

d. investigation and remediation of the hazardous substances would require Respondent to perform activities and incur costs not necessary to study, characterize, and remediate hazardous substances at the Site that were generated, treated, stored, or disposed at the Site during the ownership or control of Respondent or any of its predecessors or affiliates.

NOW, having considered this matter and being duly advised, IT IS ORDERED THAT:

I. Initial Submittals

Unless otherwise agreed with respect to specific Sites, no later than 45 days after the effective date of this Order, Respondent shall submit to the Department all data and information it has respecting each Site listed in Table "A" of this Paragraph. The data and other information shall include, at a minimum:

A. A brief history and description of the Site, including the types, quantities, physical state, location, and, if applicable, dates of disposal of MGP wastes, including methods of disposal and spillage of such wastes;

B. A comprehensive list and copies of all existing relevant reports with titles, authors, and subject matter, as well as a description of the results of all previous investigations of each Site and areas in the vicinity of each Site, including copies of all available topographic and property surveys, engineering studies and aerial photographs; and

C. An 8.5 inch by 11 inch portion of a United States Geological Survey topographic map of the Site which contains the name of the quadrangle and an arrow indicating the orientation of a northern compass point.

TABLE "A"

1. Auburn (Clark Street)
2. Auburn (Green Street)
3. Auburn (McMaster Street)
4. Clyde
5. Cortland/Homer
6. Dansville
7. Elmira (Madison Avenue)
8. Elmira (Water Street)
9. Geneva (Border City)
10. Geneva (Wadsworth Street)
11. Goshen
12. Granville
13. Ithaca (Cayuga Inlet)

14. Ithaca (Court Street)
15. Ithaca First Street)
16. Lockport (State Road)
17. Lockport (Transit Road)
18. Lyons
19. Mechanicville (Central Avenue)
20. Mechanicville (Coon's Crossing)
21. Newark
22. Norwich
23. Oneonta
24. Owego
25. Palmyra
26. Penn Yan (Jackson Street)
27. Penn Yan (Water Street)
28. Plattsburgh (Bridge Street)
29. Plattsburgh (Saranac Street)
30. Seneca Falls
31. Warsaw
32. Waterloo
33. Waterville

II. Preliminary Site Assessment

A. The Department shall review the data and information Respondent shall submit under Paragraph I of this Order for the purpose of determining whether additional data need to be obtained to enable it to characterize the nature and extent of distribution of any hazardous substances at the Site and to determine whether such substances constitute a significant threat to public health or the environment necessitating remediation. For those Sites pertaining to which the Department determines that there exist sufficient data to enable it to make such characterization and determination, the Department shall inform Respondent of its determination, and if the Department determines that the hazardous substances found at the Site constitute a significant threat to the environment, Respondent shall undertake an RI/FS for such Site as described in this Order. For those Sites pertaining to which the Department determines that more data must be acquired to enable it to make such characterization and determination, the Department shall inform Respondent in writing of its determination and identify the information which must be obtained, and Respondent shall undertake such additional investigation (referred to below as a "Preliminary Site Assessment," or "PSA") as the Department shall require in accordance with a schedule the Department shall determine in consultation with Respondent. Such schedule shall include the date by which Respondent shall submit to the Department a work plan to acquire the information the Department shall require and a date by which field work necessary to develop such information shall commence ("PSA Work Plan").

B. The Department may revise the PSA Work Plan submittal date and the field work start date, or either of them, for any Site identified in Table "A" of Paragraph I if information is developed, or otherwise becomes available, indicating the existence of a condition or circumstance justifying immediate or near-term evaluation or response at that Site which otherwise would not be addressed until a later time.

C. Each Site's PSA Work Plan shall describe the methods and procedures to be implemented in undertaking a study at the Site to which it pertains that will cause the generation of information sufficient to enable the Department to characterize the nature and extent of distribution of any hazardous substances at the Site and to determine whether such substances constitute a significant threat to public health or the environment necessitating remediation. Hence, each Site's PSA Work Plan shall include, but not be limited to, the following:

(1) A chronological description of the anticipated investigative activities together with a schedule for the performance of these activities. Such schedule shall take into account, at a minimum, the submission of draft documents, Department review of such documents, and submission of final approvable documents;

(2) A Sampling and Analysis Plan that shall include:

(a) A quality assurance project plan that describes the quality assurance and quality control protocols necessary to achieve the initial data quality objectives. This plan shall designate a data validation expert and must describe such individual's qualifications and experience, and

(b) A field sampling plan that defines sampling and data gathering methods in a manner consistent with appropriate provisions of the "Compendium of Superfund Field Operations Method" (EPA/540/P-87/001, OSWER Directive 9355.0-14, December 1987) as supplemented by the Department; and

(3) A health and safety plan to protect persons at and in the vicinity of the Site during the performance of the investigation, which shall be prepared in accordance with 29 CFR 1910 and all other applicable standards by a certified health and safety professional. Respondent shall add supplemental items to this plan if necessary to ensure the health and safety of all persons at or in the vicinity of the Site during the performance of any work pursuant to this Order.

D. If after review of the data generated during and after implementation of the Department-approved PSA Work Plan for a particular Site the Department determines that the hazardous substances found at the Site constitute a significant threat to the environment and that response actions are needed in addition to any IRMs the Department may approve or may have approved for the Site under Paragraph III of this Order to address adverse environmental conditions at the Site, the Department shall

notify Respondent of that determination and within 90 days after receipt of that notification, Respondent shall submit to the Department a work plan for that Site that shall incorporate all appropriate elements of an RI/FS as set forth in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA") [42 USC 9601 et seq.], as amended; the National Contingency Plan ("NCP") of March 8, 1990 [40 CFR Part 300]; the USEPA guidance document entitled "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA," dated October 1988 and any subsequent revisions to that guidance document in effect at the time the RI/FS Work Plan is submitted; and appropriate USEPA and Department technical and administrative guidance documents (the "RI/FS Work Plan" for that particular Site). (However, Respondent shall undertake RI/FSs for Mechanicville [Central Avenue] [546033] and Owego [754008] under the terms of, respectively, Department Orders on Consent A5-0276-91-10 dated 23 February 1993 and A7-0150-88-09 dated 2 January 1991.)

III. IRMs

A. (1) Respondent may propose one or more IRMs for any Site. Respondent may propose a treatability study as an IRM.

(2) In proposing each IRM, Respondent shall submit to the Department a work plan that includes a chronological description of the anticipated IRM activities together with a schedule for performance of those activities (an "IRM Work Plan" for that Site).

