

January 10, 2012

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Division of Environmental Remediation, Remedial Bureau C, Section A
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Subject: Utility Corridor Work Plan (Revision 1)
Patchogue Former MGP Site
Patchogue, Suffolk County, New York
Site No. 1-52-182

Dear Ms. Lukowski:

This letter work plan serves to present proposed remedial activities to be implemented to address impacted soils in the northwestern corner of the Core Area of the Patchogue Former Manufactured Gas Plant (MGP) located in Patchogue, Suffolk County, New York (Site No. 1-52-182). The revised letter work plan incorporates comments received from the New York State Department of Environmental Conservation (NYSDEC) via letter, dated December 13, 2011 and resolved during a subsequent conference call held on December 15, 2011. In order to implement the full-scale remedy selected in the March 2011 Record of Decision (ROD), overhead lines located at the Site will need to be relocated to allow for overhead clearance of construction equipment. Per discussions with representatives of the Long Island Power Authority (LIPA), the owner of the overhead lines, the lines currently located along the eastern property line of the Site will need to be relocated to the western side. To facilitate the move and create a corridor for the utility poles and overhead lines to be reinstalled, remedial activities on the western side of the Site will need to be completed prior to the move. Therefore, National Grid proposes to address impacted soils identified in the northwestern corner of the Site (in the area of the MW-2 cluster) as well as those that require capping on the western side of the Site.

This letter work plan has been divided into the following sections:

- Site Location and Features
- Site History
- Investigation Findings
- Remedial Action Implementation Activities

These sections are further described below.

Site Location and Features

The Patchogue Former MGP Site is located at 234 West Main Street in the Village of Patchogue, Town of Brookhaven, Suffolk County, New York (Figure 1). The Site is located in a mixed commercial and residential area, and is currently undeveloped and vacant. The perimeter of the Site is secured with a locked perimeter fence. The Site is generally rectangular in shape and encompasses approximately 3.6 acres with a maximum length (north-south) of approximately 680 feet and a maximum width (east-west) of 180 feet. The Site has relatively flat topography with a typical elevation of approximately five feet above mean sea level (msl).

As detailed in the Remedial Investigation Report (RIR), the Site is informally divided into three areas: the Northern Area, the Central/Core Area, and the Southern Area. The Utility Corridor Work Plan will be implemented in the northwestern corner and western side of the Central/Core Area portion of the Site. The location of the soils to be addressed under this work plan have been designated as the "Utility Corridor" and are depicted on Drawing C-100 which is attached to this letter work plan.

Site History

The Site history is presented in the Final Remedial Investigation Report for the Patchogue Former MGP Site, Patchogue, Suffolk County, New York", (TetraTech EC, Inc., December 2009) (referred to as RIR), the "Preliminary Site Assessment Report, Order on Consent D1-0001-99-05, NYSDEC Site No. 1-52-182, Former Patchogue MGP Site, Village of Patchogue, Suffolk County, New York", [Vanasse, Hangen, Brustlin (VHB) March 2002] (referred to as PSA) and the Focused Feasibility Study, Patchogue Former Manufactured Gas Plant Site, NYSDEC Site No. 1-52-182, Village of Patchogue, Suffolk" (Brown and Caldwell Associates May 2011), and is summarized below for reference.

The Site was owned and operated by the Patchogue Gas Company either independently (1904 through 1926) or, from 1927, under ownership of the Long Island Lighting Company (LILCO). The MGP was constructed by the Patchogue Gas Company in approximately 1904. Identification of retorts on the earliest Sanborn Fire Insurance (Sanborn) Maps indicates that the initial gas production activities included the coal gasification process, although in Browns Directory it was reported that the Lowe water gas process was used. Furthermore, a boiler, which is a component of the water gas process, is depicted on the Sanborn map. Routine production of manufactured gas ended in 1914, and from 1922 to 1925, the facility was used for emergency gas production. In 1914, the facility was modified to store and distribute high pressure gas produced at other facilities. High pressure gas stored at, and distributed from the Site was purchased from Suffolk Gas & Electric (Bay Shore) from 1915 through 1917 and from 1918, the gas supplier is identified only as LILCO. From 1922 through 1925, emergency gas production occurred at the Site. Review of a 1926 Sanborn Map included in the PSA Report (VHB, 2002) indicated a group of seven horizontal aboveground storage tanks (ASTs) were installed sometime after 1910. According to documentation from KeySpan (now National Grid), these ASTs were used for additional gas storage capacity at the Site and are incorrectly labeled as "oil tanks" on the Sanborn Maps.

