Central Hudson Gas & Electric Corporation

SITE MANAGEMENT PLAN

Former Manufactured Gas Plant Site
Newburgh, New York

(NYSDEC Site Number: 3-36-042)

Revision 04
April 2025

I, Mark O. Gravelding, P.E., certify that I am currently a New York State registered professional engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Mark O. Gravelding, P.E.

New York State P.E. No. 069985

Engineer of Record

Prepared for:

Central Hudson Gas & Electric Corporation

284 South Avenue

Poughkeepsie, New York 12601

Prepared by:

Arcadis U.S., Inc.

One Lincoln Center, 110 West Fayette Street,

Suite 300

Syracuse, New York 13202

Tel 315 446 9120

Fax 315 449 0017

Our Ref.:

30269889

Date:

April 2025

VERSION CONTROL

Revision No	Date Issued	Summary of Revision(s)	NYSDEC Approval Date
Draft	June 2011	Not Applicable (original submittal)	Not Applicable
01	August 2016	• Update based on changes made to SMP Templates from DEC between March 2011 and August 2015 • Include additional Area A investigations, design and construction details performed between 2011 and 2015 • Update remaining contamination discussion • Clarify institutional control discussions for Areas A and B • Formatting updates	Not Applicable
02	September 2017	• Address DEC comments dated August 14, 2017 on SMP Rev 01, including: o Update DEC Project Manager o Clarify soil vapor intrusion work plan requirements o Clarify sampling of potentially impacted material encountered during excavation • Update Arcadis Project Manager	Not Applicable
03	December 2017	• Clarify soil vapor intrusion evaluation requirements per DEC e-mail dated November 30, 2017.	2/15/2018
04	April 2025	• Update site inspection frequency and site inspection form(s) per DEC e-mail dated September 1, 2023 • Update contact information, as applicable • Updated approved disposal facilities list, as applicable	

CONTENTS

TABLES

FIGURES

APPENDICES

ACRONYMS AND ABBREVIATIONS

6 NYCRR	Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York
Arcadis	Arcadis of New York, Inc.
bgs	below ground surface
BTEX	benzene, ethylbenzene, toluene, and xylenes
CAMP	Community Air Monitoring Plan
CCR	Construction Completion Report
CHGE	Central Hudson Gas & Electric Corporation
COC	Certificate of Completion
COI	constituents of interest
CSX	CSX Transportation, Inc.
DAC	D.A. Collins
EC	Engineering Control
ECL	Environmental Conservation Law
EWP	Excavation Work Plan
ft	feet
HASP	Health and Safety Plan
HDPE	high-density polyethylene
IC	Institutional Control
IRM	interim remedial measure
MGP	manufactured gas plant
MHW	mean high water
NAPL	non-aqueous phase liquid
NGVD29	National Geodetic Vertical Datum of 1929
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	polycyclic aromatic hydrocarbon
PDI	pre-design investigation
RA	remediation actions

RI	remedial investigation
ROD	Record of Decision
RSO	Remedial System Optimization
SCO	Soil Cleanup Objective
SMP	Site Management Plan
STP	sewage treatment plant
SVI	Soil Vapor Intrusion

EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan (SMP). As discussed in further detail in Section 1, the site is divided into three areas (Area A, Area B, and Area C). Area A consists of the former manufactured gas plant. Area B consists of a transportation corridor (South Water Street and a CSX railroad right-of-way) and the City of Newburgh sewage treatment plant. Area C is a portion of the Hudson River off shore from the City of Newburgh sewage treatment plant. No institutional controls or engineering controls are associated with Area C; therefore, the focus of this SMP is Areas A and B.

Site Identification: Site No. 3-36-042
Former Manufactured Gas Plant Project Site
Newburgh, Orange County, New York

Institutional Controls:	1. The Area A property may be used for commercial or industrial use.
	2. Institutional controls required by the environmental easement (Area A) and this SMP (Areas A and B), include: a. Prohibiting use of the groundwater underlying the properties without necessary water quality treatment as determined by the New York State Department of Health or the Orange County Department of Health. b. Monitoring remedy performance and effectiveness. c. Reporting at a frequency and in a manner defined in this SMP. d. Performing future activities that will disturb remaining contaminated material in accordance with this SMP and the Excavation Work Plan. e. Operating, maintaining, monitoring, inspection, and reporting of any mechanical or physical component of the remedy as defined in this SMP. f. Providing access to the properties to agents, employees or other representatives of the State of New York to assure compliance with the restrictions identified by the environmental easement. g. Evaluating the potential for vapor intrusion for any buildings or expansions constructed in Areas A and B, and any potential impacts that are identified must be monitored or mitigated. Implementation of this SMP in Area B will be in accordance with the access agreements between Central Hudson Gas & Electric Corporation and the Area B property owners.
	3. Engineering controls must be operated, maintained, and inspected at a frequency and in a manner defined in this SMP.
Engineering Controls:	1. NAPL Collection Wells 2. NAPL Collection Trench and Barrier Wall

Site Identification: Site No. 3-36-042
Former Manufactured Gas Plant Project Site
Newburgh, Orange County, New York

Inspections:	Frequency
1. Site-wide Inspections	Every three years
Monitoring:	
1. NAPL Monitoring	As required by Table 4
Maintenance:	
1. NAPL Collection Wells Maintenance	As needed
2. NAPL Sump Maintenance	As needed
3. Collection Trench Cleanout Maintenance	As needed
Reporting:	
1. NAPL Monitoring Data Report	As required by Table 5
2. Periodic Review Report	Every three years

Further descriptions of the above requirements are provided in detail in the latter sections of this SMP.

1 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 Introduction

This Site Management Plan (SMP) is a required element of the remedial program for Areas A and B of the Central Hudson Gas & Electric Corporation (CHGE) Newburgh, New York former manufactured gas plant (MGP) project site (which includes adjacent off-site properties and the Hudson River east of the former MGP; hereinafter collectively referred to as "the site"). The site is currently in the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program (Site No. 3-36-042) administered by New York State Department of Environmental Conservation (NYSDEC). CHGE entered into an Order on Consent (Index No. D3-001-95-06) with the NYSDEC on October 20, 1995 to remediate the site. The site Location Map is provided as Figure 1. Based on land uses and physical characteristics, the site was divided into three distinct areas (Area A, Area B, and Area C) as shown on Figure 2. Area A consists of the former MGP. Area B consists of a transportation corridor (South Water Street and a CSX Transportation Inc. [CSX] railroad right-of-way) and the City of Newburgh sewage treatment plant (STP). Area C is a portion of the Hudson River off shore from the City of Newburgh STP. Area A is owned by CHGE and Area B is owned by the City of Newburgh and CSX. The boundaries of the site areas are more fully described in Section 2.1.

After completion of the remedial work, contamination was left in Areas A and B of the site, and is hereafter referred to as "remaining contamination." Institutional controls (ICs) and engineering controls (ECs) have been incorporated into the site remedy to control exposure to remaining contamination in Areas A and B to protect public health and the environment. An environmental easement for Area A (Appendix A) was granted to the NYSDEC, and recorded with the Orange County Clerk, that requires compliance with this SMP and all ECs and ICs placed on Area A of the site. For the Area B properties, CHGE has obtained an Environmental Indemnity Agreement with CSX (dated May 11, 2009) and an Access Agreement with the City of Newburgh (dated April 19, 2012) to implement the SMP; these agreements are collectively referred to as "Agreements" herein.

This SMP was prepared to manage the remaining contamination in Areas A and B until the environmental easement is extinguished in accordance with Environmental Conservation Law (ECL) Article 71, Title 36.

A property-specific SMP for the CSX property located in Area B was developed in 2006 and approved by NYSDEC following revisions made in November 2008. The CSX SMP will remain in effect and is incorporated as Appendix B to this SMP. Requirements for Area B listed in the sections below will be applied to the City of Newburgh STP property and to the CSX property (if not specifically addressed in Appendix B). In this SMP, references to the "Area B property owners" or "property owners in Area B" include both CSX and the City of Newburgh.

This SMP has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the environmental easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the implementation procedures that are required by the environmental easement. Failure to properly implement the SMP is a violation of the environmental easement, which is grounds for revocation of the Certificate of Completion (COC).
- Failure to comply with this SMP is also a violation of ECL, Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6NYCRR) Part 375 and the Order on Consent (Index # D3-001-95-06; Site #3-36-042) for the site, and violators would thereby be subject to applicable penalties.

All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in NYS. A list of contacts for persons involved with the site is provided in Appendix C of this SMP.

This SMP was prepared by Arcadis of New York, Inc. (Arcadis), on behalf of CHGE, in accordance with the requirements in NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010 and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the ICs and ECs that are required by the environmental easement.

1.2 Revisions

Revisions to this SMP will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shut-down of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. In accordance with the environmental easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files. If applicable, SMP changes may also require modification to the Agreements; however, the Agreements incorporate the SMP by reference including any future SMP modifications.

1.3 Notifications

Notifications will be submitted by CHGE to the NYSDEC, as needed, in accordance with NYSDEC's DER-10 for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Order on Consent, 6NYCRR Part 375, and/or ECL.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan (EWP).
- Notice within 48-hours of any damage or defect to the ECs that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following business day 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,

with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public. If it is not an emergency situation, notification must be made within five business days.

- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site properties or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the Order on Consent, and all approved work plans and reports, including this SMP.
- Within 15 days after the transfer of all or part of the property, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table 1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix C. CHGE will coordinate with the Area B property owners to obtain the aforementioned information within the required time frames. A summary of responsibilities of CHGE and Area B property owners is provided in Appendix D.

Table 1. Notifications

Name	Contact Information
Gerald Pratt, P.G., NYSDEC Project Manager	518.402.9667; gerald.pratt @dec.ny.gov

Note: Notifications are subject to change and will be updated as necessary.

2 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The site, which is located in Orange County, New York, is organized into three areas. Area A, which is identified as Section 46, Block 4, Parcel 1 on the City of Newburgh Tax Map, consists of the former MGP. CHGE owns this property and operates a natural gas regulator station that controls distribution of gas throughout the City of Newburgh and surrounding areas. Area B is defined as the area between South Water Street and the Hudson River and consists of the CSX property (Section 46, Block 4, Parcels 2 and 3 on the City of Newburgh Tax Map), River Street, and the City of Newburgh STP (Section 46, Block 4, Parcels 4 and 5 and a portion of Section 49, Block 1, Parcel 5.1 on the City of Newburgh Tax Map). The eastern boundary of the STP property borders the Hudson River. Area C is defined as a portion of the Hudson River below the mean high water (MHW) level located immediately off shore from the City of Newburgh STP. The three areas are illustrated on the site plan presented on Figure 2.

2.2 Site History

The MGP operation in Area A began in 1876 (using the Lowe carbureted water gas process) under the name Consumers Gas Company. After a series of consolidations and mergers in the early 20th century, the plant came under the control of CHGE. The MGP expanded several times, reaching its maximum size and production capacity in approximately 1910. From 1931 to 1948, the MGP was used as a gas storage and distribution center and for reserve gas production. In 1951, CHGE demolished the MGP, which included the decommissioning of buildings, gas holders, and oil tanks. Since demolition of the former MGP, CHGE has operated a natural gas regulator station and natural gas transmission interconnect at the former MGP site. In 1985, CHGE constructed a propane peaking plant in the southern portion of Area A. The propane peaking plant was decommissioned in 2012 and the related infrastructure, including six 60,000-gallon propane tanks, were removed from Area A.

During the MGP operation, an oily liquid by-product commonly known as coal tar was generated. This non-aqueous phase liquid (NAPL) coal tar is believed to have leaked from the MGP structures (e.g., relief holder, tar tank) and migrated into the subsurface. Over time, the NAPL has migrated easterly beneath the ground surface into Areas B and C. Some coal tar was also believed to have been discharged directly into the Hudson River via a sewer outfall, during the historical operation of the MGP.

The STP property in Area B was formerly occupied by several industries (i.e., sawmills, shipyards and shipbuilders, lumber dealers, and manufacturers of engines, boilers, and general machinery), railroads, and roads. In 1926, the City of Newburgh purchased the northernmost portion of the current STP property from the West Shore Railroad and New York Central Railroad Company. In 1963, an incinerator was built by the City of Newburgh on the STP property and was operated by the City until approximately 1976. Construction of the existing STP began in the late 1960s. Improvements on the STP property include, but are not limited to, the following: primary settling tanks, clarifiers, sludge pump building, an administrative building, and a chlorine contact tank in the central portion of the STP property, sludge processing to the north and aeration tanks to the south. Historically, the shoreline of the Hudson River was used by the

industries in Area B as a shipyard with the location of docks and wharfs varying over the years. Additionally, fill has historically been added to Areas B and C to extend the upland portion of the site. As discussed in Section 2.3.2, a significant portion of the upper layer of the Area B subsurface is fill material placed in the past to fill in embankments and extend the upland area available for industrial use.

2.3 Physical Setting

2.3.1 Land Use

Land uses surrounding the site are primarily commercial and industrial, with the nearest residence located approximately 600 feet (ft) to the southwest of Area A. The site is bounded by the following:

- To the east by the Hudson River.
- To the south by City of Newburgh property including Ward Brothers Memorial Rowing Park, CSX transportation corridor, and industrial properties.
- To the west, northwest, and southwest by South Colden Street, residences, vacant buildings, and businesses.
- To the north by South William Street, a former scrap yard and automobile dismantling operation that is now a United States Environmental Protection Agency Superfund site (Consolidated Iron and Metal Company, Inc.), and a public boat launch owned by the City of Newburgh. The Consolidated Iron site has been cleared of debris and is now owned by the City of Newburgh.

2.3.2 Geology

This section provides a general characterization of the subsurface and geologic units encountered at the site. The subsurface geologic units encountered include varying thicknesses of: fill, sand and gravel, silt/clay and fine sands, glacial till, and bedrock.

The western portion of the site at Area A is composed primarily of fill and glacial till overlying bedrock. The overburden in the eastern portion of the site in Area B consists of fill and sand and gravel, overlying silt and clay with lenses/layers of sand and gravel, till, and bedrock. In the Hudson River (Area C), fill near the upland boundary and silt and clay sediments are the primary geologic units encountered. Geologic sections are shown on Figures 3A through 3G. A general description of each geologic unit as observed in the site is provided below.

Fill

The fill is the uppermost unit throughout the site. In Area A, the fill consists of fine to coarse sand with some silt. The fill in Area B consists primarily of reworked native sand and silt with some lenses/layers of clay and fine gravel with anthropogenic materials such as brick, ash, cinders, and wood (among other materials). The fill ranges in thickness from approximately 10 ft at the former MGP (Area A) to approximately 40 ft adjacent to the Hudson River. Within the Hudson River, the fill is generally less than 5 ft and observed adjacent to the shoreline.

Sand and Sand/Gravel Unit

In Area B, a sand and sand/gravel unit lies beneath the fill. The sand and sand/gravel unit ranges in thickness from approximately 5 to 40 ft and may represent deeper fill (especially in the northern section of the STP area) and/or alluvial and glacial deposits.

Silt/Clay and Fine Sand Unit

Beneath the fill unit in Areas A and C, and beneath the sand and sand/gravel unit in Area B lies the silt/clay and fine sand unit. This unit ranges in thickness from approximately 2 ft at South Water Street to approximately 45 ft adjacent to the Hudson River. Within the Hudson River, the silt/clay unit is approximately 40 to 60 ft thick. Overall the geometry of this unit appears to be a wedge that thickens to the east and is absent in the northwest section of the STP in Area B. This unit is composed primarily of silt, clay, and fine sand with intermittent lenses/layers of sand and gravel. The color of this unit grades from dark gray to black with depth. The moisture content varies from moist to wet, often varying within the unit. The density of this unit is generally soft.

Till Unit

The till unit was observed below the fill unit in the western portion of the site and below the silt/clay and fine sand unit in the central and eastern portion of the site. This unit ranges in thickness from approximately 10 ft in the western portion to less than one foot in the eastern portion of the site. The till unit is generally dense and brittle, and ranges from light gray to dark gray. This unit is composed of varying percentages of sand, silt, and gravel.

Bedrock

The bedrock formation which underlies the overburden at the site consists of a light to medium gray graywacke with thin interbedded shale. The bedrock is fractured within the upper 10 ft. The bedrock surface slopes to the east toward the Hudson River.

2.3.3 Hydrogeology

The hydrogeologic system at the site is comprised of the saturated portion of the fill, the sand and sand/gravel unit, and silt/clay unit as well as the underlying bedrock. The depth to groundwater ranges from approximately 3 to 12 ft below ground surface (bgs). Water levels adjacent to the river in the shallow and deep overburden fluctuate with the tidal conditions in the adjacent Hudson River.

Overall, regional groundwater flow is from the higher elevations in the east to the Hudson River and river valley west of the site. Horizontal groundwater flow in the overburden units at the site is also toward the east to the river/ river valley. Figures 4A through 4C show the groundwater elevation contours in the fill/soils and Figure 4D shows the bedrock groundwater elevations based on the remedial investigation (RI) data. Horizontal groundwater flow in the bedrock unit is also toward the east based on bedrock groundwater elevations. Overall, hydraulic conductivity measurements and groundwater flow velocities are 1 to 2 orders of magnitude lower in the bedrock than the overburden.

Construction logs for existing groundwater monitoring wells are provided in Appendix E.

2.4 Summary of Remedial Investigation Findings

An RI was performed to characterize the nature and extent of environmental impacts at the site. Initial RI activities were completed in 1996 with supplemental RI activities performed in 1997, 1998, and 1999. Additional investigations were performed following the RI to aid in the remedial design process. The results of these investigations are described in detail in the following reports:

- Newburgh Project Remedial Investigation Report (BBL 1999)
- Human Health Risk Assessment (BBL 2001a)
- Ecological Assessment (BBL 2001b)
- Revised Feasibility Study Report Newburgh Project (BBL 2003)
- Area A Pre-Design Investigation Data Summary Report (ARCADIS BBL, 2006)
- NAPL Collection Well Summary Report (Arcadis 2008)
- Areas B and C Final Remedial Design Report (Arcadis 2009)
- Area A Remedial Action Work Plan (Arcadis 2015)

Generally, the RI and subsequent pre-design investigations (PDIs) determined that NAPL, in the form of oily and/or tar-like materials typically associated with MGP operations and NAPL-related constituents, were observed in Area A and B soils, Area A and B groundwater, and Area C sediment. NAPL-related constituents of interest (COIs) associated with the site include benzene, ethylbenzene, toluene, and xylenes (BTEX), as well as polycyclic aromatic hydrocarbons (PAHs). Table 2 provides an overview of the COIs encountered by media type during the previous investigations.

Table 2. MGP-Related COIs Concentration Ranges Observed by Media

	Benzene	Total BTEX	Total PAH
Soil/Fill (Area A and B)	ND to 20 mg/kg	ND to 729 mg/kg	ND to 3,304 mg/kg
Groundwater Samples (Area A and B)	ND to 4,100 µg/L	ND to 4,339 µg/L	ND to 18,816 µg/L
Sediments (Area C)	ND to 37 mg/kg	ND to 972.2 mg/kg	0.275 to 9,811 mg/kg

Notes:
1. Concentration ranges are from the RI analytical results; total PAH for sediment results also include the PDI analytical results.
2. Abbreviations are as follows:
   µg/L = micrograms per liter
   mg/kg = milligrams per kilogram
   ND = not detected

Below is a summary of the site conditions when the previous investigations were performed.

Soil/Fill (Areas A & B)

Based on the results of previous investigations conducted at the site, NAPL was observed within Area A in the overburden, primarily in the southeastern corner and central portion of the former MGP, and in the bedrock in the central portion of the former MGP. In Area B, NAPL was observed along South Water

Street, in the central portion of the STP property, and along the shoreline area (between the former incinerator building and the aeration tanks) of the STP property. The extent of NAPL impacts in Areas A and B observed during investigations is shown on Figure 5.

NAPL was observed primarily in coarser grained soils above bedrock, till, and/or silt/clay units; however, NAPL was also observed in fill materials as well as finer-grained soils and sediments (silt/clays). Depths to NAPL ranged from 2 to 42 ft bgs, with most observations at greater than 10 ft bgs. The extent of NAPL-impacted soil in Areas A and B observed during investigations is summarized on Figure 5. Figure 6 summarizes the RI analytical results for benzene, total BTEX, and total PAH in the Areas A and B soil/fill. The concentration ranges of the COIs encountered during the RI in the soil/fill are shown in Table 2.

Groundwater (Areas A & B)

In general, groundwater impacts were associated with groundwater flow through impacted soils. The COIs detected in the groundwater were similar to those detected in the soils. Metals were detected in the groundwater and appear to be naturally occurring or related to the industrial usage of the site. Results for the analysis of groundwater samples collected during the RI are shown on Figure 7 with the concentration ranges summarized in Table 2.

Sediments (Area C)

NAPL was observed in sediments within the Hudson River with most of the NAPL observed at or above 10 ft bgs. However, NAPL was encountered at depths of up to 18 ft bgs. Figure 8 illustrates where NAPL was encountered in Area C sediments. A majority of the NAPL was encountered within 120 ft of the shoreline. Sediment samples were analyzed for total PAH and toxicity (28-day *Hyalella azteca* survival and growth and 20-day *Chironomus dilutes*). Figure 9 summarizes the total PAH and toxicity results in the Area C sediments. Table 2 summarizes the range of total PAH concentrations observed in the Area C sediment. Three separate areas of PAH-impacted/potentially toxic sediment were identified outside of the NAPL-area dredging limits.

2.5 Remediation Goals

The remediation goals for the site as listed in the Record of Decision (ROD) dated December 2005 (as modified on September 26, 2017) are as follows:

- Eliminate or reduce to the extent practicable:
  - Exposures of persons at or around the site to MGP tar in Hudson River sediments.
  - Exposures of persons at or around the site to sheens and floating slicks of MGP tar on the surface of the Hudson River.
  - Exposures of persons engaged in subsurface utility work or other excavation work to MGP tar and tar-contaminated soils.
  - Environmental exposures of fish and wildlife to MGP tar and PAH compounds derived from the tar in the Hudson River sediments.
- Attaining to the extent practicable:

- Ambient groundwater quality standards.
- The narrative surface water quality standards for sheens.

2.6 Summary of Remedial Actions

The site was remediated in accordance with the following NYSDEC-approved reports:

- Remedial Design/Remedial Action Work Plan (Earth Tech 2006) for the Area A former tar tank area and former relief holder area.
- Areas B and C Final Remedial Design Report (Arcadis 2009).
- Remedial Action Work Plan (Arcadis 2015) and Site Operations Plan (D.A. Collins [DAC] 2015) for the Area A former propane tank area and surrounding areas.

A summary of the Remedial Actions (RAs) performed at the site is provided below by area.

Area A

The primary RAs at Area A included:

1. Excavation of NAPL-impacted soils in the former tar tank area in the southeast corner in 2007.
2. Excavation of NAPL-impacted soils in the former relief holder and surrounding areas in 2007.
3. Excavation of NAPL-impacted soils in the former propane tank area and surrounding areas in 2015.
4. Installation of overburden and bedrock NAPL-collection wells between 2005 and 2016.

The 2007 remedial excavations were performed by Earth Tech as summarized in the 2008 Area A Construction Completion Report (CCR) (Earth Tech 2008). The 2015 remedial excavation was performed by DAC as summarized in the 2016 CCR for Area A Former Propane Tank Area (Arcadis 2016a).

Between April 2005 and November 2007, a total of 37 NAPL recovery wells were installed by Arcadis in Area A as summarized in the NAPL Collection Well Summary Report (Arcadis 2008). In 2013, two additional NAPL collection wells were installed in Area A as set forth in the NAPL Collection Well Summary Report. As part of the 2015 remedial excavation, two NAPL collection wells were abandoned prior to excavation and replaced in 2016.

Area B

The primary RAs in Area B included:

1. Installation of a NAPL barrier wall and collection system along the bank of the Hudson River.
2. Installation of NAPL overburden collection wells.
3. Implementation of in-situ chemical oxidation following NAPL removal from the collection wells.

Installation of the NAPL barrier wall and collection system was completed in 2010 as summarized in the CCR for Areas B and C (Arcadis 2016b).

Between April 2005 and November 2007, a total of 19 NAPL recovery wells were installed in Area B; installation details are provided in the NAPL Collection Well Summary Report (Arcadis 2008). As a part of

the Area B remedial activities performed in 2010, one additional NAPL collection well (NMW-46) was installed in Area B to the west of the barrier wall near Renwick Street at the request of NYSDEC. In 2013, five additional NAPL collection wells were installed in Area B, including the two additional NAPL collection wells planned for Area B as set forth in the NAPL Collection Well Summary Report.

Note that the in-situ chemical oxidation component of the Area B remedy was removed as part of the RAs for Area B as agreed to by NYSDEC during an annual site review meeting in October 2012.

Area C

The primary RAs for Area C included:

1. Dredging NAPL-impacted sediment from the Hudson River.
2. Dredging PAH-impacted/ potentially toxic sediment from the Hudson River.
3. Restoration in the river and along the shoreline.

Implementation of the dredging and restoration activities of the Area C remedy was completed in 2011 as summarized in the Areas B and C CCR (Arcadis 2016b).

2.6.1 Removal of Contaminated Materials from the Site

The removal of impacted materials from the site is discussed below by media type. The areas where soil excavation was performed in Areas A and B are shown on Figure 10. The areas of sediment dredging in Area C are shown on Figure 11.

Soil

Soil excavation and off-site disposal activities were performed in both Areas A and B, as follows. In Area A, excavation was performed to remove the most heavily impacted soil in the former relief holder area (2007), former tar tank area (2007), and the former propane tank area (2015). The locations of these areas are shown on Figure 10. A total of 12,272 tons of soil were removed and disposed off-site as part of the 2007 excavation activities in Area A (Earth Tech 2008) and a total of 12,566 tons of impacted soil were removed and disposed off-site as part of the 2015 excavation activities in Area A (Arcadis 2016a).

In Area B between 1998 and 1999, an interim remedial measure (IRM) was implemented by the City of Newburgh to facilitate construction of the third clarifier at the STP. The IRM included excavation activities associated with the construction of the third clarifier, and the off-site transportation and disposal/treatment of the excavated soil. In total approximately 11,000 tons of soil were excavated and transported off-site; of the material excavated, approximately 2,420 tons were identified as being impacted by NAPL. A detailed description of that IRM is presented in the *Remedial Action Report for the Interim Remedial Measure* (Langan Engineering and Environmental Services, P.C. 1999).

In Area B, excavation of the collection trench during the 2010 Area B and C remedial actions resulted in the removal of impacted soil from the site. The location of the three-foot wide collection trench is shown on Figure 10 and the collection trench profile is shown on Figure 12. Approximately 2,800 tons of material was sent off-site for treatment and disposal during the construction of the collection trench.

Sediment

Dredging completed in Area C (Figure 11) removed all known NAPL-impacted and PAH-impacted/potentially toxic sediment identified in the remedial design (Arcadis 2009).

The NAPL-impacted sediment removal limits were set forth in the Areas B and C Final Remedial Design Report (Arcadis 2009) as shown on Figure 11. Approximately 19,860 cubic yards of sediment were dredged from the NAPL area, solidified on-site and transported off-site for treatment and disposal. Efforts were made to remove a sunken vessel, which was discovered near the northwest corner of the NAPL excavation area. However, after discussions with NYSDEC and other parties, it was decided that the vessel should be preserved in-situ beneath a layer of clean fill. Prior to the in-situ preservation, NAPL-impacted sediments were removed from within and around the vessel. Based on the location of the vessel in relation to the NAPL-impacted sediments, NAPL is not expected to exist beneath the vessel. Following dredging, approximately 19,250 cubic yards clean backfill was placed to restore the sediment surface within the NAPL dredge area.

Dredging of PAH-impacted/potentially toxic sediment in Area C (Figure 11) was based on locations where PAH was detected above 20 parts per million and potential toxicity was observed during laboratory toxicity testing set forth in the Areas B and C Final Remedial Design Report (Arcadis 2009). Three separate areas, as shown on Figure 11, were dredged to approximately 2 ft below the sediment surface to remove the PAH-impacted/potentially toxic sediments. Approximately 3,800 cubic yards of sediment were dredged from the PAH-areas, solidified on-site, and transported off-site for treatment and disposal. The PAH dredge areas were allowed to naturally infill as approved by the NYSDEC.

Further details on sediment removal and restoration activities are provided in the Areas B and C CCR (Arcadis 2016b). Based on the work completed, no sediment impacts are expected to exist in Area C and, therefore, no ICs or ECs are required for Area C. No further discussion of Area C is included in this SMP.

2.6.2 Site-Related Containment and Collection Systems

As part of the remedial activities, passive NAPL collection systems, which include both NAPL collection wells and the NAPL collection trench/barrier wall system, were installed to collect NAPL in the subsurface. The locations of the NAPL collection system components are provided on Figure 13. The NAPL collection wells were installed throughout Areas A and B to collect NAPL from the subsurface in those areas. The collection trench and barrier wall were installed along the shoreline on the eastern edge of Area B to limit further migration of NAPL into the Hudson River. Further details on the NAPL collection systems are provided in Section 3.2.1.1 (NAPL collection wells) and Section 3.2.1.2 (NAPL collection trench and barrier wall).

2.7 Remaining Contamination

This section presents a summary of the nature and extent of impacts that remains at the site in Areas A and B following the completion of the remedial actions. Remaining impacted media consists of soil and groundwater. A summary of the nature and approximate extent of remaining impacted media is presented below.

2.7.1 NAPL-Impacted Soil

The remedial activities completed within Area A removed the majority of the NAPL in the former tar tank area (2007), the former relief holder area (2007), and the former propane tank area (2015). However, several structures and subsurface utilities within Area A, both above and below ground, limited the extent of NAPL that could be excavated as part of the remedial activities. Locations within Area A where NAPL likely remains include the following:

- In the vicinity of natural gas distribution piping (in the central portion of Area A) that could not be relocated as part of the soil removal activities.
- Areas east and south of the relief holder excavation (2008) based on excavation sidewall observations.
- Areas south of the former tar tank area (2008) based on excavation sidewall observations.
- Areas around the former propane tank area excavation (2015) due to proximity to structures (e.g., gas piping, retaining walls, roads, Brook Sewer).
- Within bedrock beneath Area A.

Targeted removal of NAPL-impacted soil was not included as a part of the remedy for Area B due to the presence of the STP structures. However, NAPL impacted soils located within the footprint of the NAPL collection trench area and at the location of the third clarifier were removed as a part of the Area B remedial activities and IRM, respectively, in Area B. No other NAPL-impacted soils were removed in Area B as the Area B remedy focuses on the collection and removal of NAPL through the NAPL collection trench and barrier wall system and the NAPL collection wells. Locations within Area B where NAPL likely remains are consistent with the locations identified during the RI and PDI (see Figure 5).

2.7.2 Impacted Soil

Impacted soils remain in Areas A and B at concentrations greater than 6 NYCRR Part 375 Restricted Use Soil Cleanup Objectives (SCOs) for industrial sites. Appendix F summarizes the results of all subsurface soil and surface soil samples collected during the RI, including those that remain in Areas A and B after completion of remedial activities. Soil sample results in Appendix F are compared to the restricted use SCOs for industrial use; Figure 6 shows the locations of all RI soil samples.

In Area A, the majority of soil containing relatively higher concentrations of COIs was removed along with the removal of NAPL-impacted soils. However, soil remains that contains COIs at concentrations greater than the SCOs for industrial sites (see Appendix F). The distribution of sampling locations during the RI and concentrations of COIs in the soil indicate the presence of impacted soil along the eastern edge of Area A. As indicated previously, impacted soil located in the southeastern portion of the property, near the former relief holder, and near the propane tank area was removed as part of the remedial activities. Additional impacted soil that was not sampled as part of the RI based on physical obstructions may be present under other portions of Area A including but not limited to the natural gas piping and to the east, west, and south of Area A where removal activities were limited by the presence of subsurface utilities and/or existing structures.

In Area B, soil was removed during the collection trench installation and during the clarifier construction IRM. The distribution of sampling locations during the RI and concentrations of COIs in the soil indicate the presence of impacted soil along South Water Street and River Street, along the shoreline, and within the center of the STP property.

2.7.3 Impacted Groundwater

Results for the analysis of groundwater samples collected during the RI are presented in Appendix G and compared to the groundwater quality criteria provided in the Division of Water Technical and Operational Guidance Series 1.1.1. RI results indicated the presence of dissolved-phase impacts in the areas within or downgradient from where NAPL and/or related constituent-impacted soils were identified. Since NAPL and/or related constituent- impacted soils remain in Areas A and B; impacted groundwater is expected to remain in Areas A and B.

3 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

3.1 General

Since remaining contamination exists at Areas A and B, ECs and ICs are required to protect human health and the environment. This EC/IC Plan describes the procedures for the implementation and management of all EC/ICs at Areas A and B. The EC/IC Plan is one component of the SMP and is subject to revision by the NYSDEC.

This EC/IC Plan provides:

- A description of all EC/ICs in Areas A and B.
- The basic implementation and intended role of each EC/IC.
- A description of the key components of the ICs set forth in the environmental easement.
- A description of the controls to be evaluated during each required inspection and periodic review.
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the EWP (as provided in Appendix H) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on Areas A or B.
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

3.2 Engineering Controls

This section provides an overview of the ECs installed at Areas A and B as a part of the remedial actions. Also discussed are the criteria used to determine when ECs may be decommissioned.

3.2.1 Engineering Control Systems

3.2.1.1 NAPL Collection Wells

As detailed in the NAPL Collection Well Summary Report (Arcadis 2008), 56 NAPL collection wells were installed at the site between April 2005 and November 2007; these wells consisted of 21 overburden and 16 bedrock NAPL collection wells in Area A and 19 overburden NAPL collection wells in Area B. In addition, one overburden well (NMW-46) was installed in Area B in 2010 during the Area B collection trench installation at the request of NYSDEC. An additional seven wells were installed in 2013, including two bedrock wells in Area A and five overburden wells in Area B. As part of the 2015 remedial excavation, two of the overburden wells in Area A were decommissioned. The wells were re-installed in 2016.

The NAPL collection wells in Areas A and B were installed based on the observation of NAPL-impacted soils documented in boring logs during the RI and PDIs, as well as observations of NAPL impacts during well installation. Table 3 summarizes the wells identification number, as well as the well type, depths, and screened intervals of the wells. The locations of the existing NAPL collection well system components are shown on Figure 13.

Table 3. Summary of Existing NAPL Collection Wells

Well ID	Installation Date	Well Type	Total Depth (ft bgs)	Screened Interval (ft bgs)	Sump Interval (ft bgs)
NMW-1	4/14/2005	Overburden	32.2	25.0 - 30.0	30.0 - 32.2
NMW-2	4/15/2005	Overburden	37.0	25.0 - 35.0	35.0 - 37.0
NMW-3	4/18/2005	Overburden	40.0	33.0 - 38.0	38.0 - 40.0
NMW-4	4/19/2005	Overburden	46.0	34.0 - 44.0	44.0 - 46.0
NMW-5	4/20/2005	Overburden	46.0	34.0 - 44.0	44.0 - 46.0
NMW-6	1/23/2007	Overburden	25.7	13.5 - 23.5	23.5 - 25.7
NMW-7	1/24/2007	Overburden	26.0	13.5 - 23.5	23.5 - 26.0
NMW-8	1/26/2007	Overburden	27.5	15.0 - 25.0	25.0 - 27.5
NMW-9	1/25/2007	Overburden	28.5	16.0 - 26.0	26.0 - 28.5
NMW-10	1/30/2007	Overburden	28.5	16.0 - 26.0	26.0 - 28.5
NMW-11	1/31/2007	Overburden	31.7	19.5 - 29.5	29.5 - 31.7
NMW-12	2/2/2007	Overburden	26.7	14.5 - 24.5	24.5 - 26.7
NMW-13	2/6/2007	Overburden	26.8	14.0 - 24.2	24.2 - 26.8
NMW-14	2/1/2007	Overburden	25.0	13.0 - 23.0	23.0 - 25.0
NMW-15	2/7/2007	Overburden	51.5	39.0 - 49.0	49.0 - 51.5
NMW-16	2/8/2007	Overburden	30.0	17.5 - 27.5	27.5 - 30.0
NMW-17	2/9/2007	Overburden	25.5	13.0 - 23.0	23.0 - 25.5
NMW-18	2/12/2007	Overburden	28.8	16.5 - 26.5	26.5 - 28.8
NMW-19	2/13/2007	Overburden	19.8	7.5 - 17.5	17.5 - 19.8
NMW-20	2/14/2007	Overburden	18.0	6.0 - 16.0	16.0 - 18.0
NMW-21	2/21/2007	Overburden	22.0	11.0 - 21.0	21.0 - 22.0
NMW-22	2/21/2007	Overburden	22.0	10.0 - 20.0	20.0 - 22.0
NMW-22R	2/20/2007	Bedrock	48.0	23.0	46.0 - 48.0
NMW-23	2/27/2007	Overburden	24.5	12.0 - 22.0	22.0 - 24.5
NMW-23A	11/7/2007	Overburden	26.0	13.5 - 23.5	23.5 - 26.0
NMW-23R	2/23/2007	Bedrock	50.0	24.0	48.0 - 50.0
NMW-24	3/7/2007	Overburden	26.5	14.0 - 24.0	24.0 - 26.5
NMW-24A	11/6/2007	Overburden	23.0	10.5 - 20.5	20.5 - 23.0
NMW-24R	3/5/2007	Bedrock	51.5	26.0	49.5 - 51.5
NMW-25	3/6/2007	Overburden	23.0	10.5 - 20.5	20.5 - 23.0
NMW-25R	3/2/2007	Bedrock	50.0	24.5	48.0 - 50.0
NMW-25RA	10/14/2013	Bedrock	45.0	20.0	43.0 - 45.0
NMW-26	3/13/2007	Overburden	16.5	4.0 - 14.0	14.0 - 16.5
NMW-26R	3/28/2007	Bedrock	46.5	16.0	44.5 - 46.5
NMW-26RA	10/14/2013	Bedrock	45.0	20.0	43.0 – 45.0

Well ID	Installation Date	Well Type	Total Depth (ft bgs)	Screened Interval (ft bgs)	Sump Interval (ft bgs)
NMW-27	3/27/2007	Overburden	19.0	6.8 - 16.8	16.8 - 19.0
NMW-27R	3/28/2007	Bedrock	46.5	19.0	44.5 - 46.5
NMW-28	3/23/2007	Overburden	18.5	6.0 - 16.0	16.0 - 18.5
NMW-28R	3/26/2007	Bedrock	46.5	18.5	44.5 - 46.5
NMW-29	3/20/2007	Overburden	18.8	6.5 - 16.5	16.5 - 18.8
NMW-29R	3/23/2007	Bedrock	45.0	19.0	43.0 - 45.0
NMW-30	3/21/2007	Overburden	15.5	3.0 - 13.0	13.0 - 15.5
NMW-30R	3/22/2007	Bedrock	42.5	15.5	40.5 - 42.5
NMW-31	11/5/2007	Overburden	18.7	6.2 - 16.2	16.2 - 18.7
NMW-32	11/2/2007	Overburden	17.0	4.5	14.5 - 17.0
NMW-33R	10/31/2007	Bedrock	45.2	16.2	41.2 - 45.2
NMW-34R	10/30/2007	Bedrock	44.0	15.9	40.0 - 44.0
NMW-35	11/1/2007	Overburden	13.0	2 - 10.5	10.5 - 13.0
NMW-36A	1/8/2016	Overburden	17.9	5.4 - 15.4	15.4 - 17.9
NMW-37	10/25/2007	Overburden	29.6	17.1 - 27.1	27.1 - 29.6
NMW-37R	10/9/2007	Bedrock	59.5	29.0	55.5 - 59.5
NMW-38	10/25/2007	Overburden	36.5	23.5 - 33.5	33.5 - 36.5
NMW-38R	10/17/2007	Bedrock	68.0	35.5	64.0 - 68.0
NMW-39R	10/16/2007	Bedrock	53.2	23.0	48.2 - 53.2
NMW-40R	10/16/2007	Bedrock	48.5	18.5	44.5 - 48.5
NMW-41R	10/12/2007	Bedrock	58.0	27.5	54.0 - 58.0
NMW-42A	1/8/2016	Overburden	15.1	2.6 - 12.6	12.6 - 15.1
NMW-43	11/14/2007	Overburden	50.0	37.5 - 47.5	47.5 - 50.0
NMW-44	9/26/2013	Overburden	49.0	35.0 - 45.0	45.0 - 49.0
NMW-45	9/30/2013	Overburden	45.0	30.0 – 40.0	40.0 - 44.0
NMW-46	10/22/2010	Overburden	21.0	14.0 - 19.0	19.0 - 21.0
NMW-47	9/24/2013	Overburden	30.0	16.0 - 26.0	26.0 - 30.0
NMW-48	10/2/2013	Overburden	29.0	15.0 - 25.0	25.0 - 29.0
NMW-49	10/4/2013	Overburden	29.0	15.0 - 25.0	25.0 - 29.0

NAPL collection well construction logs, which include observations of NAPL impacts observed during construction, are included in Appendix E. Typically, the overburden NAPL collection wells were constructed of 6” polyvinyl chloride or 4” high-density polyethylene (HDPE) risers, slotted screens, and sumps. The screen length of the overburden collection wells ranges from 5 to 10 ft, with a majority of the wells having a screen length of 10 ft. The bedrock wells were installed using 6” or 4” steel casings and 4” or 3.75” grouted steel sumps. Additional information on well construction is provided in the NAPL collection well construction logs (Appendix E).

The NAPL collection wells operate passively and will require monitoring and removal of any accumulated NAPL. Procedures for monitoring the NAPL collection wells are included in the Monitoring and Sampling Plan (Section 4). Procedures for maintaining the NAPL collection wells are documented in the Operation and Maintenance Plan (Section 5).

3.2.1.2 NAPL Collection Trench and Barrier Wall

The barrier wall was constructed along the boundary between Areas B and C. The NAPL barrier wall extends approximately 500 ft from the location of the STP sludge disposal building at its northern terminus, to the approximate location of the STP aeration tanks at its southern terminus, as illustrated on Figure 13. The barrier wall was constructed using a combination of interlocked king-pile/steel sheetpiles and sealed at the joints using a hydrophilic joint sealant to prevent groundwater and NAPL passage through the joints. In addition, near the foot of Renwick Street where more concentrated NAPL is present, the sheetpile pairs were welded to provide additional sealing. The tip elevations of the king-piles ranged between 61.5 to 63.5 ft below mean sea level (National Geodetic Vertical Datum of 1929 [NGVD 29]) and the sheetpiles tip elevation ranged between 27.5 to 35.5 ft below mean sea level (NGVD 29); tip elevations varied based on adjacent dredge depths in Area C. Further discussion is provided in the Areas B and C CCR (Arcadis 2016b).

The NAPL collection trench was installed immediately upgradient (i.e., west) of and adjacent to the NAPL barrier wall, and extends the entire length of the barrier wall (Figure 13). The trench is approximately 3 ft wide, with a depth that extends between 10 and 20 ft bgs. The NAPL collection trench was backfilled with Type 1 stone to an elevation of 0 ft mean sea level (NGVD 29). Along the bottom of the collection trench 4-inch-diameter slotted HDPE pipe was installed and sloped towards one of five collection sumps constructed of 4-inch-diameter HDPE riser pipe. The collection trench profile is shown on Figure 12.

After construction of the collection trench and barrier wall, the top of the barrier wall was cut to an elevation of 0 ft mean sea level (NGVD 29) and the shoreline was restored. Shoreline restoration along the barrier wall and collection trench consisted of re-using non-impacted existing stone and clean imported medium stone fill materials placed over a reactive core mat (comprised of geotextile and organoclay) to the approximate pre-construction elevations and conditions.

Similar to the NAPL collection wells, the NAPL collection trench and barrier wall is a passive system that will require periodic monitoring and removal of any accumulated NAPL within the sumps. Procedures for operating and maintaining the NAPL collection trench and barrier wall system are documented in the Operation and Maintenance Plan (Section 5 of this SMP). Procedures for monitoring the system are included in the Monitoring and Sampling Plan (Section 4 of this SMP).

3.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when 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 NYSDEC DER-10. The criteria for completion for the specific remedial system are provided below.

3.2.2.1 NAPL Collection Wells

The NAPL collection wells will be monitored at the frequency discussed in Section 4. At such time that the NAPL collection wells are no longer accumulating NAPL, they will be decommissioned. No NAPL collection well will be decommissioned without prior written approval from NYSDEC. Well decommissioning will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedure" or other applicable procedures in place at the time of decommissioning. Further detail can be found in Section 5.

3.2.2.2 NAPL Collection Trench and Barrier Wall

The NAPL collection trench will be monitored at the frequency discussed in Section 4. While the monitoring frequency may change, it is expected that the collection trench and the collection trench sumps and cleanouts will remain in place, as necessary, for future monitoring and NAPL removal.

3.3 Institutional Controls

A series of ICs are required by the ROD (as modified by NYSDEC on September 26, 2017) to: (1) implement, maintain and monitor EC systems in Areas A and B; (2) prevent future exposure to remaining contamination in Areas A and B; and, (3) limit the use and development of Area A as discussed below. Adherence to these ICs is required by the environmental easement for Area A (Appendix A) and will be implemented under this SMP. Implementation of the SMP in Area B will be in accordance with the Agreements between CHGE and the Area B property owners. ICs identified in the environmental easement or Agreements may not be discontinued without an amendment to or extinguishment of the environmental easement or Agreements. These ICs are:

- The Area A property may only be used for commercial or industrial use.
- All ECs must be operated and maintained as specified in this SMP.
- All ECs must be inspected at a frequency and in a manner defined in this SMP.
- The use of the groundwater underlying the property is prohibited without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) or the Orange County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the NYSDEC.
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP.
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP.
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP and EWP.
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP.

- Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the environmental easement and Agreements(s).
- The potential for vapor intrusion must be evaluated for any buildings or expansions constructed at Areas A and B, and any potential impacts that are identified must be monitored or mitigated.

3.3.1 Excavation Work Plan

Any future intrusive work that has the potential to encounter or disturb remaining impacted material within Areas A or B will be performed in compliance with the EWP that is attached as Appendix H to this SMP.

Prior to beginning work, a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) will be developed by the party performing the work. The HASP and CAMP will be submitted with the notification provided in the EWP. The HASP and CAMP will be in compliance with DER-10, 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations including any future changes to State and Federal health and safety requirements, and specific methods employed by future consultants/contractors. 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 per Section 7.

The Areas A and B property owners and associated parties preparing the remedial documents submitted to NYSDEC, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and footings). The Area B property owners will coordinate with CHGE to monitor that development activities will not interfere with, or otherwise impair or compromise, the ECs described in this SMP. Impacted materials that are removed during the course of construction activities in Areas A and B will be managed in accordance with the EWP.

3.3.2 Soil Vapor Intrusion Evaluation

Prior to the construction of any enclosed structures in Areas A or B, a soil vapor intrusion (SVI) evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. An SVI evaluation will also be performed if an existing building onsite that is not currently occupied continuously during working hours becomes occupied due to operational changes in the future. CHGE will perform the SVI evaluation for Area A. Area B property owners shall coordinate with CHGE to perform the SVI evaluation or CHGE will perform the evaluation. Alternatively, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. If a mitigation system is installed as part of an element of the building foundation without first conducting an SVI investigation, the work plan should include procedures for demonstrating the effectiveness of the system after installation. This work plan will be developed in accordance with the most recent NYSDOH “Guidance for Evaluating Vapor Intrusion in

the State of New York"[1]. Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation. Validated SVI performed by CHGE for Area B will be transmitted to the appropriate Area B property owner within 30 days of validation. If any indoor air test results exceed NYSDOH guidelines, relevant NYSDOH fact sheets will be provided to all tenants and occupants of the property within 15 days of receipt of validated data.

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

3.4 Contingency Plan

Emergencies may occur that have the potential to affect the ECs such as a fire or explosion or serious weather conditions or an unforeseen failure of any of the ECs that result in or could result in an environmental release. In the event of such emergencies with the potential to affect the ECs, the actions listed in this Contingency Plan will be followed. Based on the ECs in Areas A and B, only impacts to the NAPL barrier wall/ collection system have the potential to constitute an emergency under this Contingency Plan. For the NAPL collection wells, contingency procedures for potential NAPL spills during NAPL removal and storage and other appropriate procedures are provided in the CHGE (or authorized consultants) HASP for performing the NAPL monitoring. In the event of an excavation at Areas A or B in the future, the implementing consultant/ contractor's HASP will provide contingency procedures associated with site-impacted soils and groundwater.

This Contingency Plan is not intended to provide contingencies for all scenarios in Areas A and B and is only provided for potential emergencies related to the ECs. The appropriate property owner's emergency procedures should be followed for any emergencies on their respective properties.

3.4.1 Project Contacts

In the event of any environmentally related situation or unplanned occurrence affecting or with the potential to affect the ECs, the property owner or their representative(s) should contact CHGE via the project contacts provided in Appendix C. CHGE will coordinate with the Area B properties owners and the STP operators to establish the communications procedures in the event of an emergency with the potential to affect the ECs. CHGE will contact NYSDEC (Table 1), as necessary and as it pertains to the ECs.

[1] As of July 2016, the most recent version of this document is dated October 2006 and the most recent update available online at http://health.ny.gov/environmental/indoors/vapor_intrusion/update.htm is dated August 2015.

3.4.2 Response Procedures

If releases are observed by the Area B property owners, STP operators, or their consultants/contractors, the release must be reported to the CHGE immediately. Following notification, CHGE will provide the necessary notifications as discussed in Section 1.3.

If NAPL-like impacts are noted in the river, secondary containment will be installed and an inspection/investigation of the barrier wall area will be performed to determine the cause of the release. Based on the findings of the investigation, a Corrective Measures Plan will be developed as discussed in Section 7.3.

Additional, task- or work-specific response procedures will be developed and included in the appropriate consultant/contractor's HASP; see the EWP (Appendix H) for additional information on the minimum monitoring and response plans required for work performed under the SMP and EWP.

3.4.3 Contingency Plan Amendments

With NYSDEC notification, this Contingency Plan and/or project contact list will be periodically updated to reflect changes in contacts or site information.

4 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC. Details regarding the monitoring procedures and data quality usability objectives for the site are provided in Section 4.4.

This Monitoring and Sampling Plan describes the methods to be used for:

- NAPL monitoring.
- Assessing the remedial performance.
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment (i.e., as part of Site-wide inspection).

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

- Monitoring locations, protocol, and frequency.
- Information on all designed monitoring systems.
- Inspection requirements for the ECs.
- Site-wide inspection and periodic certification.

Reporting requirements are provided in Section 7 of this SMP.

4.2 Inspections

Inspections of Areas A and B will be performed a minimum of once every three years. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Inspections will also be performed after severe weather conditions that may affect ECs. During these inspections, an inspection form will be completed (as provided in Appendix I). The form 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 conditions at the time of the inspection.
- The monitoring activities being conducted.
- Compliance with record keeping requirements (i.e., confirm that site records are up to date).

Inspections of all remedial components installed in Areas A and B, as described in this SMP, will be conducted. CHGE will coordinate with the Area B property owners for access to the Area B properties to perform these inspections. A comprehensive inspection will be conducted and documented according to

the SMP schedule, 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 (Areas A and B) and the environmental easement (Area A).
- Achievement of remedial performance criteria.
- If site records are complete and up to date.
- Changes, or needed changes, to the remedial or monitoring system.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster with the potential to impact the ECs or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at Areas A and B, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of Areas A and B will be conducted within 5 business days of the event (to the extent practical and safe) to verify the integrity of the ECs implemented at Areas A and B. The inspection will be performed by a qualified environmental professional as defined in 6NYCRR Part 375.

4.3 NAPL Monitoring Program

This SMP will be modified to reflect substantive changes in monitoring plans approved by NYSDEC; modifications to the SMP will be documented in the recommendation section of the Periodic Review Report.

The NAPL collection wells and the NAPL collection trench have been installed to allow for the monitoring (and removal, as applicable) of the subsurface NAPL at Areas A and B as discussed in Section 3.2.1. NAPL monitoring will be performed on a periodic basis to assess the performance of the remedy at the frequency noted in Table 4 and may be modified based on presence or absence of NAPL with the approval of the NYSDEC.

Table 4. NAPL Monitoring Frequency (as of April 2025)

Well ID	Monitoring Frequency	Well ID	Monitoring Frequency	Well ID	Monitoring Frequency
NMW-1	Quarterly	NMW-9	Yearly	NMW-17	Quarterly
NMW-2	Quarterly	NMW-10	Yearly	NMW-18	Quarterly
NMW-3	Quarterly	NMW-11	Yearly	NMW-19	Yearly
NMW-4	Quarterly	NMW-12	Yearly	NMW-20	Yearly
NMW-5	Quarterly	NMW-13	Yearly	NMW-21	Yearly
NMW-6	Yearly	NMW-14	Yearly	NMW-22	Yearly
NMW-7	Quarterly	NMW-15	Quarterly	NMW-22R	Quarterly
NMW-8	Yearly	NMW-16	Quarterly	NMW-23	Quarterly

Well ID	Monitoring Frequency
NMW-23A	Quarterly
NMW-23R	Quarterly
NMW-24	Quarterly
NMW-24A	Quarterly
NMW-24R	Quarterly
NMW-25	Quarterly
NMW-25R	Quarterly
NMW-25RA	Quarterly
NMW-26	Quarterly
NMW-26R	Quarterly
NMW-26RA	Quarterly
NMW-27	Yearly
NMW-27R	Quarterly
NMW-28	Yearly
NMW-28R	Yearly

Well ID	Monitoring Frequency
NMW-29	Yearly
NMW-29R	Yearly
NMW-30	Yearly
NMW-30R	Quarterly
NMW-31	Yearly
NMW-32	Yearly
NMW-33R	Quarterly
NMW-34R	Quarterly
NMW-35	Yearly
NMW-36A	Yearly
NMW-37	Yearly
NMW-37R	Quarterly
NMW-38	Yearly
NMW-38R	Yearly
NMW-39R	Quarterly

Well ID	Monitoring Frequency
NMW-40R	Quarterly
NMW-41R	Yearly
NMW-42A	Yearly
NMW-43	Quarterly
NMW-44	Weekly
NMW-45	Quarterly
NMW-46	Weekly
NMW-47	Weekly
NMW-48	Weekly
NMW-49	Quarterly
S-1	Quarterly
S-2	Quarterly
S-3	Weekly
S-4	Quarterly
S-5	Weekly

Deliverables to be prepared in connection with the NAPL monitoring program are specified in Section 7.

4.3.1 Monitoring Protocol

All NAPL collection well and NAPL collection trench monitoring activities will be recorded in a field book and/or a monitoring log (example presented in Appendix I). Other observations (e.g., well integrity, etc.) will also be noted on the well monitoring log. The well monitoring log will serve as the inspection form for the NAPL collection well network.

At each monitoring point, water levels and NAPL thicknesses will be measured using an oil/water interface probe or other appropriate techniques. Measurable NAPL, at thickness agreed upon by the NYSDEC and CHGE, will then be removed using a peristaltic pump, hydrolift pump, and/or bottom-loading bailer, to the extent feasible. To quantify the volume of NAPL removed from each location, the removed NAPL/water mixture will be allowed to settle, the water will be decanted from the NAPL, and the remaining NAPL will be measured using a graduated measuring cup. Any NAPL and water collected will be containerized in overpacked NYSDOT-approved 55-gallon drums. The drums will be properly labeled and secured at selected locations pending disposal by CHGE.

4.3.2 Well Inspections

During monitoring events, the monitoring point (i.e., wells, sumps and cleanouts) will be inspected for damage. Damaged locations will be assessed for repair or decommissioning and replacement based on structural integrity and overall performance. Repairs, replacement, and/or decommissioning of the NAPL collection wells and NAPL collection trench sumps will be performed as discussed in the Operation and Maintenance Plan (Section 5).

4.4 NAPL Monitoring Quality Assurance/Quality Control

4.4.1 Documentation

Field personnel will provide documentation of the field data collection. This documentation will consist of a record that allows reconstruction of field events to aid in the data review and interpretation process. Documents, records, and information relating to the performance of the field work will be retained by CHGE in their Poughkeepsie, New York office. The various forms of documentation to be maintained throughout the monitoring program include field logbooks and/or monitoring log datasheets. Entries into the logbook will contain a variety of information including the information necessary to complete the reporting in Section 7.

Measurements made and any observations will be recorded in the field logbook or on monitoring log datasheets using ink, with no erasures. If an incorrect entry is made, the information will be crossed out with a single strike mark. All equipment used to make measurements will be identified, along with the date of calibration.

4.4.2 Field Quality Control Checks

4.4.2.1 Field Measurements

Monitoring will be conducted by experienced field personnel who have been appropriately trained in equipment use and monitoring methodology.

4.4.2.2 Field Data Reduction and Review

Information collected in the field through visual observation, manual measurement, and/or field instrumentation will be reviewed by the implementing consultant/contractor on behalf of CHGE for adherence to the quality procedures and for consistency. Concerns identified as a result of this review will be discussed with the field personnel, corrected if possible, and, as necessary, incorporated into the data evaluation process.

Field data calculations, transfers, and interpretations will be conducted by the field personnel and reviewed for accuracy by the implementing consultant/contractor on behalf of CHGE. Logs and documents will be checked for:

1. General completeness
2. Readability
3. Usage of appropriate procedures
4. Appropriate instrument calibration and maintenance
5. Reasonableness in comparison to present and past data collected
6. Correct sample locations
7. Correct calculations and interpretations

5 OPERATION AND MAINTENANCE PLAN

5.1 General

The site remedy does not rely on any mechanical systems to protect public health and the environment. However, passive systems such as the NAPL collection wells and the NAPL collection trench are part of the Areas A and B remedy and will require routine maintenance. This Operation and Maintenance Plan provides a brief description of the measures necessary to operate and maintain the ECs of the remedy selected for Areas A and B. This Operation and Maintenance Plan:

- Includes the procedures necessary to allow individuals unfamiliar with Areas A and B to operate and maintain the passive NAPL collection systems.
- Will be updated as necessary to reflect changes in conditions or the manner in which the passive collection systems are operated and maintained.

Information on the monitoring of the ECs is provided in Section 4. A copy of this Operation and Maintenance Plan, along with the complete SMP, will be kept in the CHGE office in Poughkeepsie, New York. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of the SMP.

5.2 NAPL Collection Well Repairs, Replacement, and Decommissioning

If biofouling or silt accumulation occurs in the NAPL collection wells, the wells will be physically agitated/surged and redeveloped. Well redevelopment will consist of surging and purging using a Waterra positive-displacement pump and dedicated polyethylene tubing, by hand bailing with dedicated polyethylene bailers, or by surging and purging with an appropriate surge block and pump. The wells will be developed until the water removed from the well is reasonably free of visible sediment. Any NAPL and water removed during redevelopment will be containerized in NYSDOT-approved 55-gallon drums. The drums will be properly labeled and secured at selected locations pending disposal by CHGE.

NAPL collection wells will be properly decommissioned and replaced, if the wells are rendered unusable. Repairs and/or replacement of wells will be performed based on assessments of structural integrity and overall performance. The NYSDEC will be notified prior to any repair or decommissioning of NAPL collection wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

5.3 NAPL Sump Repair, Replacement, and Decommissioning

If biofouling or silt accumulation occurs in the NAPL collection sumps, the sump will be physically agitated/surged and redeveloped. Sumps will be redeveloped as discussed in Section 5.2 and until the

water removed is reasonably free of visible sediment. Any NAPL and water removed during redevelopment will be containerized in NYSDOT-approved 55-gallon drums. The drums will be properly labeled and secured at selected locations pending disposal by CHGE.

Additionally, sumps will be properly decommissioned and replaced if an event renders the sump unusable. Repairs and/or replacement of sumps in the collection trench will be performed based on assessments of structural integrity and overall performance. Sump decommissioning will consist of grouting the 2-foot sump below the slotted sump screened area in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures" to the extent feasible. Sumps that are decommissioned will be reinstalled in the nearest available location within same low point of the collection trench as the sump that is being replaced, unless otherwise approved by the NYSDEC.

The NYSDEC will be notified prior to any repair or decommissioning of the collection trench sumps for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report.

5.4 Collection Trench Cleanout

Cleanouts have been installed at the high points of the slotted HDPE pipe installed along the bottom of the NAPL collection trench. These cleanouts allow the slotted HDPE pipe to be cleaned in the event of biofouling, sedimentation, or other obstruction within the collection trench pipe. Cleaning of the collection trench pipe will be performed by air or water jetting the trench pipe through the cleanout riser and/or use of a vacuum truck at the collection sumps to remove accumulated material. Any NAPL and water removed during cleaning will be containerized in NYSDOT-approved 55-gallon drums, vacuum truck tanks, or other appropriate storage. The drums will be properly labeled and secured at selected locations pending disposal by CHGE.

6 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

This section provides a summary of vulnerability assessments that will be conducted for Areas A and B during periodic assessments, and briefly summarizes the preliminary vulnerability assessment of Areas A and B and/or engineering controls to severe storms/weather events and associated flooding. The following items will be assessed during periodic reviews:

- **Flood Plain:** A portion of Area B is within the 100-year floodplain as designated on the Flood Insurance Rate Map Number 36071C0332E (effective August 3, 2009). Components of the remedy within the 100-year floodplain include the NAPL-barrier wall, NAPL collection trench, and select NAPL collection wells (Figure 13). Due to a majority of these structures being below grade, damage to components are anticipated to be minimal. Additionally, NAPL monitoring wells are constructed with locking J-plugs to minimize infiltration of stormwater.
- **Drainage and Storm Water Management:** Areas A and B include operational facilities with existing drainage and storm water management features in place.
- **Erosion:** No areas of erosion have been observed in Areas A or B.
- **High Wind:** A majority of the NAPL collection system is located below grade and, therefore, protected from high winds and falling debris.
- **Electricity:** The remedial system operates passively and does not require electricity or other power source for operations.
- **Spill/Contaminant Release:** Collected NAPL will be containerized in DOT-approved containers and staged in Area A prior to off-site disposal. It is anticipated that shipments will be consolidated as discussed in Section 6.2.4; however, every effort will be made to dispose of or secure material prior to adverse weather conditions.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the SMP provides a summary of green remediation

evaluations to be completed for Areas A and B during site management. Components assessed as part of the green remediation evaluation include:

- **Waste Generation:** Waste generated is anticipated to include removed NAPL and groundwater; removal activities will be performed to limit the amount of groundwater removed during NAPL recovery. Additionally, NAPL may be sent to an approved facility for recycling.
- **Energy usage:** The NAPL system operates passively and does not require electricity for operation.
- **Emissions:** Emissions from transportation to/from Areas A and B will be minimized as discussed in Section 6.2.4.
- **Water usage:** Operation and monitoring of the NAPL system is not anticipated to require usage of water.
- **Land and/or ecosystems:** No additional disturbance is anticipated. In the event of well decommissioning, the area will be restored to match surrounding grade and surface.

6.2.1 Timing of Green Remediation Evaluations

For major remedial system components, green remediation evaluations and corresponding modifications will be undertaken as part of a formal Remedial System Optimization (RSO), or at any time that the Project Manager feels appropriate, e.g. during significant maintenance events or in conjunction with storm recovery activities. Modifications resulting from green remediation evaluations will be routinely implemented and scheduled to occur during planned/routine operation and maintenance activities. Reporting of these modifications will be presented in the next Periodic Review Report.

6.2.2 Remedial Systems

The installed remedial system operates passively to collect NAPL, which is then manually monitored and collected at the frequency identified in this SMP and considering current conditions. Consideration of the collection frequency to conserve materials and resources to the greatest extent possible includes:

- Existing monitoring frequency.
- Location and amount of NAPL encountered/removed during each monitoring event.

6.2.3 Building Operations

No structures or buildings are associated with the operation of the remedy.

6.2.4 Frequency of System Checks and Other Periodic Activities

Transportation to and from Areas A and B and use of consumables in relation to visiting Areas A and B in order to perform monitoring have direct and/or inherent energy costs. The schedule and/or means of these periodic activities have been prepared so that these tasks can be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources.

Consideration has been given to the following selected means to reduce expenditure of energy or resources:

- **Reduced monitoring frequencies:** Monitoring will be performed as required by this SMP, which accounts for anticipated NAPL encountered. Depending on results of monitoring, reduced NAPL monitoring may be proposed at the monitoring location in accordance with this SMP if minimal NAPL is encountered in a particular well.
- **Coordination/consolidation of activities (reduced site visits):** Site activities will be planned to perform activities in as few mobilizations as possible. For example, yearly monitoring would be performed concurrently with a quarterly monitoring event and inspections would be performed at the same time as monitoring.
- **Consolidation of off-site disposal shipments:** NAPL collected as part of the monitoring program will be containerized in DOT-approved containers and staged until being shipped off-site for disposal; shipments will be consolidated to the extent practicable based on storage area and regulatory requirements.

Consideration was also given to the following means but were determined to not be appropriate for the project, as indicated:

- **Installation of remote sensing/operations and telemetry:** Current operations are based on manual, as-needed monitoring and removal of accumulated NAPL and installation of equipment to allow for remote operation would require additional energy usage and add additional complexity to the system. Therefore, installation of remote sensing/operations and telemetry determined to be not appropriate.

6.3 Remedial System Optimization

A RSO study will be conducted any time that the NYSDEC or the remedial party requests in writing that an in-depth evaluation of the remedy is needed. A RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet the remedial goals in the time frame estimated in the Decision Document.
- The management and operation of the remedial system is exceeding the estimated costs.
- The remedial system is not performing as expected or as designed.
- Previously unidentified source material may be suspected.
- Plume shift has potentially occurred.
- Conditions in Areas A or B change due to development, change of use, change in groundwater use, etc.
- There is an anticipated transfer of site management to another remedial party or agency.
- A new and applicable remedial technology becomes available.

A RSO will provide a critique of a site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the Area A and B cleanup goals, gather additional performance or media specific data and information and provide recommendations for

improvements to enhance the ability of the present system to reach the remedial goals or to provide a basis for changing the remedial strategy.

The RSO study will focus on overall cleanup strategy, process optimization and management with the intent of identifying impediments to cleanup and improvements to Areas A and B operations to increase efficiency, cost effectiveness and remedial time frames. Green remediation technology and principals are to be considered when performing the RSO.

7 REPORTING REQUIREMENTS

7.1 Site Management Reports

All Areas A and B management inspections, maintenance, and monitoring events will be recorded on the appropriate management forms (provided in Appendix I) or recorded in a field book.

All applicable inspection forms and other records, including monitoring logs and system maintenance reports, generated for Areas A and B during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 5 and summarized in the Periodic Review Report.

Table 5. Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
NAPL Monitoring Data Report	Monthly
Periodic Review Report	Every three years
Inspection	Every three years

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC.

All monitoring/inspections reports will include, at a minimum:

- Dates of event or reporting period
- Name, company, and position of person(s) conducting monitoring/inspection activities
- Description of the activities performed
- 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)
- Copies of all field forms completed (e.g., well monitoring logs)
- Summary of monitoring results (i.e., NAPL thickness observed and amount removed by location)
- A figure illustrating monitoring locations
- Any observations, conclusions, or recommendations
- A determination as to whether contaminant conditions have changed since the last reporting event

Routine maintenance event reporting forms will include, at a minimum:

- Date of event
- Name, company, and position of person(s) conducting maintenance activities
- Description of maintenance activities performed
- Any modifications to the system

- 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)
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form)

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event
- Name, company, and position of person(s) conducting maintenance activities
- Description of non-routine activities performed
- 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)
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form)

Data will be reported in digital format as determined by the NYSDEC.

7.2 Periodic Review Report

A Periodic Review Report will be submitted to NYSDEC every year for the first five years beginning sixteen months after the Certificate of Completion is issued and every five years thereafter or at another frequency as may be required by the NYSDEC. Areas A and B are subdivided into separate parcels with different ownership; however, a single Periodic Review Report will be prepared that addresses both Area A (CHGE property) and Area B (CSX and City of Newburgh properties). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 30 days of the end of each certification period. NAPL monitoring results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for Areas A and B.
- Results of the required Site-wide inspections and severe condition inspections, if applicable.
- All applicable management forms and other records generated for Areas A and B during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- A summary of any monitoring data and/or information generated during the reporting period with comments and conclusions.
- An evaluation of Ares A and B, which includes the following:
    - The compliance of the remedy with the requirements of the remedial designs and ROD (as modified by NYSDEC on September 26, 2017).
    - The operation and the effectiveness of all ECs including identification of any needed repairs or modifications.
    - Any new conclusions or observations regarding MGP-related contamination based on inspections or data generated by the Monitoring and Sampling Plan.

- Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan.
- Trends in NAPL levels in the affected areas will be evaluated to determine if the remedy continues to be effective in achieving remedial goals.
- The overall performance and effectiveness of the remedy.

- A performance summary for all EC systems at Areas A and B during the reporting period, including information such as:
  - The NAPL volume removed from each of the collection wells and collection trench at each sampling event.
  - A description of repairs performed.
  - Comments, conclusions, and recommendations based on data evaluation.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located, and the NYSDOH Bureau of Environmental Exposure Investigation. The Periodic Review Report may need to be submitted in hard-copy format, as requested by the NYSDEC project manager.

7.2.1 Certification of Engineering and Institutional Controls

Following the last inspection of the reporting period, a qualified environmental professional, as defined by in 6NYCRR Part 375, will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

> *"For each institutional or engineering control identified for Areas A and B, I certify that all of the following statements are true:*
>
> - *The inspection of Areas A and B to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction.*
> - *The institutional control and/or engineering control employed at Areas A and B is unchanged from the date the control was put in place, or last approved by NYSDEC.*
> - *Nothing has occurred that would impair the ability of the control to protect the public health and environment.*
> - *Nothing has occurred that would constitute a violation or failure to comply with any SMP for this control.*
> - *Access to Areas A and B will continue to be provided to the NYSDEC to evaluate the remedy, including access to evaluate the continued maintenance of this control.*
> - *Use of Area A is compliant with the environmental easement.*
> - *The engineering control systems are performing as designed and are effective.*
> - *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the Areas A and B remedial program.*

- *The information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner/Remedial Party or Owner's/Remedial Party's Designated Representative]. I have been authorized and designated by all owners/remedial parties to sign this certification for Areas A and B."

The signed certification will be included in the Periodic Review Report.

7.3 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a Corrective Measures Work Plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC.

7.4 Remedial Site Optimization Report

In the event that an RSO is to be performed (see Section 6.3), upon completion of an RSO, an RSO report must be submitted to the Department for approval. A general outline for the RSO report is provided below:

1. Introduction
   - 1.1. Site Overview
   - 1.2. Project Objectives And Scope Of Work
   - 1.3. Report Overview
2. Remedial Action Description
   - 2.1. Site Location And History
   - 2.2. Regulatory History And Requirements
   - 2.3. Clean-Up Goals And Site Closure Criteria
   - 2.4. Previous Remedial Actions
   - 2.5. Description Of Existing Remedy
     - 2.5.1. System Goals And Objectives
     - 2.5.2. System Description
   - 2.6. Operation And Maintenance Program
3. Findings And Observations
   - 3.1. Subsurface Performance
   - 3.2. Treatment System Performance
   - 3.3. Regulatory Compliance 3-3
   - 3.4. Major Cost Components Or Processes
   - 3.5. Safety Record
4. Recommendations
   - 4.1. Recommendations To Achieve Or Accelerate Site Closure
     - 4.1.1. Source Reduction/Treatment
     - 4.1.2. Sampling
     - 4.1.3. Conceptual Site Model (Risk Assessment)
   - 4.2. Recommendations To Improve Performance
     - 4.2.1. Maintenance Improvements
     - 4.2.2. Monitoring Improvements
     - 4.2.3. Process Modifications

The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual site model and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located, Site Control and the NYSDOH Bureau of Environmental Exposure Investigation.

8 REFERENCES

Arcadis. 2008. NAPL Collection Well Summary Report, Former Manufactured Gas Plant Site, Newburgh, NY. February.

Arcadis. 2009. Areas B and C Final Remedial Design Report, Former Manufactured Gas Plant Site, Newburgh, NY. October.

Arcadis. 2015. Remedial Action Work Plan, Newburgh Former Manufactured Gas Plant Area A, Newburgh, NY. May.

Arcadis. 2016a. Construction Completion Report, Area A Former Propane Tank Area Newburgh Former MGP Site, Newburgh, NY. May.

Arcadis. 2016b. Construction Completion Report, Former Manufactured Gas Plant Site - Areas B and C, Newburgh, NY. August.

BBL. 1999. Newburgh Project Remedial Investigation Report, Former Manufactured Gas Plant Site, Newburgh, NY.

BBL. 2001a. Human Health Risk Assessment for Area C, Central Hudson Gas & Electric Corporation, Former Manufactured Gas Plant Site, Newburgh, NY.

BBL. 2001b. Ecological Assessment for Area C, Central Hudson Gas & Electric Corporation, Former Manufactured Gas Plant Site, Newburgh, NY.

BBL. 2003. Revised Feasibility Study Report, Former Manufactured Gas Plant Site, Newburgh, NY, October.