(3) Upon the Department's determination that the proposal is an appropriate IRM and upon the Department's approval of such work plan, the IRM Work Plan shall be incorporated into and become an enforceable part of this Order; and Respondent shall submit to the Department for its review and (as appropriate) approval, in accordance with the schedule contained in the Department-approved IRM Work Plan, detailed documents and specifications prepared, signed, and sealed by a professional engineer to implement the Department-approved IRM. Such documents shall include a health and safety plan, contingency plan, and (if the Department requires such) a citizen participation plan that incorporates appropriate activities outlined in the Department's publication, "New York State Inactive Hazardous Waste Citizen Participation Plan," dated August 30, 1988, and any subsequent revisions thereto. Respondent shall then carry out such IRM in accordance with the requirements of the approved IRM Work Plan, detailed documents and specifications, and this Order. Respondent shall notify the Department of any significant difficulties that may be encountered in implementing the Department-approved work plan, detailed documents, or specifications and shall not modify any obligation unless first approved by the Department.

(4) During implementation of all construction activities identified in the Department-approved IRM Work Plan, Respondent shall have on-Site a full-time

representative who is qualified to supervise the work done.

(5) Within the schedule contained in the Department-approved IRM Work Plan, Respondent shall submit to the Department a final engineering report prepared by a professional engineer that includes a certification by that individual that all activities that comprised the IRM were performed in full accordance with the Department-approved IRM Work Plan, detailed documents and specifications, and this Order.

(i) If the performance of the Department-approved IRM encompassed construction activities, the final engineering report shall include a detailed post-remedial operation and maintenance plan ("O & M Plan"); "as-built" drawings and a final engineering report (each including all changes made to the Remedial Design during construction); and a certification by a professional engineer that the IRM was implemented and all construction activities were completed in accordance with the Department-approved detailed documents and specifications for the IRM. The O & M Plan, "as built" drawings, final engineering report, and certification must be prepared, signed, and sealed by a professional engineer.

(ii) Upon the Department's approval of the O & M Plan, Respondent shall implement the O & M Plan in accordance with the requirements of the Department-approved O & M Plan.

(6) After receipt of the final engineering report and certification, the Department shall notify Respondent in writing whether the Department is satisfied that the IRM was completed in compliance with the Department-approved IRM Work Plan and design.

B. (1) In implementing any IRM approved by the Department under this Order, Respondent shall be exempt from the requirement to obtain any permit issuable by the Department for an activity satisfying the criteria set out in Subparagraph III.B(2) of this Order.

(2) The following criteria must be met:

(i) The activity is conducted on the Site. For purposes of this Order, an activity is on the Site:

(a) if it is conducted on the same premises as the Site, or

(b) if it is conducted on different premises that are under common control or are contiguous to or physically connected with the Site and the activity manages exclusively hazardous substances for which Respondent is liable (except

in situations where the PSA discloses the existence of off-Site hazardous substance deposits derived from, or otherwise related to materials deposited on-Site, in which case such deposits shall be deemed "on-Site" and subject to this Order to the extent Respondent is able to obtain access for purposes of investigation and/or removal); and

(c) the activity is conducted in a manner which satisfies all substantive technical requirements applicable if the activity were conducted pursuant to a permit issued by the Department.

IV. Performance and Reporting of PSA and of Remedial Investigation

A. (1) In accordance with the schedule contained in a Site's Department-approved PSA Work Plan, Respondent shall commence that Site's PSA.

(2) Respondent shall perform the PSA in accordance with that Site's Department-approved PSA Work Plan.

(3) During the performance of that Site's Department-approved PSA, Respondent shall have at such Site a full-time representative who is qualified to supervise the work done. Respondent's designated representative may be a qualified employee of a consultant or contractor.

(4) In accordance with the schedule contained in a particular Site's Department-approved PSA Work Plan, Respondent shall prepare a PSA Report pertaining to that Site that shall:

(i) include all data generated and all other information obtained during the investigation of that Site;

(ii) provide all appropriate assessments and evaluations set forth in CERCLA, the NCP, and the guidance documents identified in Subparagraph II.D of this Order; and

(iii) include a certification by the individual or firm with primary responsibility for the day to day performance of the PSA for that Site that all activities that comprised the Investigation were performed in full accordance with the Department-approved PSA Work Plan for that Site.

B. This Subparagraph applies only to those Sites identified in Table "A" of Paragraph I of this Order concerning which the Department determines under this Order that an RI/FS must be prepared. (Respondent shall undertake RI/FSs for Mechanicville [Central Avenue] [546033] and Owego [754008] under the terms of, respectively, Department Orders on Consent A5-0276-91-10 dated 23 February 1993 and A7-0150-88-09 dated 2 January 1991.)

(1) In accordance with the schedule contained in a particular Site's Department-approved RI/FS Work Plan, Respondent shall commence that Site's Remedial Investigation.

(2) Respondent shall perform the Remedial Investigation in accordance with that Site's Department-approved RI/FS Work Plan.

(3) During the performance of that Site's Remedial Investigation, Respondent shall have at such Site a full-time representative who is qualified to supervise the work done. Respondent's designated representative may be a qualified employee of a consultant or contractor.

(4) In accordance with the schedule contained in a particular Site's Department-approved RI/FS Work Plan, Respondent shall prepare a Remedial Investigation Report pertaining to that Site that shall:

(i) include all data generated and all other information obtained during the remedial investigation of that Site;

(ii) identify any additional data that must be collected; and

(iii) provide all appropriate assessments and evaluations set forth in CERCLA, the NCP, and the guidance documents identified in Subparagraph II.D of this Order; and

(iv) include a certification by the individual or firm with primary responsibility for the day to day performance of the Remedial Investigation at that Site that all activities that comprised the Remedial Investigation were performed in full accordance with the Department-approved RI/FS Work Plan for that Site.

C. As an element of the Feasibility Study pertaining to a Site, Respondent may undertake a treatability study of remedial alternatives for potential use at such Site, including two EPRI-sponsored demonstration projects, one involving a clean soil process and another involving a contaminated groundwater biotreatment demonstration project (the "study"). The Department agrees with Respondent that the data generated during the course of the study will be beneficial to both Respondent and the Department. In implementing the study, Respondent shall be exempt from the requirement to obtain any permit issuable by the Department for an activity that is conducted on the Site. For purposes of this Order, an activity is on the Site:

1. if it is conducted on the same premises as the Site, or

2. if it is conducted on different premises that are under common control or are contiguous to or physically connected with the Site and the activity

manages exclusively hazardous substance for which Respondent is liable (except in situations where the PSA discloses the existence of off-Site hazardous substance deposits derived from, or otherwise related to materials deposited on-Site, in which case such deposits shall be deemed "on-Site" and subject to this Order and this Subparagraph to the extent Respondent is able to obtain access for purposes of investigation and/or removal); and

3. the activity satisfies all substantive technical requirements applicable to like activity conducted pursuant to a permit as determined by the Department.