The 60,000 cubic foot gas holder, initially present on the Site, is consistent with the limited production of manufactured gas at the facility; larger manufactured gas production operations

would likely have required additional and larger gas holders. A gas sphere present at the Site during later operations stored gas under high pressure and is consistent with the use of the Patchogue facility for distribution of gas produced elsewhere.

The distribution facility remained until the 1970s when LILCO sold the property to third parties. From the mid-1970s through early 2005, the Site was used as a refrigeration equipment and scrap storage yard. LILCO was acquired by Brooklyn Union Gas (BUG) in 1999 and the two merged to form KeySpan. KeySpan reacquired the Site in 2005 for purposes of remediation. National Grid acquired KeySpan in 2008 and currently maintains ownership of the Site.

On September 30, 1999, KeySpan (a predecessor company to National Grid) entered into Order on Consent D1-001-99-05 with NYSDEC to conduct a PSA of the Former Patchogue MGP Site. The PSA was conducted in 2001 and the results were documented and submitted to the NYSDEC in March 2002 in the PSA Report (VHB, 2002). In 2008 and 2009, RI activities were performed and the results were documented and submitted to the NYSDEC in the RIR (TetraTech EC, December 2009).

Pre-Design Investigation (PDI) and Supplemental Pre-Design Investigation (SPDI) results are presented in the “Focused Feasibility Study, Patchogue Former Manufactured Gas Plant (MGP) Site, NYSDEC Site No. 1-52-182, Village of Patchogue, Suffolk County, New York” (Brown and Caldwell Associates, May 2011). A Draft Remedial Design Work Plan (RDWP) Patchogue Former Manufactured Gas Plant (MGP) Site, NYSDEC Site No. 1-52-182, Village of Patchogue, Suffolk County, New York” (Brown and Caldwell Associates, August 2011) was submitted to the NYSDEC on August 30, 2011. Based on the results of the Focused Feasibility Study, the NYSDEC selected the remedy for the Site which is documented in the “Record of Decision, K-Patchogue MGP, Patchogue, Suffolk County, Site No. 152182” dated March 2011.

Investigation Findings

A summary of the findings from assessment and investigation activities into the subsurface conditions and the nature and extent of MGP-related impacts at the Site are presented below. Additional details of the investigations are presented in the following documents:

- The Preliminary Site Assessment (PSA) as presented in “Preliminary Site Assessment Report Order on Consent D1-0001-99-05, NYSDEC Site No. 1-52-182 Former Patchogue MGP Site, Village of Patchogue, Suffolk County, New York”, [Vanasse, Hangen, Brustlin (VHB) March 2002].
- The Remedial Investigation (RI) as presented in “Final Remedial Investigation Report for the Patchogue Former MGP Site, Patchogue, Suffolk County, New York”, (TetraTech EC, Inc., December 2009)
- Pre-Design Investigation (PDI) and Supplemental Pre-Design Investigation (SPDI) as presented in “Focused Feasibility Study, Patchogue Former Manufactured Gas Plant (MGP) Site, NYSDEC Site No. 1-52-182, Village of Patchogue, Suffolk County, New York” (Brown and Caldwell Associates, May 2011).

Soil Quality

Analyses of subsurface soil samples obtained during the investigation activities indicate that elevated BTEX and PAH concentrations [i.e., concentrations in excess of the NYSDEC's Soil Cleanup Objectives (SCOs) for unrestricted use] in the soil are associated with intervals where NAPL was encountered. Concentrations of BTEX and PAH compounds in soil samples collected from intervals that are not impacted by NAPL are typically non-detect, or if detected, are below the SCO for unrestricted use.

