
Division of Environmental Remediation

Record of Decision Amendment
NM Glens Falls – Mohican Street
Former MGP Site
Operable Unit No. 1
State Superfund Project
Glens Falls, Warren County, New York
Site Number 557016

March 2010

New York State Department of Environmental Conservation
DAVID A. PATERSON, *Governor* ALEXANDER B. GRANNIS, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

NM Glens Falls MGP Site Operable Unit No. 1 State Superfund Project Glens Falls, Warren, New York Site No. 557016

Statement of Purpose and Basis

The Record of Decision (ROD) Amendment presents the selected remedy for Operable Unit # 1 of the NM Glens Falls MGP site, a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law, 6 NYCRR Part 375, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for Operable Unit # 1 of the NM Glens Falls MGP site and the public's input to the ROD Amendment presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD Amendment.

Description of Selected Remedy

Based on the results of the remedial investigation feasibility study (RI/FS) for the NM Glens Falls MGP site and the criteria identified for evaluation of alternatives, the Department has amended the 2003 ROD to provide a greater degree of excavation of contaminated soil and a more feasible method of treatment to address groundwater contamination. Due to the greater removal of NAPL-contaminated soils, the need for a NAPL containment barrier is eliminated.

All other elements of the 2003 ROD remedial action would remain unchanged. The Henry Street sub-station will be isolated with a containment barrier and the components of the ROD which addressed sediment removal from within the Feeder Canal, MGP-related structure removal and the site-wide soil cover will be implemented as described in the ROD.

. The components of the remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS will be resolved.
2. Excavation and off-site disposal of source material. "Source material" is defined as soil which contains:

- sources or substantial quantities of contamination or NAPL, that is identifiable either visually or is otherwise readily detectable without laboratory analysis;
- visible tar, oil, or petroleum;
- visible purifier waste, with reactive cyanide levels above 500 ppm and/or reactive sulfide levels above 250 ppm;
- NAPL identified in the field by performing a pre-approved field test (i.e., NAPL staining of disposable sampling equipment); or
- concentrations of total polycyclic aromatic hydrocarbons (PAHs) greater than 500 ppm.

Soils exhibiting odors, staining and/or sheens will not be considered for removal as source areas, unless one of the above criteria is met. The limits of this source area excavation, including the removal of several subsurface MGP structures that remain on site, as represented in Figure 4.

3. The relief holder, at grade holder, retort house foundation, gas compressor house foundation and other minor subsurface structures will be removed, as represented in Figure 3. Any NAPL source area soils adjoining these structures will also be removed.
4. Soils beneath the Henry Street Substation will be isolated with an impermeable barrier wall, to be keyed into the top of the silty clay layer underlying the site.
5. Groundwater treatment using an oxygen delivery system will be installed along three transects across the site, including one along the boundary of the Feeder Canal. This system will be installed, operated and maintained to enhance the bioremediation of dissolved residual groundwater contamination.
6. Approximately 6,000 cubic yards of sediments contaminated with PAHs will be removed from the Glens Falls Feeder Canal. This removal will conceptually extend from sample point CS-1 northward to a concrete lined portion of the canal. Approximately 2 feet of NAPL and PAH contaminated sand will be removed from the canal and the uncontaminated underlying silty clay will be left exposed as the canal bottom. The precise limits and specifics of the removal will be detailed in the remedial design and incorporate a planned concrete lining project by the New York State Canal Corporation that is estimated to begin 40 meters north of the Route 9 Bridge. The goal of the sediment remediation will be to remove all of the exposed PAH contaminated sediments above local background sediment values.
7. A soil cover consisting of material that satisfies the SCO for restricted residential use and the protection of groundwater will be constructed over the site to prevent exposures to subsurface soil. This cover will be underlain by an indicator such as orange plastic snow fence to demarcate the cover from the subsurface soil. The top six inches of soil will be of sufficient quality to support vegetation. Non-vegetated areas (buildings, roadways, parking lots, etc.) will be covered by a paving system or concrete at least 6 inches thick.
8. Imposition of an institutional control in the form of an environmental easement on OU1 properties owned by National Grid that will require: (a) limiting the use and development of the property to restricted residential use, which will also permit commercial use; (b)

compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

9. Development of a site management plan which will include the following institutional and engineering controls: (a) a long-term monitoring program that contains contingencies to be implemented immediately should the site remedy fail to achieve the remedial action objectives in a timely manner or NAPL releases are observed in the Glens Falls Feeder Canal; (b) management of the final soil cover system to restrict excavation below the soil cover's demarcation layer, pavement, or buildings. Excavated soil will be tested, properly handled to protect the health and safety of workers and the nearby community, and will be properly managed in a manner acceptable to the Department; (c) continued evaluation of the potential for soil vapor intrusion for any building developed on the site, including provisions for mitigation of any impacts identified; (d) monitoring of the groundwater, surface water and sediment; (e) provisions for the continued proper operation of the groundwater treatment system with routine maintenance performed regularly and adequate safeguards for system operation interruptions.
10. National Grid will provide periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put into place are still in place and are either unchanged from the previous certification or are compliant with the Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that will impair the ability to control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

New York State Department of Health Acceptance

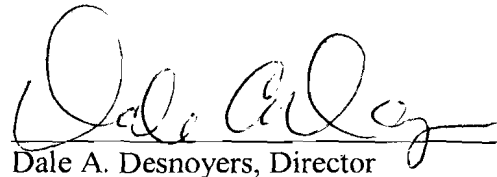
The New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health.

Declaration

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

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Date



Dale A. Desnoyers, Director
Division of Environmental Remediation

RECORD OF DECISION AMENDMENT

NM GLENS FALLS –MOHICAN STREET

FORMER MGP SITE

OPERABLE UNIT No. 1



Glens Falls / Warren County/ Registry No. 557016

March 2010

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

SECTION 1: SUMMARY AND PURPOSE OF THE AMENDED REMEDY

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has amended the remedy for the above-referenced site. The disposal of hazardous waste at the site has resulted in threats to public health and the environment that are addressed by this Record of Decision (ROD) Amendment. The disposal of hazardous wastes at this site, as more fully described in Sections 2 of this document, have contaminated various environmental media. The amended remedy, discussed in detail in Section 3, is intended to attain the remedial action objectives identified for this site in Section 4.1 for the protection of public health and the environment. This ROD Amendment identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for the selected remedy. The Department has selected a final remedy for the site after careful consideration of all comments received during the public comment period.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this ROD Amendment in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, 6 NYCRR Part 375.

2.0 SITE INFORMATION

2.1 Site Description

The NIMO Glens Falls - Mohican Street Former MGP Site is located at 14 Mohican Street in an urban residential/industrial section of the City of Glens Falls, Warren County, New York (Figure 1). Previously the site was an operational manufactured gas plant (MGP) where gas for lighting and heating of homes and businesses was produced. An operable unit (OU) represents a portion of the site remedy that for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. OU1 consists of the former manufactured gas plant (MGP) site and an off-site portion of the Glens Fall Feeder Canal (Figure 2).

The site consists of approximately 6 acres of land. National Grid, the successor company to Niagara Mohawk Power Corporation, owns the site. A portion of the site contains the Henry Street Electrical

Substation and the remainder of the site is vacant. Recently National Grid acquired a small parcel of land from the City of Glens Falls which had housed a sanitary sewer pumping station. Prior to the land transfer, the National Grid property encircled the pumping station. The property transfer was done in part to facilitate the remedial action. The site is relatively flat with a steep slope to the east-southeast toward the adjacent Glens Falls Feeder Canal. The site is fenced and primarily covered with a gravel/asphalt surface.

During 2008 National Grid completed two actions to address site conditions prior to the implementation of the full remedy. Because sheens emanating from coal tar were observed on the water surface in the Glens Falls Feeder canal, National Grid placed a temporary cap on the canal sediment. The cap was designed to control the NAPL and thereby eliminate public and environmental exposures until the sediment excavation component of the 2003 ROD can be performed. Also during 2008, National Grid excavated the contents of the tar separator located beneath the floor of the former service center building. The contents of the tar separator were transported off-site to a Department approved facility for thermal treatment and disposal. Following the removal of the tar separator contents, the excavation was backfilled and the building was demolished.

