Site Management Plan

Jackson Street Former MGP Site

Submitted to:

NYSEG, Binghamton, New York

Submitted by:

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Revisions by NEU-VELLE, LLC.

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Project 12993

AMEC Geomatrix

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ABBREVIATIONS AND ACRONYMS

ARARs	Applicable or Relevant and Appropriate Requirements
ACO	Administrative Consent Order
BGS	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COCs	Constituents of Concern
COPCs	Constituents of Potential Concern
DER	Division of Environmental Remediation
GRAs	General Response Actions
HHRA	Human Health Exposure Assessment
IC/EC	Institutional Control and Engineering Control
MGP	Manufactured Gas Plant
MNA	Monitored Natural Attenuation
NAPL	Non-Aqueous Phase Liquid
NCP	National Contingency Plan
NYCRR	Codes, Rules and Regulations of the State of New York
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSEG	New York State Electric & Gas
O&M	Operation and Maintenance
OM&M	Operation, Monitoring, and Maintenance
PAHs	Polycyclic Aromatic Hydrocarbons
PRAP	Proposed Remedial Action Plan
RAOs	Remedial Action Objectives
ROD	Record of Decision
SCGs	Standards, Criteria, and Guidance
SCOs	Soil Cleanup Objectives
SMP	Site Management Plan
TAGM	Technical Administrative Guidance Memorandum
TOGS	Technical and Operational Guidance Series
USEPA	United States Environmental Protection Agency

SITE MANAGEMENT PLAN
Jackson Street Former Manufactured Gas Plant (MGP) Site
(NYSDEC Site # 862008)
Penn Yan, New York

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is a required element of the remedial program at the Former Jackson Street Manufactured Gas Plant (MGP) Site (NYSDEC Site No: 862008), hereinafter referred to as the "Site", under the New York State (NYS) Administrative Order on Consent Index Number D0-0002-9309 (the "Order") between New York State Electric and Gas (NYSEG) and the New York State Department of Environmental Conservation ("NYSDEC") dated March 30, 1994.

1.1.1 General

NYSEG entered into the Order with NYSDEC to remediate a 0.7 acre property located in the Town of Penn Yan, Yates County, New York. The site location and site layout are shown on Figures 1A and 1B, respectively.

The Order required the Remedial Party (NYSEG) to investigate and remediate contaminated media at the Site. As such, a remedial investigation (RI) and feasibility study (FS) were completed in March 2009 and October 2010, respectively. A Proposed Remedial Action Plan (PRAP) was prepared by the NYSDEC in February 2011 and presented for public comment. A Record of Decision (ROD) was issued by the NYSDEC in March 2011. The ROD-specified remedy requires the development of a Site Management Plan (SMP) to manage exposure to constituents in soil and groundwater that remain at the Site at concentrations above regulatory comparison criteria. This SMP will remain in effect until the Environmental Easement imposed on the Site is extinguished in accordance with ECL Article 71, Title 36. All documents associated with this Site can be viewed at the document repository established at the:

Penn Yan Public Library
214 Main Street
Penn Yan, NY 14527-1796

or the NYSDEC Region 8 office located in Avon, New York.

1.1.2 Purpose

This SMP was prepared by AMEC Geomatrix, Inc., on behalf of NYSEG, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and

Remediation, effective June 18, 2010 and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the ROD and Environmental Easement for the Site.

Engineering Controls have been incorporated into the site remedy to control and minimize exposure to soil and groundwater contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Yates County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs.

This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the site. This plan 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.

This SMP provides a detailed description of all procedures required to manage contamination at the Site, including:

- implementation and management of all Engineering and Institutional Controls;
- media monitoring; and
- performance of periodic inspections, certification of results, and submittal of Periodic Review Reports.

To address these needs, this SMP includes:

- an Engineering and Institutional Control Plan for implementation and management of EC/ICs
- an Excavation Work Plan
- a Monitoring Plan for implementation of Site Monitoring

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

This SMP details the site-specific 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 Environmental Conservation Law, 6NYCRR Part 375 and the Administrative Order on Consent Index Number D0-0002-9309 for the site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. 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.

1.2 SITE BACKGROUND

The following sections detail the current and historical Site features as well as historical usage of the Site.

1.2.1 Site Location and Description

The subject site is a former MGP located on Linden Street (formerly known as Jackson Street) in the Village of Penn Yan, New York (see Figures 1A and 1B). The Site is 0.7 acres and is comprised of three separately-listed parcels. Parcel 1 is located on the northern half of the property and is bordered by a residential property to the north and Parcel 2 to the South. Parcel 2 is bordered to the South by the Yates County Correctional Facility. Both parcels are bordered to the East by Jacobs Brook and to the West by Linden Street. Parcel 3 is situated along Linden Street between Parcels 1 and 2 and contains a storage garage and paved driveway. Parcels 1 and 2 are owned by NYSEG. Parcel 3 is owned by Mr. Stephen Lizzi, a private individual residing on Linden Street. A site survey is provided in Appendix A.

The Site is situated near the northern edge of the downtown business district of the Village of Penn Yan. The land use transitions from residential to commercial in a southerly direction. The property is currently zoned as "General Residential (R-2)" which is established for single or two-family residential development. Properties north, east, and west of the Site are residential. Property to the south is commercial and used for parking by Yates County Corrections Facility and Sheriff's Office.

The property is readily accessible to the general public from Linden Street. A split rail wood fence demarcates the northern property boundary with the adjacent residential property. Jacobs Brook is accessible to the general public through private residential and commercial properties situated on the east side of the Brook. The recreational use of the Brook by the

general public is expected to be limited based on limited access (requires traversing private property) and the heavily wooded nature of the area paralleling both sides of the Brook. It is possible that older children and adolescents could play, on occasion, in the area of the Brook. The Brook could also be used for fishing (non-game fish). The Brook is not sufficiently deep to support boating/canoeing/tubing or swimming. The Site is a grass-covered, flat-lying, unoccupied residential lot with several large trees and two garages (wood-construction). A recent aerial photograph shows current Site features. NYSEG currently uses the rear garage for storage of small service equipment. The garage closest to Linden Street is used for household storage and vehicle parking by a nearby resident.

1.2.2 Site History

The site was utilized as a manufactured gas plant (MGP) from 1860 to approximately 1903. Following the cessation of MGP operations at the site, the buildings which housed the MGP were demolished by 1909. These buildings included the gas holder foundation, the former gas purifier house, retort, coal storage area, machine shop area, naphtha storage tank area, and refuse wells. The property subsequently was converted to residential use. NYSEG purchased the property, consisting of three separate parcels between 1936 and 1994. In 1994 NYSEG razed the dwelling, and currently only a privately owned garage and a NYSEG storage building occupy the site. NYSEG conducted a Task 1 Site Screening Investigation in 1991 and a Task 2 Site Investigation in 1993. During the Task 2 Investigation a small area containing purifier waste was observed and removed by hand excavation and off-site disposal. Subsequent soil sampling in that area showed no remaining contamination.

1.2.3 Geologic Conditions

The overburden was found to consist of fill materials which overlie heterogeneous glacial till. The fill is composed of brick fragments, clinker, ash, coal, and lime in a matrix of silt, sand, and gravel and is covered by a thin layer (generally a few inches thick) of topsoil and sod. The thickness of the fill ranges from less than 2 feet to approximately 16 feet in on-Site borings with fill thickness increasing in the eastern portion of the Site (above the stream bank). Native soil below the fill is glacial till composed of materials having variable grain size and density. The overall bulk composition of the till material is dense and consists of a fine-grained matrix; however, portions of the till have uniform grain size, are less dense, and occasionally include coarse sand size material. A Geologic Section is shown on Figure 2.

The water table is present approximately 9 to 13 feet below the ground surface of the Site. As a result, the majority of fill material is unsaturated. Groundwater flows through the till in an eastward direction toward Jacobs Brook with a horizontal hydraulic gradient of approximately 0.016. Hydraulic conductivity values are considered low to moderate ranging from 1.0×10^{-6} cm/s (MW-5) to 5.4×10^{-3} cm/s (MW-2). As would be expected, the wide range of values is

reflective of the heterogeneity of till composition. Shallow groundwater at the Site discharges to Jacobs Brook. Groundwater that discharges to the Brook will flow with surface water to the south for approximately 1/2 mile to the Brook's confluence with the Keuka Lake Outlet. A groundwater contour map is shown on Figure 3.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the Site. The results of the RI are described in detail in the following reports:

- Atlantic Environmental Services, Inc., "Jackson Street Manufactured Gas Plant Site Task I Screening Report, Penn Yan New York" dated May 1991
- Atlantic Environmental Services, Inc., "Jackson Street Manufactured Gas Plant Site Task II Site Investigation Report, Pen Yan New York" dated June 1993
- Geomatrix, "Final Remedial Investigation Report - Jackson Street Former Manufactured Gas Plant (MGP) Site (NYSDEC Site # 862008) Penn Yan, New York" dated February 2009.
- Geomatrix, correspondence to NYSDEC transmitting supplemental surface soil sampling results for the Jackson Street Former Manufactured Gas Plant (MGP) Site (NYSDEC Site # 862008) Penn Yan, New York" dated August, 21, 2009.

Below is a summary of Site conditions when the RI was performed. A tabular summary of the nature and extent of MGP-related constituents detected during the RI is provided in Table 1.

Soil

Surface and Shallow Soil: PAHs and certain metals were detected at slightly elevated concentrations relative to Unrestricted Use SCOs in surface soil samples collected from the Site. Metals were not detected above Restricted Use SCOs for commercial property. Supplemental sampling was conducted and results indicate that the elevated metals concentrations, above the Unrestricted Use SCOs, are attributed to the historic fill placed during the early 1900s.

Subsurface Soil: Elevated concentrations of BTEX and PAHs were detected in some soil samples collected from subsurface soils in the area of the former MGP buildings and the gas holder foundation. Impacted soils as evidenced by sheens and/or elevated PID readings (volatile compounds detected at 20 ppm or higher) were identified in the saturated zone at boring locations BH-1, BH-2, BH-7, BH-10, BH-11, BH-17, BH-22, and BH-24. Among these locations, total BTEX concentrations were detected above 10 mg/kg at borings BH-1, BH-2, and BH-7. Individual BTEX compounds were not detected above Restricted Use SCOs for

commercial property in subsurface soil. Total PAHs were detected above 500 mg/kg at boring BH-2. No other samples contained total PAHs above 500 mg/kg. Individual PAH compounds were present at concentrations above Restricted Use SCOs for commercial property at only a few boring and test pit locations.

Groundwater

Organic compounds (BTEX, styrene, and several PAHs) and total cyanide were detected in groundwater above groundwater standards at some well locations. The highest concentrations were detected at well MW-4S located downgradient from the former refuse wells and MGP buildings. The groundwater impacts were substantially less in the deeper well at that location indicating groundwater impacts near the Brook are limited primarily to the upper 20 to 30 feet of the saturated zone. Dissolved oxygen concentrations are sufficiently high to indicate biodegradation of petroleum compounds in groundwater is likely occurring.

Jacobs Brook Sediment and Surface Water: Sampling results of Jacobs Brook surface water and sediment, the receptor of groundwater discharge from the Site, indicate no significant impact from the Site.

Site Related Soil Vapor Intrusion: The SVI investigation of the adjacent home indicated that no actions were necessary to reduce exposure to volatile Site-related COPCs via inhalation of vapors. No on-site soil vapor intrusion evaluation was conducted because there are no occupied structures on the site.