Respondent, under the provisions of the Freedom of Information Law, may request that the Department treat as confidential any technology descriptions and data submitted to the Department as part of the study; and the Department, under the provisions of the Freedom of Information Law, shall maintain as confidential any of those descriptions or data that the Department determines is confidential.

V. Feasibility Study

This Paragraph applies only to those Sites identified in Table "A" of Paragraph I of this Order concerning which the Department determines under this Order that an RI/FS must be prepared. (Respondent shall undertake RI/FSs for Mechanicville [Central Avenue] [546033] and Owego [754008] under the terms of, respectively, Department Orders on Consent A5-0276-91-10 dated 23 February 1993 and A7-0150-88-09 dated 2 January 1991.)

A. Within 150 days after receipt of the Department's approval of the Remedial Investigation Report pertaining to a particular Site, Respondent shall submit a Feasibility Study evaluating on-Site and off-Site remedial actions to eliminate, to the maximum extent practicable, all health and environmental hazards and potential hazards attributable to hazardous substance disposal at that Site. Such evaluation may include remediation cleanup levels based upon a Site-specific risk assessment that shall consider a range of exposure scenarios and assumptions that take into account the form, nature, biodegradation, fate, and transport of the contaminant present, and available toxicological data that are based upon generally accepted and peer-reviewed scientific evidence or methodologies. Such Site-specific risk assessment shall be consistent with guidance and regulations for exposure assessment developed by the United States Environmental Protection Agency pursuant to CERCLA and other statutory authorities as applicable; and any proposed remediation cleanup level based upon a Site-specific risk assessment shall be protective of the public health and safety and of the environment. In the event that Respondent intends to undertake such evaluation using a Site-specific risk assessment, Respondent shall submit such risk assessment to the Department for its review no later than 90 days before Respondent shall be required to submit the Feasibility Study for the Site. Unless the Department determines that such risk

assessment is not consistent with peer-reviewed scientific evidence or methodologies, or appropriate guidance and regulations--in which case, the Department shall provide Respondent with a written explanation of the basis for such a determination--the Site-specific risk-based remediation cleanup level determined by application of the risk assessment shall be approved by the Department and shall be used for purposes of selecting the remedial alternative for the Site. Such evaluation also shall take into account any and all Department-approved IRMs that were implemented at the Site. The Feasibility Study shall be prepared by and have the signature and seal of an individual licensed and registered to practice professional engineering in the State of New York who shall certify that the Feasibility Study was prepared in accordance with this Order.

B. Unless the Department otherwise specifies for a particular Site, Respondent shall perform and prepare the Feasibility Study in accordance with the Department-approved RI/FS Work Plan in a manner consistent with appropriate sections of CERCLA, the NCP, and the guidance documents identified in Subparagraph II.D of this Order. If the Department specifies otherwise for a particular Site, Respondent shall perform and prepare the Feasibility Study in accordance with the Department's specifications.

C. (1) Within 30 days after the Department's approval of the Feasibility Study, Respondent shall cooperate and assist the Department in soliciting public comment on the RI/FS and the proposed remedial action plan identified therein, in accordance with appropriate provisions of CERCLA, the NCP, the guidance documents identified in Subparagraph II.D of this Order, and with any Department policy and guidance documents in effect at the time the public comment period is initiated.

(2) The Department shall afford Respondent an opportunity to review and comment upon the proposed remedial action plan for a Site before its release to the public using the following procedure: the Department shall prepare a proposed remedial action plan and shall mail a copy of same to Respondent at least fifteen business days before the scheduled date of the publication of the notice of availability of the document. Respondent shall have ten business days to meet with the Department to discuss it. In the event that Respondent disputes the proposed remedial action plan, within that ten day period, it may request in writing a resolution of its dispute using the procedures contained in Subparagraph XVII.A of this Order. Any resolution of the dispute through the use of those procedures shall concern only the contents of the proposed remedial action plan to be released to the public and shall not preclude the Department from selecting a final remedial alternative for the Site that may be inconsistent with the contents of the proposed remedial action plan that shall have been released to the public.

(3) After the close of the public comment period, the Department shall select a final remedial alternative for the Site in a Record of Decision ("ROD").

The ROD shall be incorporated into and become an enforceable part of this Order.

VI. Remedial Design

This Paragraph applies only to those Sites concerning which the Department determines under this Order that an RI/FS must be prepared, and to Mechanicville (Central Avenue) (546033) and Owego (754008).

A. Unless the ROD selects the "no action" alternative, within 180 days after the ROD is signed, or as otherwise specified in the ROD, Respondent shall submit to the Department a remedial design to implement the remedial alternative for the Site selected by the Department in the ROD (the "Remedial Design"). The Remedial Design shall be prepared by and have the signature and seal of a professional engineer who shall certify that the Remedial Design was prepared in accordance with this Order.

B. The Remedial Design shall include the following:

(1) A detailed description of the remedial objectives and the means by which each essential element of the selected remedial alternative will be implemented to achieve those objectives, including, but not limited to:

(i) the construction and operation of any structures;

(ii) the collection, destruction, treatment, and/or disposal of hazardous substances and their constituents and degradation products, and of any soil or other materials contaminated thereby;

(iii) the collection, destruction, treatment, and/or disposal of contaminated groundwater, leachate, and air;

(iv) physical security and posting of the Site;

(v) health and safety of persons living and/or working at or in the vicinity of the Site;

(vi) quality control and quality assurance procedures and protocols to be applied during implementation of the Remedial Design; and

(vii) monitoring which integrates needs which are present on-Site and off-Site during implementation of the Department-selected remedial alternative.

