1 WEST MAIN STREET

BEACON, NEW YORK

Site Management Plan

NYSDEC Site Number: V00293

Prepared for:
Metro North Railroad

Prepared by:
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284 South Avenue, Poughkeepsie, NY 12601
845-452-2000

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1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This Site Management Plan (SMP) is required as an element of the remedial program at the 1 West Main Street Site in Beacon, New York (hereinafter referred to as the "Site"; Figures 1 and 2). Under the direction of the New York State (NYS) Voluntary Cleanup Program (VCP) administered by New York State Department of Environmental Conservation (NYSDEC), and in accordance with the *Interim Remedial Measure (IRM) Soil Removal Work Plan* (IRM Work Plan; ARCADIS BBL, December 2006) and *Site Operations Plan* (SOP; True Blue Environmental Services [True Blue], August 2007), IRM soil removal activities were conducted at the Site in 2007. The IRM included the removal and off-Site disposal of approximately 3,300 tons of visually impacted soils located southeast and east of the Dorel Hat Building on the Site, which were identified during the Phase I/II investigation conducted by Metro-North Commuter Railroad Co. (MNR; the current Site Owner) between July 2005 and May 2006. The impacted soils were assumed to contain manufactured gas pant (MGP) tars associated with the Central Hudson Gas & Electric Corporation (CHGE) former Beacon MGP site (NYSDEC Site #V00293) located east of the 1 West Main Street Site (Figure 2).

Note that CHGE investigated the former Beacon MGP site under Voluntary Cleanup Agreement (VCA) #D3-0005-99-04. CHGE received a release from the NYSDEC under the VCA on January 31, 2002. However, the IRM soil removal activities completed at the 1 West Main Street Site were also conducted under VCA #D3-0005-99-04.

1.1.1 General

As discussed above, IRM soil removal activities were completed at the 1 West Main Street Site under the direction of the NYSDEC, and in accordance with the IRM Work Plan and SOP. A map showing the location and boundaries of the

4.1-acre Site is provided in Figure 2. The boundaries of the site are more fully described in the metes and bounds site description that accompanies the Deed Restriction (Appendix A).

After completion of the remedial work described in the IRM Work Plan, some contamination was left in the subsurface at this Site, which is hereafter referred to as "remaining contamination." This SMP was prepared to manage remaining contamination at the Site in perpetuity or until extinguishment of the Environmental Easement in accordance with ECL Article 71, Title 36. Remedial action work on the site began in August 2007, and was completed in November 2007. All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by CHGE, on behalf of the Site Owner, M-NR, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated June 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for the Site Owner to implement the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Deed Restriction for the Site.

1.1.2 Purpose

The Site contains contamination left after completion of the remedial action. ECs and ICs have been incorporated into the Site remedy to provide proper management of remaining contamination in the future to ensure protection of public health and the environment. A Deed Restriction will be enacted between MNR and the NYSDEC and will be recorded with the Dutchess County Clerk and will provide an enforceable legal instrument to ensure compliance with this SMP and all ECs and ICs placed on the Site. The ICs place restrictions on Site use, and mandate operation, maintenance, monitoring and reporting measures, to be implemented by the Site Owner, for all ECs and ICs. This SMP specifies the methods necessary for the Site Owner to ensure compliance with all ECs and ICs required by the Deed Restriction for remaining contamination at the Site. This SMP has been approved by the NYSDEC, and compliance with this SMP is required by the grantor of the Deed Restriction and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the Site after completion of the Remedial Action, including: (1) implementation and management of all ECs/ICs; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes four plans: (1) an Engineering and Institutional Control Plan for implementation and management of ECs/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial collection, containment, treatment and recovery systems; and (4) a Site Management Reporting Plan for submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the Site-specific implementation procedures that are required by the terms of the Deed Restriction to be performed by the Site Owner. Failure to properly implement the SMP is a violation of the Deed Restriction, which could result in revocation of the Certificate of Completion (COC).
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375, and thereby subject to applicable penalties.
- At the time the SMP was prepared, the SMP and all Site documents related to Remedial Investigation and Remedial Action are maintained at the NYSDEC offices in Albany, New York and New Paltz, New York. At this time, Site documents can also be found in the repositories established for this project, including:

Howland Public Library

313 Main Street, Beacon, NY 12508

845-831-1134

Monday: 9:30am – 5:30pm

Tuesday: 9:30am – 8:00pm

Wednesday: 9:30am – 5:30pm

Thursday: 9:30am – 8:00pm

Friday: 9:30am – 5:30pm

Saturday: 10:00am – 4:00pm

Sunday: 12:00pm – 4:00pm

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The Site is located in the Town of Beacon in Dutchess County, New York and is identified as Tax Parcel No. 5954-25-563911 according to a survey titled *Acquisition in Fee Title for Beacon Commuter Parking Extension Project*, dated February 28, 2002, and prepared by WELSH Engineering and Land Surveying, P.C. The Site is an approximately 4.1-acre area bounded by West Main Street to the north, vacant property to the south, River Street to the east, and Railroad Drive to the west (see Figure 2). The boundaries of the Site are more fully described in Appendix A – Metes and Bounds. According to the *Modified Phase-1 Environmental Site Assessment Report* (Phase I Report; YU & Associates, Inc. [YU], September 2005), the approximate 32,000 square foot building located in the southern portion of the Site was reportedly formerly used for office space, assembly, sales and warehousing. A grass-covered area surrounds the building and an asphalt-paved parking lot covers the northern half of the property. A contractor storage area is located in the northwest corner of the property. A fenced area located in the east-central portion of the property is used by an adjacent auto body shop to store vehicles. The southeastern portion of the property is covered with trees, high brush and other materials (*Phase II ESA Project Status Report*, Day Engineering, P.C. [Day], December 2005).

1.2.2 Site History

According to the Phase I Report (YU, September 2005), the following companies formerly occupied the subject property (based on review of Sanborn maps from 1884 to 1962):

- Hudson Straw Works
- W.N. Cambell Sash, Door and Blind Factory
- Federal Glue Company
- Gillette Rubber Company
- Beacon Tire Company
- Harry Hooper Coal Company
- Hammond Paint and Chemical Company
- Duchess Coal Company
- Inflated Products Company
- Dorel Hat Company

1.2.3 Geologic Conditions

Based on the findings of the Phase I and II investigations, overburden materials encountered at the Site include fill consisting of varying amounts of gravel, sand, coal, slag, ash, cinders, wood, concrete fragments and brick fragments. Fill materials extend to depths of 7 to 12 feet below grade. Native soils, consisting of mixtures of silt, clay and/or sand, were encountered below the fill materials at the majority of the Phase I/II soil borings. Refusal, potentially indicative of bedrock, was encountered at depths ranging from 9 to 15 feet below grade. Geologic cross sections were not prepared as part of the Phase I/II investigations.

During the Phase I/II investigations, groundwater was measured at depths ranging from 1 to 5 feet below grade. Based on the topography of the Site and surrounding area, as well as the Site's proximity to the Hudson River, groundwater is expected to flow in a westerly direction. Groundwater flow maps were not prepared as part of the Phase I/II investigations.

1.3 SUMMARY OF PREVIOUS INVESTIGATION FINDINGS

Previous investigations conducted by M-NR at the 1 West Main Street Site include:

- Modified Phase I Environmental Site Assessment (July – August 2005)

- Phase II Environmental Site Assessment (November – December 2005)
- Supplemental Phase II Investigation (May 2006)

Each of the investigations is summarized below. Complete investigation reports are provided in Appendix B (on CD).

1.3.1 Modified Phase I Environmental Site Assessment

A detailed discussion of the scope and findings of the Modified Phase I Environmental Site Assessment (ESA) are presented in the Phase I Report (YU, September 2005), and are summarized below. As discussed in the Phase I Report, the Phase I ESA scope of work was divided into two tasks: Task 1 – Phase I ESA and Task 2 – Pre-Phase II Investigation. The Phase I ESA was conducted in accordance with ASTM E1527, and included review of historical documentation, federal and state database/records searches, visual observation of current conditions, and reconnaissance of adjoining properties. Based on the findings of the Phase I ESA, ten Potential Concerns and five Recognized Environmental Conditions (RECs) were identified on the subject property.