1.4 SUMMARY OF REMEDIAL ACTIONS

The following is a summary of the ROD-specified remedy for the site:

- Maintenance of the existing site cover (grass/turf)
- Imposition of institutional controls in the form of an environmental easement
- Development and implementation of a Site Management Plan
- Periodic certification of institutional and engineering controls

Specific to this SMP, long term management of on-Site contaminants as required by the ROD includes plans for:

- Institutional and Engineering Controls;
- Site Monitoring and Maintenance; and

- Reporting

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

The following sections outline the Engineering and Institutional Controls at the Site.

2.1.1 General

Since contaminated soil and groundwater exist beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- 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 features 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 Excavation Work Plan for the proper handling of contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

A site cover consisting of thick, well-maintained turf currently exists and will be maintained to allow for the current use of the site. In addition to turf, two storage buildings cover the surface of the site. If the site is redeveloped in the future, an equivalent cover system will be established which will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). In areas where such a soil cover is required, it will consist of a minimum of one foot of soil, meeting the SCOs for

cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d). The Excavation Work Plan that appears in Appendix B outlines the procedures required to be implemented in the event work activities penetrate surface soils. Procedures for the inspection and maintenance of the ground surface cover are provided in the Site Monitoring Plan included in Section 3.0 of this SMP.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls are required by the ROD to:

- implement, maintain and monitor Engineering Control systems;
- prevent future exposure to contamination by controlling disturbances of the subsurface contamination; and,
- limit the use and development of the site for non-residential use only.

Adherence to these Institutional Controls on the site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns
- All Engineering Controls must be operated and maintained as specified in this SMP
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP
- Groundwater monitoring must be performed as defined in this SMP
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Restrictions that apply to the three parcels comprising the site (herein referred to as the controlled property) are:

- Imposition of an institutional control in the form of an environmental easement that:
    (a) requires the site owner (NYSEG) to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);

(b) allows the use and development of the controlled property for commercial or industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

(c) restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or County DOH;

(d) prohibits agriculture or vegetable gardens on the controlled property; and

(e) requires compliance with the Department approved Site Management Plan.

- The site owner will submit to NYSDEC a written statement that certifies, under penalty of perjury, that:

(a) controls employed at the controlled property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and,

(b) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP.

NYSDEC retains the right to access such controlled property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Work Plan

Any future intrusive work that will penetrate the cover soil or encounter or disturb contaminated soil will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix B to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) the Community Air Monitoring Plan (CAMP) and the Odor Management Plan (OMP). The CAMP and OMP are provided as Attachments to the EWP. Based on possible future changes to State and federal health and safety requirements and specific methods employed by future contractors, a site-specific HASP will be prepared by the contractor and submitted with any updates or revisions to the CAMP or OMP as specified by notification requirements in the EWP. Any intrusive construction work will be performed in compliance with the EWP and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 4.0).

The site owner 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 materials and de-watering operations, control of runoff from open excavations, and for structures that may be affected by excavations (such as building foundations). The site

owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluation

Prior to the construction of any enclosed structures located on the subject, an SVI evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation.

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. This work plan will be developed in accordance with the most recent (2006) NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York". 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 (unvalidated) 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. If the property is owned by a third party, include the following: Validated SVI data will be transmitted to the property owner within 30 days of validation. SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of the site cover and monitoring wells will be conducted at the frequency specified in the SMP monitoring plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;

- If site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system.

Inspections will be conducted in accordance with the procedures set forth in the Monitoring and Maintenance Plan of this SMP (Section 3.0). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 4.0).

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

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Order on Consent, 6NYCRR Part 375, and/or Environmental Conservation Law.
- 10-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls 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.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site 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 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 site, the new owner's name, contact representative, and contact information will be confirmed in writing

2.5 CONTINGENCY PLAN

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

2.5.1 Emergency Telephone Numbers

In the event of an emergency appropriate emergency response personnel should be contacted. Prompt contact should also be made to NYSEG. These emergency contact lists must be maintained in an easily accessible location at the site.

Emergency Contact Numbers	
Medical, Fire, and Police	911
One Call Center Underground Facilities Protection Organization	811 or (800) 962-7962 (3 day notice required for utility markout)
Poison Control Center	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Site Contact Numbers	
New York State Electric and Gas	(607) 762-8839

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

2.5.2 Map and Directions to Nearest Health Facility

Site Location: Linden Street, Penn Yan, New York

Nearest Hospital Name: Soldiers and Sailors Memorial Hospital

Hospital Location: 418 N Main St, Penn Yan, NY 14527

Hospital Telephone: (315) 531-2000

Directions to the Hospital:

1. Head northwest on Linden St toward Mill St
2. Turn left onto North Ave

Total Distance: 0.3 miles

Total Estimated Time: 1 minute

3.0 SITE MONITORING AND MAINTENANCE PLAN

3.1 INTRODUCTION

3.1.1 General

The Site Monitoring and Maintenance Plan provides a description of measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site and soil cover existing at the site.

This Monitoring and Maintenance Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose

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

- Sampling and analysis of groundwater at the Site;
- Sampling and analysis of sediment and pore water adjacent to the Site in Jacobs Brook
- Evaluation of soil vapor intrusion;
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards and Part 375 SCOs for soil;
- Assessing achievement of the remedial performance criteria.
- Evaluating site information periodically to confirm that the cover soil continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

The groundwater monitoring program and soil cover maintenance and inspection program are described below.

3.2 GROUNDWATER MONITORING PROGRAM (GWMP)

The Site groundwater monitoring system consists of a network of monitoring wells installed at locations shown on Figure 1 in Appendix B, Groundwater Monitoring Plan. The assessment of groundwater quality and natural attenuation processes will be evaluated through the collection of groundwater samples from the network. In addition, sediment and pore water will be monitored on a routine basis to evaluate the potential for off-site migration of site contaminants in groundwater.

3.2.1 Components of GWMP

Details of the GWMP are provided in the groundwater monitoring plan for the site (see Appendix C). The plan summarizes the following information:

- Sampling locations, protocol, and frequency;
- Monitoring well construction logs;
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells, and;
- Monitoring well decommissioning procedures.

3.2.2 Groundwater Monitoring Schedule

Groundwater at the Site will be sampled once every 15 months to rotate the sampling event on a seasonal basis. Sediment and pore water sampling of Jacobs Brook will be performed at a frequency of every 3 years.

3.3 COVER SYSTEM MAINTENANCE AND MONITORING

The cover system at the Site is an engineering control as outlined in the ROD, and consists of the existing soil cover and the associated vegetation (trees, shrubs and grass). The goal of the Site's cover system is to eliminate direct contact with underlying soil and to prohibit erosion and potential migration of constituents in deeper soil. The cover system requires inspection and maintenance to ensure the continued effectiveness of the remedy. The cover system maintenance and inspection criteria are described below.

3.3.1 Components of the Soil Cover Maintenance and Inspection Plan

Maintenance of the soil cover will consist of:

- Mowing of the grass cover;
- Maintenance of trees/shrubs across the Site (including the removal of downed or broken limbs, or dead vegetation)

The soil cover and bank of Jacobs Brook will be inspected and photographed to evaluate and document any degradation of the ground surface. This inspection will include evaluation of:

- the integrity of the grass cover, including the presence of any stressed or dead vegetation;
- the presence of any erosional features on the grass-covered areas, and along the slope of Jacobs Brook including slumping of side slopes, and;
- the presence of any burrowing animals which may negatively influence the integrity of the soil cover.

3.3.2 Soil Cover Maintenance and Inspection Schedule

The vegetative cover will be maintained on a routine schedule to be determined by the need to maintain the grass at a length typical of a residential lawn. The inspection of the soil cover system will be conducted on an annual basis.

3.4 SOIL VAPOR INTRUSION INVESTIGATION

A soil vapor intrusion (SVI) evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in any occupied structure proposed for the site. Alternatively, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation.

Prior to conducting an SVI investigation, a work plan will be developed per the most recent (2006) NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York" and submitted to the NYSDEC and NYSDOH for approval. Work plan implementation will generate SVI sampling data. Preliminary (unvalidated) 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. If the property is owned by a third party, the validated SVI data will be transmitted to the property owner within 30 days of validation. SVI sampling results, evaluations, and follow-up actions will also be summarized in the Periodic Review Report described in Section 4.3.

3.5 MONITORING AND MAINTENANCE DOCUMENTATION

A groundwater monitoring methods and results will be documented in groundwater monitoring reports as described in Appendix B. The results of the visual inspection of the soil cover will be recorded on Table 2. The documentation will be submitted to the NYSEC as described in Section 4.0.

3.6 DURATION OF SITE MONITORING AND MAINTENANCE PLAN

The maintenance and monitoring of the groundwater and cover soil systems will be conducted for the first 10 years. The frequency thereafter will be determined by NYSDEC. Trends in contaminant levels in groundwater in the affected areas will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Inspection and sampling frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the groundwater monitoring network has been reported or an emergency occurs that is deemed likely to affect the integrity of the soil cover.

4.0 INSPECTIONS, REPORTING AND CERTIFICATIONS

4.1 SITE INSPECTIONS

4.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3.0 of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of site will also be conducted whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

4.1.2 Inspections, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate field forms. All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

4.1.3 Evaluation of Records and Reporting

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

- EC/ICs are in place, are performing properly, and remain effective;
- The Groundwater Monitoring Program is being implemented;
- Maintenance activities are being conducted properly; and,
- The site remedy continues to be protective of public health and the environment.

4.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period, a qualified environmental professional will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- *The inspection of the site 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 this site is unchanged from the date the control was put in place, or last approved by the Department;*

- *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 site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site 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 site remedial program [and generally accepted engineering practices]; and*
- *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 [Site's Designated Representative]: [I have been authorized and designated by all site owners to sign this certification] for the site.*

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

For the institutional control identified for the site, I certify that all of the following statements are true:

- *The institutional control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*
- *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 site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site is compliant with the environmental easement.*

- *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's Designated Site Representative]*
- *No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and*
- *The assumptions made in the qualitative exposure assessment remain valid.*

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

4.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every year, beginning eighteen months after the Certificate of Completion is issued. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix A (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. Media sampling results will also incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;

- A site evaluation, which includes the following:

    1. The compliance of the remedy with the requirements of the site-specific ROD;
    2. Any new conclusions or observations regarding site contamination based on inspections or data generated by the Groundwater Monitoring Plan;
    3. Recommendations regarding any proposed changes to the Monitoring and Maintenance Plan; and
    4. The overall performance and effectiveness of the remedy.

4.4 CORRECTIVE MEASURES 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 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 plan until it is approved by the NYSDEC.