The remaining off-site operable unit designated as OU2 consists of a portion of the Hudson River adjacent to the site. National Grid has investigated the sediments adjacent to the site and identified coal tar on the river bottom. The Department has directed National Grid to remove the coal tar from the river as an interim remedial measure (IRM). A pilot test to assess potential removal techniques has been scheduled to be performed in early 2010.

2.2 Site History

In 1854, the Glens Falls Gas Light Company purchased a .243 acre parcel and constructed the original gas house at the site. The coal gas plant operated from 1854 to 1920, undergoing numerous expansions. In 1921, the plant was converted to the carbureted water gas process, which operated until 1929. After 1929, gas was provided to the area by pipeline from the Albany area. However, the plant at the site was operated for peak wintertime demand until December 29, 1950. The last major MGP structure removed appears to have been the eastern gas holder, which was demolished in 1959.

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers. The Department and the Niagara Mohawk Power Corporation entered into a multi-site Consent Order on December 7, 1992. The Order (#D0-0001-9210) obligates the responsible party to investigate and implement, when necessary, a full remedial program at 21 sites, including the site at Glens Falls. National Grid purchased Niagara Mohawk Power Corporation; therefore, National Grid is the responsible party for the remediation of the MGP related contamination at this site.

2.3 Nature and Extent of Site Contamination

As described in the original ROD and other documents, many surface soil, subsurface soil, sediment, canal surface water, and groundwater samples were collected at the site to characterize the nature and extent of contamination. The primary contaminants of concern include:

Waste Materials

The production of manufactured gas created many by-products, some of which remain on the site. A dense, oily liquid known as coal tar would condense out of the gas at various stages during its production, purification and distribution. Although some of the coal tar produced by plants may have been reused or

sold, recovery of the tar was incomplete. Substantial amounts of tar leaked or were discharged from storage and processing facilities over the long life of the plant, contaminating subsurface soils on the site, as well as groundwater. Another by product, purifier waste, was the exhausted lime and/or iron oxide treated wood chips that were used to remove cyanide and sulfur from the gas. Purifier waste was often discarded on the site of a gas plant or used as a fill material.

The source of much of the benzene, toluene, ethylbenzene and xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAH) contamination found on site is the coal tar or non-aqueous phase liquids (NAPL) which is found both in and around the various subsurface structures, or is migrating through the subsurface at the site. The NAPL was found to saturate the unconsolidated deposits and/or exist in scattered, discontinuous globules. Either of these conditions generally coincides with high BTEX and PAH concentrations in soils and typically results in significant contamination to the groundwater as well. Areas with a substantial volume of contaminants have been termed “source areas” and are defined as the locations at the site of former MGP structures and/or those areas of soil which contain significant volumes of coal tar waste or which are saturated with visually observed separate phase product (NAPL). Soils exhibiting odors, staining and/or sheens are not necessarily included in the definition of “source areas”. At the site, these “source areas” appear to be directly associated with several of the former plant structures, some of which remain on site below the current ground surface.

Surface Soil

The surface soils at the site are generally not contaminated by the former MGP operations. PAHs detected in surface (0-2 inches) and shallow soil (0-2 feet) samples ranged from 0.002 to 15 parts per million (ppm). The majority of the site surface is either fill that was placed after MGP operations ceased, or asphalt pavement and gravel. Although site constituents were found above analytical detection limits, they are orders of magnitude below those found in the “source areas”, and are comparable to background soil samples. Four background surface soil samples collected from areas around the site not contaminated by the MGP ranged from ND to 0.002 ppm for BTEX, and 0.65 to 1.8 ppm for total PAHs (TPAHs).

Subsurface Soil

During the remedial investigation (RI), approximately 140 subsurface soil samples were collected and analyzed. These samples found certain areas of the site were heavily contaminated by MGP related constituents, while other areas were relatively uncontaminated. The most extensive and severe of these impacts are located in the area that was within the former MGP plant footprint. Analytical results for subsurface soil samples in the northern parcel were found to range for: individual PAH concentrations from non detect to 32,000 ppm of naphthalene, TPAHs from non-detect to 123,730 ppm, as compared to total value of 500 ppm in TAGM 4046. Individual BTEX values ranged from nondetect to 1,200 ppm of benzene, non detect to 2,000 ppm for toluene, non-detect to 1,900 ppm of xylene, non detect to 430 ppm of ethylbenzene. Total BTEX ranged from non-detect to 5,270 ppm, compared to a total volatile organic compound (VOC) TAGM value of 10 ppm, and cyanide from non- detect to 521 ppm.

The impacts from coal tar were visually observed to be heaviest in close proximity to several of the former plant structures, i.e. the below grade holder. The coal tar impacts were also observed to preferentially occur in the more permeable, coarser grained sand/silt layer.

The tar separator, a former subsurface MGP structure, located within OU1 was excavated in March 2008 and the contents of the tar separator consisting of NAPL-contaminated soil were sent off-site to a thermal desorption facility for treatment. Clean fill was placed in the excavation and the site was re-graded. This

action which was called for in the ROD was expedited to address a significant area of source material that was readily accessible and limited in area to reduce the potential for further off-site NAPL migration to the feeder canal.

Sediments

During the RI, approximately 20 sediment samples were collected from the Glens Falls Feeder Canal. These samples found the stretch of the canal immediately adjacent to the site to heavily contaminated with visually identifiable coal tar and contaminants consistent with those found on site, BTEX, PAHs, and cyanide. These impacts were found to decline significantly with distance from the site.

Levels for site related contaminants observed in the canal adjacent to the site ranged from: non-detect to 113 ppm of BTEX, 1 to 31,062 ppm of TPAHs, and non detect to 9 ppm of cyanide. NAPL was also visually observed in the canal bed and shallow sediments. In contrast, levels detected north of the State Route 9 bridge, ranged from 4 to 108 ppm of TPAHs. The lowest levels were found in the sample furthest from the site, CS-6 which is located approximately 375 feet north of the bridge.

Pesticides and metals were also detected in the canal sediment samples. The pesticides and metals detections do not appear to be site related. A temporary measure to address the presence of sheens observed on the water within the canal consisting of the capping of an area of highly contaminated sediment that was identified as the source of the sheen with an organic clay material. This has proved effective and will be removed as part of the sediment removal component of the remedial action so that contaminated sediments can be accessed.

Groundwater

The RI identified significant groundwater contamination at the site. This groundwater contamination originates in the area of the former MGP structures and extends beyond the south eastern property boundary. Levels of groundwater contamination observed on the northern parcel during the RI investigation ranged from: non-detect to 2,724 parts per billion (ppb) of BTEX, non-detect to 1,960,117 ppb of TPAHs, and non-detect to 4,710 ppb of cyanide.

Levels of groundwater contamination observed during the RI investigation in monitoring wells in the canal towpath, downgradient of the site, were significantly lower. Levels observed in those wells ranged from non-detect to 83 ppb of TPAHs. BTEX ranged from non-detect to 12 ppb, and cyanide was not detected in these wells. This is likely due to dilution by the Glens Falls Feeder Canal and natural attenuation.

Surface Water

In June, 1993, 4 canal surface water and 4 storm drain outfall water samples were collected during the Preliminary Site Assessment (PSA), and analyzed for VOCs, SVOCs, metals and cyanide. These samples found only low levels of two chemicals (diethylphthalate and bis[2-ethylhexyl]phthalate) that are likely artifacts of sample collection and analysis. Thus, no additional samples were collected during the RI.

Sheens have been observed on the water surface in the canal, which is a contravention of surface water standards. The temporary sediment cap IRM described above adequately addressed the sheens generated in the canal from the MGP related sediment contamination.

Air

Air samples were collected through adsorbent tubes during the test pit investigation at the site, to assess potential impacts to ambient air quality. Six environmental samples and a field blank were submitted for analysis of BTEX and PAH compounds. No PAHs were present in the air samples, while BTEX was detected in all of the samples, including the field blank. Individual contaminant concentrations ranged up to 40 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for toluene in the upwind sample.