Three Potential Concerns/RECs were investigated as part of the Pre-Phase II Investigation, which included the following activities:

- Advancement of four soil borings (B-1 through B-4)
- Collection of three soil samples (for analysis of volatile organic compounds [VOCs], semivolatile organic compounds [SVOCs], metals, pesticides, polychlorinated biphenyls (PCBs), phenols and cyanides)
- Collection of one groundwater sample (for analysis of VOCs, SVOCs, metals, pesticides and PCBs)

Boring depths ranged from 1 to 20 feet bgs. The primary material encountered in the borings was fill material consisting of varying amounts of gravel, sand, silt, wood, concrete fragments, and brick fragments. The fill material generally extended to depths of 7 to 10 feet bgs. Native soils, consisting of mixtures of clay, silt and/or sand, were encountered below the fill material at three of the four borings. MGP tar-type material was not encountered in any of the four borings.

NYSDEC Recommended Soil Cleanup Objectives (RSCOs) for certain VOCs, SVOCs, metals and total phenols were exceeded in one or more of the soil samples. NYSDEC Ambient Water Quality Standards (AWQS) for certain VOCs, SVOCs, metals and pesticides were exceeded in the groundwater sample. Based on the results of the Pre-Phase II Investigation, additional soil and groundwater sampling and analysis were recommended in the Phase I Report (YU, September 2005).

1.3.2 Phase II Environmental Site Assessment

A detailed discussion of the scope and findings of the Phase II ESA are presented in the *Phase II ESA Project Status Report* (Day, December 2005), and are summarized below. The following investigation activities were conducted as part of the Phase II ESA:

- Advancement of 31 direct-push test borings (TB-101 through TB-131; see Figure 2)
- Installation of five 1-inch diameter monitoring wells
- Collection of 15 soil samples (for analysis of VOCs, SVOCs, metals, PCBs, cyanide, pH, ignitability and/or reactivity)
- Collection of six groundwater samples (for analysis of VOCs, SVOCs and/or metals)

Boring depths ranged from 8 to 12 feet bgs. The primary material encountered in the borings was fill material consisting of varying amounts of gravel, sand, coal, slag, wood and brick fragments. The fill material generally extended from approximately 0.5 feet bgs (at most locations, fill was overlain by approximately 0.5 feet of asphalt pavement or topsoil) to depth of 5 to 12 feet bgs. Native soils, consisting of mixtures of clay, silt and/or sand, were encountered below the fill material at 18 of the 31 borings. Refusal of the direct push boring equipment, potentially indicative of the top of bedrock, was encountered at six borings. MGP tar-type material was encountered within the fill material at eight borings.

Groundwater was measured at depths ranging from approximately one to five feet below top of casing in the five monitoring wells.

NYSDEC RSCOs for certain VOCs and SVOCs were exceeded in one or more of the soil samples. Metals concentrations in the soil samples were generally low and/or comparable to published background values. PCBs were not detected in any of the soil samples. Based on waste characterization testing, the fill material is not considered a characteristic hazardous waste.

NYSDEC AWQS for certain VOCs and SVOCs were exceeded in the groundwater sample collected from MW-103. VOCs and SVOCs were either not detected or detected below standards in the samples from the other wells.

NYSDEC AWQS for certain metals were exceeded in the groundwater samples collected from MW-101 (lead and mercury) and MW-102 (lead).

1.3.3 Supplemental Phase II Investigation

Based on the findings of the Phase II ESA, a Supplemental Phase II Investigation was conducted. A detailed discussion of the scope and findings of the Supplemental Phase II Investigation are presented in the *Supplemental Phase II Investigation Report* (YU, June 2006), and are summarized below. The following investigation activities were conducted as part of the Supplemental Phase II Investigation:

- Advancement of 11 direct-push test borings (TB-200 through TB-210; see Figure 2) within the Dorel Hat Building
- Collection of seven soil samples (for analysis of VOCs, SVOCs, cyanide, pH, ignitability, and/or reactivity); and
- Collection of one groundwater sample from MW-103 (for analysis of VOCs and SVOCs).

Boring depths ranged from 4 to 16 feet bgs. The primary material encountered in the borings was fill material consisting of varying amounts of gravel, sand, silt, coal, slag, ash and cinders. The fill material generally extended from below the concrete building floor to depths of 4 to 12.5 feet below the floor[1]. Native soils, consisting of mixtures of clay, silt and/or sand, were encountered below the fill material at seven of the 11 borings. Refusal of the direct push boring equipment was encountered at four borings. MGP tar-type material was encountered (generally within the fill material) at four borings.

NYSDEC RSCOs for certain VOCs and SVOCs were exceeded in one or more of the soil samples. Based on waste characterization testing, the fill material is not considered a characteristic hazardous waste.

NYSDEC AWQS for certain VOCs and SVOCs were exceeded in the groundwater sample collected from MW-103.

[1] The building floor is approximately three feet higher than the ground surface outside the building.

1.3.4 Extent of Visually Impacted Soils

As discussed above in Sections 1.3.1 through 1.3.3 and shown on Figure 2, visually impacted soils that contain MGP tar-type materials are present beneath the southeast corner of the Dorel Hat Building and also outside of the building (pre-remediation), adjacent to the southeast corner. Outside of the building, the visibly impacted soil area is defined to the north by TB-119 and to the south by TB-124 and TB-128 (no visibly impacted soils were observed at these borings). The presence of a steep, densely vegetated hillside that slopes up away from the Dorel Hat Building toward River Street has prevented additional investigations to the east. Visually impacted soils were observed (generally in fill materials) at depths of up to 10 feet bgs. Native soils were present at the majority of the soil borings present within this area at depths beginning from five to 10 feet bgs. Refusal (potentially indicative of bedrock) was encountered within this area at depths ranging from nine to 15 feet bgs.

1.3.5 Soil Vapor

In September 2006, on behalf of the Site Owner (M-NR) Day collected four sub-slab vapor samples, one indoor air sample and one outdoor sample using Summa canisters to evaluate/characterize the sub-slab vapor impact associated with the coal tar identified beneath the southeast corner of the building. The four sub-slab vapor samples and outdoor air sample contained constituent concentrations above regulatory guidance values established for indoor air and outdoor air, respectively. The indoor air sample did not contain constituent concentrations above regulatory guidance values.

Based on the results of the initial sampling, on behalf of the Site Owner, Day designed and installed a sub-slab depressurization (SSD) system. In March 2008, five independent SSD vacuum points were installed in select locations within the building. Specifications of the system were detailed in the *Sub-Slab Vapor Mitigation System Engineering Design Report* (Day, July 2008), which is included in Appendix C. The Design Report concluded that the SSD system was creating a vacuum sufficient to inhibit the migration of sub-slab vapors to the indoor air space.

1.4 SUMMARY OF REMEDIAL ACTIONS

The Site was remediated in accordance with the following NYSDEC-approved documents, which are included in Appendix D:

- IRM Work Plan (ARCADIS BBL, December 2006)
- SOP (True Blue, August 2007)

The majority of the IRM soil removal activities (i.e., soil removal, backfilling, and a portion of the restoration activities) were completed between August 6 and September 14, 2007. However, some additional restoration activities (e.g., installation of electrical transformer) were completed after September 14, 2007, and were ultimately completed on November 30, 2007.

The primary elements of the IRM soil removal activities included the following:

- Pre-mobilization submittals
- Mobilization and site preparation
- Soil removal
- Soil handling and disposal
- Backfilling
- Water management and treatment
- Community air monitoring
- Restoration and demobilization

Each of these activities is discussed below. The *IRM Soil Removal Final Engineering Report* (ARCADIS, April 2008), which was approved by the NYSDEC on April 9, 2008 is provided on CD in Appendix D, and provides additional details regarding the IRM soil removal activities including disposal documentation, backfill analytical data, pre- and post-construction survey maps, and various other attachments.

ECs and ICs are also components of the Remedial Action and are discussed below as well.