TABLES

TABLE 1
NATURE AND EXTENT OF DETECTED CONSTITUENTS
JACKSON STREET FORMER MGP SITE
Site Management Plan

	Constituents of Concern	Concentration Range Detected (ppm)[1]	SCG[2] (ppm)	Frequency Exceeding SCG
Surface Soil				
SVOCs[3]	Benzo(a)anthracene	0.56 - 7.5	1	12 of 15
	Benzo(b)fluoranthene	0.89 - 13	1	12 of 15
	Benzo(k)fluoranthene	ND[4] - 1.8	0.8	5 of 15
	Benzo(a)pyrene	0.58 - 8.2	1	12 of 15
	Chrysene	0.53 - 6.9	1	11 of 15
	Dibenzo(a,h)anthracene	ND - 1.9	0.33	11 of 15
	Indeno(1,2,3-cd)pyrene	0.38 - 5.6	0.5	14 of 15
Inorganic Compounds	Arsenic	3.2 - 21.2	13	2 of 11
	Copper	14.5 - 59.5	50	2 of 11
	Lead	138 - 780	63	11 of 11
	Mercury	0.193 - 0.959	0.18	11 of 11
	Zinc	80.4 - 419	109	10 of 11
Background Surface Soil				
SVOCs	Benzo(a)anthracene	0.71 - 2.4	1	1 of 3
	Benzo(b)fluoranthene	0.9 - 3	1	2 of 3
	Benzo(k)fluoranthene	0.33 - 1.3	0.8	1 of 3
	Benzo(a)pyrene	0.77 - 2.8	1	2 of 3
	Chrysene	0.81 - 2.6	1	1 of 3
	Dibenzo(a,h)anthracene	0.16 - 0.62	0.33	1 of 3
	Indeno(1,2,3-cd)pyrene	0.52 - 5.6	0.5	3 of 3
Inorganic Compounds	Lead	76.4 - 263	63	3 of 3
	Mercury	0.114 - 0.264	0.18	2 of 3
	Nickel	17.6 - 49.2	30	1 of 3
	Zinc	72.4 - 275	109	2 of 3
Subsurface Soil				
VOCs[5]	Benzene	ND - 22	0.06	11 of 27
	Ethylbenzene	ND - 2.6	1	2 of 27
	Total Xylenes	ND - 5.8	0.26	5 of 27
	Total BTEX	ND - 22.01	10	2 of 27
SVOCs	Benzo(a)anthracene	ND - 9.4	1	7 of 31
	Benzo(b)fluoranthene	ND - 18	1	8 of 31
	Benzo(a)pyrene	ND - 12	1	8 of 31
	Chrysene	ND - 9.2	1	8 of 31
	Dibenzo(a,h)anthracene	0.11 - 2.3	0.33	1 of 31
	Indeno(1,2,3-cd)pyrene	ND - 7.5	0.5	8 of 31
	Naphthalene	ND - 19	12	2 of 31

TABLE 1
NATURE AND EXTENT OF DETECTED CONSTITUENTS
JACKSON STREET FORMER MGP SITE
Site Management Plan

	Constituents of Concern	Concentration Range Detected (ppm)	SCG (ppm)	Frequency Exceeding SCG
Sediments				
VOCs	None Detected	NA[6]	NA	NA
SVOCs	Benzo(b)fluoranthene	0.35 - 4.6	1.3	1 of 3
	Benzo(k)fluoranthene	0.11 - 4.9	1.3	1 of 3
	Benzo(a)pyrene	0.22 - 2.6	1.3	1 of 3
	Chrysene	0.2 - 2.7	1.3	1 of 3
	Dibenzo(a,h)anthracene	0.044 - 0.49	0.0634	1 of 3
	Total PAHs	1.97 - 34.72	4	1 of 3
Inorganic Compounds	Copper	7.1 - 23.4	16	1 of 3
	Nickel	6.8 - 17.7	16	1 of 3
Background Sediments				
VOCs	None Detected	NA	NA	NA
SVOCs	Benzo(b)fluoranthene	0.11 - 5	1.3	1 of 8
	Benzo(a)pyrene	0.059 - 2.5	1.3	1 of 8
	Chrysene	0.57 - 3.1	1.3	1 of 8
	Dibenzo(a,h)anthracene	0.014 - 0.66	0.0634	7 of 8
	Total PAHs	0.441 - 30.6	4	5 of 8
Inorganic Compounds	Copper	13.3 - 25.3	16	4 of 8
	Lead	11.7 - 34.7	31	1 of 8
	Manganese	286 - 386	460	2 of 8
	Nickel	6.8 - 17.7	16	1 of 8
	Zinc	53.8 - 139	120	1 of 8

	Constituents of Concern	Concentration Range Detected (ppb)[7]	SCG (ppb)	Frequency Exceeding SCG
Groundwater				
VOCs	Benzene	ND - 960	1	4 of 8
	Toluene	ND - 88	5	1 of 8
	Total Xylenes	ND - 720	5	2 of 8
SVOCs	Benzo(a)anthracene	0.3 - 0.8	0.002	2 of 8
	Benzo(b)fluoranthene	ND - 0.7	0.002	2 of 8
	Benzo(k)fluoranthene	ND - 0.2	0.002	1 of 8
	Benzo(a)pyrene	ND - 0.8	0.002	1 of 8
	Chrysene	ND - 0.4	0.002	2 of 8
	Indeno(1,2,3-cd)pyrene	ND - 0.5	0.002	2 of 8
	Naphthalene	ND - 3200	10	2 of 8
Inorganic Compounds	Iron, Total	ND - 761	300	5 of 8
	Manganese, Total	ND - 756	300	2 of 8
	Total Sodium	1880 - 53,400	20,000	4 of 8

TABLE 1
NATURE AND EXTENT OF DETECTED CONSTITUENTS
JACKSON STREET FORMER MGP SITE
Site Management Plan

	Constituents of Concern	Concentration Range Detected (ppb)	SCG (ppb)	Frequency Exceeding SCG
Surface Water				
VOCs	None Detected	NA	NA	NA
SVOCs	None Detected	NA	NA	NA
Inorganic Compounds	Iron, Total	307 - 354	300	4 of 4

Notes:

[1]ppm = parts per million, which is equivalent to milligrams per kilogram (mg/kg), in soil.

[2]SCG = *standards, criteria, and guidance values*.
Soil guidance values are from 6NYCRR Part 375 Table 6.8(a): Unrestricted Soil Cleanup Objectives;
Sediment Criteria are from NYSDEC Technical Guidance for Screening Contaminated Sediments dated Novermber 22, 1993 and January 1999 update;
Guidance values for water are from 6NYCRR Part 703: Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitation, for Class GA Waters presented in TOGS 1.1.1 June 1998.

[3]SVOCs = semivolatile organic compounds.

[4]ND = non-detect.

[5]VOCs = volatile organic compounds.

[6]NA = not applicable.

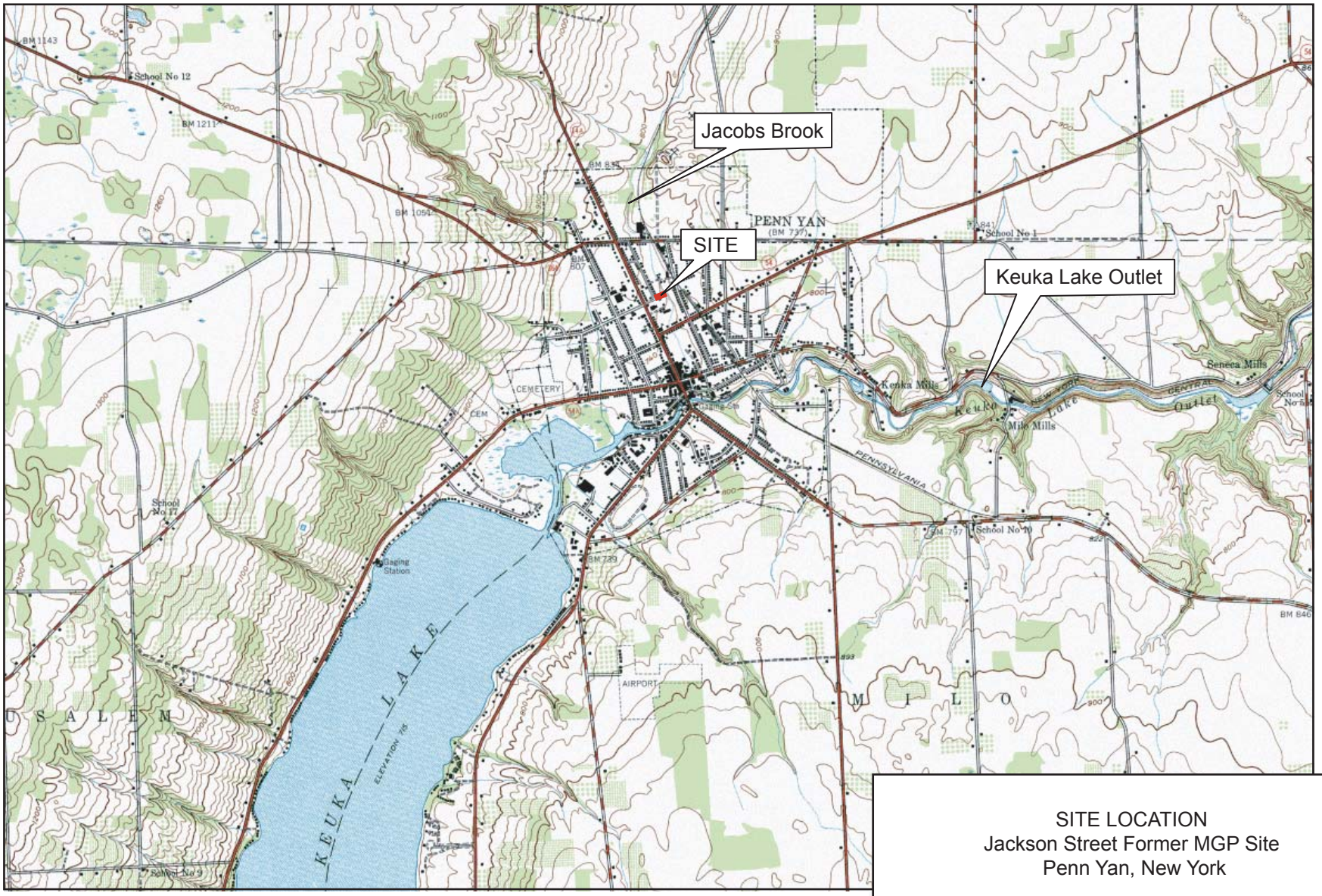
[7]ppb = parts per billion, which is equivalent to micrograms per liter (µg/L), in water.

Table 2
SOIL COVER INSPECTION AND MAINTENANCE LOG
JACKSON STREET FORMER MGP SITE
Site Management Plan

Inspection Date	Inspector	Condition of Soil Cover	Condition of Jacobs Brook Side Slope	Recommendations	Has recommended maintenance from previous inspection been implemented?

FIGURES

I:/Project/12993 Penn Yan Former MGP Site RI/ Figures/ Figure 1 Site Location Map.pdf



SITE LOCATION
Jackson Street Former MGP Site
Penn Yan, New York

By: MAC	Date: 7/2011	Project No. 12993
AMEC Geomatrix		Figure 1A

MW-3A

Linden Street Residence

Split-Rail Fence

APPROX. PROPERTY LINE

MW-4S

MW-4D

TREES

Jacobs Brook

TREES

MW-1

TREES/ BRUSH

top of slope (approximate)

SIDEWALK

GARAGE

GARAGE

ASPHALT DRIVE

MW-6

TREES

TREES/ BRUSH

MW-5

APPROX. PROPERTY LINE

ASPHALT PARKING LOT

MW-2D

MW-2S

EXPLANATION

Monitoring Well Location

N

0 50

Scale (feet, approximate)

Basemap modified from drawing No. JACKSON, provided by NYSEG Engineering Services, Binghamton, NY, November, 1007.