Background Samples

Three background sediment samples were collected from the Glens Falls Feeder Canal to assess local sediment quality due to anthropogenic or natural occurrences. These samples were collected upstream of the site and the drainage pipe that reverses flow in the canal in the site vicinity. The sediment samples found metals and pesticides levels that were generally comparable to those observed in the site vicinity and identified the lowest levels of TPAHs in the background sample collected closest to the site, CS-1. Therefore, the Total PAH level of 9.28 ppm for this sample will be utilized as background for the site. Six background soil samples were also collected from across Mohican Street, on a parcel of property owned by National Grid. These samples were collected from the surface and subsurface soils to assess the condition of local soil quality, due to anthropogenic or natural occurrences. These soil samples found metal levels that were generally comparable to those observed on the site.

2.4 Summary of Human Exposure Pathways

This section describes the types of human exposures that may present added health risks to persons at or around OU1. A more detailed discussion of the human exposure pathways can be found in Section 1.2 of the Final Feasibility Study (FS) report.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway are documented. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

Potential Exposure Pathways

- Dermal contact and/or inhalation of vapors and airborne particulates from contaminants in soil by on-site workers and construction workers.
- Dermal contact with and/or inhalation of volatiles from NAPL in subsurface soil and shallow groundwater by construction workers involved in subsurface excavations.

- Dermal contact with contaminants in canal sediments by recreational users and canal workers. The potential does exist for boaters to come in contact with contaminated sediments in the adjacent canal.
- Exposure to contaminated groundwater and soil is unlikely since the area is serviced by public water and contaminated soil is below the ground surface and most of the site is covered by blacktop. However, potential exposures to contaminated groundwater could occur in the future if a drinking water well is installed on-site.
- The potential for exposures via soil vapor intrusion will be evaluated if new construction is planned on-site in the future.

2.5 Summary of Environmental Assessment

This section summarizes the existing and potential future environmental impacts presented by the site. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands. Results of the site investigation revealed that the site itself provides limited value for fish and wildlife resources due to the site's use as a National Grid storage facility, the chain link security fence that completely surrounds the site and extensive paving on the site. However, fish and wildlife resources were associated within OU1, notably the Glens Falls Feeder Canal. The canal supports both fish and benthic communities, although the value of the resource is seasonally limited since the canal is drained every fall and remains dewatered during the winter to minimize ice damage. This dewatering and freezing of the canal sediments limits the benthic communities, aquatic plants and fish communities present in the canal. While such dewatering and freezing of the sediment limits the community to species tolerant of such fluctuations, complete elimination does not occur. Additionally, the community would be expected to recover during the spring and summer growing season when the canal is flooded. This re-growth is expected to be aided by the reintroduction of species from populations in the Hudson River, which is the source of surface water to the canal.

The canal also provides a valuable corridor of riparian habitat that wildlife may use to feed in and migrate through the area, as well as a direct link between the site and the Hudson River. Sediments in the canal contained levels of PAHs that may migrate into the Hudson River, via the canal's drain, when the canal is drained annually. Several threatened or endangered species are also present within a 2.0 mile radius of the site, according to state and federal records. The Fish and Wildlife Impact Analysis, which is included in the SRI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors. The following environmental exposure pathways and ecological risks have been identified:

- Potential exposure of benthic organisms to sediments in the canal and river that contain coal tar and levels of PAHs that exceed the effects range moderate (ERM) level.
- The potential for direct contact by terrestrial and aquatic fauna and flora with NAPL and contaminated subsurface soils.
- Site contamination has also contaminated the groundwater resource in the unconsolidated geologic units.

2.6 Original Remedy

Based upon the results of the RI/FS and an evaluation of the data, the Department selected a site remedy that included:

- Excavation of NAPL source areas. Source areas were defined as the locations of former MGP structures and/or those areas of soil which contain significant volumes of coal tar waste or which are saturated with visually observed separate phase product (NAPL). Soils exhibiting odors, staining and/or sheens were not considered to be source areas;
- Backfill of excavated areas;
- NAPL containment using a sheet pile cutoff wall to prevent further migration to off-site areas. Installation of collection wells or sumps along the inside of the wall to allow for the removal of DNAPL for off-site treatment/disposal;
- Groundwater treatment using a funnel and gate system. Groundwater passing through the gates would be treated to remove MGP contaminants;
- Isolation of contaminated soil and groundwater beneath the Henry Street electrical sub-station with an impermeable barrier wall to be keyed into the top of the silty clay layer underlying the site;
- Removal of approximately 6,000 cubic yards of contaminated sediment from the Feeder Canal. The goal of the sediment remediation was to remove all exposed PAH contaminated sediments exceeding local background sediment values; and
- Construction of a soil cover over approximately 6 acres of the site;
- Development of a soils management plan to address remaining contaminated soils that may be excavated from the site during future redevelopment;
- Development and implementation of a long term operations, monitoring, and maintenance program;
- Implementation of institutional controls to limit future site development and prevent future exposures to site contaminants.

3.0 DESCRIPTION OF THE AMENDMENTS TO THE ROD

3.1 New Information

National Grid retained an engineering firm to develop the design of the remedy specified in the March 2003 OUI ROD. The engineering work included determining the proper size and spacing of the groundwater barrier and treatment cells that comprised the funnel and gate groundwater treatment system. Based on a detailed model of the groundwater flow and calculations of contaminant mass that would pass through the treatment cells (gates), the designers concluded that the system would require a significant increase in the number of groundwater treatment cells compared to the conceptual design. Additionally, the sorbent material in each gate would require changing at such frequency that the technology was not implementable or cost-effective.

National Grid performed pilot tests of two oxygen delivery systems (ODS) as an alternative approach to the funnel and gate method of groundwater treatment specified in the ROD. The ODS systems are designed to enhance the natural degradation of dissolved groundwater contaminants. The systems provide oxygen to naturally-occurring microorganisms that consume hydrocarbons as a nutrient source. Currently the low level of oxygen in site groundwater limits the growth of these organisms. The ODS systems operate by pumping air through a network of pipes and diffusing the air into the groundwater. This creates oxygen-rich groundwater and promotes microbial growth. Without the ODS systems the rate of microbial activity would be too low to effectively remediate residual groundwater contamination.

Following the completion of the field test, the data was evaluated and the results indicated that both ODS systems operated effectively to treat the contaminated groundwater at the site. The test results indicate that, if implemented site wide, this technology would be equivalent or superior to the funnel and gate system specified in the ROD. Additionally, the long-term cost of the ODS system was estimated to be lower than

the groundwater remedy component of the ROD.

Because the ODS system does not effectively contain or treat NAPL, the revised remedy must provide a NAPL containment measure that is equivalent to the NAPL containment barrier in order to be equally protective as the ROD. National Grid proposes to expand the excavation portion of the remedy to remove all NAPL-contaminated soils from the land-side portion of OU1, with the exception of the Henry Street Substation area, which would be contained. The removal of all NAPL source material would eliminate the need to install a NAPL containment barrier.

Since the 2003 ROD was issued, the Department has overseen several excavation projects at sites contaminated with MGP-related material. Based on the Department's experience, and the issuance of recent regulations and guidance, the term "source area", as used in the 2003 ROD, has been revised. To be consistent with regulations, guidance and other MGP projects, the criteria for excavation of source material are soil which contains:

- sources or substantial quantities of mobile contamination in the form of NAPL, that is identifiable either visually, through strong odor, by elevated contaminant vapor levels, is otherwise readily detectable without laboratory analysis, or meets one or more of the following criteria:
- visible tar, oil or petroleum;
- visible purifier waste, with reactive cyanide levels above 500 ppm and/or reactive sulfide levels above 250 ppm;
- NAPL identified in the field by performing a pre-approved field test (i.e., NAPL staining of disposable sampling equipment); or
- concentrations of total polycyclic aromatic hydrocarbons (PAHs) greater than 500 ppm.

The data collected during the RI/FS was re-evaluated to determine a more precise volume of soil that would be excavated and transported offsite for treatment. National Grid, using this definition of source material, determined that the volume of soil to be excavated and transported offsite for treatment increased significantly from the previous estimate, from 5,500 cubic yards to 16,000 cubic yards, an increase of 290%. The area that would be excavated is presented in Figure 4.