(2) "Biddable quality" documents for the Remedial Design including, but not limited to, documents and specifications prepared, signed, and sealed

by a professional engineer. These plans shall satisfy all applicable local, state and federal laws, rules and regulations;

(3) A time schedule to implement the Remedial Design;

(4) The parameters, conditions, procedures, and protocols to determine the effectiveness of the Remedial Design, including, if the Remedial Design encompasses groundwater monitoring, a schedule for periodic sampling of groundwater monitoring wells on-Site and off-Site;

(5) A description of operation, maintenance, and monitoring activities to be undertaken after the Department has approved construction of the Remedial Design, including the number of years during which such activities will be performed;

(6) A contingency plan to be implemented if any element of the Remedial Design fails to achieve any of its objectives or otherwise fails to protect human health or the environment;

(7) A health and safety plan for the protection of persons at and in the vicinity of the Site during construction and after completion of construction. This plan shall be prepared in accordance with 29 CFR 1910 by a certified health and safety professional; and

(8) A citizen participation plan which incorporates appropriate activities outlined in the Department's publication, "New York State Inactive Hazardous Waste Citizen Participation Plan," dated August 30, 1988, and any subsequent revisions thereto.

VII. Remedial Construction

This Paragraph applies only to those Sites concerning which the Department determines under this Order that an RI/FS must be prepared, and to Mechanicville (Central Avenue) (546033) and Owego (754008).

A. Within such time as identified in the Department's approval of the Remedial Design (such time being determined in consultation with Respondent), Respondent shall commence construction of the Remedial Design. The Department will extend this period if reasonably necessary to accommodate weather-related limitations or other restrictions upon the construction season.

B. Respondent shall implement the Remedial Design in accordance with the Department-approved Remedial Design.

4. include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Respondent's obligations under the Order, and efforts made to mitigate those delays or anticipated delays; and

5. include any modifications to any work plans that Respondent has proposed to the Department or that the Department has approved. Respondent shall submit these progress reports to the Department with respect to each Site by the 10th day after the end of the month to which the report pertains.

B. Respondent shall allow the Department to attend, and shall provide the Department at least seven days advance notice of the occurrence of, any of the following: prebid meetings, job progress meetings, substantial completion meeting and inspection, and final inspection and meeting; provided, however, that if circumstances are such as to prevent Respondent from providing the Department with such seven day notice period, Respondent shall provide as much advance notice as possible, under the circumstances.

IX. Review of Submittals

A. (1) The Department shall review each of the submittals Respondent is required to make pursuant to this Order to determine whether it was prepared, and whether the work done to generate the data and other information in the submittal was done, in accordance with this Order and generally accepted technical and scientific principles. Respondent shall include all results of sampling and tests and all other data received or generated by Respondent or Respondent's contractors or agents, including quality assurance/quality control information, whether conducted pursuant to this Order or conducted independently by Respondent, in the submittal to which such sampling, tests, and other data pertain. The Department shall notify Respondent in writing of its approval or disapproval of the submittal, except for the health and safety plans identified in Paragraph III and in Subparagraphs II.C(3) and VI.B(7) of this Order. All Department-approved submittals shall be incorporated into and become an enforceable part of this Order.

(2) (i) If the Department disapproves a submittal, it shall so notify Respondent in writing and shall specify the reasons for its disapproval. Within 30 days after receiving written notice that Respondent's submittal has been disapproved, Respondent shall make a revised submittal to the Department that addresses and resolves all of the Department's stated reasons for disapproving the first submittal.

(ii) Within a reasonable time after receipt of the revised submittal so as to not cause Respondent to be unable to comply with subsequent obligations and schedule deadlines as presented in Department-approved work plans, the Department shall notify Respondent in writing of its approval or disapproval. If the Department disapproves the revised submittal, Respondent shall be in violation of this

Order and the Department may take any action or pursue whatever rights it has pursuant to any provision of statutory or common law, unless Respondent exercises the dispute resolution procedure described in Subparagraph XVII.A of this Order. If the Department approves the revised submittal, it shall be incorporated into and become an enforceable part of this Order.

B. The Department may require Respondent to modify and/or amplify and expand a submittal if the Department determines, as a result of reviewing data generated by an activity required under this Order or as a result of reviewing any other data or facts, that further work is necessary.

X. Penalties

A. Respondent's failure to comply with any term of this Order constitutes a violation of this Order and the ECL.

B. Respondent shall not suffer any penalty under this Order or be subject to any proceeding or action for enforcement of this Order if it cannot comply with any requirement hereof because of war, riot, or an unforeseeable disaster which the exercise of ordinary human prudence could not have prevented. Respondent shall, within five days of when it obtains knowledge of any such condition, notify the Department in writing. Respondent shall include in such notice the measures taken and to be taken by Respondent to prevent or minimize any delays and shall request an appropriate extension or modification of this Order. Failure to give such notice within such five-day period constitutes a waiver of any claim that a delay is not subject to penalties. Respondent shall have the burden of proving that an event is a defense to compliance with this Order.

XI. Entry upon Site

Subject to conditions that may be described in a particular Site's health and safety plan, Respondent hereby consents to the entry upon the Site or areas in the vicinity of the Site which may be under the control of Respondent by any duly designated employee, consultant, contractor, or agent of the Department or any State agency for purposes of inspection, sampling, and testing and to ensure Respondent's compliance with this Order.

XII. Payment of State Costs

The Department shall establish an interest-bearing account into which the Department shall place all monies received from Respondent under the provisions of this Paragraph in order to pay for the State's expenses (including, but not limited to, direct labor and fringe benefits, overhead, travel, analytical costs, and contractor costs) incurred by the State of New York to fund environmental monitors for work associated with

reviewing and revising submittals made pursuant to this Order, overseeing activities conducted pursuant to this Order, collecting and analyzing samples, and administrative costs associated with administering the requirements of this Order. Respondent shall make payments to the Department as follows:

A. Respondent shall submit to the Department the sum of $310,000, which shall represent the State's estimate of the first year expenses (including, but not limited to, direct labor and fringe benefits, overhead, travel, analytical costs, and contractor costs) incurred by the State of New York to fund environmental monitors for work associated with reviewing and revising submittals made pursuant to this Order to date, overseeing activities conducted pursuant to this Order, collecting and analyzing samples, and administrative costs associated with administering the requirements of this Order. The $310,000 shall be submitted as follows: $110,000 on or before the effective date of this Order; $100,000 on or before the 60th day after the effective date of this Order; and $100,000 on or before the 120th day after the effective date of this Order. Respondent shall make subsequent quarterly payments to the Department for the duration of this Order in order to maintain an account balance sufficient to meet the next nine months' anticipated above-described State costs, however, not exceeding on an annual basis $310,000 (which amount may be increased on an annual basis based upon increases in the Consumer Price Index). Each quarterly billing will be based on expenditures incurred to date. The quarterly billing will take into account matters such as inflation, salary increases, accrued interest to be applied to the balance, changes in operating hours and procedures and the need for additional personnel and supervision of such personnel by full-time supervisors. Costs and expenses to be covered by this account include:

(1) Direct personal service costs and fringe benefits of the State's staff assigned to work associated with reviewing and revising submittals made pursuant to this Order, overseeing activities conducted pursuant to this Order, collecting and analyzing samples, and administrative costs associated with administering the requirements of this Order, including their supervisors and including the costs of replacement personnel for the persons regularly assigned to these duties;

(2) Direct non-personal service costs, including but not limited to purchase of a vehicle if necessary and its full operating costs, any appropriate chemical sampling and analysis, travel, supplies, and contractual costs;

(3) Indirect support or overhead costs at the annually approved indirect support cost rate; and

(4) Consultant services.