SITE LAYOUT
Jackson Street Former MGP Site
Penn Yan, New York

By: MAC	Date: 7/2011	Project No. 12993
AMEC Geomatrix		Figure 1B

Put network path and drawing No. information here

West
A

East
A'

MW-1
TP-11
BH-24
BH-10 (proj 18' S)
BH-2
TP-10
TP-9
TP-8
MW-4D
MW-4S

Fill
Sand and Silt
Silty Clay
Sand and Silt
Silty Clay
Till
Fill
Jacobs Brook

744.06
740.53
740.75
739.03

Elevation (feet)

760
750
740
730
720
710
700

0 20 40 60 80 100 120 140 160 180 200 220 240

Distance (feet)

Soil Boring

Monitoring Well

screened interval

740.06 Groundwater Elevation 11/27/08

Zone of MGP impact in soil

Soil Sample interval for laboratory analysis

Silty Clay
Fill
Till
Sand and Silt
Coarse Sand
Sand and Gravel

GEOLOGIC CROSS SECTION A-A'
Jackson Street Former MGP Site
Penn Yan, New York

By: MAC	Date: 7/2011	Project No. 12993.000
AMEC Geomatrix	Figure 2	

S:\12900\12993\12993.000\task_107_1213_wpi_fig_a.ai

MW-3A
(741.25)

744
743
742
741

APPROX. PROPERTY LINE

Linden Street
Residence

Split-Rail Fence

MW-4S
(740.75)
MW-4D
(740.53)

TREES

Jacobs Brook

TREES

top of slope (approximate)

MW-1
(744.06)

TREES/ BRUSH

SIDEWALK

GARAGE

GARAGE

ASPHALT
DRIVE

MW-6
(740.10)

TREES

TREES/ BRUSH

MW-5
(740.96)

APPROX. PROPERTY LINE

ASPHALT
PARKING LOT

MW-2D
(742.71)

MW-2S
(742.20)

EXPLANATION

- Monitoring Well Location
- 743 — Groundwater Elevation Isocontour (fasl)
- (744.06) Groundwater Elevation (fasl)
- Groundwater Flow Direction

N

0 50

Scale (feet, approximate)

Basemap modified from drawing No. JACKSON, provided by NYSEG Engineering Services, Binghamton, NY, November, 1007.

GROUNDWATER CONTOUR MAP
Jackson Street Former MGP Site
Penn Yan, New York

By: MAC	Date: 7/2011	Project No. 12993
AMEC Geomatrix	Figure 3	

Put network path and drawing No. information here

APPENDIX A

Metes and Bounds

REFERENCES

1) VILLAGE OF PENN YAN TAX MAP NO. 49.59
2) DRAWING TITLED "BOUNDARY & TOPOGRAPHIC SURVEY PENN YAN, NY, JACKSON STREET 5 - 11 LINDEN STREET" BY S.Y. KIM PLS DATED JAN. 16, 1991, JOB NO. 5Y-216-90.
3) MAP FILED AT THE YATES COUNTY CLERKS OFFICE TITLED "PLAN OF LAND OWNED BY STEPHEN LIZZI TO BE CONVEYED TO NYSE&G CORPORATION" BY WILLSON & ASSOCIATES DATED MARCH 7, 2001. JOB NO. 94-011A AT MAP 01-38.
4) MAP FILED AT THE YATES COUNTY CLERKS OFFICE TITLED "PLAN OF LAND TO BE CONVEYED BY LAURENCE M. MICKELSON & SHERI KNAPTON" BY WILLSON & ASSOCIATES DATED MARCH 23, 1994. JOB NO. 94-011 AT MAP 01-38.
5) DEEDS RECORDED IN THE YATES COUNTY CLERK'S OFFICE
LIBER 306 PAGE 211 FILED NOVEMBER 30, 1981
LIBER 447 PAGE 328 FILED MARCH 7, 2001
LIBER 343 PAGE 506 FILED JULY 31, 1987
LIBER 381 PAGE 892 FILED JUNE 1, 1994
LIBER 383 PAGE 917 FILED DECEMBER 9, 1994

LEGEND

GEOTECH DRILL HOLE
UTILITY POLE
DRAINAGE STRUCTURE
WATER VALVE
FOUND IRON PIPE
SPOT ELEVATION
POST
FOUND IRON PIN
SIGN
LIGHT POLE
DECIDUOUS TREE
CONTROL PROP

GRAVEL DRIVEWAY
EDGE OF PAVEMENT
CENTERLINE
SIDEWALK
FENCE
BREAKLINE
GUY WIRE
CONCRETE
BUILDING
HB ROW
℄ PROP LINE
OE OVERHEAD ELEC

LOCATION MAP

CERTIFY TO: AMEC GEOMATRIX, INC., THE PEOPLE OF THE STATE OF NEW YORK ACTING THROUGH ITS COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION THE TITLE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "SURVEY REQUIREMENTS" AS DEFINED PER NYSDEC AS PART OF AN ENVIRONMENTAL EASEMENT PACKAGE.

WE, LABELLA ASSOCIATES PC, CERTIFY THAT THIS MAP WAS PREPARED USING REFERENCE MATERIAL AS LISTED HEREON AND FROM FIELD NOTES OF AN INSTRUMENT SURVEY COMPLETED JUNE, 2011. THESE PARCELS ARE SUBJECT TO ANY EASEMENTS OR ENCUMBRANCES OF RECORD.

MICHAEL W. HALEY PLS
NYS PLS NO. 049788

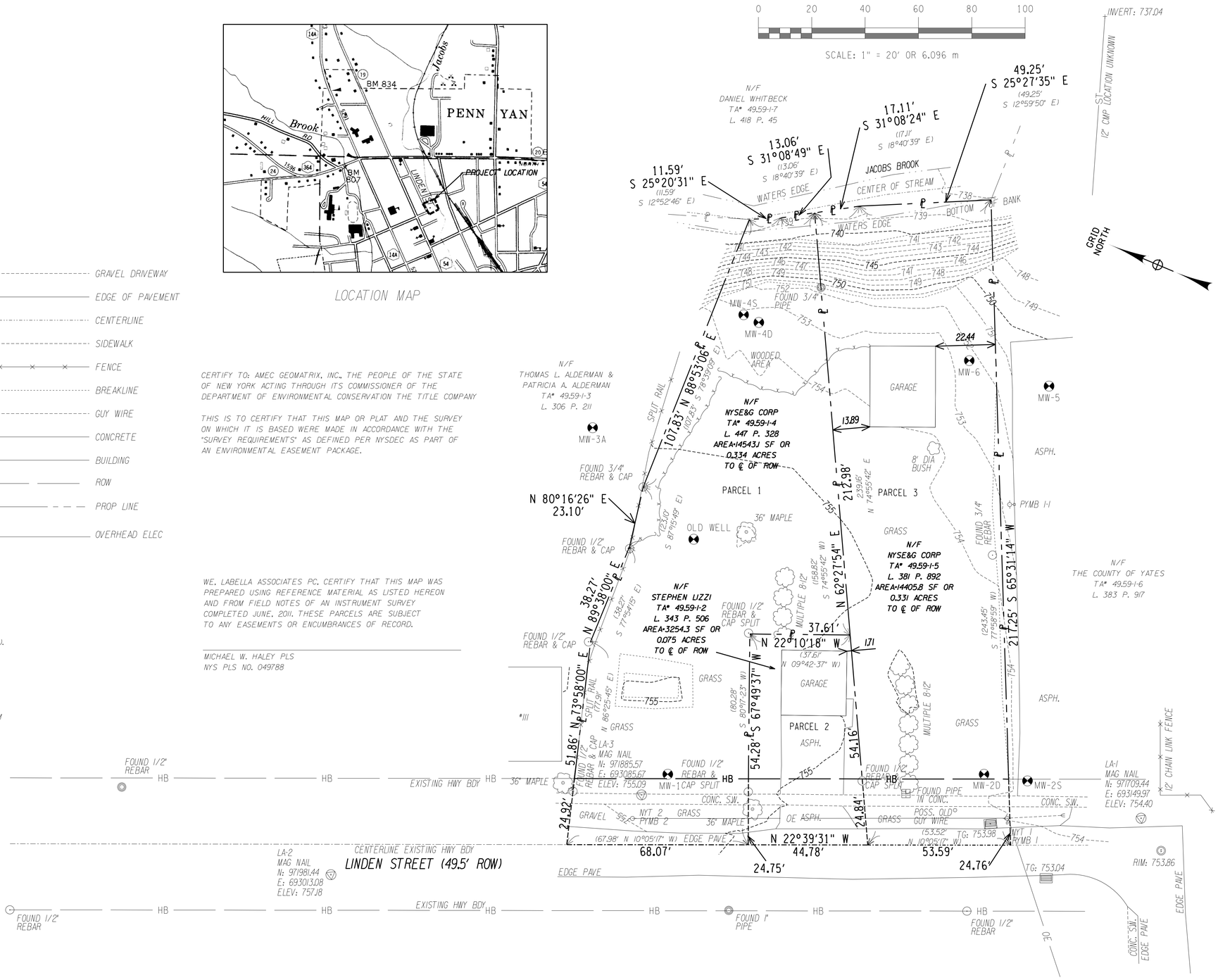
SURVEY NOTES

1) THE HORIZONTAL DATUM IS REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM CENTRAL ZONE NAD 83 (1996). OBTAINED BY RTK GPS CONNECTED TO THE NYSNET NETWORK.

2) THE VERTICAL DATUM IS REFERENCED TO NAVD 88.

3) UTILITIES SHOWN ARE PLOTTED FROM DATA PER DSNY.

4) DISTANCES AND BEARINGS SHOWN IN PARENTHESES () ARE FROM MAPS RECORDED IN YATES COUNTY CLERK'S OFFICE LIBER 17 OF MAPS PAGE 481 AND MAP M01-38



NO.	BY	DATE
1		
2		
3		
4		
5		
6		

LABELLA Associates, P.C.
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PROJECT/CLIENT
PENN YAN
FORMER MGP SITE
BOUNDARY AND
TOPOGRAPHIC SURVEY
AMEC GEOMATRIX, INC.
90 B JOHN MUIR DRIVE
AMHERST, NY
14228

DRAWING TITLE
SURVEY

DESIGNED BY: CDS
DRAWN BY: DDN
REVIEWED BY: MWH

ISSUED FOR
DRAFT
DATE: JUNE 2011

PROJECT DRAWING NUMBER
211435

1

6/15/2011 11:38:46 AM Inst Map 2D.dgn

APPENDIX B

Excavation Work Plan

EXCAVATION WORK PLAN

Jackson Street Former MGP Site

Submitted to:

NYSEG, Binghamton, New York

Submitted by:

AMEC Geomatrix, Inc., Amherst, New York

December 2011

Project 12993

AMEC Geomatrix

TABLE OF CONTENTS

ATTACHMENTS

APPENDIX B
EXCAVATION WORK PLAN
Jackson Street Former MGP Site
Penn Yan, New York

1.0 NOTIFICATION

At least 10 days prior to the start of any activity that is anticipated to encounter subsurface soils, the site owner or their representative will notify the Department. Currently, this notification will be made to:

Mr. Hank Willems
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7017
(518) 402-9662

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control,
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated 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 - simple excavations may only require compliance with a portion of the EWP. For example, excavation of a small volume of soil from above the water table that is directly loaded for off-site disposal would not require the stockpiling or fluids management provisions of this plan.
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120,
- A copy of the contractor's health and safety plan, in electronic format.
- Identification of disposal facilities for potential waste streams,
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) the Community Air Monitoring Plan (CAMP) and the Odor Management Plan (OMP). The CAMP and OMP are provided as Attachments to this EWP. Based on possible future changes to State and federal health and safety requirements and specific methods employed by future contractors, a site-specific HASP will be prepared by the contractor and submitted with any updates or revisions to the CAMP or OMP.