D.A. Collins. 2015. Site Operations Plan, Newburgh Former Manufactured Gas Plant Area A, Newburgh, NY. October.

Earth Tech. 2006. Remedial Design/Remedial Action Work Plan. Former Manufactured Gas Plant Site (Area A), Newburgh, NY. October.

Earth Tech. 2008. Construction Completion Report – Former Manufactured Gas Plant Site (Area A), Newburgh, NY. October.

Langan Engineering and Environmental Services, P.C. 1999. Remedial Action Report for the Interim Remedial Measure.

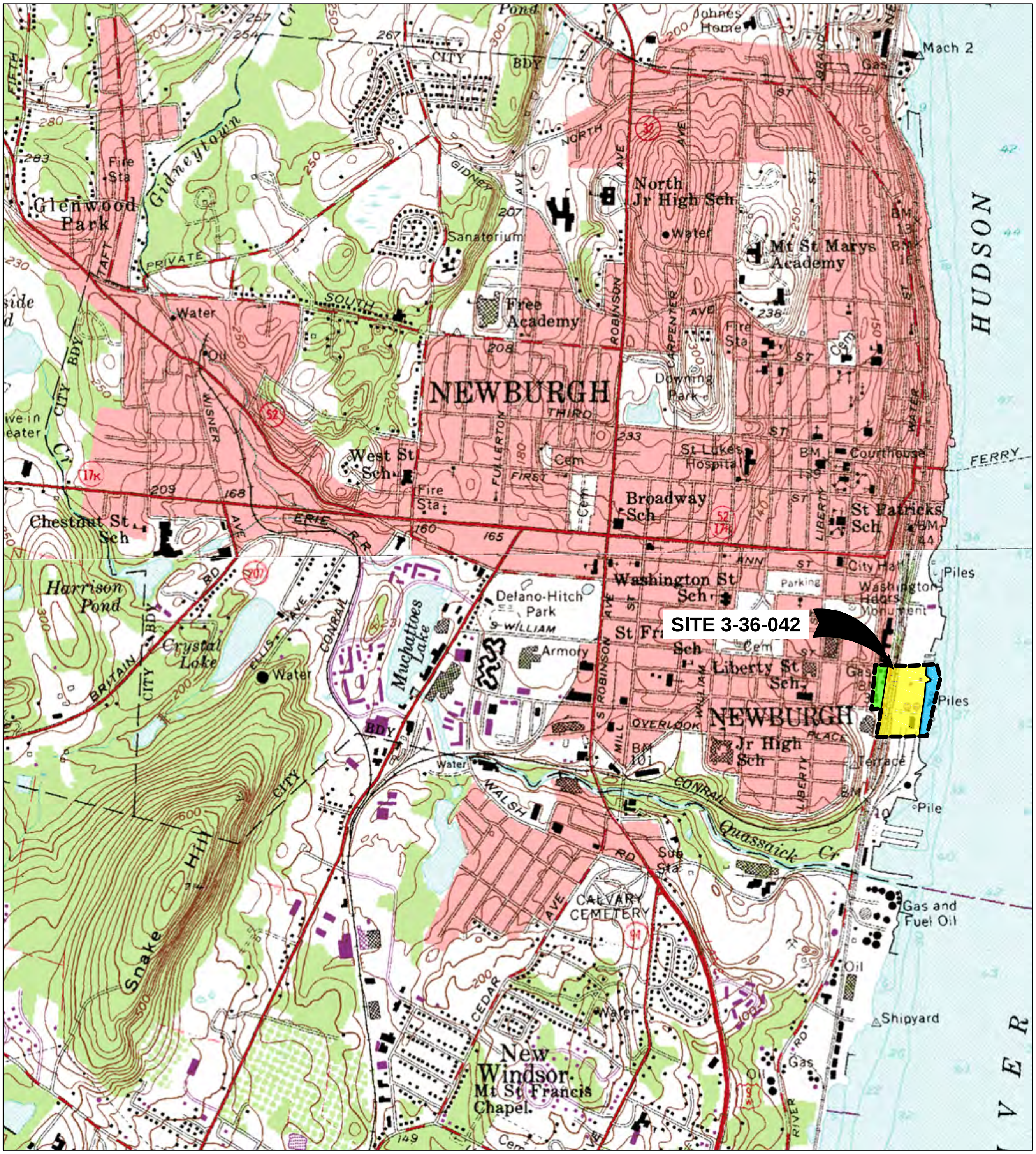
NYSDEC. 1995. Order on Consent for the Central Hudson Gas & Electric Corporation, Former Manufactured Gas Plant Site, Newburgh, NY (Index #D3-0001-95-06).

NYSDEC. 2005. Record of Decision for the Central Hudson Gas & Electric Corporation, Former Manufactured Gas Plant Site, Newburgh, NY (Site #3-36-042). December.

NYSDEC. 2010. DER-10: Technical Guidance for Site Investigation and Remediation. Issuance Date: May 3, 2010.

NYSDEC. 2017. Minor Record of Decision (ROD) Modification, Area B for Central Hudson Newburgh MGP Site, Newburgh, Orange County (Site No.: 336042). September 26.

FIGURES



REFERENCE: BASE MAP USGS 7.5 MINUTE QUADRANGLES., CORNWALL, NY, 1957 (PHOTOREVISED 1981) AND NEWBURGH, NY, 1957.

0 1000' 2000'
GRAPHIC SCALE

LEGEND:

APPROXIMATE AREA A LOCATION

APPROXIMATE AREA B LOCATION

APPROXIMATE AREA C LOCATION

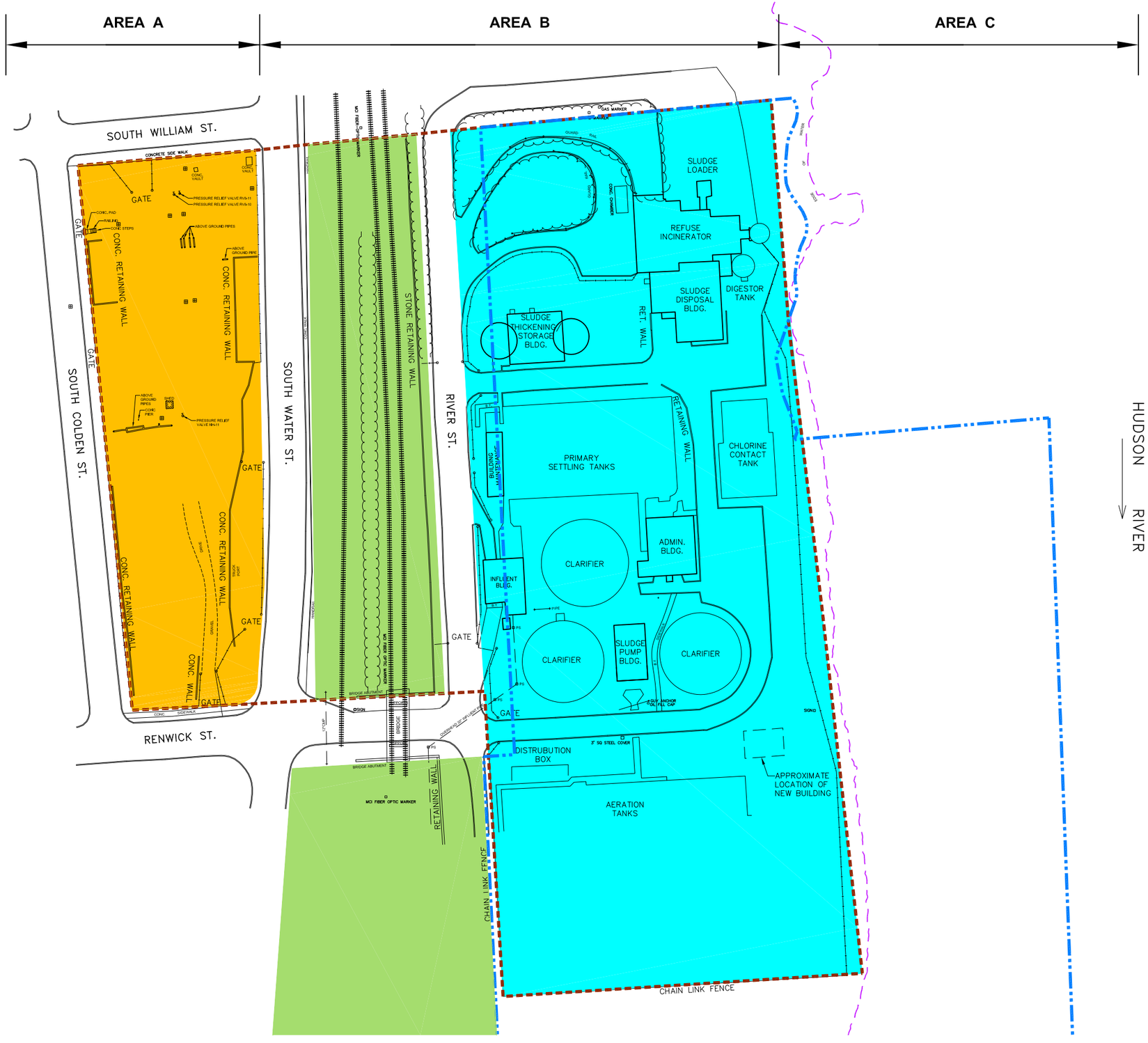
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

SITE 3-36-042
LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1

CITY:SYRACUSE-NY DIV/GROUP:ENVCAD DB:G.STEINBERGER, R. ALLEN LD: PIC:N.GENSKY PM:A.ETRINGER TM:A.KOHLER LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0020531\0003\00005\DWG\SMP\20531G01.dwg LAYOUT: 1 SAVED: 2/23/2016 4:26 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: PDF-AP PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 2/23/2016 4:28 PM BY: ALLEN, ROYCE
XREFS: IMAGES: 20531X01.tif 20531X02.tif PROJECTNAME: ----



NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY CONDUCTED BY BLASLAND, BOUCK AND LEE, INC. BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS, LOCATIONS CONSIDERED APPROXIMATE. UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. PROPERTY BOUNDARIES APPROXIMATED BASED ON CITY OF NEWBURGH 2015 TAX MAP.
3. IMPLEMENTATION OF SMP IN AREA A TO BE IN ACCORDANCE WITH THE ENVIRONMENTAL EASEMENT FOR THE PROPERTY.
4. AGREEMENTS HAVE BEEN OBTAINED BY CENTRAL HUDSON GAS AND ELECTRIC COPORATION WITH THE AREA B PROPERTY OWNERS TO IMPLEMENT THE SMP.

LEGEND:

- EDGE OF WATER
- CHAIN LINK FENCE
- TREE LINE
- EXISTING GAS VALVE
- APPROXIMATE CENTRAL HUDSON GAS AND ELECTRIC CORPORATION PROPERTY (AREA A)
- APPROXIMATE CSX TRANSPORTATION INC. PROPERTY (AREA B)
- APPROXIMATE CITY OF NEWBURGH SEWAGE TREATMENT PLANT AREA (AREA B)
- APPROXIMATE CITY OF NEWBURGH PROPERTY
- SMP AREA

0 50' 100'
GRAPHIC SCALE

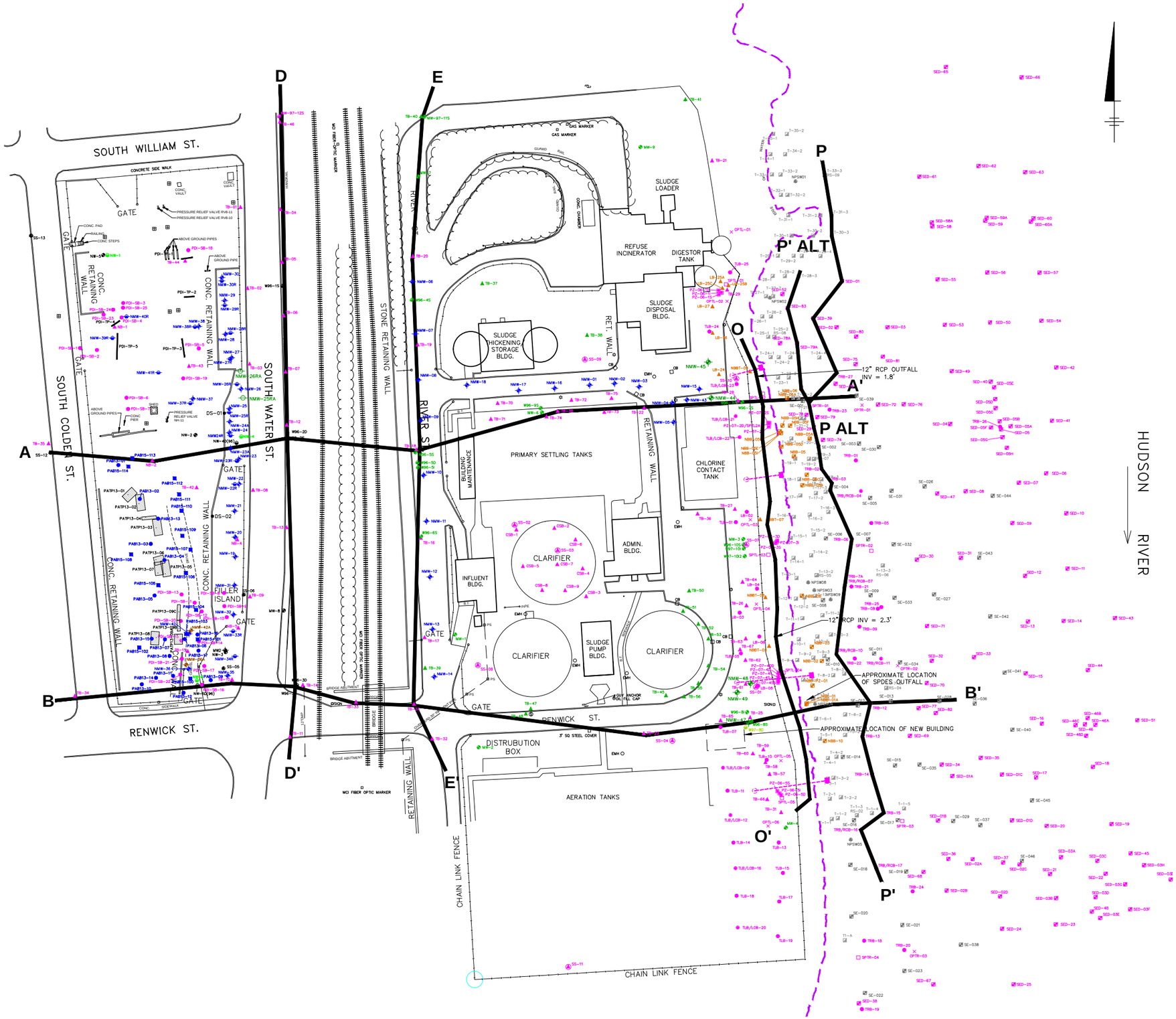
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2

CITY:SYRACUSE, N.Y. DIV/GROUP:ENVCAD-141 DB:LAF KLS R.ALLEN LD:LAF PM:L.KETCHUM TM:L.RAZAWICH LYR:(On)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB0020531\000300005\DWG\SMP20531B14.dwg LAYOUT: 2 SAVED: 7/21/2016 11:01 AM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---
PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/21/2016 11:02 AM BY: ALLEN, ROYCE
XREFS: PROJECTNAME: ---
IMAGES:
20531X01
20531X00



NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY CONDUCTED BY BLASLAND, BOUCK AND LEE, INC. BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS, LOCATION CONSIDERED APPROXIMATE. UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. SEDIMENT SAMPLING LOCATIONS SURVEYED BY ARCADIS BBL AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83), NEW YORK EAST ZONE.
3. PRE-DESIGN SAMPLING LOCATIONS SURVEYED BY ARCADIS BBL AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83), NEW YORK EAST ZONE.

LEGEND:

- O——O' CROSS-SECTION TRANSECT
- RAILROAD
- WATER ELEVATION AT MEAN LOW WATER (MLW)
- CHAIN LINK FENCE
- TREE LINE
- EXISTING GAS VALVE
- LB-27▲ 2008 PDI LAND BORING
- NBB-06 2008 PDI SHALLOW WATER BORINGS
- SED-75 SEDIMENT SAMPLE LOCATION
- PDI PIEZOMETER LOCATION
- T-26-2 SEDIMENT PROBE
- PDI TARGOST PROBE/SOIL BORING LOCATION
- PDI TARGOST CONFIRMATION LOCATION
- PDI GEOTECHNICAL SOIL BORING
- OVERBURDEN NAPL COLLECTION WELL
- BEDROCK NAPL COLLECTION WELL
- TB-28▲ SOIL BORING
- SS-07 SURFACE SOIL SAMPLE
- MW7-80 MONITORING WELL (BEDROCK)
- MW6-75 MONITORING WELL (OVERBURDEN)
- PATP13-04 2013 PROPANE AREA TEST PIT
- 2013 PROPANE AREA BORING
- 2015 PROPANE AREA BORING
- 2013 OVERBURDEN NAPL COLLECTION WELL
- 2013 BEDROCK NAPL COLLECTION WELL
- 2016 OVERBURDEN NAPL COLLECTION WELL
- LIGHTPOLE
- CATCH BASIN (CB)
- EMH ELECTRICAL MANHOLE
- SANITARY MANHOLE
- UTILITY POLE

0 50' 100'
GRAPHIC SCALE

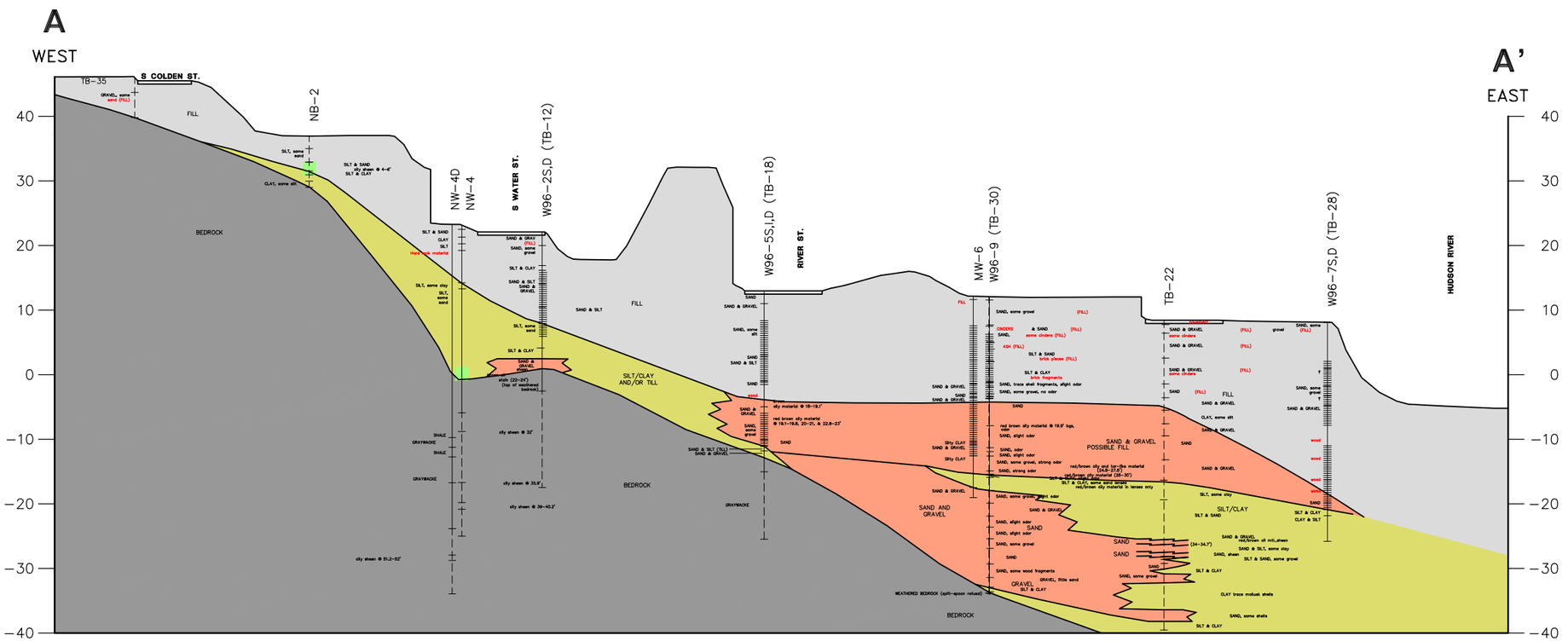
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

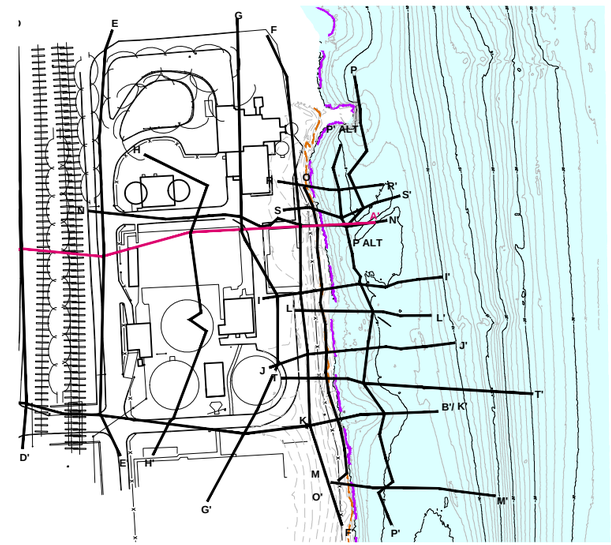
CROSS SECTION LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3A

CITY:SYRACUSE,N.Y. DIV/GROUP:ENVCAD-141 DB:LAF KLS R.ALLEN LD:LAF PM:L.KETCHUM TM:L.RAZAWICH LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIVE\B0020053100\03\000005\DWG\SMP20531B03A.dwg LAYOUT: 3A SAVED: 3/7/2016 12:23 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/7/2016 12:23 PM BY: ALLEN, ROYCE
XREFS:
20531X01
20531X00
IMAGES:
PROJECTNAME: ----





LEGEND:

- BORING/WELL NUMBER
- MONITORING WELL
- SOIL BORING
- WATER TABLE
- SCREENED INTERVAL
- OILY MATERIAL OBSERVED IN SUBSURFACE
- OPEN CORE HOLE BOTTOM OF BORING

- FILL
- UNSORTED SAND AND GRAVEL
- SILT AND CLAY
- TILL/WEATHERED ROCK
- BEDROCK

F/M/C FINE/MEDIUM/COARSE

NOTES:

1. COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, NEW YORK EAST ZONE.
2. ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.
3. ALL LOCATIONS ARE APPROXIMATE.
4. IMPACTS NOTED BASED ON OBSERVATIONS AT TIME OF BORING.

0 10' 20'
VERTICAL GRAPHIC SCALE

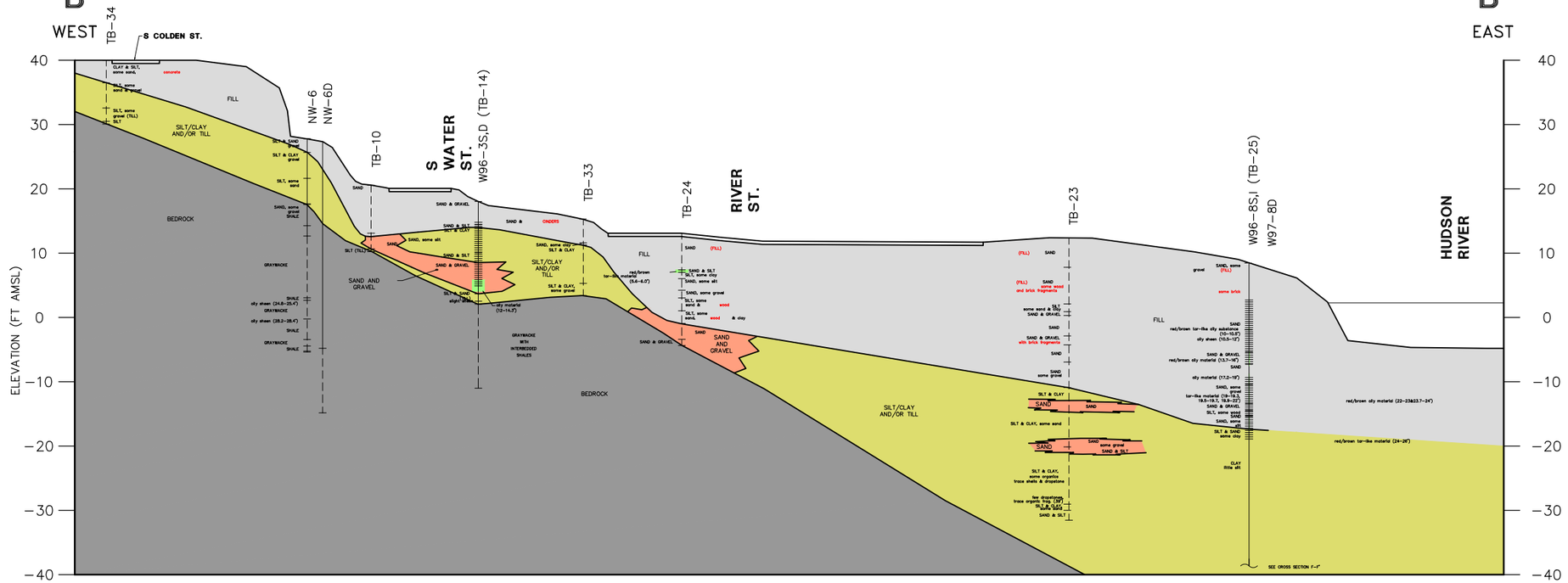
0 40' 80'
HORIZONTAL GRAPHIC SCALE

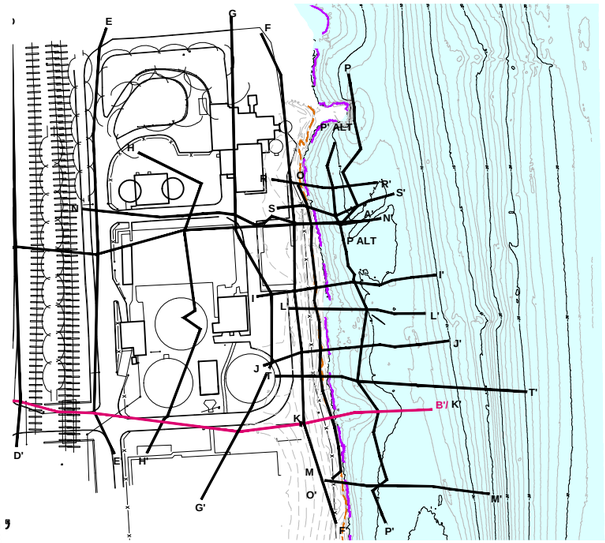
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

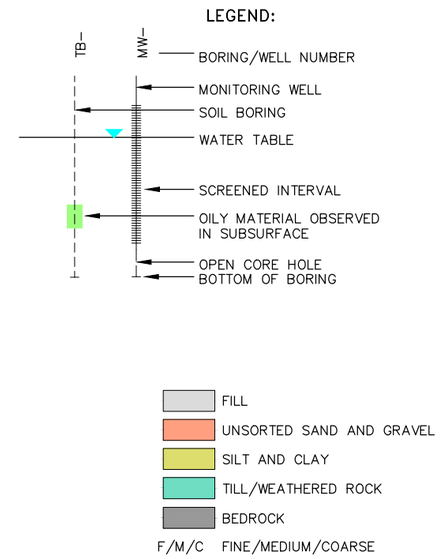
CROSS SECTION A-A'

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3B







NOTES:

1. COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, NEW YORK EAST ZONE.
2. ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.
3. ALL LOCATIONS ARE APPROXIMATE.
4. IMPACTS NOTED BASED ON OBSERVATIONS AT TIME OF BORING.

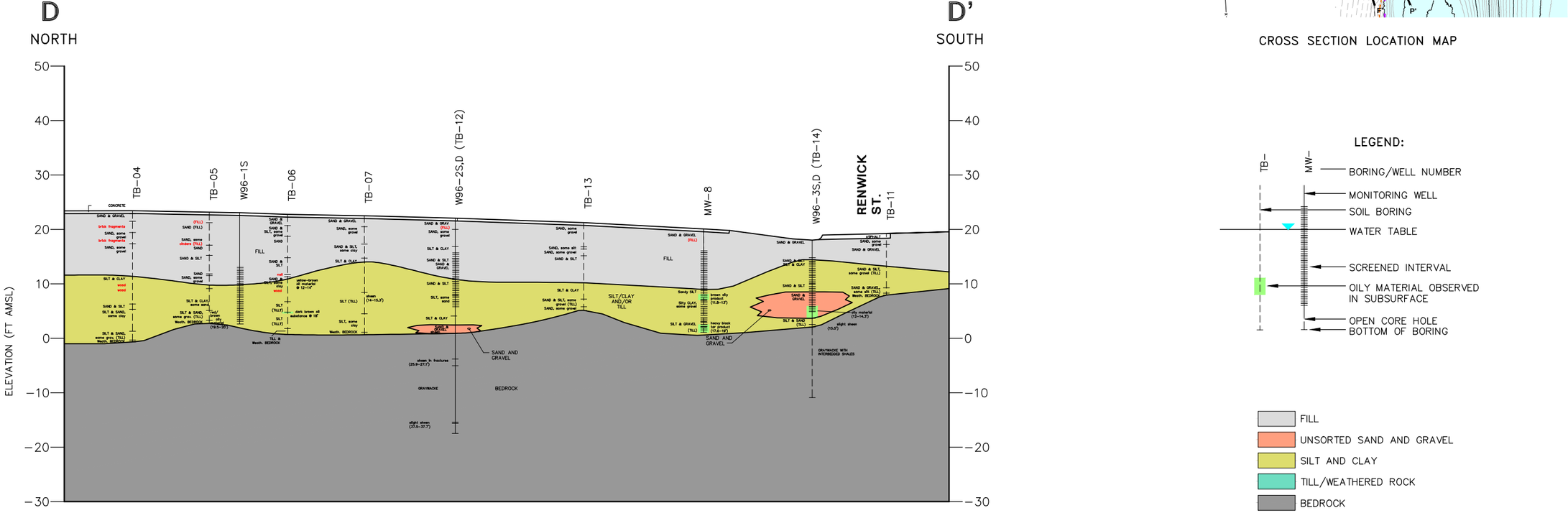
0 10' 20'
VERTICAL GRAPHIC SCALE
0 40' 80'
HORIZONTAL GRAPHIC SCALE

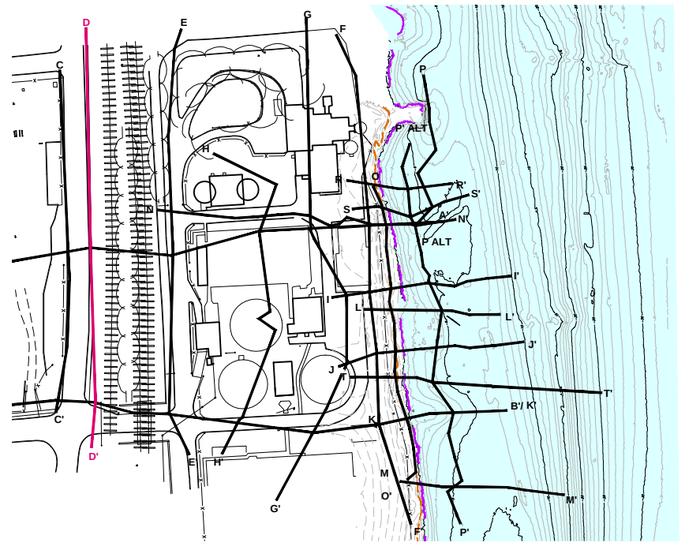
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

CROSS SECTION B-B'

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3C





CROSS SECTION LOCATION MAP

LEGEND:

- BORING/WELL NUMBER (TB− / MW−)
- MONITORING WELL
- SOIL BORING
- WATER TABLE
- SCREENED INTERVAL
- OILY MATERIAL OBSERVED IN SUBSURFACE
- OPEN CORE HOLE BOTTOM OF BORING

- FILL
- UNSORTED SAND AND GRAVEL
- SILT AND CLAY
- TILL/WEATHERED ROCK
- BEDROCK

F/M/C FINE/MEDIUM/COARSE

NOTES:

1. COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, NEW YORK EAST ZONE.
2. ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.
3. ALL LOCATIONS ARE APPROXIMATE.
4. IMPACTS NOTED BASED ON OBSERVATIONS AT TIME OF BORING.

0 10' 20'
VERTICAL GRAPHIC SCALE

0 40' 80'
HORIZONTAL GRAPHIC SCALE

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

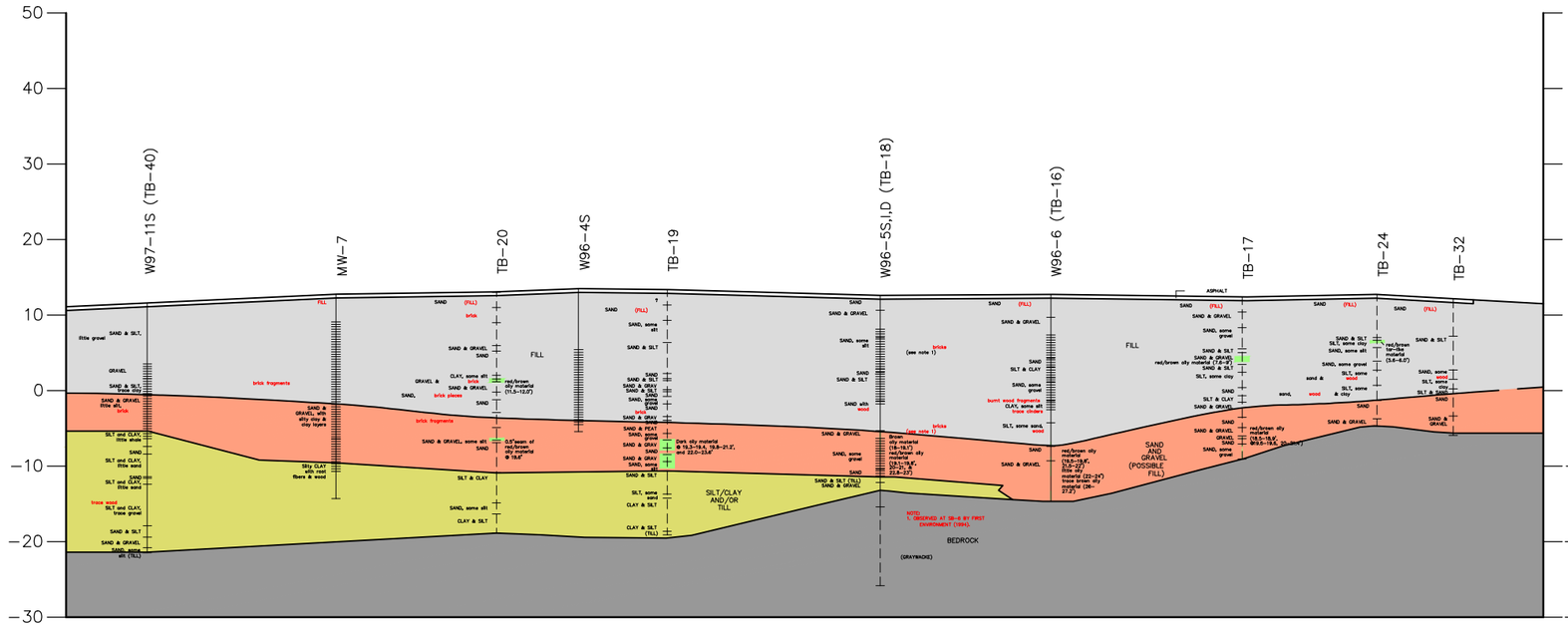
CROSS SECTION D-D'

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3D

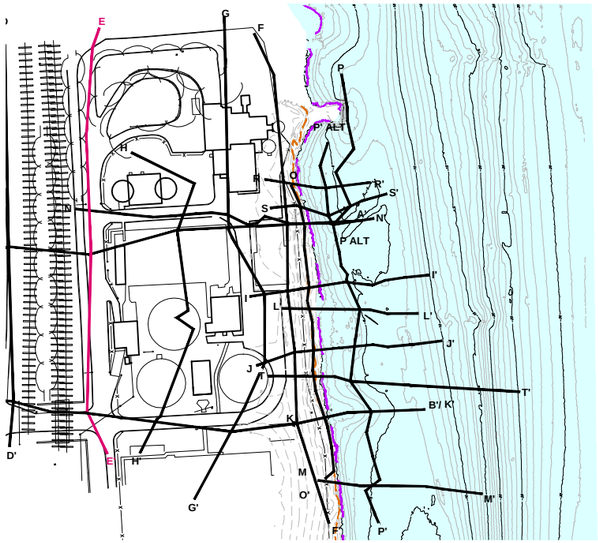
E

NORTH



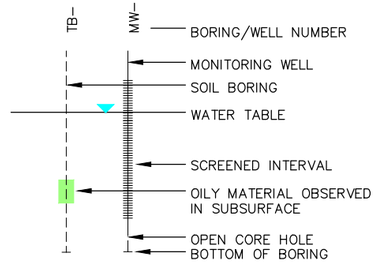
E'

SOUTH



CROSS SECTION LOCATION MAP

LEGEND:



FILL

UNSORTED SAND AND GRAVEL

SILT AND CLAY

TILL/WEATHERED ROCK

BEDROCK

F/M/C FINE/MEDIUM/COARSE

NOTES:

1. COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, NEW YORK EAST ZONE.
2. ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.
3. ALL LOCATIONS ARE APPROXIMATE.
4. IMPACTS NOTED BASED ON OBSERVATIONS AT TIME OF BORING.

0 10' 20'
VERTICAL GRAPHIC SCALE

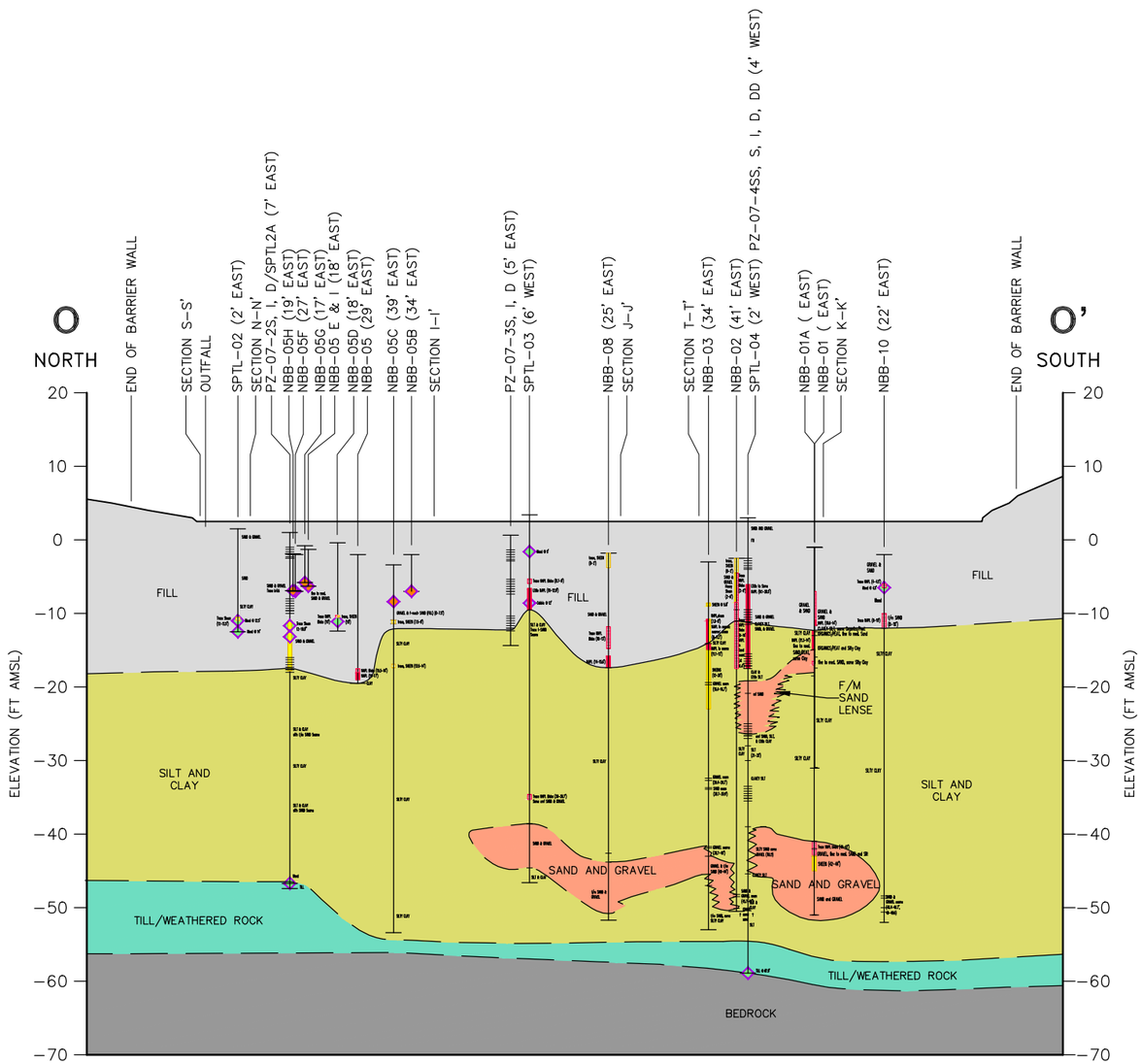
0 40' 80'
HORIZONTAL GRAPHIC SCALE

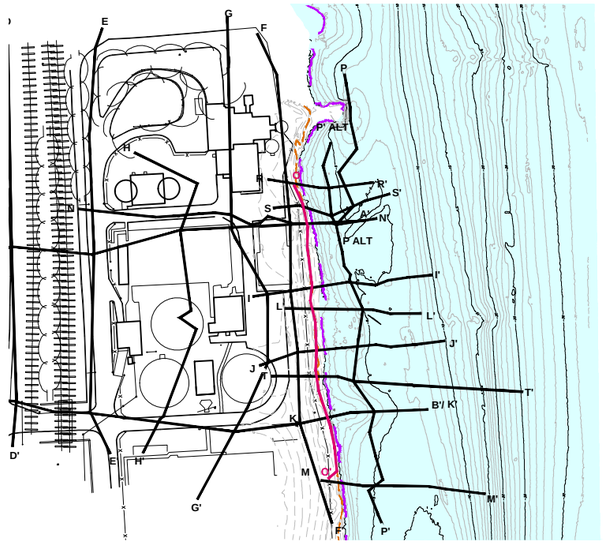
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

CROSS SECTION E-E'

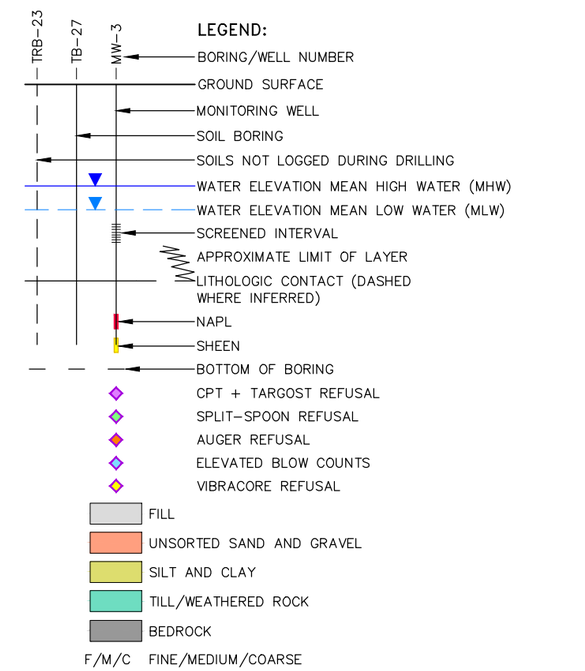
ARCADIS Design & Consultancy for natural and built assets

FIGURE
3E





CROSS SECTION LOCATION MAP



NOTES:

1. COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, NEW YORK EAST ZONE.
2. ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.
3. ALL LOCATIONS ARE APPROXIMATE.
4. IMPACTS NOTED BASED ON OBSERVATIONS AT TIME OF BORING.

0 10' 20'
VERTICAL GRAPHIC SCALE

0 40' 80'
HORIZONTAL GRAPHIC SCALE

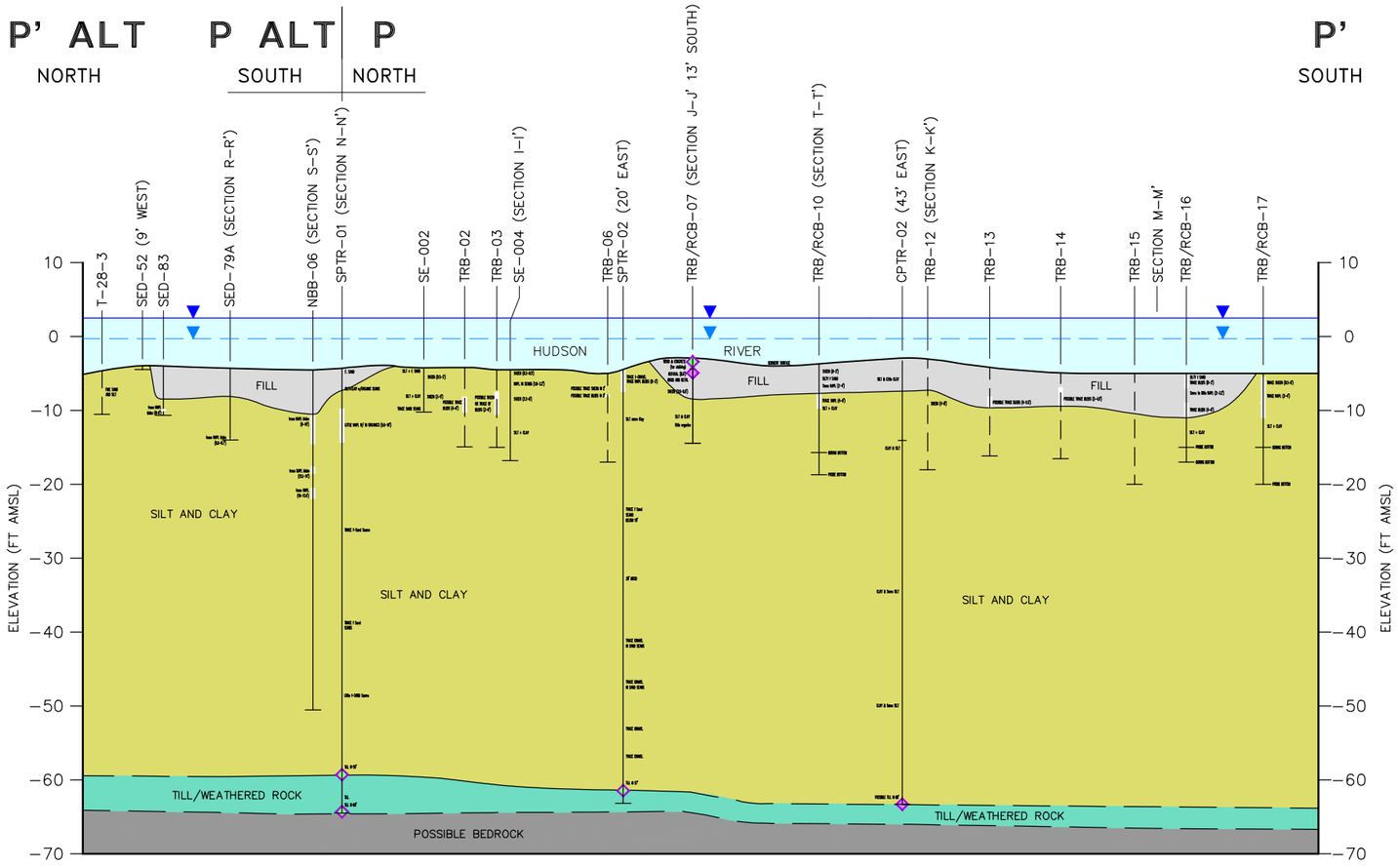
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

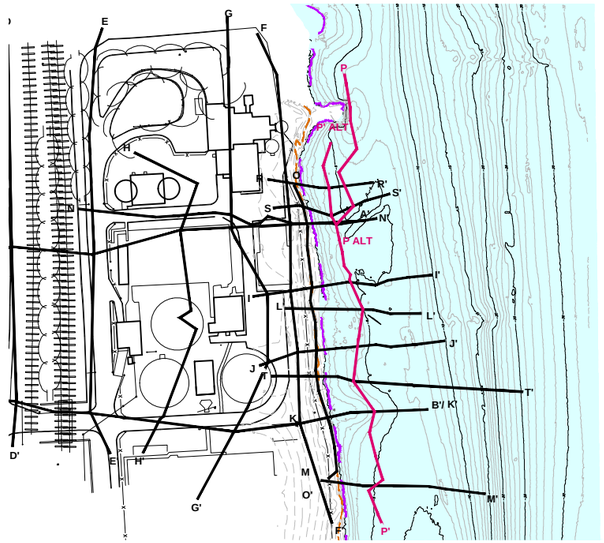
CROSS SECTION O-O'

ARCADIS Design & Consultancy for natural and built assets

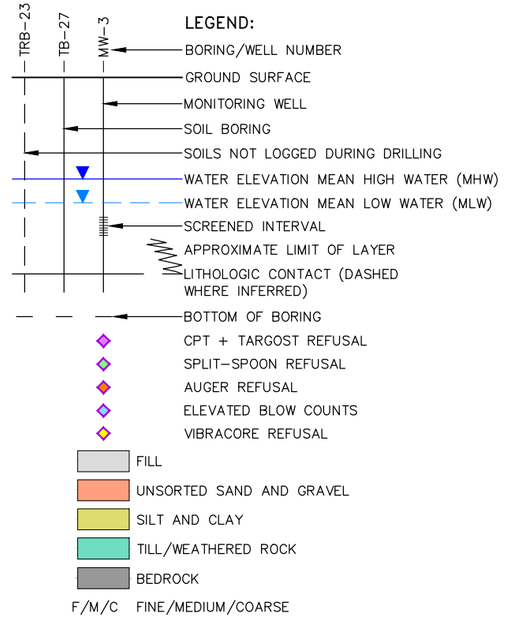
FIGURE
3F

CITY: SYRACUSE N.Y. GROUP: ENVCADD-141 DB: RCA AMS R.ALLEN LD: AM: PD: TM: TR: LYR:ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB\0020531\00003\00005\DWG\SMP\20531B03F.dwg LAYOUT: 3F SAVED: 3/7/2016 1:13 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/7/2016 1:14 PM BY: ALLEN, ROYCE





CROSS SECTION LOCATION MAP



NOTES:

1. COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, NEW YORK EAST ZONE.
2. ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.
3. ALL LOCATIONS ARE APPROXIMATE.
4. IMPACTS NOTED BASED ON OBSERVATIONS AT TIME OF BORING.

0 10' 20'
VERTICAL GRAPHIC SCALE

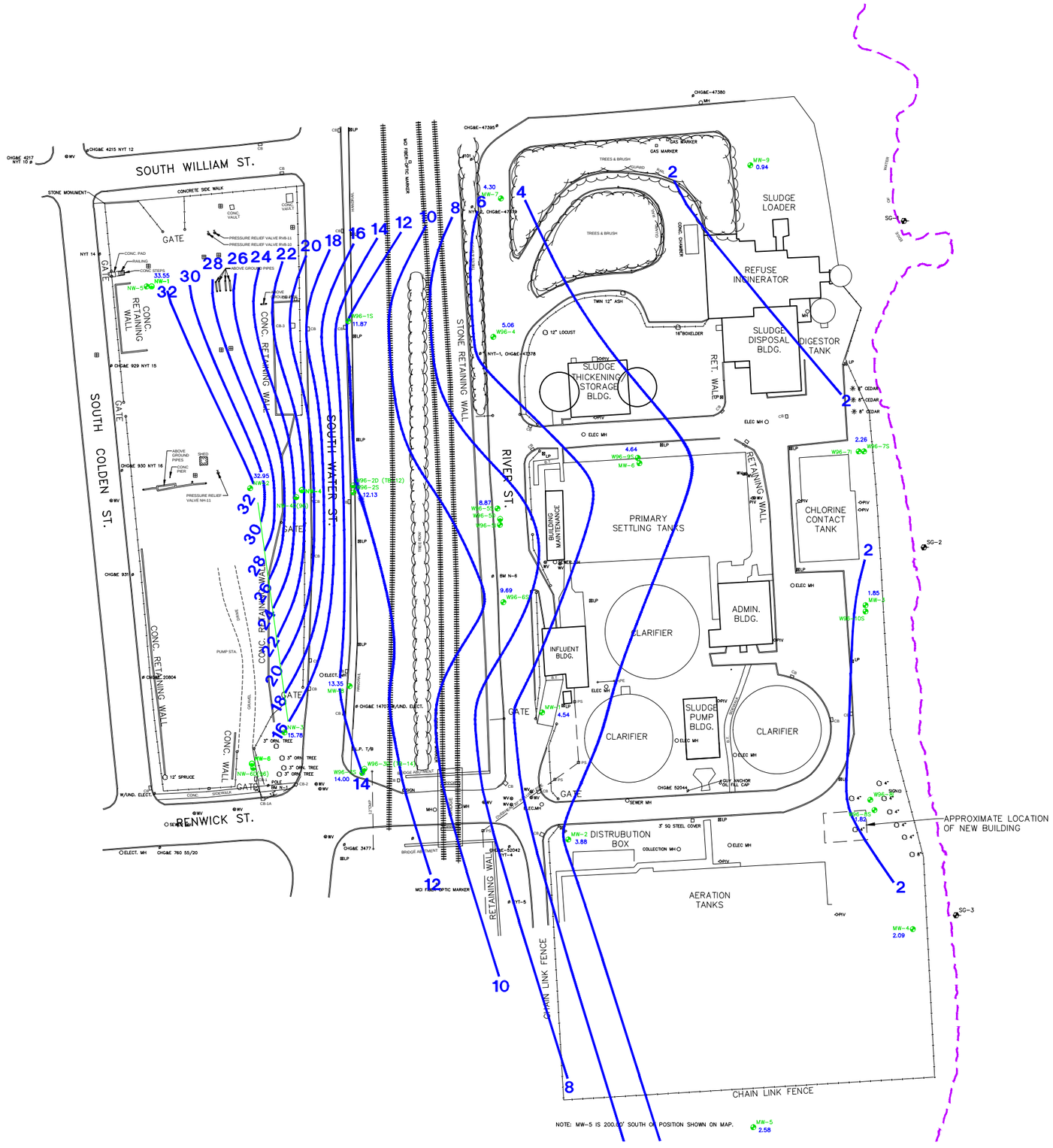
0 40' 80'
HORIZONTAL GRAPHIC SCALE

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

CROSS SECTION P-P'

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3G



LEGEND:

- EDGE OF WATER
- CHAIN LINK FENCE
- TREE LINE
- EXISTING GAS VALVE
- LIGHT STAND
- CATCH BASIN
- WATER VALVE
- DECIDOUS TREE
- CONIFEROUS TREE
- MANHOLE
- UTILITY POLE
- POSITION INDICATOR VALVE
- MONITORING WELL (BEDROCK)
- MONITORING WELL (OVERBURDEN)
- STAFF GAGE
- GROUNDWATER ELEVATION (FEET)
- GROUNDWATER ELEVATION CONTOUR LINE (FEET)

NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY CONDUCTED BY BLASLAND, BOUCK AND LEE, INC. BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS, LOCATIONS CONSIDERED APPROXIMATE. UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

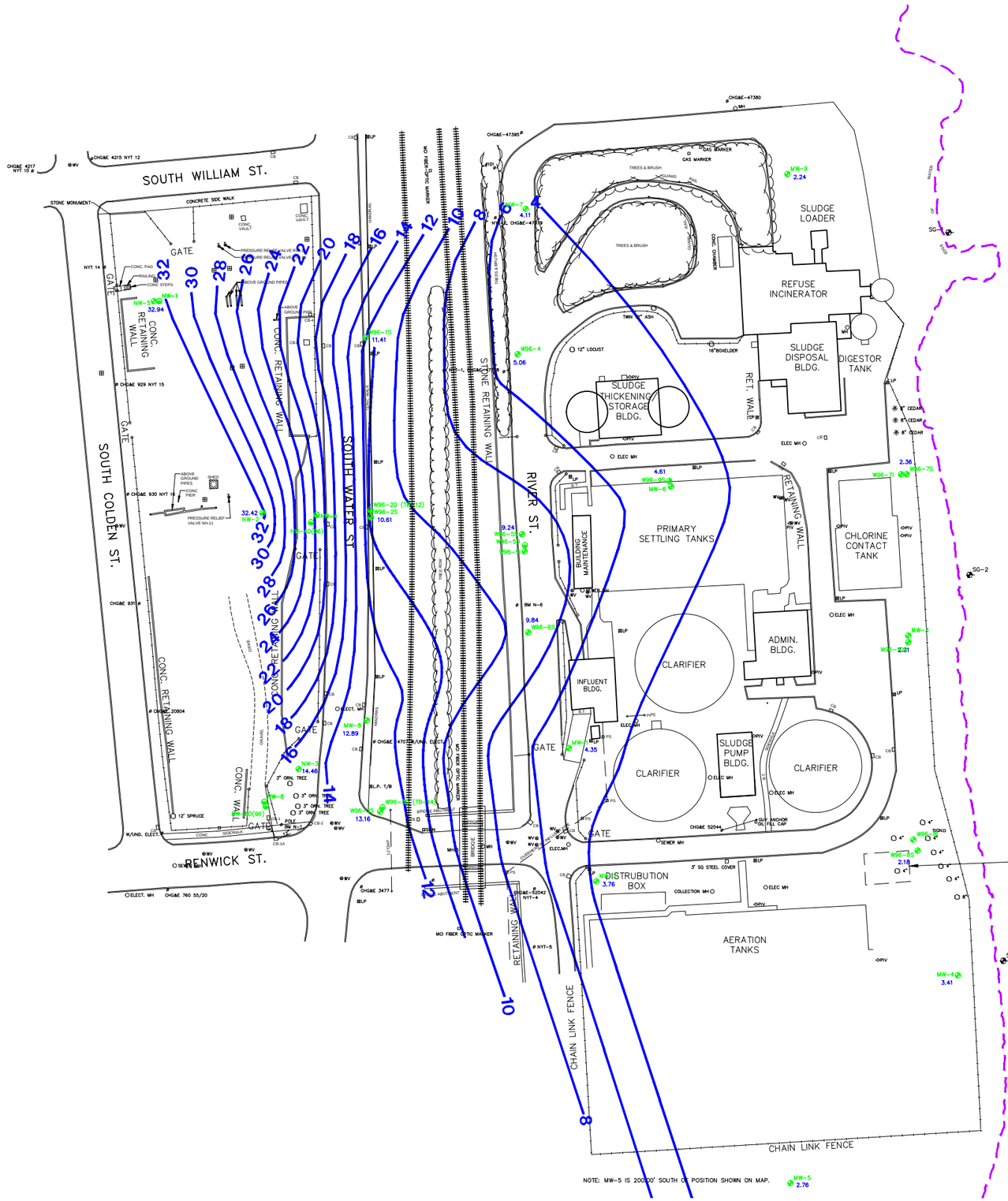
0 50' 100'
GRAPHIC SCALE

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

GROUNDWATER ELEVATION CONTOUR MAP AUGUST 26, 1996

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4A



LEGEND:

- EDGE OF WATER
- CHAIN LINK FENCE
- TREE LINE
- EXISTING GAS VALVE
- LIGHT STAND
- CATCH BASIN
- WATER VALVE
- DECIDOUS TREE
- CONIFEROUS TREE
- MANHOLE
- UTILITY POSITION
- POSITION INDICATOR VALVE
- MONITORING WELL (BEDROCK)
- MONITORING WELL (OVERBURDEN)
- STAFF GAGE
- GROUNDWATER ELEVATION (FEET)
- GROUNDWATER ELEVATION CONTOUR LINE (FEET)

NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY CONDUCTED BY BLASLAND, BOUCK AND LEE, INC. BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS, LOCATIONS CONSIDERED APPROXIMATE. UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

0 50' 100'
GRAPHIC SCALE

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

GROUNDWATER ELEVATION CONTOUR MAP SEPTEMBER 10, 1996

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4B

HUDSON RIVER

LEGEND:

- EDGE OF WATER
- CHAIN LINK FENCE
- TREE LINE
- EXISTING GAS VALVE
- LIGHT STAND
- CATCH BASIN
- WATER VALVE
- MANHOLE
- UTILITY POLE
- POSITION INDICATOR VALVE
- MONITORING WELL (BEDROCK)
- MONITORING WELL (OVERBURDEN)
- STAFF GAGE
- DRAIN SAMPLE
- 2.18 GROUNDWATER ELEVATION (FEET)
- 2 GROUNDWATER ELEVATION CONTOUR LINE (FEET)

NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY CONDUCTED BY BLASLAND, BOUCK AND LEE, INC. BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS, LOCATIONS CONSIDERED APPROXIMATE. UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

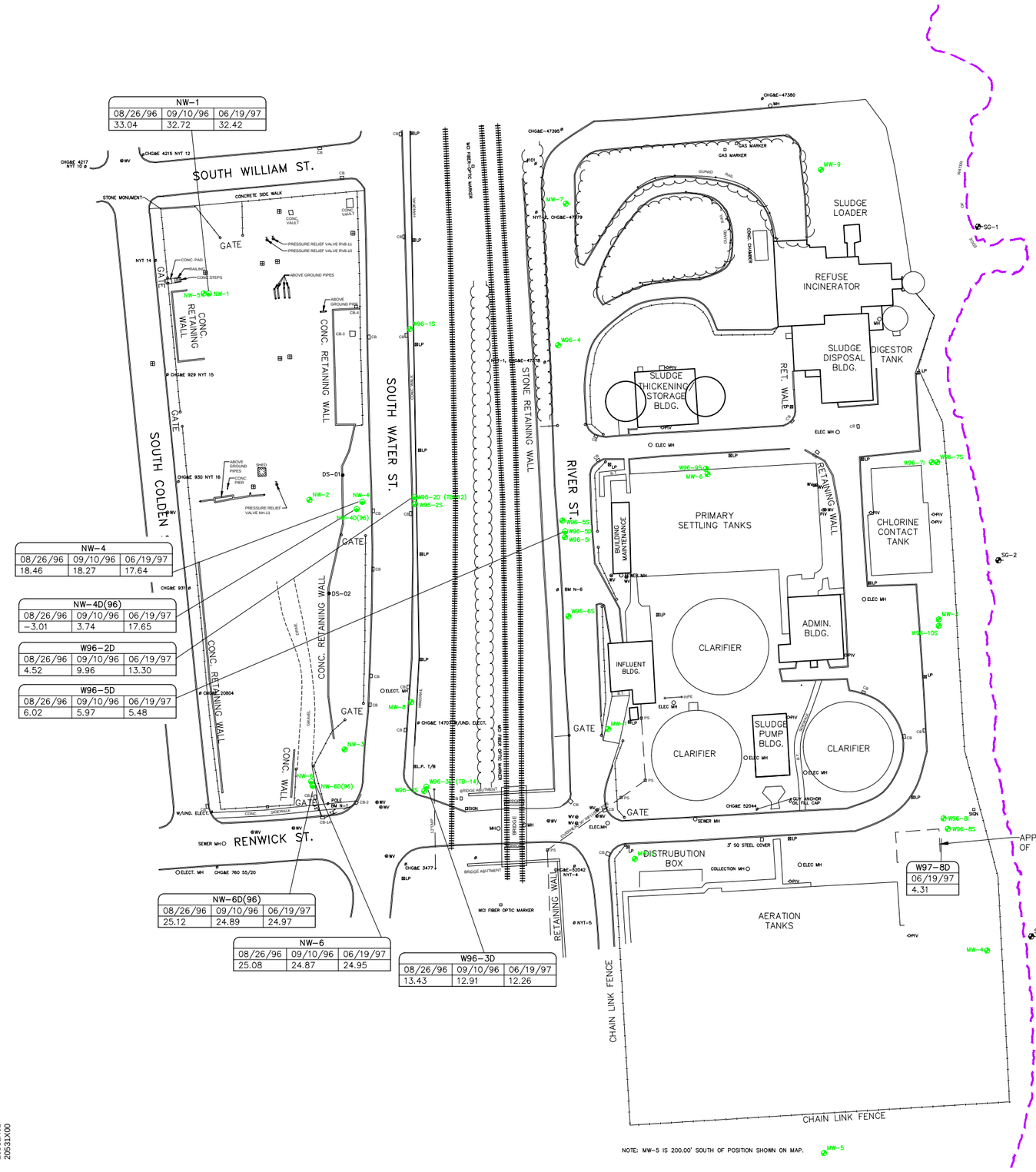
0 50' 100'
GRAPHIC SCALE

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

GROUNDWATER ELEVATION CONTOUR MAP JUNE 16, 1997

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4C



HUDSON RIVER

LEGEND:

- EDGE OF WATER
- CHAIN LINK FENCE
- TREE LINE
- EXISTING GAS VALVE
- LIGHT STAND
- CATCH BASIN
- WATER VALVE
- MANHOLE
- UTILITY POLE
- POSITION INDICATOR VALVE
- MONITORING WELL (BEDROCK)
- MONITORING WELL (OVERBURDEN)
- STAFF GAGE
- DRAIN SAMPLE

NW-6D(96)		
08/26/96	09/10/96	06/19/97
25.12	24.89	24.97

BEDROCK GROUNDWATER ELEVATION (FEET)

NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY CONDUCTED BY BLASLAND, BOUCK AND LEE, INC. BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS, LOCATIONS CONSIDERED APPROXIMATE. UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

0 50' 100'
GRAPHIC SCALE

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

GROUNDWATER ELEVATION BEDROCK

ARCADIS Design & Consultancy for natural and built assets

FIGURE
4D

AREA A

AREA B

AREA C

SOUTH WILLIAM ST.

SOUTH COLDEN ST.

SOUTH WATER ST.

RENWICK ST.

STONE RETAINING WALL

CONCRETE RETAINING WALL

RETAINING WALL

RIVER ST

RET. WALL

CHAIN LINK FENCE

GATE

SLUDGE LOADER

REFUSE INCINERATOR

SLUDGE DISPOSAL BLDG.

SLUDGE THICKENING STORAGE BLDG.

PRIMARY SETTLING TANKS

CHLORINE CONTACT TANK

ADMIN. BLDG.

INFLUENT BLDG.

CLARIFIER

SLUDGE PUMP BLDG.

BUILDING MAINTENANCE

DISTRIBUTION BOX

AERATION TANKS

APPROXIMATE LOCATION OF NEW BUILDING

HUDSON RIVER

MCI FIBER OPTIC MARKER

NOTE: MW-5 IS 200.00' SOUTH OF POSITION SHOWN ON MAP.

0 50' 100'
GRAPHIC SCALE

NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY CONDUCTED BY BLASLAND, BOUCK AND LEE, INC. BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS, LOCATIONS CONSIDERED APPROXIMATE. UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. PRE-DESIGN SAMPLING LOCATIONS SURVEYED BY ARCADIS BBL AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83), NEW YORK EAST ZONE.
3. ALL ELEVATIONS ARE IN FEET AND ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).
4. MLW FROM NOAA NAUTICAL CHART. CONVERSION FROM TIDAL DATUM TO NGVD 29 BASED ON DATUM CONVERSIONS AT SITES DIRECTLY UPSTREAM AND DOWNSTREAM OF NEWBURGH.
5. IMPACTS NOTED BASED ON OBSERVATIONS AT TIME OF BORING.