The result of applying the new definition of source material to the remedial action would be the removal of all NAPL from the subsurface, both above and below the water table, with the exception of the Henry Street Substation. This complete removal of source material would obviate the need for installation of a NAPL containment barrier.

After the 2003 ROD was issued, revisions to Environmental Conservation Law and 6NYCRR Part 375 have clarified the soil cover requirements that are suitable for various land uses. The two-foot thick soil cover specified in the 2003 ROD is compatible with restricted residential use (e.g., apartments and condominiums), and with active recreation (e.g., playgrounds and ball fields) under the new regulations. The 2003 ROD did not include restricted residential as a permissible land use, and did not specify the type of recreational use. Also, the Department's current practice is to include a demarcation beneath the soil cover to notify future site workers when an excavation has reached areas of remaining contamination. Since 2003 the Department was also authorized to obtain environmental easements to enforce the institutional control and engineering control elements of remedial programs at sites.

3.2 Changes to the 2003 ROD

Based on the infeasibility of the groundwater treatment cells and the increased volume and associated cost of soil excavation and disposal, the Department determined that the requested modification to the 2003 ROD required a ROD Amendment.

The Department selected the following changes:

- Excavation of source material, as defined above, to remove all NAPL-contaminated soils, with the exception of material beneath the Henry Street substation. This will result in an increase of 290% in the estimated volume of soil requiring excavation, from 5,500 cubic yards to 16,000 cubic yards. This will eliminate the requirement for a NAPL containment barrier.

Treatment of groundwater with an active oxygen delivery system to enhance the bioremediation of dissolved contaminants. This will be in place of the funnel and gate treatment system which used panels of absorptive material.

- Clarification that the two-foot soil cover will allow for restricted residential and active recreational use of the site. Addition of a demarcation layer beneath the soil cover system to be protective for these uses.
- Imposition of an institutional control in the form of an environmental easement on OU1 properties owned by National Grid that will require: (a) limiting the use and development of the property to restricted residential use, which will also permit commercial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.
- Development of a site management plan which will include the following institutional and engineering controls: (a) a long-term monitoring program that contains contingencies to be implemented immediately should the site remedy fail to achieve the remedial action objectives in a timely manner or NAPL releases are observed in the Glens Falls Feeder Canal; (b) management of the final soil cover system to restrict excavation below the soil cover's demarcation layer, pavement, or buildings. Excavated soil will be tested, properly handled to protect the health and safety of workers and the nearby community, and will be properly managed in a manner acceptable to the Department; (c) continued evaluation of the potential for soil vapor intrusion for any building developed on the site, including provisions for mitigation of any impacts identified; (d) monitoring of the groundwater, surface water and sediment; (e) provisions for the continued proper operation of the groundwater treatment system with routine maintenance performed regularly and adequate safeguards for system operation interruptions.
- National Grid will provide periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put into place are still in place and are either unchanged from the previous certification or are compliant with the Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that will impair the ability to control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless

otherwise approved by the Department.

4.0 EVALUATION OF CHANGES

4.1 Remedial Goals

Goals for the cleanup of the site were established in the original ROD. The goals selected for this site are to eliminate or reduce to the extent practicable:

- Human, flora and fauna contact with surface and subsurface soils exceeding standards, criteria and guidance,
- Migration of LNAPL and DNAPL in groundwater and subsurface soil,
- Off-site migration of groundwater that does not attain New York State Groundwater Quality Standards,
- Human and biota exposure to site-related contaminants in sediment above background in the Glens Falls Feeder Canal,
- The contravention of NYSDEC surface water quality criteria by site-related constituents in the Glens Falls Feeder Canal.

Further, the remediation goals for the site include attaining to the extent practicable:

- The prevention of human, flora and fauna contact with groundwater containing site related constituents that does not attain Part 5 of the New York State Sanitary Code Drinking Water Standards and/or NYSDEC ambient groundwater quality standards.

4.2 Evaluation Criteria

The criteria used to compare the remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each criterion, a brief description is provided. A detailed discussion of the evaluation criteria and comparative analysis is contained in the original Feasibility Study.

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

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

Both the selected remedy in the 2003 ROD and the amended remedy would be equally protective of human health and the environment since both would remove MGP-contaminated soils and sediments, implement long-term groundwater monitoring programs, and establish institutional controls and engineering controls for OU1.

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

The most significant SCGs of concern are ambient groundwater quality standards (6NYCRR Parts 700-705) and the 6NYCRR Part 375 Soil Cleanup Objectives (SCOs) pertaining to MGP-related NAPL and PAHs. The amended remedy will remove a greater volume of soil that exceeds the SCOs from the site. Both groundwater treatment alternatives would meet groundwater quality standards at the site boundary to a similar degree.

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

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

For both alternatives the short-term impacts of vehicle traffic, contaminated material excavation and handling, and soil backfill would represent noise, dust and emission concerns which would need to be controlled with health and safety plans and engineering controls. The amended remedy may pose a potential increase in short term impacts due to the increased excavation volume and associated increase in odors, truck traffic and duration. However, routine procedures are available to monitor and mitigate odor and dust resulting from the construction activities.

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

The excavation and off-site treatment and disposal of the amended remedy alternative would provide a higher degree of long-term effectiveness than on-site containment and collection. All source material would be treated off site and would not require the frequent maintenance that would be required for the funnel and gate treatment system. Therefore, the reliability is greater and magnitude of risk is lower for the amended remedy than for the 2003 ROD remedy. Increased contaminant removal will result in a decrease in risk and a lesser degree of controls to address the contamination that will remain on site.

Both alternatives would also require maintenance of the groundwater treatment components. However, the risk associated with the potential release of contaminated groundwater under the amended remedy will be significantly lower than the risk of releasing NAPL into the environment in the 2003 ROD.

Additionally, the time needed to achieve compliance with groundwater SCGs across the site will be significantly less for the amended remedy, due to the removal of more source material. The amended remedy will also be more permanent than the original ROD remedy because more contaminants will be treated off-site.

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

The amended remedy will remove NAPL-contaminated soil from the site by excavation and treat it off-site, which will provide a permanent reduction in volume. By comparison, the 2003 ROD remedy would excavate a smaller portion of highly contaminated soil, and the remaining NAPL would be collected over time for treatment or disposal. Because the 2003 ROD remedy would only collect mobile NAPL and residual contamination would remain, the amended remedy will permanently reduce a greater volume of waste in a shorter time frame.

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

The types of groundwater treatment systems for the two alternatives are distinctly different. The conceptual number and size of the passive, in-situ, flow-through treatment cells described in the 2003 ROD was determined to be significantly insufficient to treat the volume of groundwater exiting the site. The level of effort required to make this technology function at this site resulted in the remedial approach not being implementable due to the conditions at this site.

The remedial design determined that using the ROD-specified funnel and gate system to treat groundwater at the site is not technically feasible. This is due to a higher groundwater flow rate and contaminant mass loading on the treatment panels than was estimated in the ROD, resulting in an unacceptable frequency of maintenance. The feasibility of the oxygen delivery system was proven to be effective during the on-site field pilot test. Additionally, because the amended remedy will remove a greater degree of NAPL-contaminated soil, the need for a NAPL containment barrier and collection system will be eliminated, which favors the implementability of the proposed change. The amended remedy soil excavation, as compared to the 2003 ROD, is readily feasible for the conditions at this site.

Based on this evaluation the amended remedy is more readily implementable than the conceptual approach described in the 2003 ROD.

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

The estimated cost of the amended remedy is \$15,000,000.

The estimated cost of the 2003 ROD remedy, as determined during the design process and based on current prices, is \$17,400,000.

The amended remedy will provide substantial benefit to the environment by reducing the mass of site contaminants, reduce the level of residual contamination and shorten the time required for the restoration groundwater quality for this increase in cost.

This final criterion is considered a modifying criterion and is considered after evaluating those above. It is focused upon after public comments on the ROD amendment have been received.