2.0 SOIL SCREENING METHODS

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations at the site. Visual and olfactory evidence of impacts to soils include staining or sheens to soil, discoloration (e.g., "Prussian Blue" color), or a petroleum/naptha type odor accompanying soil will be documented. Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the certification of completion.

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

3.0 STOCKPILE METHODS

Soil excavation projects electing to use stockpile methods rather than direct load and haul are subject to the following:

- A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and stockpiling of all excavated material.
- The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.
- The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.
- 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 at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

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

4.0 MATERIALS EXCAVATION AND HAUL OUT

Soil excavation projects electing to use direct load and haul out rather than stockpile methods are subject to the following:

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

- The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

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

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

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

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

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

5.0 MATERIALS TRANSPORT OFF-SITE

Trucks hauling material from the site are subject to the following:

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

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

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

- All trucks loaded with site materials will exit the vicinity of the site from Linden Street to Court Street. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) prohibiting off-site queuing of trucks entering the facility; and (c) overall public safety in transport.

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

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

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

6.0 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site must not occur without formal NYSDEC approval.

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

waste profiles; test results; facility acceptance letters; manifests, bills of lading; and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

7.0 MATERIALS REUSE ON-SITE

Some on-site subsurface soils contain COCs at concentrations above Part 375 SCOs for unrestricted property use. The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site or on-site above the existing soil cover. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site will be placed below the soil cover and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

8.0 FLUIDS MANAGEMENT

Excavation dewatering fluids will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

9.0 SOIL COVER RESTORATION

After the completion of soil removal and any other invasive activities the soil cover will be restored in a manner that complies with Record of Decision. If the type of soil cover changes from that which exists prior the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy. A figure showing the modified

surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

10.0 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site. Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site. All imported soils will meet the backfill and soil cover 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 soil cover objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

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

11.0 STORM WATER POLLUTION PREVENTION

Storm water pollution prevention measures will be undertaken during intrusive activities. 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 site and available for inspection by 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.

12.0 CONTINGENCY PLAN

If previously unidentified contaminant sources are found during subsurface excavations (assumed to be non-MGP related), excavation activities will be suspended until sufficient equipment is mobilized to address the condition. Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone and email 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 reports prepared pursuant to Section 4.0 of the SMP.

13.0 COMMUNITY AIR MONITORING PLAN

The Community Air Monitoring Plan for the Former Jackson Street MGP Site is provided in Attachment 1 and is applicable to intrusive activities conducted at the site.

14.0 ODOR MANAGEMENT PLAN

The Odor Management Plan for the Former Jackson Street MGP Site is provided in Attachment 2 and is applicable to intrusive activities that produce odors.

15.0 DUST CONTROL PLAN

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

- Dust suppression will be achieved through water spraying onto 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.

On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

16.0 OTHER NUISANCES

The following items may be necessary depending on the type of wastes present, the location of the site and other site-specific concerns. These plans are generally not required for submission to NYSDEC.

- A plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work.

- A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

ATTACHMENT 1

Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN

Jackson Street Former MGP Site

Submitted to:

NYSEG, Binghamton, New York

Submitted by:

AMEC Geomatrix, Inc., Amherst, New York

December 2011

Project 12993

AMEC Geomatrix

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ATTACHMENTS

ATTACHMENT 1
Jackson Street Former Manufactured Gas Plant (MGP) Site
Penn Yan, New York
Community Air Monitoring Plan

1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been prepared for the Jackson Street Manufactured Gas Plant (MGP) site (the "site") located in Penn Yan, New York. This CAMP fulfills the general requirements set forth by the New York State Department of Health (NYSDOH) Generic Air Monitoring Plan, dated June 20, 2000 (Attachment 1), and the NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4031, "Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites", dated October 27, 1989 (Attachment 2).

The CAMP requires real-time monitoring for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and airborne particulates (i.e., dust). Particulate monitoring will not be performed, however, during non-intrusive activities and precipitation events.

The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, the air monitoring activities described in this CAMP will be conducted to confirm that the downwind community will not be adversely impacted during site activities from potential airborne releases of constituents of concern. The CAMP establishes action levels for VOCs and airborne particulates that may trigger emission control actions. The action levels specified herein require increased monitoring, corrective measures to abate emissions, and/or shutdown of work activities if action levels are exceeded. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

Community air monitoring shall be integrated with the construction worker personal exposure monitoring program contained in the site-specific Health and Safety Plan (HASP) to be developed by the contractor. In addition, this CAMP specifies the potential air emissions, air monitoring procedures, monitoring schedule, and data collection and reporting for the site characterization activities to be conducted as described herein.

2.0 AIR QUALITY MONITORING

2.1 GENERAL

Protection of off-site air quality from any on-site generated dust or VOCs is the objective of the air quality monitoring program. Air monitoring during site investigation activities will consist of real-time air quality monitoring for VOCs. If determined to be necessary based on field conditions encountered, the real-time air monitoring may be modified. Because real-time monitors for PAHs do not exist, the real-time VOC monitors will also serve as surrogate indicators of PAH emissions at the site.

A description of the air monitoring activities to be performed is presented in the following subsections.

2.2 METEOROLOGICAL MONITORING

Wind is the primary potential mechanism for off-site transport of dust or VOCs. Wind direction at the Site will be established at the start of each workday and may be reestablished at any time during the workday if a significant shift in wind direction is noted. If persistent on-site dust and VOC issues arise from work activities and more rigorous meteorological monitoring becomes necessary, a portable meteorological station will be utilized to record wind speed, direction, temperature, relative humidity, and barometric pressure.

2.3 REAL-TIME AIR QUALITY MONITORING

2.3.1 VOC and PAH Monitoring, Response Levels, and Actions

Air monitoring for VOCs will be monitored near the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis (or otherwise specified) during soil handling and ground intrusive activities. Ground intrusive activities include soil excavation for site improvements that disturb soil below the soil cover. In addition, air monitoring for VOCs will be conducted at one up wind locations at the start of each workday and periodically thereafter (i.e., twice per day or when wind directions change) to establish background conditions.

During non-intrusive site activities (i.e., site inspections, mowing, routine maintenance of the soil cover), monitoring for VOCs will not be necessary. However, periodic monitoring may be conducted if significant odors from coal tar or other MGP residuals occur from non-intrusive activities.

During intrusive activities, VOCs will be monitored using a photoionization detector (PID) with an appropriate electrodeless ultraviolet discharge lamp or other equivalent instrument. A

MiniRAE 2000 (or equivalent) will be used to conduct real-time VOC monitoring. The monitoring instruments will be calibrated at least once daily in accordance with the manufacturer's calibration and quality assurance (QA) requirements. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the action levels specified below.

- If the ambient air concentration of total VOCs at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background (upwind concentration) for 15-minute average, work activities will be temporarily halted and monitoring will continue. If the total organic vapor concentration decreases (per instantaneous readings) to a level less than 5 ppm above background, work activities can resume with continuous monitoring.

- If total VOC concentration s at the downwind perimeter of the work area persist at levels in excess of 5 ppm above background but less than 25 ppm, work activities must be halted the source of the vapors identified, corrective actions taken to abate emissions, and air monitoring will be continued. After the abatement steps are taken, work activities may resume provided that the total VOC concentration located 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure (whichever is less, but in no case less than 20 feet) is below 5 ppm over background for the 15-minute average.

- If the VOC level is above 25 ppm at the perimeter of the work area, the Site Safety and Health Officer (SSHO) must be notified and work activities must be shut down. The SSHO will determine when re-entry of the work zone is possible and will implement downwind air monitoring to ensure vapor emissions do not impact the nearest off0site residential or commercial structure. Air monitoring must be conducted upon restart to verify that total VOC concentrations at the downwind perimeter of the work area of the exclusion zone are less than 5 ppm above background.

All 15-minute readings must be recorded and be available for State Agencies (New York State Department of Environmental Conservation and New York State Department of Health) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

2.3.2 Particulate Monitoring, Response Levels, and Actions

Air monitoring for airborne particulates will be performed at the downwind location and one upwind location at the perimeter of the work area (i.e., the exclusion zone) on a continuous basis during soil handling and ground intrusive activities. Air monitoring for airborne particulates at the upwind location will be used to establish background conditions. Air monitoring and response levels/actions for airborne particulates will be performed in accordance with the NYSDEC's TAGM #4031.

Airborne particulates will be monitored using a particulate air monitor equipped with a data logger to measure and record real-time airborne particulate concentrations in milligrams per cubic meter (mg/m^3). A MIE DataRAM (or equivalent) will be used to conduct the real-time PM10 monitoring. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action levels. The monitoring equipment will be calibrated at least daily in accordance with the manufacturer's calibration requirements. The equipment must be equipped with an audible alarm to indicate exceedences of the action levels. In addition, fugitive dust migration should be visually assessed during all work activities. The particulate monitoring results will be compared with the action levels presented below.

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

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 ug/ m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are effective in reducing the downwind PM-10 particulate concentration to within 150 ug/ m^3 of the upwind level in preventing visible dust migration.

All air monitoring readings must be recorded and made available for the State Agencies personnel to review.

A fugitive dust suppression system will be in place and employed whenever soil handling and/or ground invasive activities have the potential to create an airborne hazard at remediation work areas. General dust suppression techniques may include applying water on haul road, wetting equipment and excavation areas, spraying water on buckets during excavation and dumping, restricting vehicle speeds, and immediately covering or wetting excavation areas. In addition to continuous monitoring, a common sense approach will be employed to address fugitive dust (i.e., if dust is visually observed to be leaving the work area and is not detected by the monitors, dust suppression techniques will be applied).

2.4 DOCUMENTATION AND REPORTING

Documentation of community air monitoring information will be required to provide written record of the air monitoring results and response actions taken, and to allow for verification

that the program was followed in accordance with the Community Air Monitoring Plan. Monitoring information will be recorded on appropriate. The following documentation schedule will be followed during typical site conditions (i.e., organic vapor and particulate concentrations below action levels).

Item	**Documentation Schedule**
Instrument Calibration Results	Whenever calibration is performed (minimum once daily)
Background Monitoring Results	At beginning of work day and once every 4 hours thereafter
Downwind Monitoring Results	15-minute running averages; in addition, any instantaneous readings for decision purposes

All documentation records will be maintained in the project file for inspection by the NYSDEC and/or the NYSDOH upon request. In accordance with TAGM #4031, the NYSDEC Division of Air Resources will be contacted in writing within 5 days of exceeding the 150 ug/ m^3 respirable dust action level. These notifications will include a description of the control measures implemented to prevent further exceedences.

ATTACHMENT 1

NYSDOH Generic Community Air Monitoring Plan

APPENDIX 1A

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

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

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

ATTACHMENT 2

TAGM #4031 Fugitive Dust Suppression and Particulate Monitoring

New York State Department of Environmental Conservation

*** Proceed to Guidance Document | Contact the Division of Environmental Remediation ***

This document is a facsimile of an original Technical and Administrative Guidance Memorandum (TAGM) issued by the New York State Department of Environmental Conservation, Division of Environmental Remediation (formerly the Division of Hazardous Waste Remediation). This facsimile was reformatted for the Internet but maintains as much as possible of the original document. Changes were made to headers, footnote locations, paging, etc. to facilitate Internet delivery. Unless otherwise noted, none of these changes revise the content of the original TAGM.