B. The Department shall notify Respondent in writing when a quarterly payment is due by submitting a quarterly billing. Respondent shall make such payment

in the form of a check payable to the order of the New York State Department of Environmental Conservation and shall submit such payment to the Department at the following address no later than 30 days from receipt of such billing:

New York State Department of Environmental Conservation
50 Wolf Road, Room 608
Albany, NY 12233-1510
ATTENTION: Director of Environmental Monitors

Payments are to be in advance of the period in which they will be expended. Respondent may dispute a quarterly billing by informing the Department in writing within 30 days of receipt of such billing that the amount of such billing is unreasonable. For purposes of this Order, the sole grounds for determining that a billing is unreasonable are that it contains clerical errors; and that all or a portion of a billing cannot be substantiated by the documentation identified in Subparagraph XII.D or XII.E, as appropriate, of this Order. The procedures contained in Subparagraph XVII.A of this Order shall be used to resolve such dispute, and Respondent shall pay the amount as those procedures shall determine Respondent shall pay, within the time period they shall require.

C. Upon the later termination of this Order and upon payment of any outstanding costs and expenses, the Department shall return the unexpended balance, including interest, to Respondent.

D. Actual personal service costs will be based on Site-specific time and activity ("T&A") costs. Non-personal service costs will be prorated based on the type of cost incurred: general costs (such as, supplies and equipment) will be prorated evenly among the Sites subject to this Order; while other project-related costs will be prorated based on the percentage of T&A incurred for each Site subject to this Order for that time period.

E. Actual costs incurred will be documented by quarterly T&A reports for personal service costs. Copies of actual invoices will not be provided but shall be made available for auditing purposes.

XIII. Department Reservation of Rights

A. Nothing contained in this Order shall be construed as barring, diminishing, adjudicating, or in any way affecting any of the Department's rights.

B. Nothing contained in this Order shall be construed to prohibit the Commissioner or his duly authorized representative from exercising any summary abatement powers.

XIV. Indemnification

Respondent shall indemnify and hold the Department, the State of New York, and their representatives and employees harmless for all claims, suits, actions, damages, and costs of every name and description arising out of or resulting from the fulfillment or attempted fulfillment of this Order by Respondent, and/or Respondent's directors, officers, employees, servants, agents, successors, and assigns; provided, however, that Respondent shall not indemnify the Department, the State of New York, and their representatives and employees in the event that such claim, suit, action, damages, or cost relate to or arise from any unlawful, willful, grossly negligent, or malicious acts or omissions on the part of the Department, the State of New York, or their representatives and employees.

XV. Public Notice

A. Within 30 days after the effective date of this Order with respect to each Site Respondent owns as of the effective date of this Order, or within 30 days after Respondent acquires ownership in any Site, Respondent shall file, with respect to each Site, a Declaration of Covenants and Restrictions with the Clerk of the County within which each such Site is located to give all parties who may acquire any interest in such Site notice of this Order.

B. If Respondent proposes to convey the whole or any part of Respondent's ownership interest in any Site, Respondent shall, not fewer than 60 days before the date of conveyance, notify the Department in writing of the identity of the transferee and of the nature and proposed date of the conveyance of the Site in question and shall notify the transferee in writing, with a copy to the Department, of the applicability of this Order and shall accompany such notification with a copy of this Order.

XVI. Communications

A. All written communications required by this Order shall be transmitted by United States Postal Service, by private courier service, or hand delivered as follows:

Communication from Respondent shall be sent to:

(1) Charles N. Goddard, P.E.
Assistant Director
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010

(2) Director, Bureau of Environmental
Exposure Investigation
New York State Department of Health
2 University Place
Albany, New York 12203

(3) Department Regional Director in whose
Region the Site in question is located

(4) Charles E. Sullivan, Jr.
Division of Environmental Enforcement
New York State Department of
Environmental Conservation
50 Wolf Road, Room 609
Albany, New York 12233-5500

B. Copies of work plans and reports shall be submitted as follows:

(1) Six copies (one unbound) to Mr. Goddard

(2) Two copies to the Director, Bureau of
Environmental Exposure Investigation

(3) One copy to Mr. Sullivan

C. Within 30 days of the Department's approval of any report submitted pursuant to this Order, Respondent shall submit to Mr. Goddard a computer readable magnetic media copy of the approved report in American Standard Code for Information Interchange (ASCII) format. This requirement shall not apply to past reports that will be submitted to the Department but have already been completed by Respondent.

D. Communication to be made from the Department to Respondent shall be sent to:

Phillip M. Murphy, Manager--Alternative Methods
Environment & Research Department
New York State Electric & Gas Corporation
Corporate Drive, Kirkwood Industrial Park
P.O. Box 5227
Binghamton, New York 13902-5227

E. The Department and Respondent reserve the right to designate additional or different addressees for communication or written notice to the other.

XVII. Miscellaneous

A. (1) This Subparagraph applies only to those Sites identified in Table "A" of Paragraph I of this Order concerning which the Department determines under this Order that an RI/FS must be prepared.

(2) If after conferring in good faith, there remains a dispute between Respondent and the Department concerning a provision of this Order identified as subject to this Subparagraph's procedures, within the time period provided in that provision Respondent serve on the Department a request for an appointment of an Administrative Law Judge ("ALJ"), and a written statement of the issues in dispute, the relevant facts upon which the dispute is based, and factual data, analysis, or opinion supporting its position, and all supporting documentation on which Respondent relies (hereinafter called the "Statement of Position"). The Department shall serve upon Respondent its Statement of Position, including supporting documentation no later than ten (10) business days after receipt of Respondent's Statement of Position. Respondent shall have five (5) business days after receipt of the Department's Statement of Position within which to serve upon the Department a reply to the Department's Statement of Position, and in the event Respondent serves such a reply, the Department shall have five (5) business days after receipt of Respondent's reply to the Department's Statement of Position within which to serve upon Respondent the Department's reply to Respondent's reply to the Department's Statement of Position. In the event that the periods for exchange of Statements of Position and replies may cause a delay in the work being performed under this Order, the time periods may be shortened upon and in accordance with notice by the Department as agreed to by Respondent.