1.4.1 Pre-Mobilization Submittals

Prior to mobilizing equipment to the site, the following documents were prepared by True Blue and submitted to CHGE and the NYSDEC:

- A *Community Air Monitoring Plan* (CAMP) was submitted to the NYSDEC on July 23, 2007. The CAMP outlined volatile organic compound (VOC)

and particulate monitoring requirements and action levels. The New York State Department of Health (NYSDOH) approved the CAMP on July 23, 2007.

- A site-specific *Health and Safety Plan* (HASP) was submitted to the NYSDEC on July 23, 2007. The HASP described procedures to be implemented to keep the site and workers safe during implementation of the IRM soil removal activities.
- After addressing NYSDEC comments, a final version of the SOP was submitted to the NYSDEC on August 3, 2007. The SOP provided details regarding how the IRM soil removal activities would be conducted. NYSDEC approved the SOP on August 7, 2007.

1.4.2 Mobilization and Site Preparation

Prior to initiating soil removal, True Blue performed the following mobilization and site preparation activities:

- Identified and marked-out existing above-ground and underground utilities within the work area.
- Excavated test pits to evaluate subsurface conditions within the soil removal area and anticipated dewatering requirements.
- Obtained a wastewater discharge permit from the City of Beacon.
- Mobilized personnel, equipment and supplies to the Site.
- Cleared vegetation and debris to facilitate the soil removal activities.
- Identified and established work zones and air monitoring locations.
- Constructed a stabilized construction entrance (polyethylene liner overlain by crushed stone and surrounded by hay bales) to the soil removal area that was also utilized as an anti-tracking pad and equipment cleaning area.
- Installed silt fencing to minimize the potential for migration of soil to and from the work area, and installed filter fabric beneath on-site catch basins (the catch basin near the temporary water treatment system [TWTS] was later lined with plastic sheeting and surrounded by a soil berm, as requested by the NYSDEC).
- Set up an on-site TWTS and associated piping connections.
- Installed temporary fencing at the Site perimeter to limit unauthorized access to the work areas.
- Removed two staircases providing access to the Dorel Hat Building.
- Performed pre-construction survey to document existing site conditions prior to the IRM soil removal activities.

- Relocated electrical service and removed an existing transformer and utility pole on the eastern side of the Dorel Hat Building.

1.4.3 Soil Removal

True Blue utilized two conventional excavators to remove soil from the targeted removal areas at the Site. The majority of the soil removal and the loading of the trucks for off-Site disposal were completed using a larger excavator. True Blue also utilized a smaller excavator to remove soil from along the building foundation and below an overhead electric line. The soil removal activities were initiated in the southern portion of the Site (behind the Dorel Hat Building) and continued to the north, along the east side of the Dorel Hat Building. All truck loading activities were conducted in the northern portion of the soil removal area.

Within the soil removal area, tar-type materials were generally encountered in a stone/slag layer approximately 6 to 8 feet below ground surface (bgs). At approximately 8 feet bgs, a visibly clean native clay layer was observed. The native clay layer was fairly consistent across the entire removal area and, in general, the soil removal was considered complete when this material was encountered. Additional details regarding the soil removal are provided below (refer to Figure 3 for surveyed soil removal limits):

- True Blue initiated soil removal along the southern wall of the Dorel Hat Building approximately 35 feet west of the southeast corner. From this point, soil removal progressed south towards TB-128 and TB-124. Initially, soils in this area were excavated to the top of bedrock (approximately 12 feet bgs). Following adequate dewatering, a clean clay layer was observed at approximately 8 feet bgs and served as the bottom of the excavation for the remainder of this area (and the remainder of the site). Visibly clean soils were observed along the western excavation sidewall in this area. Along the southwestern excavation sidewall (near TB-124), stiff, non-mobile tar-type material was encountered in the slag/stone layer approximately 6 to 8 feet bgs, but was not removed due to the presence of the steep slope in this area (this was discussed with and agreed to by the NYSDEC on August 15, 2007). Mobile tar[2] was observed beneath the building foundation in the slag/stone layer approximately 6 to 8 feet bgs along the northern excavation sidewall in this area.
- From near TB-124, the soil removal continued north towards MW-103. Along the southeastern excavation sidewall, small amounts of stiff, non-mobile tar-type material were left in place in the stone/slag layer at

[2] The term "mobile tar" is used in this report to describe the observed expression of tar from open excavation sidewalls in certain areas where additional soil removal could not be performed. The term is not intended to imply that such tar is actively moving through the subsurface under current, post-backfill conditions (or was actively moving through the subsurface prior to the soil removal activities).

approximately 6 to 8 feet bgs. The presence of a high pressure sewer main and steep slope prohibited expanding the excavation to the southeast in this area. Monitoring well MW-103 was located within the excavation limits (Figure 3), and was removed during the soil removal activities. Because the well was completely removed, it was not necessary to perform a typical well abandonment (e.g., tremie grouting).

- From the southeastern corner, the soil removal continued north, towards TB-119. Along the eastern excavation sidewall (between MW-103 and the southern edge of the "building jog"[3]), small amounts of stiff, non-mobile tar-type materials were left in place in the stone/slag layer approximately 6 to 8 feet bgs. The presence of a high pressure sewer main and steep slope prohibited expanding the excavation to the east in this area. Mobile tar was observed in the slag/stone layer approximately 6 to 8 feet bgs along the western excavation sidewall and along the southern and eastern edges of the building jog (beneath the building foundation). Mobile tar was also observed along the northern excavation sidewall and along the portion of the eastern excavation sidewall offset from the building jog (Figure 3).
- Because impacted soils were observed at the northern edge of the initially planned soil removal limits, the soil removal area was extended to the north. An approximately 20-foot wide area, located immediately north of the building jog, was not excavated because of the presence of a gas line (excavating soils within this buffer area would have required shutting down and depressurizing the gas line, which would have required replacing the line). The decision to leave the soils surrounding the gas line in place was discussed with and agreed to by the NYSDEC on September 5, 2007, with the understanding that these soils would be removed (using appropriate health and safety measures) in the future if and when the gas line is modified or replaced. The soil removal area was extended approximately 50 feet north of the building jog, until visibly clean soils were observed. Visibly clean soils were also observed along the eastern excavation sidewall in this area. Mobile tar was observed in the slag/stone layer approximately 6 to 8 feet bgs along the western excavation sidewall (beneath the building foundation) and along the southern excavation sidewall (northern edge of gas line buffer).

As indicated above and shown on Figure 3, tar-impacted soils remain beneath the Dorel Hat Building, within the gas line "buffer zone" and along portions of the outer soil removal limits.

[3] For the purpose of this report, the "building jog" refers to the approximately 20 feet by 40 feet section of the Dorel Hat Building that extends out from the eastern building wall (see Figure 3).

1.4.4 Soil Handling and Disposal

Excavated materials were temporarily stockpiled within the soil removal area for dewatering. If necessary, the excavated materials were mixed with drier soils to reduce the moisture content prior to loading. The dewatered soils were then loaded into trucks and transported off-site to ESMI of New York (located in Fort Edward) for disposal. A total of 3,307.43 tons of soil were transported off-site to ESMI.

1.4.5 Backfill

In general, the soil removal activities were conducted in cells, with each cell backfilled prior to excavating the next cell. Backfill materials included bank run sand and pond silt, placed to within approximately 12 inches of original grade, followed by 12 inches of loam topsoil. The bank run sand was obtained from the ESMI (Jointa/Galusha) Quarry in Fort Edward, New York (2,493.34 tons). The pond silt was obtained from Westhook Sand & Gravel in Cross River, New York (787.84 tons). The loam topsoil was also obtained from Westhook Sand & Gravel (183.13 tons). The excavator bucket was used to compact the backfill material as it was placed. Backfill materials were stored in the parking lot north of the Dorel Hat Building upon delivery to the site and prior to use.