LEGEND:

- 2008 PDI LAND BORING
- 2008 PDI SHALLOW WATER BORING
- HISTORICAL SOIL BORING
- HISTORICAL SURFACE SOIL SAMPLE
- HISTORICAL MONITORING WELL (OVERBURDEN)
- 2013 PROPANE AREA TEST PIT
- 2013 PROPANE AREA BORING
- 2015 PROPANE AREA BORING
- PDI PIEZOMETER LOCATION
- PDI TARGOST PROBE/SOIL BORING LOCATION
- PDI TARGOST CONFIRMATION LOCATION
- PDI GEOTECHNICAL SOIL BORING
- OVERBURDEN NAPL COLLECTION WELL
- NAPL NOT ENCOUNTERED
- NAPL ENCOUNTERED AT OR ABOVE 10 FEET DEPTH
- NAPL ENCOUNTERED GREATER THAN 10 FEET DEPTH
- NAPL ENCOUNTERED GREATER THAN 15 FEET DEPTH
- NAPL ENCOUNTERED GREATER THAN 20 FEET DEPTH
- NAPL ENCOUNTERED GREATER THAN 30 FEET DEPTH
- NAPL ENCOUNTERED GREATER THAN 40 FEET DEPTH
- SANITARY MANHOLE
- CHAIN LINK FENCE
- FENCE GATE
- LIGHTPOLE
- CATCH BASIN (CB)
- ELECTRICAL MANHOLE (EMH)
- UTILITY POLE
- WATER ELEVATION AT MEAN LOW WATER (MLW)
- CHAIN LINK FENCE
- TREE LINE
- EXISTING GAS VALVE

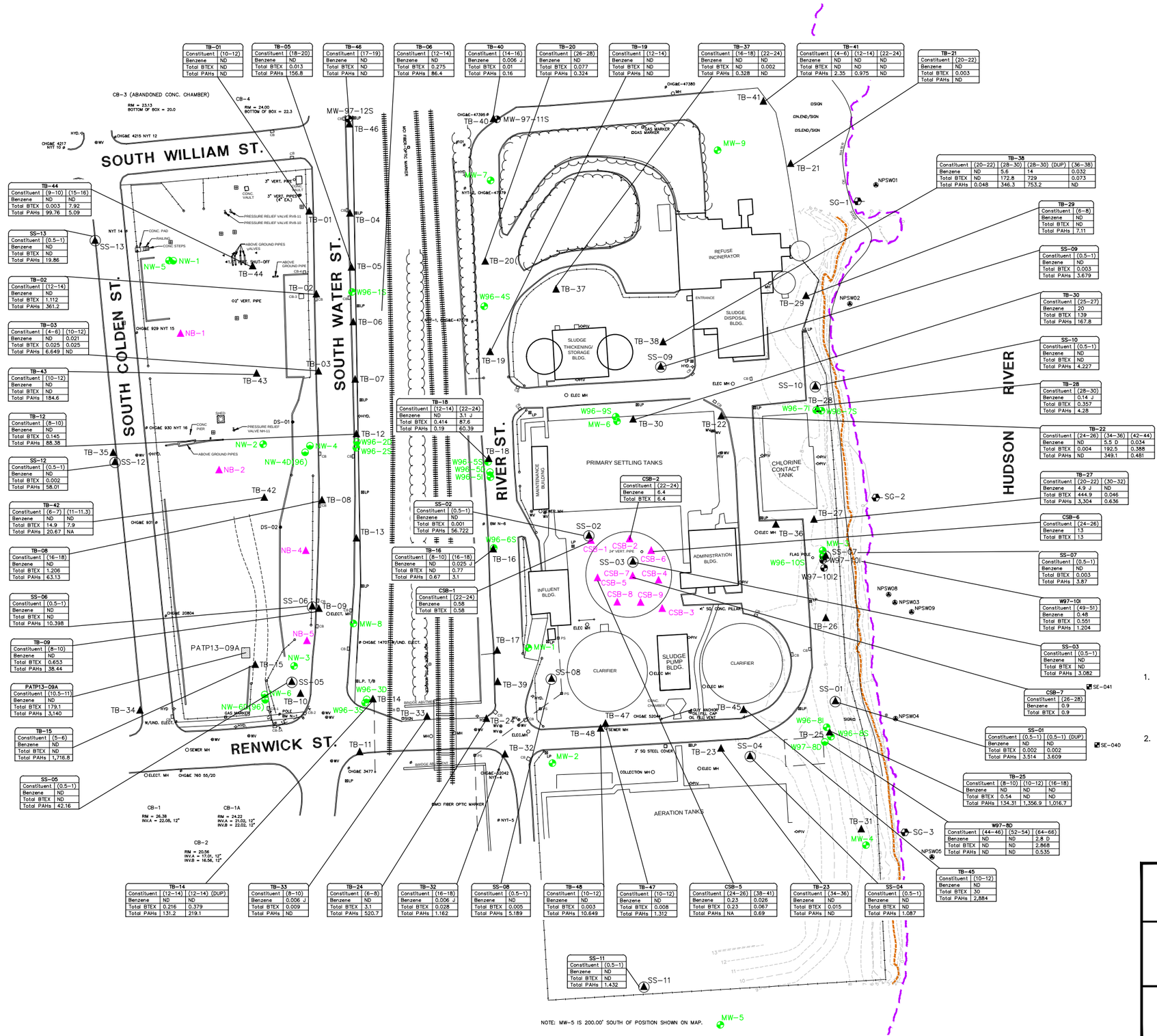
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

PREVIOUS INVESTIGATIONS EXTENT OF NAPL IMPACTED SOILS (AREAS A & B)

ARCADIS Design & Consultancy for natural and built assets

FIGURE
5

CITY:SYRACUSE, N.Y. DIV/GROUP:ENVCAD-141 DB:LAF KLS R.ALLEN LD:LAF PM:L.KETCHUM TM:L.RAZAWICH LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0\20531\0\0030000\5\DWG\SMP\20531B05.dwg LAYOUT: 5 SAVED: 3/8/2016 9:15 AM ACADVER: 19.1S (LMS TECH) PAGESETUP: ----
XREFS: IMAGES: PROJECTNAME: ----
20531X01
20531X00

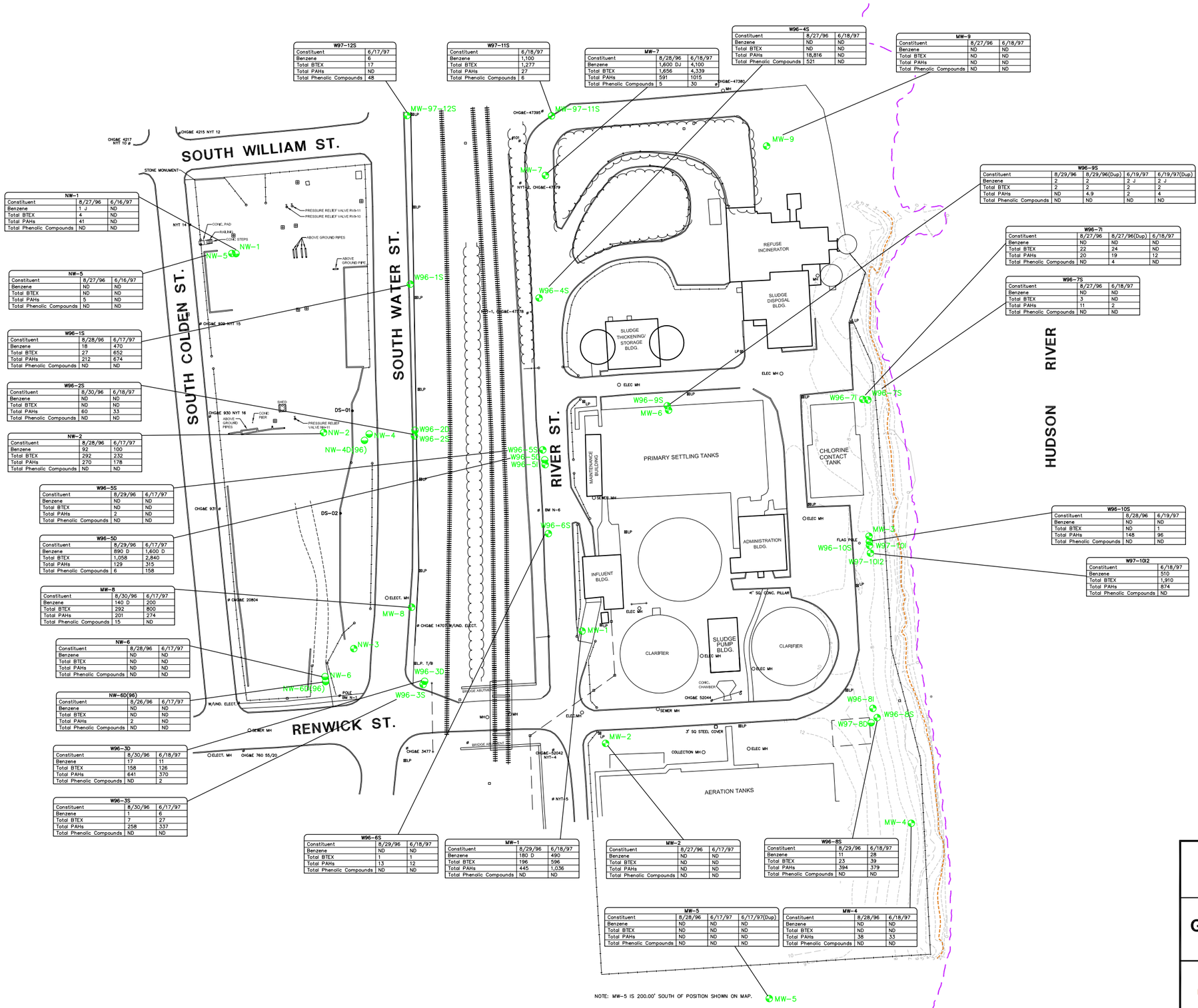


CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

REMEDIAL INVESTIGATION SOIL ANALYTICAL RESULTS (AREAS A & B)

ARCADIS Design & Consultancy for natural and built assets

FIGURE 6



W97-12S	
Constituent	6/17/97
Benzene	6
Total BTEX	17
Total PAHs	ND
Total Phenolic Compounds	48

W97-11S	
Constituent	6/18/97
Benzene	1,100
Total BTEX	1,277
Total PAHs	27
Total Phenolic Compounds	6

MW-7		
Constituent	8/28/96	6/18/97
Benzene	1,600 DJ	4,100
Total BTEX	1,656	4,339
Total PAHs	591	1015
Total Phenolic Compounds	5	30

W96-4S		
Constituent	8/27/96	6/18/97
Benzene	ND	ND
Total BTEX	ND	ND
Total PAHs	18,816	ND
Total Phenolic Compounds	521	ND

MW-9		
Constituent	8/27/96	6/18/97
Benzene	ND	ND
Total BTEX	ND	ND
Total PAHs	ND	ND
Total Phenolic Compounds	ND	ND

NW-1		
Constituent	8/27/96	6/16/97
Benzene	1 J	ND
Total BTEX	4	ND
Total PAHs	41	ND
Total Phenolic Compounds	ND	ND

NW-5		
Constituent	8/27/96	6/16/97
Benzene	ND	ND
Total BTEX	ND	ND
Total PAHs	5	ND
Total Phenolic Compounds	ND	ND

W96-1S		
Constituent	8/28/96	6/17/97
Benzene	18	470
Total BTEX	27	652
Total PAHs	212	674
Total Phenolic Compounds	ND	ND

W96-2S		
Constituent	8/30/96	6/18/97
Benzene	ND	ND
Total BTEX	ND	ND
Total PAHs	60	33
Total Phenolic Compounds	ND	ND

NW-2		
Constituent	8/28/96	6/17/97
Benzene	92	100
Total BTEX	292	232
Total PAHs	270	178
Total Phenolic Compounds	ND	ND

W96-5S		
Constituent	8/29/96	6/17/97
Benzene	ND	ND
Total BTEX	ND	ND
Total PAHs	2	ND
Total Phenolic Compounds	ND	ND

W96-5D		
Constituent	8/29/96	6/17/97
Benzene	890 D	1,600 D
Total BTEX	1,058	2,840
Total PAHs	129	315
Total Phenolic Compounds	6	158

MW-8		
Constituent	8/30/96	6/17/97
Benzene	140 D	200
Total BTEX	292	800
Total PAHs	201	274
Total Phenolic Compounds	15	ND

NW-6		
Constituent	8/28/96	6/17/97
Benzene	ND	ND
Total BTEX	ND	ND
Total PAHs	ND	ND
Total Phenolic Compounds	ND	ND

NW-6D(96)		
Constituent	8/26/96	6/17/97
Benzene	ND	ND
Total BTEX	ND	ND
Total PAHs	2	ND
Total Phenolic Compounds	ND	ND

W96-3D		
Constituent	8/30/96	6/18/97
Benzene	17	11
Total BTEX	158	126
Total PAHs	641	370
Total Phenolic Compounds	ND	2

W96-3S		
Constituent	8/30/96	6/17/97
Benzene	1	6
Total BTEX	7	27
Total PAHs	258	337
Total Phenolic Compounds	ND	ND

W96-9S				
Constituent	8/29/96	8/29/96(Dup)	6/19/97	6/19/97(Dup)
Benzene	2	2	2 J	2 J
Total BTEX	2	2	2	2
Total PAHs	ND	4.9	2	4
Total Phenolic Compounds	ND	ND	ND	ND

W96-7I			
Constituent	8/27/96	8/27/96(Dup)	6/18/97
Benzene	ND	ND	ND
Total BTEX	22	24	ND
Total PAHs	20	19	12
Total Phenolic Compounds	ND	4	ND

W96-7S		
Constituent	8/27/96	6/18/97
Benzene	ND	ND
Total BTEX	3	ND
Total PAHs	11	2
Total Phenolic Compounds	ND	ND

W96-10S		
Constituent	8/28/96	6/19/97
Benzene	ND	ND
Total BTEX	ND	1
Total PAHs	148	96
Total Phenolic Compounds	ND	ND

W97-10I2	
Constituent	6/18/97
Benzene	510
Total BTEX	1,910
Total PAHs	874
Total Phenolic Compounds	ND

W96-6S		
Constituent	8/29/96	6/18/97
Benzene	ND	ND
Total BTEX	1	1
Total PAHs	13	12
Total Phenolic Compounds	ND	ND

MW-1		
Constituent	8/29/96	6/18/97
Benzene	180 D	490
Total BTEX	196	596
Total PAHs	445	1,036
Total Phenolic Compounds	ND	ND

MW-2		
Constituent	8/27/96	6/17/97
Benzene	ND	ND
Total BTEX	ND	ND
Total PAHs	ND	ND
Total Phenolic Compounds	ND	ND

W96-8S		
Constituent	8/29/96	6/18/97
Benzene	11	28
Total BTEX	23	39
Total PAHs	394	379
Total Phenolic Compounds	ND	ND

MW-5			
Constituent	8/28/96	6/17/97	6/17/97(Dup)
Benzene	ND	ND	ND
Total BTEX	ND	ND	ND
Total PAHs	ND	ND	ND
Total Phenolic Compounds	ND	ND	ND

MW-4		
Constituent	8/28/96	6/18/97
Benzene	ND	ND
Total BTEX	ND	ND
Total PAHs	38	33
Total Phenolic Compounds	ND	ND

NOTES:

1. TOPOGRAPHIC SURVEY WAS PERFORMED IN THE FIELD BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS SOME TOPOGRAPHIC AND PLANIMETRIC FEATURES MAY NOT HAVE BEEN LOCATED AND/OR MAY BE APPROXIMATE. UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

LEGEND:

- EDGE OF WATER
- CHAIN LINK FENCE
- TREE LINE
- EXISTING GAS VALVE
- LIGHT STAND
- MONITORING WELL (BEDROCK)
- MONITORING WELL (OVERBURDEN)
- MANHOLE
- UTILITY POLE
- DRAIN SAMPLE
- BTEX: BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENE
- PAHs: POLYCYCLIC AROMATIC HYDROCARBONS
- ALL CONCENTRATIONS IN MICROGRAMS PER DLITER (ug/L)

0 50' 100'
GRAPHIC SCALE

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

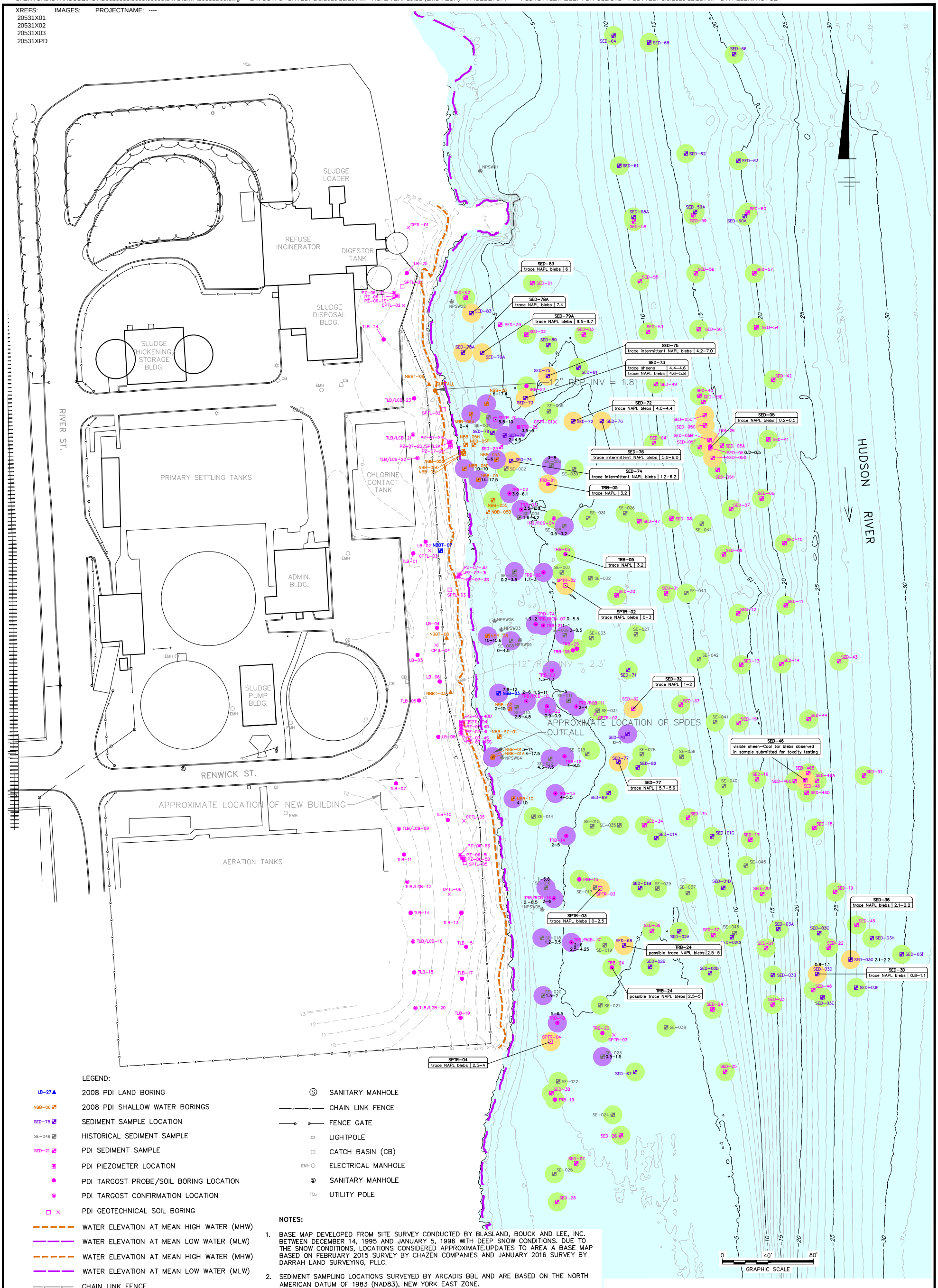
REMEDIAL INVESTIGATION GROUNDWATER MONITORING RESULTS (AREAS A & B)

ARCADIS Design & Consultancy for natural and built assets

FIGURE
7

CITY:SYRACUSE, NY DIV/GROUP:ENV/IM-DV DB:LAF, KLS, R. ALLEN LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0020531\0003\00005\DWG\SMP\20531B08.dwg LAYOUT: 8 SAVED: 3/8/2016 11:20 AM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/8/2016 11:21 AM BY: ALLEN, ROYCE

XREFS: IMAGES: PROJECTNAME: ----
20531X01
20531X02
20531X03
20531XPD



LEGEND:

- LB-27▲ 2008 PDI LAND BORING
- NBB-06 2008 PDI SHALLOW WATER BORINGS
- SED-75 SEDIMENT SAMPLE LOCATION
- SE-046 HISTORICAL SEDIMENT SAMPLE
- SED-21 PDI SEDIMENT SAMPLE
- PDI PIEZOMETER LOCATION
- PDI TARGOST PROBE/SOIL BORING LOCATION
- PDI TARGOST CONFIRMATION LOCATION
- PDI GEOTECHNICAL SOIL BORING
- WATER ELEVATION AT MEAN HIGH WATER (MHW)
- WATER ELEVATION AT MEAN LOW WATER (MLW)
- WATER ELEVATION AT MEAN HIGH WATER (MHW)
- WATER ELEVATION AT MEAN LOW WATER (MLW)
- CHAIN LINK FENCE
- TREE LINE
- TRACE NAPL ENCOUNTERED
- NAPL NOT ENCOUNTERED
- NAPL ENCOUNTERED
- X–Y NAPL INTERVAL
- SED-3D trace NAPL blebs 0.8–1.1 SEDIMENT SAMPLE IDENTIFICATION
- SAMPLE DEPTH
- SAMPLE DESCRIPTION
- SANITARY MANHOLE
- CHAIN LINK FENCE
- FENCE GATE
- LIGHTPOLE
- CATCH BASIN (CB)
- EMH ELECTRICAL MANHOLE
- SANITARY MANHOLE
- UTILITY POLE

NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY CONDUCTED BY BLASLAND, BOUCK AND LEE, INC. BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS, LOCATIONS CONSIDERED APPROXIMATE.UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. SEDIMENT SAMPLING LOCATIONS SURVEYED BY ARCADIS BBL AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83), NEW YORK EAST ZONE.
3. SURFACE TOPOGRAPHY ALONG RIVER BANK CONDUCTED BY ARCADIS BBL ON APRIL 18 AND 19, 2007.
4. BATHYMETRIC SURVEY COMPLETED BY OCEAN SURVEY. INC. ON OCTOBER 9–11, 2007. BATHYMETRIC SURVEY CONTOURS OBTAINED FROM OCEAN SURVEY'S MAP ENTITLED "CONTOURED SHADED RELIEF MAP–CENTRAL HUDSON GAS AND ELECTRIC NEWBURGH SITE–HUDSON RIVER, NEWBURGH, NEW YORK", DATED OCTOBER 31, 2007.
5. GRID SYSTEM FOR BATHYMETRY IS IN US SURVEY FEET RELATIVE TO THE NEW YORK STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD83.
6. ALL ELEVATIONS ARE IN FEET AND ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29) WITH ONE–FOOT CONTOUR INTERVALS.
7. MHW/MLW FROM NOAA NAUTICAL CHART. CONVERSION FROM TIDAL DATUM TO NGVD 29 BASED ON DATUM CONVERSIONS AT SITES DIRECTLY UPSTREAM AND DOWNSTREAM OF NEWBURGH.
8. IMPACTS NOTED ARE BASED ON OBSERVATIONS AT THE TIME OF BORING AND/OR SAMPLE COLLECTION.

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

PREVIOUS INVESTIGATIONS EXTENT OF NAPL-IMPACTED SEDIMENT (AREA C)

ARCADIS Design & Consultancy for natural and built assets

FIGURE
8

CITY: SYRACUSE, N.Y. DIV/GROUP: ENVCAD-141 DB: GMS KLS R.ALLEN PM: N.GENSKY LYR: ON= *;OFF=REF, |005_xs_aeration-tanks, |005_xs_building, |005_xs_clarifier, |005_xs_curb-top, |005_xs_fenceline, |005_xs_hose-bib, |005_xs_monitoring-wells, |005_xs_pavement-edge, |005_xs_sidewalk-edge, |005_xs_spot-elevation, |005_xs_steps-concrete, |005_xs_tank-chlorine, |005_xs_tree-deciduous, |005_xs_ut-d-catch-basin, |005_xs_ut-elec*, |005_xs_ut-tel-manhole, |005_xs_ut-UFPO*, |005_xs_ut-water-PIV, |005_xs_ut-water-valve, |IGNORE_THIS_LAYER_005_xs_bank-bottom
G:\ENVCAD\SYRACUSE\ACT\B0020531\0003\00005\DWG\SMP\20531B09.dwg LAYOUT: 9 SAVED: 3/8/2016 1:26 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/8/2016 1:26 PM BY: ALLEN, ROYCE

XREFS: IMAGES: PROJECTNAME: ----
20531X01
20531X02
20531X03
20531XPD

SAMPLE ID	DISTANCE NORTH OF SAMPLING LOCATION RS-09 (FEET)	TOTAL PAH CONCENTRATION (PPM)
RS-10	343	14.0
RS-11	460	5.6
RS-12	627	6.2

ACTUAL LOCATION IS 400FT IN THE GENERAL DIRECTION OF ARROW

SEDIMENT PROBE LOCATIONS RS-10,RS-11,RS-12 ARE LOCATED 343',460',627' RESPECTIVELY FROM T-35-2 IN THE GENERAL DIRECTION OF ARROW

SLUDGE LOADER
REFUSE INCINERATOR
DIGESTOR TANK
SLUDGE DISPOSAL BLDG.
SLUDGE THICKENING/ STORAGE BLDG.
PRIMARY SETTLING TANKS
CHLORINE CONTACT TANK
ADMIN. BLDG.
SLUDGE PUMP BLDG.
AERATION TANKS
RIVER ST.
RENWICK ST.
12" RCP INV = 1.8'
12" RCP INV = 2.3'
APPROXIMATE LOCATION OF SEWAGE TREATMENT PLANT OUTFALL SEWER
APPROXIMATE LOCATION OF SPDES OUTFALL
APPROXIMATE LOCATION OF NEW BUILDING
HUDSON RIVER

SED-32	
Sample Depth (Feet)	Total PAH Conc. (ppm)
0.0-0.5'	222
0.5-1.0'	550
1.0-2.0'	476

SED-15	
Sample Depth (Feet)	Total PAH Conc. (ppm)
0.0-0.5'	21.3 JB
0.5-1.0'	40.5 J
1.0-2.0'	26.7
2.0-2.6'	6.8 J

SED-46	
Sample Depth (Feet)	Total PAH Conc. (ppm)
0.0-0.5'	30.8 J
0.5-1.0'	13.2
1.0-2.0'	8.0
2.0-3.1'	7.1

0 40' 80'
GRAPHIC SCALE

LEGEND:

- SED-01A SEDIMENT SAMPLE LOCATION
- SE-046 HISTORICAL SEDIMENT SAMPLE
- SED-38 PDI SEDIMENT SAMPLE
- PDI TARGOST PROBE/SOIL BORING LOCATION
- PDI TARGOST CONFIRMATION LOCATION
- PDI GEOTECHNICAL SOIL BORING
- LIGHTPOLE
- CATCH BASIN (CB)
- ELECTRICAL MANHOLE (EMH)
- UTILITY POLE
- WATER ELEVATION AT MEAN HIGH WATER (MHW)
- WATER ELEVATION AT MEAN LOW WATER (MLW)
- CHAIN LINK FENCE
- TREE LINE
- UPLAND TOPOGRAPHY
- BATHYMETRIC TOPOGRAPHY
- 13.0 JB TOTAL PAH CONCENTRATION (PARTS PER MILLION)
- SAMPLE TESTED FOR TOXICITY-SIGNIFICANT REDUCTION IN HYAELLA AZTECA OR CHIRONOMUS DILUTUS
- SAMPLE TESTED FOR TOXICITY-NO SIGNIFICANT REDUCTION IN HYAELLA AZTECA OR CHIRONOMUS DILUTUS WAS NOTED
- TOTAL PAH CONCENTRATION IN SAMPLE LESS THAN 20.0 ppm
- SAMPLE IDENTIFIED BY THE NYSDEC AS TOXIC
- SANITARY MANHOLE
- CHAIN LINK FENCE
- FENCE GATE

NOTES:

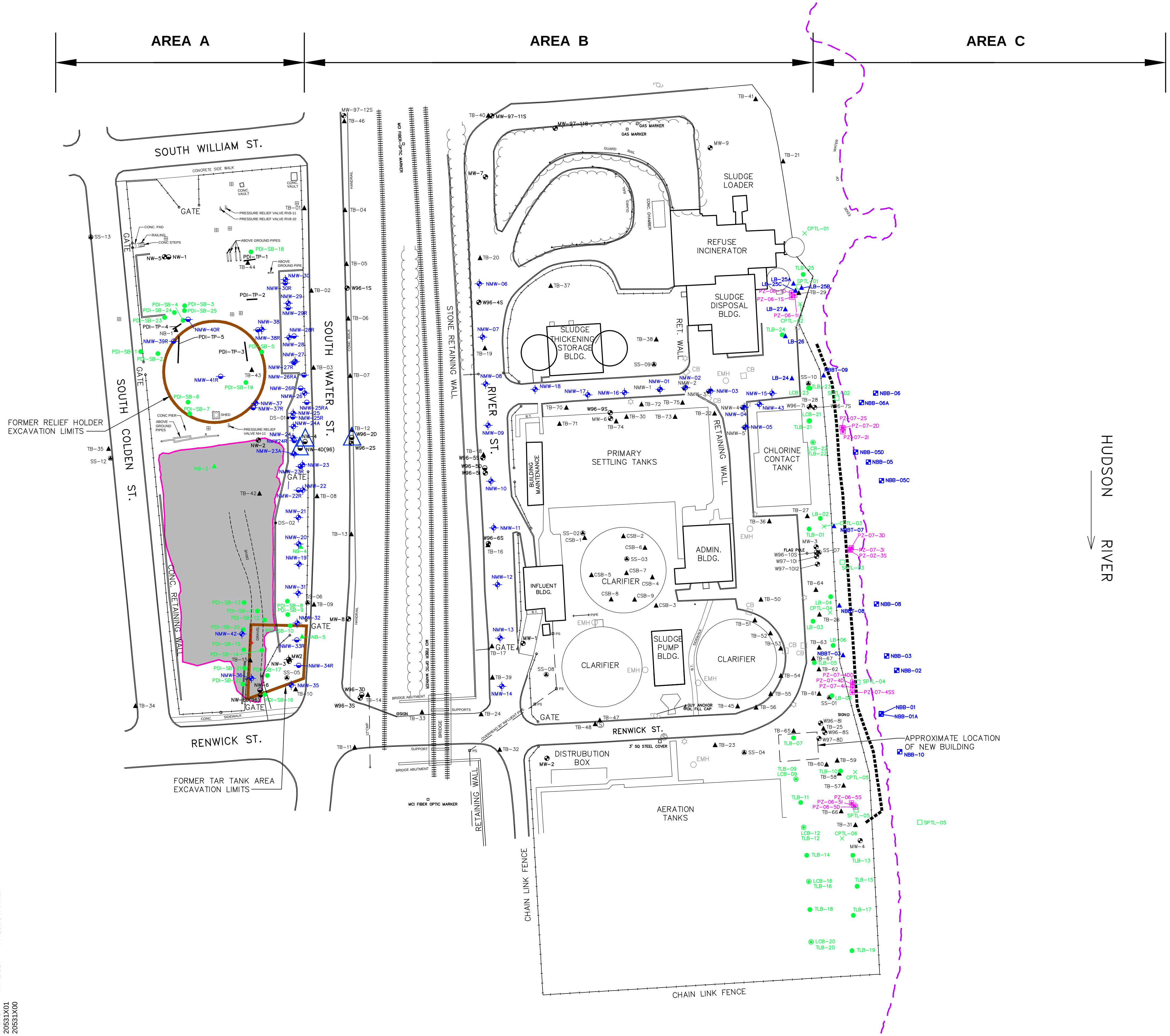
1. BASE MAP DEVELOPED FROM SITE SURVEY CONDUCTED BY BLASLAND, BOUCK AND LEE, INC. BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS, LOCATIONS CONSIDERED APPROXIMATE. UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. PRE-DESIGN SAMPLING LOCATIONS SURVEYED BY ARCADIS BBL AND ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83), NEW YORK EAST ZONE.
3. *-INDICATES A PAH RESULT FROM THE RETEC GROUP'S ANALYTICAL LABORATORY.
4. B-INDICATES THAT THE COMPOUND WAS DETECTED IN THE SAMPLE AS WELL AS THE ASSOCIATED LABORATORY BLANK.
5. D-INDICATES THAT THE PRESENTED RESULT IS BASED ON THE ANALYSIS OF A DILUTED SAMPLE.
6. BATHYMETRIC SURVEY COMPLETED BY OCEAN SURVEY. INC. ON OCTOBER 9-11, 2007. BATHYMETRIC SURVEY CONTOURS OBTAINED FROM OCEAN SURVEY'S MAP ENTITLED "CONTOURED SHADED RELIEF MAP-CENTRAL HUDSON GAS AND ELECTRIC NEWBURGH SITE-HUDSON RIVER, NEWBURGH, NEW YORK", DATED OCTOBER 31, 2007.
7. GRID SYSTEM FOR BATHYMETRY IS IN US SURVEY FEET RELATIVE TO THE NEW YORK STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD83.
8. ALL ELEVATIONS ARE IN FEET AND ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29) WITH ONE-FOOT CONTOUR INTERVALS.
9. IMPACTS NOTED ARE BASED ON OBSERVATIONS/RESULTS AT THE TIME OF BORING/SAMPLE COLLECTION.

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

PREVIOUS INVESTIGATION LOCATIONS, PAH DATA AND TOXICITY RESULTS (AREA C)

ARCADIS Design & Consultancy for natural and built assets

FIGURE
9



LEGEND:

- 2007 EXCAVATION LIMITS
- COLLECTION TRENCH
- 2015 EXCAVATION LIMITS (SEE NOTE 3)
- 2008 PDI LAND BORING
- 2008 PDI SHALLOW WATER BORING
- HISTORICAL SOIL BORING
- HISTORICAL SURFACE SOIL SAMPLE
- HISTORICAL MONITORING WELL (OVERBURDEN)
- PDI PIEZOMETER LOCATION
- PDI TARGOST PROBE/SOIL BORING LOCATION
- PDI TARGOST CONFIRMATION LOCATION
- PDI GEOTECHNICAL SOIL BORING
- OVERBURDEN NAPL COLLECTION WELL
- SANITARY MANHOLE
- CHAIN LINK FENCE
- FENCE GATE
- LIGHTPOLE
- CATCH BASIN (CB)
- ELECTRICAL MANHOLE (EMH)
- UTILITY POLE
- WATER ELEVATION AT MEAN LOW WATER (MLW)
- CHAIN LINK FENCE
- TREE LINE
- EXISTING GAS VALVE

NOTES:

1. TOPOGRAPHIC SURVEY WAS PERFORMED IN THE FIELD BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS SOME TOPOGRAPHIC AND PLANIMETRIC FEATURES MAY NOT HAVE BEEN LOCATED AND/OR MAY BE APPROXIMATE. UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
3. EXTENT OF 2007 EXCAVATIONS BASED ON INFORMATION PRESENTED IN FIGURES 5 AND 6 OF THE 2008 CONSTRUCTION COMPLETION REPORT FOR AREA A (EARTH TECH 2008).
4. HORIZONTAL EXTENTS OF 2015 EXCAVATION LIMITS BASED ON RECORD SURVEY DRAWING BY DARRAH LAND SURVEYING, PLLC TITLED "MAP OF POST–EXCAVATION CONDITIONS (DRAWING NO. 15063–3) AND DATED FEBRUARY 2, 2016.

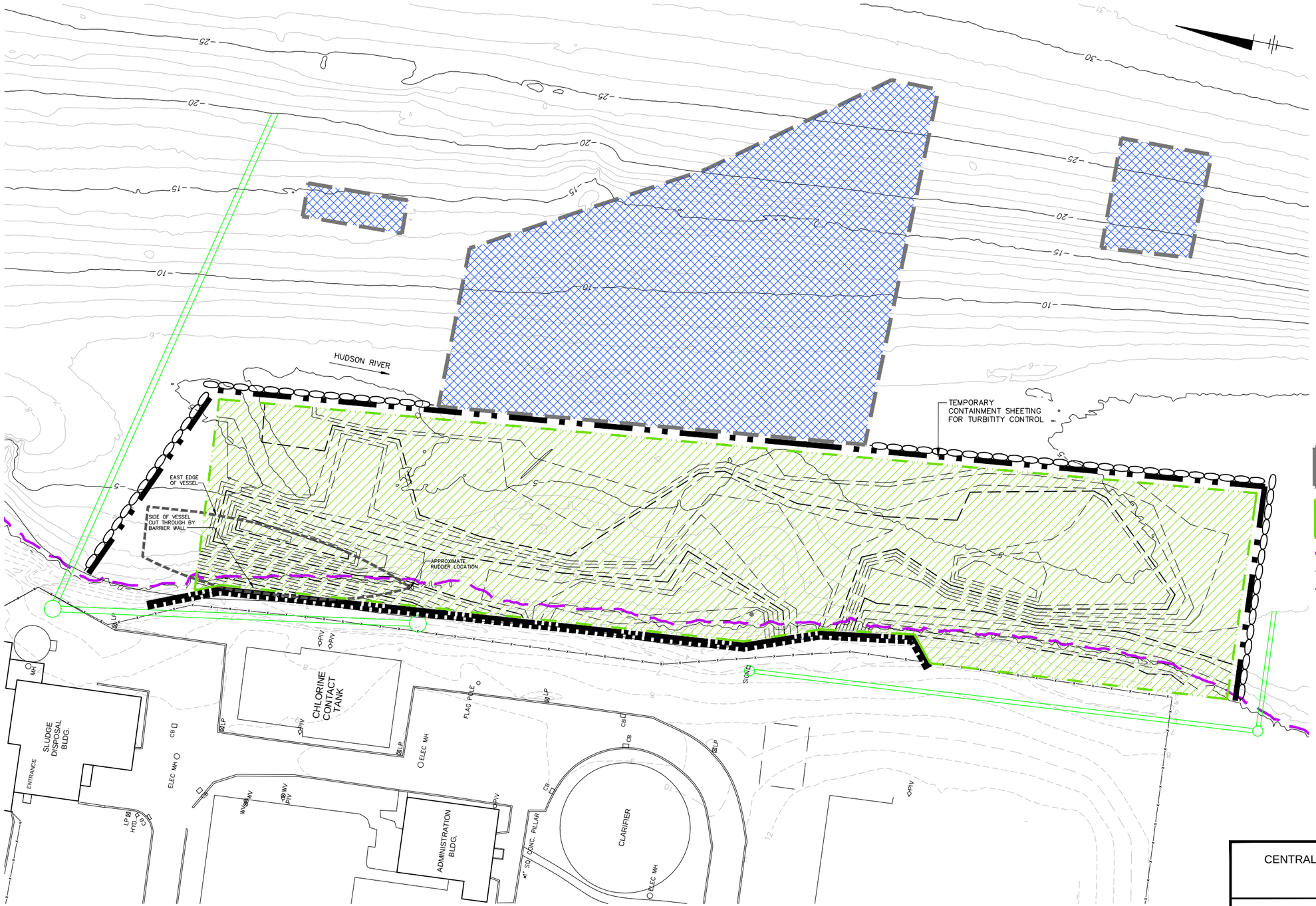
0 50' 100'
GRAPHIC SCALE

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

EXTENT OF SOIL EXCAVATION PERFORMED (AREAS A & B)

ARCADIS Design & Consultancy for natural and built assets

FIGURE
10



NOTES:

1. TOPOGRAPHIC SURVEY WAS PERFORMED IN THE FIELD BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS SOME TOPOGRAPHIC AND PLANIMETRIC FEATURES MAY NOT HAVE BEEN LOCATED AND/OR MAY BE APPROXIMATE.
2. ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
3. AN AVERAGE OF 2-FEET OF SEDIMENT WAS DREDGED WITHIN THE PAH-AREA.

LEGEND:

- PAH-AREA REMOVAL LIMITS
- NAPL-AREA REMOVAL LIMITS
- WATER ELEVATION AT MEAN LOW WATER (MLW)
- DREDGE DESIGN PRISM (1FT)
- DREDGE DESIGN PRISM (5FT)

0 30' 60'
GRAPHIC SCALE

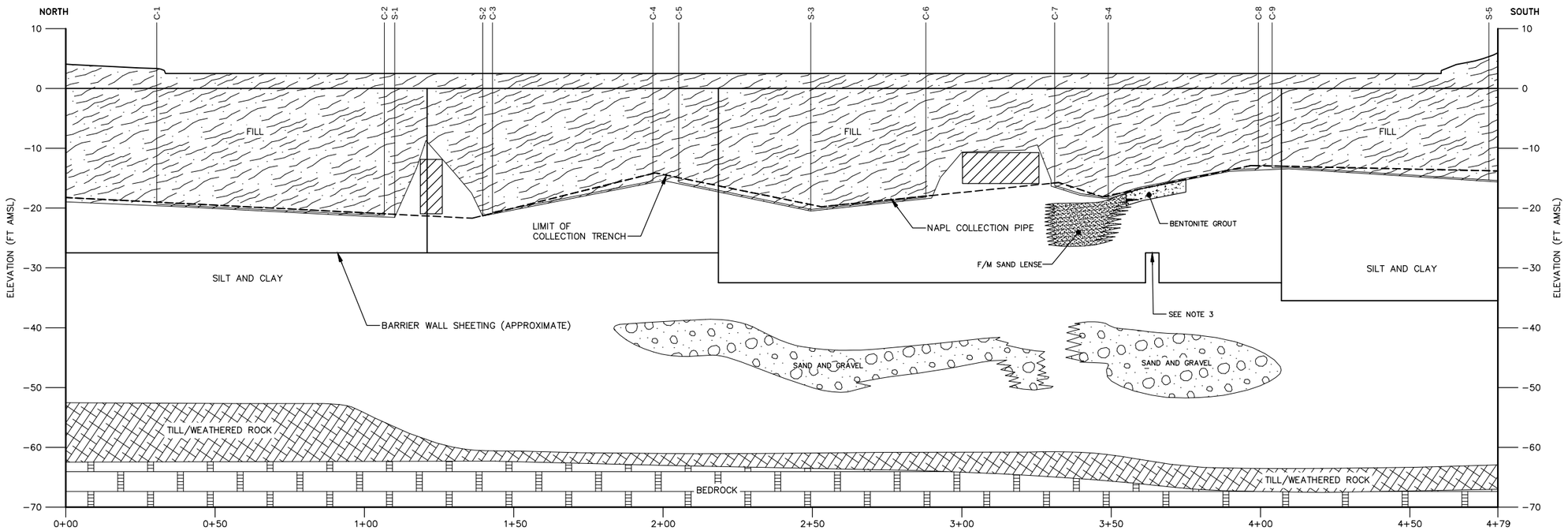
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

SEDIMENT REMOVAL (AREA C)

ARCADIS Design & Consultancy for natural and built assets

FIGURE
11

CITY:SYRACUSE, N.Y. DIV/GROUP:ENVCAD-141 DB:LAF KLS R.ALLEN LD:LAF PM:L.KETCHUM TM:L.RAZAWICH LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB\02053110003\00005\DWG\SMP\20531B11.dwg LAYOUT: 11 SAVED: 3/8/2016 1:56 PM ACADVER: 19.1S (LMS TECH)
PROJECTNAME: ----
IMAGES:
XREFS:
20531X01
20531X00
20531X02
20531X03
20531X10
PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/8/2016 1:58 PM BY: ALLEN, ROYCE



BARRIER WALL AND COLLECTION TRENCH PROFILE

VERTICAL SCALE 1"=10' (10' 0 10' 20')

HORIZONTAL SCALE 1"=20' (20' 0' 20' 40')

LEGEND:

- TRENCH BOTTOM
- SUMPS
- COLLECTION PIPE
- DESIGN COLLECTION TRENCH LIMITS
- S–1 SUMP (TYP.)
- C–1 CLEANOUT (TYP.)
- OBSTRUCTIONS

NOTES:

1. ALL LOCATIONS ARE APPROXIMATE. BARRIER WALL KING PILES NOT SHOWN FOR CLARITY; SEE RECORD DRAWINGS FOR BARRIER WALL DETAILS.
2. COLLECTION TRENCH PROFILE FROM INFORMATION PROVIDED BY GEO–SOLUTIONS INC.
3. ONE SHEET PAIR WAS NOT ABLE TO BE INSTALLED TO DESIGN TIP ELEVATION; BENTONITE GROUT WAS INSTALLED IMMEDIATELY UPGRADIANT (WEST) OF THE BARRIER WALL BELOW THE COLLECTION TRENCH TO ADDRESS CONCERNS WITH THE PROXIMITY TO THE SAND LENSE. ADDITIONALLY, A NAPL MONITORING WELL (NMW–46) WAS INSTALLED TO THE WEST OF THE COLLECTION TRENCH TO MONITOR NAPL IN THIS AREA.

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

BARRIER WALL AND COLLECTION TRENCH PROFILE

ARCADIS Design & Consultancy for natural and built assets

FIGURE
12

CITY: SYRACUSE-NY DIV/GROUP: ENV/CAD DB: GHS, KLS, R. ALLEN LD:GHS PIC:N. GENSKY PM:A. WEEKS TM:E. DIEVENDORF LYR:ON=*;OFF=*REF*
G:\ENV\CAD\SYRACUSE\ACTIB\0020531\0003\00005\DWG\SMP\20531B12.dwg LAYOUT: 12 SAVED: 3/8/2016 2:27 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTCONT1.CTB PLOTTED: 3/8/2016 2:29 PM BY: ALLEN, ROYCE

NOTES:

1. BASE MAP DEVELOPED FROM SITE SURVEY CONDUCTED BY BLASLAND, BOUCK AND LEE, INC. BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS, LOCATIONS CONSIDERED APPROXIMATE. UPDATES TO AREA A BASE MAP BASED ON FEBRUARY 2015 SURVEY BY CHAZEN COMPANIES AND JANUARY 2016 SURVEY BY DARRAH LAND SURVEYING, PLLC.
2. MGP STRUCTURES MAY BE APPROXIMATE.
3. ALL SUMP AND CLEANOUT LOCATIONS ARE APPROXIMATE.
4. DECOMMISSIONED WELLS ARE NOT SHOWN FOR CLARITY.
5. FLOOD ELEVATIONS TAKEN FROM FEMA FLOOD INSURANCE RATE MAP NUMBER 36071C0332E.

LEGEND:

- WATER ELEVATION AT MEAN LOW WATER (MLW)
- 100 YEAR FLOOD ELEVATION
- 500 YEAR FLOOD ELEVATION
- BARRIER WALL
- COLLECTION TRENCH
- COLLECTION TRENCH SUMP
- COLLECTION TRENCH CLEANOUT
- CHAIN LINK FENCE
- TREE LINE
- EXISTING GAS VALVE
- OVERBURDEN NAPL COLLECTION WELL
- BEDROCK NAPL COLLECTION WELL
- 2013 OVERBURDEN NAPL COLLECTION WELL
- 2013 BEDROCK NAPL COLLECTION WELL
- 2016 OVERBURDEN NAPL COLLECTION WELL

0 50' 100'
GRAPHIC SCALE

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH, NEW YORK
SITE MANAGEMENT PLAN

NAPL COLLECTION SYSTEM

ARCADIS Design & Consultancy for natural and built assets

FIGURE
13

CITY:SYRACUSE, N.Y. DIV/GROUP:ENVCAD-141 DB:LAF KLS R.ALLEN LD:LAF PM:L.KETCHUM TM:L.RAZAWICH LYR:(On)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB\00205311\00030\0005\DWG\SMP\205311B13.dwg LAYOUT: 13 SAVED: 3/8/2016 3:22 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/8/2016 3:22 PM BY: ALLEN, ROYCE
XREFS: IMAGES: PROJECTNAME: ----
205311X01 36071C0332E.png
205311X00

APPENDIX A

Area A Environmental Easement

BOND SCHOENECK & KING

Avant Building - Suite 900 | 200 Delaware Avenue | Buffalo, NY 14202-2107 | **bsk.com**

STEVEN J. RICCA
sricca@bsk.com
P: 716.416.7047
F: 716.416.7347

March 31, 2017

VIA CERTIFIED MAIL, RETURN RECEIPT REQUESTED AND E-MAIL [ANDREW.GUGLIELMI@DEC.NY.GOV; ELIZABETH.LUKOWSKI@DEC.NY.GOV]

Certified Article Number
9414 7266 9904 2092 7690 20
SENDERS RECORD

Andrew Guglielmi, Esq.
Section Chief A
Bureau of Remediation
New York State Department of Environmental Conservation
625 Broadway, 14th Floor
Albany, NY 12233-1500

Certified Article Number
9414 7266 9904 2092 7690 13
SENDERS RECORD

Ms. Elizabeth Lukowski
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7014

RE: Proof of Recording & Service of Environmental Easement
By Central Hudson Gas & Electric Corporation for
Former Newburgh MGP Site
Tax Parcel Section 46, Block 4, Lot 1. / DEC Site No. #336042

Dear Mr. Guglielmi and Ms. Lukowski:

Enclosed please find copies of the following:

1. March 31, 2017 Notice of Environmental Easement regarding Tax Parcel Section 46, Block 4, Lot 1, as served via Certified Mail Return Receipt Requested with the Environmental Easement described in item 2, below.

2. Environmental Easement concerning Tax Parcel Section 46, Block 4, Lot 1 as executed by Central Hudson Gas & Electric Corporation and the New York State Department of Environmental Conservation and recorded in in the Orange County Clerk's office on March 27, 2017 as Instrument

#20170021579 at Liber 14206, Page 778, with accompanying Orange County Clerk's recording receipt dated march 27, 2017.

3. Affidavit of Service of the above Notice of Environmental Easement by Certified Mail, Return Receipt Requested (original version to Andrew Guglielmi only).

If any additional information is required, please let me know. Thank you.

Very truly yours,

BOND, SCHOENECK & KING, PLLC

Steven J. Ricca

SJR

cc (w/ enc., via e-mail)

Wayne J. Mancroni [wmancroni@cenhud.com]
Mark L. McClean [mmclean@cenhud.com]
Jesse N. Gallo [jgallo@cenhud.com]

BOND SCHOENECK & KING

Avant Building - Suite 900 | 200 Delaware Avenue | Buffalo, NY 14202-2107 | **bsk.com**

STEVEN J. RICCA
sricca@bsk.com
P: 716.416.7047
F: 716.416.7347

March 31, 2017

VIA CERTIFIED MAIL, RETURN RECEIPT REQUESTED

Hon. Judy Kennedy
Mayor
City of Newburgh
City Hall, Second Floor
83 Broadway
Newburgh, NY 12550

Certified Article Number
9414 7266 9904 2092 7693 89
SENDERS RECORD

Michael G. Ciaravino
City Manager
City of Newburgh
City Hall, Second Floor
83 Broadway
Newburgh, NY 12550

Certified Article Number
9414 7266 9904 2092 7690 37
SENDERS RECORD

RE: Notice of Environmental Easement
Granted to the People of the State of New York
by Central Hudson Gas & Electric Corporation
Affecting South Water Street Property, City of Newburgh
Tax Parcel Section 46, Block 4, Lot 1. / DEC Site No. #336042

Dear Mayor Kennedy and Mr. Ciaravino:

Attached please find a copy of an environmental easement granted to the New York State Department of Environmental Conservation ("DEC" or the "Department") on [date] by Central Hudson Gas & Electric Corporation for property at South Water Street, City of Newburgh, Orange County, Tax Parcel Section 46, Block 4, Lot 1, DEC Site No. 336042 (the "Environmental Easement"). The Environmental Easement was recorded in the Orange County Clerk's office on March 27, 2017 as Instrument #20170021579 at Liber 14206, Page 778.

This Environmental Easement restricts future use of the above referenced property to commercial use as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv). Any on-site activity must be done in accordance with the Environmental Easement and the Site Management Plan which is

incorporated into the Environmental Easement. Department approval is also required prior to any groundwater use.

Article 71, Section 71 3607 of the New York State Environmental Conservation Law requires that:

1. Whenever the Department is granted an environmental easement, it shall provide each affected local government with a copy of such easement and shall also provide a copy of any documents modifying or terminating such environmental easement.

2. Whenever an affected local government receives an application for a building permit or any other application affecting land use or development of land that is subject to an environmental easement and that may relate to or impact such easement, the affected local government shall notify the Department and refer such application to the Department. The Department shall evaluate whether the application is consistent with the environmental easement and shall notify the affected local government of its determination in a timely fashion, considering the time frame for the local government's review of the application. The affected local government shall not approve the application until it receives approval from the department.

An electronic version of every environmental easement that has been accepted by this Department is available to the public at: http://www.dec.ny.gov/chemical/36045.html. If you have any questions or comments regarding this matter, please do not hesitate to contact me.

Very truly yours,

BOND, SCHOENECK & KING, PLLC

Steven J. Ricca

SJR

cc: (w/ enc., via e-mail)

Wayne J. Mancroni [wmancroni@cenhud.com]
Mark L. McClean [mmclean@cenhud.com]
Jesse N. Gallo [jgallo@cenhud.com]

ORANGE COUNTY CLERK

ANN G. RABBITT

Receipt

Receipt Date: 03/27/2017 03:43:09 PM
RECEIPT # 2292503

Recording Clerk: CH
Cash Drawer: CASH29
Rec'd Frm: BOND SCHOENECK & KING

Instr#: 20170021579 Bk/Pg: 14206/778
DOC: RIGHT OF WAY (R)
DEED STAMP: 7628
OR Party: CENTRAL HUDSON GAS & ELECTRIC CORP
EE Party: PEOPLE OF STATE OF NY

Recording Fees	$95.00
Transfer Tax	$0.00
DOCUMENT TOTAL: ---->	$95.00

Receipt Summary

TOTAL RECEIPT: ---->	$95.00
TOTAL RECEIVED: ---->	$95.00
CASH BACK: ---->	$0.00

PAYMENTS
Check # 7413 -> $95.00
BOND SCHOENECK & KING

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 3RD day of MARCH, 2017, between Owner(s) Central Hudson Gas & Electric Corporation, having an office at 284 South Road, Poughkeepsie, New York 12601, County of Dutchess, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 4 Renwick Street in the City of Newburgh, County of Orange and State of New York, known and designated on the tax map of the County Clerk of Orange as tax map parcel numbers: Section 46 Block 4 Lot 1, being the same as that property conveyed to Grantor by deeds dated January 11, 1901 and November 24, 1928 and recorded in the Orange County Clerk's Office in Liber and Page 451/67 and 693/323, respectively. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 1.770 +/- acres, and is hereinafter more fully described in the Land Title Survey dated April 4, 2016 and last revised May 31, 2016 prepared by Steven J. Alex, L.L.S. of Chazen Engineering, Land Surveying & Landscape Architecture Co., D.P.C., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation

established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent Index Number: D3-0001-95-06, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, 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 Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Orange County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining

contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property 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.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: 336042
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Central Hudson Gas & Electric Corporation:

By: Christopher Capone

Print Name: CHRISTOPHER CAPONE

Title: CFO Date: 2-8-17

Grantor's Acknowledgment

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

On the 8th day of February, in the year 2017, before me, the undersigned, personally appeared Christopher M Capone personally known to me or proved to me on the basis of satisfactory evidence to be the individual(~~s~~) whose name is (~~are~~) subscribed to the within instrument and acknowledged to me that he/she~~/they~~ executed the same in his/~~her/their~~ capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument, the individual(~~s~~), or the person upon behalf of which the individual(~~s~~) acted, executed the instrument.

Donna M. Giametta
Notary Public - State of New York

DONNA M. GIAMETTA
Notary Public, State of New York
No. 01GI5067398
Qualified In Ulster County
Commission Expires Oct. 15, 2018

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner.

By: _____
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

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

On the 3rd day of March, in the year 2017, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2018

SCHEDULE "A" PROPERTY DESCRIPTION

SURVEYORS PROPERTY DESCRIPTION
TAX PARCEL SECTION 46, BLOCK 4, LOT 1

ALL that plot, piece or parcel of land situate and being in the City of Newburgh, State of New York bounded and described as follows:

BEGINNING at a concrete monument found at the intersection of the southerly side of South William Street and the easterly side of South Colden Street, said point being the northwesterly corner of the herein described parcel; thence along the southerly side of South William Street, S 84°20'11" E, 169.59 feet to the northeasterly corner of the herein described parcel, said point being at the intersection of the southerly side of South William Street and the westerly side of South Water Street; thence along the westerly side of South Water Street, S 09°20'49" W, 276.52 feet, S 11°35'49" W, 153.54 feet and S 15°44'19" W, 74.19 feet to the point of curvature of a curve to the right having a radius of 24.00 feet; thence along said curve an arc length of 34.20 feet to the point of tangency on the northerly side of Renwick Street, said curve having a chord bearing S 56°33'34" W, 31.38 feet; thence along the northerly side of Renwick Street, N 82°37'11" W, 95.34 feet to a point at the intersection of the northerly side of Renwick Street and the easterly side of South Colden Street; thence along the easterly side of South Colden Street, N 05°17'48" E, 518.65 feet to the point or place of beginning.

CONTAINING 1.770 ACRES OF LAND MORE OR LESS.

APRIL 4, 2016
REVISED MAY 16, 2016

AFFIDAVIT OF SERVICE BY CERTIFIED MAIL

STATE OF NEW YORK)
COUNTY OF ERIE) SS:
CITY OF BUFFALO)

STEVEN J. RICCA, being duly sworn, deposes and says:

That deponent is not a party to the action, and is over the age of 18.

That on the 31st day of March, 2017, deponent served a true copy of the Environmental Easement and accompanying Notice of Environmental Easement on the persons whose name and address appear on the attached Schedule "A" by depositing a true copy of same enclosed in a postpaid properly addressed wrapper in an official postal depository at 200 DELAWARE AVENUE, BUFFALO, NEW YORK, under the care and custody of the United States Post Office Department within the State of New York.

Steven J. Ricca

Sworn to before me this 31st day of March, 2017.

NOTARY PUBLIC

HEATH J. SZYMCZAK
NOTARY PUBLIC, State of New York
Qualified in Wyoming county
Commission Expires July 30th 20 17

SCHEDULE A

Hon. Judy Kennedy
Mayor
City of Newburgh
City Hall, Second Floor
83 Broadway
Newburgh, NY 12550

Michael G. Ciaravino
City Manager
City of Newburgh
City Hall, Second Floor
83 Broadway
Newburgh, NY 12550

APPENDIX B

SMP for CSX Property

November 21, 2008

Ms. Elizabeth Lukowski
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, NY 12233-7014

Re: Central Hudson Gas & Electric Corporation
Former MGP Site, Newburgh, New York
NYSDEC Site No. 3-36-042

Dear Ms. Lukowski:

Please see the attached revised Site Management Plan (SMP) for the CSX Right-of-Way that addresses comments set forth in the New York State Department of Environmental Conservation (NYSDEC) letter dated November 13, 2008 letter.

As we discussed on November 14, 2008, references to TAGM 4046 were not changed where previous investigation data are discussed in the SMP. However for assessing future soil data, references to TAGM 4046 were replaced with DER-10 as requested by NYSDEC.

Please let me know if you have any questions. I can be reached at (845) 486-5534 or wmancroni@cenhud.com.

Sincerely,

(for)
Wayne Mancroni
Senior Environmental Research & Technology Specialist

ec: Adam Etringer, Central Hudson
Tera Stoner, Central Hudson
Dennis Harkawik, Jaeckle Fleischmann
Nancy Gensky, ARCADIS
Doug Weeks, ARCADIS
Robert Schick, NYSDEC
Gardiner Cross, NYSDEC
Lisa Gorton, NYSDEC

284 South Avenue
Poughkeepsie, NY 12601
(845) 452-2000
www.cenhud.com

ARCADIS
Infrastructure, environment, facilities

Imagine the result

Central Hudson Gas & Electric Corporation
Newburgh, New York

Site Management Plan
CSX Right-of-Way

November 2008

Table of Contents

Tables

Figures

Appendices

1. Introduction

1.1 Scope and Objectives of the SMP

This Site Management Plan (SMP) governs the CSX Transportation, Inc. (CSX) railroad right-of-way (the SMP Area) located immediately east of the Central Hudson Gas & Electric Corporation (CHGE) Newburgh former manufactured gas plant (MGP) site in Newburgh, New York. The geographic location of the site is shown on Figure 1. The CSX right-of-way is bordered by South William Street to the north, Renwick Street to the south, River Street to the east, and South Water Street to the west. The former MGP site and SMP Area are shown on Figure 2.

The purpose of this SMP is to:

- Identify the locations where constituents of interest have been identified and remain in the soil and groundwater at the SMP Area at concentrations above relevant standards, criteria, or guidance values;
- Establish requirements for the management of the existing soil material within the SMP Area that may be disturbed during future activities; and
- Establish notification and reporting requirements for future activities.

This requirements presented in this plan shall be followed for any excavation activities conducted within the SMP Area at a depth of more than six (6) feet below ground surface level. This SMP has been approved by the New York State Department of Environmental Conservation (NYSDEC). A copy of the NYSDEC's approval letter is included in Appendix B. Revisions to the SMP may be proposed based on future changes to site conditions or regulatory changes. Any revisions will be subject to NYSDEC approval. Notice of the SMP will be provided in the deed to make clear that obligations under this SMP will pass from owner to each subsequent owner upon any transfer to title.

1.2 Site History

As indicated above, the SMP Area is located immediately east of the CHGE former MGP. The MGP was constructed in 1876. Between 1878 and 1911, the MGP was operated by various companies, including the Consumer Gas Company of Newburgh, New York, the Newburgh Gaslight Company, and the Newburgh Light, Heat & Power Company. In 1911, the Newburgh Light, Heat & Power Company became the Central Hudson Gas & Electric Company. In 1926, the Central Hudson Gas & Electric Company consolidated with other utilities to form CHGE.

Gas was produced at the Newburgh MGP via the water gas method and carbureted water gas methods. From 1931 to 1948, the MGP was used as a gas storage and distribution center and for reserve gas production. In 1951, CHGE demolished the MGP, which included the decommissioning of buildings, gas holders, and oil tanks. Since demolition of the former MGP, CHGE has operated a natural gas regulator station and natural gas

transmission interconnect at the former MGP site. In 1985, CHGE constructed a propane peaking plant in the southern portion of the site.

The SMP Area has been occupied by railroad lines since the mid 1800s. These railroads have been operated by various entities including: New York Railroad, Erie Railroad, New York West Shore & Buffalo Railroad, New York Lake Erie & Western Railroad, Erie Lackawanna Railroad, the New York Central Railroad, and CSX.

1.3 Plan Organization

This SMP is organized into the following sections:

Section	Purpose
Section 1 – Introduction	Presents a brief overview of the SMP and relevant background information.
Section 2 – Nature and Extent of Constituents of Interest	Summarizes previous investigation activities and discusses the current nature and extent of constituents of interest in soil and groundwater within the SMP Area.
Section 3 – Contemplated Use	Identifies potential future use of the SMP Area.
Section 4 – Proposed Remedial Activities for the Former MGP	Summarizes the proposed remedial activities for the former MGP.
Section 5 – Requirements during Future Intrusive Activities on CSX Property	Establishes requirements for the management of soil material within the SMP Area that may be disturbed during future activities.
Section 6 – Notification and Reporting	Establishes notification and reporting requirements for the SMP Area.

2. Nature and Extent of Constituents of Interest

2.1 General

This section presents a brief overview of previous site investigations and remedial activities completed to evaluate and address onsite conditions. This section also discusses the nature and extent of constituents of interest that will remain within the CSX right-of-way following the remedial activities to be conducted within the former MGP area.

2.2 Previous Investigations and Remedial Activities

Several investigations have been conducted for the former MGP site and surrounding environs (the project area). Previous investigations completed for the former MGP and the project area have been documented in the following reports:

- *Phase I Investigation, Newburgh Coal Gasification Plant Site*, EA Science and Technology, 1987;
- *Phase II Investigation Report for the Former Coal Gasification Plant Site*, Blasland & Bouck Engineers, P.C., 1989;
- *Initial Subsurface Investigation at Newburgh, New York, Sewage Treatment Facility*, First Environment, 1994; and
- *Soil Assessment Report, Proposed Clarifier Area, City of Newburgh Sewage Treatment Plant*, Blasland, Bouck & Lee, Inc. (BBL), 1996.

A comprehensive Remedial Investigation (RI) was completed from 1996 to 1999 and consisted of the following investigation activities:

- Project area survey;
- Source investigation;
- Geologic investigation;
- Hydrogeologic investigation;
- Subsurface utility investigation;
- Drain investigation;
- Hudson River investigation; and
- Air investigation.

Investigation activities and results were documented in the *Newburgh Project Remedial Investigation Report* prepared in 1997 (revised 1999) by BBL. Following the approval of the RI Report, post-RI activities were conducted, including:

- Supplemental Hudson River investigation;
- Supplemental Non-Aqueous Phase Liquid (NAPL) investigation; and
- Evaluation of ex-situ bioremediation and chemical oxidation treatment technologies.

Supplemental investigations results are provided in the *Revised FS Report, Newburgh Project* (FS Report) prepared by BBL in October 2003 (BBL, 2003)

BBL conducted two risk assessments for the former MGP and project area in 2001. Risk assessment findings were documented in the following reports:

- *Baseline Human Health Risk Assessment, Newburgh Project*, BBL, 2001; and
- *Newburgh Project Ecological Assessment*, BBL, 2001.

In 1998 and 1999, an interim remedial measure (IRM) was completed to facilitate construction of a clarifier at the sewage treatment plant. IRM activities included excavation and offsite treatment/disposal of soil, and the removal and treatment of groundwater from the excavations. A detailed description of the IRM activities is presented in the *Remedial Action Report for the Interim Remedial Measure* prepared in 1999 by Langan Engineering and Environmental Services, P.C.

A pre-design investigation (PDI) was also conducted at the former MGP site to provide additional site information to facilitate the remedial design. Pre-design activities included additional soil and groundwater characterization as well as characterization of materials to determine potential waste disposal requirements. The pre-design investigation results are provided in the *Area A Pre-Design Investigation Data Summary Report*, BBL, 2006.

2.3 Nature and Extent of Constituents of Interest

This section presents a summary of the nature and extent of constituents of interest in soil and groundwater, as well as, observations of NAPL during previous investigations and RI activities within the CSX right-of-way. The nature and extent of constituents of interest within the SMP Area have been characterized by nine soil test borings and seven overburden/bedrock monitoring wells along the eastern side of South Water Street and adjacent to the lower rail line. RI and post-RI sample locations are shown on Figure 3. Constituent concentrations in subsurface soils and groundwater are compared to NYSDEC Technical and Administrative Guidance Memorandum 4046 (TAGM 4046) titled, *Determination of Soil Cleanup Objectives and Cleanup Level* (January 24, 1994) and NYSDEC Class GA Standards/Guidance Values from NYSDEC document entitled, *Division of Water, Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (TOGS 1.1.1, reissued June 1998 with amendments in April 2000), respectively.

2.3.1 NAPL Characterization

Sample locations where NAPL was observed within the CSX property during RI activities are summarized in the table below.

Sample Location	Observation	Depth Interval (feet)	Stratigraphic Placement
MW-8	Brown oily product Heavy black tar product	11.8-13 17.6-19	Within sandy silt Within silt/gravel above till
Test Boring TB-05	red/brown oily material	19.5 – 20	Above bedrock
Test Boring TB-06	yellow/brown oily material dark brown oily material	12 – 14 18	Within sand/silt/clay Within silt, above till /bedrock
Testing Boring TB-14 (Overburden Well W96-3S)	oily material and sheen	12 – 14.3	Within sand and gravel, above bedrock

Sample Location	Observation	Depth Interval (feet)	Stratigraphic Placement
Bedrock Well W96-2D	NAPL was recovered from the bedrock well	---	Within bedrock

Additionally, a sheen was observed at a depth of 14 to 16 feet below ground level in soil collected from test boring TB-07.

A summary of the results for the analytical laboratory testing for NAPL collected from bedrock monitoring well W96-2D are presented in Tables 1 through 3 (volatile organic compounds [VOCs], semi-volatile organic compounds [SVOCs], and inorganic constituents, respectively). Constituents detected in the NAPL include benzene, toluene, ethylbenzene, and xylenes (BTEX) and polycyclic aromatic hydrocarbon (PAH) compounds.

2.3.2 Soil Characterization

Soil test boring samples were collect in July and August 1996 and May 1997. Select soils from test borings were submitted for laboratory analysis based on the absence/presence of visual impacts (i.e., NAPL, staining, sheens, etc.). Results for laboratory analysis for the soil samples collected from test borings TB-05, TB-06, TB-12, TB-14, TB-33, and TB-46 are presented in Tables 4 through 6 (VOCs, SVOCs, and inorganics, respectively). Soil samples did not contain BTEX compounds at concentrations greater than NYSDEC TAGM 4046 soil guidance values. SVOCs detected at concentrations greater than NYSDEC TAGM 4046 soil guidance values include PAHs.

For most inorganics, TAGM 4046 provides a "default" recommended soil guidance values, but also allows the use of typical or "site" background concentrations in lieu of the default value. It is important to note that background levels of a number of inorganics are often higher in industrial settings (e.g., the SMP Area). In general, subsurface soils contained inorganic compounds at concentrations below or slightly above background concentrations established during the RI.

2.3.3 Groundwater Characterization

Groundwater samples were collected from overburden and bedrock wells during two samples events: August 1996 and June 1997. Results for laboratory analysis for the groundwater samples collected from overburden monitoring wells MW-8, W96-1S, W96-2S, W96-3S, and W97-12S and bedrock monitoring well W96-3D are presented in Tables 7 through 9 (VOCs, SVOCs, and inorganics, respectively). VOCs and SVOCs detected in groundwater at concentrations greater than TOGS 1.1.1 criteria include BTEX, styrene, PAHs and phenol. Inorganic constituents detected in groundwater at concentrations greater than TOGS 1.1.1 criteria include arsenic, iron, magnesium, manganese, and sodium.

3. Contemplated Use

Under foreseeable circumstances, the SMP Area will continue to be operated by CSX as a railroad right-of-way. No remedial activities are currently planned for the CSX property (i.e., the subject of this SMP).

4. Proposed Remedial Activities for the Former MGP

4.1 General

Based on data obtained from previous site investigations and remedial activities completed at the former MGP, a Feasibility Study (FS) was conducted for the former MGP site to identify and evaluate remedial alternatives that are appropriate for site-specific conditions, protective of human health and the environment, and consistent will applicable lows, regulations, and guidance documents. This section presents a summary of the remedial activities to be conducted for the former MGP.

4.2 Former MGP Site Remedial Activities

As described in the *Revised FS Report, Newburgh Project* (FS Report) prepared by BBL in October 2003 (BBL, 2003) and presented in the *Record of Decision* (NYSDEC, December 2005), the former MGP site remedial activities include the following components:

- Institutional controls;
- Excavation and offsite disposal of NAPL-impacted soil from the southeast corner of the former MGP;
- Excavation and offsite disposal of NAPL-impacted material from within the former relief holder;
- Removal of NAPL from the overburden along South Water Street;
- Removal of NAPL from the bedrock beneath the former relief holder; and
- Development of an SMP.

Implementation of these remedial activities will minimize potential future migration of NAPL from the former MGP site to the CSX right-of-way.

5. Requirements during Future Intrusive Activities on CSX Property

5.1 Scope

This section sets forth the requirements for any intrusive activities conducted more than six (6) feet below mean ground surface level (e.g., utility installation, etc.) within the SMP Area, including requirements for:

- characterizing and managing impacted subsurface soils/fill;
- characterizing subsurface fill or cover layer materials imported from an offsite source;
- providing erosion control and vapor and dust control measures when impacted soils are encountered;
- managing water that accumulates within excavated areas;
- developing a site-specific health and safety plan; and
- collecting and analyzing quality assurance/quality control (QA/QC) samples, as needed.

The ongoing requirements established in this SMP (Sections 5 and 6) apply only to areas where constituents potentially related to the former MGP site remain in subsurface soils or groundwater at concentrations above specified guidance values or criteria in the SMP Area as discussed in Section 3.1. Prior to any intrusive activities in the SMP Area, workers shall be notified of the site conditions with clear instruction regarding how the work is to proceed.

DISCLAIMER: This SMP is not intended to serve as a design document for construction activities at the SMP Area. It is the owner's responsibility to prepare a design(s) that incorporates the requirements set forth in this SMP.

5.2 Subsurface Material Characterization/Management

During intrusive activities in the SMP Area, access to such subsurface soil/fill shall be controlled (via construction fencing, perimeter flagging, barricades, or other means) to mitigate potential direct contact with subgrade materials until an appropriate backfill and/or cover layer (e.g., soil cover, concrete, or asphalt) is restored.

Also, during intrusive activities within the SMP Area, the soil/fill shall be visually characterized for the presence of NAPLs, staining and/or obvious odor. For purposes of this SMP, stained soil is soil that is observed to be discolored, tinted, dyed, unnaturally mottled, or has a sheen. Soil/fill that is excavated from the SMP Area and does not exhibit NAPLs, staining or an obvious odor may be reused onsite as backfill within the SMP Area.

Excavated soil/fill that contains NAPLs shall be considered impacted and stockpiled for off-site disposal. Excavated soil/fill that is visibly stained, or exhibits an obvious odor shall be considered potentially impacted and stockpiled separately from the NAPL-impacted soils for further assessment. Potentially impacted soil/fill shall be placed on polyethylene sheeting in stockpiles not to exceed 100 cubic-yards (CY). The stockpiled NAPL-impacted and potentially impacted soil/fill shall be covered whenever soils are not actively being placed into or removed from the stockpile, during overnight/weekend hours, during periods of precipitation, or whenever vapor or dust action levels are exceeded. This material shall be covered using polyethylene sheeting to reduce potential infiltration of precipitation, migration of vapors and wind-blown dust, and direct contact exposures.

Stockpiled potentially impacted soil/fill shall be sampled and analyzed to evaluate whether the material can be replaced in the SMP Area or must be transported for offsite disposal. One composite sample and one representative discrete sample shall be collected for each 100 CY of potentially impacted soils. Each composite sample shall be formed using individual grab samples collected from five locations within each stockpile (i.e., five discrete grab samples per composite). The composite sample shall be formed by placing equal portions of soil from each of the five discrete grab sampling locations into a pre-cleaned, stainless steel bowl (or dedicated container). The composite sample shall be thoroughly homogenized using a stainless steel scoop or trowel before being transferred into the sample containers provided by the laboratory. The filled sample containers shall be labeled and transported to the analytical laboratory.

Each composite sample shall be submitted to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program- (ELAP-) certified laboratory for analysis for PAHs. In addition, each discrete sample shall be submitted to a NYSDOH ELAP certified laboratory for analysis of BTEX. The sample analytes (i.e. PAHs and BTEX) were selected based on the constituents detected at concentrations greater than NYSDEC TAGM 4046 soil guidance values in previous investigations adjacent to the former MGP site as set forth in Section 2.3. Note that previous investigations used NYSDEC TAGM 4046 soil guidance values to screen and assess soil constituents. In the future, soil clean-up objectives in the final NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation will be used to screen and assess soil data.

Soil/fill that is excavated from the SMP Area and does not exhibit NAPLs, staining or an obvious odor can be used as backfill. In addition, soil/fill that is stained or exhibits odors, is analytically tested as described above, and does not contain BTEX and total PAHs greater than DER-10 soil clean-up objectives can be used as backfill. Excavated soil/fill that is not used for backfill and NAPL-impacted soils shall be transported for offsite disposal at a CHGE-approved treatment/disposal facility(ies) in accordance with applicable rules and regulations. Additional waste characterization analysis may be needed to characterize the material for offsite disposal.

Any intrusive activities within the SMP Area must be documented in a certification report. This report shall certify that the work within the SMP Area and subsequent repair/replacement of an appropriate backfill and cover layer was conducted in a manner consistent with this SMP and applicable regulations. This certification report shall be prepared in accordance with Section 6 of this SMP.

5.3 Imported Subgrade Fill and Cover Material Characterization

In the event fill material is imported from offsite sources to backfill subsurface excavations or provide a cover layer in the SMP Area, imported material shall meet the following criteria:

- Offsite borrow soils shall be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products.

- Offsite borrow soils cannot otherwise be defined as a solid waste in accordance with 6 NYCRR Part 360-1.2(a).

- If an offsite source is designated as “virgin” soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use.

- Virgin soils should be subjected to collection of one representative composite sample and one representative discrete sample per source. The composite sample should be analyzed for target compound list (TCL) SVOCs, polychlorinated biphenyls (PCBs), and pesticides, and target analyte list TAL inorganic constituents (including cyanide). The discrete sample should be analyzed for TCL VOCs. The soil shall be acceptable for use as cover material or subsurface fill provided that no chemical constituents are identified at concentrations above DER-10 soil clean-up objectives. The material shall be acceptable for use as subsurface fill containing constituents at concentrations greater than the DER-10 soil clean-up objectives only with prior approval from NYSDEC.

- Non-virgin soils shall be tested via collection of one composite sample per 500 CY of material from each source area. If more than 1,000 CY of soil are borrowed from a given offsite non-virgin soil source area and both samples of the first 1,000 CY meet appropriate comparison criteria (e.g., NYSDEC DER-10), the sample collection frequency shall be reduced to one composite for every 2,500 CY of additional soils from the same source, up to 5,000 CY. For borrow sources greater than 5,000 CY, sampling frequency may be reduced to one sample per 5,000 CY, provided all earlier samples met appropriate comparison criteria (e.g., NYSDEC DER-10). The soil shall be acceptable for use as cover material or subsurface fill provided that no chemical constituents are identified at concentrations above applicable soil guidance values (e.g., NYSDEC DER-10). Material containing constituents of interest at concentrations greater than the DER-10 soil clean-up objectives soil guidance values will only be used as backfill with prior approval from NYSDEC.

- Topsoil, if used for the final cover, shall be fertile, friable, natural loam surface soil, capable of sustaining plant growth, and free of clods or hard earth, plants or roots, sticks or other extraneous material that could discourage plant growth.