(3) The Department shall maintain an administrative record of any dispute being addressed under this Subparagraph. The record shall include the Statement of Position of each party served pursuant to Subparagraph XVII.A(2) and any relevant information. The record shall be available for review of all parties and the public.

(4) Upon review of the administrative record as developed pursuant to this Subparagraph, the ALJ shall issue a final decision and order resolving the dispute. If the matter in dispute concerns a submittal,

(i) Respondent shall revise the submittal in accordance with the Department's specific comments, as may be modified by the ALJ and except for those which have been withdrawn by the ALJ, and shall submit a revised submittal. The period of time within which the submittal must be revised as specified by the Department in its notice of disapproval shall control unless the ALJ revises the time frame in the ALJ's final decision and order resolving the dispute.

(ii) After receipt of the revised submittal, the Department

shall notify Respondent in writing of its approval or disapproval of the revised submittal.

(iii) If the revised submittal fails to address the Department's specific comments, as may be modified by the ALJ, and the Department disapproves the revised submittal for this reason, Respondent shall be in violation of this Order and the ECL.

(5) In review by the ALJ of any dispute pursued under this Subparagraph, Respondent shall have the burden of proving by a preponderance of the evidence that the Department's position should not prevail.

(6) a deadline involving any matter that is the subject of the dispute resolution process described in this Subparagraph shall be held in abeyance while it is the subject of the dispute resolution process unless the Department and Respondent otherwise agree in writing. The invocation of the procedures stated in this Subparagraph shall constitute an election of administrative remedies by Respondent, and such election of this remedy shall constitute a waiver of any and all other administrative remedies which may otherwise be available to Respondent regarding the issue in dispute.

B. All activities and submittals required by this Order shall address both on-Site and off-Site contamination resulting from the disposal of hazardous substances at each Site.

C. Respondent shall retain professional consultants, contractors, laboratories, quality assurance/quality control personnel, and data validators acceptable to the Department to perform the technical, engineering, and analytical obligations required by this Order. Within 30 days after completion of Respondent's retainer process resulting in the selection of a particular firm or individual to perform any of such obligations, Respondent shall submit to the Department a summary of the experience, capabilities, and qualifications of the firm or individual retained. Respondent must obtain the Department's approval of these firms or individuals before the initiation of any activities for which Respondent and such firms or individuals will be responsible.

D. The Department shall have the right to obtain split samples, duplicate samples, or both, of all substances and materials sampled by Respondent, and the Department also shall have the right to take its own samples. Respondent shall have the right to obtain split samples, duplicate samples, or both, of all substances and materials sampled by the Department, and Respondent also shall have the right to take its own samples. Respondent shall make available to the Department the results of all sampling and/or tests or other data generated by Respondent with respect to implementation of this Order, including a tabular summary of any such results in any report submitted pursuant to this Order requiring such results.

E. Respondent shall notify the Department at least 10 working days in

advance of any field activities to be conducted pursuant to this Order. The Department's project manager is hereby authorized to approve any modification to an activity to be conducted under a Department-approved work plan in order to adapt the activities to be undertaken under such work plan to the conditions actually encountered in the field.

F. Respondent shall use reasonable efforts to obtain whatever permits, easements, rights-of-way, rights-of-entry, approvals, or authorizations are necessary to perform Respondent's obligations under this Order. If Respondent is unable, after exhaustion of such reasonable efforts, to obtain any such permissions, the Department will exercise whatever authority is available to it, in its discretion, to obtain same. In no event will Respondent be determined to be in violation of this Order if it fails to obtain any such permissions after exhausting reasonable efforts to obtain same. This is in recognition of the fact that, with respect to certain Sites, the New York State Electric and Gas Corporation is the current owner of only part of the potential area of disposal of MGP wastes, and may in fact, as to certain Sites, not be the owner of any portion of the Site. Significant impediments may, therefore, be encountered as to Respondent's ability to obtain access for purposes of carrying out the requirements of this Order.

G. If Respondent determines, in connection with any given Site, that a valid claim exists in favor of Respondent as against any other potentially responsible party, for contribution toward response costs deemed necessary by the Department in connection with such Site (or for recovery of an appropriate portion of such costs previously incurred by Respondent), the Department shall provide, in a timely manner, information responsive to any reasonable request (otherwise in conformity with Freedom of Information Law requirements) by such party related to conditions at the Site and any other relevant information that may be helpful in substantiating Respondent's claim. Similarly, if Respondent requests access to non-privileged and otherwise disclosable information in the Department's possession and relevant to the potential liability of any person or entity who may be subject to such claim by Respondent for contribution or cost recovery, the Department will take reasonable steps to expedite Respondent's access to such information.

H. Respondent and its successors and assigns shall be bound by this Order. Any change in ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall in no way alter Respondent's responsibilities under this Order. Respondent's officers, directors, employees, servants, and agents shall be obliged to comply with the relevant provisions of this Order in the performance of their designated duties on behalf of Respondent.

I. Respondent shall provide a copy of this Order to each contractor hired to perform work required by this Order and to each person representing Respondent with respect to the Site and shall condition all contracts entered into hereunder upon performance in conformity with the terms of this Order. Respondent or Respondent's contractors shall provide written notice of this Order to all subcontractors hired to

perform any portion of the work required by this Order. Respondent shall nonetheless be responsible for ensuring that Respondent's contractors and subcontractors perform the work to be done under this Order in accordance with this Order.

J . All references to "professional engineer" in this Order are to an individual licensed and registered to practice professional engineering in accordance with Article 145 of the New York State Education Law.

K. All references to "days" in this Order are to calendar days unless otherwise specified.

L. The section headings set forth in this Order are included for convenience of reference only and shall be disregarded in the construction and interpretation of any of the provisions of this Order.

M. (1) The terms of this Order shall constitute the complete and entire Order between Respondent and the Department concerning the Site. No term, condition, understanding, or agreement purporting to modify or vary any term of this Order shall be binding unless made in writing and subscribed by the party to be bound. No informal advice, guidance, suggestion, or comment by the Department regarding any report, proposal, plan, specification, schedule, or any other submittal shall be construed as relieving Respondent of Respondent's obligation to obtain such formal approvals as may be required by this Order. However, in the event that Respondent determines that it cannot continue burning CTS at either its Jennison Station or Hickling Station, then Respondent may request that the Department modify its obligations regarding the Sites listed in Table "A" of Paragraph I of this Order. The Department's decision on whether to grant Respondent's request shall not be unreasonably denied and shall consider, but not be limited to, Respondent's costs of proceeding with its obligations under this Order.