1.4.6 Water Management and Treatment

During the soil removal activities, groundwater was typically encountered at 2 to 3 feet bgs. Groundwater was pumped from two dewatering sumps to lower the water table within the excavation and facilitate soil removal activities. The sumps consisted of 12-inch diameter perforated PVC pipe backfilled with 2-inch stone. The sumps were repositioned, as needed, as the soil removal progressed. Groundwater was pumped from the sumps using 3-inch electric submersible pumps, and was transmitted through 2- inch PVC piping to the on-site TWTS.

In addition to the groundwater, a significant volume of water was collected and treated from two separate leaks from an existing water line that supplies water to the Dorel Hat Building's fire suppression system. On August 16, 2007, True Blue discovered the first leak from the fire suppression line. True Blue subsequently removed the leaking section of 6" ductile iron pipe and replaced it along with new fittings and fasteners on August 23, 2007. Upon returning to the site on August 27, 2007, it was discovered that the pipe was leaking from a second location. The second leak was repaired with new gaskets on August 30, 2007. The City of Beacon was notified of both leaks. The City shut of the water to the pipe, inspected the repairs, and restored water flow to the pipe following repair. The approximate location of the fire suppression system water line is shown on Figure 3.

The first component of the on-site TWTS consisted of a 20,000 gallon frac tank that was used as a temporary settling and storage tank. From the frac tank,

water was pumped through a series of bag filters, which served as primary solids filtration, and finally through two granular activated carbon (GAC) canisters for dissolved constituent removal. In accordance with a permit from the City of Beacon, treated effluent from the TWTS was discharged to the City of Beacon sanitary sewer system through an on-site manhole located at the northern end of the site. A total of 351,000 gallons of water was treated and discharged throughout the course of the project.

Prior to the discharge of water from the TWTS to the City of Beacon sanitary sewer system, a sample of the treated effluent was collected for various laboratory analyses specified in the discharge permit. The sample met all permit-specified discharge limits.

1.4.7 Community Air Monitoring

In accordance with the CAMP, perimeter air monitoring for VOCs and particulates was conducted at four stations (Figure 3) during intrusive activities.

During the project there were measured VOC and particulate concentrations that exceeded the 15-minute average levels specified in the CAMP. However, these exceedances were either not sustainable over an extended period of time, determined to be associated with non-excavation-related sources (e.g., humidity, vehicle exhaust), or resulted from the loss of instrument calibration (i.e., exceedances were not present after re-calibrating the instrument). Based on the air monitoring results and visual/olfactory observations at the work-zone and site perimeter, no odor or dust control measures were performed during the project.

1.4.8 Restoration and Demobilization

The following restoration and demobilization activities were conducted:

- Following completion of backfill and grading, all disturbed areas were seeded and covered with straw.
- Two staircases on the eastern side of the Dorel Hat Building that were removed prior to/during construction were replaced (a steel staircase was re-installed, and a new prefabricated concrete staircase was installed).
- A new transformer and underground electric line was installed, and the temporary above-ground service was removed.
- A post-construction survey was performed.
- The TWTS was dismantled, and treatment residuals (including spent GAC) were mixed with soil and sent off-site to ESMI for disposal.
- All equipment, excess materials, and erosion/sedimentation controls were removed (all equipment was cleaned prior to demobilization).

1.4.9 Engineering and Institutional Controls

Since remaining contamination is present at this site, ECs/ICs have been implemented by the Site Owner to protect public health and the environment for the applicable future use. The Controlled Property has the following Engineering Controls: A sub-slab depressurization system has been installed beneath the Dorel Hat Building to inhibit the migration of sub-slab vapors into the indoor air space.

A series of ICs are required to implement, maintain and monitor the EC. The Deed Restriction requires Site Owner compliance with these ICs to ensure that:

- All ECs are operated and maintained as specified in this SMP.
- All ECs on the Site are inspected and certified at a frequency and in a manner defined in this SMP.
- Groundwater, soil vapor, and other environmental or public health monitoring are performed as defined in this SMP.
- Data and information pertinent to Site Management for the Controlled Property are reported at the frequency and in a manner defined in this SMP.
- On-Site environmental monitoring devices, including but not limited to, groundwater monitoring wells and soil vapor probes, are protected and replaced as necessary to ensure continued functioning in the manner specified in this SMP.

In addition, the Deed Restriction places the following restrictions on the property:

- The Site may not be used for residential purposes. The Site may only be used for appropriate commercial or industrial use, consistent with applicable zoning ordinances, provided the following long-term activities are employed:
    - Compliance with the approved Site Management Plan.
    - Development of water supply wells and use of groundwater from the site for potable or process water is prohibited, without necessary water quality treatment as determined by the NYSDOH.
    - Periodic certification by the Site Owner, prepared and submitted to the NYSDEC by a professional engineer or environmental professional acceptable to the NYSDEC, which will certify that the Institutional Controls put in place are unchanged from the

previous certification, comply with any Site Management Plan, and have not been impaired.
    - Depending on the nature of any future development or proposed change in use, soil vapor intrusion into on-site structures must be re-evaluated at the time future redevelopment is proposed.
    - In the event future development and/or proposed change in use is approved, additional remediation efforts may be required and/or a vapor intrusion mitigation system may need to be installed meeting the requirements of the NYSDEC and the NYSDOH.
- The Site may not be used for a higher level of use such as unrestricted use, restricted residential, commercial and/or industrial use, and/or restricted-residential use, and the above-stated activities may not be discontinued without an amendment or extinguishment of the Deed Restriction as described below.
- Grantor covenants and agrees that until such time as the Deed Restriction is extinguished in accordance with the requirements of Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Site shall state in at least fifteen-point bold-faced type:
    - This property is subject to an Deed Restriction held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.
- Grantor covenants and agrees that the Deed Restriction shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Site.
- Grantor covenants and agrees that it shall annually, or such time as the NYSDEC may allow, submit to the NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Site are unchanged from the previous certification or that any changes to the controls employed at the Site were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management Plan for such controls and giving access to such Site to evaluate continued maintenance of such controls.

These EC/ICs are designed to:

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure to contaminants volatilizing from contaminated soil.

- Prevent ingestion of groundwater with contaminant levels that exceed drinking water standards.
- Prevent contact with or inhalation of volatiles from contaminated groundwater.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Remedial activities completed at the 1 West Main Street Site were conducted in accordance with the NYSDEC-approved IRM Work Plan (ARCADIS BBL, December 2006), and included the removal and off-Site disposal of visually impacted soils. However, because remaining contaminated soil exists beneath the site, ECs/ICs are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all ECs/ICs at the Site by the Site Owner. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC. It is the responsibility of the Site Owner to comply with this Engineering and Institutional Control Plan.

2.1.2 Purpose

The purpose of this Plan is to provide:

- A description of all ECs/ICs on the site;
- The basic operation and intended role of each implemented EC/IC;
- A description of the key components of the ICs created as stated in the Environmental Easement;
- A description of the features that should be evaluated during each periodic inspection and compliance certification period;
- A description of plans and procedures to be followed for implementation of ECs/ICs, such as the implementation of the Excavation Work Plan (Section 2.4) for the safe handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and

- Any other provisions necessary to identify or establish methods for implementing the ECs/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

There are two ECs at the site; the SSD system and a cover system. The SSD system was installed by the Site Owner in March 2008 and consists of five SSD vacuum points that are connected to piping that penetrates the roof and fitted with a high-pressure in-line centrifugal fan. Additional details regarding the SSD system are provided in the *Sub-Slab Vapor Mitigation System Engineering Design Report* (Day, July 2008), which is included in Appendix C. The purpose of the SSD is to inhibit the migration of sub-slab vapors into the indoor air space. Procedures for operating and maintaining the SSD system are documented in the Operation and Maintenance Plan (Section 4 of this SMP). Procedures for monitoring the system are included in the Monitoring Plan (Section 3 of this SMP). The Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the Site, occurs. The cover system consists of an asphalt parking lot and the former Dorel Hat Company building.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

The active SSD system will not be discontinued unless prior written approval is granted by the NYSDEC. In the event that monitoring data indicates that the SSD system is no longer required, a proposal to discontinue the SSD system will be submitted by the Site Owner to the NYSDEC and NYSDOH.