8. Community Acceptance. Concerns of the community regarding the proposed ROD Amendment have been evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the Department addressed the concerns raised. The public generally supported the amended remedy, but expressed concerns for quality of life issues related to the implementation of the remedy.

5.0 SUMMARY OF THE ROD AMENDMENT

The Department has amended the Record of Decision (ROD) for the Glens Falls – Mohican Street, Former MGP Site, Operable Unit 1. The selected changes include:

- Increasing the quantity of contaminated soil to be excavated and transported offsite for treatment and disposal compared to the quantity presented in the 2003 ROD. The result will be the removal of all source material, with the exception of material beneath the Henry Street substation. Source material will be defined as soil which contains:
 - sources or substantial quantities of contamination or NAPL that is identifiable either visually or is otherwise readily detectable without laboratory analysis;
 - visible tar, oil, or petroleum;
 - visible purifier waste, with reactive cyanide levels above 500 ppm and/or reactive sulfide levels above 250 ppm, or;
 - NAPL identified in the field by performing a pre-approved field test (i.e., NAPL staining of disposable sampling equipment);
 - concentrations of total polycyclic aromatic hydrocarbons (PAHs) greater than 500 ppm.
- Eliminating the NAPL containment barrier and NAPL collection system.
- Replacing the funnel and gate groundwater treatment system with an active oxygen delivery system to enhance the bioremediation of dissolved contamination.
- Clarifying that the 2-foot soil cover system will permit restricted residential and active recreational uses of the site.
- Imposition of an institutional control in the form of an environmental easement on OU1 properties owned by National Grid that will require: (a) limiting the use and development of the property to restricted residential use, which will also permit commercial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.
- Development of a site management plan which will include the following institutional and engineering controls: (a) a long-term monitoring program that contains contingencies to be implemented immediately should the site remedy fail to achieve the remedial action objectives in a timely manner or NAPL releases are observed in the Glens Falls Feeder Canal; (b) management of the final soil cover system to restrict excavation below the soil cover's demarcation layer, pavement, or buildings. Excavated soil will be tested, properly handled to protect the health and safety of workers and the nearby community, and will be properly managed in a manner acceptable to the

Department; (c) continued evaluation of the potential for soil vapor intrusion for any building developed on the site, including provisions for mitigation of any impacts identified; (d) monitoring of the groundwater, surface water and sediment; (e) provisions for the continued proper operation of the groundwater treatment system with routine maintenance performed regularly and adequate safeguards for system operation interruptions.

National Grid will provide periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put into place are still in place and are either unchanged from the previous certification or are compliant with the Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that will impair the ability to control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

The estimated present worth cost to carry out the amended remedy is \$18,700,000. The estimated present worth to complete the original remedy was \$23,800,000. The cost to construct the amended remedy is estimated to be \$15,000,000 and the estimated average annual cost for 30 years is \$237,000.

The elements of the amended remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS will be resolved.
2. Excavation and off-site disposal of source material. "Source material" is defined as soil which contains:
 - sources or substantial quantities of contamination or NAPL, that is identifiable either visually or is otherwise readily detectable without laboratory analysis;
 - visible tar, oil, or petroleum;
 - visible purifier waste, with reactive cyanide levels above 500 ppm and/or reactive sulfide levels above 250 ppm;
 - NAPL identified in the field by performing a pre-approved field test (i.e., NAPL staining of disposable sampling equipment); or
 - concentrations of total polycyclic aromatic hydrocarbons (PAHs) greater than 500 ppm.

Soils exhibiting odors, staining and/or sheens will not be considered for removal as source areas, unless one of the above criteria is met. The limits of this source area excavation, including the removal of several subsurface MGP structures that remain on site, as represented in Figure 4.

3. The relief holder, at grade holder, retort house foundation, gas compressor house foundation and other minor subsurface structures will be removed, as represented in Figure 3. Any NAPL source area soils adjoining these structures will also be removed.
4. Soils beneath the Henry Street Substation will be isolated with an impermeable barrier wall, to be

keyed into the top of the silty clay layer underlying the site.

5. Groundwater treatment using an oxygen delivery system will be installed along three transects across the site, including one along the boundary of the Feeder Canal. This system will be installed, operated and maintained to enhance the bioremediation of dissolved residual groundwater contamination.
6. Approximately 6,000 cubic yards of sediments contaminated with PAHs will be removed from the Glens Falls Feeder Canal. This removal will conceptually extend from sample point CS-1 northward to a concrete lined portion of the canal. Approximately 2 feet of NAPL and PAH contaminated sand will be removed from the canal and the uncontaminated underlying silty clay will be left exposed as the canal bottom. The precise limits and specifics of the removal will be detailed in the remedial design and incorporate a planned concrete lining project by the New York State Canal Corporation that is estimated to begin 40 meters north of the Route 9 Bridge. The goal of the sediment remediation will be to remove all of the exposed PAH contaminated sediments above local background sediment values.
7. A soil cover consisting of material that satisfies the SCO for restricted residential use and the protection of groundwater will be constructed over the site to prevent exposures to subsurface soil. This cover will be underlain by an indicator such as orange plastic snow fence to demarcate the cover from the subsurface soil. The top six inches of soil will be of sufficient quality to support vegetation. Non-vegetated areas (buildings, roadways, parking lots, etc.) will be covered by a paving system or concrete at least 6 inches thick.
8. Imposition of an institutional control in the form of an environmental easement on OU1 properties owned by National Grid that will require: (a) limiting the use and development of the property to restricted residential use, which will also permit commercial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.
9. Development of a site management plan which will include the following institutional and engineering controls: (a) a long-term monitoring program that contains contingencies to be implemented immediately should the site remedy fail to achieve the remedial action objectives in a timely manner or NAPL releases are observed in the Glens Falls Feeder Canal; (b) management of the final soil cover system to restrict excavation below the soil cover's demarcation layer, pavement, or buildings. Excavated soil will be tested, properly handled to protect the health and safety of workers and the nearby community, and will be properly managed in a manner acceptable to the Department; (c) continued evaluation of the potential for soil vapor intrusion for any building developed on the site, including provisions for mitigation of any impacts identified; (d) monitoring of the groundwater, surface water and sediment; (e) provisions for the continued proper operation of the groundwater treatment system with routine maintenance performed regularly and adequate safeguards for system operation interruptions.
10. National Grid will provide periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the

Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put into place are still in place and are either unchanged from the previous certification or are compliant with the Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that will impair the ability to control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

SECTION 6: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- Repositories for documents pertaining to the site were established.
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established.
- A Fact Sheet was mailed on February 10, 2010 to the surrounding community, government officials, news media and interested parties.
- A public meeting was held on February 25, 2010 to present and receive comments during the public comment period for the ROD Amendment.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the ROD Amendment.

APPENDIX A

Responsiveness Summary

Responsiveness Summary

**NM – Glens Falls MGP Site
Operable Unit No. 1
State Superfund Project
Glens Falls, Warren County, New York
Site No. 557016**

The Proposed Record of Decision Amendment (ROD Amendment) for the NM – Glens Falls MGP site, was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 11, 2010. The ROD Amendment outlined the remedial measure proposed for the contaminated soil, groundwater, and sediment at the NM – Glens Falls site.

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

A public meeting was held on February 25, 2010, which included a presentation of the remedial investigation feasibility study (RI/FS) for the NM – Glens Falls MGP Site as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 11, 2010.

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

Comment 1: The area marked as Area “C” in the 2003 ROD was used as a dumping pit for leftover tar that was used to seal roads in the city. My house is near that portion of the site, and I am concerned.

Response 1: This ROD Amendment requires soil contaminated with MGP- or petroleum-related contamination in this area, above the cleanup criteria, to be excavated and transported off-site for treatment and disposal. During 2009, the area along Mohican Street between the site and the adjacent residences was excavated to depths reaching 16 feet below the ground surface for the installation of a sanitary sewer. Department personnel were present during the excavation and no MGP related contamination was encountered, indicating that contamination had not reach Mohican Street. In addition, sample results obtained during the site investigation indicate that contamination is not migrating off-site toward the current residential areas. Therefore, on-site contamination does not present exposure concerns (through direct contact or ingestion of contaminated soils or groundwater, and/or inhalation) for the residents along Clendon Avenue and Basin Street.