5.4 Erosion Control

During future intrusive activities that may disturb the SMP Area, erosion and sedimentation control measures shall be employed in conformance with applicable laws and regulations. Soil conservation practices shall be incorporated in order to mitigate soil erosion, offsite sediment migration, and water pollution from erosion. Appropriate temporary erosion control measures (e.g., silt fencing, hay bales) shall be implemented and maintained around NAPL- impacted and potentially impacted soil/fill stockpiles and unvegetated soil surfaces in the SMP Area during intrusive activities. Such stockpiles shall be graded and compacted as necessary for positive surface water runoff as well as vapor and dust control.

5.5 Vapor and Dust Monitoring and Control

Adequate measures shall be employed for monitoring and controlling dust and vapors produced by soil/fill intrusive activities such as excavation, stockpiling, backfilling, and loading for transportation to an off-site disposal facility. Monitoring and controlling dust and vapors (if necessary) shall be conducted throughout the performance of soil/fill excavation stockpiling, backfilling, and loading for transportation or other intrusive activities in the SMP Area. Air monitoring shall include the measurement of particulate levels and total organic vapor (TOV) levels in the breathing zone and at the downwind site perimeter to facilitate the implementation of adequate measures (if necessary) to control elevated dust and TOV levels generated as a result of soil/fill excavation, stockpiling, backfilling, and loading for transportation or other intrusive activities. Dust and TOV action levels shall be established using the levels set forth in NYSDEC TAGM 4031 – *Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites,* the SMP Area Health and Safety Plan (HASP), and/or NYSDOH Generic Community Air Monitoring Program (GCAMP) requirements.

During future intrusive activities that may disturb the SMP Area, dust and vapor control measures shall be employed in accordance with site-specific plans prepared in conformance with applicable laws and regulations. Dust and vapor control techniques that may be used for the SMP Area include applying water, transporting materials in properly covered or watertight containers, covering excavations and stockpiled soils/fill, and using odor suppressants.

5.6 Construction Water Management

Pumping of water from excavations (i.e., groundwater and/or stormwater accumulating in excavations) within the SMP Area, if necessary, shall be done in such a manner as to prevent the migration of particulates or soil/fill and to prevent damage to the existing subgrade. Water pumped from such excavations shall be characterized as discussed below, and managed in accordance with applicable regulations.

Water to be removed from excavations within the SMP Area shall be sampled and analyzed for the constituents detected in groundwater at concentrations greater than TOGS 1.1.1 criteria during previous investigations as set forth in Section 2.3, which include BTEX, PAHs, and phenols. Results shall be compared to the surface water and groundwater quality standards set forth in 6 NYCRR Part 703.5 and TOGS 1.1.1. If the water meets the surface water and groundwater quality standards, it may be discharged to the ground surface. If the water does not meet the surface water and groundwater quality standards, it shall be discharged to the local sewer authority (if authorized), transported offsite for proper disposal, or treated onsite via a treatment system that has been approved by the NYSDEC, as appropriate. Runoff from surface discharges (if any) shall be controlled. No discharges shall enter a surface water body without proper permits.

5.7 Health and Safety

Invasive activities that may disturb the soils within the SMP Area shall be performed in accordance with applicable federal, state, and local rules and regulations to protect worker health and safety. If invasive work is expected to be conducted in the SMP Area, all contractors who may come in to contact with impacted environmental media shall follow a site-specific HASP detailing the procedures that will be utilized to comply with applicable regulations. These procedures may include donning adequate personal protective equipment (PPE), performing appropriate air monitoring, and implementing other engineering controls, as necessary, to mitigate potential ingestion, inhalation or contact with residual constituents in the soils.

The SMP Area site-specific HASP must follow standard health and safety practices as per 29 CFR 1910 and 1926, Occupational Safety and Health Administration (OSHA) Standards and include, but not be limited to, the following components to address potentially impacted soils and groundwater in the SMP Area:

1. Task-specific Hazard/Risk Analysis - Identify and provide a means of mitigating all foreseeable biological, chemical, and physical hazards associated with the intrusive work including, but not limited to, hazards associated with exposure to impacted soil and groundwater.
2. Personal Safety Equipment and Protective Clothing - Identify personal safety equipment and protective clothing to be available at the work site and used by project personnel to prevent or mitigate exposure to impacted soil and groundwater.
3. Personal Air Monitoring - Identify protocols and criteria associated with personal air monitoring of on-site personnel.

4. Community Air Monitoring - Identify protocols and criteria associated with community air monitoring. in accordance with and meets the requirements of appropriate federal, state, and local air monitoring requirements including, but not limited to, the NYSDOH GCAMP.
5. Vapor and Dust Control – Identify procedures to mitigate vapors and dust above personal and community criteria.
6. Decontamination – Identify personnel and equipment decontamination procedures to mitigate potential migration of impacted soils and groundwater.
7. Material Safety Data Sheets (MSDSs) - Provide (MSDSs) for constituents which are expected to be encountered in the course of implementation of subsurface activities.

5.8 Quality Assurance/Quality Control

Soil and water characterization samples collected pursuant to this SMP shall be analyzed using the most recent NYSDEC Analytical Services Protocol (ASP). The laboratory selected to perform the analyses shall be NYSDOH ELAP-certified to perform Contract Laboratory Program (CLP) analysis and Solid Waste and Hazardous Waste Analytical testing on all media to be sampled. The laboratory shall maintain this certification for the duration of the project.

Procedures for chain of custody, laboratory instrumentation calibration, laboratory analyses, reporting of data, internal quality control, and corrective actions shall be followed in accordance with NYSDEC ASP and the laboratory's Quality Assurance Plan. QA/QC samples (e.g., field duplicate, matrix spike, matrix spike duplicate, and/or trip blank samples) shall be collected, as needed, to assess the quality of the analytical data. The laboratory's in-house QA/QC limits shall be utilized whenever they are more stringent than those suggested by the USEPA methods.

Laboratory detection limits shall be less than or equal to the NYSDEC DER-10 soil clean-up objectives, or water quality standards, as appropriate, depending on the anticipated use of the sampled materials.

6. Notification and Reporting

6.1 General

This section presents notification and reporting requirements for the SMP Area.

6.2 Notification and Reporting

There shall be no construction, use or occupancy of the property that would result in human exposure to impacted soils, without first providing the NYSDEC with notice of such activities. Notification should be made to the NYSDEC at the address below at least 30 days prior to any such work.

In addition, by January 15th of each year, the owner or operator of the property shall complete and maintain on file an annual report. The report shall contain a certification that soil is still in place, has not been altered in a way that does not meet the intent of this SMP, is still effective, and has been maintained. If intrusive activities are conducted in the SMP Areas during the year, the annual report shall also include the following:

- A certification that all work in the SMP Area was performed in conformance with this SMP.
- Plans showing areas and depth of fill removal.
- Description of erosion control measures.
- A text narrative describing the excavation activities performed, health and safety monitoring performed (both site-specific and community air monitoring), quantities and locations of soil/fill excavated, disposal locations for the soil/fill, a discussion of the sampling performed for soil/fill excavated from the SMP Area and associated analytical results, a description of any problems encountered, source(s) for subsurface fill associated acceptability test results, and other pertinent information necessary to document that the site activities were performed pursuant to this SMP.

Notifications shall be submitted to:

Office of General Counsel
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-1500

Tables

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
NAPL

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT
SITE MANAGEMENT PLAN

Location Lab ID Date Sampled	W96-2D L32142-16 08/30/96	W96-2D L37610-10 06/19/97
Benzene	880	11
2-Butanone	< 500	< 0.1
Ethylbenzene	3,300	3.4
Toluene	850	< 0.1
Trichloroethene	< 100	2.8
Xylene (Total)	3,900	3.8
Total BTEX	8,930	21

Notes:

1. All concentrations are reported in mg/L equivalent to parts per million (ppm).
2. < = The compound was not detected above the reported quantitation limit.
3. Total BTEX = The sum of benzene, toluene, ethylbenzene, and total xylene concentrations.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
SEMI-VOLATILE ORGANIC COMPOUNDS
NAPL

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT
SITE MANAGEMENT PLAN

Location Lab ID Date Sampled	W96-2D L32142-16 08/30/96	W96-2D L37610-10 06/19/97
Acenaphthene	11,000 D	64
Acenaphthylene	3,900 JD	17 J
Anthracene	6,000 D	30
Benzo(a)anthracene	2,800 JD	16 J
Benzo(a)pyrene	2,300 JD	12 J
Benzo(b)fluoranthene	790 J	4.2 J
Benzo(g,h,i)perylene	860 J	3.7 J
Benzo(k)fluoranthene	1,100 J	7.9 J
Bis(2-ethylhexyl)phthalate	< 100 J	NA
Carbazole	200	< 22
Chrysene	2,500 JD	13 J
Dibenzo(a,h)anthracene	320 J	< 22
Dibenzofuran	800	7.5 J
2,4-Dimethylphenol	< 100 J	< 22
2,4-Dinitrophenol	< 250	NA
2,4-Dinitrotoluene	< 100	NA
Fluoranthene	4,500 JD	27
Fluorene	9,200 JD	51
Indeno(1,2,3-cd)pyrene	700 J	3.3 J
2-Methylnaphthalene	41,000 D	330
2-Methylphenol	< 100	NA
4-Methylphenol	< 100	< 22
Naphthalene	77,000 D	440 D
Phenanthrene	19,000 DB	NA
Phenol	< 100	110
Pyrene	8,400 JD	50
Total PAHs	191,370	1,179

Notes:

1. All concentrations are reported in mg/L equivalent to parts per million (ppm).
2. D = The compound was analyzed at a secondary dilution.
3. < = The compound was not detected above the reported quantitation limit.
4. J = The compound is reported at an estimated concentratio
5. B = The compound was detected in the associated blank as well as the sample.
6. NA = Not analyzed.
7. Total PAHs = The sum of TCL PAH concentrations.

TABLE 3
SUMMARY OF ANALYTICAL RESULTS
INORGANIC CONSTITUENTS
NAPL

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT
SITE MANAGEMENT PLAN

Location Lab ID Date Sampled	W96-2D L32142-16 08/30/96	W96-2D L37610-10 06/19/97
Aluminum	2.1	116
Antimony	< 0.005	0.0051 BJ
Arsenic	0.076	0.148
Barium	0.034 B	1.54
Beryllium	< 0.001	0.0059
Cadmium	< 0.002	0.0021 B
Calcium	14.3	390
Chromium	0.0058 B	0.203
Cobalt	< 0.002	0.0642
Copper	< 0.007	0.387
Cyanide	0.0907	0.0192
Iron	1.91	216 J
Lead	0.0042	0.0933
Magnesium	0.417 B	57.6
Manganese	0.0209	3.26
Mercury	0.00071 J	< 0.0001
Nickel	0.002 B	0.206
Potassium	37.5	40.8
Selenium	0.0074	0.0085
Silver	NA	< 0.0009
Sodium	54.9	38.9
Thallium	NA	0.0063 BJ
Vanadium	0.032 B	0.172
Zinc	0.0071 B	0.51

Notes:

1. All concentrations are reported in mg/L equivalent to parts. per million (ppm)
2. NA = Not Analyzed.
3. < = The compound was not detected above the reported detection limit.
4. B = The reported value was obtained from a reading less than the contract required detection limit but greater than the instrument detection unit.
5. J = The compound is reported at an estimated concentratior

TABLE 4
SUMMARY OF ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
SUBSURFACE SOIL

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT
SITE MANAGEMENT PLAN

Location Depth (ft) Lab ID Date Sampled	TAGM 4046 Recommended Soil Cleanup Objective	TB-05 18-20 L30829-4 07/10/96	TB-06 12-14 L30829-3 07/10/96	TB-12 8-10 L31001-3 07/15/96	TB-14 14-16 L31001-1 07/15/96	TB-14 (Dup) 14-16 L31001-2 07/15/96	TB-33 8-10 L31447-1 08/02/96	TB-46 17-19 L37116-2 05/22/97
Acetone	0.2	0.042	0.1	0.054 J	0.056 J	0.074	0.010 J	< 0.06
Benzene	0.06	< 0.012	< 0.032	< 0.068	< 0.063	< 0.061	0.006 J	< 0.06
2-Butanone	0.3	< 0.012 J	< 0.032 J	< 0.068	< 0.063	< 0.061	< 0.013	< 0.06 J
Carbon Disulfide	2.7	0.001 J	< 0.032	< 0.068	< 0.063	0.016 J	NA	< 0.06
Chloroform	- -	< 0.012	< 0.032	< 0.068	< 0.063	< 0.061	< 0.013	< 0.06
Chloromethane	- -	< 0.012	< 0.032	< 0.068	< 0.063	< 0.061	< 0.013	< 0.06
Ethylbenzene	5.5	0.002 J	0.094	0.018 J	0.086	0.22	< 0.013	< 0.06
Methylene chloride	0.1	< 0.012	< 0.032	< 0.068	< 0.063	< 0.061	0.008 J	< 0.06
Toluene	1.5	0.008 J	0.041	0.050 J	< 0.063	0.049 J	0.003 J	< 0.06
Xylenes, Total	1.2	0.003 J	0.14	0.077	0.13	0.11	< 0.013	< 0.06
Total BTEX	- -	0.013	0.275	0.145	0.216	0.379	0.009	ND

Notes:

1. All concentrations are reported in mg/kg equivalent to parts per million (ppm).
2. NA = Not analyzed.
3. ND = Not detected.
4. < = The compound was not detected above the reported quantitation limit.
5. J = The compound is reported at an estimated concentration.
6. Total BTEX = The sum of benzene, toluene, ethylbenzene, and total xylene concentrations.
7. TAGM 4046 recommended soil cleanup objectives from the New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) titled "Determination of Soil Cleanup Objectives and Cleanup Levels, " HWR-94-4046 (TAGM 4046) dated January 24, 1994.
8. Representative background soil sample results can be obtained from sampling locations SS-11 through SS-13 as presented in the RI Report Tables 8 through 10 and 55.

TABLE 5
SUMMARY OF ANALYTICAL RESULTS
SEMI-VOLATILE ORGANIC COMPOUNDS
SUBSURFACE SOIL

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT
SITE MANAGEMENT PLAN

Location Depth (ft) Lab ID Date Sampled	TAGM 4046 Recommended Soil Cleanup Objective	TB-05 18-20 L30829-4 07/10/96	TB-06 12-14 L30829-3 07/10/96	TB-12 8-10 L31001-3RE 07/15/96	TB-14 14-16 L31001-1RE 07/15/96	TB-14 (Dup) 4-16 L31001-2RE 07/15/96	TB-33 8-10 L31447-1 08/02/96	TB-46 17-19 L37116-2 05/22/97
Acenaphthene	50	5.3	9.1	14	22	37	< 0.41	< 0.39
Acenaphthylene	41	3.4 J	< 2.1	< 2.20	1.3 J	2.3 J	< 0.41	< 0.39
Anthracene	50	7.1	4.9	7	12	19	< 0.41	< 0.39
Benzo(a)anthracene	0.224	**12**	**3.4**	**3.9**	**6.3**	**10**	< 0.41	< 0.39
Benzo(a)pyrene	0.061	**8.8**	**2.6**	**2.7**	**4.8**	**7.6**	< 0.41	< 0.39
Benzo(b)fluoranthene	1.1	3.7 J	1 J	0.90 J	2 J	2.4 J	< 0.41	< 0.39
Benzo(g,h,i)perylene	50	2.5 J	1 J	0.98 J	1.4 J	2.4 J	< 0.41	< 0.39
Benzo(k)fluoranthene	1.1	6	2 J	2.1J	2.6	5.1	< 0.41	< 0.39
bis(2-Ethylhexyl)phthala	50	< 4	< 2.1	< 2.20	< 2.30	< 4	< 0.41	< 0.39
Carbazole	- -	< 4	< 2.1	< 2.20	< 2.30	< 4	< 0.41	< 0.39
2-Chloronaphthalene	- -	< 4	< 2.1	< 2.20	< 2.30	< 4	< 0.41	< 0.39
Chrysene	0.4	**12**	**3.6**	**3.9**	**6.1**	**10**	< 0.41	< 0.39
Di-n-butyl phthalate	8.1	< 4	< 2.1	< 2.20	< 2.30	< 4	< 0.41	< 0.39
Dibenz(a,h)anthracene	0.014	< 4	< 2.1	< 2.20	< 2.30	< 4	< 0.41	< 0.39
Dibenzofuran	6.2	< 4	< 2.1	1.70 J	1.2 J	2.1 J	< 0.41	< 0.39
Fluoranthene	50	19	6	7.7	9.3	16	< 0.41	< 0.39
Fluorene	50	12	5.8	9.2	13	22	< 0.41	< 0.39
Hexachlorobenzene	0.41	< 4	< 2.1	< 2.20	< 2.30	< 4	< 0.41	< 0.39
Indeno(1,2,3-cd)pyrene	3.2	2 J	< 2.1	< 2.20	1.1 J	1.8 J	< 0.41	< 0.39
2-Methylnaphthalene	36.4	< 4	12	< 2.20	< 2.30	< 4	< 0.41	< 0.39
Naphthalene	13	< 4	9.5	< 2.20	1.3 J	1.5 J	< 0.41	< 0.39
4-Nitrophenol	0.1	< 10	< 5.3	< 5.50	< 5.80	< 10	< 1.00	< 0.39
Phenanthrene	50	35	17	25	33	**56**	< 0.41	< 0.39
Pyrene	50	28	8.5	11	15	26	< 0.41	< 0.39
1,2,4-Trichlorobenzene	- -	< 4	< 21	< 2.20	< 2.30	< 4	< 0.41	< 0.39
Total PAHs	- -	156.8	86.4	88.38	131.2	219.1	ND	ND

Notes:

1. All concentrations are reported in mg/kg equivalent to parts per million (ppm).
2. Bold values indicate that the compound was detected at a concentration exceeding the NYSDEC recommended soil cleanup objectives presented in TAGM 4046.
3. ND - Not detected.
4. < = The compound was not detected above the reported quantitation limit.
5. J = The compound is reported at an estimated concentration.
6. Total PAHs = The sum of TCL PAH concentrations.
7. TAGM 4046 recommended soil cleanup objectives from the New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) titled "Determination of Soil Cleanup Objectives and Cleanup Levels," HWR-94-4046 (TAGM 4046) dated January 24, 1994.
8. Representative background soil sample results can be obtained from sampling locations SS-11 through SS-13 as presented in the RI Report Tables 8 through 10 and 55.

TABLE 6
SUMMARY OF ANALYTICAL RESULTS
INORGANIC CONSTITUENTS
SUBSURFACE SOIL

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT
SITE MANAGEMENT PLAN

Location Depth (ft) Lab ID Date Sampled	TAGM 4046 Recommended Soil Cleanup Objective	TB-05 18-20 L30829-4 07/10/96	TB-06 12-14 L30829-3 07/10/96	TB-12 8-10 L31001-3 07/15/96	TB-14 14-16 L31001-1 07/15/96	TB-14 (DUP) 14-16 L31001-2 07/15/96	TB-33 8-10 L31447-1 08/02/96	TB-46 17-19 L37116-2 05/22/97
Aluminum	SB	13,000	13,100	11,400	10,000	8,040	15,400	9,480
Antimony	SB	1.4 B	1.2 B	1.3 B	1.5 B	1 B	1.2 JB	1.6 BJ
Arsenic	7.5 or SB	4.5	3.1	5.9	3.7	3.2	7.6	3.6
Barium	300 or SB	58.1	72.8	38.7	50.9	36	84.5 J	57.5
Beryllium	0.16 or SB	0.75	0.7	0.67 B	0.56 B	0.44 B	0.83	0.55 B
Cadmium	1 or SB	< 0.24	< 0.26	< 0.22	< 0.25	< 0.24	0.58 B	0.28 B
Calcium	SB	1,960	2,920	30,800	12,200	58,700	3,330	NA
Chromium	10 or SB	18	16.4	16.8	14	11.4	20.2	11.5
Cobalt	30 or SB	13.1	11.5	12.7	10.1	8.3	14.1	7.1
Copper	25 or SB	30.7	24.8	31.7	24.2	19.4	36.4	16.5
Cyanide, Total	- -	0.59	3.55	< 0.29	< 0.32	< 0.31	< 0.32	NA
Iron	2,000 or SB	32,300	28,000	28,100	24,700	19,200	36,100	16,600
Lead	SB	16	31.8	14.5	13.7	19.6	16.1	10.2 J
Magnesium	SB	5,350	4,520	11,300	5,910	4,360	5,710	3,060
Manganese	SB	542	607	586	489	336	821	225
Mercury	0.1	< 0.06	0.11 B	< 0.07	< 0.06	< 0.06	< 0.06	< 0.06
Nickel	13 or SB	26.4	22.5	26	21.9	16.7	31.3	14.9
Potassium	SB	1,310 J	1,290 J	1130	1,040	848	1,120	NA
Selenium	2 or SB	< 0.38	< 0.38	< 0.4	< 0.37	< 0.37	1.2 J	< 0.36
Silver	SB	< 0.37	< 0.38	< 0.4	< 0.37	< 0.37	< 0.36	< 0.24
Sodium	SB	88 B	392 B	101 B	175 B	150 B	216 B	NA
Thallium	SB	1.9	1.5	1.3 B	0.89 B	0.77 B	< 0.24	< 0.71
Vanadium	150 or SB	19.3	19.6	16.1	15.3	12.2	19.8	13.5
Zinc	20 or SB	77.5	60.8	65.4	55.7	53.2	71.9 J	42.2 J

Notes:

1. All Concentrations are reported in mg/kg equivalent to parts per million (ppm).
2. NA = Not analyzed.
3. < = The compound was not detected above the reported detection limit.
4. J = The compound is reported at an estimated concentration.
5. B = The compound was detected at a concentration greater than or equal to the instrument detection limit but less than the contract required detection limit.
6. SB = Site background.
7. TAGM 4046 recommended soil cleanup objectives from the New York State Department of Environmental Conservation (NYSDE Technical and Administrative Guidance Memorandum (TAGM) titled "Determination of Soil Cleanup Objectives and Cleanup Leve HWR-94-4046 (TAGM 4046) dated January 24, 1994.
8. Representative background soil sample results can be obtained from sampling locations SS-11 through SS-13 as presented in the RI Report Tables 8 through 10 and 55.

TABLE 7
SUMMARY OF ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS
GROUNDWATER

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT
SITE MANAGEMENT PLAN

Location Lab ID Date Sampled	Class GA Groundwater Criteria	W96-2S L32142-15RE 08/30/96	W96-2S L37571-16 6/18/97	W96-3S L32142-14RE 08/30/96	W96-3S L37553-13 6/17/97	W96-3D L32142-13 08/30/96	W96-3D L37571-4 6/18/97	W97-12S L37553-9 6/17/97
Acetone	50	< 5	NA	< 5	NA	19	NA	NA
Benzene	1	< 1	< 1	**1**	**6**	**17**	**11**	**6**
Bromodichloromethane	50	< 1	NA	< 1	NA	< 1	NA	NA
Styrene	5	**5 J**	< 1	4 J	< 1	**8**	< 1	< 1
Chloroform	7	< 1	2 J	< 1	< 1	1	< 1	3 J
Ethylbenzene	5	< 1	< 1	< 1	**11**	**80**	**71**	4 J
Toluene	5	< 1	< 1	< 1	< 1	5	< 1	< 1
Trichloroethene	5	< 1	NA	< 1	NA	3	NA	NA
Xylenes, Total	5	< 1	< 1	**6**	**10**	**56**	**44**	**7**
Total BTEX	**- -**	ND	ND	7	27	158	126	17

Notes:

1. All concentrations are reported in ug/L equivalent to parts per billion (ppb).
2. Bold values indicate that the compound was detected at a concentration greater than or equal to the NYSDEC Class GA (groundwater) standard or guidance value presented in TOGS 1.1.1.
3. < = The compound was not detected above the reported quantitation limit.
4. J = The compound is reported at an estimated concentration.
5. NA = Not analyzed.
6. ND = Not detected.
7. Total BTEX = The sum of benzene, toluene, ethylbenzene, and total xylene concentrations.
8. NYSDEC Class GA Standards/Guidance Values from New York State Department of Environmental Conservation (NYSDEC) document entitle "Division of Water,Technical and Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, reissued June 1998 and addended April 2000).

TABLE 8
SUMMARY OF ANALYTICAL RESULTS
SEMI-VOLATILE ORGANIC COMPOUNDS
GROUNDWATER

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT
SITE MANAGEMENT PLAN

Location Lab ID Date Collected	Class GA Groundwater Criteria	W96-2S L32142-15 08/30/96	W96-3D L32142-13 08/30/96	W96-3S L32142-14 08/30/96	W96-2S L37571-16 06/18/97	W96-3D L37571-4 06/18/97	W96-3S L37553-13 06/17/97	W97-12S L37571-17RE 06/18/97
Acenaphthene	20	**52**	**120**	**160**	19	**140**	**190**	< 10
Acenaphthylene	- -	1 J	7 J	6 J	< 10	6 J	< 20	< 10
Anthracene	50	< 10	9 J	18	< 10	9 J	16 J	< 10
Benzo(a)anthracene	0.002	< 10	< 10	< 10	< 10	< 10	< 20	< 10
Benzo(a)pyrene	ND	< 10	< 10	< 10	< 10	< 10	< 20	< 10
Benzo(b)fluoranthene	0.002	< 10	< 10	< 10	< 10	< 10	< 20	< 10
Benzo(g,h,i)perylene	- -	< 10	< 10	< 10	NA	NA	NA	NA
Benzo(k)fluoranthene	0.002	< 10	< 10	< 10	< 10	< 10	< 20	< 10
Benzoic Acid	- -	< 26	< 26	< 24	NA	NA	NA	NA
2,4-Dimethylphenol	50	< 10	< 10	< 10	< 10	< 10	< 20	< 10
2-Methylnaphthalene	- -	< 10	54	< 10	< 10	26	< 20	< 10
2-Methylphenol	- -	< 10	< 10	< 10	NA	NA	NA	NA
4-Methylphenol	- -	< 10	< 10	< 10	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	5	< 10	3 J	< 10	2 J	2 J	2 J	2 J
Carbazole	- -	< 10	4 J	1 J	< 10	3 J	< 20	< 10
Chrysene	0.002	< 10	< 10	**1 J**	< 10	< 10	**2 J**	< 10
Dibenzo(a,h)anthracene	- -	< 10	< 10	< 10	< 10	< 10	< 20	39
Dibenzofuran	- -	< 10	8 J	6 J	2 J	8 J	6 J	< 10
Fluoranthene	50	< 10	4 J	8 J	2 J	3 J	7 J	< 10
Fluorene	50	6 J	**55**	**54**	10	47	47	< 10
Indeno(1,2,3-cd)pyrene	0.002	< 10	< 10	< 10	NA	NA	NA	NA
Naphthalene	10	< 10	**330**	< 10	< 10	**84 DJ**	8 J	< 10
Phenanthrene	50	< 10	**56**	< 10	< 10	**50**	**58**	< 10
Phenol	1	< 10	< 10	< 10	< 10	**2 J**	< 20	**9 J**
Pyrene	50	1 J	6 J	11	2 J	5 J	9 J	< 10
Total PAHs	**- -**	60	641	258	33	370	337	ND

Notes:

1. All concentrations are reported in ug/L equivalent to parts per billion (ppb).
2. Bold values indicate that the compound was detected at a concentration greater than or equal to the NYSDEC Class GA (groundwater) standard or guidance value presented in TOGS 1.1.1.
3. D = The compound was analyzed at a secondary dilution.
4. < = The compound was not detected above the reported quantitation limit.
5. J = The compound is reported at an estimated concentration.
6. NA = Not analyzed.
7. Total PAHs = The sum of TCL PAH concentrations.
8. ND = Not detected.
9. NYSDEC Class GA Standards/Guidance Values from New York State Department of Environmental Conservation (NYSDEC) document entitled, "Division of Water,Technical and Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, reissued June 1998 and addended April 2000).

TABLE 9
SUMMARY OF ANALYTICAL RESULTS
INORGANIC CONSTITUENTS
GROUNDWATER

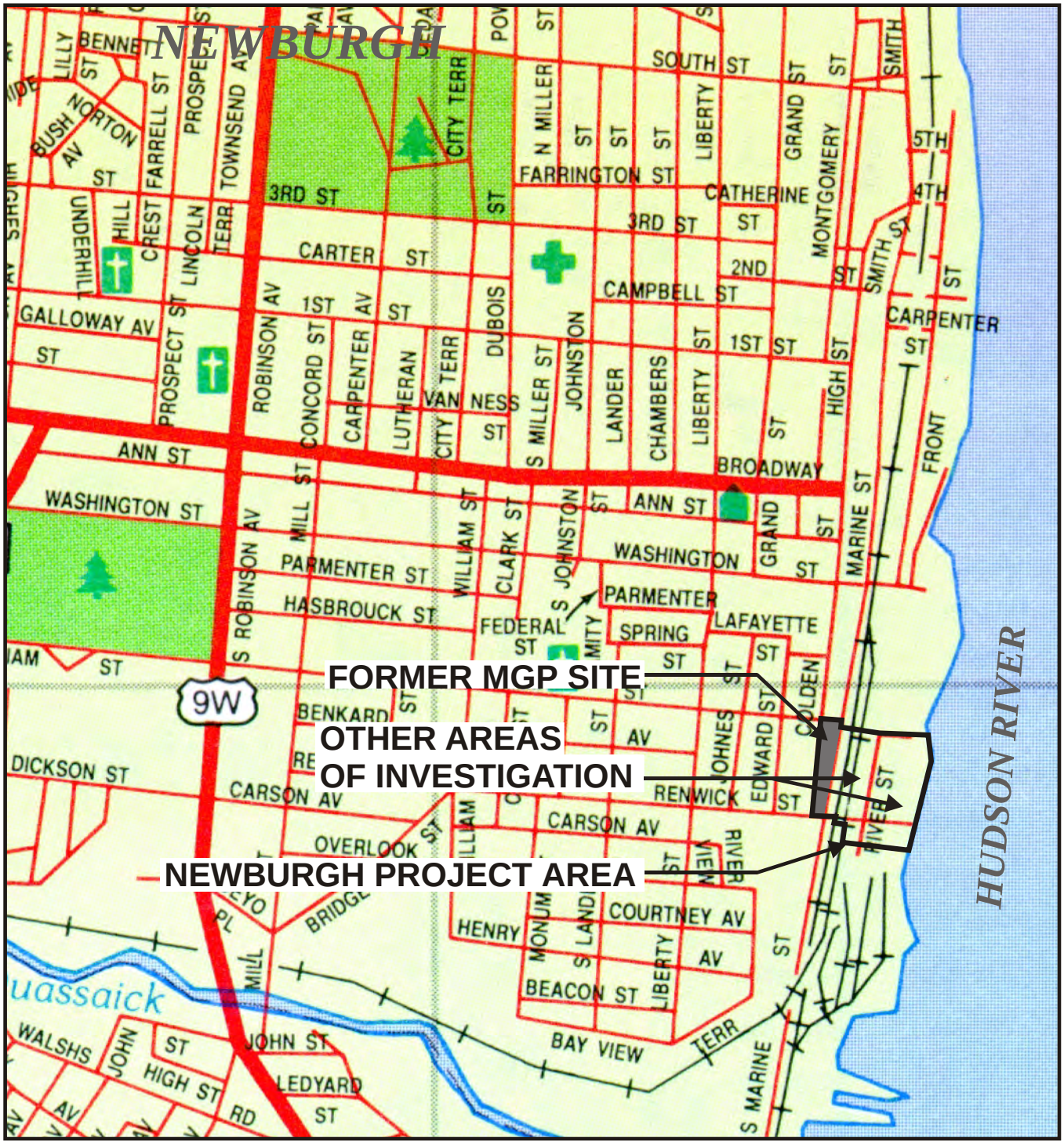
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT
SITE MANAGEMENT PLAN

Location Lab ID Date Sampled	Class GA Groundwater Criteria	W96-2S L32142-15 08/30/96	W96-3D L32142-13 08/30/96	W96-3S L32142-14 08/30/96	W96-2S L37553-11 06/17/97	W96-3D L37571-4 06/18/97	W96-3S L37553-13 06/17/97	W97-12S L37553-9 06/17/97
Aluminum	- -	245	3,050	< 115	< 47	913	115 B	19,700
Antimony	3	< 5	< 5	< 5	< 4	< 4	< 4	**8.7 B**
Arsenic	25	< 5	< 5	< 5	**47 B**	**38.3 B**	**92 B**	**257**
Barium	1,000	104 B	47 B	76.6 B	< 1	< 1	< 1	< 1
Cadmium	5	< 2	< 2	< 2	< 1	< 1	< 1	< 1
Calcium	- -	123,000	24,800	80,500	68,400	24,300	102,000	59,800
Chromium	50	< 3	21.3	< 3	< 3	< 3	< 3	25.4
Cobalt	- -	< 2	< 2	< 2	< 2	< 2	< 2	10.2 B
Copper	200	< 7	< 7	< 7	< 6	< 6	< 6	44
Cyanide	200	83.1	< 10	< 10	12.1 J	< 10	< 10J	46.3 J
Iron	500	**630**	**3,400**	< 33.1	**225**	**1,630**	**1,810**	**18,700**
Lead	25	< 2	< 2	< 2	3.4	< 3.2	4.3	23.1
Magnesium	35,000	28,100	5,230	18,000	14,600	3,700 B	21,300	12,400
Manganese	500	**818**	157	**724**	371	116	**719**	**536**
Mercury	0.7	R	R	R	< 0.1	< 0.1	0.11 B	< 0.1
Nickel	100	< 1	17.8 B	< 1	< 3	7.1 B	< 3	24.4 B
Potassium	- -	4,580 B	23,900	4,600 B	2,960 B	14,000	4,040 B	27,300
Selenium	10	< 4	< 5	< 4.4	< 3	< 3	< 3	< 3
Sodium	20,000	**94,000**	**53,400**	**201,000**	**59,700**	**53,600**	**207,000**	**89,800**
Thallium	0.5	< 2	< 2	**3.8 B**	< 6	< 6	< 6	< 6
Vanadium	- -	< 1	5.3 B	< 1	< 3	< 3	< 3	36.5 B
Zinc	2,000	< 5	29	< 5	< 6	< 6	< 6	63.2

Notes:

1. All concentrations are reported in ug/L equivalent to parts per billion (ppb).
2. Bold values indicate that the compound was detected at a concentration greater than or equal to the NYSDEC Class GA (groundwater) standard or guidance value presented in TOGS 1.1.1.
3. < = The constituent was not detected above the reported detection limit.
4. B = The reported value was obtained from a reading that was less than the Contract Required Detection Limit but greater than the instrument detection limit.
5. R = Data rejected.
6. J = The constituent is reported at an estimated concentration.
7. NYSDEC Class GA Standards/Guidance Values from New York State Department of Environmental Conservation (NYSDEC) document entitled, "Division of Water,Technical and Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (NYSDEC, reissued June 1998 and addended April 2000).

Figures



900' 0 900'

Approximate Scale: 1" = 900'

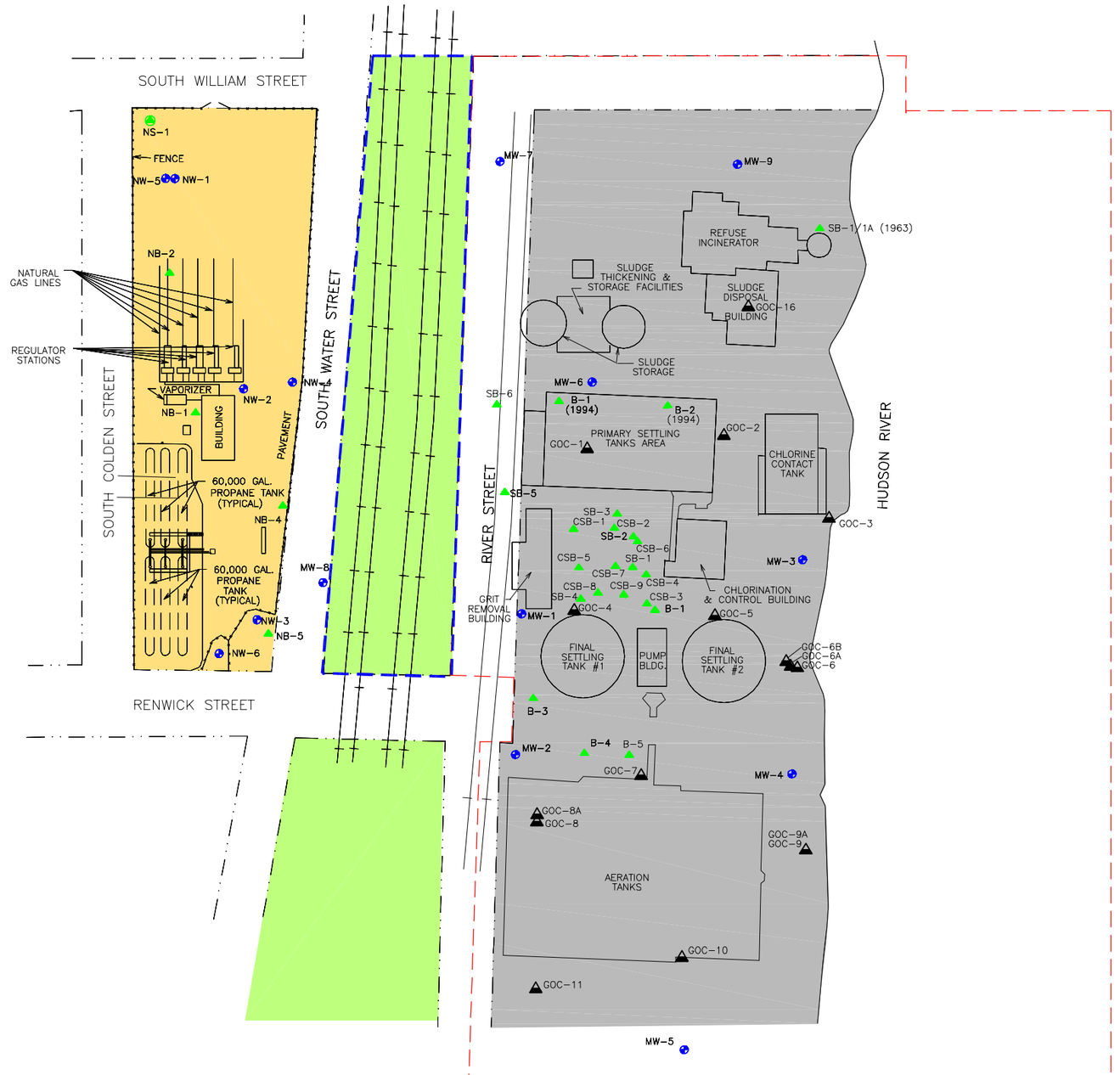
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT
SITE MANAGEMENT PLAN

SITE LOCATION MAP

ARCADIS

FIGURE
1

11/20/08 SYR-141ENV-DJH
B0020537/0000/00006/CDR/20537N01.CDR



LEGEND:

- PRE RI GROUND-WATER MONITORING WELL
- PRE RI SOIL BORING
- PRE RI SURFACE SOIL SAMPLE
- GEOTECHNICAL BORING (GOODKIND & O'DEA-CHAZEN)
- APPROXIMATE FORMER MGP SITE PROPERTY AREA (AREA A)
- APPROXIMATE CITY OF NEWBURGH SEWAGE TREATMENT PLANT PROPERTY AREA (AREA B)
- APPROXIMATE CSX TRANSPORTATION PROPERTY AREA
- SMP AREA
- APPROXIMATE CITY PROPERTY BOUNDARY

NOTE:

BASE MAP PROVIDED BY CITY OF NEWBURGH ENGINEERING DEPARTMENT. ALL LOCATIONS ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

120' 0 120'

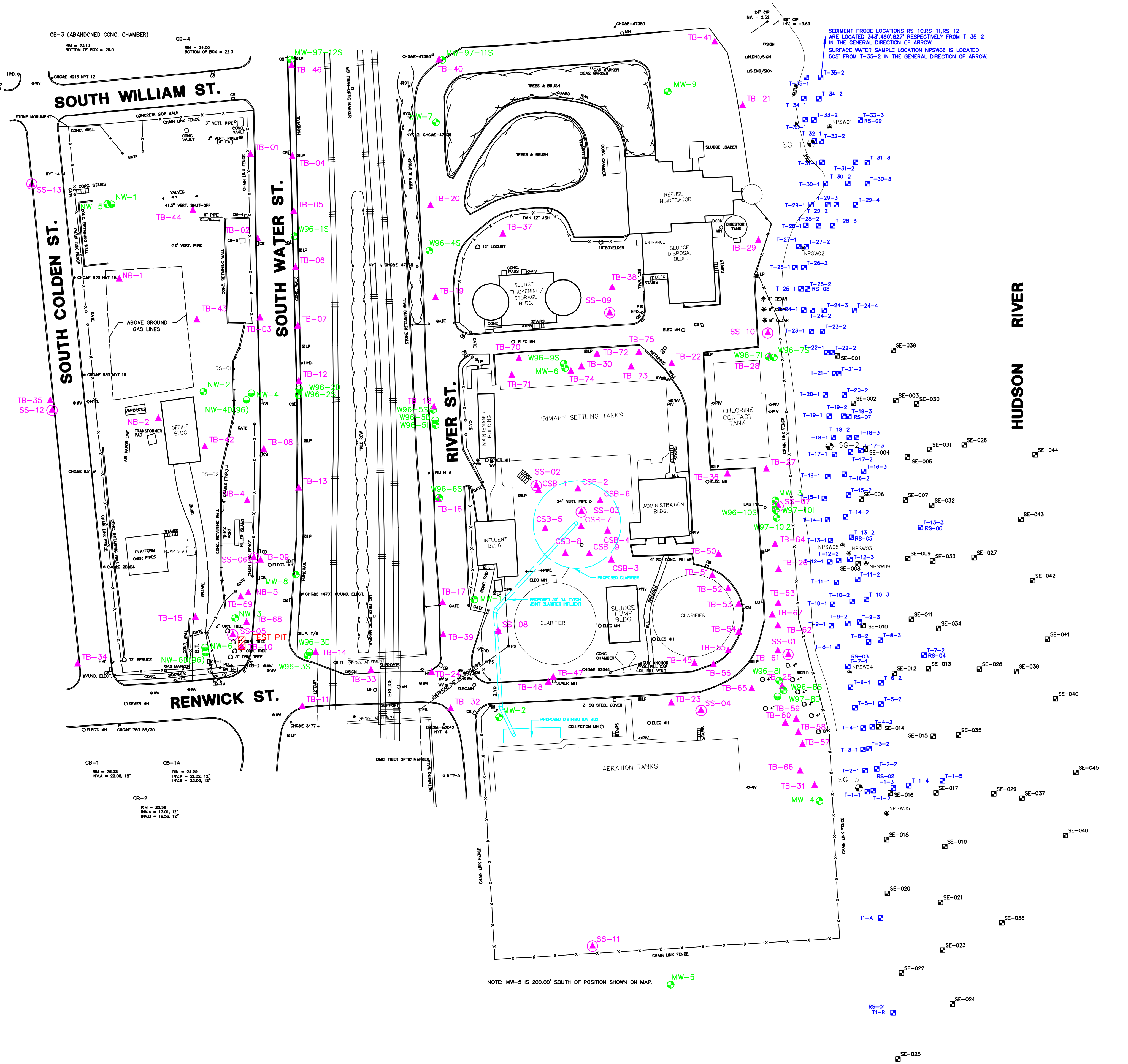
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT

SITE MANAGEMENT PLAN

SITE LAYOUT

ARCADIS

FIGURE 2



LEGEND:

LP	LIGHT STAND
CSB-8	SOIL BORING
SS-13	SURFACE SOIL SAMPLE
NW-4	MONITORING WELL (BEDROCK)
W96-8S	MONITORING WELL (OVERBURDEN)
CB	CATCH BASIN
WV	WATER VALVE
4"	DECIDOUS TREE
8" CEDAR	CONIFEROUS TREE
MH	MANHOLE
	UTILITY POLE
PIV	POSITION INDICATOR VALVE
SG-3	STAFF GAGE
DS-01	DRAIN SAMPLE
SE-027	SEDIMENT SAMPLE
RS-07 T-19-3	SEDIMENT PROBE
NPSW05	SURFACE WATER SAMPLE
	TEST PIT

NOTES:

1. TOPOGRAPHIC SURVEY WAS PERFORMED IN THE FIELD BETWEEN DECEMBER 14, 1995 AND JANUARY 5, 1996 WITH DEEP SNOW CONDITIONS. DUE TO THE SNOW CONDITIONS SOME TOPOGRAPHIC AND PLANIMETRIC FEATURES MAY NOT HAVE BEEN LOCATED AND/OR MAY BE APPROXIMATE.

2. ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

0 100' 200'
APPROXIMATE SCALE

CENTRAL HUDSON GAS & ELECTRIC CORPORATION
NEWBURGH PROJECT

SITE MANAGEMENT PLAN

RI AND POST-RI SAMPLE LOCATION MAP

ARCADIS

FIGURE 3

Appendices

Appendix A

Property Description: Metes and Bounds

This Railroad Valuation Map Exhibit
Graphically Represents A Proposed
Real Estate Transaction.
It May Not Reflect Current "On The Ground"
Conditions And/Or Actual Locations Of Features.
All Dimensions, Offset Distances,
Area Calculations And Measurement Notations,
Shown On This Exhibit Are Approximate.

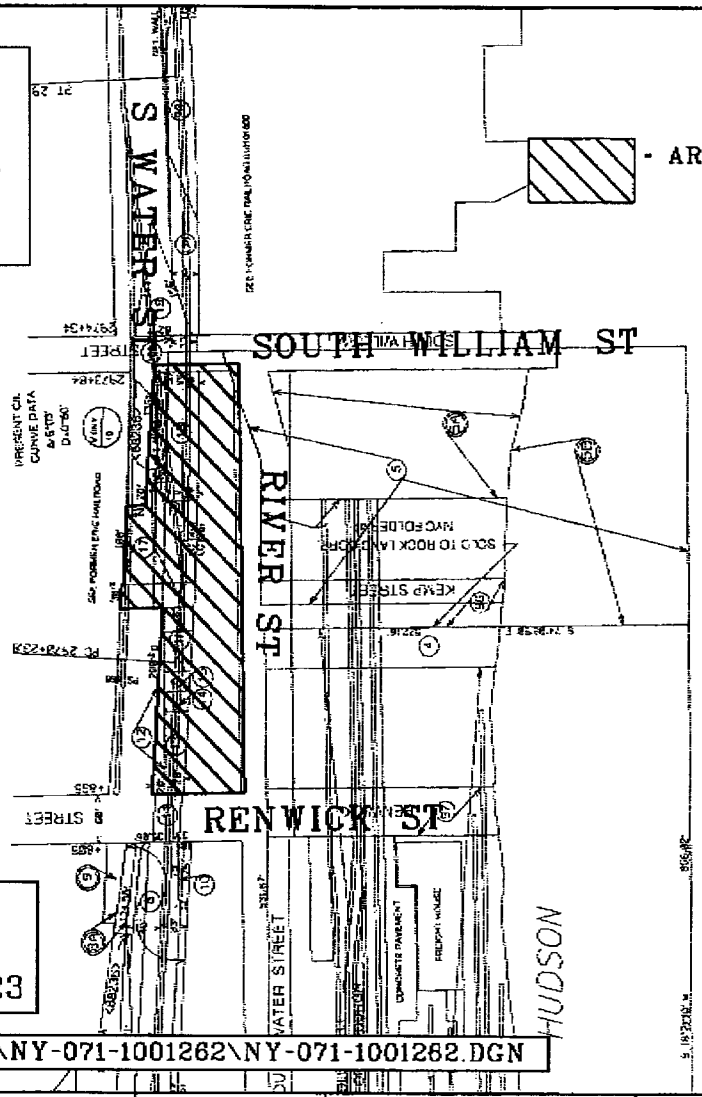


EXHIBIT "A"

ALBANY DIVISION
RIVER SUBDIVISION
VICINITY OF MP QR-56.23

S:\PIN\NY36\NY071\ 071-0019\NY-071-1001262\NY-071-1001262.DGN

CSX TRANSPORTATION, INC.	DATE: 07-09-04	CITY: NEWBURGH	VAL. SECT.:	GIS NUMBERS:	PIN NUMBERS:
SITE ID: NY-071-1001262	SCALE: 1"=200'	STATE: NY	V116, V6NY	48286 59300	36071-0019 36071-0031
DEED RESTRICTION	DRAWN BY: L ROMANCHIK	FIPS: 36071	MAP No:		
	REVISED:	DWG #: 1001262	38L, 19L		

.../ny-071-1001262.dgn Jul. 09, 2004 14:16:47

ARCADIS

Appendix B

NYSDEC Letter Approving Site Management Plan

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

Alexander B. Grannis
Commissioner

November 13, 2008

Wayne Mancroni
Central Hudson Gas & Electric
284 South Avenue
Poughkeepsie, NY 12601

RE: Central Hudson Newburgh Site
Newburgh, Orange County, Site No: 3-36-042
Soil Management Plan - CSX Property

Dear Mr. Mancroni:

The New York State Department of Environmental Conservation (Department) has reviewed the Soil Management Plan dated August 2006 for the above referenced site. This document is approved with the following changes:

- The Department now requires that the title of this document be changed to Site Management Plan, as opposed to Soil Management Plan.
- References to TAGM 4046 should be replaced with DER-10.
- Notifications shall be sent to:
  NYS Department of Environmental Conservation
  Office of General Counsel
  625 Broadway, 14th Floor
  Albany, NY 12233-1500

These modifications are a result of changes within the Department. Please submit a revised document. If you have further questions, please feel free to contact me at (518) 402-9564.

Sincerely,

Elizabeth B. Lukowski
Engineering Geologist 1
Remedial Action Bureau C
Division of Environmental Remediation

Cc: Dennis Harkawik, Esq.

Ec: Wayne Mancroni, CHGE
Tera Stoner, CHGE
Gardiner Cross
Robert Schick
Lisa Gorton

APPENDIX C

List of Project Contacts

LIST OF PROJECT CONTACTS

Name/Affiliation	Phone Number	Email Address
CHGE (Remedial Party, Area A Property Owner)		
Mark McLean, Senior Manager – Environmental Affairs	845.486.5461	MMclean@cenhud.com
Jesse Gallo, Project Manager	845.486.5641	JGallo@cenhud.com
CHGE Call Center	845.452.2700 1.800.527.2714	Not applicable
Arcadis of New York, Inc.		
Amanda Kohler, Project Manager	315.671.9333	Amanda.Kohler@arcadis.com
Mark Gravelding, P.E., Lead Engineer	315.671.9235	Mark.Gravelding@arcadis.com
NYSDEC		
Gerald Pratt, P.G , DER Project Manager	518.402.9667	Gerald.Pratt @dec.ny.gov
Area B Property Owners		
CSX - William Parry, Senior Manager of Environmental Remediation	518.767.6049	William_Parry@csx.com
City of Newburgh – Jason Morris, Commissioner of Public Works & City Engineer	845.565.7447	jmorris@cityofnewburgh-ny.gov

Note:

1. Contact numbers are subject to change and will be updated as necessary.

APPENDIX D

Responsibilities of Remedial Party and Property Owners

D RESPONSIBILITIES OF REMEDIAL PARTY AND PROPERTY OWNERS

D.1 Responsibilities

The responsibilities for implementing the Site Management Plan (SMP) for the Central Hudson Gas & Electric Corporation (CHGE) Newburgh, New York former manufactured gas plant (MGP) project site (including the MGP property and adjacent offsite properties east of the former MGP hereinafter collectively referred to as "the SMP area"), number 3-36-042, are divided between the Remedial Party and property owners, as defined below. The current property owners are identified in Table 1.

Table 1. Property Owners

Tax ID	Owner's Name	Owner's Address	Contact
Area A			
46-4-1	CHGE	284 South Ave Poughkeepsie NY 12601	Mark L. McLean Senior Manager – Environmental Affairs T:845.486.5461 E: MMcLean@cenhud.com
Area B			
46-4-2 and 46-4-3	CSX Transportation Inc.	500 Water St (C910) Jacksonville FL 32202	William Parry, PG, CGWP Senior Manager of Environmental Remediation T: 518.767.6049 E: William_parry@csx.com
46-4-4, 46-4-5, and portion of 49-1-5.1	City of Newburgh	81-83 Broadway Newburgh NY 12550	Jason Morris, P.E. Commissioner of Public Works & City Engineer T: 845.565.7447 E: jmorris@cityofnewburgh-ny.gov

Note: Tax ID references section, block, and parcel (S-B-P) from City of Newburgh Tax Map 331100.

Solely for the purposes of this document and based upon the facts related to a particular site and the remedial program being carried out, the term Remedial Party (RP) refers to any of the following: certificate of completion holder, volunteer, applicant, responsible party, and, in the event the New York State Department of Environmental Conservation (NYSDEC) is carrying out remediation or site management, the NYSDEC and/or an agent acting on its behalf. The RP is:

CHGE
Attn: Mark L. McLean, Senior Manager – Environmental Affairs
284 South Ave
Poughkeepsie NY 12601

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the SMP area.

Change in RP ownership and/or control and/or property ownership does not affect the RP's obligations with respect to the SMP area unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future property owners and RPs and their successors and assigns are required to carry out the activities set forth below.

D.2 Owner's Responsibilities:

1. The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the SMP area.
2. In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in the Environmental Easement (Area A) remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the SMP area's Periodic Review Report certification to the NYSDEC.
3. In the event the SMP area is delisted, the owner remains bound by the Environmental Easement (Area A) associated with the property and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.
4. The owner shall grant access to the SMP area to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.
5. The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the SMP area's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3 (Notifications) of the SMP.
6. In the event some action or inaction by the owner adversely impacts the SMP area, the owner must notify the SMP area's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3 (Notifications) of the SMP and coordinate the performance of necessary corrective actions with the RP.
7. The owner must notify the RP and the NYSDEC of any change in ownership of the SMP area property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the SMP area property(ies). 6 NYCRR Part 375 contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 1.3 of the SMP. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

8. In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the SMP area, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

D.3 Remedial Party Responsibilities

1. The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the SMP area.
2. The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.
3. Before accessing the SMP area property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the visit and/or any final report produced.
4. If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).
5. The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.
6. The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3 (Notifications) of the SMP.
7. Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.
8. Any change in use, change in ownership, change in site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the SMP area may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the NYSDEC to discuss the need to update such documents.

APPENDIX E

Existing Monitoring Well Construction Logs

Date Start/Finish: 4/13/05 - 4/14/05
Drilling Company: Parratt-Wolff, Inc.
Driller's Name: J. Percy, B. Rice
Drilling Method: Hollow Stem Auger
Bit Size: NA
Auger Size: 3.25" ID/8.25" ID
Rig Type: CME-75 Rig
Sampling Method: 2" ID x 2' SS

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 36' below grade
Surface Elevation: NA

Geologist: David Cornell

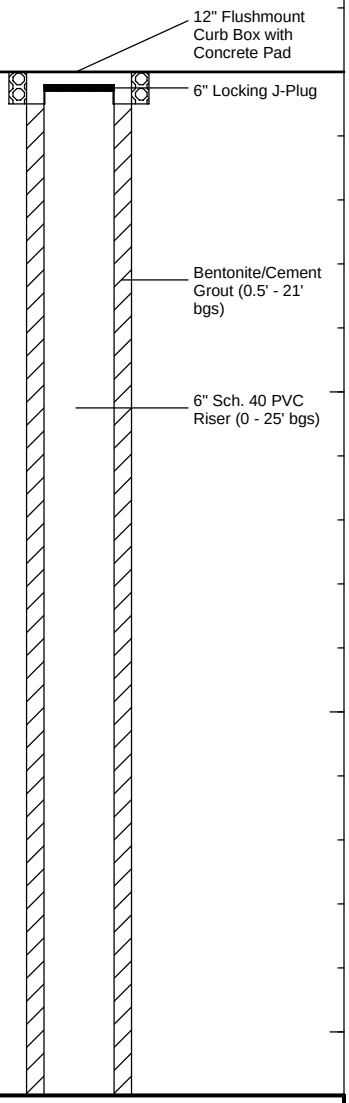
Well/Boring ID: NMW-1

Client: Central Hudson Gas & Electric Corporation

Location: Newburgh Project
Newburgh, NY

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	FID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 0	1	0-2	NA	NA	NA	NA		ASPHALT. Subbase.
	2	2-4	1.7	5 7 5 5	12	ND		Brown-gray Silty fine to medium SAND, some fine to medium subrounded Gravel, little Cinders, trace Slag, Coal, and Brick, non-plastic, moist.
5 -5	3	4-6	1..8	4 5 5 4	10	ND		Brown fine to coarse SAND, trace Silt and fine Gravel, non-plastic, moist. Gray CINDERS and ASH, little Slag, non-plastic, wet.
	4	6-8	1.5	4 7 7 6	14	ND		Brown SILT, some Clay, little red-orange Brick, trace fine Gravel, non-plastic, wet. Gray-olive SILT and CLAY, trace fine Gravel and Brick, slightly plastic, wet.
	5	8-10	0.8	3 5 5 4	10	ND		
10-10	6	10-12	0.9	10 12 6 5	18	ND		Gray color below 10' bgs.
	7	12-14	1.6	3 6 7 7	13	ND		Gray-brown Silty CLAY, little fine to medium subrounded Gravel, trace Brick and Silt, non-plastic, saturated. Gray fine to medium SAND, little fine to medium subrounded Gravel, trace Brick and Silt, non-plastic, saturated. Trace coarse Gravel below 14' bgs.
15-15	8	14-16	1.4	3 6 2 2	8	ND		

Well/Boring Construction



BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect.

Client:
Central Hudson Gas & Electric Corporation

Site Location:
Newburgh Project
Newburgh, NY

Well/Boring ID: NMW-1

Borehole Depth: 36' below grade

DEPTH ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	9	16-18	2.0	2 3 3 4	6	ND		Gray fine to coarse SAND, some fine to coarse subrounded Gravel, non-plastic, saturated. Brown-gray Silty CLAY, trace Organics, moderately plastic, moist. Gray Silty fine to coarse SAND, some fine to coarse Gravel, trace Cobbles, non-plastic, saturated.	
	10	18-20	1.3	1 2 1 1	3	ND		Gray-brown SILT and CLAY, trace Organics, moderately plastic, moist. Brown color, wet below 18' bgs. Gray fine to coarse SAND, trace fine Gravel, non-plastic, saturated. Brown SILT and CLAY, moderately plastic, wet.	Bentonite/Cement Grout (0.5' - 21' bgs)
20-*20*	11	20-22	1.7	2 2 3 4	5	3.1 0.8 0.4		Gray fine to coarse SAND, some fine to medium Gravel, non-plastic, saturated. Brown-gray Silty CLAY, faint odor, moderately plastic, saturated. Gray fine to coarse SAND, some fine to medium subrounded Gravel, trace Silt, trace Organics, faint odor, non-plastic, saturated.	6" Sch. 40 PVC Riser (0 - 25' bgs)
	12	22-24	1.5	3 4 5 4	9	3.6 2.5		Gray Silty fine to coarse SAND, little fine to medium subrounded Gravel, trace coarse Gravel, faint odor, non-plastic, saturated. Brown SILT and CLAY, moderately plastic, wet.	Bentonite Seal (21' - 23' bgs)
25-*25*	13	24-26	1.2	3 3 4 3	7	5.1 5.5		Gray Silty fine to medium GRAVEL and SAND, some coarse Sand and Gravel, non-plastic, saturated. Trace NAPL below 24.8' bgs. Gray fine to coarse SAND, some fine to medium subrounded Gravel, non-plastic, saturated. Trace NAPL at 26.3' bgs.	#1 Silica Sand Pack (23' - 30' bgs)
	14	26-28	1.6	2 3 2 3	5	9.6 39 1537		Gray-brown SILT, little fine to medium Sand and Gravel, non-plastic, wet. Gray fine to coarse SAND and GRAVEL, some NAPL, non-plastic, saturated.	6" 0.020 Slot Sch. 40 Screen (25' - 30' bgs)
	14	28-30	1.5	2 1 1 2	2	423 39.1 41.3		Gray SILT, little Clay, trace fine Sand and Organics, slightly plastic, moist. Little fine Gravel and fine Sand, trace Clay, moderate odor, NAPL on slough, saturated below 28' bgs.	
30-*30*	15	30-32	1.7	4 6 6 7	12	22 15 7		Some fine to coarse subrounded Gravel and fine to medium Sand, trace Clay, faint odor, non-plastic below 30' bgs.	6" Sch. 40 PVC Sump (30' - 32.4' bgs)
	16	32-34	1.0	5 8 7 6	15	ND ND		Some fine to coarse Sand, little fine to coarse subrounded Gravel below 32' bgs.	Grout (30' - 32.4' bgs)
35-*35*	17	34-36	1.2	3 5 4 4	9	ND ND			

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect.

Date Start/Finish: 4/14/05 - 4/15/05
Drilling Company: Parratt-Wolff, Inc.
Driller's Name: J. Percy, B. Rice
Drilling Method: Hollow Stem Auger
Bit Size: NA
Auger Size: 3.25" ID/8.25" ID
Rig Type: CME-75 Rig
Sampling Method: 2" ID x 2' SS

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 40' below grade
Surface Elevation: NA

Geologist: David Cornell

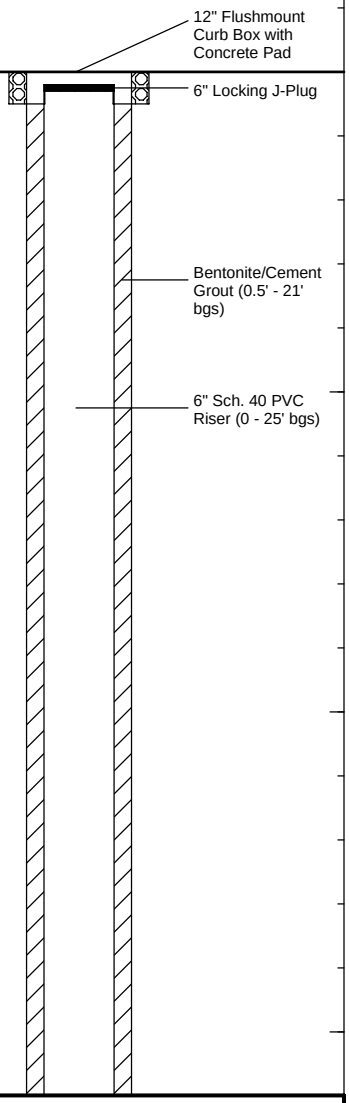
Well/Boring ID: NMW-2

Client: Central Hudson Gas & Electric Corporation

Location: Newburgh Project
Newburgh, NY

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	FID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 - 0	1	0-2	NA	NA	NA	NA		ASPHALT. Subbase.
	2	2-4	1.1	4 3 2 2	5	ND		Brown-gray fine to medium SAND and SILT, little fine to coarse subrounded Gravel, little Cinders, trace Brick and Ash, non-plastic, moist.
5 - -5	3	4-6	1.7	6 3 2 2	5	ND		Brown medium to coarse SAND, some fine Sand, trace fine Gravel, non-plastic, moist. Wet below 5.3' bgs. Brown SILT, little Clay, trace fine Gravel, slightly plastic, moist to wet.
	4	6-8	0.7	4 4 9 8	13	ND		Brown-gray fine to coarse SAND, some Brick, little Silt and Cinders, non-plastic, saturated.
10 - 10	5	8-10	1.3	4 8 5 15	13	ND		Gray Silty fine to medium SAND and subangular GRAVEL, trace coarse Sand, non-plastic, saturated. Trace Cobble below 10' bgs.
	6	10-12	0.2	6 5 5 2	10	ND		
	7	12-14	1.9	4 4 4 2	8	ND		Brown-gray SILT, some fine Sand, little fine to medium Gravel and Clay, slightly plastic, saturated. SAND and GRAVEL layer from 13.6' - 13.8' bgs.
15 - 15	8	14-16	1.7	3 4 4 5	8	ND		Dark brown SILT and CLAY, plastic, moist to wet. Brown medium to coarse SAND, some fine Sand, little fine Gravel and Silt, trace Organics, non-plastic, saturated.

Well/Boring Construction



BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect.

Client:
Central Hudson Gas & Electric Corporation

Site Location:
Newburgh Project
Newburgh, NY

Well/Boring ID: NMW-2

Borehole Depth: 40' below grade

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	9	16-18	1.1	2 6 3 4	9	ND		Gray Silty fine SAND, some fine to coarse subrounded Gravel, non-plastic, saturated.	
	10	18-20	1.7	2 5 1 1	6	ND		Brown SILT, little Clay, trace fine Sand, slightly plastic, wet. Gray medium to coarse SAND, some fine Sand, little fine to medium Gravel, trace Silt, slightly plastic, saturated. Brown SILT, little Clay, trace fine Sand, slightly plastic, moist.	Bentonite/Cement Grout (0.5' - 21' bgs)
20-*20*	11	20-22	1.2	1 1 1 1	2	ND		No Sand present below 20' bgs.	6" Sch. 40 PVC Riser (0 - 25' bgs)
	12	22-24	1.9	2 3 3 2	6	ND		Some Clay, trace Organics, slightly to moderately plastic below 22' bgs. Gray Silty fine to coarse SAND and fine to coarse subrounded GRAVEL. Brown SILT, some Clay, trace Organics, slightly to moderately plastic, moist.	Bentonite Seal (21' - 23' bgs)
25-*25*	13	24-26	1.1	3 7 8 7	15	ND 0.2 1.2		Gray Silty fine to coarse SAND and fine to coarse subrounded GRAVEL, trace Organics, faint odor, non-plastic, saturated.	#1 Silica Sand Pack (23' - 35' bgs)
	14	26-28	1.0	4 8 8 8	16	0.8 1.9		Trace Cobbles below 26' bgs.	6" 0.020 Slot Sch. 40 Screen (25' - 35' bgs)
	14	28-30	1.4	3 2 2 2	4	4.2 5.2 18		Gray Silty fine to coarse SAND, some fine to coarse Gravel, non-plastic, saturated. 0.1'-thick Silt seam at 28.7' bgs. Trace NAPL below 29.3' bgs. Little NAPL below 30' bgs.	
30-*30*	15	30-32	1.1	2 1 2 2	3	215 22.3		Brown SILT, some Clay, trace Organics, slightly plastic, moist.	
	16	32-34	1.1	2 2 3 6	5	35.2 21.5		Faint odor, yellowish NAPL on slought below 32' bgs. Gray Silty fine SAND and fine to coarse subrounded GRAVEL, trace medium to coarse Sand, faint odor, non-plastic, wet.	
35-*35*	17	34-36	1.3	2 1 2 2	3	ND		Gray SILT, little Clay and fine to coarse Gravel, trace Shell fragments and fine Sand, slight plastic, wet.	6" Sch. 40 PVC Sump (35' - 37.2' bgs) Grout (35' - 37.4' bgs)

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect.

Client:
Central Hudson Gas & Electric Corporation

Site Location:
Newburgh Project
Newburgh, NY

Well/Boring ID: NMW-2

Borehole Depth: 40' below grade

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	18	36-38	1.5	3 4 3 2	7	ND		Gray SILT and fine to medium SAND, some coarse Sand and fine to coarse subrounded Gravel, trace Organics and Clay, non-plastic, saturated.	6" Sch. 40 PVC Sump (35' - 37.2' bgs) Grout (35' - 37.4' bgs)
	19	38-40	1.4	2 1 2 1	3	ND		Gray SILT, little to trace fine Gravel, trace fine Sand, Clay, and Shell fragments, slightly plastic, moist.	
40-40									
45-45									
50-50									
55-55									

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect.

Date Start/Finish: 4/15/05 - 4/18/05
Drilling Company: Parratt-Wolff, Inc.
Driller's Name: J. Percy, B. Rice
Drilling Method: Hollow Stem Auger
Bit Size: NA
Auger Size: 3.25" ID/8.25" ID
Rig Type: CME-75 Rig
Sampling Method: 2" ID x 2' SS

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 42' below grade
Surface Elevation: NA

Geologist: David Cornell

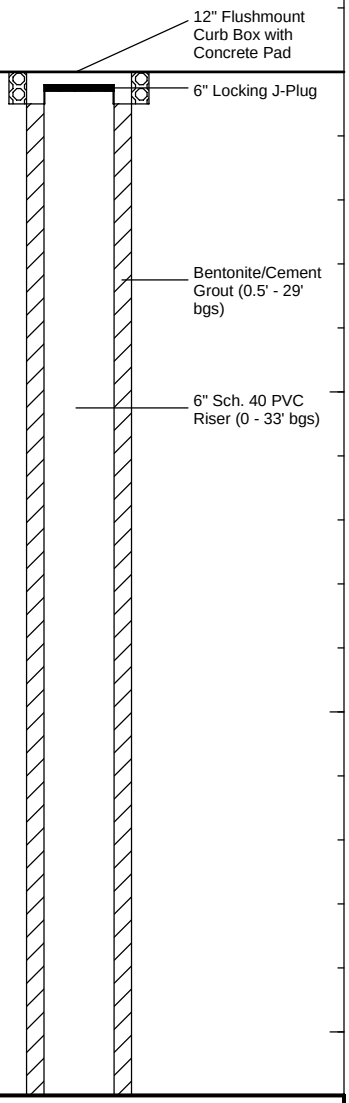
Well/Boring ID: NMW-3

Client: Central Hudson Gas & Electric Corporation

Location: Newburgh Project
Newburgh, NY

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	FID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 / 0	1	0-2	NA	NA	NA	NA		ASPHALT. Subbase.
	2	2-4	1.6	5 8 5 4	13	ND		Gray-brown Silty fine to medium SAND, some coarse Sand and fine to coarse subangular Gravel, trace Cinders and Brick, non-plastic, moist.
5 / -5	3	4-6	1.0	3 4 3 4	7	ND		Wet below 4.9' bgs.
	4	6-8	1.5	3 5 6 4	11	ND		Brown color, trace Cobbles, saturated below 6.0' bgs.
	5	8-10	0.9	2 4 12 6	16	ND		Brown Silty fine to medium SAND and fine to coarse subangular GRAVEL, trace Cobbles, non-plastic, saturated.
10 / -10	6	10-12	1.1	3 4 4 3	8	ND		Gray-brown color below 12' bgs.
	7	12-14	1.4	8 9 6 3	15	ND		Gray SILT, little fine Sand, fine Gravel, and Clay, slightly plastic, saturated.
15 / -15	8	14-16	2.0	WOH WOH 1 1	1	ND		Brown Silty CLAY, trace Organics, moderately plastic, moist to wet. Trace fine Sand interbeds below 15.5' bgs.

Well/Boring Construction



BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect; WOH = Weight of Hammer.

Client:
Central Hudson Gas & Electric Corporation

Site Location:
Newburgh Project
Newburgh, NY

Well/Boring ID: NMW-3

Borehole Depth: 42' below grade

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
				1 5 7 7				Brown Silty CLAY, trace Organics, moderately plastic, wet.	
	9	16-18	1.8		12	ND		Gray medium to coarse SAND, some fine Sand, little fine to medium subrounded Gravel, trace Silt, non-plastic, saturated.	
	10	18-20	1.2	1 1 1 3	2	ND			Bentonite/Cement Grout (0.5' - 29' bgs)
20-*20*								Increased Gravel content below 20' bgs.	
	11	20-22	1.4	8 3 5 5	8	ND			6" Sch. 40 PVC Riser (0 - 33' bgs)
	12	22-24	1.2	6 6 7 9	13	ND		Gray Silty fine to coarse SAND, some fine to coarse subrounded Gravel, non-plastic, saturated.	
25-*25*	13	24-26	1.3	3 2 1 1	3	ND		Brown-gray SILT and CLAY, moderately plastic, wet; interbedded with gray fine to coarse SAND, trace fine Gravel, non-plastic, saturated.	
	14	26-28	1.7	3 4 3 2	7	ND		Brown SILT and CLAY, trace Organics, moderately plastic, wet. Gray Silty fine to medium SAND, some coarse Sand, little fine Gravel, non-plastic, saturated.	
	14	28-30	0.2	WOH 1 1 1	2	ND		Slough (Sand and Gravel); SILT and CLAY in tip of shoe, moderately plastic, wet.	
30-*30*	15	30-32	1.0	1 2 3 3	5	4.2 2.4		Gray Silty fine to coarse SAND, little to some fine to medium subrounded Gravel, trace coarse Gravel, intervals of increased Silt and Clay content present, faint odor, non-plastic, saturated.	Bentonite Seal (29' - 31' bgs)
	16	32-34	1.0	2 2 2 3	4	8.8 38.8		Brown-gray SILT, little fine to medium Sand and fine to coarse subrounded Gravel, trace Clay, faint odor, slightly plastic, saturated.	#1 Silica Sand Pack (31' - 38' bgs)
35-*35*	17	34-36	1.3	2 2 2 2	4	52.1 301		Brown SILT and CLAY, trace Organics, faint odor, moderately plastic, wet. Gray fine to coarse SAND, some medium to fine subrounded Gravel, some yellow NAPL, non-plastic, saturated.	6" 0.020 Slot Sch. 40 Screen (33' - 38' bgs)

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect; WOH = Weight of Hammer.