2.3 Institutional Controls

A series of ICs is required to: (1) implement, maintain and monitor EC systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to commercial or industrial uses only. Adherence to these ICs on the Site is required by the Deed Restriction and will be implemented by the Site Owner under this SMP. The following ICs, as documented in the Deed Restriction (Appendix A), apply to the use of the Site, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Site, any lessees, and any person using the Site:

- The Site may not be used for residential purposes. The Site may only be used for appropriate commercial or industrial use, consistent with applicable zoning ordinances, provided the following long-term activities are employed:
    - Compliance with the approved Site Management Plan.
    - Development of water supply wells and use of groundwater from the site for potable or process water is prohibited, without necessary water quality treatment as determined by the NYSDOH.
    - Periodic certification by the Site Owner, prepared and submitted to the NYSDEC by a professional engineer or environmental professional acceptable to the NYSDEC, which will certify that the Institutional Controls put in place are unchanged from the previous certification, comply with any Site Management Plan, and have not been impaired.
    - Depending on the nature of any future development or proposed change in use, soil vapor intrusion into on-site structures must be re-evaluated at the time future redevelopment is proposed.
    - In the event future development and/or proposed change in use is approved, additional remediation efforts may be required and/or a vapor intrusion mitigation system may need to be installed meeting the requirements of the NYSDEC and the NYSDOH.
- The Site may not be used for a higher level of use such as unrestricted use, restricted residential, commercial and/or industrial use, and/or restricted-residential use, and the above-stated activities may not be discontinued without an amendment or extinguishment of the Environmental Easement as described below.
- Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of Article 71, Title 36 of the ECL, the property deed and all subsequent instruments

of conveyance relating to the Site shall state in at least fifteen-point bold-faced type:

  - This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

- Grantor covenants and agrees that the Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Site.
- Grantor covenants and agrees that it shall annually, or at such time as the NYSDEC may allow, submit to the NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Site are unchanged from the previous certification or that any changes to the controls employed at the Site were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management Plan for such controls and giving access to such Site to evaluate continued maintenance of such controls.

The above-listed ICs may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

2.4 Excavation Work Plan

As discussed above, following completion of the IRM soil removal activities, impacted soils remained in certain areas of the Site. Any future intrusive work that will penetrate, encounter or disturb the remaining contamination will be performed in compliance with this Excavation Work Plan (EWP). It should be noted that if, and when, the gas line located north of the building jog is replaced, the soils that were not excavated during the IRM soil removal should be removed down to the clean native clay layer and disposed of in accordance with this SMP. Intrusive construction work must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the site. A HASP is attached as Appendix E to this SMP that is in current compliance with DER-10, 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. A copy of the NYSDEC Generic CAMP is included as Appendix F. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section 2.4.1. Any intrusive

construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

The Site Owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations and bridge footings).

The Site Owner will be responsible for compliance with this EWP.

2.4.1 Notification

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination (e.g., grading, excavation, building construction or demolition, utility line installation, maintenance or repair), the Site Owner or their representative will notify the Department. Currently, this notification will be made to:

Mr. Henry Willems
Engineering Geologist 1
MGP Remedial Section, Bureau C
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7017

This notification will include:

- A detailed description of the work to be performed, including plans for Site re-grading, intrusive elements or utilities to be installed below the soil cover, or any work that may impact an EC,
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern and potential presence of grossly contaminated media,
- A schedule for the work, detailing the start and completion of all intrusive work,

- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120,
- A copy of the contractor's health and safety plan, in electronic format, if it differs from the HASP provided in Appendix E of this document,
- Identification of disposal facilities for potential waste streams,
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

2.4.2 Soil Screening Methods

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-Site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

2.4.3 Stockpile Methods

Material stockpiles (e.g., excavated materials, backfill materials) will be continuously encircled with a berm and/or silt fence. Hay bales and/or watertight seals will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered with appropriately anchored tarps whenever materials are not actively being placed into or removed from the stockpile, during overnight/weekend hours, during periods of precipitation, or whenever dust action levels are exceeded. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC.

2.4.4 Materials Excavation and Load Out

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The Site Owner and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the Site.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-Site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the activities performed under this section are complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-Site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

2.4.5 Materials Transport Off-Site

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Truck transport routes will be determined by the Site Owner and contractor prior to initiating any off-Site transport activities. All trucks loaded with Site materials will exit the vicinity of the Site using only these pre-determined truck routes. The pre-determined trucking routes will take into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; (f) overall safety in transport; and(g) community input (if necessary).

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Queuing of trucks will be performed on-Site in order to minimize off-Site disturbance. Off-Site queuing will be prohibited.

2.4.6 Materials Disposal Off-Site

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed of in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated off-Site disposal (i.e., clean soil removed for development purposes), a formal

request with an associated plan will be made to the NYSDEC. Unregulated off-Site management of materials from this Site will not occur without formal NYSDEC approval.

Off-Site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility). MGP-impacted materials will be disposed of in a manner consistent with NYSDEC program policy, Technical and Administrative Guidance Memorandum (TAGM) 4061 (Management of Coal Tar Waste and Coal Tar Contaminated Soils and Sediment from Former Manufactured Gas Plants).

2.4.7 Materials Reuse On-Site

The proposed on-Site reuse of materials will be identified in the pre-excavation notification, if applicable. Sampling requirements, chemical criteria, and stockpiling requirements for on-Site reuse will be approved by the NYSDEC prior to initiating any activities that will involve the on-Site reuse of materials generated from the Site. The qualified environmental professional will ensure that NYSDEC-approved procedures for materials reuse are followed and that unacceptable material does not remain on-Site. Contaminated on-Site material, including historic fill and contaminated soil, that is acceptable for re-use on-Site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-Site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-Site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site will not be reused on-Site.

2.4.8 Fluids Management

All liquids to be removed from the Site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed of in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the Site, but will be managed off-Site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

2.4.9 Backfill from Off-Site Sources

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the Site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Imported soils will not exceed the applicable soil cleanup objectives for the use of the site, as set forth in Tables 375-6.8(b); specifically, the lower of the protection of groundwater or the protection of public health soil cleanup objectives for commercial sites. Soils that meet ‘exempt’ fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

2.4.10 Stormwater Pollution Prevention

Exposed MGP-impacted surface soil does not currently exist at the Site; therefore, a Stormwater Pollution Prevention Plan and associated erosion/sedimentation controls and monitoring are not currently warranted. If future Site actions involve activities (e.g., soil excavation) that warrant the development of a Stormwater Pollution Prevention Plan, one will be developed that conforms to the requirements of NYSDEC Division of Water guidelines and NYS regulations.

2.4.11 Contingency Plan

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in daily and periodic electronic media reports.

2.4.12 Community Air Monitoring Plan

A map showing the location of air sampling stations used during the IRM soil removal activities is shown in Figure 3. During future Site activities that require community air monitoring, -these locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations

At a minimum, community air monitoring will be conducted in accordance with the NYSDOH's Generic CAMP (Attachment F). In addition, a more detailed Site-specific CAMP will be prepared by the Site owner and submitted to the NYSDEC and NYSDOH for approval prior to initiating activities at the Site that may produce vapors or dust. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

2.4.13 Odor Control Plan

The odor control plan will be capable of controlling emissions of nuisance odors off-Site and on-Site. Specific odor control methods to be used on a routine basis will be determined by the Site Owner and contractor, and may include the use of foam suppressants. If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the Site Owner's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site

disposal; (e) use of chemical odorants in spray or misting systems; and (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

2.4.14 Dust Control Plan

A dust suppression plan that addresses dust management during invasive on-Site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-Site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger areas will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-Site roads will be limited in total area to minimize the area required for water truck sprinkling.

2.4.15 Other Nuisances

If applicable and necessary, a plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work.

If applicable and necessary, a plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

2.5 INSPECTIONS AND NOTIFICATIONS

2.5.1 Inspections

Inspections of all remedial components installed at the Site will be conducted by the Site Owner, or designated qualified environmental professional at the frequency specified in Section 3 of this SMP. A comprehensive Site-wide inspection will be conducted by the Site Owner or designated qualified environmental professional annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If Site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system;

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the site Management Reporting Plan (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the ECs/ICs implemented at the Site by a qualified environmental professional as determined by NYSDEC.