This document was developed to provide Department staff with guidance on how to ensure compliance with statutory and regulatory requirements, including case law interpretations, and to provide consistent treatment of similar situations. This document may also be used by the public to gain technical guidance and insight regarding how the department staff may analyze an issue and factors in their consideration of particular facts and circumstances. This guidance document is not a fixed rule under the State Administrative Procedure Act section 102(2)(a)(i). Furthermore, nothing set forth herein prevents staff from varying from this guidance as the specific facts and circumstances may dictate, provided staff's actions comply with applicable statutory and regulatory requirements. This document does not create any enforceable rights for the benefit of any party.

Many procedures used by the Division of Environmental Remediation are undergoing revision as a result of our continual efforts to improve program implementation. In many cases, previously issued guidance documents are no longer completely consistent with current practice, but are provided here in their original form until final revisions are issued. Users of the posted guidance documents are urged to contact the Division of Environmental Remediation.

TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM #4031

FUGITIVE DUST SUPPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

TO: Regional Hazardous Waste Remediation Engrs., Bur. Directors & Section Chiefs

FROM: Michael J. O'Toole, Jr., Director, Division of Hazardous Waste Remediation

SUBJECT: DIVISION TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM -- FUGITIVE DUST SUPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

DATE: Oct 27, 1989

Michael J. O'Toole, Jr. (signed)

1. Introduction

Fugitive dust suppression, particulate monitoring, and subsequent action levels for such must be used and applied consistently during remedial activities at hazardous waste sites. This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring program as an element of a hazardous waste site's health and safety program.

2. Background

Fugitive dust is particulate matter--a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles, liquid droplets or solids, over a wide range of sizes--which becomes airborne and contributes to air quality as a nuisance and threat to human health and the environment.

On July 1, 1987, the United States Environmental Protection Agency (USEPA) revised the ambient air quality standard for particulates so as to reflect direct impact on human health by setting the standard for particulate matter less than ten microns in diameter (PM_{10}); this involves fugitive dust whether contaminated or not. Based upon an examination of air quality composition, respiratory tract deposition, and health effects, PM_{10} is considered conservative for the primary standard--that requisite to protect public health with an adequate margin of safety. The primary standards are 150 ug/m^3 over a 24-hour averaging time and 50 ug/m^3 over an annual averaging time. Both of these standards are to be averaged arithmetically.

There exists real-time monitoring equipment available to measure PM_{10} and capable of integrating over a period of six seconds to ten hours. Combined with an adequate fugitive dust suppression program, such equipment will aid in preventing the off-site migration of contaminated soil. It will also protect both on-site personnel from exposure to high levels of dust and the public around the site from any exposure to any dust. While specifically intended for the protection of on-site personnel as well as the public, this program is not meant to replace long-term monitoring which may be required given the contaminants inherent to the site and its air quality.

3. Guidance

A program for suppressing fugitive dust and monitoring particulate matter at hazardous waste sites can be developed without placing an undue burden on remedial activities while still being protective of health and environment. Since the responsibility for implementing this program ultimately will fall on the party performing the work, these procedures must be incorporated into appropriate work plans. The following fugitive dust suppression and particulate monitoring program will be employed at hazardous waste sites during construction and other activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Such activities shall also include the excavation, grading, or placement of clean fill, and control measures therefore should be considered.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM_{10}) with the following minimum performance standards:

   Object to be measured: Dust, Mists, Aerosols
   Size range: <0.1 to 10 microns
   Sensitivity: 0.001 mg/m^3
   Range: 0.001 to 10 mg/m^3
   Overall Accuracy: ±10% as compared to gravimetric analysis of stearic acid or reference dust

   Operating Conditions:
   Temperature: 0 to 40°C
   Humidity: 10 to 99% Relative Humidity

   Power: Battery operated with a minimum capacity of eight hours continuous operation

   Automatic alarms are suggested.

   Particulate levels will be monitored immediately downwind at the working site and integrated over a period not to exceed 15 minutes. Consequently, instrumentation

shall require necessary averaging hardware to accomplish this task; the P-5 Digital Dust Indicator as manufactured by MDA Scientific, Inc. or similar is appropriate.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the entity operating the equipment to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m^3 over the integrated period not to exceed 15 minutes. While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m^3, the upwind background level must be measured immediately using the same portable monitor. If the working site particulate measurement is greater than 100 ug/m^3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7). Should the action level of 150 ug/m^3 be exceeded, the Division of Air Resources must be notified in writing within five working days; the notification shall include a description of the control measures implemented to prevent further exceedences.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM_{10} at or above the action level. Since this situation has the potential to migrate contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

    1. Applying water on haul roads.
    2. Wetting equipment and excavation faces.
    3. Spraying water on buckets during excavation and dumping.
    4. Hauling materials in properly tarped or watertight containers.
    5. Restricting vehicle speeds to 10 mph.
    6. Covering excavated areas and material after excavation activity ceases.
    7. Reducing the excavation size and/or number of excavations.

    Experience has shown that utilizing the above-mentioned dust suppression techniques, within reason as not to create excess water which would result in

unacceptable wet conditions, the chance of exceeding the 150 ug/m^3 action level at hazardous waste site remediations is remote. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. If the dust suppression techniques being utilized at the site do not lower particulates to an acceptable level (that is, below 150 ug/m^3 and no visible dust), work must be suspended until appropriate corrective measures are approved to remedy the situation. Also, the evaluation of weather conditions will be necessary for proper fugitive dust control--when extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended.

There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require appropriate toxics monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

ATTACHMENT 2

Odor Management Plan

ODOR MANAGEMENT PLAN

Jackson Street Former MGP Site

Submitted to:

NYSEG, Binghamton, New York

Submitted by:

AMEC Geomatrix, Inc., Amherst, New York

December 2011

Project No. 12993

AMEC Geomatrix

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ODOR MANAGEMENT PLAN
Jackson Street Former MGP Site
Penn Yan, New York

1.0 INTRODUCTION

The purpose of this Odor Management Plan (OMP) is to provide actions to control odors that may be generated during intrusive work at the property referred to as the Jackson Street Former Manufactured Gas Plant (MGP) Site. The Site is located along Linden Street in Penn Yan, New York.

The historic fill materials encountered at the property are generally heterogeneous and included both natural organic matter (buried leaves, wood) and anthropogenic materials. These materials can produce distinctive organic-type nuisance odors when exposed to air during excavation. Because VOC and SVOCs petroleum-type compounds were detected in historic soil samples collected on-Site, petroleum-type odors (i.e., similar to roofing tar, asphalt driveway sealer) may be present during excavation work conducted on-Site.

This plan would be implemented with activities described in the Excavation Work Plan, appearing in the Site Management Plan for the Site. In addition, a Community Air Monitoring Plan (CAMP) has been prepared and will be implemented during excavation activities. The CAMP requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of the work area if during certain activities.

2.0 ODOR MONITORING

The CAMP specifies continual monitoring of VOCs and particulates during soil excavation work. This OMP specifies the procedures and actions to be employed should VOCs and/or particulates be detected above action levels specified in the CAMP, or to minimize nuisance odors during excavation.

Oversight personnel will record observations of odors generated during the implementation of the Work Plan. Odors will be recorded as weak, moderate, or strong, based on olfactory responses. When odors attributable to materials encountered during subsurface excavation are noted in the work area, observations also will be made at the downwind limit of the property. The downwind odor monitoring will be performed in conjunction with the VOC and particulate monitoring program described in the CAMP.

Upon detection of moderate or strong odors at the site perimeter, site controls, starting in the work area, will be implemented. The site controls described in the following sections will be used to assist with odor mitigation. The goal of the OMP is to minimize, and to prevent where practicable, the migration of off-site odors generated during work activities.

3.0 ODOR MITIGATION

If odor mitigation becomes necessary due to work activities, site controls will be implemented, as described in this section. Site controls are intended to limit the production of odors from on-site activities and to minimize the off-site migration of nuisance odors.

Primary Controls: Several primary odor controls will be implemented such as:

- Every effort will be made to minimize the amount of time that ambient air is exposed to odiferous material at the site. During excavation activities, polyethylene sheeting/tarps may be used to cover these soils to prevent or minimize fugitive odors.
- Soil stockpiles and excavations will be covered when they are not being manipulated.
- Meteorological conditions are also a factor in the generation and migration of odors. Some site activities may be limited to times when specific meteorological conditions prevail, such as when winds are blowing away from a specific receptor.

Secondary Site Controls: If moderate or strong odors remain at the downwind site perimeter after primary odor controls have been implemented, secondary control measures will be employed. The qualified environmental professional will work with the contactors involved with the work activities producing odors to identify and select appropriate secondary controls until the site perimeter odor issues are resolved. Final selection of controls will be dependent on field conditions encountered and the effectiveness and availability of the control technology. Secondary controls may include the following:

- For stockpiled impacted material, tarps or polyethylene covers will be used to control odors.
- Three agents that can be sprayed over impacted soil have been determined to be effective in controlling emissions. They include BioSolve® vapor suppression, hydro-mulch, and odor suppressant foam., These agents may be used where tarps cannot be effectively deployed over the source material such as during active excavation and stockpiling, or where tarps are ineffective in controlling odors:
  - **BioSolve®** is a biodegradable, water based product that has the unique ability to encapsulate hydrocarbon VOC vapor. The product is mixed with water at a 3-5% concentration and can be applied with a wide variety of water application spray methods. BioSolve® emulsifies and encapsulates the hydrocarbon almost instantly, and is not subject to breaches or drawdown (like some foam applications) that allow for re-volatilization, making it an ideal choice in windy conditions, and on sloped surfaces.
  - **Hydromulch** - Although it is unlikely that it will be necessary, a modified hydromulch slurry may be used to cover inactive sources for extended periods

of time (up to several days). The hydromulch, typically cellulose fibers (HydroSealR) is modified by mixing a tackifier (glue) with the mulch and water to form a slurry. It is applied using a standard hydroseed applicator to a thickness of ¼ inch. The material forms a sticky, cohesive, and somewhat flexible cover. Reapplication may be necessary if the applied layer becomes desiccated or begins to crack.

- **Odor Suppressant Foam** - Odor suppressant foam can provide immediate, localized control of odor emissions. The foam is made by the injection of air into a foam concentrate/water mixture using a Pneumatic Foam Unit (PFU). The foam is applied via a hose to cover source areas to a depth of 3 to 6 inches. Short-term foam (such as Rusmar AC-645) is recommended to control VOC and odor emissions from active excavations and stockpiles. It is shipped as a concentrate and diluted with water at the site. Under normal conditions this foam can last for between 12-17 hours. However, it has been observed to degrade quickly in direct sunlight, so frequent and liberal application to all areas that require odor control is advisable. For longer-term odor suppression needs, such as over weekends, long-term foam (such as Rusmar AC-904, which lasts between 15-30 days) should be used.

The placement of portable barriers close to small active source areas (excavation areas) can elevate the discharge point of emissions to facilitate dispersion and minimize the effect on downwind receptors. The barriers can be constructed using materials such as plastic “Jersey barriers”, or fence poles and visual barrier fabric/plastic. The barriers are placed as temporary two or three-sided structures around active test pit or other intrusive activity areas, oriented such that the barriers are placed on the upwind and downwind sides of the source. If only one side of the source can be accessed, then the barrier should be placed on the downwind side.