Within the Utility Corridor, three boring locations were observed to have NAPL/tar. The three boring locations, all located in the northwestern corner of the Site, are MW-2X, SB-108A and SB-111. The deepest indication of coal tar at each location is 5.0 feet below ground surface (bgs), 2.6 feet bgs and 7.3 feet bgs, respectively.

Proposed Remedial Action

To facilitate the relocation of the overhead utility lines and the subsequent implementation of the selected remedy for the Site as detailed in the ROD, National Grid proposes the following remedial actions as part of this Utility Corridor Work Plan:

- Excavation (to a depth of 10 feet bgs) and off-site disposal of soils impacted by NAPL/coal tar located in the northwestern corner of the Site (i.e., in the area of the MW-2 cluster);
- Removal of former MGP-related structures, if encountered, within the Utility Corridor. Structure identified during excavation of the Utility Corridor will be fully removed even if it extends beyond the limits of the Utility Corridor, as shown on the attached Drawing C-100;
- Excavation of two feet of soils impacted by contaminants at concentration in excess of the applicable SCOs with the corridor necessary to relocate the overhead utility lines. This two foot excavation is being performed to establish the environmental cap in this area as a component of the final remedy for the Site;
- Backfill of the excavation with clean soils;
- Survey of the pre- and post-backfill conditions to verify the installation of the two-foot environmental cap;
- Establishment of surface cover.

Remedial Action Implementation Activities

Remedial action implementation activities are grouped into the following tasks:

- Submittals and Mobilization;
- Site Preparation;
- Remedial Activities;
- Monitoring; and
- Post-Remedial Action Activities.

The following sections detail the implementation of the Utility Corridor Work Plan activities to be performed at the Site.

Submittals/Mobilization

The remedial contractor will be responsible for the preparation of the required submittals for review by National Grid. The major submittals will include a Construction Management Plan, a Site-Specific Health and Safety Plan, and a Site-Specific Construction Quality Control Project Plan (CQCPP). After submittals have been reviewed and accepted by National Grid, they will be submitted to NYSDEC for review and concurrence. National Grid will provide sufficient copies of the accepted contractor submittals for NYSDEC's use and coordination with other agencies.

Site Preparation

The Site will be prepared, as needed, to facilitate the implementation of the proposed remedial activities. Site preparation activities will include, but will not be limited to, the following:

- Recording existing conditions within the Utility Corridor by photo documentation and surveying. The location of former MGP structures or other significant features that are uncovered or removed during the site preparation or excavation activities will be surveyed.
- Establishing stabilized construction entrances and widening ingress/egress gates, if required;
- Establishing a secure Site perimeter;
- Locating and isolating utilities;
- Clearing and grubbing including the removal of vegetation, concrete, and any on-site debris within the limits of the Utility Corridor, as required;
- Establishing Site haul roads/truck routes;
- Establishing equipment and material staging areas;
- Establishing the decontamination area(s);
- Conducting selective demolition, including removal of internal fences;
- Establishment of locations for air monitoring;
- Decommissioning of monitoring well MW-2S and MW-2D; and
- Establishing and implementing soil erosion and sedimentation controls.

Major activities are further described below.

Stabilized Construction Entrance(s)/Exit(s)

Stabilized construction entrances/exits consisting of smoothly graded areas large enough to accommodate equipment and truck traffic will be constructed. The stabilized construction entrances/exits will consist of crushed coarse aggregate stone underlain by non-woven geotextile fabric and will be maintained and redressed while in use.

A single ingress/egress point is proposed for the remediation activities and will require a stabilized construction entrance/exit. The ingress/egress point to the Site will be from West Main Street. The proposed ingress/egress location is indicated on Drawing C-100. The necessary municipal permits, if any, to maintain a construction entrance/exit will be obtained for the duration of the project by the Remedial Contractor. These permits will be obtained by the Remedial Contractor prior to mobilization to the Site.