Comment 2: What does the new, active treatment consist of?

Response 2: The groundwater treatment system will be designed to inject oxygen into the groundwater through a series of underground distribution and diffusion pipes. Oxygen (in the form of air) will be pumped through the distribution piping to a depth below the groundwater table where it will be injected

through diffusion piping. The oxygen will rise through the water providing supplemental oxygen to the naturally-occurring soil microbes, thereby promoting their growth. These microbes consume MGP-related contaminants, resulting in enhanced natural biological degradation of groundwater contamination. The growth of these microbes is currently limited by the relatively low level of dissolved oxygen in the groundwater. The active system would increase the dissolved oxygen level and subsequently promote the growth of the microbes.

Comment 3: Are you aware of artesian wells in the area? How will this condition be managed?

Response 3: Yes, the Department is aware of this condition. The remedial design developed for the site will include dewatering provisions sufficient for managing the anticipated flow of groundwater.

Comment 4: When will construction of the new remedy start, and how long will it take?

Response 4: The Department anticipates that construction will begin in 2011 and be completed in 2012.

Comment 5: What time of year will the remedy be performed?

Response 5: The land side portion of the remedial work can be performed any time of the year. The sediment removal from the canal will be performed during the time that the canal is closed and drained during the fall through spring.

Comment 6: Will the bike path (tow path) be closed?

Response 6: At this time, the Department expects that the bike path (tow path) will be closed during the excavation of the canal sediment. The schedule for this work will be during the closure of the canal (fall through spring). Signs will be posted to detour pedestrian and bicycles traffic around the work area.

Comment 7: Will the canal be closed?

Response 7: Excavation of the sediments from the canal will be performed during the months when the canal would typically be closed (fall through spring). The Department does not anticipate any need for additional canal closures.

Comment 8: Where will the excavated material be taken?

Response 8: Certain coal tar contaminated soils will be transported off-site to a Department-approved thermal desorption facility for treatment and disposal. National Grid will determine which approved facility they will use. Other non-hazardous waste will be transported off-site to an approved landfill.

Comment 9: I am concerned about truck routes through the city, particularly the intersection of Mohican and Madison streets, where children play in the street.

Response 9: The trucking route will be determined as part of the remedial design. The plan will be designed to efficiently move construction equipment onto and off the site and minimize disruption to the community. The trucking route will take into consideration the presence of the recreational park.

Comment 10: Has the impact of the Northway Exit 18 improvement project been considered on trucking routes?

Response 10: The Exit 18 improvement truck routes will be incorporated into the Mohican Street MGP site traffic plan as necessary.

Comment 11: Will Mohican Street be closed or partially closed during the construction?

Response 11: The Department does not anticipate a need to close Mohican Street as part of this construction. Periodically traffic may be stopped to facilitate trucks entering or leaving the site.

Comment 12: Will any homes be affected during construction?

Response 12: Construction will be performed within the Operable Unit 1 boundary depicted on Figure 2 of the 2010 ROD Amendment. No homes are located within the boundary.

Comment 13: What is the impact of this contamination on residents of the area and former workers at the facility?

Response 13: The investigation of the site has not identified any completed exposure pathway, i.e. contact, ingestion or inhalation with any site related contaminants. Therefore, on-site contamination does not present exposure concerns for the residents along Clendon Avenue and Basin Street. In addition, access to the site is restricted by a fence and residential homes in the area are currently provided water through a public water supply.

Since MGP operations shutdown at the site, the site has been used for equipment storage and as a vehicle service center by Niagara Mohawk. The Department and the NYSDOH cannot speak to the nature of work activities or the types of chemicals that may have been handled as part of these operations. Occupational health and safety associated with recent commercial and industrial operations at the site were overseen and regulated by the US Department of Labor Occupational Safety and Health Administration (OSHA).

Comment 14: Is the State concerned about cancers in the neighborhood?

Response 14: Cancer is a very common disease. One in three people will be diagnosed with cancer at some time in their life. Eventually, cancer occurs in three out of every four families. In New York State, physicians and other health care providers are required to notify the NYSDOH of every case of cancer diagnosed. The NYSDOH uses this information to track cancer incidence rates in the State and at a local level (i.e., county), to develop reports for the public, to identify geographical areas that may have elevated incidence of a specific type or types of cancer for study, and ultimately to learn more about the potential causes of cancer for the purposes of prevention. More information about the NYS Cancer Registry can be found at <http://www.health.state.ny.us/statistics/cancer/registry/>.

As discussed in response #13, there is no evidence that contamination associated with the former MGP operations has migrated to the residential properties on Clendon Avenue or Basin Street. Moreover, access to the site is restricted. As a result, there is no evidence that the residents are coming in direct

contact with contamination at the site and there are no known ongoing exposures for the residents living near the site.

Comment 15: Will National Grid ratepayers pay for this cleanup?

Response 15: This question is beyond the scope of this document. National Grid is responsible for implementing the remedy, and the question should be directed to them.

Following the public meeting, the State received two e-mails with concerns regarding cancer rates in the community near the former MGP site. The e-mails contained specific details regarding cancer incidence and to protect the privacy of the families mentioned, the e-mails were not included in this responsiveness summary. Instead, the concerns have been shared with the NYSDOH Cancer Surveillance Program and direct feedback will be provided to the residents that sent the e-mails.

Comment 16: Each of these emails referred to occurrences of cancer for the residents who currently or formerly lived adjacent to the site and requested that these occurrences be researched for a possible link to the site conditions.

Response 16: See responses 13 and 14 above.

The Department received a letter from the New York State Canal Corporation on March 10, 2010 that provided the following comments. Each comment related to the dredging of the Glens Falls Feeder Canal (GFFC).

Comment 17: The remedial design must incorporate measures to ensure that the floor of the GFFC maintains its integrity after dredging is completed. The Canal Corporation requests that National Grid evaluate the geology underlying the GFFC and propose a suitable restoration for the GFFC. Additionally, all work in the GFFC must be conducted during the non-navigation season.

Response 17: The remedial design will incorporate measures to ensure the integrity of the canal. National Grid's design of a suitable restoration will be coordinated with the Canal Corporation. As stated in Response #7, the work will be conducted during between the fall and spring when the canal is closed (during non-navigation season).

Comment 18: The Canal Corporation insists that the recreational trail remain open and unobstructed during remediation activities at the Glens Falls Former MGP and that adequate measures be established to ensure the users of the trail are not exposed to any health risks from the remediation efforts. If the trail cannot remain open for safety reasons, then a trail detour should be planned and established. Any trail detour must be approved by the Canal Corporation in advance and in all likelihood, the New York State Department of Transportation.

Response 18: The Department expects that the remediation will require the tow path (recreational trail) to be closed for the protection of the public from physical hazards and the need to establish exclusion zones associated with the construction. As the Canal Corporation is aware there is very limited open working space in this area, so it is unlikely that full public access with all necessary safeguards, can be

maintained throughout the project. As stated in Response #6, the remedial design will provide for detours for pedestrian and cycling public as well as seeking to minimize the extent of any necessary closure. The Department will work with Canal Corporation to ensure an adequate alternative pathway.

Comment 19: A Canal Work Permit will be required for any remedial work located on Canal lands. Before a Canal Work Permit can be issued, plans and specifications will need to be reviewed and approved by the Canal Corporation. Long term activities will require a Use and Occupancy Permit. To facilitate these requirements, the Canal Corporation requests the opportunity to review and comment on all phases of the remedial design.

Response 19: As part of the design process, National Grid will be required to obtain all necessary permits, or request the Department exercise its statutory waiver authority should an impasse with the issuing authority occur, before work can be initiated. This includes permits issued by the Canal Corporation. The Canal Corporation will have the opportunity to review all plans that pertain to Canal Corporation property during the permitting process.

Comment 20: If institutional controls are required on property under the Canal Corporation jurisdiction, then the Canal Corporation should be permitted to comment on the proposed controls and any potential impacts those controls may have on Canal operations and maintenance. Further, the Canal Corporation would not agree to an environmental easement that obligates it to conduct a periodic certification of institutional and engineering controls.