2.5.2 Notifications

Notifications will be submitted by the Site Owner to the NYSDEC, as needed, for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under 6NYCRR Part 375, and/or Environmental Conservation Law.
- 15-day advance notice of any proposed ground-intrusive activities.
- Notice within 48-hours of any damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other ECs and likewise any action to be taken to mitigate the damage or defect.
- Notice within 48-hours of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, including a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

3.0 MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the implemented ECs to reduce or mitigate contamination at the Site. (ECs at the site include the SSD system). This Monitoring Plan may only be revised with the approval of NYSDEC. It is the responsibility of the Site Owner to comply with this Monitoring Plan.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing achievement of the remedial performance criteria;
- Evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements; and
- Annual inspection and periodic certification.

3.2 ENGINEERING CONTROL SYSTEM MONITORING

As discussed in Section 2.2.1, ECs at the site consist of the Dorel Hat Building SSD system and a cover system. The SSD system was installed by the Site Owner to mitigate possible soil vapor intrusion into occupied buildings. A copy of the *Sub-Slab Vapor Mitigation System Engineering Design Report* (Day, July 2008), which contains a figure depicting the locations of the five SSD vacuum points and a summary of the system design, installation and testing, is included in Appendix C.

3.2.1 Monitoring Schedule

In accordance with the *Sub-Slab Vapor Mitigation System Work Plan* (Day, February 2008), which is included in Appendix C, annual inspections of the SSD system by a qualified third party will be conducted on behalf of the Site Owner and will include the following tasks:

- A visual inspection of the SSD system (e.g., vent fan, piping, warning device or indicator, labeling on systems, etc.);
- Identification and repair of observed leaks in the SSD system (i.e., ducting, seals, etc.) or leaks associated with penetrations within the building's floor;
- Inspection of the exhaust/discharge point(s) of the SSD system to verify no air intakes have been located nearby; and
- Comparison of manometer readings to those recorded during the pressure field extension test.

In addition, monthly monitoring by building occupants will be conducted, on behalf of the Site Owner, to ensure the system is operating properly and consistently. Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSD system has been reported or an emergency occurs that is deemed likely to affect the operation of the system. Monitoring deliverables for the SSD system are specified later in this Plan.

The Site Owner will also perform a monthly inspection of the cover system. The inspection will include an observation of the asphalt parking lot and the Dorel Hat

Building slab foundation to ensure that the overall integrity is intact, and that no new cracks have formed.

3.2.2 System Monitoring Devices and Alarms

The SSD system has visual gauges at each extraction point to indicate whether the system is operating properly. In the event that the system is not operating properly, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSD system restarted. Operational problems will be noted in the subsequent Periodic Review Report.

3.3 GROUNDWATER MONITORING PROGRAM

Groundwater monitoring is not a current component of Monitoring Plan. If groundwater monitoring is required in the future, the Site Owner will update the Monitoring Plan accordingly.

3.4 MONITORING WELL REPAIRS, REPLACEMENT AND DECOMMISSIONING

Monitoring well repair, replacement and decommissioning is not a current component of Monitoring Plan. If these activities are required in the future, the Site Owner will update the Monitoring Plan accordingly.

3.5 SITE-WIDE INSPECTION

Site-wide inspections will be performed by the Site Owner or designated qualified environmental professional on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed by the Site Owner or designated qualified environmental professional after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, detailed notes will be entered into a bound field book. The notes will compile sufficient information to assess the following:

- Compliance with all ICs, including Site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General Site conditions at the time of the inspection;

- The Site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that Site records are up to date.

3.6 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

Sampling and analysis are not current components of the Monitoring Plan. If future activities require sampling and analysis, the Site Owner will update the Monitoring Plan to include quality assurance/quality control provisions.

3.7 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file at the Site by the Site Owner. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted by the Site Owner at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP (Section 5).

3.8 CERTIFICATIONS

The Site owner will conduct site inspections and sampling activities, as outlined above. The frequency of inspection may only be revised with the prior approval of NYSDEC. Inspection certifications for all ICs and ECs will be submitted by the Site Owner to NYSDEC based on the date of issuance of the COC or equivalent document. The first certification will be made within one year of this date, and the remainder will be made annually thereafter. A qualified environmental professional, as determined by NYSDEC, will perform the inspection and certification, unless an engineering evaluation of engineering controls is required. In this case a licensed professional engineer with current registration will provide the certification. Further information on the certification requirements are outlined in the Reporting Plan of the SMP.

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

As discussed in Section 3.2, ECs at the site consist of the Dorel Hat Building SSD system and a cover system. Operation and maintenance of the ECs is discussed below. It is the responsibility of the Site Owner to comply with this Operation and Maintenance Plan.

4.2 ENGINEERING CONTROL SYSTEMS OPERATION AND MAINTENANCE

The SSD system was installed by the Site Owner to mitigate possible soil vapor intrusion into occupied buildings. A copy of the *Sub-Slab Vapor Mitigation System Engineering Design Report* (Day, July 2008), which contains a figure depicting the locations of the five SSD vacuum points and a summary of the system design, installation and testing, is included in Appendix C. SSD operation and maintenance activities are discussed below.

4.2.1 SSD System Start-Up and Testing; Cover System Testing

The system is designed to run continuously. If the system is shut down due to routine maintenance or damage, the re-start should be conducting according to the manufacturer's recommendation. The fan specifications are included in Appendix G. Following system start up, the following testing methods should be performed:

- Checks for leaks;
- Checks of seals;
- Check for backdrafts;
- Pressure tests;
- System balancing;
- Warning devices;
- Sampling;
- Check building floor for new cracks;

- Check asphalt parking lot for new cracks.

4.2.2 System Operation: Routine Operation Procedures

Since the system is designed to continuously operate, the primary operation procedure is for the property owner to routinely monitor the manometers that are mounted on the system piping. The manometers clearly indicate whether or not the system is operational.

4.2.3 System Operation: Routine Equipment Maintenance

The mitigation fans that are part of this system are maintenance free. If the fans stop working, they should be replaced according to the manufacturer's recommendations. If new cracks are observed in the asphalt parking lot of the concrete floor of the building, the Site Owner is responsible for repairing the cracks.

4.2.4 System Operation: Non-Routine Equipment Maintenance

All system components should be observed during routine monitoring events for damage, reduced effectiveness or component replacement.

4.3 MAINTENANCE REPORTING REQUIREMENTS

Maintenance reports and any other information generated during regular operations at the Site will be kept on-file at the Site by the Site Owner. All reports, notes, and other relevant information generated will be available upon request to the NYSDEC and submitted by the Site Owner as part of the Periodic Review Report, as specified in the Section 5 of this SMP.

4.3.1 Routine Maintenance Notes

Detailed notes will be recorded during each routine maintenance event. Notes will be recorded in a bound book and will include, but not be limited to the following information:

- Date;

- Name, company, and position of person(s) conducting maintenance activities;
- Maintenance activities conducted;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

4.3.2 Non-Routine Maintenance Notes

During each non-routine maintenance event, notes will be recorded which will include, but not be limited to, the following information:

- Date;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Presence of leaks;
- Date of leak repair;
- Other repairs or adjustments made to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and,
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

4.4 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

4.4.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance, the Site Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to Metro North Railroad. These emergency contact lists must be maintained in an easily accessible location at the Site.

Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Contact Numbers

Metro North Railroad – Karen Timko	(914) 461-0592
Day Engineering – Nate Simon	(585) 454-0210
CHGE (Wayne Mancroni) [only for emergencies related to potential MGP impacts]	(845) 486-5534

* Note: Contact numbers subject to change and should be updated as necessary

4.4.2 Map and Directions to Nearest Health Facility

Site Location: 1 West Main Street, Beacon, New York

Nearest Hospital Name: St. Francis Hospital

Hospital Location: 11 Hastings Drive

Hospital Telephone: (845) 838-4500

Directions to the Hospital:

1. Head **east** on West Main Street toward River Street (go 0.2 mi.)
2. Turn **left** on Beekman Street (go 0.2 mi.)
3. Turn **right** on North Ave/RT-9D
4. Turn **left** on Main Street/RT-52-BR (go 0.7 mi)
5. Turn **left** on Fishkill Ave (go 0.6 mi)
6. Turn **left** on Delvan Ave (go 0.1 mi)
7. Bear **right** on Hastings Dr.