Site Security

The existing site perimeter fence will be inspected and maintained during the remedial activities. As needed, the Remedial Contractor will install temporary fencing with gates with locks to secure the Site. The perimeter of the Site will be secured and locked during non-working hours. Perimeter security checks will be performed daily by Brown and Caldwell and conditions will be logged.

Twenty-four hour security is not anticipated for this work; however, during site working hours, an employee of the Remedial Contractor will be assigned to the main entrance gate to control access to the Site. The employee will be equipped with a two-way radio with phone service to ensure constant contact with Site personnel.

All site workers, subcontractors and site visitors will be required to sign a daily log. A list of persons authorized for site entry will be maintained at the site entrance.

Clearing and Grubbing

Vegetation and debris will be removed from the Utility Corridor and other areas where remedial activities will occur. Debris, stumps, roots and other vegetation that are generated during clearing operations will be stockpiled, characterized and disposed of off-site at an appropriate disposal facility.

Equipment and Material Staging Areas

Equipment staging areas will be located so as to facilitate equipment ingress and egress and allow for proper sequencing of the remedial construction work. The construction equipment necessary to implement the remedial construction activities will be mobilized to the Site.

Material staging areas will be established for excavated material, debris, clean backfill, and liquid wastes (if generated). Staging areas will be underlain by plastic sheeting with perimeter berms to contain run-on and run-off. Liners beneath the stockpiles as well as plastic sheeting used to cover stockpiles will be of sufficient thickness to minimize rips caused by debris and/or the movement of materials and to be protective from the elements. Damaged or ripped liners/sheeting will be repaired or replaced, as necessary. The staging areas will be physically segregated to prevent cross-contamination or commingling of materials. To the extent feasible, materials intended for off-site transportation and disposal will be staged in areas of the Site that are not proximate to existing off-site roadways in order to minimize the potential for off-site impacts. Staging areas for excavated soils and impacted debris destined for off-site disposal will be principally located in the remaining areas of the Site subject to excavation.

Excavated soils and impacted debris will be covered with plastic to minimize odors as well as the effects of weather. A construction detail for the stockpile area is included on Drawing C-101. Odor suppressing foam will be applied to stockpiles, as necessary, to minimize the potential for odors generated by the impacted soils.

The locations of the staging areas are shown on Drawing C-100.

Decontamination Area

During the implementation of the remedial construction activities, the Site will be divided into three primary zones: the exclusion zone, the contamination reduction zone, and the support zone. These locations will be identified in the field during the implementation of the remedial activities based on the location of the Utility Corridor. The decontamination area will be located within the contamination reduction zone and will include the personnel decontamination station and the equipment decontamination pads. Heavy machinery, trucks, equipment and personnel exiting the exclusion zone will be subject to the decontamination procedures. A construction detail for the decontamination pad is included on Drawing C-101.

The location of the decontamination area is shown on Drawing C-100.

Decommissioning of Monitoring Wells

Protection of the existing groundwater monitoring well, MW-2, within the Utility Corridor would be difficult and impractical. This monitoring well will be decommissioned prior to excavation activities. The well will be decommissioned in accordance with "CP-43: Groundwater Monitoring Well Decommissioning Policy" (NYSDEC, November 2009) by grouting in-place. To decommission the groundwater monitoring well, a tremie pipe will be lowered to the bottom of the well and cement-bentonite grout pumped through the tremie pipe so that the well is grouted from the bottom to the top. Water displaced from the well during decommissioning will be contained for proper disposal. The grout level will be monitored, and if it settles substantially, additional grout will be added to raise the grout level. Following completion of the grouting, the above-grade protective casing or flush-mounted protective cover will be removed, along with any portion of the polyvinyl chloride (PVC) casing that is above grade. The area where the protective cover/casing was removed will be backfilled with clean soil to grade.