Response 20: The comment is acknowledged. A monitoring program will be established for sediments and surface water quality in the canal and will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impractical or not feasible. The implementation of this program, including periodic certification of the controls, will be the responsibility of National Grid.

Comment 21: Although the Canal Corporation retains jurisdictional control over a portion of the property to be remediated, this property is held in the name of the People of the State of New York, and pursuant to Section 6 of the Canal Law, the Canal Corporation is indemnified by the State of New York of any liability connected with this remedial action.

Response 21: The comment is acknowledged.

The Department received an email correspondence from National Grid's engineering consulting firm Innovative Engineering Solutions, Inc. on March 11, 2010 regarding the soil cover component of the remedy. A copy of this email is included in the Administrative Record for the site.

Comment 22: Figure 3 in the proposed ROD amendment indicates that the "Extent of the Post-Remediation Soil Cover" will extend to a paved area that is used by the Glens Falls Hospital for parking (located near the intersection of Basin Street and Mohican Street). As such, the ROD, the proposed ROD amendment and the conceptual design prepared for National Grid in December 2008 did not include any excavation (or other intrusive remediation activities) within this paved parking lot. Since this area will not be disturbed and is currently paved, we request that the proposed ROD amendment be

revised to indicate that a soil cover is not required at this location.

Response 22:

The requirement of a soil cover is appropriate in this location since the investigation results indicated elevated PID measurements from soil samples collected in this area, while other soil samples were observed to have staining and odors attributed to residual coal tar. Therefore the ROD Amendment will not be revised to eliminate the soil cover in this area, rather the current paving will satisfy this requirement as stated in the amendment. The ROD provides for the use of paved areas as a component of the soil cover, therefore the existing blacktop is the cover system in this area of the site.

APPENDIX B

Administrative Record

Administrative Record

**NM – Glens Falls MGP Site
Operable Unit No. 1
State Superfund Project
Glens Falls, Warren County, New York
Site No. 557016**

Record of Decision for NIMO Glens Falls – Mohican Street, Former MGP Site, Operable Unit No. 1, MGP Site and Canal, dated March 2003 prepared by the Department

Demolition of the Crew Facility Building, Blasland, Bouck, & Lee, August 2004

Response to Comments on the Draft Pre-Design Evaluation Report, Innovative Engineering Solution, Inc., September 2005

Work Plan for Pilot Test of Oxygen Deliver System, Innovative Engineering Solution, Inc., August 2006

Response to Comments of the Draft Work Plan for Pilot Test of Oxygen Delivery System, Canal Work Permit Application, Innovative Engineering Solution, Inc., August 2006

Bedrock Installation Report, Innovative Engineering Solution, Inc., September 2006

Canal Work Permit Application, Innovative Engineering Solution, Inc., October 2006

Oxygen Delivery System Pilot Test Report, Innovative Engineering Solution, Inc., August 2007

Proposed Interim Remedial Measure for the Glens Falls Feeder Canal, Innovative Engineering Solution, Inc., September 2007

Proposed Tar Separator Contents Removal Action Report, Innovative Engineering Solution, Inc., October 2007

Bedrock Well Gauging Report, Innovative Engineering Solution, Inc., October 2007

Canal Work Permit Application, Interim Remedial Measure to Cap Feeder Canal Sediments, Innovative Engineering Solution, Inc., December 2007

Report for the Installation of Additional Monitoring Wells Within the Feeder Canal Tow Path, Innovative Engineering Solution, Inc., February 2008

Interim Remedial Measure Completion Report, Innovative Engineering Solution, Inc., September 2008

Conceptual (30%) Design Report, Innovative Engineering Solution, Inc., December 2008

Response to Request for a Phase IA Literature Search and Sensitivity Assessment, Innovative Engineering Solution, Inc., June 2009

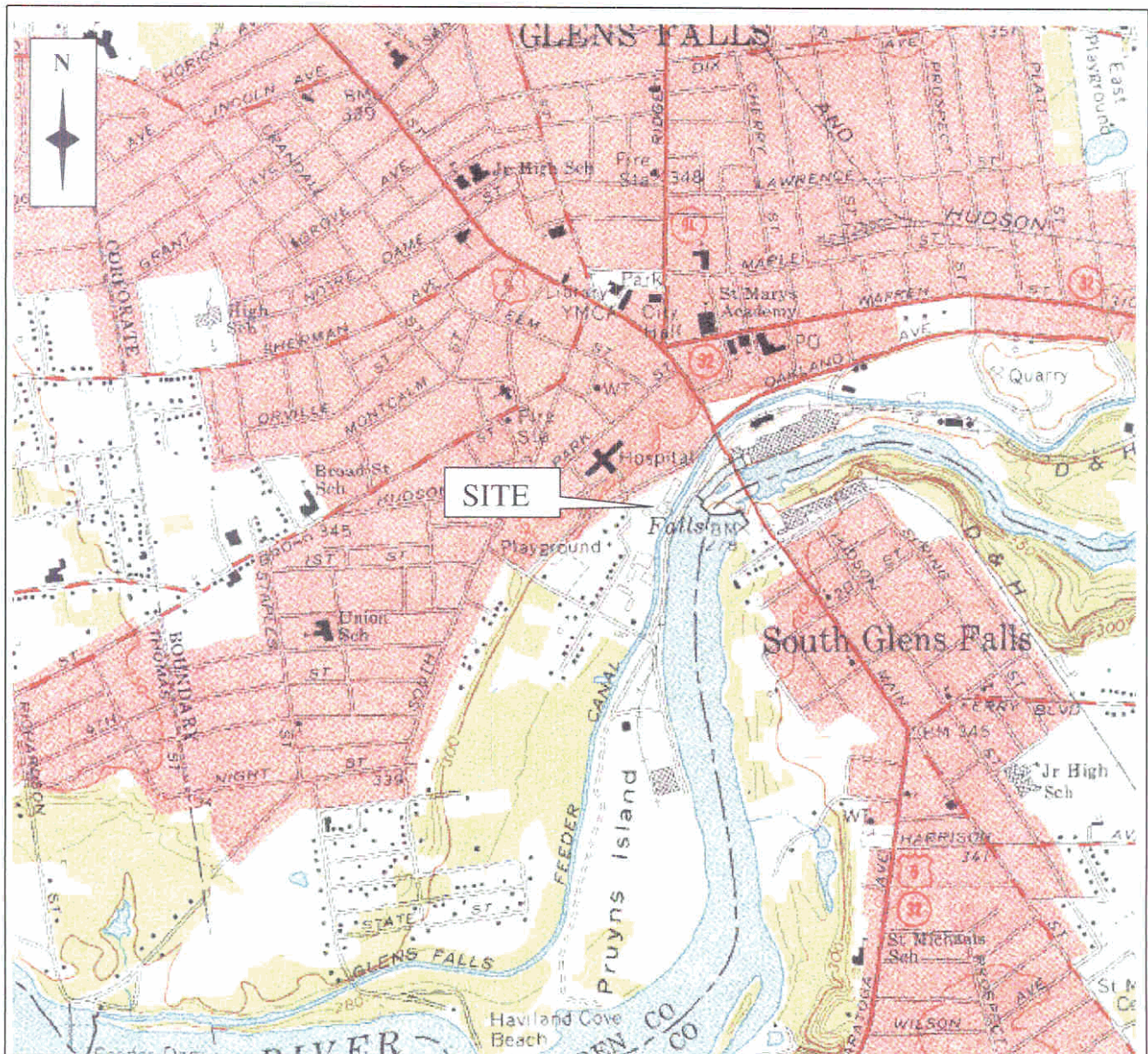
Email dated June 29, 2009, C. Vandrei (Department) to C. Post (Department) re: Feeder Canal Wall

Environmental Conditions Field Data Summary Report, Henry Street Pump Station Replacement Project, Innovative Engineering Solutions, Inc., November 2009

Fact Sheet, February 2010, Inviting public comment on the Proposed Record of Decision Amendment and announcing the public meeting date.

Email from Mr. Robert Barody, to C. Post, NYSDEC, dated March 3, 2010.