8. Arrive at 11 Hastings Dr.Total Distance: Approximately 2 miles

Total Estimated Time: Approximately 9 minutes

Map Showing Route from the Site to the Hospital:


Hospital
Site
A
B
Beacon
Main St
Fishkill Ave
Wolcott Ave
Southern Dutchess Country Club
Memorial Park
125 0m
Data © 2008 NAVTEQ

5.0 SITE MANAGEMENT REPORTING PLAN

5.1 INTRODUCTION

A Periodic Review Report will be submitted by the Site Owner to NYSDEC every year, beginning one year after the COC is issued. The Periodic Review Report will be prepared by the Site Owner in accordance with NYSDEC DER-10 "Technical Guidance for site Investigation and Remediation" requirements. The frequency of submittal of the Periodic Review Report may be modified with the approval of the NYSDEC.

This report will include the following:

- Identification of all ECs/ICs required for the site;
- An assessment of the effectiveness of all ECs/ICs for the site;
- An evaluation of the Engineering and Institutional Control Plan and the Monitoring Plan for adequacy in meeting remedial goals;
- Results of the required annual Site inspections and severe condition inspections, if any;
- A compilation of all deliverables generated during the reporting period, as specified in Section 2 EC/IC Plan, Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan; and
- Certification of the ECs/ICs.

It is the responsibility of the Site Owner to comply with this Site Management Reporting Plan.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

Information pertaining to ECs/ICs can be found in the Engineering and Institutional Control Plan portion of the SMP. Inspection of the EC/ICs by the Site Owner will occur at a frequency described in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan. After the last inspection of the reporting period, the Site Owner will designate a qualified environmental professional to sign and certify the document. The document will certify that:

- On-site ECs/ICs are unchanged from the previous certification;
- They remain in-place and are effective;
- The systems are performing as designed;
- Nothing has occurred that would impair the ability of the controls to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any operation and maintenance plan for such controls;
- Access is available to the Site by NYSDEC and NYSDOH to evaluate continued maintenance of such controls; and
- Site use is compliant with the deed restrictions.

The signed certification will be included in the Periodic Review Report (see Section 5.4).

5.3 SITE INSPECTIONS

5.3.1 Inspection Frequency

All inspections will be conducted by the Site Owner or designated qualified environmental professional at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a Site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.3.2 Inspection Forms, Sampling Data, and Maintenance Reports

The details of all inspections and monitoring events will be recorded in a bound field notebook. These notes are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the Site during the reporting period will be included in the Periodic Review Report.

5.3.3 Evaluation of Records and Reporting

The results of the inspection and Site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- ECs/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The Site remedy continues to be protective of public health and the environment and is performing as designed.

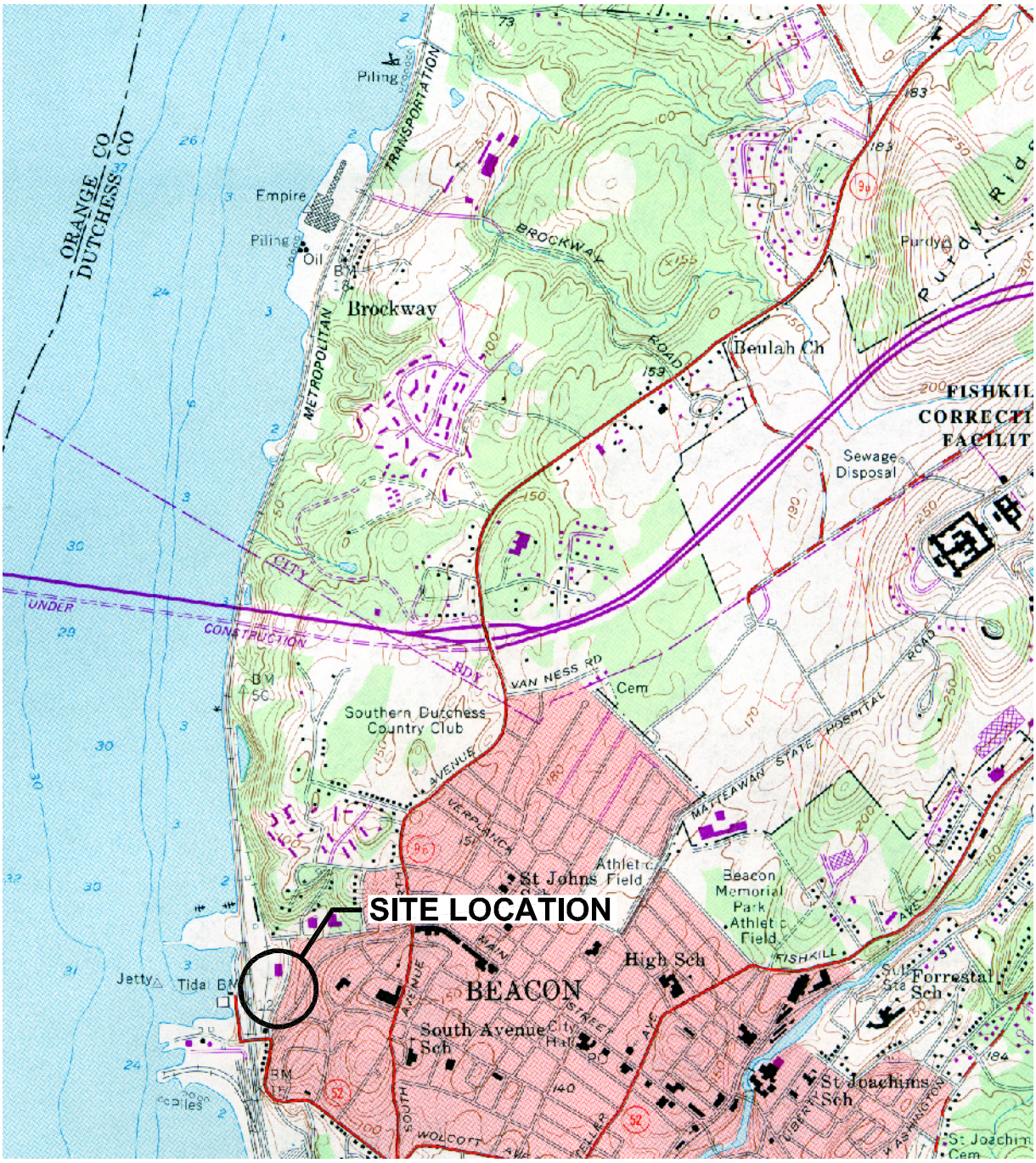
5.4 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted by the Site Owner every year, beginning one year after the Certificate of Completion or equivalent document is issued. The report will include:

- EC/IC certification;
- All applicable inspection forms and other records generated for the Site during the reporting period;
- A Site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the Site-specific RAWP, ROD or Decision Document;
    - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
    - Any new conclusions or observations regarding Site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
    - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted by the Site Owner, in hard-copy format, to the NYSDEC Regional Office located closest to the site, and in electronic format to the NYSDEC Central Office and the NYSDOH Bureau of Environmental Exposure Investigation.

Figures



FROM USGS WAPPINGERS FALLS, N.Y. QUADRANGLE PHOTOREVISED 1981

0 2000' 4000'

GRAPHIC SCALE

QUADRANGLE LOCATION

CENTRAL HUDSON GAS AND ELECTRIC CORP.
BEACON, NEW YORK

INTERIM REMEDIAL MEASURE (IRM) SOIL REMOVAL FINAL ENGINEERING REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1

NOTES:

1. BASEMAP INFORMATION (INCLUDING TEST BORING AND GROUNDWATER MONITORING WELL LOCATIONS) OBTAINED FROM AN AERIAL PHOTOGRAPH BY YU & ASSOCIATES, INC. DATED 9/9/05 AND A FIGURE BY DAY ENGINEERING, P.C. ENTITLED "SITE PLAN WITH AREAS OF CONTAMINATION" DATED 12/30/2005 AT A SCALE OF 1"=50'.
2. ALL LOCATIONS ARE APPROXIMATE.
3. BASED ON INTERPRETATION OF BORING LOGS PREPARED BY DAY ENGINEERING, INC. AND/OR YU & ASSOCIATES, INC.
4. SOIL REMOVAL LIMITS BASED ON SURVEY CONDUCTED BY DENNIS E. WALDEN, LAND SURVEYOR.