Monitoring wells 7S and 7D are located at the southern most end of the Utility Corridor and will be protected during implementation of this work plan. Excavation of two feet of soils adjacent to these wells will be performed by manual methods to minimize the potential for damage to the wells. Backfilling will be conducted in a similar manner. The wells will be protected by barricades or orange fencing during implementation of the project.

Monitoring wells located outside of the Utility Corridor that are to remain will be protected by either wooden fences/barricades, orange construction fencing and/or applicable signage. Site personnel will be made aware of these areas in the daily safety discussions.

Soil Erosion and Sediment Control

Prior to commencement of the remedial activities, temporary soil erosion and sediment control (SESC) measures will be installed. The elements of the proposed SESC measures will be designed and installed in accordance with the New York State Standards and Specifications for Erosion and Sediment Control. In addition, remedial activities will be implemented so as to minimize erosion and silting and the potential for fugitive odor and dust emissions.

SESC measures will be employed utilizing Best Management Practices (BMPs) including silt fencing, hay bale dikes, storm drain inlet protection, stabilized construction entrances/exits and dust control measures. At a minimum, silt fence/hay bale dikes will be installed to delineate the limit of the remedial work area (installed on the down slope side) and around the perimeter of any stockpile areas. Details for each type of SESC measure are presented on Drawing C-101.

The SESC measures will be installed as shown on Drawing C-100 and in strategic locations based on visual observation of flow patterns and the topography of work areas to control sediment entrained storm water from exiting and entering work areas.

During remedial construction, SESC measures will be inspected and maintained on a daily basis and following precipitation events. Accumulated sediment will be removed from the erosion and sediment controls, as needed. Sediment that originates from the remedial work areas will be added to the stockpile(s) for off-site disposal. Sediment will be removed from behind the silt fence and hay bales when it accumulates to a depth greater than 0.5 feet deep behind the barrier.

Remedial Activities

The remedial activities will include the following:

- Selective Demolition;
- Excavation;
- Dewatering;
- Backfilling and Compaction;
- Capping; and
- Site Restoration.

These activities are further described below.

Selective Demolition

Existing concrete and remnants of former structures (i.e., concrete pads) within the Utility Corridor will be demolished utilizing a hoe ram, hydraulic hammer or equivalent attachment mounted on an excavator, backhoe or other conventional excavation equipment. After demolition, the debris will be prepared and decontaminated, as necessary, to meet the acceptance criteria of the selected disposal or recycling facility. Preparation will consist of demolishing the structural materials into pieces that are manageable and meet facility acceptance criteria. Decontamination of concrete debris will consist of pressure washing using a high pressure, low volume power washer. In addition, physical/mechanical agitation (scraping with hand tools) of soil adhered to debris may be utilized to minimize wastewater generation. Generated decontamination fluids will be containerized on-site where it will be characterized for off-site disposal.

Excavation – NAPL/Tar Impacted Soils

The dimensions of the excavation of NAPL/tar impacted soils in the area of the MW-2 cluster are approximately 15 feet by 18 feet. Based on the observations of NAPL/tar during the installation of the investigation borings (deepest NAPL/tar noted at 7.3 feet bgs) and your concern regarding excavation in the wet and the ability to visually detect impacts, the depth of the excavation will be ten (10) feet bgs. The limits and depth of the excavation are based on information obtained during the historical investigation activities and two additional soil borings requested during the December 15, 2011 discussion. The proposed locations of the two soil borings were forwarded to the NYSDEC via e-mail on December 16, 2011 and approved (by e-mail) on December 20, 2011.

The excavation will require trench stabilization via a trench box, sheeting and internal bracing or other engineered support system. This support system will be proposed by the Remediation Contractor in the pre-mobilization submittals for approval by National Grid.

In the event that indications of NAPL/tar impacted soils are observed beyond the limits of the proposed excavation, as depicted on Drawing C-100, NYSDEC will be notified and a methodology for addressing these impacts will be discussed.