4.0 RECORDKEEPING

Similar to readings recorded during the monitoring specified in the CAMP, odor monitoring results will be recorded in the field log book or other air monitoring forms. These records will be provided included with site inspection reports.

APPENDIX C

Groundwater Monitoring Plan

GROUNDWATER MONITORING PLAN

Jackson Street Former MGP Site

Submitted to:

NYSEG, Binghamton, New York

Submitted by:

AMEC Geomatrix, Inc., Amherst, New York

Revisions by NEU-VELLE, LLC.

Original Final: December 2011

Revision Date: July 2023, NEU-VELLE, LLC.

Project 12993

AMEC Geomatrix

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GROUNDWATER MONITORING PLAN
Jackson Street Former MGP Site
Penn Yan, New York

1.0 GROUNDWATER MONITORING STRATEGY

The Record of Decision (ROD) for the site specifies monitoring of groundwater quality. The 2009 Remedial Investigation (RI) identified volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and total cyanide at concentrations above groundwater standards in several monitoring wells. A conclusion of the RI was that dissolved oxygen concentrations in overburden groundwater are sufficiently high to indicate biodegradation of the VOC and SVOC compounds on an ongoing basis. The goal of the Groundwater Monitoring Plan (GMP) is to monitor the attenuation of these compounds and assess potential variation in the concentrations in groundwater across the Site. Sediment and pore water sampling of the adjacent Jacobs Brook will also evaluate the potential for off-Site migration of site contaminants in groundwater.

2.0 SAMPLING METHODS

The groundwater monitoring network at the Site consists of eight overburden monitoring wells, as shown on Figure 1. Groundwater samples will be collected from each of the eight existing monitoring wells, including:

- MW-1
- MW-2S
- MW-2D
- MW-3A
- MW-4S
- MW-4D
- MW-5
- MW-6

Sediment and pore water samples will be collected from the three previously sampled (November 2022) locations: DWN-1, DWN-2, and DWN-3. Locations are depicted on Figure 2.

Samples will be collected in accordance with the Groundwater Field Sampling Plan (FSP), included as Attachment 1. Monitoring well completion logs are provided in Attachment 2.

3.0 SAMPLE ANALYSIS

Groundwater, sediment, and pore water samples will be analyzed by a NYSDOH-certified laboratory that maintains NELAP accreditation. The laboratory will analyze the samples for:

- VOCs (BTEX only) by USEPA Method 8260
- NYSDEC STARS List SVOCs (PAHs) Method 8270
- Total Cyanide
- Total organic carbon (sediment only)

4.0 SAMPLING FREQUENCY

Groundwater samples will be collected and analyzed once every 15 months to rotate the sampling event on a seasonal basis. Sediment and pore water sampling of Jacobs Brook will be performed at a frequency of every 3 years.

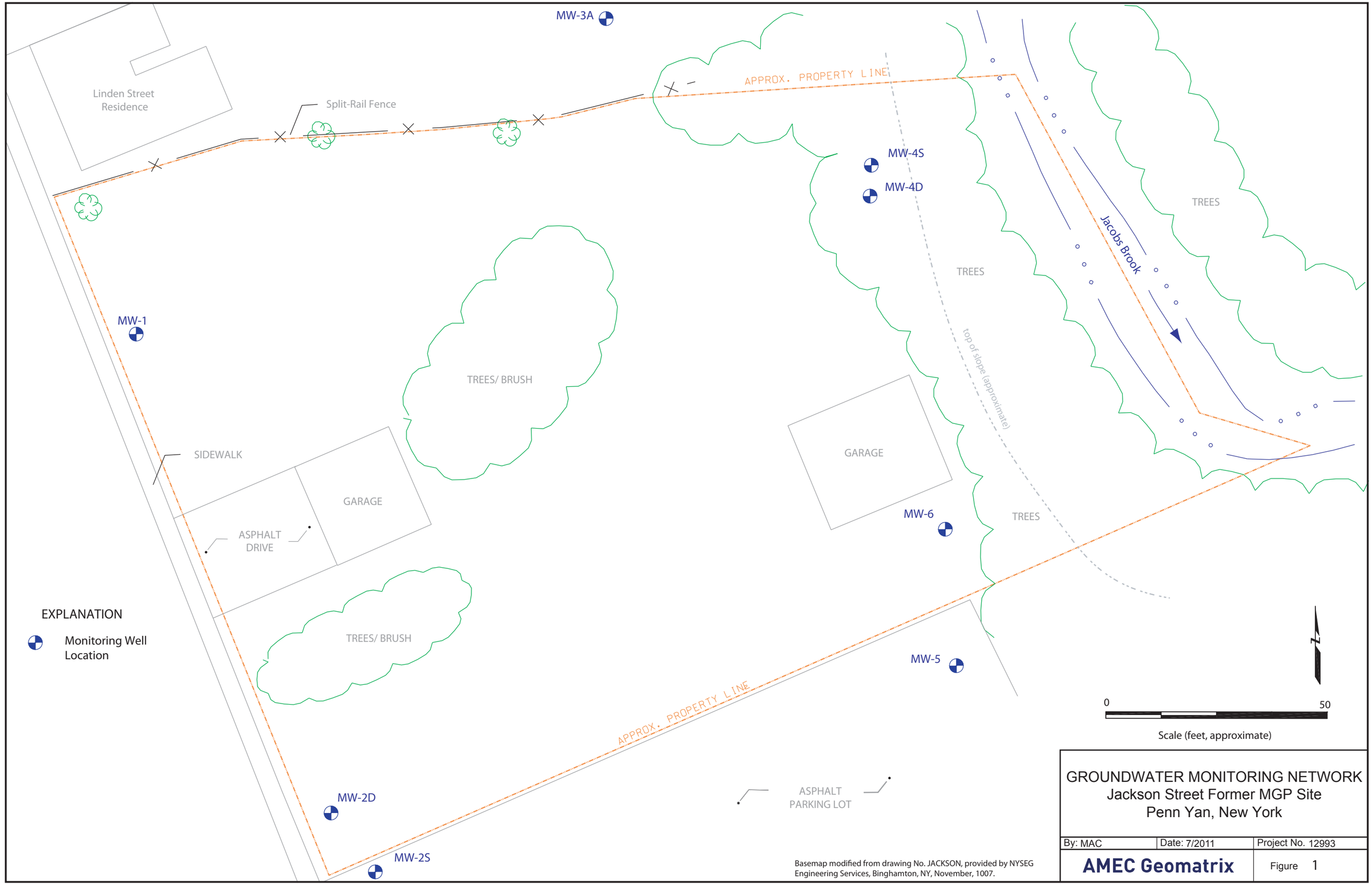
5.0 MONITORING WELL DECOMMISSIONING AND RE-INSTALLATION

If during the course of routine Site monitoring or sampling any monitoring well is damaged or deemed to be unusable for the purposes of groundwater sampling, the monitoring well will be decommissioned. Monitoring wells will be decommissioned in accordance with NYSDEC Commissioner Policy 43 (CP-43). The need for in-kind replacement will be discussed with the NYSDEC and documented in site inspection reports.

6.0 REPORTING

The results will be included in a narrative report that describes the sampling event, laboratory data usability, presents a tabulated summary of detected compounds, and identifies constituents detected above NYS Glass GA Groundwater Standards. Sediment sample results should be screened against the Sediment Guidance Values, Table 7 of the "Screening and Assessing of Contaminated Sediment" (NYSDEC, 2014). The report will be submitted to the NYSDEC with annual inspection reports.

FIGURES



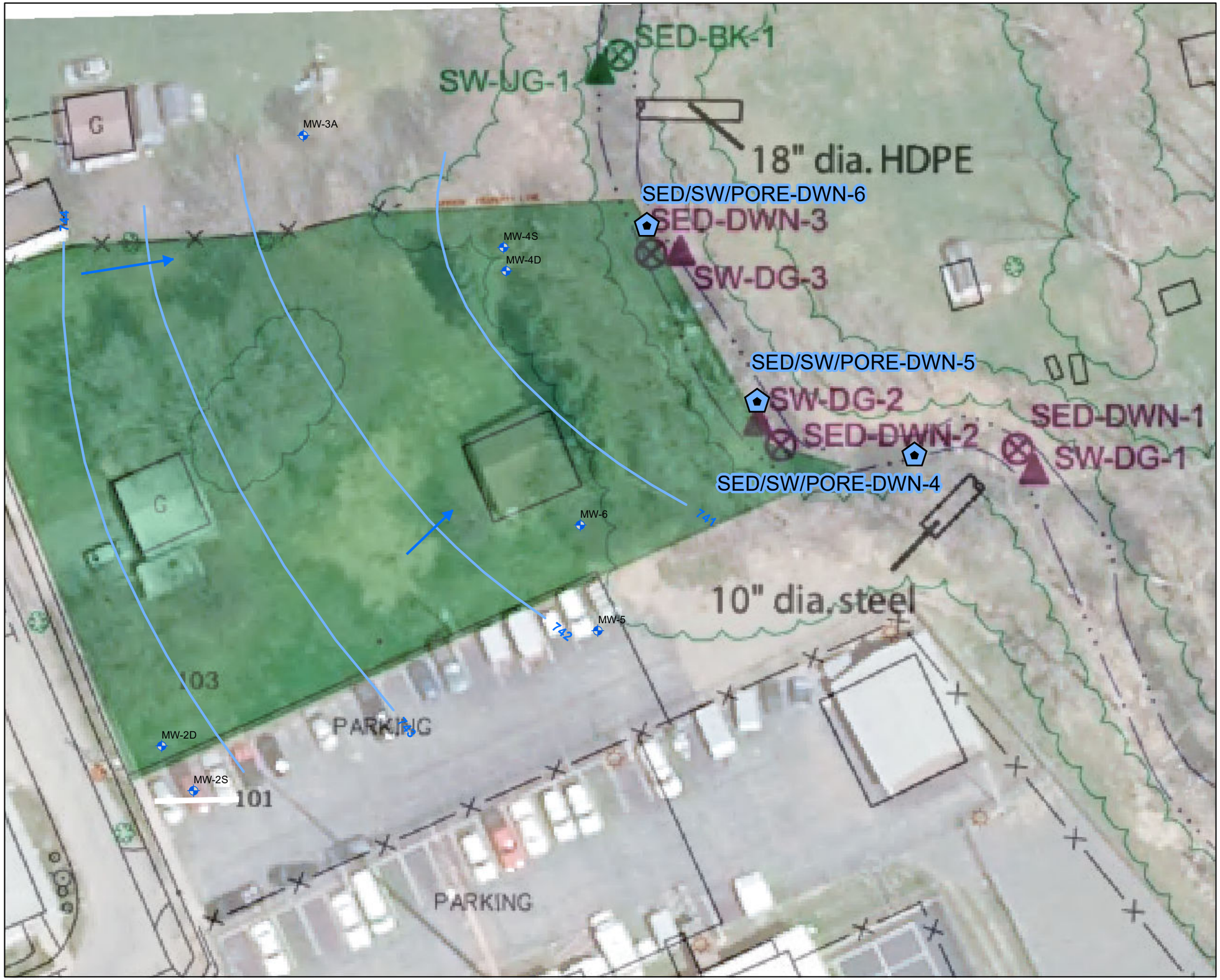
Basemap modified from drawing No. JACKSON, provided by NYSEG Engineering Services, Binghamton, NY, November, 1007.