Client:
Central Hudson Gas & Electric Corporation

Site Location:
Newburgh Project
Newburgh, NY

Well/Boring ID: NMW-3

Borehole Depth: 42' below grade

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	18	36-38	1.7	2 2 4 4	6	85.3 57.3 31.1		Gray SILT, little fine to medium Sand and Gravel, trace Clay, slightly plastic, wet. Brown SILT and CLAY, trace fine Sand and Organics, moderate odor, moderately plastic, wet. Gray fine to coarse SAND, some fine to coarse subrounded Gravel, sheen on slough, non-plastic, saturated.	#1 Silica Sand Pack (31' - 38' bgs) 6" 0.020 Slot Sch. 40 Screen (33' - 38' bgs) 6" Sch. 40 PVC Sump (38' - 40.4' bgs) Grout (38' - 40.4' bgs)
	19	38-40	1.4	1 1 1 1	2	ND		Brown SILT, little Clay, trace Shell fragments and Organics, trace Sand and Gravel seams, slightly to moderately plastic, wet.	
40-40	20	40-42	1.8	WOH WOH 1 2	1	ND		Some Clay, moderately plastic, moist to wet below 40' bgs. Fine to medium Sand seam at 40.5' bgs. Gray medium to coarse Sand and fine Gravel seam at 41.1' bgs.	
45-45									
50-50									
55-55									

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect; WOH = Weight of Hammer.

Date Start/Finish: 4/18/05 - 4/19/05
Drilling Company: Parratt-Wolff, Inc.
Driller's Name: J. Percy, B. Rice
Drilling Method: Hollow Stem Auger
Bit Size: NA
Auger Size: 3.25" ID/8.25" ID
Rig Type: CME-75 Rig
Sampling Method: 2" ID x 2' SS

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 46' below grade
Surface Elevation: NA

Geologist: David Cornell

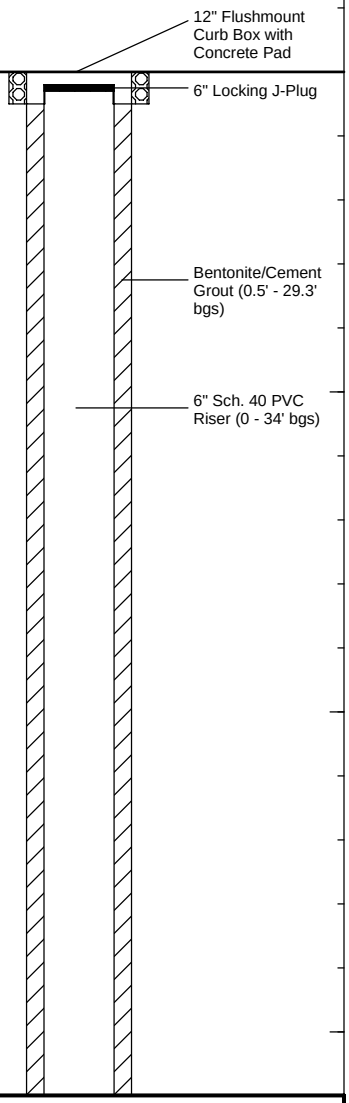
Well/Boring ID: NMW-4

Client: Central Hudson Gas & Electric Corporation

Location: Newburgh Project
Newburgh, NY

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	FID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 / 0	1	0-2	NA	NA	NA	NA		ASPHALT. Subbase.
	2	2-4	1.8	3 7 3 3	10	ND		Brown-gray SILT and fine SAND, little fine to coarse subrounded Gravel, trace Brick and medium Sand, trace Cinders, non-plastic, moist.
5 / -5	3	4-6	0.2	3 5 3 5	8	ND		Trace Cobbles below 4.0' bgs.
	4	6-8	1.5	4 3 8 8	11	ND		Brown fine to medium SAND, some coarse Sand and fine to medium subrounded Gravel, little coarse Gravel and Silt, non-plastic, saturated.
	5	8-10	1.1	2 6 6 4	12	ND		Brown-gray color below 8.0' bgs.
10 / -10	6	10-12	0.5	2 3 2 1	5	ND		Brown-gray SILT and fine to coarse SAND, little fine to medium Gravel, trace Brick fragments and coarse Gravel, trace Clay, non-plastic, saturated.
	7	12-14	0.6	2 2 1 1	4	ND		Gray medium to coarse SAND, some fine Sand, little fine to medium subrounded Gravel, trace coarse Gravel and Silt, non-plastic, saturated.
15 / -15	8	14-16	0.4	3 2 5 7	7	ND		Trace Cobbles below 14' bgs.

Well/Boring Construction



BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect; WOH = Weight of Hammer.

Client:
Central Hudson Gas & Electric Corporation

Site Location:
Newburgh Project
Newburgh, NY

Well/Boring ID: NMW-4

Borehole Depth: 46' below grade

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	9	16-18	0.3	4 8 3 1	11	ND		Gray medium to coarse SAND, some fine Sand, litle fine to medium subrounded Gravel, trace coarse Gravel and Silt, non-plastic, saturated.	
	10	18-20	1.4	WOH 1 1 1	2	ND		Brown SILT, little Clay, trace Organics, slightly plastic, moist. Trace fine Sand seam, non-plastic, wet at 18.6' bgs	Bentonite/Cement Grout (0.5' - 29.3' bgs)
20-*20*	11	20-22	1.9	WOH WOH 2 1	2	ND		Fine Sand seam at 21.3' bgs.	6" Sch. 40 PVC Riser (0 - 34' bgs)
	12	22-24	1.8	WOH 2 1 5	3	ND		Fine Sand seam at 23.15' bgs. Brown-gray fine to coarse SAND, little fine to medium subrounded Gravel, trace Silt, non-plastic, saturated.	
25-*25*	13	24-26	1.5	2 9 9 7	18	ND		Gray fine to coarse SAND and fine to coarse GRAVEL, trace Silt, non-plastic, saturated.	
	14	26-28	1.6	5 3 5 6	8	ND			
	14	28-30	1.0	3 3 2 3	5	ND		Little Silt below 28' bgs.	
30-*30*	15	30-32	0.6	3 2 3 2	5	ND			Bentonite Seal (29.3' - 32' bgs)
	16	32-34	1.1	3 4 1 2	5	ND		Trace Cobbles below 32' bgs. Brown-gray SILT, little Clay and Organics, trace fine Sand, slightly plastic, wet to saturated.	#1 Silica Sand Pack (32' - 44' bgs)
35-*35*	17	34-36	1.5	1 1 1 2	2	ND ND 0.2		Little fine to medium Gravel, trace Organics, non-plastic to slightly plastic, moist to wet below 34' bgs. No Gravel present below 34.8' bgs. Gray fine to coarse SAND and fine to coarse subrounded GRAVEL, trace Silt, very faint odor, non-plastic, saturated.	6" 0.020 Slot Sch. 40 Screen (34' - 44' bgs)

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect; WOH = Weight of Hammer.

Client:
Central Hudson Gas & Electric Corporation

Site Location:
Newburgh Project
Newburgh, NY

Well/Boring ID: NMW-4

Borehole Depth: 46' below grade

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	18	36-38	1.5	3 2 1 1	3	8.5 23.1		Brown-gray SILT, little Clay, trace Organics, slightly plastic, moist; with seams of SILT and fine to medium SAND, little fine to coarse Gravel, trace Clay, faint odor, non-plastic, wet.	#1 Silica Sand Pack (32' - 44' bgs)
	19	38-40	1.8	1 3 3 4	6	40.1 127 40.3 117 39.5		Thin seam of fine to coarse SAND, some fine to coarse subrounded Gravel, trace Silt, little NAPL at 38.9', 39.15', and 39.25' bgs.	
40-*40*	20	40-42	1.3	1 3 2 3	5	28.3 20.1 9.7		Brown SILT and CLAY, trace Organics, moderately plastic, moist. Gray fine to coarse SAND, little fine to medium subrounded Gravel seam, faint odor, non-plastic, saturated at 40.4' bgs. Gray fine to coarse SAND, little fine to medium subrounded Gravel seam, faint odor, non-plastic, saturated at 41.2' bgs.	6" 0.020 Slot Sch. 40 Screen (34' - 44' bgs)
	21	42-44	1.9	1 1 1 1	2	24.3 19.2 4.3 3.6		Brown Silty CLAY, trace Organics, faint odor, noderately plastic to plastic, moist. Trace fine Sand seam at 42.7' bgs.	
45-*45*	22	44-46	2.0	WOH 1 2 3	3	ND		Trace Shell fragments, no odor, plastic, moist below 44' bgs. Gray fine to medium SAND, no odor, non-plastic, saturated.	6" Sch. 40 PVC Sump (44' - 46.4' bgs) Grout (44' - 46.4' bgs)
50-*50*									
55-*55*									

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect; WOH = Weight of Hammer.

Date Start/Finish: 4/19/05 - 4/20/05
Drilling Company: Parratt-Wolff, Inc.
Driller's Name: J. Percy, B. Rice
Drilling Method: Hollow Stem Auger
Bit Size: NA
Auger Size: 3.25" ID/8.25" ID
Rig Type: CME-75 Rig
Sampling Method: 2" ID x 2' SS

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 48' below grade
Surface Elevation: NA

Geologist: David Cornell

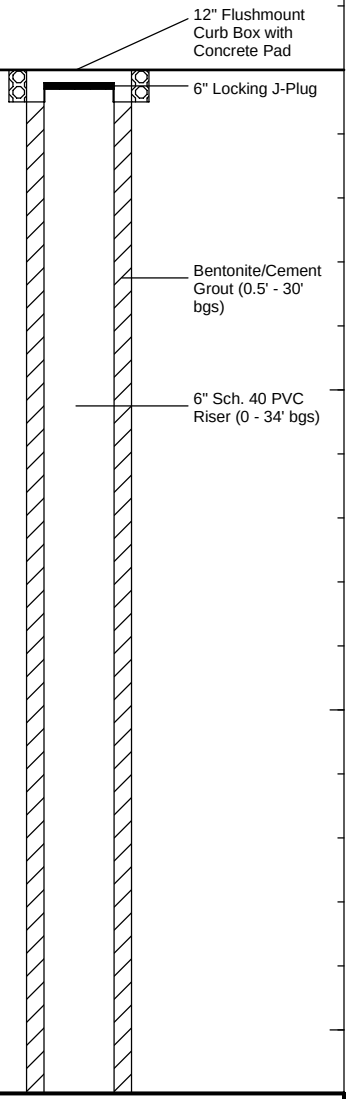
Well/Boring ID: NMW-5

Client: Central Hudson Gas & Electric Corporation

Location: Newburgh Project
Newburgh, NY

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	FID Headspace (ppm)	Geologic Column	Stratigraphic Description
0 / 0	1	0-2	NA	NA	NA	NA		ASPHALT. Subbase.
	2	2-4	1.7	5 7 3 2	10	ND		Brown-gray Silty fine SAND, little fine to medium Gravel, trace Brick and medium Sand, non-plastic, moist.
5 / -5	3	4-6	0.4	1 2 4 4	6	ND		
	4	6-8	0.8	3 2 2 2	4	ND		Dark brown fine to coarse SAND, little fine to medium subrounded Gravel, non-plastic, saturated.
	5	8-10	1.4	2 1 1 1	2	ND		Trace Silt and Organics below 8.0' bgs.
10 / -10	6	10-12	1.6	3 5 6 4	11	ND		Brown-gray Silty fine to medium SAND and fine to coarse subrounded GRAVEL, some coarse Sand, non-plastic, saturated.
	7	12-14	0.8	3. 2 2 1	4	ND		
15 / -15	8	14-16	1.4	4 2 2 4	4	ND		Brown SILT and CLAY, moderately plastic, wet.

Well/Boring Construction



BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect; WOH = Weight of Hammer.

Client:
Central Hudson Gas & Electric Corporation

Site Location:
Newburgh Project
Newburgh, NY

Well/Boring ID: NMW-5

Borehole Depth: 48' below grade

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
				WOH WOH 2 1	2	ND		Brown SILT and CLAY, moderately plastic, wet.	
	9	16-18	1.2					Brown-gray Silty fine SAND, trace medium Sand, trace Silt seams, non-plastic, wet.	
				WOH WOH 2 1	2	ND		Brown Silty CLAY, trace Shell fragments, plastic, moist to wet. Gray fine to coarse SAND seam, little fine Gravel from 18.6' - 18.7' bgs.	Bentonite/Cement Grout (0.5' - 30' bgs)
20-*20*	10	18-20	1.6						
				WOH 1 1 2	2	ND		Brown SILT and CLAY, moderately plastic, wet. Trace fine SAND seam at 21' bgs. Trace fine SAND seam at 21.5' bgs.	6" Sch. 40 PVC Riser (0 - 34' bgs)
	11	20-22	1.9						
				WOH WOH WOH 3	NA	ND		Brown SILT, some to little Clay, trace fine Sand and Organics, slightly to moderately plastic, moist to wet.	
				4 4 5 4	9	ND		Brown-gray fine to coarse SAND and fine to coarse subrounded GRAVEL, trace Silt, non-plastic, saturated.	
25-*25*	13	24-26	1.6						
				4 4 2 3	6	ND			
	14	26-28	1.7						
				3 2 2 2	4	ND		Gray Silty fine to coarse SAND, little fine to coarse subrounded Gravel, non-plastic, saturated.	
	14	28-30	1.0						
30-*30*				3 2 1 5	3	ND		Gray Silty fine to medium SAND and fine to coarse GRAVEL, some coarse Sand, non-plastic, saturated.	Bentonite Seal (30' - 32' bgs)
	15	30-32	1.1						
				2 1 2 2	3	ND		Brown SILT, little Clay, trace Organics, moderately to slightly plastic, moist; Trace seams of fine SAND and seams of SAND and GRAVEL, non-plastic, saturated.	#1 Silica Sand Pack (32' - 44' bgs)
	16	32-34	1.7						
				1 1 3 2	4	ND		Gray Silty fine to coarse SAND, some fine to coarse subrounded Gravel, non-plastic, saturated.	6" 0.020 Slot Sch. 40 Screen (34' - 44' bgs)
35-*35*	17	34-36	1.8						

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect; WOH = Weight of Hammer.

Client:
Central Hudson Gas & Electric Corporation

Site Location:
Newburgh Project
Newburgh, NY

Well/Boring ID: NMW-5

Borehole Depth: 48' below grade

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows/6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
				2		1.3		Gray Silty fine to coarse SAND, some fine to coarse subrounded Gravel, non-plastic, saturated.	
	18	36-38	1.8	1 1 2	2	3.0 37.6		Brown SILT and CLAY, little Organics, faint odor, non-plastic, saturated. 0.1'-thick gray fine to coarse SAND seam, some fine to coarse Gravel at 36.7' and 37.7' bgs.	#1 Silica Sand Pack (32' - 44' bgs)
				2		26.3		Gray Silty fine to coarse SAND, little fine to medium subrounded Gravel, some NAPL, non-plastic, saturated.	
	19	38-40	1.4	2 3 2	5	75.3 35.5		Brown SILT, some Clay, trace Organics, moderate odor, slightly to moderately plastic, wet.	
40-*40*				4		15.2		Gray fine to coarse SAND, little fine to medium subrounded Gravel, non-plastic, saturated.	6" 0.020 Slot Sch. 40 Screen (34' - 44' bgs)
	20	40-42	1.6	2 1 1	3	9.3 0.2		Brown SILT, some Clay, trace organics and Shell fragments, trace fine Sand seams, moderately to slightly plastic, wet.	
				2		ND		Brown SILT and CLAY, trace Shell fragments, moderately plastic, moist.	
	21	42-44	1.1	1 1 1	2	ND			
				WOH		2.1		Moderately plastic, moist to wet below 44' bgs.	6" Sch. 40 PVC Sump (44' - 46.2' bgs)
45-*45*	22	44-46	1.9	WOH WOH WOH	NA	1.2 2.0			Grout (44' - 46.2' bgs)
				WOH		3.2		Wet below 46' bgs.	
	23	46-48	1.6	8 6 5	14	2.1		Gray Silty fine to coarse SAND, little fine subrounded Gravel, non-plastic, wet to saturated.	
50-*50*									
55-*55*									

BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non-detect; WOH = Weight of Hammer.

Date Start/Finish: 1/23/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 970034.1
Easting: 627144.7
Casing Elevation: 13.37'

Borehole Depth: 25.7
Surface Elevation: 13.8'

Descriptions By: Dave Cornell

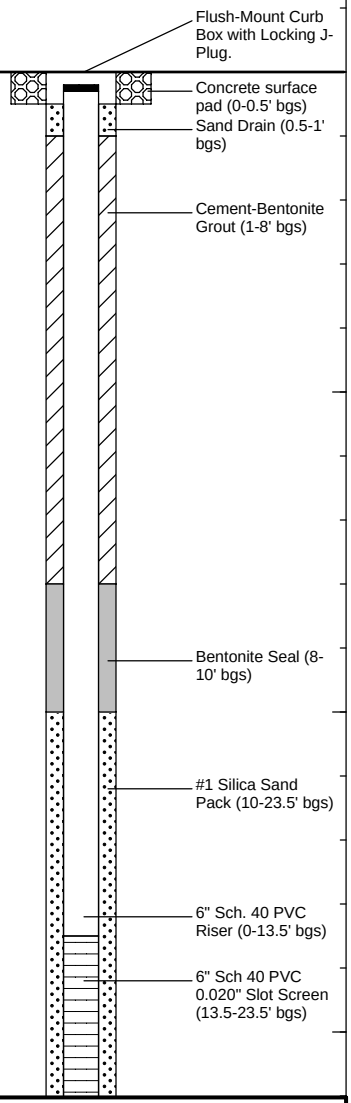
Well/Boring ID: **NMW-6**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								
									Blind drilled to 10' bgs.
5	-5	NA	NA	NA	NA	NA	NA		
10	-10	1	10-12	1.0	7 11 15 2	26	ND		Brownish-gray medium to coarse angular GRAVEL, some fine to coarse Sand, little Cobbles, trace Silt and fine Gravel (S,NP), trace brick.
		2	12-14	1.4	2 6 4 7	10	ND		Dark brown Organics (wood and roots) (W,NP) (peat-like).
15	-15	3	14-16	0.4	8 2 2 2	4	ND		Cobble stuck in shoe, (S,NP) no noticeable odors on outside of spoon.

Well/Boring Construction



Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

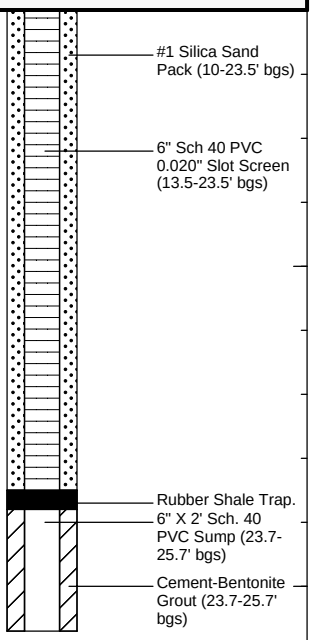
Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-6

Borehole Depth: 25.7

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
		4	16-18	2.0	23 13 16 12	29	ND		Gray Silty fine to coarse SAND and fine to coarse rounded multicolored Gravel, little Cobbles (S,NP), very thin reddish-brown stringers/seams of Organics.
		5	18-20	1.5	7 7 9 8	16	ND 123		Similar Soils (S,NP), little NAPL blebs (reddish-brown) in spoon shoe (~19.5' bgs).
20	-20	6	20-22	1.2	4 5 6 6	11	33.4		No NAPL, faint odor from 20-22.8' bgs.
		7	22-24	1.9	4 3 4 5	7	28.4 12.2 1.7		Layers of brown Silt, little Clay, trace Organics (twigs, roots, wood) and fine Sand (S, NP), alternating with layers of gray fine to coarse SAND, trace fine Gravel (S,NP).
25	-25	8	24-26	2.0	WOR/ 1.0 2 2	NA	ND		Grayish-brown SILT, little Clay, trace Organics and fine Sand (S, NP).
30	-30								
35	-35								

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 1/24/07
Drilling Company: Parratt Wolff
Driller's Name: D. Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969982.9
Easting: 627137.9
Casing Elevation: 13.54'

Borehole Depth: 25.7' bgs
Surface Elevation: 13.8'

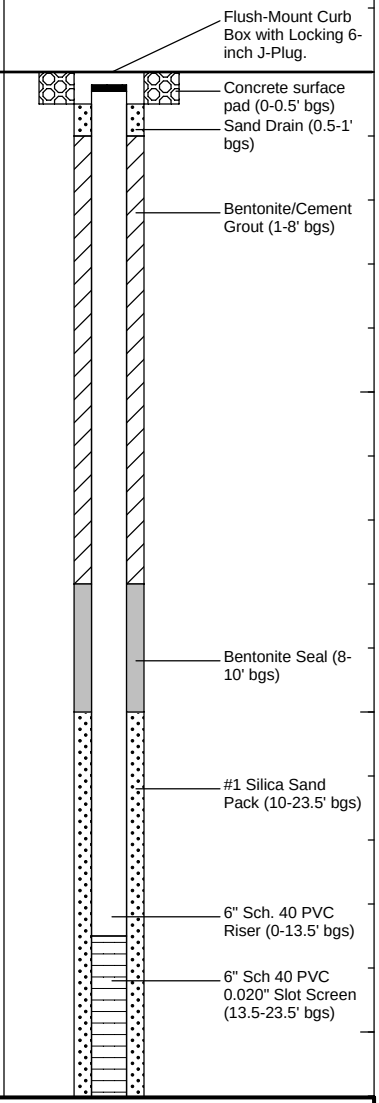
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-7**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								Blind drilled to 22' bgs
5	-5	NA	NA	NA	NA	NA	NA		
10	-10								
15	-15								



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

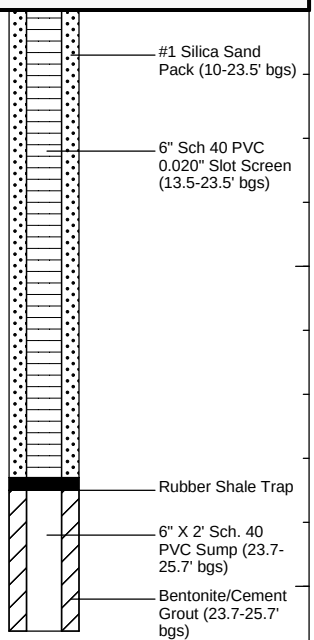
Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-7

Borehole Depth: 25.7' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		NA	NA	NA	NA	NA	NA		Blind drilled to 22' bgs	
20	-20									
		1	22-24	1.0	WOR 2 5 4	7	73.1 15.3		Brown SILT and fine to medium Sand, little fine subrounded Gravel and coarse Sand (faint to moderate odor), trace Clay (S,NP), NAPL in slough water above.	
									Faint odor at 24' bgs.	
25	-25	2	24-26	2.0	4 3 4 11	7	14.3 2.1		Brown-gray SILT, some Clay, trace fine Sand, Organics (peat-like material), trace amounts of medium Sand and fine Gravel below 25.6' bgs (S,SP)	
30	-30									
35	-35									



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 1/26/07
Drilling Company: Parratt Wolff
Driller's Name: D. Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969937.7
Easting: 627132.2
Casing Elevation: 13.23'

Borehole Depth: 27.5' bgs
Surface Elevation: 13.23'

Descriptions By: Dave Cornell

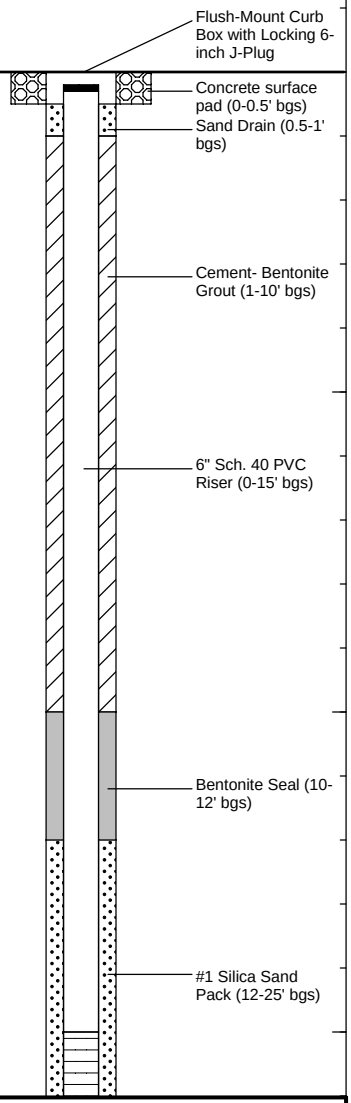
Well/Boring ID: **NMW-8**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								Blind drilled to 22' bgs
5	-5	NA	NA	NA	NA	NA	NA		
10	-10								
15	-15								

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-8

Borehole Depth: 27.5' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	NA	NA	NA	NA	NA	NA			
20 -20									
	1	22-24	1.4	4 3 4 46	7	22.3 75.1		Gray Silty fine to coarse SAND, little fine to coarse subrounded Gravel (S, NP), moderate odor, NAPL in slough water (none in sample). Gray SILT and fine Sand, some to little fine to coarse subrounded to subangular Gravel, trace Organics (peat) and coarse to medium Sand (S,NP).	
	2	24-26	1.2	4 8 11 16	19	38.1 6.3		Brown SILT and fine Sand, little fine to coarse, subrounded Gravel, trace Organics (twigs) (S,NP). Gray Silty fine to coarse SAND, some fine to coarse subrounded Gravel (Possible till) (S,NP).	
25 -25	NA	NA	NA	NA	NA	NA		NA	
30 -30									
35 -35									

6" Sch 40 PVC 0.020" Slot Screen (15-25' bgs)
Rubber Shale Trap
Cement-Bentonite Grout (25-27.5' bgs)
6" X 2' Sch. 40 PVC Sump (25-27.5' bgs)

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 1/25/07
Drilling Company: Parratt Wolff
Driller's Name: D. Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969898.0
Easting: 627126.9
Casing Elevation: 13.26'

Borehole Depth: 28.5' bgs
Surface Elevation: 13.6'

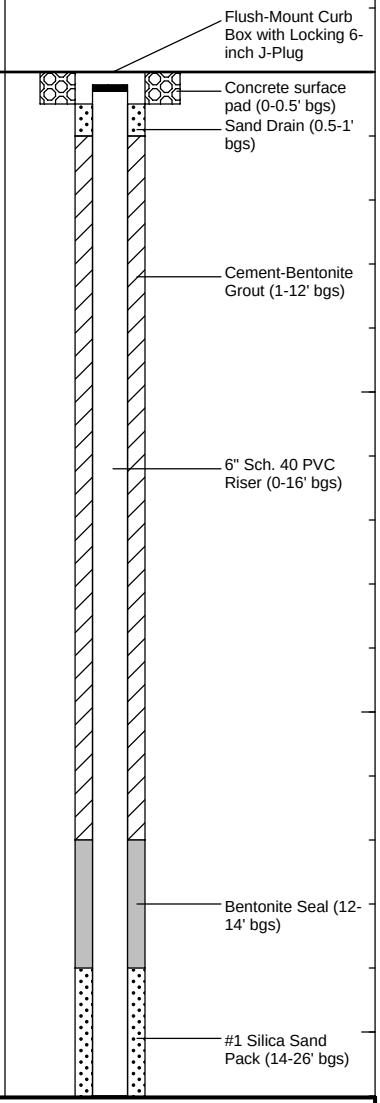
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-9**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								
5	-5	NA	NA	NA	NA	NA	NA		Blind drilled to 22' bgs.
10	-10								
15	-15								



Well/Boring Construction

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

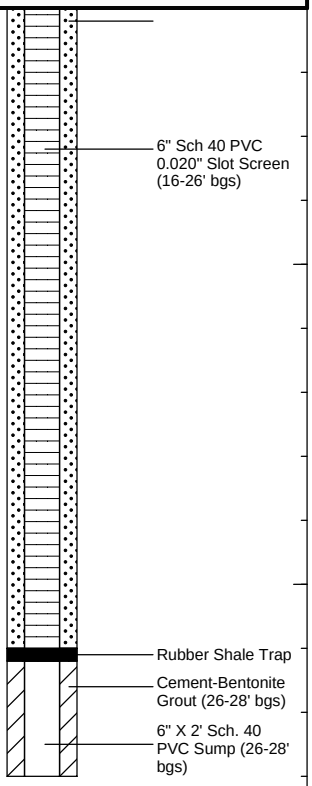
Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-9

Borehole Depth: 28.5' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		NA	NA	NA	NA	NA	NA		Blind drilled to 22' bgs.	
20	-20									
		1	22-24	1.2	4 2 6 14	8	514 219		Brown-gray Silty fine to coarse SAND and fine to coarse subrounded GRAVEL (S,NP), little red-brown NAPL. Brown SILT, some fine to coarse Gravel, little Cobbles and fine to coarse Sand, trace Clay (S,NP), moderate odor.	
25	-25	2	24-26	2.0	21 21 12 12	33	373 3750		NAPL on top of Silt @ 25.6' bgs. Gray-olive SILT, trace Clay (W, NP), strong odor, no NAPL.	
		3	26-28	1.7	14 23 42 88	65	85.5 253		Gray-olive, fine Sandy SILT, little fine to medium subangular Gravel (Possible till) (W,NS). Brown SILT and fine to coarse subangular to subrounded GRAVEL, little fine sand and cobbles (S,NP), very dense (Till).	
30	-30									
35	-35									



Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 1/30/07
Drilling Company: Parratt Wolff Inc.
Driller's Name: D. Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969844.5
Easting: 627119.3
Casing Elevation: 12.99'

Borehole Depth: 28.5' bgs
Surface Elevation: 13.3'

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-10**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0								Blind drilled to 20' bgs	Flush-Mount Curb Box with Locking 6-inch J-Plug; Concrete surface pad (0-0.5' bgs); Sand Drain (0.5-1' bgs)
5	-5	NA	NA	NA	NA	NA	NA			Cement-Bentonite Grout (1-10' bgs); 6" Sch. 40 PVC Riser (0-16' bgs)
10	-10									Bentonite Seal (10-12' bgs)
15	-15									#1 Silica Sand Pack (12-26' bgs)

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-10

Borehole Depth: 28.5' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		NA	NA	NA	NA	NA	NA		Blind drilled to 20' bgs	#1 Silica Sand Pack (12-26' bgs); 6" Sch 40 PVC 0.020" Slot Screen (16-26' bgs)
20	-20	1	20-22	1.2	2 3 2 3	5	76.2 43.3		Gray Silty fine to coarse SAND, some fine to medium subangular Gravel (S,NP), little NAPL, little coarse Gravel, between 20' and 21.2' bgs.	
		2	22-24	1.5	4 4 12 17	16	345 740		Some NAPL, becoming more dense with depth.	
25	-25	3	24-26	1.6	9 14 35 44	49	139 280 186		Olive-brown SILT and fine SAND, some fine to coarse subangular Gravel, trace Cobbles and medium to coarse Sand (S-W,NP), dense (Possible till), medium odor, NAPL in slough water above sample.	
		4	26-28	1.8	8 18 32 38	50	68.1 102		Faint to medium odor, dense (Till) (S,NP), no NAPL in water above sample.	Rubber Shale Trap; Cement-Bentonite Grout (26-28' bgs); 6" X 2' Sch. 40 PVC Sump (26-28' bgs)
30	-30									
35	-35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 1/31/07
Drilling Company: Parratt Wolff
Driller's Name: D. Richmond, R. Fisk and J. Fisk
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: D. Richmond
Sampling Method: 2" Split Spoon

Northing: 969799.6
Easting: 627113.4
Casing Elevation: 12.96'

Borehole Depth: 31.7' bgs
Surface Elevation: 13.4'

Descriptions By: Dave Cornell

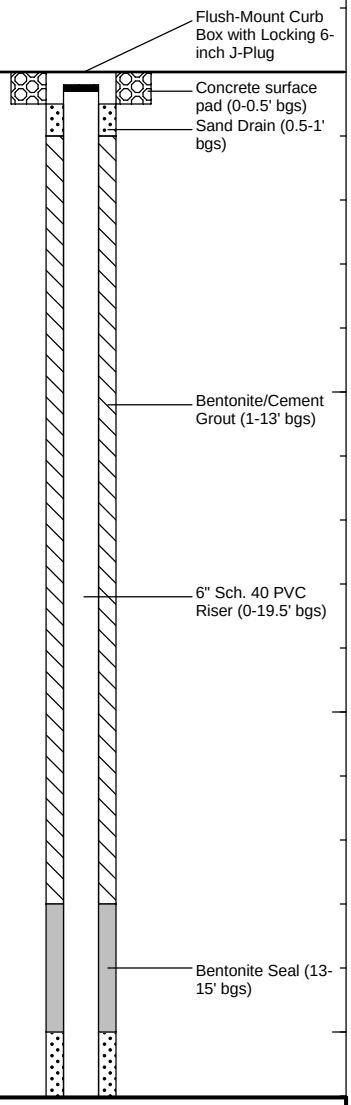
Well/Boring ID: **NMW-11**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 24' bgs
5	-5								
10	-10								
15	-15								

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; SR = Spoon Refusal; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

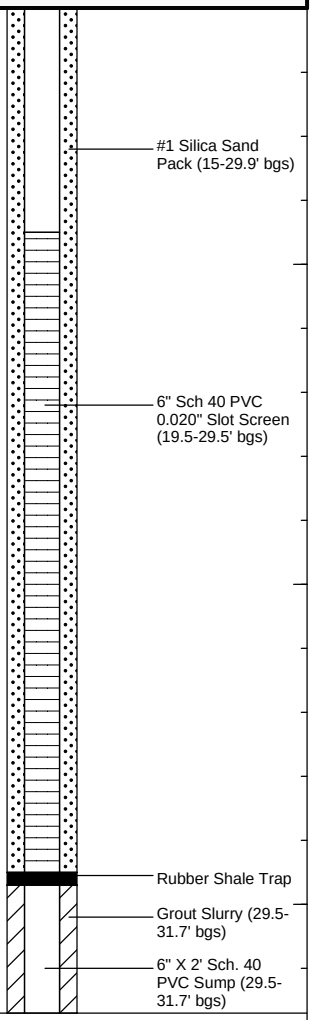
Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-11

Borehole Depth: 31.7' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
		NA	NA	NA	NA	NA	NA		Blind drilled to 24' bgs
20	-20								
25	-25	1	24-26	1.2	15 9 7 12	16	48 114		Gray SILT and fine to coarse subangular GRAVEL, some fine Sand, trace medium to coarse Sand, Cobbles, and Clay (S,NP), little red-brown NAPL.
		2	26-28	1.6	6 13 19 21	32	103 68.1		Olive-gray Similar Soils (W,NP), (Till), (no NAPL), medium odor, NAPL in slough water above.
		3	28-30	0.2	17 50 SR	50	ND		Gray ROCK.
30	-30								
		NA	NA	NA	NA	NA	NA		
35	-35								



Well/Boring Construction

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; SR = Spoon Refusal; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 2/2/07
Drilling Company: Parratt Wolff
Driller's Name: D. Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969745.0
Easting: 627106.4
Casing Elevation: 12.81

Borehole Depth: 26.7' bgs
Surface Elevation: 13.2

Descriptions By: R. Jaimes

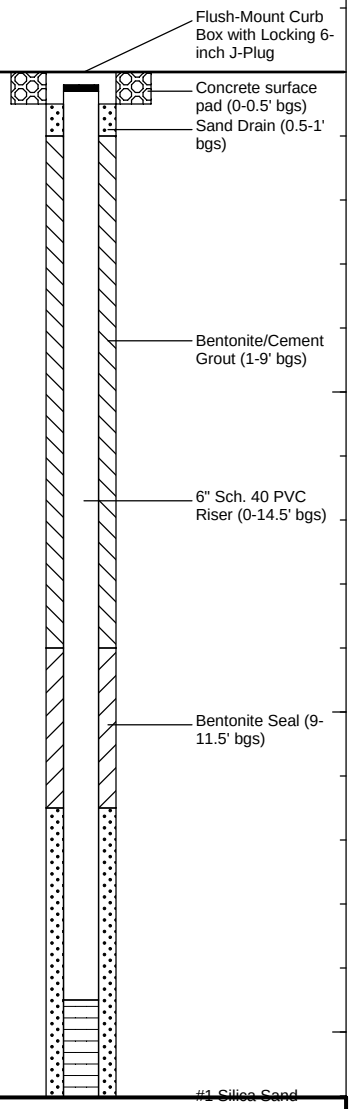
Well/Boring ID: **NMW-12**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								Blind drilled to 4' bgs.
		NA	NA	NA	NA	NA	NA		
5	-5	1	4-6	1.08	7 11 14 19	25	0.0		Brown to olive gray SILT and fine sand, trace angular Gravel, medium dense, non-plastic, moist.
		2	6-8	0.23	23 20 19 17	39	0.0		Dark gray to gray fine to medium SAND, some subangular Gravel, non-plastic, medium dense, moist.
		3	8-10	1.45	2 3 3 3	6	0.3		Gray to reddish brown very fine SAND, little angular Gravel, little brick fragments, non-plastic, loose, moist, slight odor, trace Wood.
10	-10	4	10-12	0.91	1 2 1 2	3	0.5		Gray brown Silty SAND, trace Clay, non-plastic, loose, wet, no odor. Gray brown SILT and CLAY, low plasticity, soft, wet, slight petroleum-like odor.
		5	12-14	1.51	2 2 2 3	4	0.0		Gray brown CLAY and SILT, little Organics (wood), medium to high plasticity, moist to wet, no odor, trace fine sand.
15	-15	6	14-16	1.62	WOR WOR 2 2	NA	0.0		Gray brown CLAY and SILT, trace wood, medium plastic, very soft, wet, no odor.

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; SAA = Same As Above; SR = Spoon Refusal; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

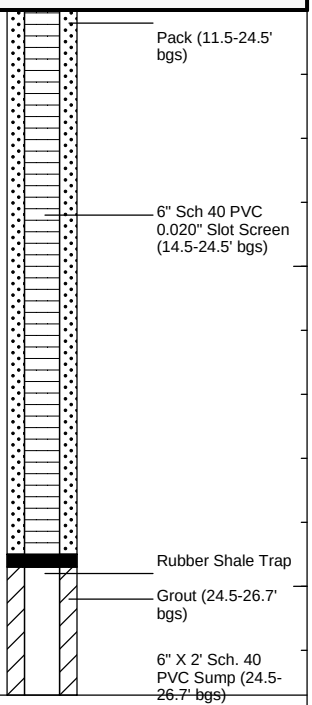
Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-12

Borehole Depth: 26.7' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
		NA	NA	NA	NA	NA			Gray brown CLAY and SILT, trace wood, medium plastic, very soft, wet, no odor.
		NA	NA	NA	NA	NA			
20	-20	NA	NA	NA	NA	NA			
		NA	NA	NA	NA	NA			
		7		0.2	100 0.2		24.5		Gray Rock (fine grain sandstone), odor, sheen.
25	-25								
30	-30								
35	-35								

Well/Boring Construction



Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; SAA = Same As Above; SR = Spoon Refusal; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 2/6/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969693.8
Easting: 627099.0
Casing Elevation: 12.78'

Borehole Depth: 26.8' bgs
Surface Elevation: 13.2'

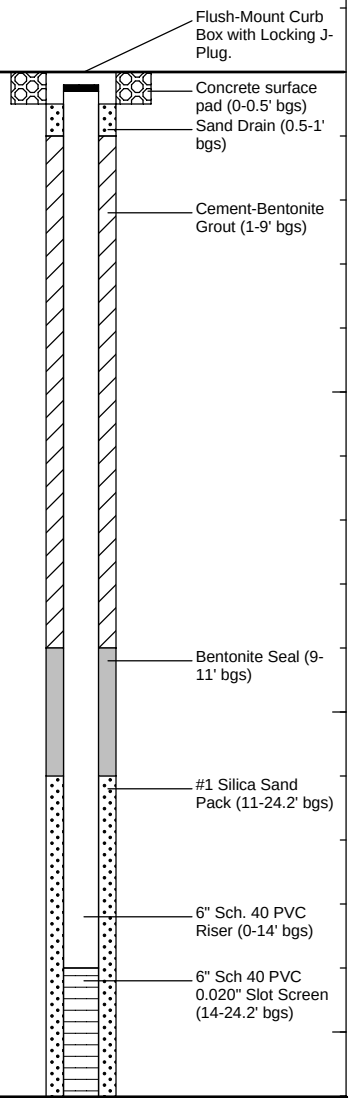
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-13**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 4' bgs.
5	-5	1	4-6	1.3	4 6 16 14	22	ND		Brown Silty fine SAND, some fine to coarse angular Gravel, trace Cobbles (M,NP).
		2	6-8	1.5	20 18 26 12	44	ND 20.1		Gray, wet below 6.9' bgs. Faint petroleum-like odor below 7.2' bgs. Faint to moderate petroleum-like odor. (8-8.2' bgs)
10	-10	3	8-10	1.4	4 4 4 5	8	4.2 3.1		Brownish-gray Silty fine to medium SAND, trace Coarse Sand (S,NP) and organics, faint to moderate petroleum-like odor, trace sheen. Gray to brown, increasing Silt. (10-10.9' bgs)
		4	10-12	0.8	1 2 4 2	6	1.1		
15	-15	NA	NA	NA	NA	NA	NA		



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non Detect; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-13

Borehole Depth: 26.8' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	-20	NA	NA	NA	NA	NA	NA		Bedrock encountered at 24' bgs.	#1 Silica Sand Pack (11-24.2' bgs); 6" Sch 40 PVC 0.020" Slot Screen (14-24.2' bgs); Rubber Shale Trap.; 6" Sch. 40 PVC Sump (24.2-26.8' bgs); Cement-Bentonite Grout (24.2-26.8' bgs)
25	-25									
30	-30									
35	-35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non Detect; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 1/31/07-2/1/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969647.6
Easting: 627091.8
Casing Elevation: 12.54'

Borehole Depth: 25' bgs
Surface Elevation: 12.8'

Descriptions By: Dave Cornell

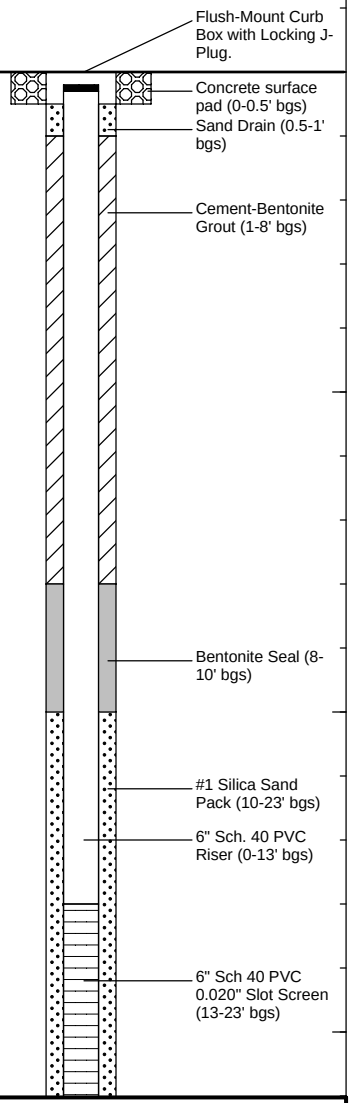
Well/Boring ID: **NMW-14**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								
		NA	NA	NA	NA	NA	NA		Blind drilled to 4' bgs.
5	-5	1	4-6	1.4	3 2 8 14	10	ND		Brown Silty fine SAND, some fine to medium subrounded Gravel, trace medium to coarse Sand and coarse Gravel (M,NP). Gray at 4.6' bgs.
		2	6-8	1.4	5 11 17 9	28	ND		Gray, mold and cast Gravel (M-W,NP). (6-7.4' bgs)
		3	8-10	1.5	4 5 4 2	9	ND		Gray fine to medium SAND, little fine Gravel (fining downward) to a silty fine Sand (W,NP). Gray Silty fine to coarse SAND, medium fine to coarse subrounded GRAVEL (S,NP).
10	-10	4	10-12	1.9	WOR/ 1.0 2 2	NA	ND		Brown SILT, some Clay, trace fine Sand and Organics (peat and wood) (W-S,SP).
		5	12-14	2.0	2 3 3 2	6	ND ND		
15	-15	6	14-16	1.7	3 7 10 16	17	2.8 1.1 6.4		Gray Silty fine to coarse SAND and fine to coarse subangular Gravel (S,NP), faint odor, trace sheen.

Well/Boring Construction



Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non Detect; WOD= Weight of Rod; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-14

Borehole Depth: 25' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		7	16-18	1.8	13 18 16 16	34	10.7 7.9		Gray, some fine to coarse Gravel (S,NP) faint odor. (16-17.8' bgs)	#1 Silica Sand Pack (10-23' bgs)
		8	18-20	1.5	8 10 28 32	38	2.6 0.5			6" Sch 40 PVC 0.020" Slot Screen (13-23' bgs)
20	-20	9	20-22	1.8	8 16 22 22	38	9.4 12.1			
		10	22-23.2	1.2	22 24 29 50/ 0.2	52	3.8 9.4		Gray Rock (possibly GRAYWACKE).	Rubber Shale Trap. 6" Sch. 40 PVC Sump (23-25' bgs) Cement-Bentonite Grout (23-25' bgs)
25	-25									
30	-30									
35	-35									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; ND = Non Detect; WOD= Weight of Rod; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 2/7/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969647.6
Easting: 627091.8
Casing Elevation: 12.54'

Borehole Depth: 51.5' bgs
Surface Elevation: 12.8'

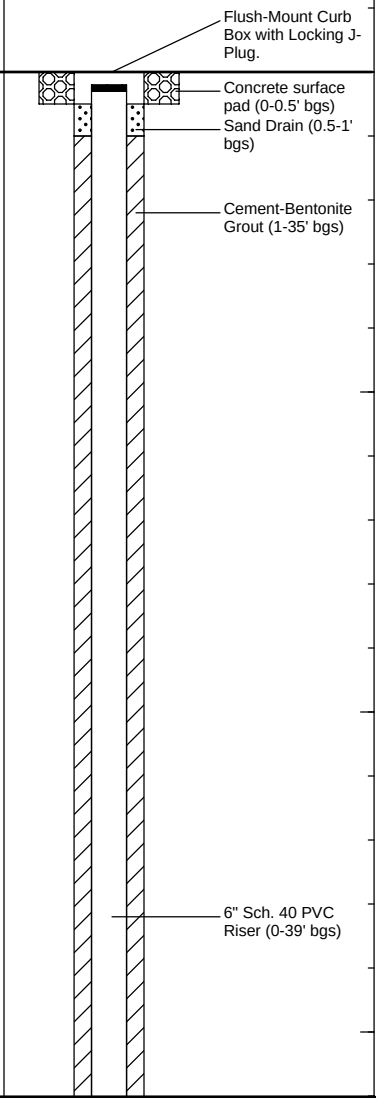
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-15**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0									
5	-5	NA	NA	NA	NA	NA	NA		Blind drilled to 34' bgs.	
10	-10									
15	-15									



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-15

Borehole Depth: 51.5' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		NA	NA	NA	NA	NA	NA		Blind drilled to 34' bgs.	Cement-Bentonite Grout (1-35' bgs); 6" Sch. 40 PVC Riser (0-39' bgs)
20	-20									
25	-25									
30	-30									
35	-35	1	34-36	0.2	14 6 2 3	8	NA		COBBLE stuck in shoe from 34-36' bgs.	Bentonite Seal (35-37' bgs)

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

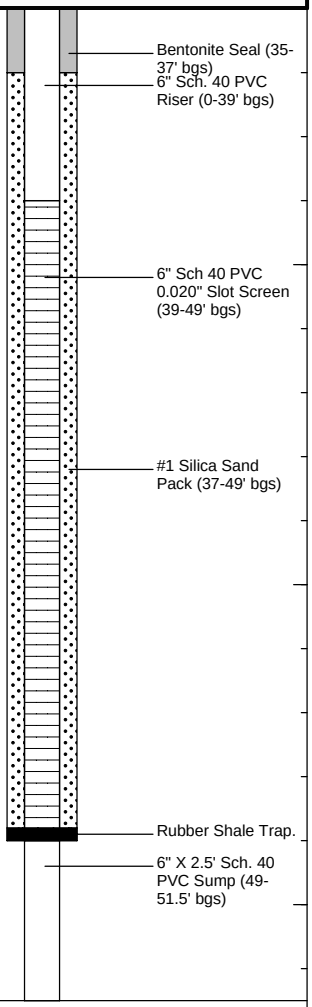
Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-15

Borehole Depth: 51.5' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
		2	36-38	1.7	4 3 4 4	7	ND		COBBLE stuck in shoe from 36-38' bgs.
		3	38-40	0.2	3 1 3 4	4	ND		Brown Silty CLAY (S,P). Sand and Gravel layer (38.8-38.9' bgs). Some Organics (Vegetative wood) below 39.3' bgs.
40	-40	4	40-42	1.5	3 2 2 2	4	ND		Brown Silty CLAY with thin seams of Silt (~2mm thick).
		5	42-44	1.7	2 5 7 5	12	4.4 51.3 114		Thin seams of silty Sand and Gravel, faint odor.
45	-45	6	44-46	2.0	2 3 1 2	4	271 330		Brownish-gray Silty CLAY with seams of silty Sand and Gravels at 40.0', 44.65', and 45.2'- 45.4' bgs (all containing some NAPL).
		7	46-48	1.8	5 2 3 4	5	383 59		Seams from 46.55'- 46.9' and 47.6'- 47.8' bgs. NAPL in slough and in seams from 46.55'-46.9' bgs.
50	-50	8	48-50	1.0	WOR/ 1.0 1 1	NA	95.3		Grayish-brown Silty CLAY with thin seams of Silt (W,MP), no evidence of NAPL.
55	-55								



Well/Boring Construction

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 2/8/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969904.0
Easting: 627262.5
Casing Elevation: 10.37'

Borehole Depth: 30' bgs
Surface Elevation: 10.7'

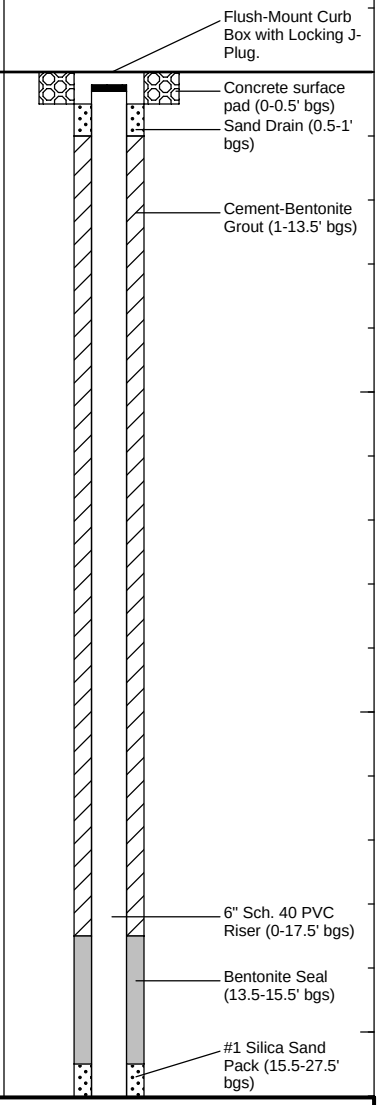
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-16**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0									
5	-5	NA	NA	NA	NA	NA	NA		Blind drilled to 20' bgs.	
10	-10									
15	-15									



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-16

Borehole Depth: 30' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		NA	NA	NA	NA	NA	NA		Blind drilled to 20' bgs.	#1 Silica Sand Pack (15.5-27.5' bgs); 6" Sch. 40 PVC Riser (0-17.5' bgs); 6" Sch 40 PVC 0.020" Slot Screen (17.5-27.5' bgs)
20	-20	1	20-22	1.6	5 5 5 5	10	ND 79 293		Olive-brown Silty CLAY, trace to little fine to medium Gravel and fine Sand (W,MP). Gray Silty fine to coarse SAND and fine to coarse subrounded GRAVEL (S,NP), little to trace yellowish-brown NAPL, trace Organics.	
		2	22-24	1.8	5 1 4 5	5	126 282		Little NAPL. Clayey SILT seams from 23.2' to 23.5' bgs.	
25	-25	3	24-26	1.4	WOR/0.5 3 1 2	4	32.1 5.6		Brown Clayey SILT, trace fine Gravel, shell fragments and roots (W,MP). No Gravel.	
		4	26-28	NA	12 6 10 11	16	NA		No recovery (stiff drilling).	Rubber Shale Trap
		5	28-30	1.6	2 2 1 5	3	4.7 ND		Brown Clayey SILT, little fine to medium subrounded Gravel, trace fine to coarse Sand (W,SP).	6"x 2.5' Sch. 40 PVC Sump (27.5-30' bgs); Cement-Bentonite Grout (27.5-30' bgs)
30	-30									
35	-35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 2/9/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969908.6
Easting: 627227.2
Casing Elevation: 11.31'

Borehole Depth: 25.5' bgs
Surface Elevation: 11.7'

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-17**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 18' bgs.	Flush-Mount Curb Box with Locking J-Plug. Concrete surface pad (0-0.5' bgs) Sand Drain (0.5-1' bgs) Cement-Bentonite Grout (1-9' bgs) 6" Sch. 40 PVC Riser (0-13' bgs) Bentonite Seal (9-11' bgs) 6" Sch 40 PVC 0.020" Slot Screen (13-23' bgs) #1 Silica Sand Pack (11-23' bgs)
5	-5									
10	-10									
15	-15									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

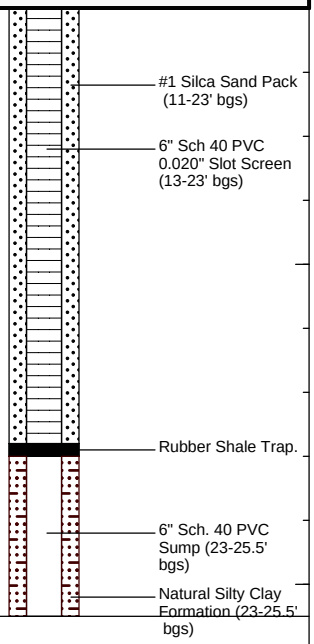
Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-17

Borehole Depth: 25.5' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
	NA	NA	NA	NA	NA	NA		Blind drilled to 18' bgs.
	1	18-20	1.1	1 3 7 7	10	22.1		Brownish-gray Silty fine SAND and fine to coarse subangular GRAVEL, little Cobbles and medium to coarse Sand (S,NP) yellowish-brown NAPL in slough.
20 -20	2	20-22	1.2	3 3 3 6	6	337 97		Seam of NAPL (1" thick) at 20.6' bgs Trace NAPL (possible slough) and trace Brick.
	3	22-24	1.5	4 2 1 2	3	251 3.3		Brown SILT and CLAY, trace fine to medium Gravel and Organics (Roots)(M,MP).
				WOR/ 1.0		0.3		No Gravel, trace fine Sand (W,MP).
25 -25	4	24-26	1.5	2 3	NA	1.0		
30 -30								
35 -35								



Well/Boring Construction

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 2/12/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969923.6
Easting: 627178.2
Casing Elevation: 12.35'

Borehole Depth: 28.8' bgs
Surface Elevation: 12.7'

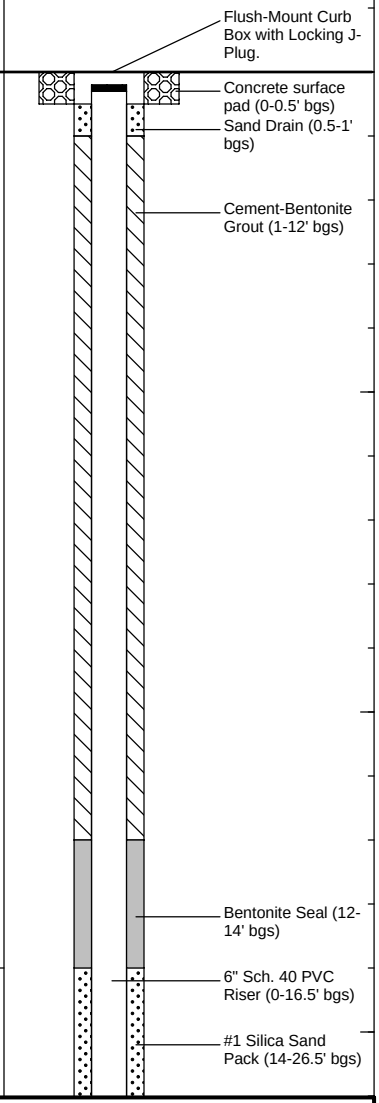
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-18**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								
									Blind drilled to 14' bgs.
5	-5	NA	NA	NA	NA	NA	NA		
10	-10								
15	-15	1	14-16	1.4	6 13 17 4	30	ND		Brownish-gray Silty fine to coarse SAND, some fine to coarse subangular Gravel, trace Brick fragments and Cobbles (W,NP).



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-18

Borehole Depth: 28.8' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
	2	16-18	1.5	8 7 7 4	14	ND		Brownish-gray Silty fine to coarse SAND, some fine to coarse subangular Gravel, trace Brick fragments and Cobbles (W,NP).
	3	18-20	1.8	4 3 7 8	10	5.5 3.2		Trace sheen.
20 -20	4	20-22	1.8	3 4 7 5	11	24.7 307		Brownish-gray Silty fine to medium SAND, some to little fine to coarse subrounded Gravel, trace Clay (S,NS). Some reddish-brown NAPL between 21.5' and 21.7' bgs sitting on top of layer with increased Silt content.
	5	22-24	2.0	5 5 5 4	10	220 45.7		Trace NAPL blebs and sheen at 22.5' bgs.
25 -25	6	24-26	NA	WOR/ 1.0 2 2	NA	NA		No recovery.
	7	26-28	1.8	2 2 2 2	4	11.4 5.4		Brown SILT, little Clay and fine to medium subrounded Gravel (S,SP), faint odor.
30 -30								
35 -35								

Well/Boring Construction

- 6" Sch. 40 PVC Riser (0-16.5' bgs)
- #1 Silica Sand Pack (14-26.5' bgs)
- 6" Sch 40 PVC 0.020" Slot Screen (16.5-26.5' bgs)
- Rubber Shale Trap.
- Cement-Bentonite Grout (26.5-28.8' bgs)
- 6" Sch. 40 PVC Sump (26.5-28.8' bgs)

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 2/13/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969801.1
Easting: 626921.7
Casing Elevation: 21.87'

Borehole Depth: 19.8' bgs
Surface Elevation: 22.01'

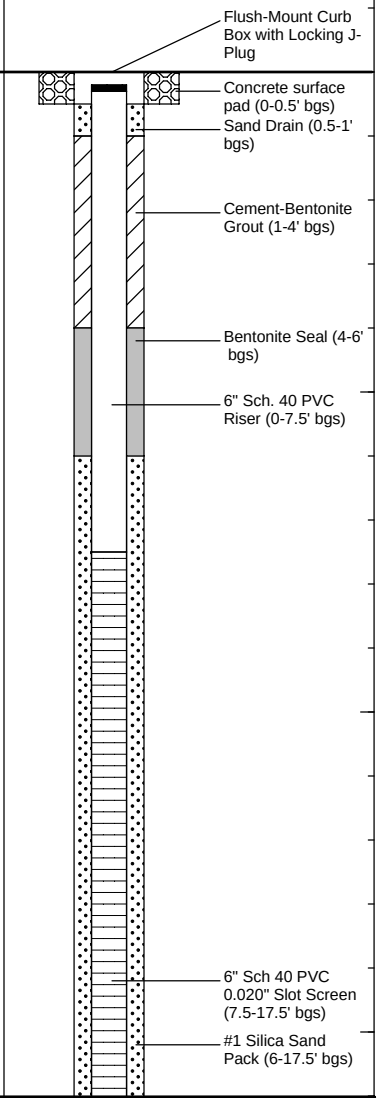
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-19**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Faint overburden odors and trace sheen observed in recirculation water during drilling of rock socket; difficult overburden drilling.
5	-5								
10	-10								
15	-15								



Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-19

Borehole Depth: 19.8' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	NA	NA	NA	NA	NA	NA		Faint overburden odors and trace sheen observed in recirculation water during drilling of rock socket; difficult overburden drilling Bedrock at 17' bgs.	6" Sch 40 PVC 0.020" Slot Screen (7.5-17.5' bgs) #1 Silica Sand Pack (6-17.5' bgs) Rubber Shale Trap Cement-Bentonite Grout (17.5-19.8' bgs) 6" Sch. 40 PVC Sump (17.5-19.8' bgs)
20 -20									
25 -25									
30 -30									
35 -35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 2/14/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969820.2
Easting: 626925.2
Casing Elevation: 22.01'

Borehole Depth: 18' bgs
Surface Elevation: 22.25'

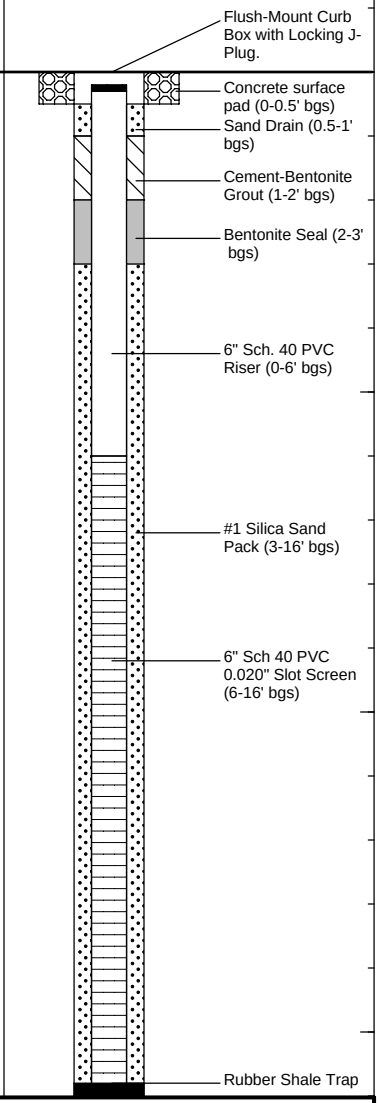
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-20**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 18' bgs
5	-5								
10	-10								
15	-15								



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-20

Borehole Depth: 18' bgs

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		NA	NA	NA	NA	NA	NA		Bedrock at 16' bgs. Blind drilled to 18' bgs	Cement-Bentonite Grout (16-18' bgs) 6" Sch. 40 PVC Sump (16-18' bgs)
20	-20									
25	-25									
30	-30									
35	-35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 2/20/07
Drilling Company: Parratt Wolff Inc.
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969845.5
Easting: 626929.7
Casing Elevation: 22.26'

Borehole Depth: 22' bgs
Surface Elevation: 22.54'

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-21**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0									
									Blind drilled to 22' bgs.	
5	-5	NA	NA	NA	NA	NA	NA			
10	-10									
15	-15									
									Blind drilled to 22' bgs.	