Excavated soils will be visually inspected for impacts. Impacted soil above the existing groundwater table will be directly loaded and transported to the material staging area. Impacted soils generated below the groundwater table will initially be placed in a stockpile in a temporary staging area constructed near the edge of the excavation. This temporary staging area will be sloped towards the excavation. Entrained water will be allowed to gravity drain back into the excavation. The gravity drained excavated saturated soils may also be mixed with excavated unsaturated soils or amending materials to reduce moisture content while located within the temporary staging area. Amending of the soil will be for the purposes of improving handling characteristics and for meeting disposal facility acceptance criteria. The amended soil will then be placed in the material staging area pending characterization and off-site disposal.

Excavation – Establishment of Environmental Cap

A component of the selected remedial action of the Site, as detailed in the ROD, is the establishment of a two foot thick environmental cap over the portions of the Site subject to historic filling activities. In order to facilitate the relocation of the utility poles to the western side of the site, the top two feet of soils will be excavated from the remainder of the Utility Corridor. The approximate limits of the area of the Utility Corridor to be subject to the two foot excavation are depicted on Drawing C-100. If NAPL/tar impacted soils are observed below the planned depth of the excavation (i.e., two feet bgs) to establish the environmental cap, excavation will continue until the NAPL/tar impacted soils are removed or until it is determined that the area should be further investigated to define the limits of impacts and addressed as part of the overall remedial strategy for the Site (i.e., in-situ solidification).

In the event that indications of NAPL/tar impacted soils are observed beyond the limits of the Utility Corridor, as depicted on Drawing C-100, NYSDEC will be notified and a methodology for addressing these impacts will be discussed.

Excavated soils will be stockpiled in the staging area pending characterization and off-site disposal.

After excavation activities are completed, the area will be restored with the environmental cap per the detail on Drawing C-102. Construction of the cap will consist of a demarcation liner placed directly on the native soils, 18-inches of well graded sandy-soil (above groundwater fill) and finished with six-inches of NYSDOT Type 2 coarse aggregate.

Backfilling and Compaction

Backfill must meet the requirements of 6 NYCRR 375-6.7(d) and meet the following criteria in accordance with Division of Environmental Remediation, Technical Guidance for Site Investigation and Remediation (DER-10):

- Comply with Remedial Action Objectives (RAOs);
- Be free of extraneous debris or solid waste;
- Be recognizable soil or other unregulated material as set forth in 6 NYCRR Part 360 and materials for which DEC has issued a beneficial use determination;
- Not exceed the allowable constituent levels for imported fill or soil; and
- Be tested as described below.

Sampling is required for all imported soil for use as backfill or cover material. Characterization samples of the material will be a minimum of one sample analyzed from every new source (virgin mine/pit or material sources other than a virgin mine/pit) and the sampling frequency will be determined in accordance with Table 5.4(e)10 presented below:

Table 5.4(e)10			
Recommended Number of Soil Samples for Soil Imported To or Exported From a Site			
Contaminant	VOCs	SVOCs, Inorganics & PCBs/Pesticides	
Soil Quantity (cubic yards)	Discrete Samples	Composite	Discrete Samples/Composite
0-50	1	1	3-5 discrete samples from different locations in the fill being provided will comprise a composite sample for analysis
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1000	7	2	
➤ 1000	Add an additional 2 VOC and 1 composite for each additional 1000 Cubic yards or consult with DER		

Documentation of the source of fill must be provided to National Grid for approval of the source of the material before it is used on the site, which should include:

- the name of the person providing the documentation and relationship to the source of the fill;
- the location where the fill was obtained;
- identification of any state or local approvals as a fill source; and
- if no prior approval is available for the source, a brief history of the use of the property which is the source of the fill.

Bills of lading will be provided to Nation Grid for inclusion into the Construction Completion Report (CCR) to document that the fill delivered was from a NYSDEC-approved source(s).

The excavation areas within the Utility Corridor will be backfilled with either a coarse aggregate (below the water table) or well graded sandy soil (above the water table). The well graded sandy soil will be brought to within six-inches of the surface and finished with coarse stone.

Specifications for each type of stone are presented below as well as on Drawing C-102.