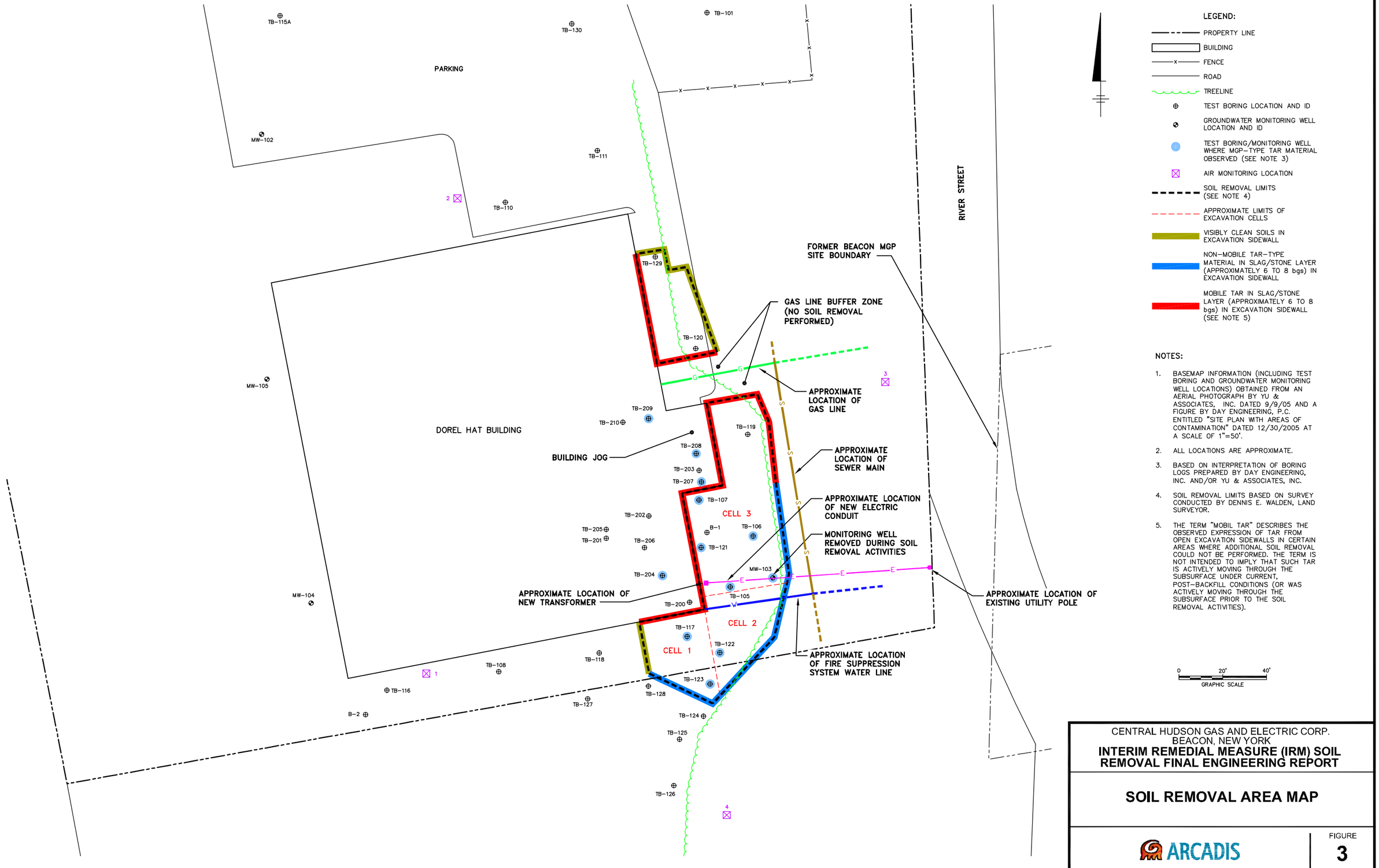
CENTRAL HUDSON GAS AND ELECTRIC CORP.
BEACON, NEW YORK

INTERIM REMEDIAL MEASURE (IRM) SOIL REMOVAL FINAL ENGINEERING REPORT

SITE PLAN

ARCADIS

FIGURE 2



LEGEND:

- PROPERTY LINE
- BUILDING
- FENCE
- ROAD
- TREELINE
- TEST BORING LOCATION AND ID
- GROUNDWATER MONITORING WELL LOCATION AND ID
- TEST BORING/MONITORING WELL WHERE MGP-TYPE TAR MATERIAL OBSERVED (SEE NOTE 3)
- AIR MONITORING LOCATION
- SOIL REMOVAL LIMITS (SEE NOTE 4)
- APPROXIMATE LIMITS OF EXCAVATION CELLS
- VISIBLY CLEAN SOILS IN EXCAVATION SIDEWALL
- NON-MOBILE TAR-TYPE MATERIAL IN SLAG/STONE LAYER (APPROXIMATELY 6 TO 8 bgs) IN EXCAVATION SIDEWALL
- MOBILE TAR IN SLAG/STONE LAYER (APPROXIMATELY 6 TO 8 bgs) IN EXCAVATION SIDEWALL (SEE NOTE 5)

NOTES:

1. BASEMAP INFORMATION (INCLUDING TEST BORING AND GROUNDWATER MONITORING WELL LOCATIONS) OBTAINED FROM AN AERIAL PHOTOGRAPH BY YU & ASSOCIATES, INC. DATED 9/9/05 AND A FIGURE BY DAY ENGINEERING, P.C. ENTITLED "SITE PLAN WITH AREAS OF CONTAMINATION" DATED 12/30/2005 AT A SCALE OF 1"=50'.
2. ALL LOCATIONS ARE APPROXIMATE.
3. BASED ON INTERPRETATION OF BORING LOGS PREPARED BY DAY ENGINEERING, INC. AND/OR YU & ASSOCIATES, INC.
4. SOIL REMOVAL LIMITS BASED ON SURVEY CONDUCTED BY DENNIS E. WALDEN, LAND SURVEYOR.
5. THE TERM "MOBIL TAR" DESCRIBES THE OBSERVED EXPRESSION OF TAR FROM OPEN EXCAVATION SIDEWALLS IN CERTAIN AREAS WHERE ADDITIONAL SOIL REMOVAL COULD NOT BE PERFORMED. THE TERM IS NOT INTENDED TO IMPLY THAT SUCH TAR IS ACTIVELY MOVING THROUGH THE SUBSURFACE UNDER CURRENT, POST-BACKFILL CONDITIONS (OR WAS ACTIVELY MOVING THROUGH THE SUBSURFACE PRIOR TO THE SOIL REMOVAL ACTIVITIES).

0 20' 40'
GRAPHIC SCALE

CENTRAL HUDSON GAS AND ELECTRIC CORP.
BEACON, NEW YORK
INTERIM REMEDIAL MEASURE (IRM) SOIL REMOVAL FINAL ENGINEERING REPORT

SOIL REMOVAL AREA MAP

ARCADIS

FIGURE 3

CITY: SYR DIV/GROUP: 85 DB: LAF LD: AM: PD: TM: TR: LYRON=YOF=*REF*
G:\CAD\ACTIVE\00205300\0100\003\DWG\REMOVAL\REVISED\20530G05.DWG LAYOUT: 3 SAVED: 4/8/2008 8:48 AM ACADVER: 17.0S (LMS TECH) PAGESETUP: CALD2B-PDF PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 4/8/2008 8:48 AM BY: FORAKER, LYDIA
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