Flush-Mount Curb Box with Locking J-Plug.
Concrete surface pad (0-0.5' bgs)
Sand Drain (0.5-1' bgs)
Cement-Bentonite Grout (1-7' bgs)
6" Sch. 40 PVC Riser (0-11' bgs)
Bentonite Seal (7-9' bgs)
6" Sch 40 PVC 0.020" Slot Screen (11-20' bgs)
#1 Silica Sand Pack (9-20' bgs)

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-21

Borehole Depth: 22' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
20 -20	NA	NA	NA	NA	NA	NA			#1 Silica Sand Pack (9-20' bgs); 6" Sch 40 PVC 0.020" Slot Screen (11-20' bgs); Rubber Shale Trap; Cement-Bentonite Grout (20-22' bgs)
								Bedrock at 22' bgs.	6"x 2.5' Sch. 40 PVC Sump (20-22' bgs)
25 -25									
30 -30									
35 -35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 2/21/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969870.8
Easting: 626939.0
Casing Elevation: 22.45'

Borehole Depth: 22' bgs
Surface Elevation: 22.63'

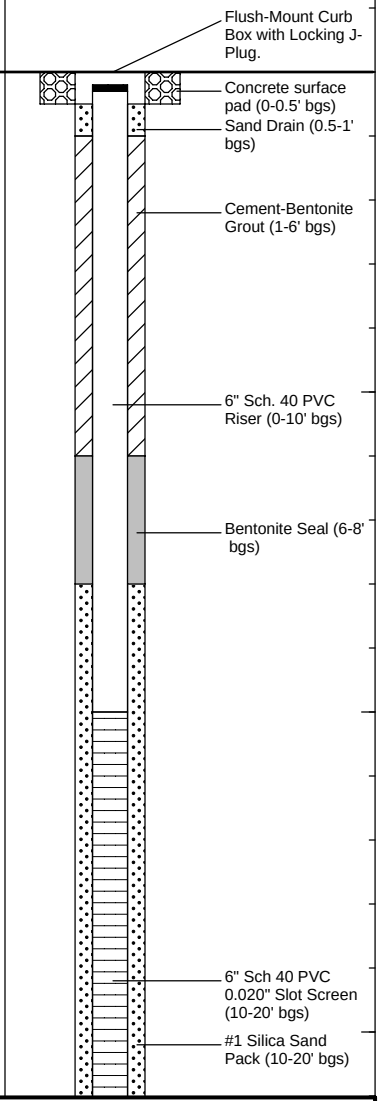
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-22**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0									
0	0	NA	NA	NA	NA	NA	NA		Cuttings observed during advancement of 8 1/4" HSA exibited a faint MGP-like and petroleum-like odor. A Trace sheen was in the recirculation water during advancement of rock-socket.	
5	-5									
10	-10									
15	-15									



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-22

Borehole Depth: 22' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
20 -20	NA	NA	NA	NA	NA	NA		Cuttings observed during advancement of 8 1/4" HSA exibited a faint MGP-like and petroleum-like odor. A Trace sheen was in the recirculation water during advancement of rock-socket.	#1 Silica Sand Pack (8-20' bgs); 6" Sch 40 PVC 0.020" Slot Screen (10-20' bgs); Rubber Shale Trap; Cement-Bentonite Grout (20-22' bgs); 6"x 2' Sch. 40 PVC Sump (20-22' bgs)
25 -25									
30 -30									
35 -35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 2/20/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5 7/8-inch Rollerbit

Northing: 969871.5
Easting: 626934.9
Casing Elevation: 22.49'

Borehole Depth: 48' bgs
Surface Elevation: 22.72'

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-22R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	5									12" Flush-mount Curb Box with locking j-plug
0	0									Concrete surface pad
	0									Cement-Bentonite Grout (0-23' bgs)
5										6" Steel Casing (0 - 23' bgs)
	-5	NA	NA	NA			NA			
10										
	-10									
15										

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-22R

Borehole Depth: 48' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15									Cement-Bentonite Grout (0-23' bgs)
									6" Steel Casing (0-23' bgs)
20								Bedrock at 21' bgs. (possible GRAYWACKE chips)	
-20								Trace sheen observed in recirculation water in first 5' of rock drilling only.	
25									5 7/8" Open hole (23-46' bgs)
-25	NA	NA	NA			NA			
30									
-30									
35									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-22R

Borehole Depth: 48' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35 / 40 / -40 / 45 / -45	NA	NA	NA			NA			5 7/8" Open hole (23-46' bgs); K-Packer; 4" Steel Sump (46-48' bgs); Cement-Bentonite Grout (46-48' bgs)
50 / -50 / 55									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 2/27/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969894.9
Easting: 626943.4
Casing Elevation: 22.74'

Borehole Depth: 24.5' bgs
Surface Elevation: 22.98'

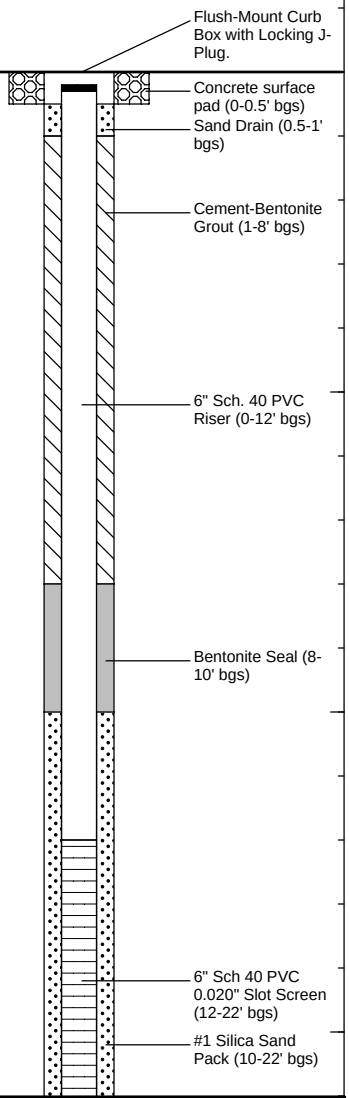
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-23**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0	NA	NA	NA	NA	NA	NA		Faint petroleum-like odor observed in overburden soil cuttings during advancement.	
5	-5									
10	-10									
15	-15									



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-23

Borehole Depth: 24.5' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
20 -20	NA	NA	NA	NA	NA	NA		Faint petroleum-like odor observed in overburden soil cuttings during advancement. Bedrock at 21' bgs.	#1 Silica Sand Pack (12-22' bgs) 6" Sch 40 PVC 0.020" Slot Screen (12-22' bgs) Rubber Shale Trap 6" Sch. 40 PVC Sump (22-24.5' bgs) Cement-Bentonite Grout (22-24.5' bgs)
25 -25									
30 -30									
35 -35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 11/7/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969906.7
Easting: 626937.5
Casing Elevation: 22.83'

Borehole Depth: 26' bgs
Surface Elevation: 23.25'

Descriptions By: Nathan Smith

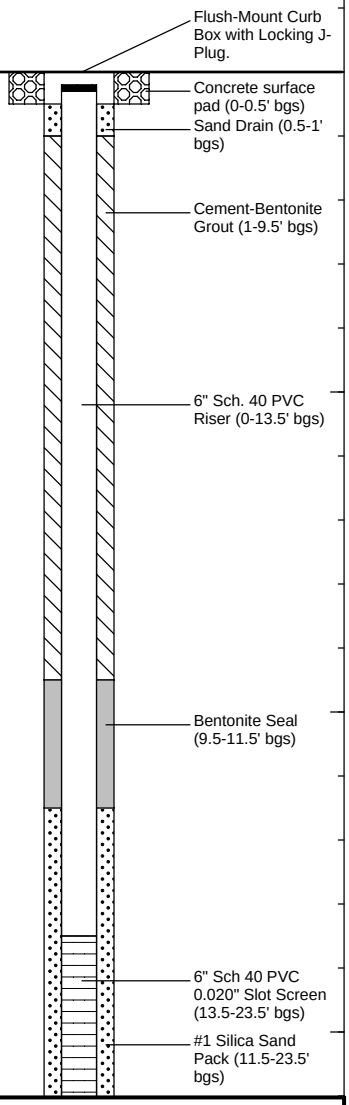
Well/Boring ID: **NMW-23A**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Possible trace blebs observed in recirculation water during drilling at 16' bgs.
5	-5								
10	-10								
15	-15								

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-23A

Borehole Depth: 26' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
20 -20	NA	NA	NA	NA	NA	NA		Possible trace blebs observed in recirculation water during drilling at 16' bgs.	#1 Silica Sand Pack (11.5-23.5' bgs); 6" Sch 40 PVC 0.020" Slot Screen (13.5-23.5' bgs)
25 -25								Bedrock at 24' bgs.	Rubber Shale Trap; Cement-Bentonite Grout (23.5-26' bgs); 6" Sch. 40 PVC Sump (23.5-26' bgs)
30 -30									
35 -35									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 2/23/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5 7/8-inch Rollerbit

Northing: 969893.6
Easting: 626941.2
Casing Elevation: 22.82'

Borehole Depth: 50' bgs
Surface Elevation: 22.98

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-23R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	5									12" Flush-mount Curb Box with locking j-plug
0									Faint odors observed in soil cuttings during overburden drilling.	Concrete surface pad
	0									Cement-Bentonite Grout (0-24' bgs)
5										6" Steel Casing (0 - 24' bgs)
	-5	NA	NA	NA			NA			
10										
	-10									
15										

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-23R

Borehole Depth: 50' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15									Cement-Bentonite Grout (0-24' bgs)
									6" Steel Casing (0-24' bgs)
20								Bedrock at 21' bgs.	
-20									
25									5 7/8" Open hole (24-48' bgs)
-25	NA	NA	NA			NA		No sheens observed during rock drilling	
30									
-30									
35									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

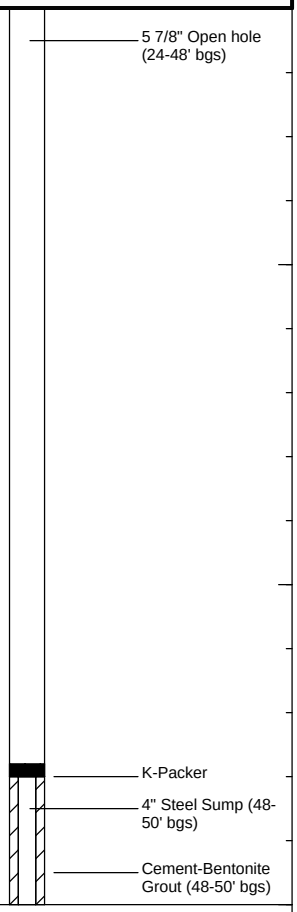
Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-23R**

Borehole Depth: 50' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35									
	NA	NA	NA			NA			
40									
-40									
45									
-45									
50									
-50									
55									



Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 3/7/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969922.3
Easting: 626939.4
Casing Elevation: 22.73'

Borehole Depth: 26.5' bgs
Surface Elevation: 23.25'

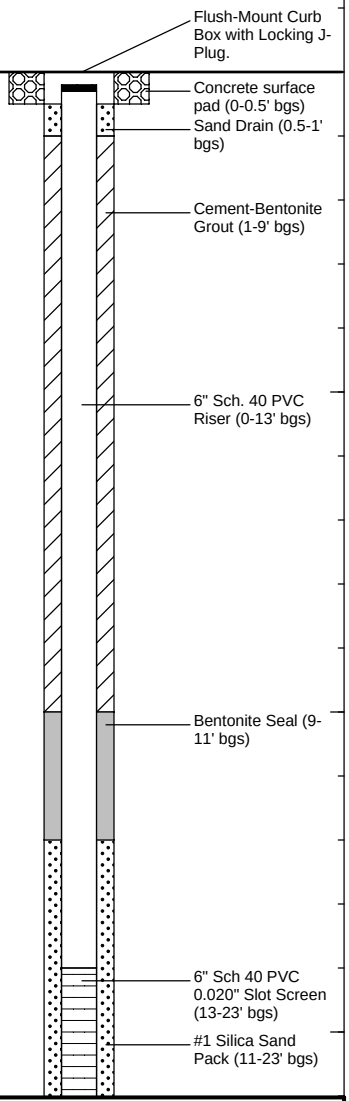
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-24**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0									
5	-5	NA	NA	NA	NA	NA	NA		Blind drilled to 26.5' bgs.	
10	-10									
15	-15									



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-24

Borehole Depth: 26.5' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
20 -20	NA	NA	NA	NA	NA	NA		Blind drilled to 26.5' bgs.	#1 Silica Sand Pack (11-23' bgs); 6" Sch 40 PVC 0.020" Slot Screen (13-23' bgs)
25 -25								Bedrock at 24' bgs.	Rubber Shale Trap.; 6" Sch. 40 PVC Sump (23-25.5' bgs); Cement-Bentonite Grout (23-25.5' bgs)
30 -30									
35 -35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 11/6/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969932.8
Easting: 626941.8
Casing Elevation: 22.86'

Borehole Depth: 23' bgs
Surface Elevation: 23.24'

Descriptions By: Nathan Smith

Well/Boring ID: **NMW-24A**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0									
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 23' bgs.	
5	-5									
10	-10									
15	-15									

Flush-Mount Curb Box with Locking J-Plug
Concrete surface pad (0-0.5' bgs)
Sand Drain (0.5-1' bgs)
Cement-Bentonite Grout (1-6.5' bgs)
6" Sch. 40 PVC Riser (0-10.5' bgs)
Bentonite Seal (6.5-8.5' bgs)
6" Sch 40 PVC 0.020" Slot Screen (10.5-20.5' bgs)
#1 Silica Sand Pack (8.5-20.5' bgs)

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-24A

Borehole Depth: 23' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
20 -20	NA	NA	NA	NA	NA	NA		Blind drilled to 23' bgs. Hard non-rock strata at 16.2 bgs. Possible NAPL blebs in recirculation water during flush-out, trace sheens. Bedrock at 21' bgs.	#1 Silica Sand Pack (8.5-20.5' bgs) 6" Sch 40 PVC 0.020" Slot Screen (10.5-20.5' bgs) Rubber Shale Trap Cement-Bentonite Grout (20.5-23' bgs) 6" Sch. 40 PVC Sump (20.5-23' bgs)
25 -25									
30 -30									
35 -35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 3/5/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5 7/8-inch Rollerbit

Northing: 969919.3
Easting: 626940.0
Casing Elevation: 22.76'

Borehole Depth: 51.5' bgs
Surface Elevation: 23.23'

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-24R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	5									12" Flush-mount Curb Box with locking j-plug
0	0								No increase in water level during drilling of NMW-24R.	Concrete surface pad
										Cement-Bentonite Grout (0-26' bgs)
5										
	-5	NA	NA	NA			NA			6" Steel Casing (0 - 26' bgs)
10										
	-10									
15										

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-24R

Borehole Depth: 51.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15								Rock chips in recirculation water at 18' bgs appear to be similar to native bedrock. Faint petroleum-like odor in recirculation water.	Cement-Bentonite Grout (0-26' bgs)
20								At 21' drilling got much harder.	6" Steel Casing (0 - 26' bgs)
-20								Drilling softer between 23' and 23.5' bgs. Began to see little sheen and trace NAPL blebs below 23' bgs.	
25								Began to lose water below 24.5' bgs.	5 7/8" Open hole (26-49.5' bgs)
-25	NA	NA	NA			NA		Trace Sheen in recirculation of water	
30									
-30									
35									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-24R

Borehole Depth: 51.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35	NA	NA	NA			NA			5 7/8" Open hole (26-49.5' bgs)
40									
-40									
45									
-45									K-Packer
50									4" Steel Sump (49.5-51.5' bgs)
-50									Cement-Bentonite Grout (49.5-51.5' bgs)
55									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 3/6/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969945.5
Easting: 626944.0
Casing Elevation: 22.77'

Borehole Depth: 23' bgs
Surface Elevation: 23.15

Descriptions By: Dave Cornell

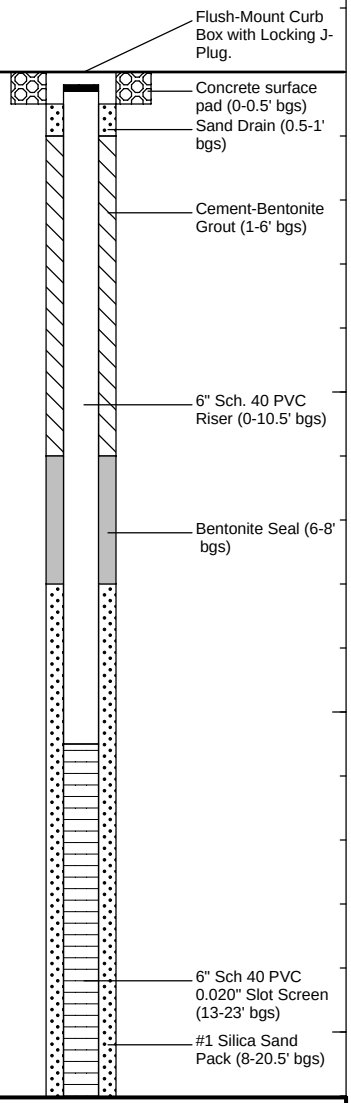
Well/Boring ID: **NMW-25**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 23' bgs.
5	-5								
10	-10								
15	-15								

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-25

Borehole Depth: 23' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
20 -20	NA	NA	NA	NA	NA	NA		Blind drilled to 23' bgs. Bedrock at 20.5' bgs.	#1 Silica Sand Pack (8-20.5' bgs) 6" Sch 40 PVC 0.020" Slot Screen (10.5-20.5' bgs) Rubber Shale Trap. 6" Sch. 40 PVC Sump (20.5-23' bgs) Cement-Bentonite Grout (20.5-23' bgs)
25 -25									
30 -30									
35 -35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 3/2/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5 7/8-inch Rollerbit

Northing: 969942.0
Easting: 626943.0
Casing Elevation: 22.82'

Borehole Depth: 50' bgs
Surface Elevation: 23.18'

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-25R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	5									12" Flush-mount Curb Box with locking j-plug
0	0									Concrete surface pad
	0									Cement-Bentonite Grout (0-24.5' bgs)
5									Began to observe moderate Petroleum-like odor from 3' to 5' bgs. Cutting return revealed yellowish NAPL.	
									Drilling became more stiff below 5' bgs.	6" Steel Casing (0 - 24.5' bgs)
	-5	NA	NA	NA			NA			
10										
	-10									
15										

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-25R**

Borehole Depth: 50' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15									Cement-Bentonite Grout (0-24.5' bgs); 6" Steel Casing (0-24.5' bgs)
20								Began to observe brown NAPL (trace) and heavy sheen in recirculation water from 21.5' to 22.5' bgs.	
-20								Appeared to encounter compact rock at 22.5' bgs.	
25									5 7/8" Open hole (24.5-48' bgs)
-25	NA	NA	NA			NA		Bedrock at 27.5' bgs.	
30									
-30								Formation drilled softer between 34' and 36' bgs.	
35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-25R**

Borehole Depth: 50' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35 / 40 / -40 / 45 / -45 / 50 / -50 / 55	NA	NA	NA			NA		Trace sheen observed between 36' and 38' bgs. Rock became stiffer below 36' bgs. Recirculation water revealed Gray rock chips (GRAYWACKE).	5 7/8" Open hole (24.5-48' bgs); K-Packer; 4" Steel Sump (48-50' bgs); Cement-Bentonite Grout (48-50' bgs)

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 9/18/13-10/14/13
Drilling Company: Parratt Wolff
Driller's Name: G. Lansing/ J. Bailey
Drilling Method: Hollow Stem Auger/ Fluid Rotary
Auger Size: 8.25" ID / 5.875" Rollerbit
Rig Type: CME-55
Sampling Method: NA

Northing: 969956.1
Easting: 626955.1
Casing Elevation: 22.50

Borehole Depth: 45' bgs
Surface Elevation: 22.99

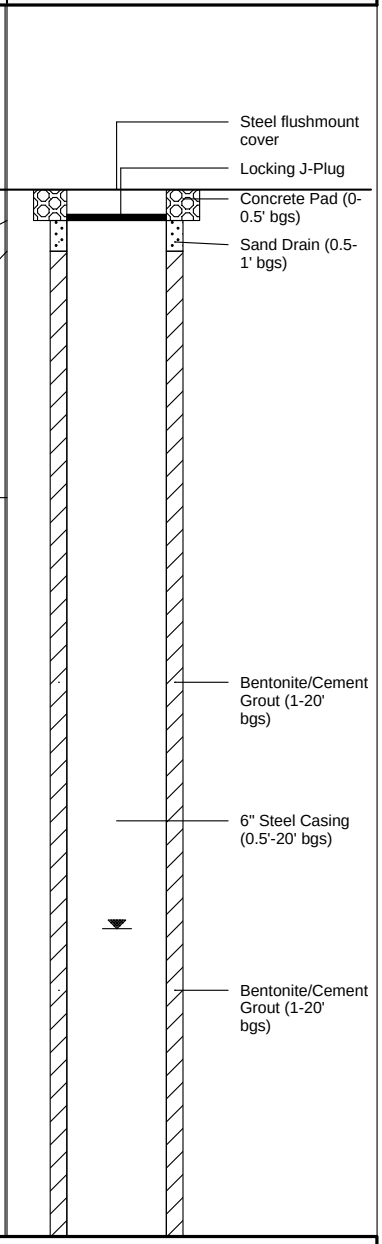
Descriptions By: M. Eriksson

Well/Boring ID: **NMW-25RA**

Client: Former MGP Site
Central Hudson Gas & Electric

Location: Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								ASPHALT.
									Brown fine SAND, little fine to coarse subangular Gravel, moist.
									Grey/brown fine to coarse angular GRAVEL, little to some fine Sand, wet, heavy coal-tar-like odor throughout water, dark staining.
5	-5								Blind drilled to 45' bgs.
		NA	NA	NA	NA	NA	NA		
10	-10								
15	-15								



Well/Boring Construction

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Client: Former MGP Site
Central Hudson Gas & Electric

Well/Boring ID: NMW-25RA

Borehole Depth: 45' bgs

Site Location:
Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
									Blind drilled to 45' bgs.	Bentonite/Cement Grout (1-20' bgs)
20	-20									
25	-25	NA	NA	NA	NA	NA	NA			5.875" Open Rock Hole (20-43' bgs)
30	-30									
35	-35									

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Client: Former MGP Site
Central Hudson Gas & Electric

Well/Boring ID: NMW-25RA

Borehole Depth: 45' bgs

Site Location:
Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
40	-40	NA	NA	NA	NA	NA	NA		Blind drilled to 45' bgs.	5.875" Open Rock Hole (20-43' bgs); K-Packer (43' bgs); Bentonite/Cement Grout (43-45' bgs); 4" Steel Sump (43-45' bgs)
45	-45								Boring terminated at 45' bgs	
50	-50									
55	-55									

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Date Start/Finish: 3/13/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969962.4
Easting: 626958.8
Casing Elevation: 22.51'

Borehole Depth: 16.5' bgs
Surface Elevation: 22.79'

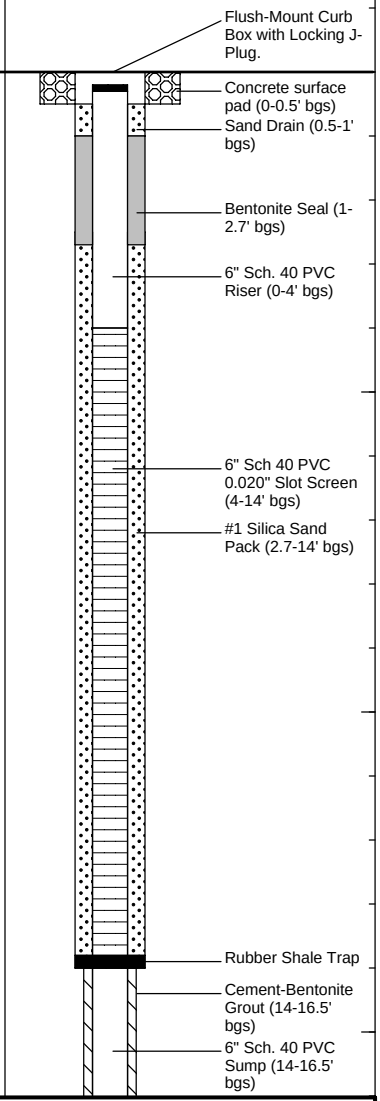
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-26**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 16.5' bgs.
5	-5								
10	-10								
15	-15								



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-26

Borehole Depth: 16.5' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	NA	NA	NA	NA	NA	NA		Blind drilled to 16.5' bgs.	Cement-Bentonite Grout (14-16.5' bgs); 6" Sch. 40 PVC Sump (14-16.5' bgs)

20 -20

25 -25

30 -30

35 -35

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 3/28/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5 7/8-inch Rollerbit

Northing: 969967.8
Easting: 626955.8
Casing Elevation: 22.45'

Borehole Depth: 46.5' bgs
Surface Elevation: 22.80'

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-26R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	5									12" Flush-mount Curb Box with locking j-plug
0	0									Concrete surface pad
	0									Cement-Bentonite Grout (0-16' bgs)
5										6" Steel Casing (0 - 16' bgs)
	-5	NA	NA	NA			NA		
10									
	-10								Bedrock at 13' bgs.	
15										

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-26R

Borehole Depth: 46.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15								Trace blebs observed in recirculation water at 17' bgs.	
20									
-20									
25									5 7/8" Open hole (16-44.5' bgs)
-25	NA	NA	NA			NA			
30									
-30									
35									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-26R

Borehole Depth: 46.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35 / 40	NA	NA	NA			NA			5 7/8" Open hole (16-44.5' bgs); K-Packer; 4" Steel Sump (44.5-46.5' bgs); Cement-Bentonite Grout (44.5-46.5' bgs)
-40 / 45									
-45 / 50									
-50 / 55									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 9/18/13-10/14/13
Drilling Company: Parratt Wolff
Driller's Name: G. Lansing/ J. Bailey
Drilling Method: Hollow Stem Auger / Fluid Rotary
Auger Size: 8.25" ID / 5.875" Rollerbit
Rig Type: CME-55
Sampling Method: NA

Northing: 969975.6
Easting: 626959.2
Casing Elevation: 22.78

Borehole Depth: 45' bgs
Surface Elevation: 23.10

Descriptions By: M. Eriksson

Well/Boring ID: **NMW-26RA**

Client: Former MGP Site
Central Hudson Gas & Electric

Location: Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0								Grey/brown fine to coarse subangular GRAVEL, little fine Sand, moist. {Run-a-crush}	Steel flushmount cover; Locking J-Plug; Concrete Pad (0-0.5' bgs); Sand Drain (0.5-1' bgs)
									ASPHALT.	
									Grey/brown fine to medium SAND, little fine to coarse subangular Gravel, Silt, moist.	
5	-5								Blind drilled to 45' bgs.	
		NA	NA	NA	NA	NA	NA			Bentonite/Cement Grout (1-20' bgs)
10	-10									6" Steel Casing (0.5'-20' bgs)
										Bentonite/Cement Grout (1-20' bgs)
15	-15								Grey WEATHERED ROCK. (Observed in cuttings)	

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Client: Former MGP Site
Central Hudson Gas & Electric

Well/Boring ID: NMW-26RA

Borehole Depth: 45' bgs

Site Location:
Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
20	-20								Blind drilled to 45' bgs. (ROCK)	Bentonite/Cement Grout (1-20' bgs)
25	-25	NA	NA	NA	NA	NA	NA			5.875" Open Rock Hole (20-43' bgs)
30	-30									
35	-35									

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Client: Former MGP Site
Central Hudson Gas & Electric

Well/Boring ID: **NMW-26RA**

Borehole Depth: 45' bgs

Site Location:
Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
40	-40	NA	NA	NA	NA	NA	NA		Blind drilled to 45' bgs. (ROCK)	5.875" Open Rock Hole (20-43' bgs); K-Packer (43' bgs); Bentonite/Cement Grout (43-45' bgs); 4" Steel Sump (43-45' bgs)
45	-45								Boring terminated at 45' bgs	
50	-50									
55	-55									

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Date Start/Finish: 3/27/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969994.4
Easting: 626955.5
Casing Elevation: 23.01'

Borehole Depth: 19' bgs
Surface Elevation: 23.29'

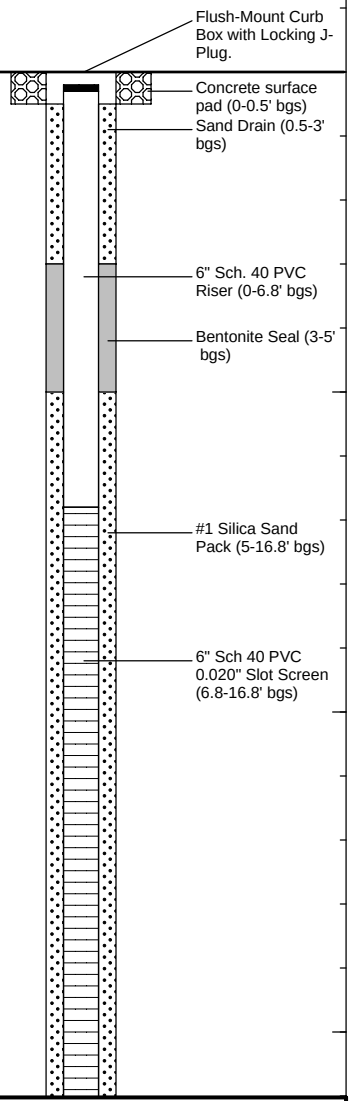
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-27**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 19' bgs
5	-5								
10	-10								
15	-15								



Well/Boring Construction

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-27

Borehole Depth: 19' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	NA	NA	NA	NA	NA	NA		Bedrock at 16' bgs.	6" Sch 40 PVC 0.020" Slot Screen (6.8-16.8' bgs); #1 Silica Sand Pack (5-16.8' bgs); Rubber Shale Trap; Cement-Bentonite Grout (16.8-19' bgs); 6" Sch. 40 PVC Sump (16.8-19' bgs)
20 -20									
25 -25									
30 -30									
35 -35									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 3/28/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5' RQ Corebarrel

Northing: 969993.5
Easting: 626954.0
Casing Elevation: 23.01'

Borehole Depth: 46.5' bgs
Surface Elevation: 23.32'

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-27R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	5									12" Flush-mount Curb Box with locking j-plug
0	0									Concrete surface pad
	0									Cement-Bentonite Grout (0-19' bgs)
5										6" Steel Casing (0 - 19' bgs)
	-5	NA	NA	NA			NA		
10									
	-10								
15									Bedrock at 16' bgs.	

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

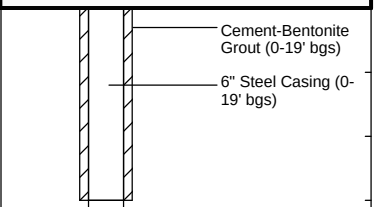
Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-27R

Borehole Depth: 46.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15								Bedrock at 16' bgs.	Cement-Bentonite Grout (0-19' bgs)
								Trace sheen observed in recirculation water at 17 ft bgs.	6" Steel Casing (0-19' bgs)
20									
-20									5 7/8" Open hole (19-45' bgs)
25									
-25	NA	NA	NA			NA			
30									
-30									
35									



Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-27R

Borehole Depth: 46.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35 / 40	NA	NA	NA			NA			5 7/8" Open hole (19-46.5' bgs)
-40 / 45									4" Steel Sump (Grouted in Cement-Bentonite)
-45 / 50									
-50 / 55									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 3/23/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 970018.2
Easting: 626954.1
Casing Elevation: 23.03'

Borehole Depth: 18.5' bgs
Surface Elevation: 23.33'

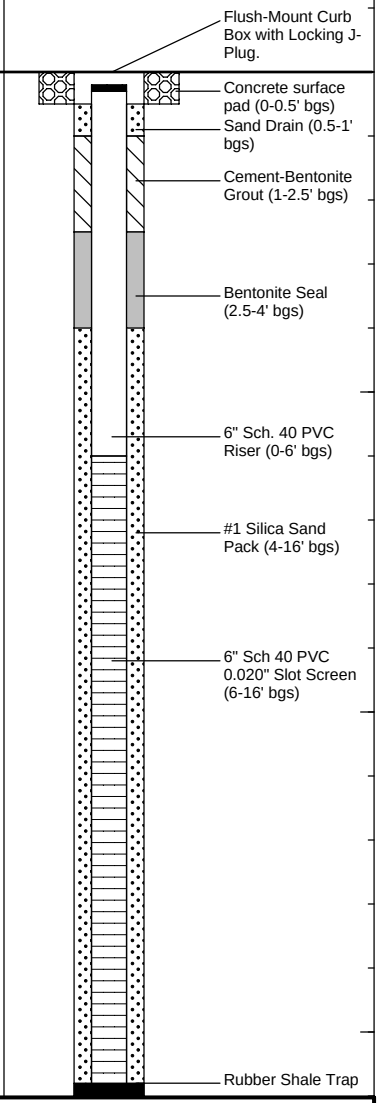
Descriptions By: Dave Cornell

Well/Boring ID: **NMW-28**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 19' bgs
5	-5								
10	-10								
15	-15								



Well/Boring Construction

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-28

Borehole Depth: 18.5' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	NA	NA	NA	NA	NA	NA		Bedrock at 16' bgs. Trace NAPL blebs in return water @ 16 ft bgs.	Cement-Bentonite Grout (16-18.5' bgs) 6" Sch. 40 PVC Sump (16-18.5' bgs)
20 -20									
25 -25									
30 -30									
35 -35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 3/26/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5 7/8-inch Rollerbit

Northing: 970018.6
Easting: 626959.2
Casing Elevation: 23.04'

Borehole Depth: 46.5' bgs
Surface Elevation: 23.30'

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-28R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
5									12" Flush-mount Curb Box with locking j-plug
0									Concrete surface pad
0									Cement-Bentonite Grout (0-18.5' bgs)
5									6" Steel Casing (0 - 18.5' bgs)
-5	NA	NA	NA			NA		
10								
-10								
15								Bedrock at 16' bgs.	

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-28R**

Borehole Depth: 46.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15								Bedrock at 16' bgs.	Cement-Bentonite Grout (0-18.5' bgs); 6" Steel Casing (0-18.5' bgs)
20								Very faint odor observed in recirculation water during drilling.	
-20									5 7/8" Open hole (18.5-46.5' bgs)
25									
-25	NA	NA	NA			NA			
30									
-30									
35									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-28R

Borehole Depth: 46.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35 / 40	NA	NA	NA			NA			5 7/8" Open hole (18.5- 46.5' bgs)
-40 / 45									4" Steel Sump (Grouted in Cement-Bentonite)
-45 / 50									
-50 / 55									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 3/20/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: NA

Northing: 970051.0
Easting: 626959.7
Casing Elevation: 23.04'

Borehole Depth: 18.8' bgs
Surface Elevation: 23.28'

Descriptions By: Dave Cornell

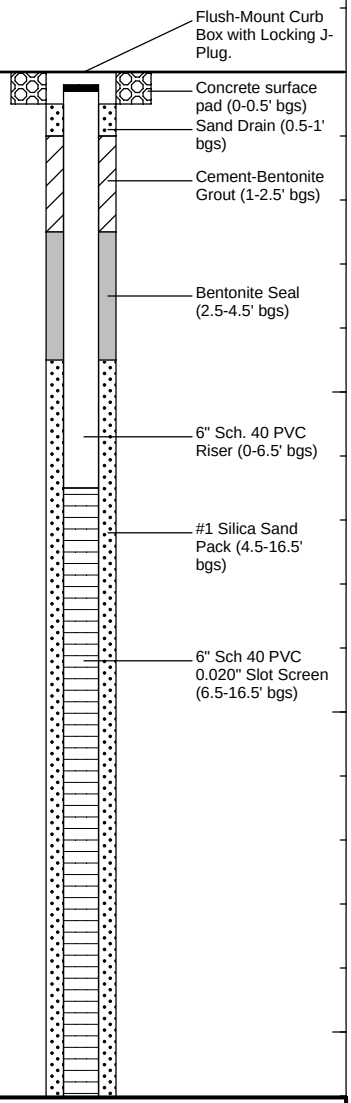
Well/Boring ID: **NMW-29**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 18.8' bgs.
5	-5								
10	-10								
15	-15								A trace sheen was observed when rollerbitting was intiated at 14.7' bgs. Bedrock at 15.5' bgs.

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-29

Borehole Depth: 18.8' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	NA	NA	NA	NA	NA	NA		Blind drilled to 18.8' bgs.	#1 Silica Sand Pack (4.5-16.5' bgs) 6" Sch 40 PVC 0.020" Slot Screen (6.5-16.5' bgs) Rubber Shale Trap Cement-Bentonite Grout (16.5-18.8' bgs) 6" Sch. 40 PVC Sump (16.5-18.8' bgs)

20 -20
25 -25
30 -30
35 -35

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 3/23/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5 7/8-inch Rollerbit

Northing: 970046.5
Easting: 626958.8
Casing Elevation: 22.90'

Borehole Depth: 45' bgs
Surface Elevation: 23.26'

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-29R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	5									12" Flush-mount Curb Box with locking j-plug
	0									Concrete surface pad
										Cement-Bentonite Grout (0-19' bgs)
5										
	-5	NA	NA	NA			NA			6" Steel Casing (0 - 19' bgs)
10										
	-10									
15									Bedrock at 15' bgs.	

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-29R**

Borehole Depth: 45' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15									Cement-Bentonite Grout (0-19' bgs); 6" Steel Casing (0-19' bgs)
20								Trace sheen observed in upper bedrock.	
-20									5 7/8" Open hole (19-45' bgs)
25									
-25	NA	NA	NA			NA			
30									
-30									
35									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-29R**

Borehole Depth: 45' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35	NA	NA	NA			NA			5 7/8" Open hole (19-45' bgs)
40									
-40									
45									4" Steel Sump (Grouted in Cement-Bentonite)
-45									
50									
-50									
55									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 3/20/07-3/21/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 970073.8
Easting: 626961.3
Casing Elevation: 22.38'

Borehole Depth: 15.5' bgs
Surface Elevation: 22.90'

Descriptions By: Dave Cornell

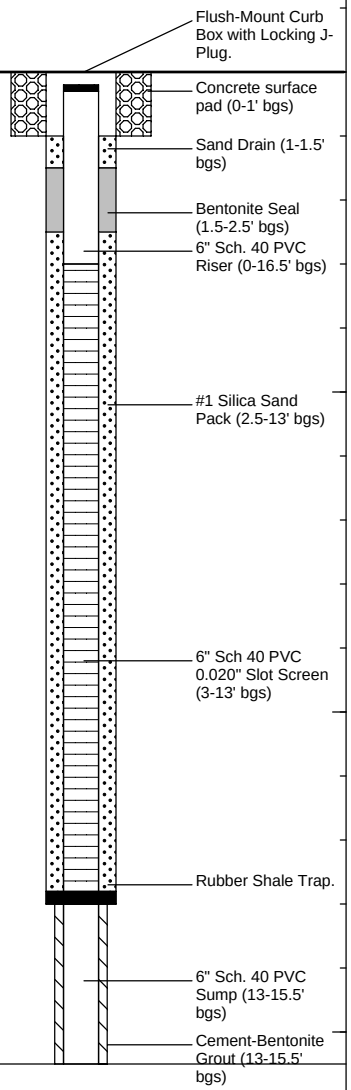
Well/Boring ID: **NMW-30**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	1	0-2	0.8	2 1 2 3	3	ND		Dark Gray fine GRAVEL, little Sand (M,NP)(possibly Asphalt or Slag). Brown fine to coarse SAND, little fine to coarse subrounded Gravel (M,NP).
		2	2-4	0.5	11 2 2 3	4	ND		CONCRETE (2.3-2.5' bgs).
5	-5	3	4-6	1.0	2 3 3 5	6	ND		Brown fine to coarse SAND, little fine to coarse subrounded Gravel (W,NP) trace Cobble.
		4	6-8	1.0	5 7 6 7	13	ND		
		5	8-10	0.8	4 5 10 20	15	ND		Saturated at 8' bgs.
10	-10	6	10-11	0.9	14 18 50/ 0.3	NA	ND		Gray and pink ROCK chips (possible COBBLES) (M,NP).
		7	11-12	NA	16 20 60/ 0.4	NA	ND		
15	-15								

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 3/22/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5 7/8-inch Rollerbit

Northing: 970070.6
Easting: 626960.6
Casing Elevation: 22.63'

Borehole Depth: 42.5' bgs
Surface Elevation: 23.05'

Descriptions By: Dave Cornell

Well/Boring ID: **NMW-30R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	5									12" Flush-mount Curb Box with locking j-plug
0									Blind drilled to bedrock	Concrete surface pad
	0									Cement-Bentonite Grout (0-15.5' bgs)
5										
	-5	NA	NA	NA			NA			6" Steel Casing (0 - 15.5' bgs)
10										
	-10								Bedrock at 13' bgs.	
15									Trace sheen observed in recirculation water during rock socket installation.	Open hole (15.5-42.5' bgs)

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-30R**

Borehole Depth: 42.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15									
20									
-20									Open hole (15.5-42.5' bgs)
25									
-25	NA	NA	NA			NA			
30									
-30									
35									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-30R**

Borehole Depth: 42.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35	NA	NA	NA			NA			Open hole (15.5-40.5' bgs)
40									4" Steel Sump (Grouted in Cement-Bentonite)
-40									
45									
-45									
50									
-50									
55									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 11/5/07
Drilling Company: Parratt Wolff Inc.
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: NA

Northing: 969773.6
Easting: 626915.6
Casing Elevation: 21.40'

Borehole Depth: 18.7' bgs
Surface Elevation: 21.82'

Descriptions By: Dave Cornell

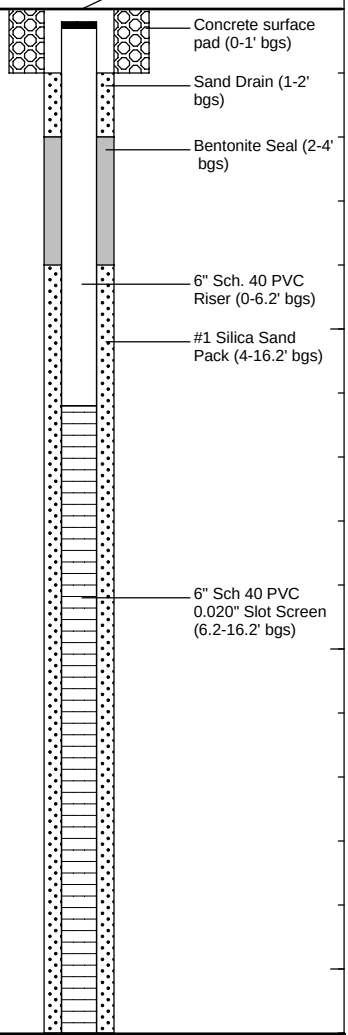
Well/Boring ID: **NMW-31**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 18.7' bgs.
5	-5								
10	-10								
15	-15								Possible weathered bedrock at 15.6 ft bgs.

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-31

Borehole Depth: 18.7' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	NA	NA	NA	NA	NA	NA		Blind drilled to 18.7' bgs. Bedrock at 17' bgs.	Rubber Shale Trap 6" Sch. 40 PVC Sump (16.2-18.7' bgs) Cement-Bentonite Grout (16.2-18.7' bgs)

20 -20

25 -25

30 -30

35 -35

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 11/02/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: NA

Northing: 969745.4
Easting: 626909.1
Casing Elevation: 20.80'

Borehole Depth: 17' bgs
Surface Elevation: 21.22'

Descriptions By: Nathan Smith

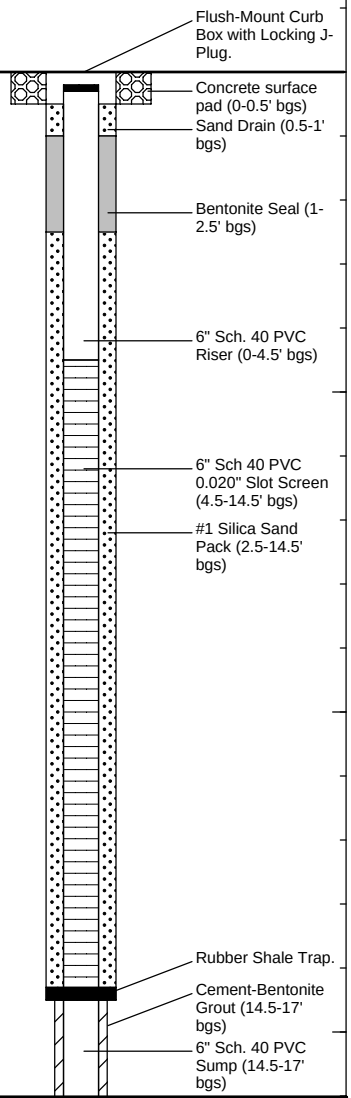
Well/Boring ID: **NMW-32**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								
									Sheen observed and petroleum-like odor noted in recirculation water during drilling
5	-5	NA	NA	NA	NA	NA	NA		Gray stained soils (strong petroleum-like odor) in overburden soils from 7' bgs.
10	-10								
15	-15								Bedrock at 15.2' bgs.

Well/Boring Construction



Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-32

Borehole Depth: 17' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	NA	NA	NA	NA	NA	NA		Sheen observed and petroleum-like odor noted in recirculation water during drilling	Cement-Bentonite Grout (14.5-17' bgs); 6" Sch. 40 PVC Sump (14.5-17' bgs)
20 -20									
25 -25									
30 -30									
35 -35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 10/31/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5' HQ Corebarrel

Northing: 969729.5
Easting: 626905.6
Casing Elevation: 20.28'

Borehole Depth: 45.2' bgs
Surface Elevation: 20.73'

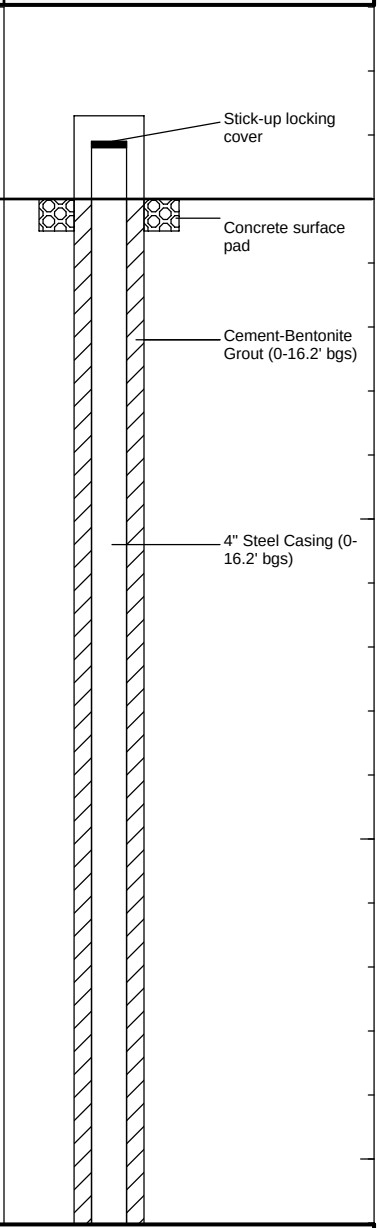
Descriptions By: Nathan Smith

Well/Boring ID: **NMW-33R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	5									
0	0								Auger through overburden to bedrock surface at 16.2' bgs.	
	0									
5										
	-5	NA	NA	NA			NA			
10										
	-10									
15									Bedrock at 14.2' bgs.	



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-33R**

Borehole Depth: 45.2' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		1	16.2-20.2	4.0			0.0		Dark Gray (N3) to grayish-black (N2) ROCK (GRAYWACKE) with Calcite seams and few black Shale laminae. 20 degree fractures at 17.2' and 20.2' bgs. 15 degree fracture at 18.4' bgs.	Cement-Bentonite Grout (0-16.2' bgs); 4" Steel Casing (0-16.2' bgs)
20	-15	2	20.2-25.2	5.0			0.0		Same as run 1 (16.2'- 20.2' bgs), more Shale laminae. 20 degeree fractures at 21', 21.2', 21.3', 21.9', 23.2', and 23.5' bgs. 30 degree fractures at 24.2', 24.3', 24.6', 24.9', and 25.2' bgs. Sediment seam at 23.6'. Broken zone from 21.9'-23.2' bgs and 23.5'- 23.8' bgs. Trace sediment seams on fracture surfaces.	
25	-20	3	25.2-30.2	5.0			0.0		Same as run 1 (16.2'- 20.2' bgs), more Shale laminae. 30 degree fractures at 25.2', 25.4', 25.7', and 26.5' bgs. 20 degree fractures at 26.1', 26.9', 28.4, and 28.7' bgs. Horizontal fractures at 25.5' and 25.6' bgs. Trace sediment on frecture surfaces.	
30	-25	4	30.2-35.2	5.0			0.0		Same as run 1 (16.2'- 20.2' bgs), more Shale laminae. 50 degree fractures at 30.5' and 32.7' bgs. 30 degree fractures at 30.8', 30.9', 31.0', 31.9', 32.1', 32.0', 31.7', 31.9', 33.6', 33.7', 35.0', and 35.1' bgs. Trace sediment on fracture surfaces. Trace sheen at 35.0' bgs.	3 7/8" Open hole (16.2-41.2' bgs)
35	-30	5	35.2-40.2	4.8			0.0		Same as run 1 (16.2'- 20.2' bgs), more Shale laminae. 10 degree fracture at 35.4' bgs. 20 degree fracture at 32.5' bgs. 60 degree fractures at 36.7' and 36.8' bgs. 50 degree fractures 37.3' and 37.4' bgs. Horizontal fracture at 36.0' bgs.	

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-33R

Borehole Depth: 45.2' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35	5	35.2-40.2	4.8			0.0		40 degree fractures at 36.2', 37.6', 39.7' and 40.2' bgs. 30 degree fractures at 37.8', 38.0' and 38.4' bgs. Sediment seams at 35.9' and 37.0' bgs. Trace sediment on fracture surfaces.	3 7/8" Open hole (16.2-41.2' bgs)
40									
-40	6	40.2-45.2	5.0			0.0		Same as run 1 (16.2'- 20.2' bgs), more Shale laminae. Trace sediment on fracture surfaces. 40 degree fractures at 40.2', 41.4', 41.6', 41.8', 42.6', 42.7', 44.9' and 45.2' bgs. 30 degree fractures at 43.1' and 45.1' bgs. 55 degree fracture at 43.5' bgs. 50 degree fracture at 44.7' bgs. Mechanical break at 41.0' bgs.	3.5" Steel Sump (Grouted in Cement-Bentonite) (41.2-45.2' bgs)
45									
-45									
50									
-50									
55									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Date Start/Finish: 10/30/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5' HQ Corebarrel

Northing: 969705.0
Easting: 626902.7
Casing Elevation: 19.78'

Borehole Depth: 44' bgs
Surface Elevation: 20.34'

Descriptions By: Nathan Smith

Well/Boring ID: **NMW-34R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	5									Stick-up locking cover
0	0								Auger through over burden to bedrock surface at 15.4' bgs.	Concrete surface pad
	0								Overburden soil cuttings stained dark gray with strong odor and sheens present.	Cement-Bentonite Grout (0-15.9' bgs)
5										4" Steel Casing (0-15.9' bgs)
	-5	NA	NA	NA			NA			
10										
	-10									
15										
		1	15.4-18	2.6			0.0		Grayish-black (N2) to dark gray (N3) GRAYWACKE, with Calcite seams, and black (N1) Shale laminae. 30 degree fracture at 15.7' bgs. 45 degree fracture at	

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-34R

Borehole Depth: 44' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15	1	15.4-18	2.6			0.0		16.3' bgs. 50 degree fracture at 17.3' bgs. Broken zone (with sediment observed) from 17.3'- 18.0' bgs. Trace sediment on fracture surfaces.	3 7/8" Open hole (15.9-40' bgs)
	2	18-19.8	1.8			0.0		Grayish-black (N2) to dark gray (N3) GRAYWACKE, with Calcite seams, and black (N1) Shale laminae. 30 degree fracture at 18.4' bgs. 30 degree fracture at 19.1' bgs.	
20 -20	3	19.8-24.8	5.0			3.2 0.8		Grayish-black (N2) to dark gray (N3) GRAYWACKE, with Calcite seams, and higher density of black (N1) Shale laminae. 30 degree fractures at 21.8', 22', 22.2', 22.5', 22.8', 22.9', 23.7' and 24.3' bgs (trace sediment on fracture surfaces). Broken zone from 23.2'- 23.5' (with sediment seams) and 23.7'- 24.3' bgs (trace sediment). Trace NAPL at 24.3' bgs (coal tar-like odor). Slight odor at 23.4' bgs. Shale laminae approximately parallel to fractures.	
25 -25	4	24.8-29.8	5.0			1.8 13.7 1.3		Grayish-black (N2) to dark gray (N3) GRAYWACKE, with Calcite seams, and higher density black (N1) Shale laminae. Trace odor in recirculation water during cutting. 30 degree fractures at 24.9', 25.8', 26', 26.1', 26.7', 26.8', 26.9', 27.5', 27.9', 28', 28.3', and 29.2' bgs. 45 degree fractures at 27.2' bgs. Broken zones from 25.3'- 25.8' and 28.6- 28.7' bgs. NAPL at 27.5' bgs. Trace NAPL at 25.4' bgs. Trace sheen at 29.8' bgs.	
30 -30	5	29.8-34.8	4.7			0.0		Grayish-black (N2) to dark gray (N3) GRAYWACKE, with Calcite seams, and black (N1) Shale laminae. 30 degree fractures at 30.5', 32', 32.9', 33.9', 34.2' and 34.4' bgs. Irregular fracute at 30.9' bgs. Broken zone from 31.9'- 32' and 32.4'- 32.7' bgs. Trace NAPL at 32.7' bgs.	
35	6	34.8-39.8	5.0			0.0		Grayish-black (N2) to dark gray (N3) GRAYWACKE, with Calcite seams, and black (N1) Shale laminae. 30 degree fractures at 35.7', 36', 36.1', 37.1' and 37.7' bgs. 45 degree fractures 36.5', 38', 38.6' and 39.8' bgs. Sediment seams at 37.1' bgs. Trace sediment on fracture surfaces.	

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-34R

Borehole Depth: 44' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35	6	34.8-39.8	5.0			0.0		Grayish-black (N2) to dark gray (N3) GRAYWACKE, with Calcite seams, and black (N1) Shale laminae. 30 degree fractures at 35.7', 36', 36.1', 37.1' and 37.7' bgs. 45 degree fractures 36.5', 38', 38.6' and 39.8' bgs. Sediment seams at 37.1' bgs. Trace sediment on fracture surfaces.	3 7/8" Open hole (15.9-40' bgs)
40									
-40	7	39.8-44	4.2			0.0		Grayish-black (N2) to dark gray (N3) GRAYWACKE, with Calcite seams, and black (N1) Shale laminae. 60 degree fractures at 40' and 40.6' bgs. 45 degree fractures at 41.7', 42.5', 42.6', 42.7' and 43.1' bgs. Broken zone from 39.8'- 40' and 40.6'- 40.9' bgs. Trace sediment on fracture surfaces.	3.5" Grouted Steel Sump (40-44' bgs)
45									
-45									
50									
-50									
55									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Date Start/Finish: 11/1/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: 2" Split Spoon

Northing: 969687.6
Easting: 626892.0
Casing Elevation: 20.67'

Borehole Depth: 13' bgs
Surface Elevation: 21.14'

Descriptions By: Dave Cornell

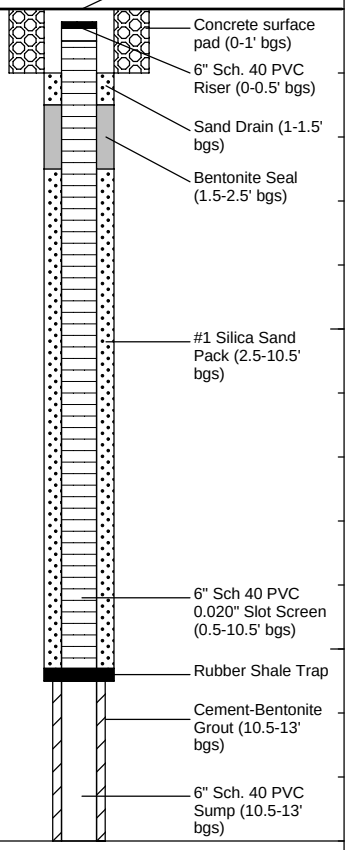
Well/Boring ID: **NMW-35**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								
									Blind drilled to 13' bgs.
5	-5	NA	NA	NA	NA	NA	NA		
									Gray staining and strong petroleum-like odor in soil cuttings at 8-9' bgs.
									Probable weathered bedrock at 9' bgs.
10	-10								Competent bedrock at 10.4' bgs.
									Sheen obsereved in recirculation water at 10.6' bgs.
15	-15								

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

ARCADIS
Infrastructure · Water · Environment · Buildings

TEST BORING LOG

BORING No.NMW-36A

PROJECT **Site Area A Remediation**	LOCATION **Newburgh, NY**	SHEET **1** OF **1**	
CLIENT **Central Hudson**		PROJECT No. **B0020531.0002**	
DRILLING CONTRACTOR **Aztech Environmental**		MEAS. PT. ELEV.	
PURPOSE **Monitoring Wells**		GROUND ELEV.	
WELL MATERIAL **Sch 40 PVC**		DATUM	
DRILLING METHOD(S) **HSA**	SAMPLE / CORE / CASING	DATE STARTED **1/7/16**	
DRILL RIG TYPE	TYPE	DATE FINISHED **1/8/16**	
GROUND WATER DEPTH '	DIA. "	DRILLER **Bob**	
MEASURING POINT	WEIGHT #	PIRNIE STAFF **B. Quaglieri**	
DATE OF MEASUREMENT	FALL "		

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. DEPTH	WELL Constr.	REMARKS
2						2.4		6" Sch 40 PVC
4						3.4		
6								6" Sch 40 PVC, 20 slot (5.4'-15.4')
8								
10								
12								
14						15.4		2.5' sump with rubber shale trap (15.4'-17.9')
16						17.9		

Date Start/Finish: 10/25/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: NA

Northing: 969961.9
Easting: 626910.4
Casing Elevation: 40.60'

Borehole Depth: 29.6' bgs
Surface Elevation: 40.93'

Descriptions By: Nathan Smith

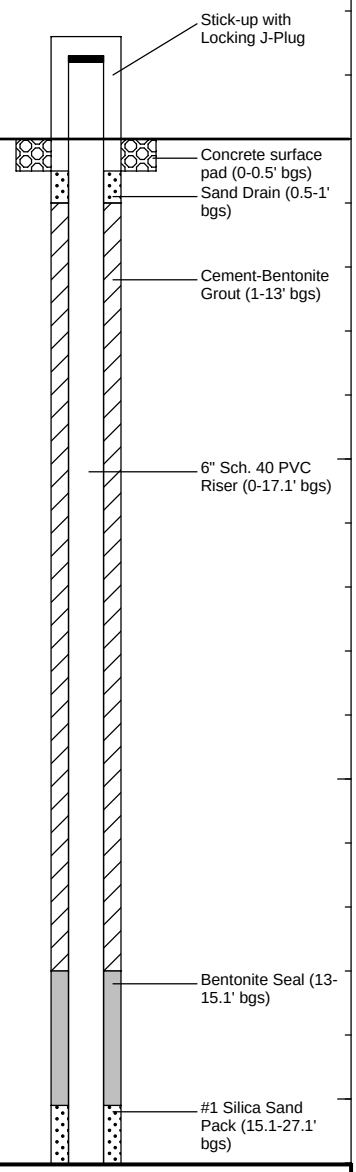
Well/Boring ID: **NMW-37**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Blind drilled to 29.6' bgs.
5	-5								
10	-10								Gray stained soil cuttings and strong odor at 14' bgs.
15	-15								

Well/Boring Construction



ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-37

Borehole Depth: 29.6' bgs

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
20 -20	NA	NA	NA	NA	NA	NA		Blind drilled to 29.6' bgs.	#1 Silica Sand Pack (15.1-27.1' bgs); 6" Sch 40 PVC 0.020" Slot Screen (17.1-27.1' bgs)
25 -25								Bedrock at 26.5' bgs.	Rubber Shale Trap; Cement-Bentonite Grout (27.1-29.6' bgs); 6" Sch. 40 PVC Sump (27.1-29.6' bgs)
30 -30									
35 -35									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

Date Start/Finish: 10/5/07-10/9/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5' HQ Corebarrel

Northing: 969958.1
Easting: 626907.1
Casing Elevation: 41.09'

Borehole Depth: 59.5' bgs
Surface Elevation: 39.0'

Descriptions By: Nathan Smith

Well/Boring ID: **NMW-37R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0									Stick-up locking cover
									Auger through over burden to bedrock surface at 29.5' bgs.	Concrete surface pad
										Cement-Bentonite Grout (0-29' bgs)
5	-5									4" Steel Casing (0-29' bgs)
		NA	NA	NA			NA			
10	-10									
15	-15									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-37R

Borehole Depth: 59.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		NA	NA	NA			NA		Auger through over burden to bedrock surface at 29.5' bgs.	Cement-Bentonite Grout (0-29' bgs); 4" Steel Casing (0-29' bgs)
20	-20									
25	-25									
30	-30	1	29.5-30.5	1.0			NA		Dark Gray (N2-N3) weathered ROCK. 55 degree fracture from horizontal at 29.8' bgs. Rock below busted up. Possible GRAYWACKE with Shale partings and Calcite seams.	
		2	30.5-34.5	3.3			0.9		Dark Gray (N2-N3) weathered ROCK (possible GRAYWACKE) with Shale partings and Calcite seams. Fractures parallel to Shale bedding planes. Calcite seams ~1-4mm. 25 degree fractures from horizontal at 30.9', 31.1', 31.3', 31.6', 32.2', 33.4' (trace odor on fracture surface) and 32.5' bgs (broken up zone and sediment on fracture surface). 20 degree fracture at 31.8' bgs. Thicker ~10 mm Calcite seams from 32.5'-33' bgs. Trace sheen on fracture surfaces at 33' and 32.6' bgs. Trace NAPL on fracture surfaces at 33.9' bgs.	3 7/8" Open hole (29-55.5' bgs)
35	-35	3	34.5-39.5	5.0			NA		Dark Gray (N2-N3) weathered ROCK (GRAYWACKE with (N1) Shale partings and Calcite seams). 45 degree fractures at 35.1' (parallel to shale bedding), 37.7' bgs (parallel to shale bedding), and 36.8' bgs (parallel to calcite large 5mm seams). Higher density of fractures below 37.3' bgs. Irregular fracturing at 37.3' bgs, sediment observed on fracture surfaces. 40 degree fracture at 37.5'	

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-37R

Borehole Depth: 59.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
								bgs	
	3	34.5-39.5	5.0			NA		(parallel to shale bedding). Broken zone from 38.2'-38.6' bgs. 60 degree fracture at 38.8' bgs. 50 degree fracture at 39.2' bgs.	3 7/8" Open hole (29-55.5' bgs)
40 -40	4	39.5-43	3.5			NA		Dark Gray to grayish-black (N2-N3) weathered ROCK (possible GRAYWACKE) with black (N1) Shale beds up to 2" thick and thin Calcite seams (~1-2mm thick). 70 degree fracture at 39.8' bgs (sediment on surface). Broken zone from 41.8'- 43' bgs. Sediment and NAPL observed 41.8' bgs. Sheen and sediment obsereved from 42'- 43' bgs.	
	5	43-44.5	1.5			NA		Dark Gray to grayish-black (N2-N3) ROCK (possible GRAYWACKE) with approximetly 1" thick (N1) Shale beds (75 degrees from horizontal) and Calcite seams. 75 degree fracture from 43.5'- 43.9' bgs (parallel bedding). 40 degree fracture at 43.8' bgs. Irregular fracture at 44.4' bgs (sediment observed). NAPL observed at 43.3' bgs on fracture surfaces.	
45 -45	6	44.5-49.5	5.0			NA		Dark Gray to grayish-black (N2-N3) ROCK (possible GRAYWACKE) with Shale (N1) beds (up to 1" thick) and Calcite seams. Irregular cracks from 44.5'- 45.5' bgs, fracture (20 degrees from horizontal) at 45' bgs. Broken zone at 45.5' bgs. 25 degrees fracture from horizontal at 45.6' bgs. 30 degree fracture from horizontal at 45.9', 46.2', 47.7', and 47.8' bgs. 35 degree fracture along shale bedding from horizontal at 46.6' bgs. Broken zone, NAPL observed, sediment obsevered, at 49.5' bgs.	
50 -50	7	49.5-54.5	5.0			7.0 11.0		Dark Gray to grayish-black (N2-N3) GRAYWACKE with black (N1) Shale and Calcite seams. Sheen observed in recirculation water during cutting. Broken zone from 49.5'- 51' bgs. 25 degree fracture from horizontal at 50.1' and 50.3' bgs. Sediment seam at 51.1' bgs. 20 degree fracture from horizontal at 51.5' and 54.3' bgs. 0.8' long vertical fracture from 52'- 52.8' bgs. NAPL observed at 52.8' bgs.	
55 -55	8	54.5-59.5	5.0			NA		Dark Gray to grayish-black (N2-N3) GRAYWACKE, with black (N1) Shale and Calcite seams. Sheen present in recirculation water during cutting. 25 degree fracture at 55.3' and 55.5' bgs. Broken zone from 56'- 57.1' bgs (sediment present on fracture surfaces). 55 degree fracture at 57.8' bgs. 30 degree fracture at 58.1' bgs.	3.5" Grouted Steel Sump (55.5-59.5'

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-37R

Borehole Depth: 59.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	8	54.5-59.5	5.0			NA		Dark Gray to grayish-black (N2-N3) GRAYWACKE (possibly), with black (N1) Shale and Calcite seams. Sheen present in recirculation water during cutting. 25 degree fracture at 55.3' and 55.5' bgs. Broken zone from 56'- 57.1' bgs (sediment present on fracture surfaces). 55 degree fracture at 57.8' bgs. 30 degree fracture at 58.1' bgs.	bgs) 3.5" Grouted Steel Sump (55.5-59.5' bgs)
60 -60									
65 -65									
70 -70									
75 -75									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Date Start/Finish: 10/25/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 8 1/4" ID
Rig Type: CME-75
Sampling Method: NA

Northing: 970030.9
Easting: 626929.7
Casing Elevation: 42.66'

Borehole Depth: 36.5'
Surface Elevation: 40.40'

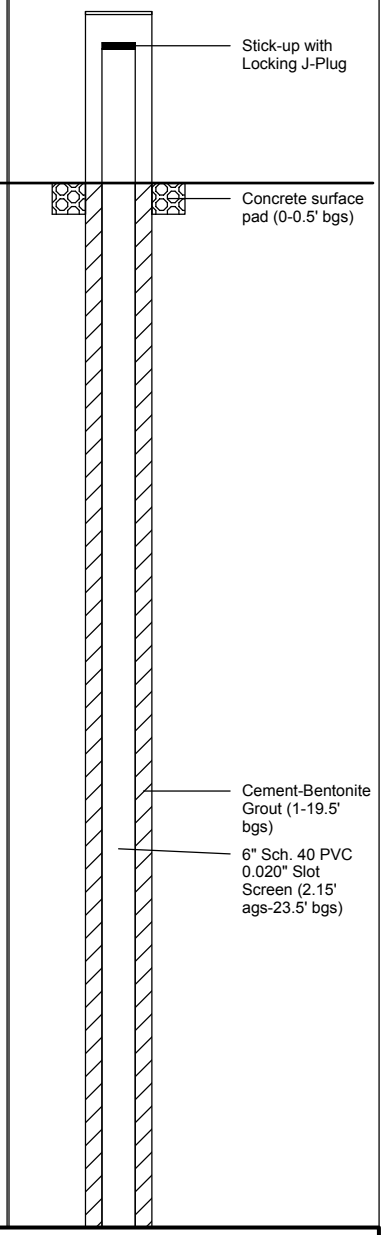
Descriptions By: Nathan Smith

Well/Boring ID: **NMW-38**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP Site Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	40								Blind drilled to 36.5' bgs
5	35	NA	NA	NA	NA	NA	NA		
10	30								
15	25								



Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.
Remarks

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Site Location:
Former Newburgh MGP Site
Newburgh, New York

Well/Boring ID: NMW-38

Borehole Depth: 36.5'

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
									Blind drilled to 36.5' bgs	
20	20									Bentonite Seal (19.5-21.5' bgs)
25	15	NA	NA	NA	NA	NA	NA			#1 Silica Sand Pack (21.5-33.5' bgs)
										6" Sch. 40 PVC 0.020" Slot Screen (23.5-33.5' bgs)
30	10									Rubber Shale Trap
35	5									Cement-Bentonite Grout (33.5-36.5' bgs)
									End of boring at 36.5' bgs	6" Sch. 40 PVC Sump (33.5-36.5' bgs)

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; ND = Non Detect; WOR = Weight of Rods; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.
Remarks

Date Start/Finish: 10/17/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5' HQ Corebarrel

Northing: 970031.2
Easting: 626925.9
Casing Elevation: 42.96'

Borehole Depth: 68' bgs
Surface Elevation: 40.5'

Descriptions By: Nathan Smith

Well/Boring ID: **NMW-38R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	5									Stick-up locking cover
0	0								Auger through over burden to bedrock surface at 37.2' bgs.	Concrete surface pad
	0									Cement-Bentonite Grout (0-35.5' bgs)
5										
	-5	NA	NA	NA			NA			4" Steel Casing (0 - 35.5' bgs)
10										
	-10									
15										

Remarks: bgs = below ground surface; NA = Not Applicable/Available; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-38R**

Borehole Depth: 68' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
									Auger through over burden to bedrock surface at 37.2' bgs.	Cement-Bentonite Grout (0-35.5' bgs)
	-15								Began observing trace NAPL blebs and began losing little Drilling fluid at 18' bgs. From 18'-19' bgs hard drilling, increase NAPL blebs and sheen observed. Below 19' bgs no noticeable impacts.	
20										
	-20									4" Steel Casing (0-35.5' bgs)
25		NA	NA	NA			NA			
	-25									
30										
	-30									
35										3 7/8" Open hole (35.5-64' bgs)

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-38R**

Borehole Depth: 68' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35	1	37.2-39	1.2			0.0		Dark Gray to grayish-black ROCK (GRAYWACKE) with Shale laminae parallel to fracture and Calcite seams. Broken zone from 37.2' to 38.1' bgs. Trace NAPL at 37.4' bgs. 30 degree fractures at 38.1' and 39' bgs.	
40	2	39-44	4.6			0.0		Same as run 1 (37.2'- 39' bgs). Trace sheen and trace odor during cutting in recirculation water. Broken zone at 39'- 39.2' and 42.4'-44' bgs. 30 degree fractures at 39.3', 39.7', 40.3', 40.4', 41.4', 41.9', 42.3' and 43.8' bgs. 20 degree fractures at 42.5' bgs.	
-40									
45	3	44-49	5.0			0.0		Same as run 1 (37.2'- 39' bgs). Trace sheen and trace odor during cutting in recirculation water. Mechanical breaks at 45.1', 45.3' and 45.5' bgs. 30 degree fractures at 46.1', 46.2', 46.4', 47.2', 47.4', 47.6' and 48.2' bgs. Sediment observed at 46.1', 46.2', 46.3', 47.4', 47.6' and 48.3' bgs. Trace sediment at 48.9' bgs. Broken zone at 48.3'- 49' bgs.	3 7/8" Open hole (35.5-64' bgs)
-45									
50	4	49-54	5.0			0.0 0.0 4.4 0.0		Same as run 1 (37.2'- 39' bgs). Trace sheen and odor during cutting in recirculation water. Mechanical breaks at 49.9', 52.3', 52.4', 52.5', and 52.8' bgs. 30 degree fractures at 51.1', 51.5', 53.4' and 53.5' bgs. 25 degree fracture at 52' bgs. 20 degree fracture at 53' bgs. Sediment observed at 50', 51.2', 52.3' and 52.7' bgs. Trace NAPL at 52.2' bgs.	
-50									
55	5	54-59	4.8			0.0		Same as run 1 (37.2'- 39' bgs). Trace sheen in recirculation water during cutting. Broken zone at 54.3'- 54.9' and 58.8'-59' bgs. Sediment observed at 54.5'-54.9', 56.4', 56.8', 54.7', 55.1', 55.5', 56', 56.1', 56.2', 56.4', 56.6', 56.7' and 58.1'- 58.7' bgs. 45 degree fracture at 54.9' bgs. 40 degree fractures at 51.4', 56.2', 56.4', 56.5' and 56.7' bgs. 30 degree fracture at 56' bgs. Vertical fractures at 58.1'- 58.7' bgs (~70 degrees from horizontal).	

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-38R**

Borehole Depth: 68' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-55	5	54-59	4.8			0.0		Same as run 1 (37.2'- 39' bgs). Trace sheen in recirculation water during cutting. Broken zone at 54.3'- 54.9' and 58.8'-59' bgs. Sediment observed at 54.5'-54.9', 56.4', 56.8', 54.7', 55.1', 55.5', 56', 56.1', 56.2', 56.4', 56.6', 56.7' and 58.1'- 58.7' bgs. 45 degree fracture at 54.9' bgs. 40 degree fractures at 51.4', 56.2', 56.4', 56.5' and 56.7' bgs. 30 degree fracture at 56' bgs. Vertical fractures at 58.1'- 58.7' bgs (~70 degrees from horizontal).	3 7/8" Open hole (35.5- 64' bgs)
60									
-60	6	59-64	5.0			0.0		Same as run 1 (37.2'- 39' bgs). 45 degree fracture at 59' bgs. 40 degree fractures at 62.3' and 62.6' bgs. 55 degree fractures at 63.5' and 63.9' bgs. Irregular fracture at 62.8' bgs. Horizontal fracture at 63' and 63.2' bgs. Sediment obsereved at 59', 62.3', 62.6', 63', 63.5' and 63,9' bgs.	
65									
-65	7	64-68	4.0			0.0		Same as run 1 (37.2'- 39' bgs). 30 degree fracture at 65.3' bgs. 25 degree fracture at 65.8' bgs. 70 degree fractures at 66'- 66.4' bgs. Horizontal fracture at 67.4' bgs. Sediment observed at 64.1', 66'- 66.4' and 67.4' bgs.	3.5" Grouted Steel Sump (64-68' bgs)
70									
-70									
75									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture.

Date Start/Finish: 10/30/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5' HQ Corebarrel

Northing: 970035.9
Easting: 626843.9
Casing Elevation: 43.44'

Borehole Depth: 53.2' bgs
Surface Elevation: 40.9'

Descriptions By: Nathan Smith

Well/Boring ID: **NMW-39R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	0									Stick-up locking cover.
									Auger through over burden to bedrock surface at 23' bgs.	Concrete Pad (0-0.5' bgs)
										Sand Drain (0.5-1'bgs)
										Cement-Bentonite Grout (0.0' - 23' bgs)
5	-5									
		NA	NA	NA			NA			4" Steel Casing (0.0' - 23' bgs)
10	-10									
15	-15									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-39R**

Borehole Depth: 53.2' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	NA	NA	NA			NA		Auger through over burden to bedrock surface at 23' bgs.	Cement-Bentonite Grout (0.0' - 23' bgs)
									4" Steel Casing (0.0' - 23' bgs)
20 -20								Encountered probable bedrock at 21' bgs. Obsereved trace sheens in recirculation water. Harder strata was encountered originally through to bedrock, but the rollerbit punched through it at about 16' bgs and easily went through to 21' bgs. Observed trace sheens and odors at 22' bgs.	
	1	23-23.8	0.8			NA		Dark Gray (N3) to grayish-black (N2) ROCK (GRAYWACKE) with black (N1) Shale beds (~1mm thick) and Calcite.	
						4.0		Same as Run 1 (23'- 23.8' bgs). Trace sheen in recirculation water. Broken zones from 24.7'- 25.1' (trace sediment), 25.5'- 26.2' (Trace sediment), and 26.5'-27' bgs (trace sediment). 55 degree fracture from horizontal fracture at 23.8' bgs. 45 degree fracture from horizontal at 25.1', 26.2' and 26.5' bgs. ~3mm thick sediment seam at 25.3' bgs.	
25 -25	2	23.8-27	3.3			0.0			3 7/8" Open hole (23'-49.2' bgs)
						0.0			
	3	27-28.6	1.6			0.0		Same as Run 1 (23'- 23.8' bgs). 45 degree fracture from horizontal at 27.1' and 27.2' bgs. 55 degree fracture from horizontal at 27.4' bgs. 50 degree fracture from horizontal at 27.7' bgs. 40 degree fracture from horizontal at 28.4' bgs (trace sediment). 45 degree fracture from horizontal at 28.5' bgs.	
						0.0			
						0.0		Same as Run 1 (23'- 23.8' bgs). Broken zone from 29.7'- 30.5' bgs (trace sediment). 40 degree fractures at 29.1' and 29.5' bgs (sediment on fracture surfaces). 40 degree fractures at 29.7' (trace sediment), 31.4', 31.6', 32.4', 32.6', 32.8', 32.9', 33.1', and 33.3' bgs (trace sediment on the last 6 fractures). 45 degree fractures at 30.6', 31.4', and 32' bgs. Horizontal fracture at 30.9' bgs (trace sediment).	
30 -30	4	28.6-33.6	5.0			0.0			
						0.0			
						0.0		Same as Run 1 (23'- 23.8' bgs). 35 degree fracture from horizontal at 33.6', 33.9', 34.4', 34.8', 35.1, 35.2', 35.6', 37' and 38.6' bgs. 45 degree fracture from horizontal at 38.1' bgs. Sediment seam observed at 38.1' bgs. Trace sediment on fracture surface at 35.1' bgs.	
35 -35						0.0			
	5	33.6-38.6	5.0						

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-39R**

Borehole Depth: 53.2' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	5	33.6-38.6	5.0			0.0 0.0		Same as Run 1 (23'- 23.8' bgs). 35 degree fracture from horizontal at 33.6', 33.9', 34.4', 34.8', 35.1, 35.2', 35.6', 37' and 38.6' bgs. 45 degree fracture from horizontal at 38.1' bgs. Sediment seam observed at 38.1' bgs. Trace sediment on fracture surface at 35.1' bgs.	3 7/8" Open hole (23'-53.2' bgs)
40 -40	6	38.6-43.2	4.6			0.0		Same as Run 1 (23'- 23.8' bgs). 45 degree fractures from horizontal at 40' and 42.2' bgs. Irregular fracture at 40.6' bgs. 30 degree fracture from horizontal at 42.9' bgs (trace sediment). Broken zone from 42.4'- 42.8' bgs (trace sediment).	
45 -45	7	43.2-48.2	5.0			0.0 0.0 0.0 0.0		Same as Run 1 (23'- 23.8' bgs). Broken zone from 45'- 45.2' bgs (trace sediment). 30 degree fractures at 43.9' and 44.2' bgs. 45 degree fractures at 44.3' and 44.4' bgs. 40 degree fracture at 44.7' bgs. Sediment seams (silty) at 43.9' bgs.	
50 -50	8	48.2-53.2	5.0			0.0 0.0 0.0		Same as Run 1 (23'- 23.8' bgs). 40 degree fractures from horizontal at 49.8', 50.2', 51.6' and 52.1' bgs. 30 degree fractures from horizontal at 50.4', 50.6', 51.7', 52.5' and 52.7' bgs. Sediment observed on fracture surfaces at 49.8', 51.6', 51.8 and 52' bgs. Broken zone from 51.1-51.2' bgs (trace sediment).	3.5" Grouted Steel Sump (49.2'- 53.2' bgs)
55 -55									

Remarks: bgs = below ground surface; NA = Not Applicable/Available; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 10/16/07
Drilling Company: Parratt Wolff Inc.
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5' RQ Corebarrel

Northing: 970054.0
Easting: 626861.6
Casing Elevation: 43.70'

Borehole Depth: 48.5' bgs
Surface Elevation: 41.4'

Descriptions By: Nathan Smith

Well/Boring ID: **NMW-40R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DRAFT

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	5									Stick-up locking cover
0	0								Auger through over burden to bedrock surface at 18.5' bgs. Gray staining and slight odor observed in soil cuttings. (PID of soil cuttings = 7.1 ppm)	Concrete surface pad
5	0									Cement-Bentonite Grout (0-18.3' bgs)
5	-5	NA	NA	NA			NA			4" Steel Casing (0 - 18.3' bgs)
10	-10									
15										

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-40R**

Borehole Depth: 48.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DRAFT

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15	NA	NA	NA			NA		Auger through over burden to bedrock surface at 18.5' bgs.	Cement-Bentonite Grout (0-18.3' bgs); 4" Steel Casing (0-18.3' bgs)
20 / -20	1	18.5-23.5	5.0			0.0		Grayish-black (N2) to dark gray ROCK (GRAYWACKE) with black (N2) Shale laminae (~1mm) and Calcite seams. 25 degree fractures at 19.2', 22' and 22.5' bgs. 30 degree fractures at 19.5, 22.5' and 23.5' bgs. Vertical fractures from 19.5'-21.7' bgs. Sediment obserevd at 19.5', 22' and 22.5' bgs on fracture surfaces. Broken zone from 18.5'-19.2' bgs.	3 7/8" Open hole (18.3-44.5' bgs)
25 / -25	2	23.5-28.5	5.0			0.0 0.0 0.0		Same as Run 1(18.5'-23.5' bgs), greater deformation from 22.5'-28.5' bgs. 30 degree fractures at 23.5', 24.7', 25.8', 26.6', 26.7' and 26.9' bgs. Broken zone from 27.9'-28.5' bgs. Sediment observed at 25.7', 26.8' and 27.9'-28.5' bgs.	
30 / -30	3	28.5-33.5	5.0			0.0 0.0 0.0 0.0		Same as Run 1 (18.5'-23.5' bgs), greater deformation from 28.5'-30' bgs. 35 degree fractures at 29.2', 29.5' and 29.7' bgs (several closely spread fractures at 29.7' bgs). 55 degree fractures at 30.9' and 31.1' bgs. 40 degree fractures at 31.3' and 33.5' bgs. 5 degree fracture at 31.9' bgs. 20 degree fractures at 32.2', 32.5', 32.6' and 33' bgs. Broken zone from 28.5'-29' bgs (trace sediment) and 30.3'-30.7' bgs (trace sediment). Sediment observed at 29.7' and from 31'-31.4' bgs on fracture surfaces.	
35	4	33.5-38.5	5.0			0.0 0.0		Same as Run 1 (18.5'-23.5' bgs). 45 degree fracture at 33.6' bgs. 15 degree fracture at 33.4' and 35.3' bgs. 20 degree fracture at 34.8 bgs. 30 degree fracture at 35.1' bgs. 55 degree fracture at 35.7' bgs. 40 degree fracture at 36.3', 36.6', 36.9', 32.4' and 37.7' bgs. Irregular fracture at 38.3 bgs.	