Within the groundwater table, the clean fill will be a coarse aggregate with a New York State Department of Transportation (NYSDOT) Standard Specifications for Coarse Aggregate size designation Type 1 (or approved equal). This NYSDOT designation includes the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
1 inch	100%
1/2 inch	90% - 100%
1/4 inch	0% - 15%

Above the groundwater table to within six-inches of the surface, the clean fill will be a well graded sandy soil consisting of clean naturally occurring or blended soil and aggregate mix conforming to the following gradation (or approved equal):

<u>Sieve Size</u>	<u>Percent Passing</u>
2 inch	100%
3/4 inch	70% - 100%
No. 4	30% - 80%
No. 50	10% - 35%
No. 200	5% - 12%

The environmental cap constructed of surface fill placed from the ground surface to six-inches below grade will be a coarse stone with a NYSDOT Standard Specifications for Coarse Aggregate size designation Type 2 (or approved equivalent). This NYSDOT designation includes the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
1 1/2 inch	100%
1 inch	90% - 100%
1/2 inch	0% - 15%

A geotextile fabric (Mirafi 140N or equivalent) shall be placed between the two types of backfill material to minimize the downward migration of fines from the upper backfill material into the coarser backfill material.

In accordance with DER-10, a demarcation layer will be installed below the environmental cap (six-inches below grade). The demarcation layer will be located below the coarse stone and above the well graded sandy soil.

Within the water table, backfill will be placed in loose layers and tamped in-place using excavation equipment. Above the groundwater table, all backfill will be placed in 12-inch thick lifts and mechanically compacted.

Site Restoration

Site restoration activities will consist of establishing the environmental cap over the Utility Corridor, re-establishing chain-link fencing (if needed), removing soil erosion and sediment control measures, and general clean-up activities.

Air Monitoring

During the implementation of intrusive, earth disturbing activities, the generation of dust and odors or organic vapors is likely to occur. The New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP) requires that during construction/excavation at contaminated sites, real-time (continuous) monitoring for total volatile organic compounds (TVOCs) and particulates (i.e., dust) be conducted at the downwind perimeter of each designated work area (the NAPL/tar excavation area and two-foot excavation area). The air monitoring means and methods that will be implemented during the work described in this work plan will be consistent with the NYSDOH Generic CAMP. The air monitoring activities will be supplemented based on the comments contained in the December 13, 2011 letter. Perimeter monitoring will be conducted at two downwind locations as well as a single upwind location. Continuous air monitoring will be conducted not only during intrusive site activities but also whenever there are stockpiles present at the Site and when material handling activities are being conducted. The purpose of the air monitoring program is to ensure that the community and general public are not exposed to hazardous constituents at levels above accepted regulatory limits and guidelines provided in the NYSDOH CAMP.

The Action Levels will be as follows:

Volatile Organics	
Conditions	Actions
If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average	Work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm	Work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
If the organic vapor level is above 25 ppm at the perimeter of the work area	Activities must be shutdown.

Particulate Matter (PM-10)	
Conditions	Actions
If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m ³) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area	Dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m ³ above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m ³ above the upwind level	Work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m ³ of the upwind level and in preventing visible dust migration.
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Upwind concentrations will be measured continuously throughout the day to establish background conditions. Background concentrations will be determined by the upwind CAMP measurements. Action level conditions will be determined by subtracting the downwind measurement from the upwind (background) measurements. Odor mitigation measures will be implemented when noticeable odor occurs.

Air monitoring readings will be recorded and be available for NYSDEC and NYSDOH personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded and made available.

Mitigation Measures and Corrective Actions

During the remedial activities, if the generation of organic vapors, dust and/or odors occurs at levels above those specified in the NYSDOH Generic CAMP, appropriate mitigation measures and corrective actions will be taken.

To minimize and mitigate the generation of organic vapors, the excavation as well as staged soil will be covered with a barrier such as polyethylene sheeting or odor suppressing foam.