(2) If Respondent desires that any provision of this Order be changed, Respondent shall make timely written application, signed by the Respondent, to the Commissioner setting forth reasonable grounds for the relief sought. Copies of such written application shall be delivered or mailed to Messrs. Goddard and Sullivan.

N. The effective date of this Order shall be the date it is signed by the Commissioner or his designee.

DATED: Albany, New York
March 30, 1994

J. LANGDON MARSH
Acting Commissioner
New York State Department
of Environmental Conservation

CONSENT BY RESPONDENT

Respondent hereby waives its right to a hearing herein as provided by law; consents to the issuance and entry of this Order; and agrees to be bound by its terms, not to contest the authority or jurisdiction of the Department to issue or enforce this Order, and not to contest the validity of this Order or its terms.

NEW YORK STATE ELECTRIC & GAS CORPORATION

by: Vincent W Rider

Typed name of signer: Vincent W. Rider

Title of signer: Vice President - Electric Generation

Date signed: March 25, 1994

STATE OF NEW YORK)
) ss:
COUNTY OF Broome)

On this 25th day of March, 1994, before me personally appeared Vincent W. Rider, to me known, who, being duly sworn, did depose and say that he resides in Endwell, New York; that he is Vice President - Electric Generation of the New York State Electric & Gas Corporation; that he executed the foregoing instrument on behalf of the New York State Electric & Gas Corporation; that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that he signed his name thereto by like order.

Gail A. Marion
Notary Public State of New York
Registration number: 5003473
My commission expires: 10/26/94

GAIL A. MARION
Notary Public, State of New York
No. 5003473
Residing in Broome County
My commission expires Oct 26 1994

APPENDIX K

BIOSOLVE® PRODUCT INFORMATION

BioSolve®

Hydrocarbon Mitigation Technology

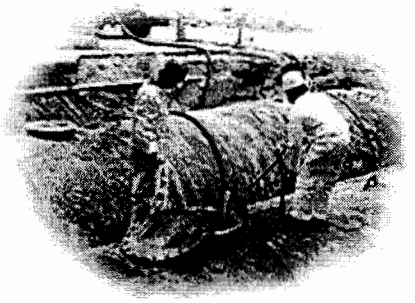
Westford Chemical Corporation®

Environmental Applications

BioSolve ... Is Making a World of Difference

For many years, BioSolve has been used extensively on a wide variety of projects, from biotreatment of soil and water to emergency spill response cleanups, VOC vapor suppression on soil to storage tank cleaning, all with remarkable results.

BioSolve users range from large commercial soil farming facilities, environmental engineers and contractors to offshore oil platforms, refineries, fire departments and manufacturers. The applications for BioSolve are expanding at a tremendous rate.



It is this variety of experience and success that has led us to invite you to use a product that is so technically advanced, well rounded, and versatile that it is setting new standards in many industries.

BioSolve is designed to improve the efficiency, productivity and profitability of your project. It has been field and lab tested and proven many times with documented results. Two major factors that should always be of concern when considering a product are cost effectiveness and technical support. BioSolve is excellent in both categories.

If your work includes dealing with hydrocarbons, you should know about the advantages that BioSolve can offer, it may well be your solution.

BioSolve "The Versatile Tool"
basic understanding is available on CD-ROM
FREE to qualified personnel !!
Click E-Mail below and request "Versatile Tool" CD

Bioremediation

BioSolve greatly enhances soil and water bioremediation by making hydrocarbons a more bioavailable food source for the bacteria. The addition of BioSolve creates micro-emulsions which exposes more surface area or "end chain exposure" so the degrading bacteria can metabolise the hydrocarbons very quickly. **See our Bioremediation page.**

Enhanced Natural Attenuation - Passive Bioremediation

A single application of BioSolve will enhance the naturally occurring bacteria's ability to biodegrade hydrocarbons. This is especially helpful in the case of natural attenuation (passive bioremediation) where no other actions are likely.

Stormwater Runoff Compliance

BioSolve is being utilized by numerous organizations as a Best Management Practice (BMP) and Best Available Technology (BAT) in the fight to reduce and eliminate hydrocarbons from contributing to stormwater runoff contamination. By enhancing the natural bioremediation of Fuel Range Hydrocarbons, BioSolve offers an effective, economical and practical technology for compliance with stormwater runoff regulations.

Surfactant Enhanced Aquifer Remediation - SEAR

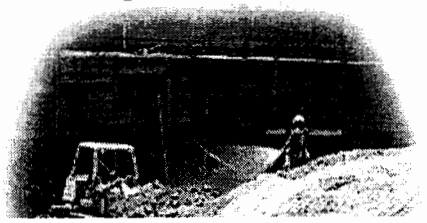
Treat & Pump vs. Pump & Treat

BioSolve's unique formulation allows for insitu flushing to remove hydrocarbons entrained in the zones of an aquifer. BioSolve desorbs the hydrocarbon from the soil particles and solublizes it into the waterphase of the contaminated aquifer. Once it is suspended in the water, the hydrocarbon is mobile and can easily be removed with the water by a vacuum recovery pump for treatment or disposal.

During this desorption and mobilization process the hydrocarbon end chain exposure is greatly increased, enhancing the biodegradation rate of any residual hydrocarbon not removed.
See our Bioremediation page

Vapor Suppression - Odor Suppression

BioSolve is commonly used by top Environmental Engineering and Construction firms for vapor suppression and odor suppression of VOC vapors and other organic odors. Because BioSolve emulsifies and encapsulates hydrocarbons rather than just temporarily blanketing them like foam, it is being used for vapor suppression in place of foam for many applications.



In confined space applications such as tank cleaning and degassing, sewer lines, conduits, etc. BioSolve offers a quick and long lasting solution. With a power washer or steam cleaner apply with a hard or coarse stream and it will attack imbedded VOC's on sidewalls, roofs or tank bottoms, preventing the VOC vapors from reemerging, fogging will attack airborn VOC's. The result is a much safer long term gas free environment and a dramatic increase in worker safety.

BioSolve also provides a simple and cost effective method of controllingVOC vapor release during excavation, stockpiling, loading, transporting, etc. of soil. The application is quick and easy and the effect is long lasting.