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: NMW-40R

Borehole Depth: 48.5' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DRAFT

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35	4	33.5-38.5	5.0			0.0 0.0		Same as Run 1 (18.5'-23.5' bgs). 45 degree fracture at 33.6' bgs. 15 degree fracture at 33.4' and 35.3' bgs. 20 degree fracture at 34.8 bgs. 30 degree fracture at 35.1' bgs. 55 degree fracture at 35.7' bgs. 40 degree fracture at 36.3', 36.6', 36.9', 32.4' and 37.7' bgs. Irregular fracture at 38.3 bgs.	3 7/8" Open hole (18.3-44.5' bgs)
40 -40	5	38.5-43.5	5.0			0.0		Same as Run 1 (18.5'-23.5' bgs). 65 degree fracture at 38.8' bgs. 45 degree fracture at 39.2' bgs. 30 degree fracture at 40.7' bgs. 45 degree fracture at 41.5' and 41.6' bgs. 30 degree fracture at 42.3' bgs. Broken zone at 39.6'-40.7' bgs (trace sediment).	
45 -45	6	43.5-48.5	5.0			0.0		Same as Run 1 (18.5'-23.5' bgs). 25 degree fracture at 44.9', 45.1' and 45.3' bgs. 50 degree fracture at 46.3' bgs. 40 degree fractures at 48' and 48.3' bgs. 45 degree fracture at 48.2' bgs. Sediment obserevd at 44.9', 45.1', 45.3' and 48.2' bgs.	3.5" Grouted Steel Sump (44.5-48.5' bgs)
50 -50									
55									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; AMSL = Above Mean Sea Level; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Date Start/Finish: 10/11/07-10/12/07
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond
Drilling Method: HQ Rock Coring
Auger Size: NA
Rig Type: CME-75
Sampling Method: 5' HQ Corebarrel

Northing: 969993.8
Easting: 626882.0
Casing Elevation: 42.37'

Borehole Depth: 58.0' bgs
Surface Elevation: 39.7'

Descriptions By: Nathan Smith

Well/Boring ID: **NMW-41R**

Client: Central Hudson Gas and Electric Corporation

Location: Former Newburgh MGP (Area A) Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
5									Stick-up locking cover.
0								Auger through overburden to bedrock surface at 27.5' bgs.	Concrete surface pad.
0									Cement-Bentonite Grout (0.0' - 27.5' bgs)
5									
-5	NA	NA	NA			NA			4" Steel Casing (0.0' - 27.5' bgs)
10								Faint MGP odor in cuttings at 14' bgs.	
-10									
15									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-41R**

Borehole Depth: 58.0' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-15	NA	NA	NA			NA		Auger through overburden to bedrock surface at 27.5' bgs.	Cement-Bentonite Grout (0.0' - 27.5' bgs)
20 / -20									4" Steel Casing (0.0' - 27.5' bgs)
25 / -25	1	27.5-29.3	1.8			NA		Dark Gray to grayish-black GRAYWACKE with Calcite seams and black Shale beds (thinly bedded ~1-4 mm thick). Trace sheen observed in recirculation water at 28'-29.3' bgs. Sediment seam at 28.7' bgs. Broken zone 27.7'-27.9' and 28.3'-28.5' bgs. 30 degree fracture at 27.9', 28.5', and 28.7' bgs.	
30 / -30	2	29.3-34.3	4.8			NA		Same as Run 1 (27.5'-29.3' bgs). Sediment seam and trace NAPL observed from 31.6'-31.8' bgs. Broken zone at 29.5'-29.7'bgs, broken zone with broken sediment from 30.3'-30.8' bgs, and 31.6'-31.8' bgs. 45 degree fracture at 29.7' bgs. 40 degree fracture at 30.2' bgs (parallel to thinly (~1mm) bedded shale). 35 degree fracture at 31.1' bgs. 40 degree fracture at 32.7' bgs.	3 7/8" Open hole (27.5'-54.0' bgs)
35	2	34.3-39.3	5.0			NA		Same as Run 1 (27.5'-29.3' bgs). Trace sheen observed in recirculation water . Trace NAPL at 36' and 36.7' bgs. Broken zone at 35.4' bgs. 35 degree fracture at 35.6', 35.7', 36', 36.7', 37.6', and 39.0' bgs.	

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-41R**

Borehole Depth: 58.0' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-35	3	34.3-39.3	5.0			NA		Same as Run 1 (27.5'-29.3' bgs). Trace sheen observed in recirculation water . Trace NAPL at 36' and 36.7' bgs. Broken zone at 35.4' bgs. 35 degree fracture at 35.6', 35.7', 36', 36.7', 37.6', and 39.0' bgs.	
40	4	39.3-44.3	5.0			NA		Same as Run 1 (27.5'-29.3' bgs), less shale. Trace sediment at 43.4' bgs. Sediment observed at at bottom of core at 44.3' bgs. 30 degree fracture at 40.7' and 40.9' bgs. 45 degree fracture at 41.3' bgs. 65 degree fracture at 43.4' bgs (trace sediment).	
-40									
45	5	44.3-49.3	5.0			NA		Same as Run 1 (27.5'-29.3' bgs). Broken zone from 45.2'-45.5' bgs (trace sediment) and from 47.2'-47.3' bgs (trace sediment). Increase in calcite seam size/density and shale bed thickness (5-10 mm) between 47.3'-48.3' bgs. 25 degree fracture with sediment observed on fracture surface at 48.8' bgs. Shale bedding parallel to fractures. NAPL present on fracture surface at 49.2' bgs. 30 degree fracture at 44.7' and 45' bgs.	3 7/8" Open hole (27.5'- 54.0' bgs)
-45									
50	6	49.3-54.3	NA			NA		Same as Run 1 (27.5'-29.3' bgs). Trace sheen in recirculation water during cutting. Trace NAPL at 49.6' bgs. Broken zone from 49.3'-49.7' bgs (trace sediment on fracture surfaces). Vertical fracture at 50.4'-51.0' bgs (trace sheen at 50.8' bgs). Broken zone at 52.5'-54.3' bgs (irregular fracturing w/trace sediment on fracture surfaces). 30 degree fractures at 51.6', 51.7', and 51.9' bgs.	
-50									
55	7	54.3-58	3.7			NA		Same as Run 1 (27.5'-29.3' bgs). Broken zone from 54.3'-56' bgs (trace sediment on surfaces). Irregular fractures at 56.4', 56.5', 57', 57.6' and 57.8' bgs. No sheen or NAPL observed. 50 degree fracture at 56' and 56.1' bgs. 55 degree fracture at 57.1' and 57.5' bgs.	3.5" Grouted Steel Sump (54.0' - 58.0' bgs)

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture.

Client: Central Hudson Gas and Electric Corporation

Well/Boring ID: **NMW-41R**

Borehole Depth: 58.0' bgs

Site Location:
Former Newburgh MGP (Area A)
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
-55	7	54.3-58	3.7			NA		Same as Run 1 (27.5'-29.3' bgs). Broken zone from 54.3'-56' bgs (trace sediment on surfaces). Irregular fractures at 56.4', 56.5', 57', 57.6' and 57.8' bgs. No sheen or NAPL observed. 50 degree fracture at 56' and 56.1' bgs. 55 degree fracture at 57.1' and 57.5' bgs.	3.5" Grouted Steel Sump (54.0' - 58.0' bgs)
60 / -60									
65 / -65									
70 / -70									
75									

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available; WOH = Weight of Hammer; S = Saturated; M = Moist; W = Wet; NP= Non-Plastic; SP = Slightly Plastic; MP = Moderately Plastic; P = Plastic.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture.

ARCADIS
Infrastructure · Water · Environment · Buildings

TEST BORING LOG

BORING No.NMW-42A

PROJECT	**Site Area A Remediation**	LOCATION **Newburgh, NY**	SHEET **1** OF **1**
CLIENT	**Central Hudson**		PROJECT No. **B0020531.0002**
DRILLING CONTRACTOR	**Aztech Environmental**		MEAS. PT. ELEV.
PURPOSE	**Monitoring Wells**		GROUND ELEV.
WELL MATERIAL	**Sch 40 PVC**		DATUM
DRILLING METHOD(S)	**HSA**	SAMPLE / CORE / CASING	DATE STARTED **1/7/16**
DRILL RIG TYPE	TYPE		DATE FINISHED **1/8/16**
GROUND WATER DEPTH '	DIA. "		DRILLER **Bob**
MEASURING POINT	WEIGHT #		PIRNIE STAFF **B. Quaglieri**
DATE OF MEASUREMENT	FALL "		

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2						1.6 2.4		6" Sch 40 PVC 6" Sch 40 PVC, 20 slot (2.6'-12.6')
4								
6								
8								
10								
12						12.6 15.1		2.5' sump with rubber shale trap (12.6'-15.1')
14								

Date Start/Finish: 11/14/07
Drilling Company: Parratt Wolff, Inc.
Driller's Name: Doug Richmond
Drilling Method: Hollow Stem Auger
Auger Size: 3.25 inches
Rig Type: CME-75
Sampling Method: 2 inch Split Spoon w/ 140lb Hammer

Northing: 969867.9
Easting: 627388.4
Casing Elevation: 8.26

Borehole Depth: 50 feet bgs
Surface Elevation: 8.65

Descriptions By: D. Cornell

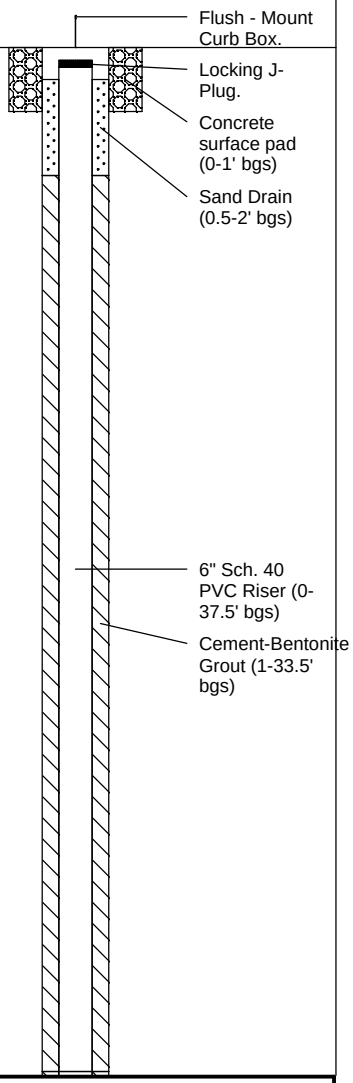
Well/Boring ID: NMW-43

Client: Central Hudson Gas and Electric Corp.

Location: Newburgh, New York

DRAFT

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								Blind Drilled to 10' bgs.
5	-5	NA	0-10	NA	NA	NA	NA		
10	-10	1	10-12	1.2	4 6 7 9	13	ND		Brown SILT, some fine to coarse sub-angular Gravel, little brick, trace fine Sand. Gray fine to coarse SAND, little to some fine to coarse sub-rounded Gravel, non-plastic, saturated.
		2	12-14	1.3	4 3 4 3	7	ND		0.03' thick Silty CLAY stringers (12.9' bgs).
15	-15	3	14-16	1.4	2 3 3 4	6	ND		trace shell fragments, trace sheen (possibly from split spoon water, at 14.5' bgs).



Well/Boring Construction

ARCADIS
Infrastructure, environment, facilities

Remarks: NA = Not Applicable; bgs = below ground surface; ND = Non Detect.

Client: Central Hudson Gas and Electric Corp.

Well/Boring ID: **NMW-43**

Borehole Depth: 50 feet bgs

Site Location:
Newburgh, New York

DRAFT

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
		4	16-18	1.1	5 7 9 7	16	ND		Gray fine to coarse SAND, little to some fine to coarse sub-rounded Gravel, non-plastic, saturated.
		5	18-20	0.3	5 8 7 9	15	ND		little Silt (18-20' bgs).
20	-20	6	20-22	1.0	4 4 5 5	9	ND		Dark gray fine SAND, little Silt and Coal, medium Sand, trace Slag, Shell fragments, Organics and Gravel, non-plastic, saturated.
		7	22-24	1.7	3 4 4 3	8	ND		Brown SILT and CLAY, moderately plastic, saturated.
25	-25	8	24-26	1.7	2 1 1 2	2	ND		Brown to gray Silty CLAY, trace Organics, moderately plastic to plastic, saturated.
		9	26-28	1.6	1 2 1 2	3	ND		trace Brick fragments (26.6' bgs), fine Sand seams (26.8-26.9' bgs), trace Organics (26-28' bgs), moderately plastic.
									Gray SILT and CLAY, trace Organics and Shell fragments, trace fine Sand, moderately plastic, saturated.
		10	28-30	0.8	1 1 2 3	3	ND		Gray Silty fine to medium SAND, trace Shell fragments, trace fine Gravel, non-plastic, saturated.
									Gray brown SILT and CLAY, trace Shell fragments, trace fine Gravel, Cobble stuck in spoon shoe, non-plastic, saturated.
30	-30	11	30-32	1.3	4 4 5 5	9	ND		Gray fine to coarse SAND and fine to coarse sub-angular GRAVEL, trace Brick, Shell fragments, Organics and Silt, fine Sand, trace Organic layer (30.9-30.95' bgs), non-plastic, saturated.
		12	32-34	1.6	3 3 2 2	5	ND		Brown to gray Clayey SILT with thin layers of Organics and fine Sand, slightly-plastic, wet to saturated.
									Brown SILT, some fine Gravel and fine Sand, trace Clay, non-plastic, saturated.
35	-35	13	34-36	1.2	2 2 2 3	4	ND		Brown SILT and CLAY some Wood, trace fine Sand stringers, moderately plastic, moist.

Well/Boring Construction

Cement-Bentonite Grout (1-33.5' bgs)

6" Sch. 40 PVC Riser (0-37.5' bgs)

Bentonite Seal (33.5-35.5' bgs)

Remarks: NA = Not Applicable; bgs = below ground surface; ND = Non Detect.

ARCADIS
Infrastructure, environment, facilities

Client: Central Hudson Gas and Electric Corp.

Well/Boring ID: NMW-43

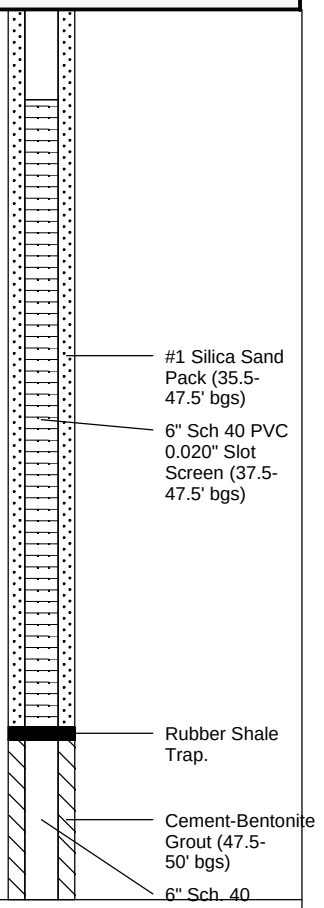
Borehole Depth: 50 feet bgs

Site Location:
Newburgh, New York

DRAFT

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
	14	36-38	1.4	3 4 6 7	10	ND		Brown Clayey SILT with trace fine Sand stringers, slightly plastic to moderately plastic, saturated. Dark gray Silty fine to coarse SAND and fine to sub-angular GRAVEL, non-plastic, saturated.
	15	38-40	1.5	4 3 4 5	7	281		Brown Silty CLAY, trace Organics and Sand seams, moderate MGP-like odor, moderately plastic, moist. Gray fine to medium SAND and fine to medium sub-angular GRAVEL, some red to brown NAPL, non-plastic, saturated.
40 -40	16	40-42	1.2	3 3 6 4	9	93		Gray Clayey SILT, little fine to medium Gravel, sheen and trace NAPL blebs.
	17	42-44	1.1	4 6 8 10	14	59		Gray Silty fine to medium SAND, some fine to medium sub-angular to sub-rounded Gravel, moderate odor, little NAPL in slough, non-plastic, saturated.
45 -45	18	44-46	1.2	7 7 4 3	11	16		faint odor (44-44.8' bgs). Brown to gray SILT and CLAY, trace Organics, faint odor, slightly plastic to moderately plastic, moist.
	19	46-48	0.4	12 5 5 6	10	8.8		Brown to gray Clayey SILT, little fine to coarse GRAVEL, trace Cobbles, non-plastic to slightly plastic, moist.
	20	48-50	2.0	2 1 1 4	2	5.4		Gray SILT and CLAY, trace Sand, some fine to coarse Sand (48.9-49' bgs), moderately plastic, saturated. Gray fine to coarse SAND, little fine to medium sub-rounded Gravel, trace Silt, non-plastic, saturated.
50 -50								
55 -55								

Well/Boring Construction



Remarks: NA = Not Applicable; bgs = below ground surface; ND = Non Detect.

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 9/18/13 & 9/25-26/13
Drilling Company: Parratt Wolff
Driller's Name: G. Lansing/ J. Bailey
Drilling Method: Hollow Stem Auger
Auger Size: 8.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: 969865.2
Easting: 627412.1
Casing Elevation: 8.35

Borehole Depth: 49' bgs
Surface Elevation: 8.85

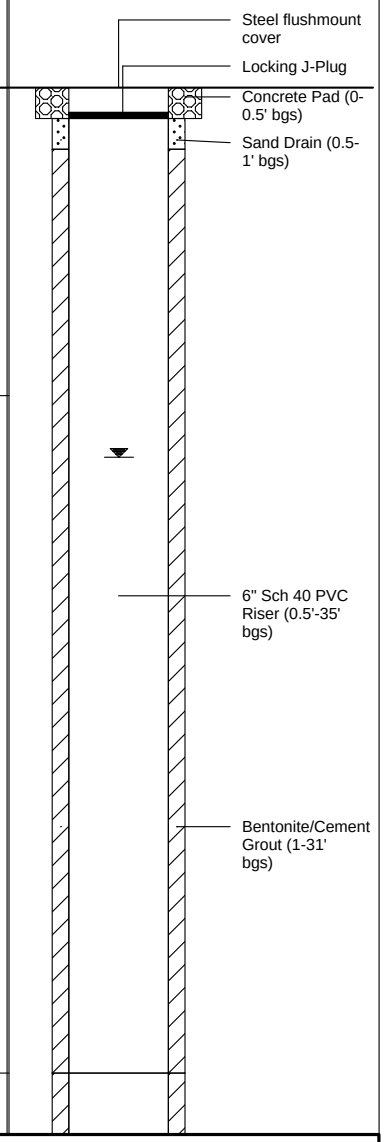
Descriptions By: M. Eriksson

Well/Boring ID: **NMW-44**

Client: Former MGP Site
Central Hudson Gas & Electric

Location: Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Brown fine SAND, little fine to coarse subangular Gravel, Organics (roots), trace Silt, Cobbles, moist.
5	-5	NA	NA	NA	NA	NA	NA		Blind drilled to 35' bgs.
10	-10								
15	-15								
									Blind drilled to 35' bgs.



Well/Boring Construction

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

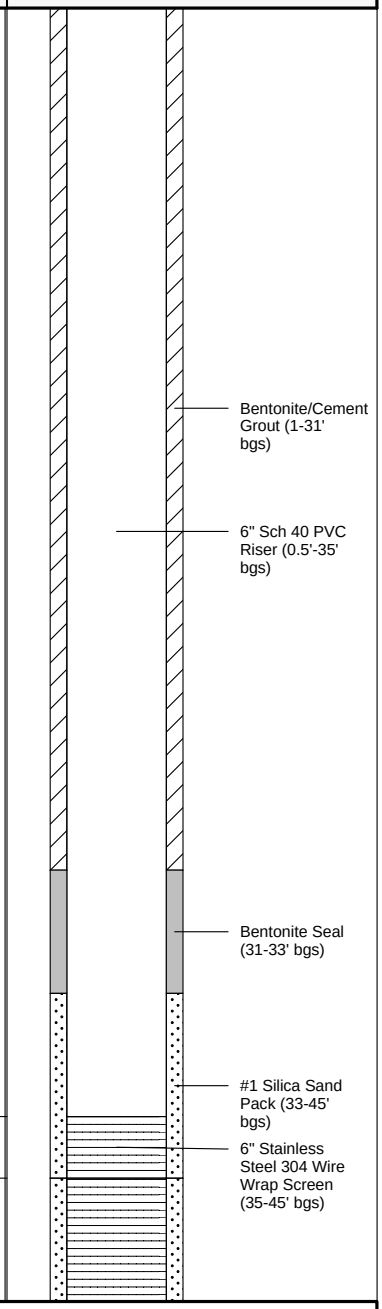
Client: Former MGP Site
Central Hudson Gas & Electric

Well/Boring ID: NMW-44

Borehole Depth: 49' bgs

Site Location:
Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
20	-20								
25	-25	NA	NA	NA	NA	NA	NA		
30	-30								
35	-35	1	35-37	1.1	2 1	2	0.0		Brown fine SAND, little Silt, Wood, wet, trace sheen, faint MGP-like odor.
		1	35-37	1.1	1 2	2	0.0		Brown fine SAND, little Silt, Wood, wet, trace sheen, faint MGP-like odor.
					2 3				



ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Client: Former MGP Site
Central Hudson Gas & Electric

Well/Boring ID: NMW-44

Borehole Depth: 49' bgs

Site Location:
Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		2	37-39	2.0	4 3	7	1.8			
40	-40	3	39-41	1.2	5 1 2 3	3	0.0		Grey Silty CLAY, little fine to medium Sands (1-2mm seams), moderate plasticity, wet, moderate MGP-like odor, tar-like material in water. Coal tar observed in soil cuttings from augers starting at 39' bgs.	6" Stainless Steel 304 Wire Wrap Screen (35-45' bgs)
		4	41-43	1.3	2 2 4 3	6	0.8			
		5	43-45	1.2	2 1 2 2	3	16.0		Little tar-like material in sand seams (44-45' bgs)	#1 Silica Sand Pack (33-45' bgs)
45	-45	6	45-47	1.0	1 1 2 2	3	6.2		Grey fine to medium SAND and fine to medium subrounded GRAVEL, little Silty Clay, wet, little sheen (possibly from above).	Bentonite/Cement Grout (45-49' bgs)
		7	47-49	2.0	2 2 1 1	3	0.2			6" Sch 40 PVC Sump (45-49' bgs)
50	-50								Boring terminated at 49' bgs	
55	-55									

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Date Start/Finish: 9/18/13 & 9/30/13
Drilling Company: Parratt Wolff
Driller's Name: G. Lansing/ J. Bailey
Drilling Method: Hollow Stem Auger
Auger Size: 8.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: 969900.4
Easting: 627416.1
Casing Elevation: 7.00

Borehole Depth: 45' bgs
Surface Elevation: 7.38

Descriptions By: M. Eriksson

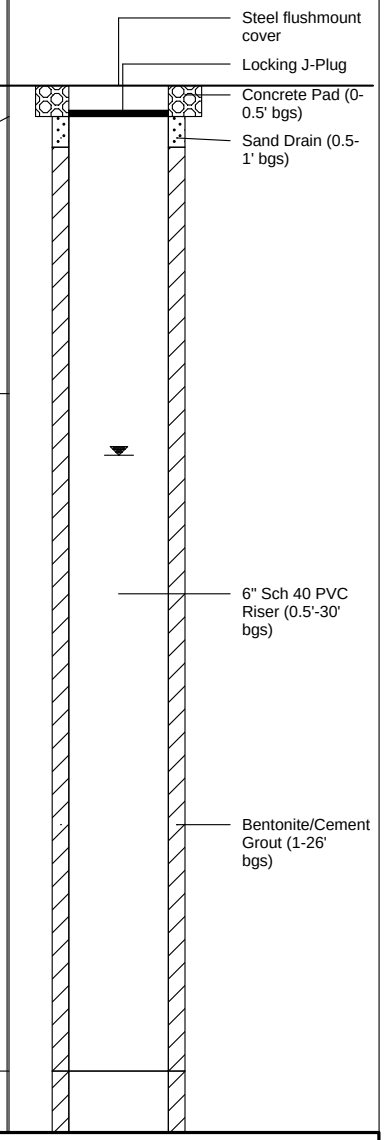
Well/Boring ID: **NMW-45**

Client: Former MGP Site
Central Hudson Gas & Electric

Location: Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								
		NA	NA	NA	NA	NA	NA		ASPHALT Brown fine to medium SAND, little fine to coarse subangular Gravel, Silt, red Brick, moist. (little Cobbles 3-5' bgs)
5	-5	NA	NA	NA	NA	NA	NA		Blind drilled to 35' bgs.
10	-10								
15	-15								Blind drilled to 35' bgs.

Well/Boring Construction



ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Client: Former MGP Site
Central Hudson Gas & Electric

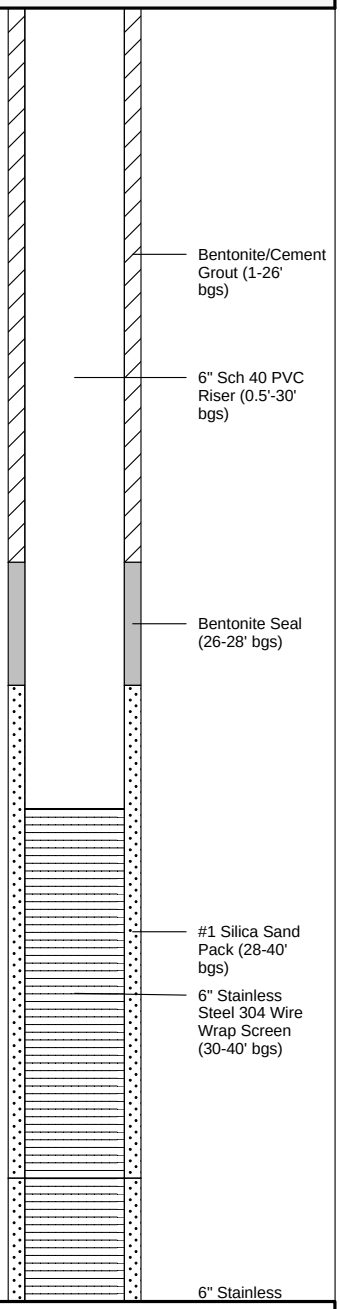
Well/Boring ID: **NMW-45**

Borehole Depth: 45' bgs

Site Location:
Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
20	-20								
25	-25	NA	NA	NA	NA	NA	NA		
30	-30								
35	-35	1	35-37	0.0	8 7	9	NA		No Recovery. (Only possible Gravel sluff)
		1	35-37	0.0	2 3	9	NA		No Recovery. (Only possible Gravel sluff)
					2 2				Grey fine to coarse angular GRAVEL and fine to medium SAND, little Silt, red Brick, trace Clay, wet, sheen throughout.

Well/Boring Construction



ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

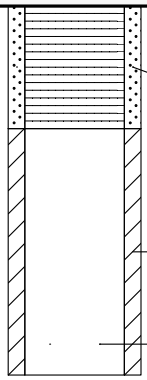
Client: Former MGP Site
Central Hudson Gas & Electric

Well/Boring ID: NMW-45

Borehole Depth: 45' bgs

Site Location:
Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		2	37-39	0.8	2 2	4	0.6		Coal tar observed in soil cuttings from augers.	
40	-40	3	39-41	2.0	1 WOH WOH 1	2	26.5		Grey SILTY CLAY, little to trace fine Sand, fine to medium Gravel, wet, moderate plasticity, brown NAPL-like coal tar, sheen, MGP-like odor.	
		4	41-43	2.0	1 1 1 1	2	0.3		No impacts observed (41-45' bgs)	
45	-45	5	43-45	1.0	WOH WOH 1 2	2	0.6			
									Boring terminated at 45' bgs	
50	-50									
55	-55									



ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Date Start/Finish: 10/22/2010
Drilling Company: Aztech Technologies, Inc.
Driller's Name: Marty Harrington
Drilling Method: 6 5/8 inch HSA
Sampling Method: 2 inch x 5 feet Macrocores
Rig Type: Track-mounted Geoprobe 6610 DT

Northing: NA
Easting: NA
Casing Elevation: NA

Borehole Depth: 22.5 feet bgs
Surface Elevation: NA

Descriptions By: Scott Sanders

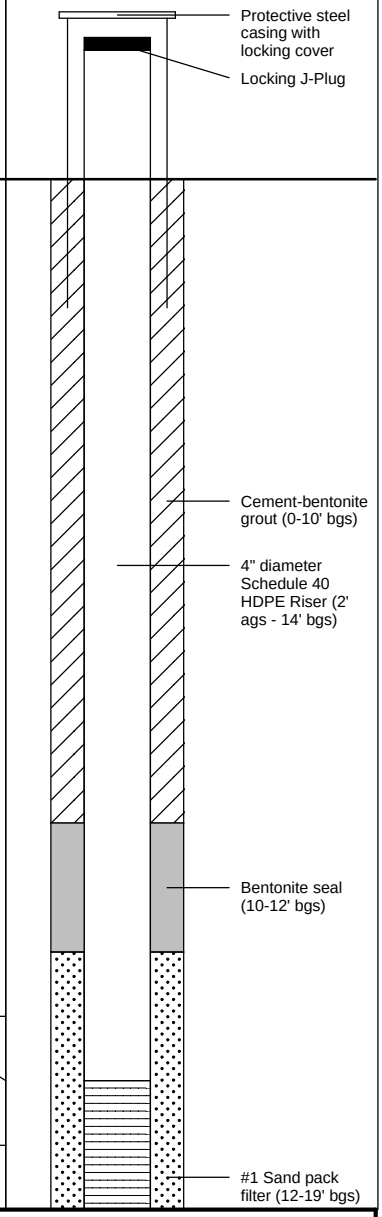
Well/Boring ID: **NMW-46**

Client: Central Hudson Gas and Electric Corp

Location: Newburgh, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0						Augered to 13.0 feet bgs.
5	-5						
10	-10						
15	-15	1	13-18	3.5	NA		Gray-brown SILTY CLAY, trace Gravel, trace Organics, fine to coarse SAND layer from 13.4 to 13.8 feet bgs, moderately coated with NAPL. Gray-brown CLAY, some Silt (and fine Sand from 14.0 to 14.5 feet bgs), trace Gravel and Organics, fine to course SAND layer from 14.8 to 15.0 feet bgs, moderately coated with NAPL. Gray-brown CLAY, some Silt, trace fine Sand and Organics, moderately coated with NAPL from 15.0 to 15.4 feet bgs.

Well/Boring Construction



ARCADIS
Infrastructure, environment, buildings

Remarks: NA = Not Available; bgs = below ground surface; ags = above ground surface; HSA = hollow stem auger; NAPL = non-aqueous phase liquid;

This NAPL collection well was requested by NYSDEC on October 22, 2010. Prior to well installation, the boring observations for this location were reviewed by NYSDEC and the location of the well screen and sump were selected by NYSDEC.

Client: Central Hudson Gas and Electric Corp

Well/Boring ID: **NMW-46**

Borehole Depth: 22.5 feet bgs

Site Location:
Newburgh, New York

DEPTH / ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
	1	13-18	3.5	NA		Gray-brown CLAY, some Silt, trace fine Sand and Organics,	4" diameter Schedule 40 HDPE Screen (14-19' bgs)
						Gray-brown CLAY, some Silt, trace Organics.	
20 -20	2	18-23	2.8	NA		Dark gray-brown fine SAND and SILT, trace Clay and Organics, moderately coated with NAPL.	4" diameter Schedule 40 HDPE Sump (19-21' bgs)
						Gray-brown fine to coarse SAND, trace Gravel and Silt, moderately coated with NAPL.	
						Gray-brown SILT, some Clay, heavily coated with NAPL.	
						WOOD, heavily coated with NAPL.	
						Refusal at wood obstruction at 22.5 feet bgs.	
25 -25							
30 -30							
35 -35							

ARCADIS
Infrastructure, environment, buildings

Remarks: NA = Not Available; bgs = below ground surface; ags = above ground surface; HSA = hollow stem auger; NAPL = non-aqueous phase liquid;

This NAPL collection well was requested by NYSDEC on October 22, 2010. Prior to well installation, the boring observations for this location were reviewed by NYSDEC and the location of the well screen and sump were selected by NYSDEC.

Date Start/Finish: 9/18/13-9/24/13
Drilling Company: Parratt Wolff
Driller's Name: G. Lansing/ J. Bailey
Drilling Method: Hollow Stem Auger
Auger Size: 8.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: 969544.1
Easting: 627387.4
Casing Elevation: 8.14

Borehole Depth: 30' bgs
Surface Elevation: 8.64

Descriptions By: M. Eriksson

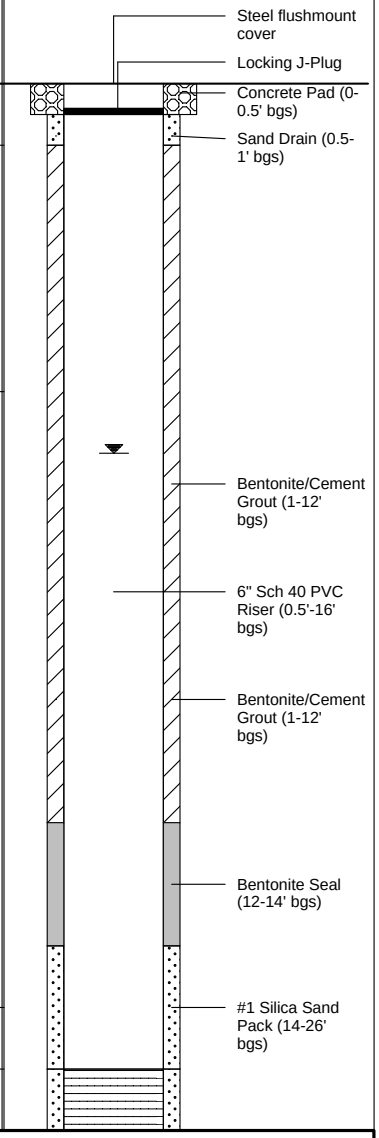
Well/Boring ID: **NMW-47**

Client: Former MGP Site
Central Hudson Gas & Electric

Location: Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Grey fine to coarse GRAVEL, (black fabric at 1.0' bgs).
									Brown fine SAND, some fine to coarse subangular Gravel, little Cobbles, moist.
5	-5								Blind drilled to 15' bgs.
10	-10	NA	NA	NA	NA	NA	NA		
15	-15	1	15-17	1.1	13 16	21	43.7		Grey/black fine to coarse subangular GRAVEL, trace fine Sand, wet, little NAPL blebs throughout, staining, strong MGP-like odor.
		1	15-17	1.1	5 5	21	43.7		Grey/black fine to coarse subangular GRAVEL, trace fine Sand, wet, little NAPL blebs throughout, staining, strong MGP-like odor.

Well/Boring Construction



ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Client: Former MGP Site
Central Hudson Gas & Electric

Well/Boring ID: NMW-47

Borehole Depth: 30' bgs

Site Location:
Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		2	17-19	1.5	3 4 5 5	9	98			
		3	19-20	1.0	4 6	NA	54.4			
20	-20	4	20-22	0.5	2 2 1 1	3	384		Grey/black fine SAND, trace fine Gravel, wet, little NAPL throughout.	6" Stainless Steel 304 Wire Wrap Screen (16-26' bgs)
		5	22-24	2.0	1 2 4 5	6	1084		Grey/black fine SAND, wet, some NAPL throughout, strong MGP-like odor.	
		6	24-25	1.0	4 5	NA	908			
25	-25	7	25-27	2.0	1 1 2 3	3	907		Grey/brown Silty CLAY, little fine Sand, trace Organics (shells), wet, (Competant Clay between 26.5-27' bgs)	#1 Silica Sand Pack (14-26' bgs)
		NA	NA	NA	NA	NA	NA		Blind drilled to 30' bgs.	Bentonite/Cement Grout (26-30' bgs)
30	-30									6" Sch 40 PVC Sump (26-30' bgs)
									Boring terminated at 30' bgs	
35	-35									

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Date Start/Finish: 9/26/13-10/2/13
Drilling Company: Parratt Wolff
Driller's Name: G. Lansing/ J. Bailey
Drilling Method: Hollow Stem Auger
Auger Size: 8.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: 969581.6
Easting: 627396.5
Casing Elevation: 8.08

Borehole Depth: 29' bgs
Surface Elevation: 8.54

Descriptions By: M. Eriksson

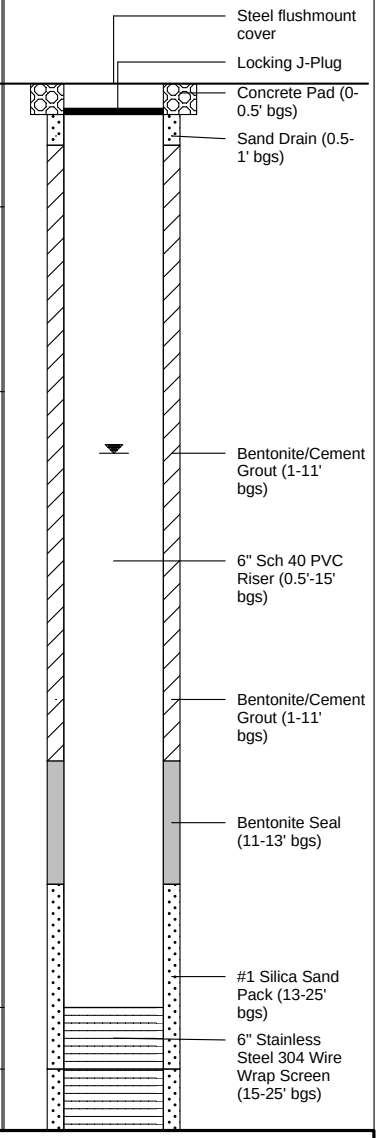
Well/Boring ID: **NMW-48**

Client: Former MGP Site
Central Hudson Gas & Electric

Location: Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0								Grey fine to coarse angular GRAVEL, little fine Sand, moist. (Black fabric at 1.5' bgs) {Run-a-crush}
		NA	NA	NA	NA	NA	NA		Brown fine SAND, little fine to medium subangular Gravel, red Brick, Silt, moist.
5	-5								Blind drilled to 15' bgs.
10	-10	NA	NA	NA	NA	NA	NA		
15	-15	1	15-17	1.0	1 1	2	73.7		Grey/black fine to coarse SAND and GRAVEL, little Wood, Silt, wet, little NAPL throughout, strong MGP-like odor, sheen. (NAPL content increasing with depth)
		1	15-17	1.0	1 1	2	73.7		Grey/black fine to coarse SAND and GRAVEL, little Wood, Silt, wet, little NAPL throughout, strong MGP-like odor, sheen. (NAPL content increasing with depth)

Well/Boring Construction



ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/26/13

Client: Former MGP Site
Central Hudson Gas & Electric

Well/Boring ID: NMW-48

Borehole Depth: 29' bgs

Site Location:
Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		2	17-19	2.0	1 3 2 2	5	101.3			
20	-20	3	19-21	0.0	1 1 1 1	2	NA			6" Stainless Steel 304 Wire Wrap Screen (15-25' bgs)
		4	21-23	2.0	1 1 1 1	2	1309		Grey/brown fine to medium SAND, little Silty Clay, Organics (roots), MGP-like odor.	#1 Silica Sand Pack (13-25' bgs)
		5	23-25	2.0	1 1 2 1	3	604			
25	-25	NA	NA	NA	NA	NA	NA		Grey SILTY CLAY, little to trace fine Sand, Organics (roots), NAPL at 25' bgs, no impacts below 25' bgs.	Bentonite/Cement Grout (25-29' bgs) 6" Sch 40 PVC Sump (25-29' bgs)
30	-30								Boring terminated at 29' bgs	
35	-35									

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/26/13

Date Start/Finish: 9/18/13-10/4/13
Drilling Company: Parratt Wolff
Driller's Name: G. Lansing/ J. Bailey
Drilling Method: Hollow Stem Auger
Auger Size: 8.25" ID
Rig Type: CME-55
Sampling Method: 2" x 2' Split Spoon

Northing: 969575.5
Easting: 627381.9
Casing Elevation: 8.49

Borehole Depth: 29' bgs
Surface Elevation: 9.05

Descriptions By: M. Eriksson

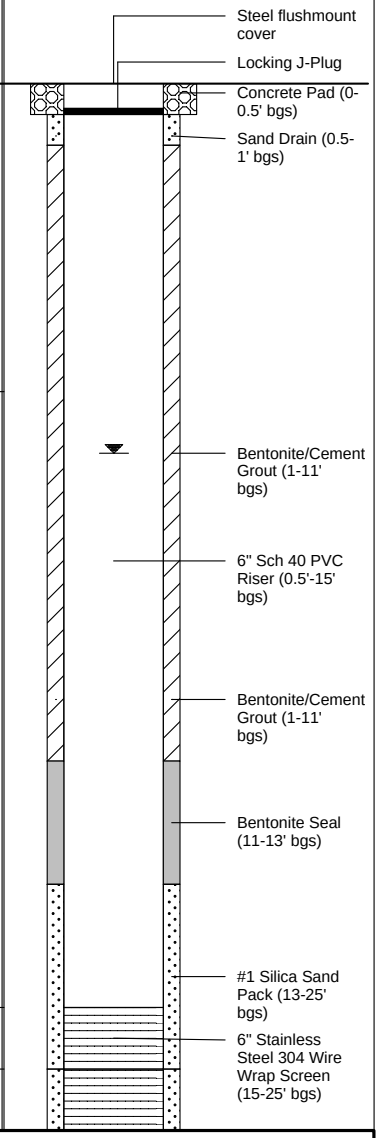
Well/Boring ID: **NMW-49**

Client: Former MGP Site
Central Hudson Gas & Electric

Location: Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	0	NA	NA	NA	NA	NA	NA		Brown fine SAND, little fine to medium Gravel, moist. (Black fabric at 1.5' bgs) {Run-a-crush}
5	-5								Blind drilled to 15' bgs.
10	-10	NA	NA	NA	NA	NA	NA		
15	-15	1	15-17	1.0	4 42	59	180		Black fine to medium SAND, some fine to medium Gravel, little Silt, Wood, wet, coal-tar saturated.
		1	15-17	1.0	17 5	59	180		Black fine to medium SAND, some fine to medium Gravel, little Silt, Wood, wet, coal-tar saturated.

Well/Boring Construction



ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

Client: Former MGP Site
Central Hudson Gas & Electric

Well/Boring ID: NMW-49

Borehole Depth: 29' bgs

Site Location:
Water Street
Newburgh, NY

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blow Counts	N - Value	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well/Boring Construction
		2	17-19	1.5	7 22 22 12	44	98.7			
20	-20	3	19-21	1.0	3 4 18 8	22	103.2			6" Stainless Steel 304 Wire Wrap Screen (15-25' bgs)
		4	21-23	0.8	7 17 10 10	27	6.2		WOOD.	
		5	23-25	1.0	26 22 9 5	31	78.2		Grey/black fine to medium SAND and GRAVEL, little Wood, wet, NAPL saturated.	#1 Silica Sand Pack (13-25' bgs)
25	-25								Grey Silty CLAY, wet.	
		NA	NA	NA	NA	NA	NA			Bentonite/Cement Grout (25-29' bgs) 6" Sch 40 PVC Sump (25-29' bgs)
30	-30								Boring terminated at 29' bgs	
35	-35									

ARCADIS
Infrastructure · Water · Environment · Buildings

Remarks: ags = above ground surface; bgs = below ground surface; NA = Not Applicable/Available;
AMSL = Above Mean Sea Level.

Boring cleared to 5' bgs by VacUnit on 9/18/13

APPENDIX F

Soil Sample Results

Table F-1. Remedial Investigation Subsurface Soil Analytical Results Summary (Areas A and B). Site Management Plan, Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Site Area	Part 375 Soil Cleanup Objectives		Area A	Area A	Area A	Area A	Area A	Area A	Area A	Area A	Area A	Area A	Area A	Area A	Area B	Area B
Location			TB-02 [1]	TB-03	TB-03	TB-08 [1]	TB-09 [1]	TB-15 [2]	TB-42	TB-42	TB-43 [2]	TB-44 [3]	TB-44 [3]	PATP-13-09A [2]	CSB-1	CSB-2
Depth (ft)			12-14	4-6	10-12	16-18	8-10	5-6	6-7	11-11.3	10-12	9-10	15-16	10.5-11	22-24	22-24
Lab ID	Unrestricted Use	Restricted Use - Commercial	L30829-6	L30829-5	L30829-1	L30919-2	L30919-1	L31001-4	L37081-6	L37081-9	L37081-7	L37058-1	L37058-2	MC25907-1	L27084-1	L27084-2
Date Sampled			07/09/96	07/09/96	07/09/96	07/11/96	07/12/96	07/16/96	05/20/97	05/20/97	05/20/97	05/20/97	05/20/97	10/31/13	11/27/95	11/28/95
Volatile Organic Compounds																
Acetone	0.05	500	0.018 J	**0.12**	NA	0.010 J	0.012 J	NA	15 U	1.4 U	16 U	0.012 U	1.5 U	NA	NA	NA
Benzene	0.06	44	0.03 U	0.030 U	0.021	0.028 U	0.027 U	0.006 U	15 U	1.4 U	16 U	0.012 U	1.5 U	0.850 U	**0.580**	**6.4**
2-Butanone	0.12	500	0.03 UJ	0.03 UJ	NA	0.028 UJ	0.027 UJ	NA	15 U	**1.2 J**	16 U	0.012 UJ	**1.4 J**	NA	NA	NA
Carbon Disulfide	--	--	0.004 J	0.030 U	NA	0.007 J	0.027 U	NA	15 U	1.4 U	16 U	0.012 U	1.5 U	NA	NA	NA
Chloroform	0.37	350	0.03 U	0.030 U	NA	0.028 U	0.027 U	NA	15 U	1.4 U	16 U	0.012 U	1.5 U	NA	0.015 J	0.016 J
Chloromethane	--	--	0.03 U	0.030 U	NA	0.028 U	0.027 U	NA	15 U	1.4 U	16 U	0.012 U	1.5 U	NA	1.2 BJ	0.38 UJ
Ethylbenzene	1	390	0.57	0.030 U	0.006 U	0.580 J	0.54	0.006 U	**9.9 J**	0.66 J	16 U	0.012 U	0.63 J	**93.9**	NA	NA
Methylene chloride	0.05	500	0.03 U	0.030 U	NA	0.028 U	0.027 U	NA	15 U	1.4 U	16 U	0.012 U	1.5 U	NA	0.180 U	0.11 U
Toluene	0.7	500	0.012 J	0.025 J	0.004 J	0.066	0.003 J	0.006 U	15 U	**0.74 J**	16 U	0.003 J	**0.79 J**	0.850 U	NA	NA
Xylenes, Total	0.26	500	**0.53**	0.030 U	0.006 U	**0.56**	0.11	0.006 U	**5 J**	**6.5**	16 U	0.012 U	**6.5**	**85.2**	NA	NA
Total BTEX	--	--	1.112	0.025	0.025	1.206	0.653	ND	14.9	7.9	ND	0.003	7.92	179.1	0.580	6.4
Total TICs	--	--	18.15	19.69	NA	15.76	5.35	NA	128	20.09	108	ND	19.9	NA	NA	NA
Semi-volatile Organic Compounds																
Acenaphthene	20	500	**28**	0.84	0.38 U	6.3	4.7	39 U	2.4	NA	18	1.90 U	0.054 J	**100**	NA	NA
Acenaphthylene	100	500	4 J	0.40 U	0.38 U	0.85	0.23 J	34 J	0.40 U	NA	1.8 J	0.72 J	0.39 U	19	NA	NA
Anthracene	100	500	29	0.59	0.38 U	1.6	2.1	34 J	0.51 J	NA	7.9 J	0.21 J	0.39 U	32.7	NA	NA
Benzo(a)anthracene	1	5.6	**22**	0.28 J	0.38 U	**2**	**1.6**	**220**	0.40 J	NA	**12 J**	**2.9 J**	0.056 J	**12.6**	NA	NA
Benzo(a)pyrene	1	1	**16**	0.14 J	0.38 U	**1.2**	**1.1**	**170**	0.40 UJ	NA	**2.2 J**	**14 J**	0.39 U	**10.3**	NA	NA
Benzo(b)fluoranthene	1	5.6	**7.60 J**	0.40 U	0.38 U	0.86 U	0.52 J	**89**	0.27 J	NA	**4.7 J**	**14 J**	0.12 J	**3.88**	NA	NA
Benzo(g,h,i)perylene	100	500	4.80 J	0.089 J	0.38 U	0.67 J	0.43 J	71	0.40 UJ	NA	2.10 UJ	4.7 J	0.39 U	3.33	NA	NA
Benzo(k)fluoranthene	0.8	56	**9.10 J**	0.16 J	0.38 U	**1.3**	**0.82**	**120**	0.36 J	NA	**6.1 J**	**7.6 J**	0.08 J	**5.26**	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	10 U	0.40 U	0.38 U	1.3 B	0.73 U	39 U	0.40 UJ	NA	2.10 UJ	1.90 UJ	0.11 J	NA	NA	NA
Carbazole	--	--	10 U	0.11 J	0.38 U	0.75 U	0.73 U	39 U	0.40 UJ	NA	2.10 UJ	1.90 U	0.39 U	NA	NA	NA
2-Chloronaphthalene	--	--	10 U	0.40 U	0.38 U	0.75 U	0.73 U	39 U	0.40 U	NA	2.10 U	1.90 U	0.39 U	NA	NA	NA
Chrysene	1	56	**21**	0.35 J	0.38 U	**2.2**	**1.7**	**240**	0.48 J	NA	**12 J**	**13 J**	0.09 J	**12**	NA	NA
Di-n-butyl phthalate	--	--	10 U	0.40 U	0.38 U	4.60 U	0.73 U	39 U	0.40 UJ	NA	2.10 UJ	1.90 U	0.39 U	NA	NA	NA
Dibenz(a,h)anthracene	0.33	0.56	10 U	0.40 U	0.38 U	0.19 J	0.73 U	39 U	0.40 UJ	NA	5.20 UJ	4.80 UJ	0.39 U	NA	NA	NA
Dibenzofuran	7	350	10 U	0.40 U	0.38 U	0.75 U	0.73 U	39 U	0.40 U	NA	2.6	1.90 U	0.39 U	5.84	NA	NA
Fluoranthene	100	500	33	0.44	0.38 U	3.8	2.9	**200**	0.62 J	NA	19 J	2.4	0.36 J	22.7	NA	NA
Fluorene	30	500	**34**	0.97	0.38 U	5.1	3	9.8 J	1.8	NA	25	1.90 U	0.15 J	**34.5**	NA	NA
Hexachlorobenzene	0.33	6	10 U	0.40 U	0.38 U	0.75 U	0.73 U	39 U	0.40 UJ	NA	2.10 UJ	1.90 U	0.39 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.5	5.6	**3.9 J**	0.40 U	0.38 U	**0.52 J**	0.34 J	**58**	0.40 UJ	NA	**2 J**	**15 J**	0.39 U	**2.99**	NA	NA
2-Methylnaphthalene	--	--	10 U	0.40 U	0.38 U	10	2	39 U	0.58	NA	2.10 U	1.90 U	0.7	444	NA	NA
Naphthalene	12	500	8.8 J	0.40 U	0.38 U	11	4.5	39 U	8.5 D	NA	1.9 J	0.26 J	2.5	**967**	NA	NA
4-Nitrophenol	--	--	25 U	0.99 U	0.94 U	1.90 U	1.80 U	97 U	1 U	NA	5.20 U	4.80 U	0.97 U	NA	NA	NA
Phenanthrene	100	500	91	2	0.38 U	11	8.1	61	4.2 J	NA	49 DJ	0.97 J	0.85	**103**	NA	NA
Pyrene	100	500	49	0.79	0.38 U	5.4	4.4	**410**	0.55 J	NA	23 J	24 J	0.13 J	39.9	NA	NA
1,2,4-Trichlorobenzene	--	--	10 U	0.40 U	0.38 U	0.75 U	0.73 U	0.39 U	0.40 U	NA	2.10 U	1.90 U	0.39 U	NA	NA	NA
Total PAHs	--	--	361.2	6.649	ND	63.13	38.44	1,716.8	20.67	NA	184.6	99.76	5.09	3,140	NA	NA
Total TICs	--	--	635	342.5	300.72	1,023.6	434.79	946	80.7	NA	161.9	30.38	5.66	NA	NA	NA

See notes on page 6.

Table F-1. Remedial Investigation Subsurface Soil Analytical Results Summary (Areas A and B). Site Management Plan, Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Site Area	Part 375 Soil Cleanup Objectives		Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B
Location			CSB-5	CSB-5	CSB-6	CSB-7	TB-01	TB-05	TB-06	TB-12	TB-14	TB-14 (Dup)	TB-16	TB-16	TB-18	TB-18	TB-19
Depth (ft)			24-26	38-41	24-26	26-28	10-12	18-20	12-14	8-10	14-16	14-16	8-10	16-18	12-14	22-24	12-14
Lab ID	Unrestricted Use	Restricted Use - Commercial	L27109-4	L27115-1	L27109-1	L27109-5	L30829-2	L30829-4	L30829-3	L31001-3	L31001-1	L31001-2	L31607-12	L31607-8	L31607-14	L31607-7	L31516-1
Date Sampled			11/29/95	11/29/95	11/29/95	11/30/95	07/09/96	07/10/96	07/10/96	07/15/96	07/15/96	07/15/96	08/08/96	08/08/96	08/08/96	08/08/96	08/06/96
Volatile Organic Compounds																	
Acetone	0.05	500	NA	NA	NA	NA	NA	0.042	**0.1**	**0.054 J**	**0.056 J**	**0.074**	NA	**0.75 J**	NA	15 UJ	NA
Benzene	0.06	44	**0.23**	0.026	**13**	**0.9**	0.006 UJ	0.012 U	0.032 U	0.068 U	0.063 U	0.061 U	0.006 U	0.025 J	0.035 U	**3.1 J**	0.032 U
2-Butanone	0.12	500	NA	NA	NA	NA	NA	0.012 UJ	0.032 UJ	0.068 U	0.063 U	0.061 U	NA	**0.21**	NA	15 U	NA
Carbon Disulfide	--	--	NA	NA	NA	NA	NA	0.001 J	0.032 U	0.068 U	0.063 U	0.016 J	NA	0.016 J	NA	15 U	40 U
Chloroform	0.37	350	0.012 J	NA	0.73 U	0.014 J	NA	0.012 U	0.032 U	0.068 U	0.063 U	0.061 U	NA	0.044 U	NA	15 U	NA
Chloromethane	--	--	0.34 UJ	NA	0.73 UJ	0.29 UJ	NA	0.012 U	0.032 U	0.068 U	0.063 U	0.061 U	NA	0.044 U	NA	15 U	NA
Ethylbenzene	1	390	NA	0.017	NA	NA	0.006 UJ	0.002 J	0.094	0.018 J	0.086	0.22	0.006 U	0.48	0.024 J	**43 J**	0.032 U
Methylene chloride	0.05	500	0.17 U	NA	0.73 U	0.12 U	NA	0.012 U	0.032 U	0.068 U	0.063 U	0.061 U	NA	0.006 J	NA	15 U	NA
Toluene	0.7	500	NA	0.06	NA	NA	0.006 UJ	0.008 J	0.041	0.050 J	0.063 U	0.049 J	0.006 U	0.005 J	0.035 U	**7.5 J**	0.032 U
Xylenes, Total	0.26	500	NA	0.018	NA	NA	0.006 UJ	0.003 J	0.14	0.077	0.13	0.11	0.006 U	0.26	**0.39**	**34**	0.032 U
Total BTEX	--	--	0.23	0.067	13	0.9	ND	0.013	0.275	0.145	0.216	0.379	ND	0.77	0.414	87.6	ND
Total TICs	--	--	NA	NA	NA	NA	ND	0.676	12.98	19.13	16.27	13.42	NA	3.06	NA	488	NA
Semi-volatile Organic Compounds																	
Acenaphthene	20	500	NA	0.40 U	NA	NA	0.40 U	5.3	9.1	14	**22**	**37**	0.20 J	0.58 U	0.46 U	3.2	0.42 U
Acenaphthylene	100	500	NA	0.40 U	NA	NA	0.40 U	3.4 J	2.10 U	2.20 U	1.3 J	2.3 J	0.42 U	0.58 U	0.46 U	2.4	0.42 U
Anthracene	100	500	NA	0.40 U	NA	NA	0.40 U	7.1	4.9	7	12	19	0.42 U	0.58 U	0.46 U	3.5	0.42 U
Benzo(a)anthracene	1	5.6	NA	0.40 U	NA	NA	0.40 U	**12**	**3.4**	**3.9**	**6.3**	**10**	0.42 UJ	0.58 U	0.46 U	**2.3**	0.42 U
Benzo(a)pyrene	1	1	NA	0.40 U	NA	NA	0.40 U	**8.8**	**2.6**	**2.7**	**4.8**	**7.6**	0.42 UJ	0.58 U	0.46 U	**1.8 J**	0.42 U
Benzo(b)fluoranthene	1	5.6	NA	0.40 U	NA	NA	0.40 U	**3.7 J**	1 J	0.90 J	**2 J**	**2.4 J**	0.42 UJ	0.58 U	0.46 U	0.63 J	0.42 U
Benzo(g,h,i)perylene	100	500	NA	0.40 U	NA	NA	0.40 U	2.5 J	1J	0.98 J	1.4 J	2.4 J	0.42 UJ	0.58 U	0.46 U	0.71 J	0.42 U
Benzo(k)fluoranthene	0.8	56	NA	0.40 U	NA	NA	0.40 U	**6**	**2 J**	**2.1J**	**2.6**	**5.1**	0.42 UJ	0.58 U	0.46 U	**1.1 J**	0.42 U
bis(2-Ethylhexyl)phthalate	--	--	NA	NA	NA	NA	0.40 U	4 U	2.10 U	2.20 U	2.30 U	4 U	NA	0.68	NA	0.12 J	NA
Carbazole	--	--	NA	NA	NA	NA	0.40 U	4 U	2.10 U	2.20 U	2.30 U	4 U	NA	0.58 U	NA	0.13 J	NA
2-Chloronaphthalene	--	--	NA	NA	NA	NA	0.40 U	4 U	2.10 U	2.20 U	2.30 U	4 U	NA	0.58 U	NA	0.41 U	NA
Chrysene	1	56	NA	0.40 U	NA	NA	0.40 U	**12**	**3.6**	**3.9**	**6.1**	**10**	0.42 UJ	0.58 U	0.46 U	**2.2**	0.42 U
Di-n-butyl phthalate	--	--	NA	NA	NA	NA	0.40 U	4 U	2.10 U	2.20 U	2.30 U	4 U	NA	0.58 U	NA	0.41 U	NA
Dibenz(a,h)anthracene	0.33	0.56	NA	0.40 U	NA	NA	0.40 U	4 U	2.10 U	2.20 U	2.30 U	4 U	0.42 UJ	0.58 U	0.46 U	0.41 UJ	0.42 U
Dibenzofuran	7	350	NA	NA	NA	NA	0.40 U	4 U	2.10 U	1.70 J	1.2 J	2.1 J	NA	0.58 U	NA	0.30 J	NA
Fluoranthene	100	500	NA	0.40 U	NA	NA	0.40 U	19	6	7.7	9.3	16	0.42 U	0.58 U	0.46 U	3	0.42 U
Fluorene	30	500	NA	0.40 U	NA	NA	0.40 U	12	5.8	9.2	13	22	0.42 U	0.58 U	0.46 U	3.8	0.42 U
Hexachlorobenzene	0.33	6	NA	NA	NA	NA	0.40 U	4 U	2.10 U	2.20 U	2.30 U	4 U	NA	0.58 U	NA	0.41 U	NA
Indeno(1,2,3-cd)pyrene	0.5	5.6	NA	0.40 U	NA	NA	0.40 U	**2 J**	2.10 U	2.20 U	**1.1 J**	**1.8 J**	0.42 UJ	0.58 U	0.46 U	**0.55 J**	0.42 U
2-Methylnaphthalene	--	--	NA	NA	NA	NA	0.40 U	4 U	12	2.20 U	2.30 U	4 U	NA	0.58 U	NA	5.4	NA
Naphthalene	12	500	NA	0.62	NA	NA	0.40 U	4 U	9.5	2.20 U	1.3 J	1.5 J	0.30 J	3.1	0.19 J	12 D	0.42 U
4-Nitrophenol	--	--	NA	NA	NA	NA	1.00 U	10 U	5.30 U	5.50 U	5.80 U	10 U	NA	1.50 U	NA	1 U	NA
Phenanthrene	100	500	NA	0.07 J	NA	NA	0.40 U	35	17	25	33	56	0.083 J	0.58 U	0.46 U	12 D	0.42 U
Pyrene	100	500	NA	0.40 U	NA	NA	0.40 U	28	8.5	11	15	26	0.087 J	0.58 U	0.46 U	5.8 D	0.42 U
1,2,4-Trichlorobenzene	--	--	NA	NA	NA	NA	0.44 U	4 U	21 U	2.20 U	2.30 U	4 U	NA	0.58 U	NA	0.41 U	NA
Total PAHs	--	--	NA	0.69	NA	NA	ND	156.8	86.4	88.38	131.2	219.1	0.67	3.1	0.19	60.39	ND
Total TICs	--	--	NA	NA	NA	NA	220.7	880.7	798.6	251.5	97.1	173	NA	14.45	NA	18.46	NA

See notes on page 6.

Table F-1. Remedial Investigation Subsurface Soil Analytical Results Summary (Areas A and B). Site Management Plan, Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Site Area	Part 375 Soil Cleanup Objectives		Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B
Location			TB-20	TB-21	TB-22	TB-22	TB-22	TB-23	TB-24	TB-25	TB-25	TB-25	TB-27	TB-27	TB-28	TB-29
Depth (ft)			26-28	20-22	24-26	34-36	42-44	34-36	6-8	8-10	10-12	16-18	20-22	30-32	28-30	6-8
Lab ID	Unrestricted Use	Restricted Use - Commercial	L31270-5	L31270-1	L31270-2	L31270-3DL	L31270-4	L31270-6	L31690-2	L31607-15	L31607-9	L31447-5	L31447-6	L31690-1	L31448-1	L31607-13
Date Sampled			07/24/96	07/25/96	07/25/96	07/25/96	07/25/96	07/26/96	08/13/96	08/09/96	08/09/96	07/29/96	07/30/96	08/13/96	07/30/96	08/08/96
Volatile Organic Compounds																
Acetone	0.05	500	NA	NA	NA	NA	NA	NA	6 U	NA	1.4 UJ	15 U	40 U	NA	NA	NA
Benzene	0.06	44	0.007 U	0.006 U	0.006 U	**5.5 D**	0.034	0.007 UJ	6 U	0.73 UJ	1.4 U	15 U	**4.9 J**	0.008 UJ	**0.140 J**	NA
2-Butanone	0.12	500	NA	NA	NA	NA	NA	NA	**29 B**	NA	1.4 U	**8.80 J**	**8.7 J**	NA	NA	0.028 U
Carbon Disulfide	--	--	NA	NA	NA	NA	NA	NA	6 U	NA	1.4 U	15 U	40 U	NA	NA	NA
Chloroform	0.37	350	NA	NA	NA	NA	NA	NA	6 U	NA	1.4 U	15 U	40 U	NA	NA	NA
Chloromethane	--	--	NA	NA	NA	NA	NA	NA	6 U	NA	1.4 U	15 U	40 U	NA	NA	NA
Ethylbenzene	1	390	0.036	0.006 U	0.006 U	**79 D**	0.12	0.007 UJ	**1.5 J**	0.230 J	1.4 U	15 U	**300**	0.041 J	0.025 J	0.028 U
Methylene chloride	0.05	500	NA	NA	NA	NA	NA	NA	6 U	NA	1.4 U	15 U	40 U	NA	NA	NA
Toluene	0.7	500	0.022	0.003 J	0.004 J	**22 D**	0.074	0.015 J	6 U	0.73 UJ	1.4 U	15 U	40 U	0.008 UJ	0.170 J	0.028 U
Xylenes, Total	0.26	500	0.019	0.006 U	0.006 U	**86 D**	0.16	0.007 UJ	**1.60 J**	**0.31 J**	1.4 U	15 U	**140**	0.005 J	0.022 J	0.028 U
Total BTEX	--	--	0.077	0.003	0.004	192.5	0.388	0.015	3.1	0.54	ND	ND	444.9	0.046	0.357	NA
Total TICs	--	--	NA	NA	NA	NA	NA	NA	222.2	NA	35.6	383	4,020	NA	NA	NA
Semi-volatile Organic Compounds																
Acenaphthene	20	500	0.46 U	0.38 U	0.43 U	16 DJ	0.43 UJ	0.49 U	**72 D**	12 D	**130 D**	**120 D**	**380**	0.52 U	0.53	0.14 J
Acenaphthylene	100	500	0.46 U	0.38 U	0.43 U	20 DJ	0.43 UJ	0.49 U	3.4	0.76	9.6 DJ	4	10 J	0.52 U	0.53 U	0.37 U
Anthracene	100	500	0.46 U	0.38 U	0.43 U	18 DJ	0.43 UJ	0.49 U	24	9.2 D	**130 D**	**110 D**	**140**	0.52 U	0.25 J	0.18 J
Benzo(a)anthracene	1	5.6	0.46 U	0.38 U	0.43 U	**12 DJ**	0.43 UJ	0.49 U	**14**	**8 D**	**85 D**	**41 D**	**84**	0.52 U	0.20 J	0.58
Benzo(a)pyrene	1	1	0.46 U	0.38 U	0.43 U	**9.4 DJ**	0.43 UJ	0.49 U	**13 J**	**6.1**	**73 D**	**32 DJ**	**65**	0.52 U	0.16 J	0.59
Benzo(b)fluoranthene	1	5.6	0.46 U	0.38 U	0.43 U	**2.4 J**	0.43 UJ	0.49 U	**5.2 J**	**2.8**	**32 D**	**9.7 J**	**21 J**	0.52 U	0.53 U	0.49
Benzo(g,h,i)perylene	100	500	0.46 U	0.38 U	0.43 U	4.4 J	0.43 UJ	0.49 U	5.7 J	5.3	29 DJ	18 J	19 J	0.52 U	0.53 U	0.39 J
Benzo(k)fluoranthene	0.8	56	0.46 U	0.38 U	0.43 U	**4.6 J**	0.43 UJ	0.49 U	**7.9 J**	**4.3**	**43 D**	**18 J**	**46 J**	0.52 U	0.53 U	0.45
bis(2-Ethylhexyl)phthalate	--	--	NA	NA	NA	NA	NA	NA	2 U	NA	19 U	1.90 UJ	51 U	NA	NA	NA
Carbazole	--	--	NA	NA	NA	NA	NA	NA	1 J	NA	19 U	1.90 UJ	51 U	NA	NA	NA
2-Chloronaphthalene	--	--	NA	NA	NA	NA	NA	NA	2 U	NA	19 U	1.90 U	51 U	NA	NA	NA
Chrysene	1	56	0.46 U	0.38 U	0.43 U	**11 DJ**	0.43 UJ	0.49 U	**14**	**7.80 J**	**92 D**	**40 D**	**79**	0.52 U	**0.20 J**	**0.74**
Di-n-butyl phthalate	--	--	NA	NA	NA	NA	NA	NA	2 U	NA	19 U	1.90 UJ	51 U	NA	NA	NA
Dibenz(a,h)anthracene	0.33	0.56	0.46 U	0.38 U	0.43 U	0.44 UJ	0.43 UJ	0.49 U	2 UJ	0.39 U	19 U	1.90 UJ	51 U	0.52 U	0.53 U	0.37 U
Dibenzofuran	7	350	NA	NA	NA	NA	NA	NA	4.6	NA	**10 DJ**	4.8	**19 J**	NA	NA	NA
Fluoranthene	100	500	0.46 U	0.38 U	0.43 U	18 DJ	0.061 J	0.49 U	21	15 D	160 D	79 D	**150**	0.096 J	0.36 J	1
Fluorene	30	500	0.46 U	0.38 U	0.43 U	24 DJ	0.43 UJ	0.49 U	**31**	6.1	3.5 DJ	**67 D**	**180**	0.52 U	0.25 J	0.13 J
Hexachlorobenzene	0.33	6	NA	NA	NA	NA	NA	NA	2 U	NA	19 U	1.90 UJ	51 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.5	5.6	0.46 U	0.38 U	0.43 U	**3.3 J**	0.43 UJ	0.49 U	**4.5 J**	**4**	**24 DJ**	**13 J**	51 U	0.52 U	0.53 U	0.32 J
2-Methylnaphthalene	--	--	NA	NA	NA	NA	NA	NA	73 D	NA	30 D	37 DJ	550	NA	NA	NA
Naphthalene	12	500	0.13 J	0.38 U	0.43 U	**120 DJ**	0.11 J	0.49 U	**94 D**	0.95	5.8 DJ	**18**	**820**	0.12 J	0.74	0.37 U
4-Nitrophenol	--	--	NA	NA	NA	NA	NA	NA	4.90 U	NA	48 U	2.3 J	130 U	NA	NA	NA
Phenanthrene	100	500	0.11 J	0.38 U	0.43 U	56 DJ	0.20 J	0.49 U	91 D	32 D	**290 D**	**280 D**	**520**	0.28 J	1	0.8
Pyrene	100	500	0.084 J	0.38 U	0.43 U	30 DJ	0.11 J	0.49 U	47 D	20 D	**220 D**	**130 D**	**240**	0.14 J	0.59	1.3
1,2,4-Trichlorobenzene	--	--	NA	NA	NA	NA	NA	NA	2 U	NA	19 U	1.90 U	51 U	NA	NA	NA
Total PAHs	--	--	0.324	ND	ND	349.1	0.481	ND	520.7	134.31	1,356.9	1,016.7	3,304	0.636	4.28	7.11
Total TICs	--	--	NA	NA	NA	NA	NA	NA	275.6	NA	464.3	282.7	1,516	NA	NA	NA

See notes on page 6.