Dust mitigation measures will be implemented to minimize the potential for dust generation during soil excavation and handling, stockpiling and placement of backfill materials. The primary method of dust control will be the application of water spray. Water trucks and/or flat hose(s) connected to a water supply will be utilized to wet down heavily traveled on-site truck routes and off-site roads in order to minimize dust emissions. Prior to exiting the Site, transport vehicles will be properly cleaned and decontaminated to minimize potential soil tracking and dusty conditions on adjacent roadways. In addition, transport vehicles will be required to exit through the stabilized construction entrance/exit. The tires of transport trucks will be further inspected at this point to ensure that tires and undercarriages are clean and that tarps are secured. Excessive mud and loose soil observed on the trucks will be manually removed with brooms and brushes, as necessary. Routes on- and off-site will be routinely monitored for build-up of excessive site soils and dust.

In the event that former MGP features require removal, dust mitigation measures will include the spraying of water or misting the work area(s) to ensure the concrete and brick is moist.

Corrective actions for dust exceedances will include adjusting or increasing water spray applications, application of foam, ceasing select activities during high wind, and/or utilizing different sizes or types of equipment that may result in less dust generation. Additional dust control measures will include covering open excavations and stockpiles of soil with sheeting and/or tarps, as required, to minimize erosion and dust generation.

If excavated soil exhibits the potential for nuisance odors, the soil will be covered with a barrier such as polyethylene sheeting or odor suppressing foam. Mitigation measures and corrective actions will be deployed prior to receipt of complaints from the public.

Odors will be controlled by sequencing the remedial excavation in a manner that will result in manageable areas of open excavation. Odor mitigation measures will consist of placing a layer of non-odorous soils, polyethylene sheeting or tarps over the excavation area or stockpile. In addition, foam application equipment and an adequate supply of odor reducing foaming agent will be available for application to the excavation area, during soil handling and management activities or to stockpiles, as needed.

Post-Remedial Action Activities

As per the requirements of NYSDEC DER-10, Chapter 5, Section 5.8, the remedial activities performed in the Utility Corridor will be documented in a Construction Completion Report (CCR). The CCR will be certified by a Professional Engineer licensed in the State of New York and will include, but not be limited to, the following:

- Description of the remedy as constructed pursuant to the approved Utility Corridor Work Plan;
- Description of problems encountered during construction and a discussion of their resolution;
- Description of changes to the design documents and a description as to why the changes were made;
- Quantities and concentrations of contaminants removed or treated;
- Listing of the waste streams, quantities of materials disposed and the facilities used for disposal;
- Boundaries of the real property to be subject to an environmental easement, deed restriction and/or other institutional controls;
- Restoration activities;
- A list of the remedial action objectives applied to the remedial action;
- Tables and figures prepared pursuant to NYSDEC DER-10, Chapter 5, Section 3.14 depicting pre- and post-remedial data keyed appropriately so that completion of the remedial action is documented. The figures should clearly indicate the volume of contaminated soil or sediment which was remediated, as well as contamination remaining at the site to be managed by the Site Management Plan;
- A detailed description of the applicable areas of remedial action compliance identified in NYSDEC DER-10, Chapter 5, Section 5.4;
- A detailed report of actual costs including bid tabulations and change orders, if any state funding is provided;
- "As-built" drawings bearing a NYS professional engineer's stamp and signature on each drawing;
- Identification of the applicable institutional controls employed along with a copy of the environmental easement or other institutional controls that apply;
- Fully executed manifests documenting off-site transport of waste material;
- Site Management Plan; and

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- Results of all analyses, including laboratory data sheets and the required laboratory data deliverables pursuant to NYSDEC DER-10, Chapter 5, Sections 2.2 and 2.3 and Appendix 2B.

If you should have any questions, comments or require any additional information, please do not hesitate to contact me (516-545-2586).

Sincerely,

William J. Ryan

Project Manager, Site Investigation and Remediation

cc: Gardiner Cross (NYSDEC)
Jacquelyn Nealon (NYSDOH)
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Ronald Paulsen (SCDHS)