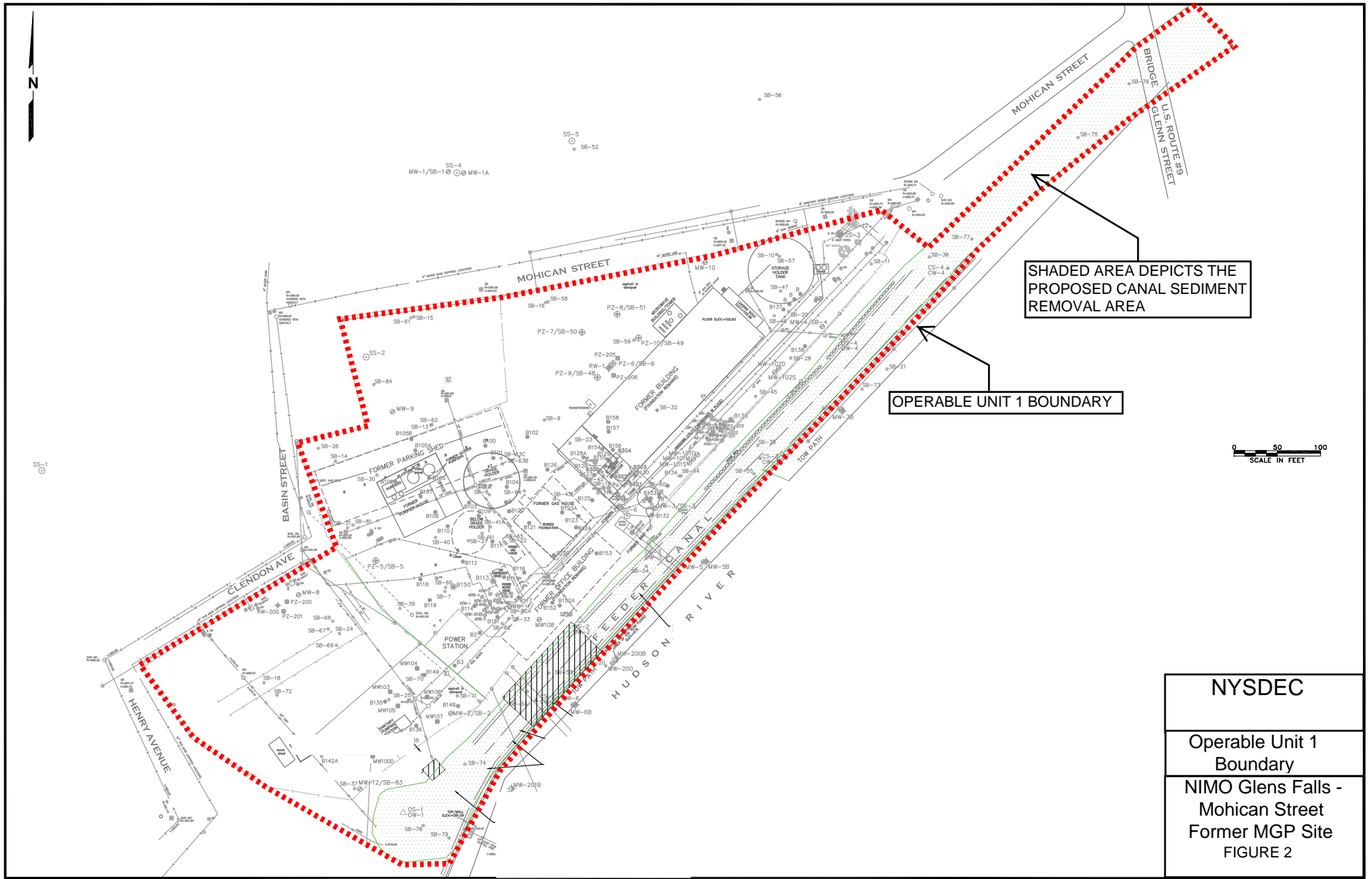
Email from Ms. Kathleen Barody-Lemery, to C. Post dated March 11, 2010.

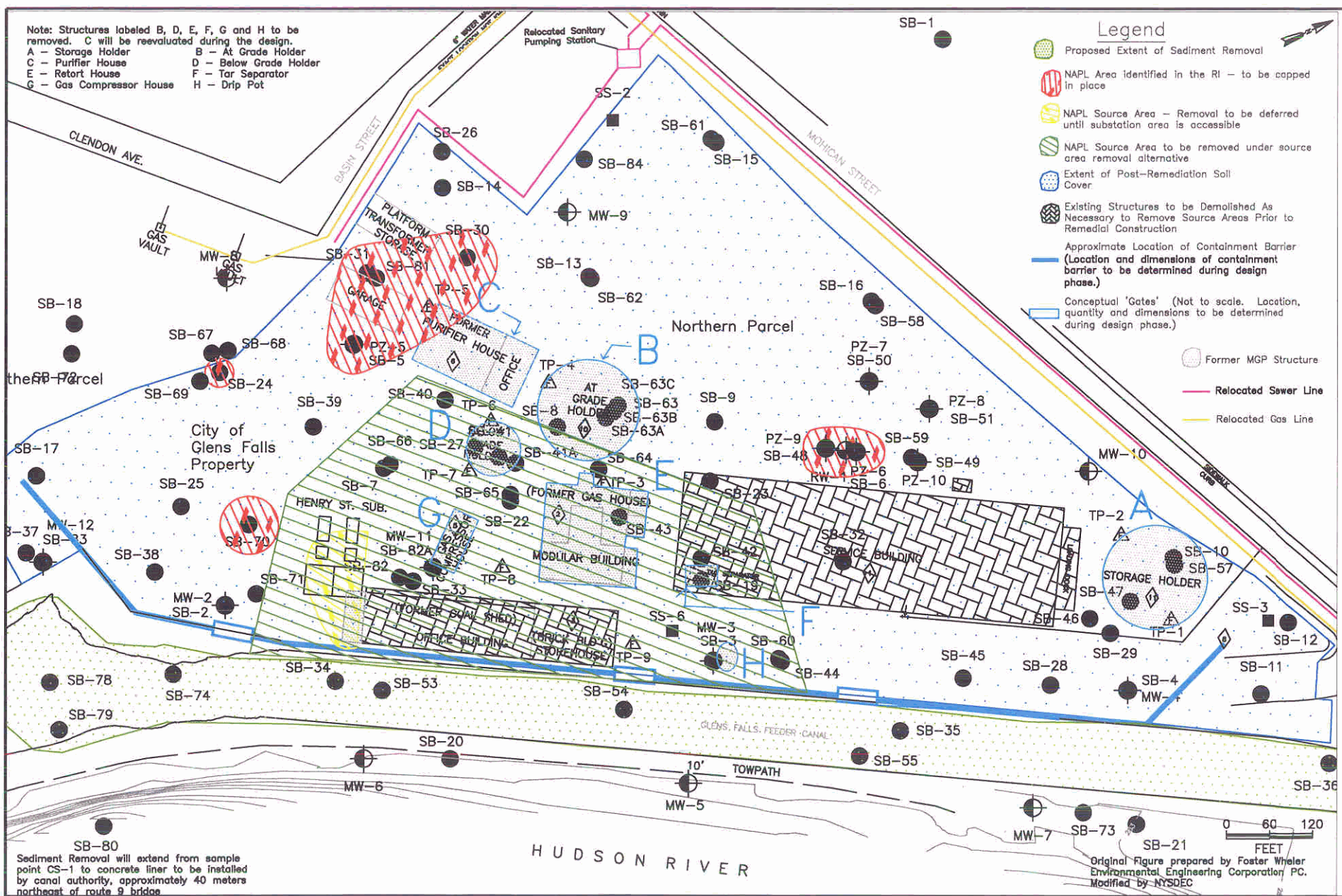


NIMO GLENS FALLS MOHICAN ST. SITE
GLENS FALLS, WARREN COUNTY, NEW YORK

SITE LOCATION

FIGURE I





NIMO GLENS FALLS MOHICAN ST. SITE
GLENS FALLS, WARREN COUNTY, NEW YORK

2003 Record of Decision Map
Depicting the Elements of the Selected Remedy

Figure 3