BioSolve is so effective it has been the choice for vapor suppression applications on various SUPERFUND sites.

Technical LINKS Relevent to this Page

Home - **What is BioSolve** - **Whats New**

Environmental - **Emergency Spill Response** - **Fire Fighting** - **Oil & Gas**

Military - **Bioremediation** - **Marine** - **Industrial** - **Distributors** - **Links** - **MSDS**

Questions ?

Want More Info ?

Comments ?

E-mail Us !

Phone: 800-225-3909 Int: 978-392-0689 Fax: 978-692-3487

Westford Chemical Corporation, P.O. Box 798, Westford, MA 01886

MATERIAL SAFETY DATA SHEET

THE WESTFORD CHEMICAL CORPORATION®
P.O. Box 798
Westford, Massachusetts 01886 USA

Ref. No.: 2001
Date: 1/1/2002

Phone: (978) 392-0689
Phone: (508) 878-5895
Emergency Phone-24 Hours: 1-800-225-3909

Fax: (978) 692-3487
Web Site: http://www.BioSolve.com
E-Mail: info@BioSolve.com

SECTION I - IDENTITY

Name:	**BioSolve®**
CAS #:	138757-63-8
Formula:	Proprietary
Chemical Family:	Water Based, Biodegradable, Wetting Agents & Surfactants
HMIS Code:	Health 1, Fire 0, Reactivity 0
HMIS Key:	4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Insignificant

SECTION II - HAZARDOUS INGREDIENTS

Massachusetts Right to Know Law or 29 C.F.R. (Code of Federal Regulations) 1910.1000 require listing of hazardous ingredients.

This product does not contain any hazardous ingredients as defined by CERCLA, Massachusetts Right to Know Law and California's Prop. 65.

SECTION III - PHYSICAL - CHEMICAL CHARACTERISTICS

Boiling Point	: 265°F	Specific Gravity	: 1.00 +/-.01
Melting Point	: 32°F	Vapor Pressure mm/Hg	: Not Applicable
Surface Tension- 6% Solution	: 29.1 Dyne/cm at 25°C	Vapor Density Air = 1	: Not Applicable
Reactivity with Water	: No	Viscosity - Concentrate	: 490 Centipoise
Evaporation Rate	: >1 as compared to Water	Viscosity - 6% Solution	: 15 Centipoise
Appearance	: Clear Liquid unless Dyed	Solubility in Water	: Complete
Odor	: Pleasant Fragrance	pH	: 9.1+/-.3
Pounds per Gallon	: 8.38		

SECTION IV - FIRE AND EXPLOSION DATA

Special Fire Fighting Procedures	: None	Flammable Limit	: None
Unusual Fire and Explosion Hazards	: None	Auto Ignite Temperature	: None
Solvent for Clean-Up	: Water	Fire Extinguisher Media	: Not Applicable
Flash Point	: None		

SECTION V - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Precautions to be taken in Handling and Storage: Use good normal hygiene.
Precautions to be taken in case of Spill or Leak -

Small spills, in an undiluted form, contain. Soak up with absorbent materials.
Large spills, in an undiluted form, dike and contain. Remove with vacuum truck or pump to storage/salvage vessel. Soak up residue with absorbent materials.

Waste Disposal Procedures -

Dispose in an approved disposal area or in a manner which complies with all local, state, and federal regulations.

SECTION VI - HEALTH HAZARDS

Threshold Limit Values: Not applicable
Signs and Symptoms of Over Exposure-

Acute : Moderate eye irritation. Skin: Causes redness, edema, drying of skin.
Chronic: Pre-existing skin and eye disorders may be aggravated by contact with this product.

Medical Conditions Generally Aggravated by Exposure: Unknown
Carcinogen: No
Emergency First Aid Procedures -

Eyes: Flush thoroughly with water for 15 minutes. Get medical attention.
Skin: Remove contaminated clothing. Wash exposed areas with soap and water. Wash clothing before reuse. Get medical attention if irritation develops.
Ingestion: Get medical attention.
Inhalation: None considered necessary.

SECTION VII - SPECIAL PROTECTION INFORMATION

Respiratory Protection	: Not necessary	Local Exhaust Required	: No
Ventilation Required	: Normal	Protective Clothing	: Gloves, safety glasses Wash clothing before reuse.

SECTION VIII - PHYSICAL HAZARDS

Stability	: Stable	Incompatible Substances	: None Known
Polymerization	: No	Hazardous Decomposition Products	: None Known

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SECTION IX - TRANSPORT & STORAGE

DOT Class	: Not Regulated/Non Hazardous		
Freeze Temperature	: 28°F	Storage	: 35°F-120°F
Freeze Harm	: None (thaw & stir)	Shelf Life	: Unlimited Unopened

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SECTION X - REGULATORY INFORMATION

The Information on this Material Safety Data Sheet reflects the latest information and data that we have on hazards, properties, and handling of this product under the recommended conditions of use. Any use of this product or method of application, which is not described on the Product label or in this Material Safety Data Sheet, is the sole responsibility of the user. This Material Safety Data Sheet was prepared to comply with the OSHA Hazardous Communication Regulation and Massachusetts Right to Know Law.

APPENDIX L

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
APPROVAL LETTER

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway, Albany, New York 12233-7014
Phone: (518) 402-9662 • **FAX:** (518) 402-9679
Website: www.dec.state.ny.us

Denise M. Sheehan
Acting
Commissioner

May 5, 2005

Bert Finch
New York State Electric & Gas
Corporate Drive, Kirkwood Industrial Park
Binghamton, NY 13902

Re: Washington Street Excavation
Ithaca Court Street MGP Site
Site #7-55-008

Dear Mr. Finch:

The New York State Department of Environmental Conservation and the New York State Department of Health have reviewed the "Work Plan For Removal of Coal Tar Impacted Soil on Washington Street between W. Court and Cascadilla Streets" dated March 2005. This plan is hereby approved with the following condition:

1. We do not know the full extent of contamination along the water line in Washington Street. If this contamination is sufficiently extensive, it may be most feasible to replace this water line than to carefully work around it. In addition, there was no visible contamination in the area of the Washington Street storm sewer at West Court Street. At this time, we do not know where this line starts to exhibit contamination.

   To resolve these uncertainties, we will require that test pits be completed prior to the start of the remediation on Washington St. Test pitting should be completed prior to tree removal.

   If you have any questions, please contact me at (518) 402-9686.

Sincerely,

William S. Ottaway, P.E.
Environmental Engineer 2
MGP Remedial Section
Division of Environmental Remediation