Table F-1. Remedial Investigation Subsurface Soil Analytical Results Summary (Areas A and B). Site Management Plan, Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Site Area	Part 375 Soil Cleanup Objectives		Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B
Location			TB-30	TB-32	TB-33	TB-37	TB-37	TB-38	TB-38	TB-38 (Dup)	TB-38	TB-40	TB-41	TB-41	TB-41	TB-45	NPTB-46
Depth (ft)			25-27	16-18	8-10	16-18	22-24	20-22	28-30	28-30	36-38	14-16	4-6	12-14	22-24	10-12	17-19
Lab ID	Unrestricted Use	Restricted Use - Commercial	L31447-4	L31448-7	L31447-1	L36908-1	L36908-2	L36908-3	L36908-4	L36908-5	L36908-6	L37081-8	L37081-1	L37081-2	L37081-3	L37116-1	L37116-2
Date Sampled			08/01/96	08/01/96	08/02/96	05/12/97	05/12/97	05/13/97	05/13/97	05/13/97	05/13/97	05/19/97	05/20/97	05/19/97	05/19/97	05/22/97	05/22/97
Volatile Organic Compounds																	
Acetone	0.05	500	3.1 U	NA	0.010 J	**0.13 J**	**0.070**	0.049 J	2.8 UJ	8.6 UJ	0.026 J	0.013 U	0.066 U	0.011 UJ	0.058 U	14 U	0.06 U
Benzene	0.06	44	**20**	0.006 J	0.006 J	0.014 U	0.015 U	0.063 U	**5.6**	**14**	0.032	0.006 J	0.066 U	0.011 UJ	0.058 U	14 U	0.06 U
2-Butanone	0.12	500	**1 J**	NA	0.013 U	0.014 U	0.012 J	0.063 U	2.8 U	8.6 U	0.012 U	0.013 UJ	0.066 UJ	0.011 UJ	0.058 UJ	14 U	0.06 UJ
Carbon Disulfide	--	--	3.1 U	NA	NA	0.014 U	0.015 U	0.063 U	2.8 U	8.6 U	0.004 J	0.013 U	0.066 U	0.011 UJ	0.058 U	14 U	0.06 U
Chloroform	0.37	350	3.1 U	NA	0.013 U	0.014 U	0.015 U	0.063 U	2.8 U	8.6 U	0.012 U	0.013 U	0.066 U	0.011 UJ	0.058 U	14 U	0.06 U
Chloromethane	--	--	3.1 U	NA	0.013 U	0.014 U	0.015 U	0.063 U	2.8 U	8.6 U	0.012 U	0.013 U	0.066 U	0.011 UJ	0.058 U	14 U	0.06 U
Ethylbenzene	1	390	36	0.022 J	0.013 U	0.014 U	0.015 U	0.063 U	**76DJ**	**320 DJ**	0.016	0.013 U	0.066 U	0.011 UJ	0.058 U	**16**	0.06 U
Methylene chloride	0.05	500	3.1 U	NA	0.008 J	0.014 U	0.015 U	0.063 U	2.8 U	8.6 U	0.012 U	0.013 U	0.066 U	0.011 UJ	0.058 U	14 U	0.06 U
Toluene	0.7	500	**34**	0.028 U	0.003 J	0.014 U	0.002 J	0.063 U	**5.2**	**15**	0.003 J	0.013 U	0.066 U	0.011 UJ	0.058 U	14 U	0.06 U
Xylenes, Total	0.26	500	**49**	0.028 U	0.013 U	0.014 U	0.015 U	0.063 U	**86 J**	**380 J**	0.022	0.004 J	0.066 U	0.011 UJ	0.058 U	**14**	0.06 U
Total BTEX	--	--	139	0.028	0.009	ND	0.002	ND	172.8	729	0.073	0.010	ND	ND	ND	30	ND
Total TICs	--	--	275	NA	NA	ND	ND	0.54	530	1,822	0.085	0.016	2.45	ND	0.321	421	0.462
Semi-volatile Organic Compounds																	
Acenaphthene	20	500	2.6	0.18 J	0.41 U	0.27 J	0.51 U	0.048 J	**23**	50	0.39 U	0.049 J	0.098 J	0.07 J	0.39 U	**350**	0.39 U
Acenaphthylene	100	500	12 D	0.37 U	0.41 U	0.48 U	0.51 U	0.42 U	3.3 J	7.90 J	0.39 U	0.42 U	0.43 U	0.082 J	0.39 U	47 U	0.39 U
Anthracene	100	500	5.3	0.062 J	0.41 U	0.48 U	0.51 U	0.42 U	12	29	0.39 U	0.42 U	0.052 J	0.078 J	0.39 U	**120**	0.39 U
Benzo(a)anthracene	1	5.6	**4.6**	0.37 U	0.41 U	0.48 U	0.51 U	0.42 U	**9.1**	**19**	0.39 U	0.42 U	0.25 J	0.087 J	0.39 U	**61**	0.39 U
Benzo(a)pyrene	1	1	**3.4 J**	0.37 U	0.41 U	0.48 U	0.51 U	0.42 U	**5.8 J**	**13 J**	0.39 U	0.42 U	0.43 U	0.36 U	0.39 U	**53**	0.39 U
Benzo(b)fluoranthene	1	5.6	**1.7 J**	0.37 U	0.41 U	0.48 U	0.51 U	0.42 U	**3.2 J**	**5.7 J**	0.39 U	0.42 U	0.20 J	0.091 J	0.39 U	**27 J**	0.39 U
Benzo(g,h,i)perylene	100	500	1.7 J	0.37 U	0.41 U	0.48 U	0.51 U	0.42 U	2.1 J	4.7 J	0.39 U	0.42 U	0.43 U	0.36 U	0.39 U	21 J	0.39 U
Benzo(k)fluoranthene	0.8	56	**2.7 J**	0.37 U	0.41 U	0.48 U	0.51 U	0.42 U	**3.1 J**	**7.5 J**	0.39 U	0.42 U	0.20 J	0.13 J	0.39 U	**27 J**	0.39 U
bis(2-Ethylhexyl)phthalate	--	--	0.4 U	NA	0.41 U	0.22 J	0.51 U	0.56	3.70 U	11 U	0.39 U	0.42 U	0.14 J	0.088 J	0.11 J	47 U	0.39 U
Carbazole	--	--	0.089 J	NA	0.41 U	0.48 U	0.51 U	0.42 U	3.70 U	11 U	0.39 U	0.42 U	0.43 U	0.36 U	0.39 U	47 U	0.39 U
2-Chloronaphthalene	--	--	0.4 U	NA	0.41 U	0.48 U	0.51 U	0.42 U	3.70 U	11 U	0.39 U	0.42 U	0.43 U	0.073 J	0.39 U	47 U	0.39 U
Chrysene	1	56	**4.5**	0.37 U	0.41 U	0.48 U	0.51 U	0.42 U	**8**	**16**	0.39 U	0.42 U	0.28 J	0.11 J	0.39 U	**63**	0.39 U
Di-n-butyl phthalate	--	--	0.045J	NA	0.41 U	0.48 U	0.51 U	0.42 U	3.70 U	11 U	0.39 U	0.42 U	0.43 U	0.36 U	0.39 U	47 U	0.39 U
Dibenz(a,h)anthracene	0.33	0.56	0.4 UJ	0.37 U	0.41 U	0.48 U	0.51 U	0.42 U	9.20 U	11 U	0.39 U	0.42 U	0.43 U	0.36 U	0.39 U	47 U	0.39 U
Dibenzofuran	7	350	0.69	NA	0.41 U	0.48 U	0.51 U	0.42 U	1.4 J	2.3 J	0.39 U	0.42 U	0.43 U	0.36 U	0.39 U	**14 J**	0.39 U
Fluoranthene	100	500	5.9	0.37 U	0.41 U	0.48 U	0.51 U	0.42 U	12	29	0.39 U	0.42 U	0.51	0.11 J	0.39 U	**160**	0.39 U
Fluorene	30	500	11 D	0.12 J	0.41 U	0.058 J	0.51 U	0.42 U	17	**37**	0.39 U	0.42 U	0.43 U	0.36 U	0.39 U	**170**	0.39 U
Hexachlorobenzene	0.33	6	0.4 U	NA	0.41 U	0.48 U	0.51 U	0.42 U	3.70 U	11 U	0.39 U	0.42 U	0.43 U	0.079 J	0.39 U	47 U	0.39 U
Indeno(1,2,3-cd)pyrene	0.5	5.6	**1.4 J**	0.37 U	0.41 U	0.48 U	0.51 U	0.42 U	**1.7 J**	**3.4 J**	0.39 U	0.42 U	0.43 U	0.36 U	0.39 U	**12 J**	0.39 U
2-Methylnaphthalene	--	--	25 D	NA	0.41 U	0.48 U	0.51 U	0.42 U	50	110	0.39 U	0.42 U	0.43 U	0.36 U	0.39 U	520	0.39 U
Naphthalene	12	500	**47 D**	0.52	0.41 U	0.48 U	0.51 U	0.42 U	**140 D**	**300 D**	0.39 U	0.047 J	0.11 J	0.042 J	0.39 U	**640**	0.39 U
4-Nitrophenol	--	--	1 U	NA	1.00 U	1.20 U	1.30 U	1.00 U	9.20 U	28 U	0.98 U	1.00 U	1.10 U	0.90 U	0.97 U	12 UJ	0.98 U
Phenanthrene	100	500	25 D	0.28 J	0.41 U	0.48 U	0.51 U	0.42 U	38	83	0.39 U	0.42 U	0.41 J	0.091 J	0.39 U	**460**	0.39 U
Pyrene	100	500	14 D	0.37 U	0.41 U	0.48 U	0.51 U	0.42 U	18	38	0.39 U	0.064 J	0.24 J	0.084 J	0.39 U	**200**	0.39 U
1,2,4-Trichlorobenzene	--	--	0.4 U	NA	0.41 U	0.48 U	0.51 U	0.42 U	3.70 U	11 U	0.39 U	0.043 J	0.43 U	0.066 J	0.39 U	47 U	0.39 U
Total PAHs	--	--	167.8	1.162	ND	0.328	ND	0.048	346.3	753.2	ND	0.16	2.35	0.975	ND	2,884	ND
Total TICs	--	--	44.4	NA	2.99	2.01	0.29	2.01	138.8	0.3971	0.88	0.69	5.7	0.17	0.22	1,907	0.75

See notes on page 6.

Table F-1. Remedial Investigation Subsurface Soil Analytical Results Summary (Areas A and B). Site Management Plan, Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Site Area	Part 375 Soil Cleanup Objectives		Area B	Area B	Area B	Area B	Area B	Area B
Location			NPTB-47	TB-48	W97-8D	W97-8D	W97-8D	W97-10I
Depth (ft)			10-12	10-12	44-46	52-54	64-66	49-51
Lab ID	Unrestricted	Restricted Use	L37268-2	L37268-1	L37179-1	L37179-2	L37179-3	L37116-3
Date Sampled	Use	- Commercial	06/02/97	06/03/97	05/28/97	05/28/97	05/29/97	05/22/97
Volatile Organic Compounds								
Acetone	0.05	500	**0.091**	0.041	0.035 J	**0.087 J**	**0.19 J**	0.12 U
Benzene	0.06	44	0.012 U	0.013 U	0.015 U	0.014 U	**2.8 D**	**0.48**
2-Butanone	0.12	500	0.02	0.021	0.015 U	0.008 J	0.068 U	0.12 UJ
Carbon Disulfide	--	--	0.012 U	0.013 U	0.015 U	0.014 U	0.068 U	0.12 U
Chloroform	0.37	350	0.012 U	0.013 U	0.015 U	0.014 U	0.068 U	0.12 U
Chloromethane	--	--	0.012 U	0.013 U	0.015 U	0.014 U	0.068 U	0.12 U
Ethylbenzene	1	390	0.012 UJ	0.013 U	0.015 U	0.014 UJ	0.068 UJ	0.023 J
Methylene chloride	0.05	500	0.012 U	0.013 U	0.015 U	0.014 U	**0.15**	0.12 U
Toluene	0.7	500	0.008 J	0.013 U	0.015 U	0.014 UJ	0.039 J	0.018 J
Xylenes, Total	0.26	500	0.012 UJ	0.003 J	0.015 U	0.014 UJ	0.029 J	0.03 J
Total BTEX	--	--	0.008	0.003	ND	ND	2.868	0.551
Total TICs	--	--	0.368	0.138	ND	ND	ND	ND
Semi-volatile Organic Compounds								
Acenaphthene	20	500	1.1	0.61	0.48 U	0.46 U	0.44 U	0.044 J
Acenaphthylene	100	500	0.39 U	0.056 J	0.48 U	0.46 U	0.44 U	0.38 U
Anthracene	100	500	0.39 U	0.71	0.48 U	0.46 U	0.44 U	0.064 J
Benzo(a)anthracene	1	5.6	0.39 U	0.75	0.48 U	0.46 U	0.44 U	0.38 U
Benzo(a)pyrene	1	1	0.39 U	0.55	0.48 U	0.46 U	0.44 U	0.38 U
Benzo(b)fluoranthene	1	5.6	0.39 U	0.27 J	0.48 U	0.46 U	0.44 U	0.38 U
Benzo(g,h,i)perylene	100	500	0.39 U	0.29 J	0.48 U	0.46 U	0.44 U	0.38 U
Benzo(k)fluoranthene	0.8	56	0.39 U	0.29 J	0.48 U	0.46 U	0.44 U	0.38 U
bis(2-Ethylhexyl)phthalate	--	--	0.39 U	0.049 J	0.48 U	0.46 U	0.076 J	0.078 J
Carbazole	--	--	0.39 U	0.41 U	0.48 U	0.46 U	0.44 U	0.38 U
2-Chloronaphthalene	--	--	0.39 U	0.41 U	0.48 U	0.46 U	0.44 U	0.38 U
Chrysene	1	56	0.39 U	0.75	0.48 U	0.46 U	0.44 U	0.039 J
Di-n-butyl phthalate	--	--	0.39 U	0.41 U	0.48 U	0.46 U	0.44 U	0.38 U
Dibenz(a,h)anthracene	0.33	0.56	0.39 U	1.00 U	0.48 U	0.46 U	0.44 U	0.38 U
Dibenzofuran	7	350	0.39 U	0.41 U	0.48 U	0.46 U	0.44 U	0.38 U
Fluoranthene	100	500	0.39 U	1.4	0.48 U	0.46 U	0.069 J	0.066 J
Fluorene	30	500	0.13 J	0.21 J	0.48 U	0.46 U	0.44 U	0.053 J
Hexachlorobenzene	0.33	6	0.39 U	0.41 U	0.48 U	0.46 U	0.44 U	0.38 U
Indeno(1,2,3-cd)pyrene	0.5	5.6	0.39 U	0.20 J	0.48 U	0.46 U	0.44 U	0.38 U
2-Methylnaphthalene	--	--	0.39 U	0.043 J	0.48 U	0.46 U	0.083 J	0.13 J
Naphthalene	12	500	0.39 U	0.12 J	0.48 U	0.46 U	0.18 J	0.52
4-Nitrophenol	--	--	0.98 U	1.00 U	1.20 U	1.10 U	1.10 U	0.95 U
Phenanthrene	100	500	0.39 U	2	0.48 U	0.46 U	0.13 J	0.19 J
Pyrene	100	500	0.082 J	2.4 J	0.48 U	0.46 U	0.073 J	0.098 J
1,2,4-Trichlorobenzene	--	--	0.39 U	0.41 U	0.48 U	0.46 U	0.44 U	0.38 U
Total PAHs	--	--	1.312	10.649	ND	ND	0.535	1.204
Total TICs	--	--	5.55	8.9	0.53	5.49	5.45	0.66

See notes on page 6.

Table F-1. Remedial Investigation Subsurface Soil Analytical Results Summary (Areas A and B). Site Management Plan, Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Notes:

Highlighted cells indicate that the compound was detected at a concentration exceeding the 6 NYCRR Part 375 Restricuted Use Soil Cleanup Objectives for protection of human health at Commercial sites (NYSDEC, 2006).

Bold values indicate that the compound was detected at a concentration exceeding the 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (NYSDEC, 2006).

Grey values indicate analytes that were not analyzed for or not detected in the sample.

All concentrations are reported in mg/kg equivalent to parts per million (ppm).

[1] Sampling locations TB-2, TB-8, and TB-9 are located immediately east of Site A; no excavation was performed in this area.

[2] Sampling location TB-15, TB-43, and PATP-13-09-A were included within the areas of the Area A remedial action excavation work; this material was disposed of offsite.

[3] Sampling location TB-44 is located within an area of the property with active gas lines and so excavation was not performed.

D = The compound was analyzed at a secondary dilution.

U = The compound was not detected above the reported quantitation limit.

J = The compound is reported at an estimated concentration.

B = The compound was also detected in an associated blank sample.

R = Sample result rejected during data validation.

Total BTEX = The sum of benzene, toluene, ethylbenzene, and xylenes.

TICs = Tentatively identified compounds.

Table F-2. Remedial Investigation Surface Soil Analytical Results Summary (Areas A and B), Site Management Plan, Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Site Area	Part 375 Soil Cleanup Objectives		Area A	Area A	Area A	Area A	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B	Area B
Location			SS-05 [1]	SS-06	SS-12	SS-13	SS-01	SS-01(Dup)	SS-02	SS-03	SS-04	SS-07	SS-08	SS-09	SS-10	SS-11
Depth (ft)			0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1	0.5-1
Lab ID	Unrestricted Use	Restricted Use - Commercial	L31690-8	L31690-7	L32141-2	L32141-3	L31607-1	L31607-2	L31607-3	L31607-6	L31690-9	L31690-6	L31690-5	L31690-3	L31690-4	L32141-1
Date Sampled			08/12/96	08/12/96	08/30/96	08/30/96	08/08/96	08/08/96	08/08/96	08/08/96	08/12/96	08/12/96	08/12/96	08/12/96	08/12/96	08/30/96
Volatile Organic Compounds																
Acetone	0.05	500	0.012 U	0.012 U	0.012 U	0.014 U	0.012 U	0.012 U	0.002 J	0.01 U	0.011 U	0.013 U	0.012 U	0.012 U	0.011 U	0.012 U
2-Hexanone	--	--	0.012 U	0.018 J	0.012 U J	0.014 U J	0.012 U	0.012 U	0.01 U	0.01 U	0.011 U	0.013 UJ	0.012 UJ	0.012 U	0.011 UJ	0.012 U J
Methylene chloride	0.05	500	0.012 U	0.012 U	0.02 U	0.016 U	0.002 J	0.002 J	0.002 J	0.01 U	0.011 U	0.013 U	0.012 U	0.012 U	0.011 U	0.018 U
Toluene	0.7	500	0.012 U	0.012 U	0.002 J	0.014 U J	0.002 J	0.002 J	0.001 J	0.01 U	0.011 U	0.003 J	0.005 J	0.003 J	0.011 UJ	0.012 U
Total TICs	--	--	ND	0.05	0.007	0.008	0.034	0.183	0.1	0.039	0.023	0.052	0.084	0.045	0.019	ND
Semi-volatile Organic Compounds																
Acenaphthene	20	500	0.2J	0.4U	0.73	0.16J	0.4U	0.4U	0.23J	0.35U	0.38U	0.42U	0.39U	0.39U	0.37U	0.39U
Acenaphthylene	100	500	0.26J	0.078J	0.27J	0.14J	0.4U	0.4U	0.58	0.35U	0.38U	0.42U	0.39U	0.39U	0.37U	0.39U
Anthracene	100	500	0.79	0.08J	1.5	0.41J	0.064J	0.069J	3.9	0.083J	0.38U	0.42U	0.079J	0.059J	0.057J	0.39U
Benzo(a)anthracene	1	5.6	**3.4**	0.83	**4.7J**	**1.6J**	0.28J	0.28J	**2.9J**	0.26J	0.085J	0.3J	0.39	0.3J	0.32J	0.098J
Benzo(a)pyrene	1	1	**3.4J**	0.84J	**4.6J**	**1.7J**	0.34J	0.33J	**2.8J**	0.27J	0.1J	0.29J	0.46	0.33J	0.33J	0.14J
Benzo(b)fluoranthene	1	5.6	**2.4J**	0.86J	**3.5J**	**1.3J**	0.32J	0.26J	**1.5J**	0.18J	0.12J	0.28J	0.46	0.3J	0.37	0.17J
Benzo(g,h,i)perylene	100	500	3.4J	1J	3.2J	1.4J	0.24J	0.24J	2.8J	0.089J	0.076J	0.2J	0.31J	0.22J	0.28J	0.088J
Benzo(k)fluoranthene	0.8	56	**3.7J**	**1J**	**4.6J**	**1.5J**	0.29J	0.34J	**2.4J**	0.29J	0.1J	0.4J	0.54	0.38J	0.41	0.14J
bis(2-Ethylhexyl)phthalate	--	--	0.1J	0.22J	0.5B	0.12UJ	0.4U	0.4U	0.35UJ	0.014J	0.38U	0.13J	0.39U	0.39U	0.11J	0.86U
Butylbenzylphthalate	--	--	0.39U	0.31J	0.13J	0.48U	0.4U	0.4U	0.35UJ	0.35U	0.38U	0.42U	0.39U	0.39U	0.37U	0.39U
Carbazole	--	--	0.32J	0.4U	0.65	0.16J	0.4U	0.4U	0.11J	0.35U	0.38U	0.42U	0.39U	0.39U	0.37U	0.39U
Chrysene	1	56	**3.5**	**1.1**	**5.1J**	**1.9J**	0.34J	0.34J	**3.6J**	0.3J	0.11J	0.36J	0.5	0.36J	0.39	0.15J
Di-n-butyl phthalate	--	--	0.39U	0.15J	0.063J	0.48U	0.4U	0.4U	0.35UJ	0.35U	0.38U	0.42U	0.39U	0.39U	0.37U	0.39U
Dibenzofuran	7	350	0.1J	0.4U	0.55	0.48U	0.4U	0.4U	0.079J	0.35U	0.38U	0.42U	0.39U	0.39U	0.37U	0.39U
Fluoranthene	100	500	5.3	1.1	6.3	3	0.46	0.49	0.82	0.44	0.2J	0.69	0.8	0.62	0.68	0.21J
Fluorene	30	500	0.31J	0.4U	0.92	0.15J	0.4U	0.4U	1.1	0.35U	0.38U	0.42U	0.39U	0.39U	0.37U	0.39U
Indeno(1,2,3-cd)pyrene	0.5	5.6	**2.5J**	**0.8J**	**2.9J**	**1.2J**	0.21J	0.19J	**2J**	0.15J	0.38U	0.18J	0.28J	0.2J	0.24J	0.39UJ
2-Methylnaphthalene	--	--	0.39U	0.4U	0.24J	0.48U	0.4U	0.4U	0.35U	0.35U	0.38U	0.42U	0.39U	0.39U	0.37U	0.39U
Naphthalene	12	500	0.39U	0.4U	0.55	0.48U	0.4U	0.4U	0.092J	0.35U	0.38U	0.42U	0.39U	0.39U	0.37U	0.39U
Phenanthrene	100	500	3.2	0.51	7.9D	2	0.25J	0.33J	13D	0.34J	0.086J	0.4J	0.45	0.27J	0.37	0.096J
Pyrene	100	500	9.8D	2.2	**110D**	3.4J	0.72	0.74	19D	0.68	0.21J	0.77	0.92	0.64	0.78	0.34J
Total PAHs	--	--	42.16	10.398	58.01	19.86	3.514	3.609	56.722	3.082	1.087	3.87	5.189	3.679	4.227	1.432
Total TICs	--	--	29.62	33.62	22.8	22.86	2.84	2.84	8.65	2.82	24.54	26.11	31.57	21.32	25.04	14.39

See notes on page 2.

Table F-2. Remedial Investigation Surface Soil Analytical Results Summary (Areas A and B), Site Management Plan, Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Notes:

Highlighted cells indicate that the compound was detected at a concentration exceeding the 6 NYCRR Part 375 Restricuted Use Soil Cleanup Objectives for protection of human health at Commercial sites (NYSDEC, 2006).

Bold values indicate that the compound was detected at a concentration exceeding the 6 NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (NYSDEC, 2006).

Grey values indicate analytes that were not analyzed for or not detected in the sample.

All concentrations are reported in mg/kg equivalent to parts per million (ppm).

[1] SB-05 was located within the Former Tar Tank Area Excavation Limits; material from this area was removed and disposed off-site.

D = The compound was analyzed at a secondary dilution.

U = The compound was not detected above the reported quantitation limit.

J = The compound is reported at an estimated concentration.

B = The compound was also detected in an associated blank sample.

Total BTEX = The sum of benzene, toluene, ethylbenzene, and xylenes.

TICs = Tentatively identified compounds.

APPENDIX G

Groundwater Sample Results

Table G. Remedial Investigation Groundwater Impacts Summary (Areas A and B), Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Site Area Location Lab ID Date Sampled	TOGS 1.1.1 Groundwater Effluent Limitations	MW-1 L32142-7 08/29/96	MW-1 L37571-6 06/18/97	MW-2 L32023-11 08/27/96	MW-2 L37553-8 06/17/97	MW-4 L32107-2 08/29/96	MW-4 L37571-10 06/18/97	MW-5 L32107-3 08/29/96	MW-5 L37553-5 06/17/97	MW-5 (DUP) L37553-6 06/17/97	MW-7 L32107-6 08/29/96	MW-7 L37571-1 06/18/97	MW-8 L32142-10DL 08/30/96
Volatile Organic Compounds													
Acetone	50	5 U	ND	5 U	NA	5 U	NA	5 U	NA	NA	5 U	NA	10 U
Benzene	1	**180 D**	**490**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1,600 DJ**	**4,100**	**140 D**
2-Butanone	50	5 U	NA	R	NA	6 J	NA	9 J	NA	NA	R	NA	10 U
Chloroform	7	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10 U	2 U
Ethylbenzene	5	2	**6 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**39**	**190**	2 U
Styrene	930	NA	5 U	NA	1 U	NA	1 U	NA	1 U	1 U	NA	10 U	NA
Toluene	5	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 J	10 U	2 D
Trichloroethene	5	1 U	NA	1 U	NA	1 U	NA	1 U	NA	NA	1 U	NA	2 U
Xylene (Total)	5	**14 J**	**100**	2 U	1 U	2 UJ	1 U	2 U	1 U	1 U	**16**	**49 J**	**150 D**
Total BTEX	--	196	596	ND	ND	ND	ND	ND	ND	ND	1,656	4,339	292
Total VOC TICs	--	1,062	174	ND	ND	ND	ND	ND	ND	ND	ND	920	1,265
Semi-volatile Organic Compounds													
Acenaphthene	20	**110**	**110**	10 U	10 U	**23**	**26**	10 U	10 U	10 U	3 J	64 U	**89**
Acenaphthylene	--	2 J	3 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	64 U	3 J
Anthracene	50	8 J	5 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	64 U	10 U
Benzo(a)anthracene	0.002	**3 J**	21 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	64 U	10 U
Benzo(a)pyrene	ND	**3 J**	21 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	64 U	10 U
Benzo(b)fluoranthene	0.002	10 U	21 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	64 U	10 U
Benzo(g,h,i)perylene	--	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	10 U	NA	10 U
Benzo(k)fluoranthene	0.002	10 U	21 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	64 U	10 U
Benzoic Acid	--	24 U	NA	24 U	NA	24 U	NA	24 U	NA	NA	24 U	NA	24 U
2,4-Dimethylphenol	2 [1]	10 U	21 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	64 U	10 U
2-Methylnaphthalene	--	8 J	52	10 U	10 U	2 J	10 U	10 U	10 U	10 U	8 J	15 J	75
2-Methylphenol	--	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	10 U	NA	10 U
4-Methylphenol	--	10 U	21 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	64 U	10 U
Bis(2-ethylhexyl)phthalate	5	4 J	3 J	2 J	1 J	10 U	1 J	10 U	2 J	4 J	10 U	64 U	3 J
Carbazole	--	4 J	4 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	64 U	5 J
Chrysene	0.002	**2 J**	21 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	64 U	10 U
Dibenzo(a,h)anthracene	--	10 U	3 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	64 U	10 U
Dibenzofuran	--	3 J	NA	10 U	NA	10 U	NA	10 U	NA	NA	10 U	NA	3 J
Fluoranthene	50	5 J	2 J	10 U	10 U	1 J	1 J	10 U	10 U	10 U	10 U	64 U	3 J
Fluorene	50	29	27	10 U	10 U	4 J	4 J	10 U	10 U	10 U	10 U	64 U	22
Indeno(1,2,3-cd)pyrene	0.002	10 U	NA	10 U	NA	10 U	NA	10 U	NA	NA	10 U	NA	10 U
Naphthalene	10	**240**	**810 D**	10 U	10 U	3 J	10 U	10 U	10 U	10 U	**580 DJ**	**1,000 D**	10 U
Phenanthrene	50	28	24	10 U	10 U	3 J	10 U	10 U	10 U	10 U	10 U	64 U	5 J
Phenol	2 [1]	10 U	21 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**5 J**	**30 J**	**15**
Pyrene	50	7 J	3 J	10 U	10 U	2 J	2 J	10 U	10 U	10 U	10 U	64 U	4 J
Total PAHs	--	445	1,036	ND	ND	38	33	ND	ND	ND	591	1,015	201
Total SVOCs TICs	--	241	78	ND	ND	12	30	ND	19	8	261	120	582

See notes on page 6.

Table G. Remedial Investigation Groundwater Impacts Summary (Areas A and B), Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Site Area Location Lab ID Date Sampled	TOGS 1.1.1 Groundwater Effluent Limitations	MW-8 L37553-12 06/17/97	MW-9 L32023-5 08/27/96	MW-9 L37571-7 06/18/97	NW-1 L32023-10 08/27/96	NW-1 L37529-1 06/16/97	NW-2 L32107-1 08/28/96	NW-2 L37553-7 06/17/97	NW-5 L32023-9 08/27/96	NW-5 L37529-4 06/16/97	NW-6 L32107-4 08/29/96	NW-6 L37553-1 06/17/97	NW-6D L32023-4 08/26/96
Volatile Organic Compounds													
Acetone	50	NA	4 J	NA	3 J	NA	5 U	NA	5 U	NA	5 U	NA	5 U
Benzene	1	**200**	1 U	1 U	**1 J**	1 U	**92**	**100**	1 U	1 U	1 U	1 U	1 UJ
2-Butanone	50	NA	7 UJ	NA	9 UJ	NA	1 J	NA	R	NA	5 UJ	NA	5 UJ
Chloroform	7	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	**420**	1 U	1 U	2 J	1 U	**95**	**14**	1 U	1 U	1 U	1 U	1 UJ
Styrene	930	10 U	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Toluene	5	10 U	1 U	1 U	1 J	1 U	5	**8**	1 U	1 U	1 U	1 U	1 UJ
Trichloroethene	5	NA	1 U	NA	1 U	NA	2 J	NA	1 U	NA	1 U	NA	1 U
Xylene (Total)	5	**180**	U	1 U	2 UJ	1 U	**100**	**110**	2 U	1 U	2 U	1 U	2 UJ
Total BTEX	--	800	ND	ND	4	ND	292	232	ND	ND	ND	ND	ND
Total VOC TICs	--	316	ND	ND	25	ND	60	285	ND	ND	ND	ND	ND
Semi-volatile Organic Compounds													
Acenaphthene	20	**94**	10 U	10 U	2 J	10 U	**40**	**50**	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	--	2 J	10 U	10 U	2 J	10 U	4 J	3 J	2 J	10 U	10 U	10 U	10 U
Anthracene	50	4 J	10 U	10 U	2 J	10 U	3 J	4 J	3 J	10 U	10 U	10 U	10 U
Benzo(a)anthracene	0.002	10 U	10 U	10 U	10 U	10 U	10 U	**1 J**	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	ND	R	10 U	10 U	10 U	10 U	10 U	**1 J**	10 U	10 UJ	10 U	10 U	10 U
Benzo(b)fluoranthene	0.002	R	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U
Benzo(g,h,i)perylene	--	NA	10 U	NA	10 U	NA	1 J	NA	10 U	NA	10 U	NA	10 U
Benzo(k)fluoranthene	0.002	R	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U
Benzoic Acid	--	NA	24 U	NA	24 U	NA	25 U	NA	24 U	NA	24 U	NA	25 U
2,4-Dimethylphenol	2 [1]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	--	10 U	10 U	10 U	11	10 U	16	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	--	NA	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
4-Methylphenol	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	2 J	10 U	3 J	10 U	10 U	10 U	**6 J**	10 U	**13**	10 U	10 U	10 U
Carbazole	--	10 U	10 U	10 U	10 U	10 U	6 J	4 J	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002	10 U	10 U	10 U	10 U	10 U	10 U	**1 J**	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	--	2 J	10 U	10 U	10 U	10 U	10 U	3 J	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	--	NA	10 U	NA	10 U	NA	3 J	NA	10 U	NA	10 U	NA	10 U
Fluoranthene	50	2 J	10 U	10 U	10 U	10 U	10 U	4 J	10 U	10 U	10 U	10 U	10 U
Fluorene	50	20	10 U	10 U	2 J	10 U	14	18	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	0.002	NA	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U	NA	10 U
Naphthalene	10	**130**	10 U	10 U	**19**	10 U	**180**	**75**	10 U	10 U	10 U	10 U	2 J
Phenanthrene	50	20	10 U	10 U	3 J	10 U	10	16	10 U	10 U	10 U	10 U	10 U
Phenol	2 [1]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50	2 J	10 U	10 U	10 U	10 U	2 J	5 J	10 U	10 U	10 U	10 U	10 U
Total PAHs	--	274	ND	ND	41	ND	270	178	5	ND	ND	ND	2
Total SVOCs TICs	--	290	ND	12	21	ND	355	616	ND	ND	ND	14	ND

See notes on page 6.

Table G. Remedial Investigation Groundwater Impacts Summary (Areas A and B), Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Site Area Location Lab ID Date Sampled	TOGS 1.1.1 Groundwater Effluent Limitations	NW-6D L37553-2 06/17/97	W96-1S L32107-5 08/28/96	W96-1S L37553-10 06/17/97	W96-2S L32142-15RE 08/30/96	W96-2S L37571-16 06/18/97	W96-3D L32142-13 08/30/96	W96-3D L37571-4 06/18/97	W96-3S L32142-14RE 08/30/96	W96-3S L37553-13 06/17/97	W96-4S L32023-8 08/27/96	W96-4S L37571-3 06/18/97	W96-5D L32142-1 08/29/96
Volatile Organic Compounds													
Acetone	50	NA	6 U	NA	5 U	NA	19	NA	5 U	NA	5 U	NA	5 U
Benzene	1	1 U	**18**	**470**	1 U	1 U	**17**	**11**	**1**	**6**	1 U	1 U	**890 D**
2-Butanone	50	NA	12 J	NA	5 J	NA	8	NA	4 J	NA	R	NA	5 U
Chloroform	7	1 U	1 U	5 U	1 U	2 J	1	1 U	1 U	1 U	1 U	**11**	1 U
Ethylbenzene	5	1 U	5	**140**	1 U	1 U	**80**	**71**	1 U	**11**	1 U	1 U	**53**
Styrene	930	1 U	NA	5 U	NA	1 U	NA	1 U	NA	1 U	NA	1 U	NA
Toluene	5	1 U	1 U	5 U	1 U	1 U	5	1 U	1 U	1 U	1 U	1 U	**41**
Trichloroethene	5	NA	1 U	NA	1 U	NA	3	NA	1 U	NA	1 U	NA	1 U
Xylene (Total)	5	1 U	4 J	**42**	2 U	1 U	**56**	**44**	**6**	**10**	2 U	1 U	**74 J**
Total BTEX	--	ND	27	652	ND	ND	158	126	7	27	ND	ND	1,058
Total VOC TICs	--	ND	105	312	ND	ND	546	222	267	304	ND	ND	ND
Semi-volatile Organic Compounds													
Acenaphthene	20	10 U	**41**	**210**	**52**	19	**120**	**140**	**160**	**190**	**940 D**	10 U	2 J
Acenaphthylene	--	10 U	3 J	5 J	1 J	10 U	7 J	6 J	6 J	20 U	150	10 U	4 J
Anthracene	50	10 U	6 J	5 J	10 U	10 U	9 J	9 J	18	16 J	**210**	10 U	10 U
Benzo(a)anthracene	0.002	10 U	**3 J**	19 U	10 U	10 U	10 U	10 U	10 U	20 U	**120**	10 U	10 U
Benzo(a)pyrene	ND	10 U	**2 J**	19 U	10 U	10 U	10 U	10 U	10 U	20 U	**100**	10 U	10 U
Benzo(b)fluoranthene	0.002	10 U	10 U	19 U	10 U	10 U	10 U	10 U	10 U	20 U	**38**	10 U	10 U
Benzo(g,h,i)perylene	--	NA	10 U	NA	10 U	NA	10 U	NA	10 U	NA	50	NA	10 U
Benzo(k)fluoranthene	0.002	10 U	2 J	19 U	10 U	10 U	10 U	10 U	10 U	20 U	62	10 U	10 U
Benzoic Acid	--	NA	24 U	NA	26 U	NA	26 U	NA	24 U	NA	27	NA	24 U
2,4-Dimethylphenol	2 [1]	10 U	10 U	19 U	10 U	10 U	10 U	10 U	10 U	20 U	**250**	10 U	10 U
2-Methylnaphthalene	--	10 U	27	81	10 U	10 U	54	26	10 U	20 U	3,600 D	10 U	11
2-Methylphenol	--	NA	10 U	NA	10 U	NA	10 U	NA	10 U	NA	110	NA	10 U
4-Methylphenol	--	10 U	10 U	19 U	10 U	10 U	10 U	10 U	10 U	20 U	66	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 U	14 U	19 U	10 U	2 J	3 J	2 J	10 U	2 J	**6 J**	10 U	10 U
Carbazole	--	10 U	1 J	2 J	10 U	10 U	4 J	3 J	1 J	20 U	30	10 U	10 U
Chrysene	0.002	10 U	**4 J**	19 U	10 U	10 U	10 U	10 U	1 J	**2 J**	**120**	10 U	10 U
Dibenzo(a,h)anthracene	--	10 U	10 U	5 J	10 U	2 J	10 U	8 J	10 U	6 J	16	10 U	10 U
Dibenzofuran	--	NA	2 J	NA	10 U	NA	8 J	NA	6 J	NA	10 U	NA	10 U
Fluoranthene	50	10 U	6 J	19 U	10 U	2 J	4 J	3 J	8 J	7 J	**170**	10 UJ	10 U
Fluorene	50	10 U	12	**51**	6 J	10	**55**	47	**54**	47	**660 D**	10 U	1 J
Indeno(1,2,3-cd)pyrene	0.002	NA	10 U	NA	10 U	NA	10 U	NA	10 U	NA	**40**	NA	10 U
Naphthalene	10	10 U	**84**	**290**	10 U	10 U	**330**	**84 DJ**	10 U	8 J	**11,000 D**	10 U	**110**
Phenanthrene	50	10 U	13	32	10 U	10 U	**56**	50	10 U	**58**	**1,100 D**	10 U	1 J
Phenol	2 [1]	10 U	10 U	19 U	10 U	10 U	10 U	2 J	10 U	20 U	**95**	10 U	**6 J**
Pyrene	50	10 U	9 J	19 U	1 J	2 J	6 J	5 J	11	9 J	**440 JD**	10 U	10 U
Total PAHs	--	ND	212	674	60	33	641	370	258	337	18816	ND	129
Total SVOCs TICs	--	ND	187	480	73	47	448	490	977	1,163	4572	ND	63

See notes on page 6.

Table G. Remedial Investigation Groundwater Impacts Summary (Areas A and B), Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Site Area Location Lab ID Date Sampled	TOGS 1.1.1 Groundwater Effluent Limitations	W96-5D L37553-4 06/17/97	W96-5S L32142-2 08/29/96	W96-5S L37553-3 06/17/97	W96-6S L32142-8 08/29/96	W96-6S L37571-5 06/18/97	W96-7I L32023-14 08/27/96	W96-7I (DUP) L32023-15 08/27/96	W96-7I L37571-11 06/18/97	W96-7S L32023-12 08/27/96	W96-7S L37571-12 06/18/97	W96-8S L32142-6 08/29/96	W96-8S L37571-13 06/18/97
Volatile Organic Compounds													
Acetone	50	NA	5 U	NA	5 U	NA	11 U	12 U	NA	4 J	NA	5 U	NA
Benzene	1	**1,600 D**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	**11**	**28**
2-Butanone	50	NA	5 U	NA	5 U	NA	5 UJ	9 UJ	NA	6 UJ	NA	5 U	NA
Chloroform	7	5 U	2	**10**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	**460 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	2	2 J
Styrene	930	5 U	NA	1 U	NA	1 U	NA	NA	1 U	NA	1 U	NA	1 U
Toluene	5	**120 J**	1 U	1 U	1	1 U	**22**	**24**	1 U	3 J	1 U	1	1 U
Trichloroethene	5	NA	1 U	NA	1 U	NA	1 U	1 U	NA	1 U	NA	1 U	NA
Xylene (Total)	5	**660 J**	2 U	1 U	2 U	1 J	2 U	2 U	1 U	2 UJ	1 U	**9**	**9**
Total BTEX	--	2,840	ND	ND	1	1	22	24	ND	3	ND	23	39
Total VOC TICs	--	364	ND	ND	30	ND	27	27	22	ND	7	928	23
Semi-volatile Organic Compounds													
Acenaphthene	20	**24**	10 U	10 U	13	11	5 J	4 J	6 J	3 J	2 J	**180**	**140**
Acenaphthylene	--	31	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 J	5 J
Anthracene	50	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J	10 U	22	20
Benzo(a)anthracene	0.002	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**13**	**6 J**
Benzo(a)pyrene	ND	10 U	10 U	R	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**9 J**	**3 J**
Benzo(b)fluoranthene	0.002	10 U	10 U	R	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**4 J**	**2 J**
Benzo(g,h,i)perylene	--	NA	10 U	NA	10 U	NA	10 U	10 U	NA	10 U	NA	3 J	NA
Benzo(k)fluoranthene	0.002	10 U	10 U	R	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 J	2 J
Benzoic Acid	--	NA	24 U	NA	24 U	NA	25 U	160	NA	120	NA	24 U	NA
2,4-Dimethylphenol	2 [1]	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U
2-Methylnaphthalene	--	68 J	10 U	10 U	10 U	10 U	3 J	3 J	2J	10 U	10 U	10	8J
2-Methylphenol	--	NA	10 U	NA	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA
4-Methylphenol	--	6 J	10 U	10 U	10 U	10 U	10 U	4 J	10 U	10 U	10 U	10 U	20 U
Bis(2-ethylhexyl)phthalate	5	4 J	10 U	10 U	10 U	2 J	10 U	2 J	1 J	3 J	3 J	10 U	20 U
Carbazole	--	2 J	10 U	10 U	10 U	10 U	10 U	2 J	2 J	10 U	10 U	4 J	20 U
Chrysene	0.002	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**14**	**6 J**
Dibenzo(a,h)anthracene	--	1 J	10 U	10 U	10 U	10 U	1 J	1 J	1 J	10 U	10 U	4 J	5 J
Dibenzofuran	--	NA	10 U	NA	10 U	NA	10 U	10 U	NA	10 U	NA	10 U	NA
Fluoranthene	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2 J	10 U	34	16 J
Fluorene	50	11	10 U	10 U	10 U	10 U	10 U	10 U	2 J	1 J	10 U	22	42
Indeno(1,2,3-cd)pyrene	0.002	NA	10 U	NA	10 U	NA	10 U	10 U	NA	10 U	NA	**2 J**	NA
Naphthalene	10	**170 D**	2 J	10 U	10 U	1 J	10	10	2 J	10 U	10 U	**22**	**18 J**
Phenanthrene	50	9 J	10 U	10 U	10 U	10 U	2 J	2 J	10 U	2 J	10 U	2 J	**81**
Phenol	2 [1]	**150 D**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	20 U
Pyrene	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2 J	10 U	47	30
Total PAHs	--	315	2	ND	13	12	20	19	12	11	2	394	379
Total SVOCs TICs	--	390	340	16	31	21	712	880	19	215	ND	638	565

See notes on page 6.

Table G. Remedial Investigation Groundwater Impacts Summary (Areas A and B), Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Site Area Location Lab ID Date Sampled	TOGS 1.1.1 Groundwater Effluent Limitations	W96-9S L32142-4 08/29/96	W96-9S (DUP) L32142-5 08/29/96	W96-9S L37608-2 06/19/97	W96-9S (DUP) L37608-3 06/19/97	W96-10S L32107-7 08/28/96	W96-10S L37608-1 06/19/97	W97-10I2 L37571-14 06/18/97	W97-11S L37571-2 06/18/97	W97-12S L37553-9 06/17/97
Volatile Organic Compounds										
Acetone	50	4 J	3 J	NA	NA	5 U	NA	NA	NA	NA
Benzene	1	**2**	**2**	**2 J**	**2 J**	1 U	1 U	**510**	**1,100**	**6**
2-Butanone	50	9 J	6 J	NA	NA	R	NA	NA	NA	NA
Chloroform	7	**15**	**15**	6	6	1 U	1 U	10 U	1 U	3 J
Ethylbenzene	5	1 U	1 U	1 U	1 U	1 U	1 U	**440**	**130**	4 J
Styrene	930	NA	NA	1 U	1 U	NA	1 U	77	1 U	1 U
Toluene	5	1 U	1 U	1 U	1 U	1 U	1 J	**610**	2 J	1 U
Trichloroethene	5	1 U	1 U	NA	NA	1 U	NA	NA	NA	NA
Xylene (Total)	5	2 UJ	2 UJ	1 U	1 U	2 U	1 U	**350**	**45**	**7**
Total BTEX	--	2	2	2	2	ND	1 J	1,910	1,277	17
Total VOC TICs	--	60	58	ND	ND	280	5	ND	394	ND
Semi-volatile Organic Compounds										
Acenaphthene	20	10 UJ	0.9 J	1 J	2 J	**53**	**29**	8 J	13 U	10 U
Acenaphthylene	--	10 UJ	10 U	10 U	10 U	2 J	1 J	23	13 U	10 U
Anthracene	50	10 UJ	10 U	10 U	10 U	5 J	4 J	20 U	13 U	10 U
Benzo(a)anthracene	0.002	10 UJ	10 U	10 U	10 U	**4 J**	**2 J**	20 U	13 U	10 U
Benzo(a)pyrene	ND	10 UJ	10 U	10 U	10 U	**5 J**	**3 J**	20 U	13 U	10 U
Benzo(b)fluoranthene	0.002	10 UJ	10 U	10 U	10 U	**3 J**	**2 J**	20 U	13 U	10 U
Benzo(g,h,i)perylene	--	10 UJ	10 U	NA	NA	2 J	NA	NA	NA	NA
Benzo(k)fluoranthene	0.002	10 UJ	10 U	10 U	10 U	3 J	1 J	20 U	13 U	10 U
Benzoic Acid	--	24 U	24 U	NA	NA	24 U	NA	NA	NA	NA
2,4-Dimethylphenol	2 [1]	10 U	10 U	10 U	10 U	10 U	10 U	20 U	13 U	10 U
2-Methylnaphthalene	--	10 UJ	10 U	10 U	10 U	2 J	10 U	55	13 U	10 U
2-Methylphenol	--	10 U	10 U	NA	NA	10 U	NA	NA	NA	NA
4-Methylphenol	--	10 U	10 U	10 U	10 U	10 U	10 U	20 U	13 U	39
Bis(2-ethylhexyl)phthalate	5	4 J	10 U	**25**	5 J	10 U	10 U	20 U	13 U	2 J
Carbazole	--	10 UJ	10 U	10 U	10 U	3 J	3 J	20 U	13 U	10 U
Chrysene	0.002	10 UJ	10 U	10 U	10 U	**6 J**	**4 J**	20 U	13 U	10 U
Dibenzo(a,h)anthracene	--	10 UJ	10 U	10 U	10 U	4 J	3 J	20 U	13 U	10 U
Dibenzofuran	--	10 U	10 UJ	NA	NA	1 J	NA	NA	NA	NA
Fluoranthene	50	10 UJ	10 U	10 U	10 U	26	9 J	20 U	13 UJ	10 U
Fluorene	50	10 UJ	10 U	10 U	10 U	1 J	14	5 J	13 U	10 U
Indeno(1,2,3-cd)pyrene	0.002	10 UJ	10 U	NA	NA	10 U	NA	NA	NA	NA
Naphthalene	10	10 UJ	4 J	1 J	2 J	4 J	4 J	**780 D**	**27 J**	10 U
Phenanthrene	50	10 UJ	10 U	10 U	10 U	17	14	3 J	13 U	10 U
Phenol	2 [1]	10 U	10 U	10 U	10 U	10 U	10 U	20 U	**6 J**	**9 J**
Pyrene	50	10 UJ	10 U	10 U	10 U	14	9 J	20 U	13 U	10 U
Total PAHs	--	ND	4.9	2	4	148	96	874	27	ND
Total SVOCs TICs	--	ND	ND	ND	ND	150	60	330	174	771

See notes on page 6.

Table G. Remedial Investigation Groundwater Impacts Summary (Areas A and B), Central Hudson Gas Electric Corporation, Newburgh Former MGP Site, Newburgh, New York

Notes:

Bold values indicate that the compound was detected at a concentration exceeding the Maximum Allowable Concentration for groundwater effluent (TOGS 1.1.1; NYSDEC 1998)

Grey values indicate analytes that were not analyzed for or not detected in the sample.

All concentrations are reported in ug/L equivalent to parts per billion (ppb).

[1] Maximum allowable concentration applies to the sump of the the phenolic compounds indicated.

D = The compound was analyzed at a secondary dilution.

U = The compound was not detected above the reported quantitation limit.

J = The compound is reported at an estimated concentration.

B = The compound was also detected in an associated blank sample.

Total BTEX = The sum of benzene, toluene, ethylbenzene, and xylenes.

TICs = Tentatively identified compounds.

APPENDIX H

Excavation Work Plan

H EXCAVATION WORK PLAN

This Excavation Work Plan (EWP) provides protocols that must be followed in the event that soil excavation or other intrusive activities are required at the Central Hudson Gas & Electric Corporation (CHGE) Newburgh, New York former manufactured gas plant (MGP) site (includes the former MGP property and adjacent offsite properties (collectively referred to as "the site"). This EWP is focused on soil removal in the upland areas of the Site.

As noted in the Site Management Plan (SMP), the site is divided into three areas (Areas A, B, and C) as shown on Figure 2 of the SMP. The Area A property is owned by CHGE, and the Area B properties are owned by the City of Newburgh and CSX Transportation, Inc. (CSX). Area A consists of the former MGP and is currently occupied by a CHGE natural gas regulator station that controls distribution of gas throughout the City of Newburgh and surrounding areas. Area B is defined as the area between South Water Street and the Hudson River. This area is now occupied by a transportation corridor (South Water Street and a CSX Railroad right-of-way) and the City of Newburgh Sewage Treatment Plant (STP). Improvements on the STP property include, but are not limited to, the following: primary settling tanks, clarifiers, a sludge pump building, an administrative building, and a chlorine contact tank in the central portion of the STP property, sludge processing to the north, and aeration tanks to the south. The eastern boundary of the STP property borders the Hudson River. Area C is defined as the portion of the Hudson River below the mean high water (MHW) line located immediately off shore from the City of Newburgh STP. No institutional or engineering controls are required for Area C; therefore this EWP focuses on Areas A and B.

H.1 Notification

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, CHGE in coordination with the property owner or their representative will notify the New York State Department of Environmental Conservation (NYSDEC). Table 1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix C of the SMP.

Table 1. Notifications*

Contact	Phone	Email
Gerald Pratt, NYSDEC Project Manager	518.402.9667	Gerald.Pratt@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for re-grading, intrusive elements or utilities to be installed below grade, estimated volumes of contaminated soil to be excavated and any work that may impact an existing engineering control.
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentrations of constituents of interest, potential presence of impacted media, and plans for any pre-construction sampling.
- A schedule for the work, detailing the start and completion of all intrusive work.

- A summary of the applicable components of this EWP.
- 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 (HASP), in electronic format.
- Identification of disposal facilities for potential waste streams (see Table 2 for approved disposal facilities).
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

H.2 Media Screening Methods

Visual, olfactory, and instrument-based (e.g. photoionization detector), if appropriate, soil screening will be performed by a qualified environmental professional or person under their supervision during all excavations into known or potentially contaminated material (remaining contamination). Excavated soil will be visually characterized for the presence of non-aqueous phase liquid (NAPL), staining and/or obvious odors. For purposes of this EWP, stained soil is soil that is observed to be discolored, tinted, dyed, unnaturally mottled, or has a sheen. Excavated soils that contain NAPL will be considered potentially impacted and stockpiled for further assessment

Stockpiled potentially impacted soil will be sampled and analyzed to evaluate whether the material can be reused in the work area or must be transported for offsite disposal. Sampling will be performed as follows for each 500 cubic yards (cy) of potentially impacted soils:

- Two (2) discrete samples submitted for benzene, toluene, ethylbenzene, and xylenes (BTEX) using United States Environmental Protection Agency (USEPA) SW-846 Method 8260
- One (1) composite sample submitted for polycyclic aromatic hydrocarbons (PAHs) using USEPA SW-846 Method 8270C

Each composite sample shall be formed using individual grab samples collected from five locations within each stockpile (i.e., five discrete grab samples per composite sample). The composite sample will be formed by placing equal portions of soil from each of the five discrete grab sampling locations into a pre-cleaned, stainless steel bowl (or dedicated container). The composite sample will be thoroughly homogenized using a stainless steel scoop or trowel before being transferred into the sample containers provided by the laboratory.

The filled discrete and composite sample containers will be labeled and transported to the laboratory using a chain-of-custody form. Samples will be submitted to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory for analysis as described above and.

Soil that is excavated from the work area and does not exhibit NAPL, staining, or an obvious odor will be stockpiled separately from the potentially impacted soil and may be reused onsite, with prior NYSDEC approval.

Soil screening will be performed when 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 Certificate of Completion (COC).

H.3 Soil Staging Methods

Excavated soil will be stockpiled based on visual characterization and/or obvious odors as discussed in Section H.2. Potentially impacted soils and non-impacted soils will be stockpiled separately to prevent cross-contamination. Potentially impacted soil will be placed on polyethylene sheeting in stockpiles not to exceed 500 cy.

All soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters, and other discharge points. Stockpiles will be kept covered whenever soils 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 covered using polyethylene sheeting to reduce potential infiltration of precipitation, migration of wind-blown dust, and direct contact exposures.

Stockpiles will be routinely inspected and damaged polyethylene sheeting 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 work area and available for inspection by the NYSDEC.

H.4 Materials Excavation and Load-Out

A qualified environmental professional or person under their supervision will oversee all intrusive work and the excavation and load-out of all excavated material. The owners of the property and remedial party (if applicable) and its consultants/contractors are responsible for safe execution of all excavation and other intrusive work performed under this EWP and SMP.

The presence of utilities and easements in the work area 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 in the work area.

Loaded vehicles leaving the work area will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and New York State Department of Transportation (NYSDOT) requirements (and all other applicable transportation requirements).

The appropriate best management practices will be used to prevent impacted material from contacting the outside of the truck. The qualified environmental professional will be responsible for ensuring that all outbound trucks are decontaminated as appropriate before leaving the work area until the activities performed under this section are complete.

Locations where vehicles enter or exit the work area shall be inspected daily for evidence of offsite soil tracking. The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the work area are clean of dirt and other materials derived from the work area during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to excavation-derived materials.

H.5 Materials Transport Offsite

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 work area will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. All material transported offsite will be dewatered as necessary to pass the paint filter test.

Waters generated during decontamination and dewatering activities will be collected and disposed of offsite in an appropriate manner.

A project-specific truck transport route has been developed and will be followed as a part of any work plan developed under this EWP. The truck transport routes from Areas A and B are as follows:

Arrival from Interstate 87 (toll road):

1. Take Exit 17 for NY Rte 17K/Interstate 84 toward Newburgh/Stewart Airport.
2. Follow signs to Interstate 84 E.
3. Take Exit 10 for US 9W S / NY-32S.
4. Turn right (south) onto NY-32 S / US-9W S / Robinson Avenue.
5. Turn left (east) at South William Street.
6. Turn right (south) at South Water Street.
7. Turn onto Renwick Street. To reach Area A turn right (west) and to reach Area B turn left (east)

Departure to Interstate 87:

1. Turn onto Renwick Street towards South Water Street.
2. Turn south onto South Water Street; this will be a right turn coming from Area A or a left turn coming from Area B.
3. Turn right (west) onto Walsh Avenue.
4. Turn right (north) onto US 9W (Quassaick Avenue / South Robinson Avenue)
5. Turn left (west) onto North Plank Road and use left lanes to merge onto Interstate 84 W/NY-52 W ramp.
6. Follow signs to the entrance of Interstate 87 (toll road).

All trucks loaded with Area A or B materials will exit the vicinity of the work area using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport

through residential areas and past sensitive sites; (b) prohibiting offsite queuing of trucks entering the facility; (c) limiting total distance to major highways; (d) promoting safety in access to highways; and (e) overall safety in transport. Trucks will be prohibited from stopping and idling in the neighborhood outside the work area. Egress points for truck and equipment transport from the work area will be kept clean of dirt and other materials during remediation and development. Queuing of trucks will be performed onsite (to the extent practicable) in order to minimize offsite disturbance. Offsite queuing will be prohibited.

H.6 Materials Disposal Offsite

All material excavated and removed from the work area and treated as impacted (see Section H.2) and regulated material will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of material from Area A or B is proposed for unregulated offsite disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated offsite management of materials from Areas A or B will not occur without formal NYSDEC approval.

Offsite 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. Additional waste characterization analysis may be needed to characterize the material for offsite disposal based on the requirements of the disposal facility. A listing of CHGE-approved waste disposal facilities is presented in Table 2.

Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report to be prepared in accordance with the SMP. This documentation will include: waste profiles, laboratory test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken offsite will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Unrestricted Soil Cleanup Objectives (SCOs) is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

Table 2. CHGE-Approved Waste Disposal Facilities (as of March 2025)

Facility	Contact Information
Low-Temperature Thermal Desorption Facilities	
Environmental Soil Management, Inc. (ESMI) – New York	304 Towpath Road Fort Edward, New York (518) 747-5500
Environmental Soil Management, Inc. (ESMI) – New Hampshire	67 International Drive Loudon, New Hampshire (603) 783-0228
Clean Earth of Southeast Pennsylvania	7 Steel Road East Morrisville, Pennsylvania (215) 428-1700
Hazardous Materials	
Wayne Disposal, Inc.	49350 North I-94 Service Drive Belleville, MI 48111 (734) 697-2200

Facility	Contact Information
Hazardous Liquids	
Veolia Environmental Services	1 Eden Lane Flanders, New Jersey (973) 347-7111
NAPL Disposal	
Tradebe	50 Cross Street Bridgeport, Connecticut (888) 276-0887
Special Waste Landfills	
Waste Management (Fairless/GROWS Landfill)	1513 Bordentown Road Morrisville, Pennsylvania (866) 909-4458
Seneca Meadows Landfill	1786 Salcman Road Waterloo, New York (315) 539-5624
Non-Hazardous Liquids	
Tradebe	50 Cross Street Bridgeport, Connecticut (888) 276-0887

Note:

1. Contractors may propose alternative treatment/disposal facilities for approval by CHGE.

H.7 Materials Reuse Onsite

Only non-impacted material (as discussed in Section H.2) may be re-used onsite with prior NYSDEC approval. The qualified environmental professional or person under their supervision will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain onsite.

Any demolition material proposed for reuse onsite will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing onsite 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 work area will not be reused onsite.

H.8 Fluids Management

All liquids to be removed from the work area, including but not limited to, excavation dewatering liquids and decontamination waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations.

Water encountered in excavations within the work area will be sampled and analyzed for the constituents of interest (COIs) known to be in the area as determined by previous analytical results, which include BTEX and PAHs. Results will be compared to the surface water and groundwater quality standards set forth in 6 New York Codes, Rules and Regulations (NYCRR) Part 703.5 and Technical and Operational Guidance Series (TOGS) 1.1.1 (respectively). If the water meets the surface water and groundwater quality standards, it may be discharged to the ground surface. If the water does not meet the surface

water and groundwater quality standards, it should be discharged to the local sewer authority (if authorized), transported offsite for proper disposal, or treated onsite via a treatment system that has been approved by the NYSDEC, as appropriate. Discharge of water generated during large-scale construction activities to surface waters (i.e. Hudson River) will be performed under a State Pollutant Discharge Elimination System (SPDES) permit. No discharges shall enter a surface water body without proper permits.

H.9 Surface Restoration

A cover system is not included in the remedy for the Areas A and B; however, clean backfill was required for those portions of the remedy where excavation occurred. After the completion of soil removal and any other invasive activities, the excavation area will be restored with clean backfill in a similar manner to the remedy and is consistent with pre-excavation conditions (i.e. asphalt will be restored) unless otherwise defined in the work scope. A figure showing the modified surface will be included in the subsequent Periodic Review Report and an updated SMP.

H.10 Backfill from Offsite Sources

All materials proposed for import onto Areas A or B will be approved by the qualified environmental professional and will be in compliance with provisions in the SMP prior to receipt at the work area. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review. Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to Areas A or B.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for Areas A or B, will not be imported into the work area without prior approval by NYSDEC. Solid waste will not be imported onto Areas A or B.

Virgin soils (i.e., documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use) should be subjected to collection of one representative composite sample and one representative discrete sample per source. The composite sample should be analyzed for polychlorinated biphenyls (PCBs), pesticides, Target Compound List (TCL) semivolatile organic compounds (SVOCs), and Target Analyte List (TAL) inorganic constituents (including cyanide). The discrete sample should be analyzed for TCL volatile organic compounds (VOCs). The soil shall be acceptable for use as cover material or subsurface fill provided that no chemical constituents are identified at concentrations above 6 NYCRR Part 375 Unrestricted Use SCOs. Material containing chemical constituents at concentrations greater than the Part 375 Unrestricted Use SCOs will only be used as fill material with prior approval from NYSDEC.

Non-virgin soils shall be sampled at a frequency of one composite sample per 500 cy of material for each source. If more than 1,000 cy of soil are borrowed from a given offsite non-virgin soil source area and both samples of the first 1,000 cy meet the Part 375 unrestricted use soil cleanup objectives, the sample collection frequency shall be reduced to one composite for every 2,500 cy of additional soils from the same source, up to 5,000 cy. For borrow sources greater than 5,000 cy, sampling frequency may be reduced to one sample per 5,000 cy, provided the results obtained for the analysis of all previous

samples collected from that borrow source met the Part 375 Unrestricted Use SCOs. The soil shall be acceptable for use as cover material or subsurface fill provided that no chemical constituents are identified at concentrations greater than the Part 375 Unrestricted Use SCOs. Material containing COIs at concentrations greater than the Part 375 Unrestricted Use SCOs will only be used as fill material with prior approval from NYSDEC.

Trucks entering the work area 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. All imported soils will be stored by type, separately from one another. All imported soils must be stored in accordance with Federal, State, and local regulations for proper erosion control requirements, such as covering, while temporarily stockpiled onsite prior to use.

H.11 Stormwater Pollution Prevention Plan

For projects that disturb an area greater than 1 acre, a Stormwater Pollution Prevention Plan that conforms to the requirements of NYSDEC Division of Water guidelines and NYS regulations will be prepared.

At a minimum, stormwater pollution prevention will include the following best management practices, as applicable:

- Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the work area and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.
- Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.
- All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.
- Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.
- Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.
- Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

H.12 Excavation Contingency Plan

The objective of a Contingency Plan is to minimize uncertainties by establishing the provisions and procedures for responding to certain circumstances, including discovery of an unknown source of COIs that may require remediation (underground storage tanks, stained soil, drums, etc.), accidental spills, and discharges that may occur during any excavation work. Prior to beginning an excavation activity, task- or

work-specific contingency procedures will be developed and included in the appropriate HASP as described in the SMP. Additionally, the following procedures will be implemented, as applicable:

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

- 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 a full list of analytes (TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the Area A and B 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 impacted media identified by screening during invasive work in Areas A or B 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 the Periodic Review Report.

H.13 Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) specific to the excavation work proposed at Areas A or B will be prepared in accordance with the guidelines provided in Appendix 1A (Generic Community Air Monitoring Plan of the New York State Department of Health [NYSDOH]) in the New York State Department of Environmental Conservation's (NYSDEC's) Technical Guidance for Site Investigation and Remediation (DER-10, May 2010).

At a minimum the CAMP will include:

- Details of the perimeter air monitoring program

- Action levels to be used

- Methods for air monitoring

- Analytes measured and instrumentation to be used

- A figure showing locations of all air monitoring instrumentation

A figure showing the location of air sampling stations will be included in the CAMP based on the work area and average prevailing wind conditions. These locations may 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. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

H.14 Odor Control Plan

An odor control plan will be developed by the Contractor performing work under this EWP. The odor control plan will be capable of controlling emissions of nuisance odors offsite. Specific odor control

methods to be used on a routine basis will include use of odor suppressant foam, covering of excavation faces or stockpiles with polyethylene sheeting, and use of oil absorbent booms and/or pads to absorb NAPL floating product or sheens on water surfaces. If nuisance odors are identified at the work area boundary, or if odor complaints are received, work will be halted and the source of the 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 party performing the work under this EWP and its consultants/contractors, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent onsite and offsite nuisances. At a minimum, these measures may include: (a) limiting the area of open excavations and size of soil stockpiles; (b) covering open excavations with tarps; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances may include: (a) direct load-out of soils to trucks for offsite disposal; (b) use of chemical odorants in spray or misting systems; and, (c) use of staff to monitor odors more frequently offsite where nuisance odors are observed.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to onsite 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.

H.15 Dust Control Plan

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

- Dust suppression will be achieved through the use of a dedicated onsite 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 sites 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.
- Onsite roads will be limited in total area to minimize the area required for water truck sprinkling.

H.16 Other Nuisances

As previously mentioned, land uses surrounding Areas A and B are primarily commercial and industrial. Therefore, no additional nuisances are expected to be of concern during excavation activities.

APPENDIX I

Site Forms

SITE INSPECTION FORM

Former Manufactured Gas Plant Site
Newburgh, New York
Site No. 3-36-042

SIF-[YYYY]-[MM]

☐ Routine Site-Wide
☐ Severe Condition

Inspection Date:	**Time Arrived:**	**Time Departed:**

Inspector(s) Information

Name	**Company**	**Position**

Weather Conditions

Weather:	Tidal Cycle:	Precipitation:
Temperature:	Wind Speed and Direction:	

Additional Notes/Comments:

Site Records

Records Reviewed:

Title	**Record Type**	**Record Date (Latest)**	**Review Date**	**Format Reviewed / Location**
Area A Environmental Easement	Legal Record			
Site Management Plan	Report			
O&M Plan	Report			
Periodic Review Reports	Report			
Sump Collection Data	Data			
NAPL Monitoring Data	Data			

Notes:

SIF-[YYYY]-[MM]

☐ Routine Site-Wide
☐ Severe Condition

Area A

Summary of Existing Conditions *(attach additional sheets as necessary)*

Site Personnel Met/Spoke With (if applicable):

1. Existing site use is commercial or industrial use? ☐ **Yes** ☐ No, describe below:

2. Any evidence or reference to current/recent construction since previous inspection? ☐ **No** ☐ Yes, describe below:

3. Condition of Area A NAPL Monitoring Wells:

Well ID	Well in Good Condition?		Notes
NMW-19	☐ Yes	☐ No	
NMW-20	☐ Yes	☐ No	
NMW-21	☐ Yes	☐ No	
NMW-22	☐ Yes	☐ No	
NMW-22R	☐ Yes	☐ No	
NMW-23	☐ Yes	☐ No	
NMW-23A	☐ Yes	☐ No	
NMW-23R	☐ Yes	☐ No	
NMW-24	☐ Yes	☐ No	
NMW-24A	☐ Yes	☐ No	
NMW-24R	☐ Yes	☐ No	
NMW-25	☐ Yes	☐ No	
NMW-25R	☐ Yes	☐ No	
NMW-25RA	☐ Yes	☐ No	
NMW-26	☐ Yes	☐ No	
NMW-26R	☐ Yes	☐ No	
NMW-26RA	☐ Yes	☐ No	
NMW-27	☐ Yes	☐ No	
NMW-27R	☐ Yes	☐ No	
NMW-28	☐ Yes	☐ No	
NMW-28R	☐ Yes	☐ No	

(continued next page)

Area A - NAPL Monitoring Wells (continued)

Well ID	Well in Good Condition?		Notes
NMW-29	☐ Yes	☐ No	
NMW-29R	☐ Yes	☐ No	
NMW-30	☐ Yes	☐ No	
NMW-30R	☐ Yes	☐ No	
NMW-31	☐ Yes	☐ No	
NMW-32	☐ Yes	☐ No	
NMW-33R	☐ Yes	☐ No	
NMW-34R	☐ Yes	☐ No	
NMW-35	☐ Yes	☐ No	
NMW-36A	☐ Yes	☐ No	
NMW-37	☐ Yes	☐ No	
NMW-37R	☐ Yes	☐ No	
NMW-38	☐ Yes	☐ No	
NMW-38R	☐ Yes	☐ No	
NMW-39R	☐ Yes	☐ No	
NMW-40R	☐ Yes	☐ No	
NMW-41R	☐ Yes	☐ No	
NMW-42A	☐ Yes	☐ No	

Additional Area A NAPL Monitoring Wells Observations:

Additional Area A Notes/Observations (attach additional sheet[s] if necessary)

SIF-[YYYY]-[MM]

☐ Routine Site-Wide
☐ Severe Condition

Area B

Summary of Existing Conditions *(attach additional sheets as necessary)*

Site Personnel Met/Spoke With (if applicable):

1. Any evidence or reference to current/recent construction since previous inspection? ☐ **No** ☐ Yes, describe below:

2. Condition of Area B NAPL Monitoring Wells

Well ID	Well in Good Condition?		Notes
NMW-1	☐ Yes	☐ No	
NMW-2	☐ Yes	☐ No	
NMW-3	☐ Yes	☐ No	
NMW-4	☐ Yes	☐ No	
NMW-5	☐ Yes	☐ No	
NMW-6	☐ Yes	☐ No	
NMW-7	☐ Yes	☐ No	
NMW-8	☐ Yes	☐ No	
NMW-9	☐ Yes	☐ No	
NMW-10	☐ Yes	☐ No	
NMW-11	☐ Yes	☐ No	
NMW-12	☐ Yes	☐ No	
NMW-13	☐ Yes	☐ No	
NMW-14	☐ Yes	☐ No	
NMW-15	☐ Yes	☐ No	
NMW-16	☐ Yes	☐ No	
NMW-17	☐ Yes	☐ No	
NMW-18	☐ Yes	☐ No	
NMW-43	☐ Yes	☐ No	
NMW-44	☐ Yes	☐ No	
NMW-45	☐ Yes	☐ No	
NMW-46	☐ Yes	☐ No	

(continues next page)

Area B NAPL Monitoring Wells (continued)

Well ID	Well in Good Condition?		Notes
NMW-47	☐ Yes	☐ No	
NMW-48	☐ Yes	☐ No	
NMW-49	☐ Yes	☐ No	

Additional Area B NAPL Monitoring Wells Observations:

3. Condition of Area B Collection Trench Sumps and Cleanouts

ID	In Good Condition?		Notes
S-1	☐ Yes	☐ No	
S-2	☐ Yes	☐ No	
S-3	☐ Yes	☐ No	
S-4	☐ Yes	☐ No	
S-5	☐ Yes	☐ No	
C-1	☐ Yes	☐ No	
C-2	☐ Yes	☐ No	
C-3	☐ Yes	☐ No	
C-4	☐ Yes	☐ No	
C-5	☐ Yes	☐ No	
C-6	☐ Yes	☐ No	
C-7	☐ Yes	☐ No	
C-8	☐ Yes	☐ No	
C-9	☐ Yes	☐ No	

Additional Collection Trench Area Observations:

4. Condition of Barrier Wall / Shoreline:
   a. Evidence of shoreline scouring and/or erosion: ☐ **No** ☐ Yes, describe below:

   b. Portions of barrier wall exposed: ☐ **No** ☐ Yes, describe below:
   Location(s):
   Condition:

Additional Area B Notes/Observations (attach additional sheet[s] if necessary)

SIF-[YYYY]-[MM]

☐ Routine Site-Wide
☐ Severe Condition

Summary

Available Site records are up-to-date and current: ☐ **Yes** ☐ No, describe below:

Controls continue to perform in a manner protective of human health and environment: ☐ **Yes** ☐ No, describe below:

Additional Comments

Attachment(s)

(Check all that apply)		Description
Field Notes:		
Photographs:		
Other:		

Inspector Sign Off

Signature	Name	Date

NAPL MONITORING FORM

Former Manufactured Gas Plant Site
Newburgh, New York
Site No. 3-36-042

NMF-[YYYY]-[MM]-[DD]

Date:	**Time Arrived:**	**Time Departed:**

Personnel (attach additional sheets as needed)

Name	**Company**	**Position**

Weather Conditions

Weather:	Tidal Cycle:	Precipitation:
Temperature:	Wind Speed and Direction:	

Additional Notes/Comments:

NAPL Monitoring

Monitoring Event: ☐ Weekly (complete Table 1) ☐ Quarterly (complete Tables 1 and 2)
☐ Yearly (complete all Tables) ☐ Other: _____

Table 1 - Weekly Monitoring Frequency

Well ID	Time	Depth to Water (ft)	Depth to DNAPL (ft)	Total Well Depth (ft)	Aprx. DNAPL Thickness (ft)	Aprx. DNAPL Removed (gal)	Well Condition
NMW-44							
NMW-46							
NMW-47							
NMW-48							
S-3							
S-5							

Notes:

Table 2 - Quarterly Monitoring Frequency

Well ID	Time	Depth to Water (ft)	Depth to DNAPL (ft)	Total Well Depth (ft)	Aprx. DNAPL Thickness (ft)	Aprx. DNAPL Removed (gal)	Well Condition
NMW-1							
NMW-2							
NMW-3							
NMW-4							

(continues next page)

Table 2 (continued)

NMW-5							
NMW-7							
NMW-15							
NMW-16							
NMW-17							
NMW-18							
NMW-22R							
NMW-23							
NMW-23A							
NMW-23R							
NMW-24							
NMW-24A							
NMW-24R							
NMW-25							
NMW-25R							
NMW-25RA							
NMW-26							
NMW-26R							
NMW-26RA							
NMW-27R							
NMW-30R							
NMW-33R							
NMW-34R							
NMW-37R							
NMW-39R							
NMW-40R							
NMW-43							
NMW-45							
NMW-49							
S-1							
S-2							
S-4							

Notes:

Table 3 – Yearly Monitoring Frequency

NMF-[YYYY]-[MM]-[DD]

Well ID	Time	Depth to Water (ft)	Depth to top of DNAPL (ft)	Total Well Depth (ft)	Approx. DNAPL Thickness (ft)	Approx Volume DNAPL Removed (gallons)	Well Condition
NMW-6							
NMW-8							
NMW-9							
NMW-10							
NMW-11							
NMW-12							
NMW-13							
NMW-14							
NMW-19							
NMW-20							
NMW-21							
NMW-22							
NMW-27							
NMW-28							
NMW-28R							
NMW-29							
NMW-29R							
NMW-30							
NMW-31							
NMW-32							
NMW-35							
NMW-36A							
NMW-37							
NMW-38							
NMW-38R							
NMW-41R							
NMW-42A							

Notes:

NMF-[YYYY]-[MM]-[DD]

Additional Notes

Overall Status of Well Network:

- ☐ Good – No Corrective Action Needed
- ☐ Fair – Minor Repairs Made in Field (describe below)
- ☐ Corrective Action Needed (describe below)

Other Notes/Comments *(attach additional sheet[s] if necessary)*

Attachment(s)

(Check all that apply)		Description
Field Notes:		
Photographs:		
Other:		

Field Lead Sign-Off

Signature	Name	Date

MAINTENANCE FORM

Former Manufactured Gas Plant Site
Newburgh, New York
Site No. 3-36-042

MF-YYYY-MM	☐ Routine ☐ Non-routine	
Date:	**Time Arrived:**	**Time Departed:**

Personnel (attach additional sheets as needed)

Name	**Company**	**Position**

Weather Conditions

Weather:	Tidal Cycle:	Precipitation:
Temperature:	Wind Speed and Direction:	

Additional Notes/Comments:

Maintenance Activities

System: ☐ NAPL Wells ☐ NAPL Sumps ☐ Collection Trench ☐ Barrier Wall

Detailed description of maintenance activities performed *(attach additional sheets as needed)*

Summary of System Modifications *(attach additional sheets as needed)*

Status: ☐ Maintenance Complete ☐ Additional Action Need (attach sheets)

MF-YYYY-MM	☐ Routine ☐ Non-routine
Additional Notes	

Attachment(s)		
(Check all that apply)		Description
Field Notes:		
Photographs:		
Figures/Sketches:		
Invoices/Receipts:		
Other:		

Field Lead Sign-Off		
Signature	Name	Date