GROUNDWATER MONITORING NETWORK
Jackson Street Former MGP Site
Penn Yan, New York

By: MAC	Date: 7/2011	Project No. 12993
AMEC Geomatrix		Figure 1

Put network path and drawing No. information here

FIGURE 2



N

LEGEND

- SURFACE/SEDIMENT/PORE WATER SAMPLE LOCATION
- INFERRED GROUNDWATER ELEVATION CONTOUR (DEC. 2021)
- INFERRED GROUNDWATER FLOW DIRECTION (DEC. 2021)

NOTES:
1. BASEMAP ADAPTED FROM RIR, FIGURE 7.
2. GROUNDWATER ELEVATION MEASURED DECEMBER 1, 2021 IN FEET (NAVD 88).
3. ALL LOCATIONS ARE APPROXIMATE.

NEW YORK STATE
ELECTRIC & GAS
CORPORATION
JACKSON STREET
FORMER MGP SITE
PENN YAN, NEW YORK

SEDIMENT/PORE WATER SAMPLE LOCATIONS

0 15 30 60
Feet

JULY 2023

NEU-VELLE LLC

ATTACHMENT 1

Field Sampling Plan

FIELD SAMPLING PLAN

Jackson Street Former MGP Site

Submitted to:

NYSEG, Binghamton, New York

Submitted by:

AMEC Geomatrix, Inc., Amherst, New York

Revisions by NEU-VELLE, LLC.

Original Final: December 2011

Revision Date: July 2023, NEU-VELLE, LLC.

Project 12993

AMEC Geomatrix

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GROUNDWATER MONITORING PLAN - FIELD SAMPLING PLAN
Jackson Street Former Manufactured Gas Plant (MGP) Site
Penn Yan, New York

1.0 INTRODUCTION

This Field Sampling Plan (FSP) supports the Site Management Plan prepared by AMEC Geomatrix, Inc. (Geomatrix) for the Jackson Street Former MGP Site (hereinafter referred to as the "Site") , located in Penn Yan, New York. The FSP addresses the field procedures and sample collection methods to be used during implementation of the Groundwater Monitoring Plan (GWMP), a component of the Site Management Plan.

1.1 PROJECT OBJECTIVES

The purpose of the field investigation activities outlined in the Work Plan is to provide data to address the following objective:

- Evaluate the performance of the natural attenuation of remaining contamination at the Site, as discussed in the SMP. Monitored Natural Attenuation (MNA) was the selected remedy in the NYSDEC-issued Record of Decision ROD for the Site, dated March 2011.

- Evaluate for off-Site migration of Site contaminants into Jacobs Brook.

1.2 OVERVIEW OF INVESTIGATION FIELD ACTIVITIES

To obtain information necessary to meet the investigation objectives stated above, the following activities will be conducted:

- The collection of groundwater elevation measurements in the existing monitoring wells for the development of groundwater contour maps;

- The collection of groundwater samples from existing wells to supplement previous groundwater characterization data; and

- The collection of sediment and pore water samples from the three previously sampled locations in Jacobs Brook.

Monitoring well locations are shown on Figure 1 and sediment and pore water sample locations are depicted on Figure 2.

2.0 FIELD METHODS

The following is a general list of equipment necessary for sample collection:

- Appropriate sample containers provided by the laboratory (kept closed and in laboratory supplied coolers until the samples are collected);
- Pre-preserved sample containers for aqueous samples;
- Chain of custody record forms
- Log book, field sampling records, and indelible ink pens and markers;
- Laboratory grade soap (i.e., Alconox), reagent grade solvents, and distilled water to be used for decontaminating equipment between sampling locations;
- Buckets, plastic wash basins, and scrub brushes for decontaminating equipment;
- Camera and film;
- Shipping labels and forms;
- Packing/shipping material for sample bottles;
- Clear plastic tape;
- Aluminum foil;
- Portable field instruments, including a photoionization detector (PID), water quality parameter meters, conductivity meter, and water-level indicator; and
- A pore water extraction device (PushPoint™ or similar brand) for the collection of the pore water samples.

Field log books will be maintained by the field team leader and other team members to provide a daily record of significant events, observations, and measurements during the field investigation.

Information pertinent to the field investigation and/or sampling activities will also be recorded in the log books. The books will be bound with consecutively numbered pages. Daily field forms can be found in Attachment A.

Original data recorded in the field log books and Chain of Custody Records will be written with indelible ink. If an error is made on the field forms, that individual will make all corrections simply by crossing a single line through the error and entering the correct information. The erroneous information will not be erased. Any subsequent error discovered on a field form will be corrected by the person who made the entry. Subsequent corrections will be initialed and dated.

2.1 SAMPLE LABELING, PACKING, AND SHIPPING

Each sample will be given a unique identifier. With this type of identification, no two samples will have the same label.

Samples will be promptly labeled upon collection with the following information:

- Project number and site;
- Unique sample identification;
- Analysis required;
- Data and time sampled;
- Sample type (composite or grab); and
- Preservative, if applicable.

Clear tape will be secured over the sample label and the chain-of-custody will be initiated. A sample chain-of-custody form is included in Attachment B. Appropriate sample containers, preservation methods, and laboratory holding times for each sample will be applied as required by the analytical laboratory.

If samples are to be shipped by commercial carrier (e.g., Federal Express), sample bottle/jars will be packed in coolers containing the following:

- A drain plug (if present) that has been sealed with duct tape;
- Water ice packaged in re-sealable plastic bags;
- Appropriate packaging material to help ensure sample integrity while being transported; and
- The completed chain-of-custody in a re-sealable plastic bag, taped to the inside cover of the cooler.

The cooler will then be sealed with tape. Appropriate shipping labels, such as “This End Up” and “Fragile” stickers will be affixed to the cooler. Samples will be hand delivered or delivered by an express carrier within 48 hours of sample collection. The express carrier will not be required to sign the chain-of-custody form, however, the shipping receipt should be retained by the sampler, and forwarded to the project files.

2.2 SAMPLING EQUIPMENT DECONTAMINATION

Prior to collecting samples to be submitted for chemical analysis, non-dedicated bowls, spoons, hand augers, bailers, pore water samplers, and filtering equipment will be washed with potable water and a detergent (e.g., Alconox). Decontamination may take place at the sampling location as long as liquids are contained in pails, buckets, etc. The sampling equipment will then be rinsed with potable water and a distilled water rinse. At no time will washed equipment be placed directly on the ground. Equipment will either be used immediately or wrapped in plastic or aluminum foil for storage or transportation from the designated decontamination areas to the sampling locations.

2.3 GROUNDWATER ELEVATION MEASUREMENTS

Groundwater elevations will be measured in all existing and newly installed wells/piezometers from the top of riser using an electric water level meter to the nearest 0.01 feet. Groundwater elevation readings will also be made at the time that groundwater sampling is performed.

2.4 GROUNDWATER SAMPLING

Prior to sampling, the well will be checked for DNAPL presence. A weighted white cotton rope (approximate $^{1}/_{4}$-inch thickness) will be lowered to the bottom of the well and retrieved. DNAPL presence will stain the rope and the length of staining will indicate accumulated DNAPL thickness. Care will be taken not to mistake staining on the rope resultant from an LNAPL layer as actually indicating a greater thickness of DNAPL than may actually be present. A clear, PVC, bottom loading bailer may also be used to assess DNAPL thickness and DNAPL well entry recovery rate. The NYSDEC will be notified if DNAPL is present in a well and a discussion regarding the practicality of obtaining a representative groundwater sample will be discussed. The analytical parameter list for collected groundwater samples is described in the GWMP.

The sampling event will occur approximately, but no sooner than, two weeks following well installation and development. Consistency of groundwater sampling methods is important to the assessment of groundwater quality and, when feasible, low flow sampling with a submersible pump will be the preferred method of sampling in accordance with USEPA Region 2 low flow groundwater sampling procedures.

However, the peristaltic pump will be useful in achieving low-flow purging rates in shallow monitoring wells, (e.g., less than 20 feet deep) with low well yields. A well will be considered low yielding when purging rates are less than 100 ml/min and more than 2 feet of drawdown occurs in the well. Groundwater samples for inorganic and semi-volatile organic parameters may be collected following adequate purging (e.g., removal of 3 well volumes and

stabilization of measured field parameters) directly from peristaltic pump tubing. Groundwater samples for VOCs may be collected following adequate purging using dedicated and disposal bailers after adequate purging is conducted with a peristaltic pump. The use of the disposable bailer will minimize the potential loss of VOCs, if present, that could occur if samples are collected directly from the tubing of the peristaltic pump. Sampling with a bailer will be considered a last resort measure in obtaining a groundwater sample.

Low flow purging will be accomplished using either a submersible pump or a peristaltic pump. Groundwater will be discharged to a flow through cell to measure pH, specific conductance, dissolved oxygen and temperature. In addition, turbidity will be measured using a portable field turbidity meter. Purging will be considered completed when the pH, Eh, specific conductivity and temperature have stabilized; and when the turbidity is below 5 NTU, or has stabilized above 5 NTU. Water removed during purging will be discharged to the ground surface.

Samples will be collected in pre-preserved sample bottles and will be analyzed for parameters summarized in GWMP. Groundwater samples for metals analysis collected using the USEPA Region 2 Low-Flow sampling method will not be field filtered provided sample turbidity values are at or near 50 NTU. However, groundwater samples that are collected for total metals analysis from wells that have not achieved a maximum turbidity goal of 50 NTU will include a field filtered sample for soluble metals analysis to compare the difference between total and soluble metals water quality data.

The sediment and pore water sample collection will proceed from downstream to upstream, with surface water collection performed first, followed by pore water, then bulk sediment. Areas of deeper fine sediment will be chosen for sample collection. Samples will always be collected from undisturbed areas.

While the collection of the bulk sediment samples will assess for the presence of the selected chemical contaminants in the sediment, pore water sampling will be performed to assess for adverse biological effects of nonpolar organic contaminants in the interstitial pore water of the sediment. Pore-water sampling techniques will adhere to the United States Environmental Protection Agency (USEPA) operating procedure, “Pore Water Sampling”, dated May 13, 2020. A pore water extraction device (PushPoint™ or similar brand) will be utilized in the collection of the pore water samples. To assist in the screening of potential pore water contaminants, TOC will also be analyzed by the laboratory from the bulk sediment samples. The TOC of the sediment may have an effect in calculating the SGVs for nonpolar organic contaminants.

3.0 FIELD INSTRUMENTS

Field-screening equipment will be calibrated prior to each day's use and move frequently if required. The calibration procedures will conform to the manufacturer's standard instructions. Records of instrument calibration and copies of instrument manuals will be maintained by field personnel.

3.1 pH METER

The pH meter will be calibrated at the start of each day of use, and after very high or low reading as required by this plan. National Institute of Standards and Technology traceable standard buffer solutions that bracket the expected pH range will be used. The standards will most likely be a pH of 7.0 and 10.0 standard units. The pH calibration and slope knobs will be used to set the meter to display the value of the standard being checked. Then calibration data will be recorded in field notebooks.

3.2 SPECIFIC CONDUCTIVITY METER

Calibration checks using appropriate conductivity standard for the meter will be performed at the start of each day of use, and after very high or low readings, as required by this plan. Readings must be within five percent to be acceptable.

3.3 TURBIDITY METER

The turbidity meter will be calibrated daily prior to use. Calibration and maintenance will be conducted in accordance with the manufacturer's specifications. Calibration and maintenance will be recorded in the field notebook.

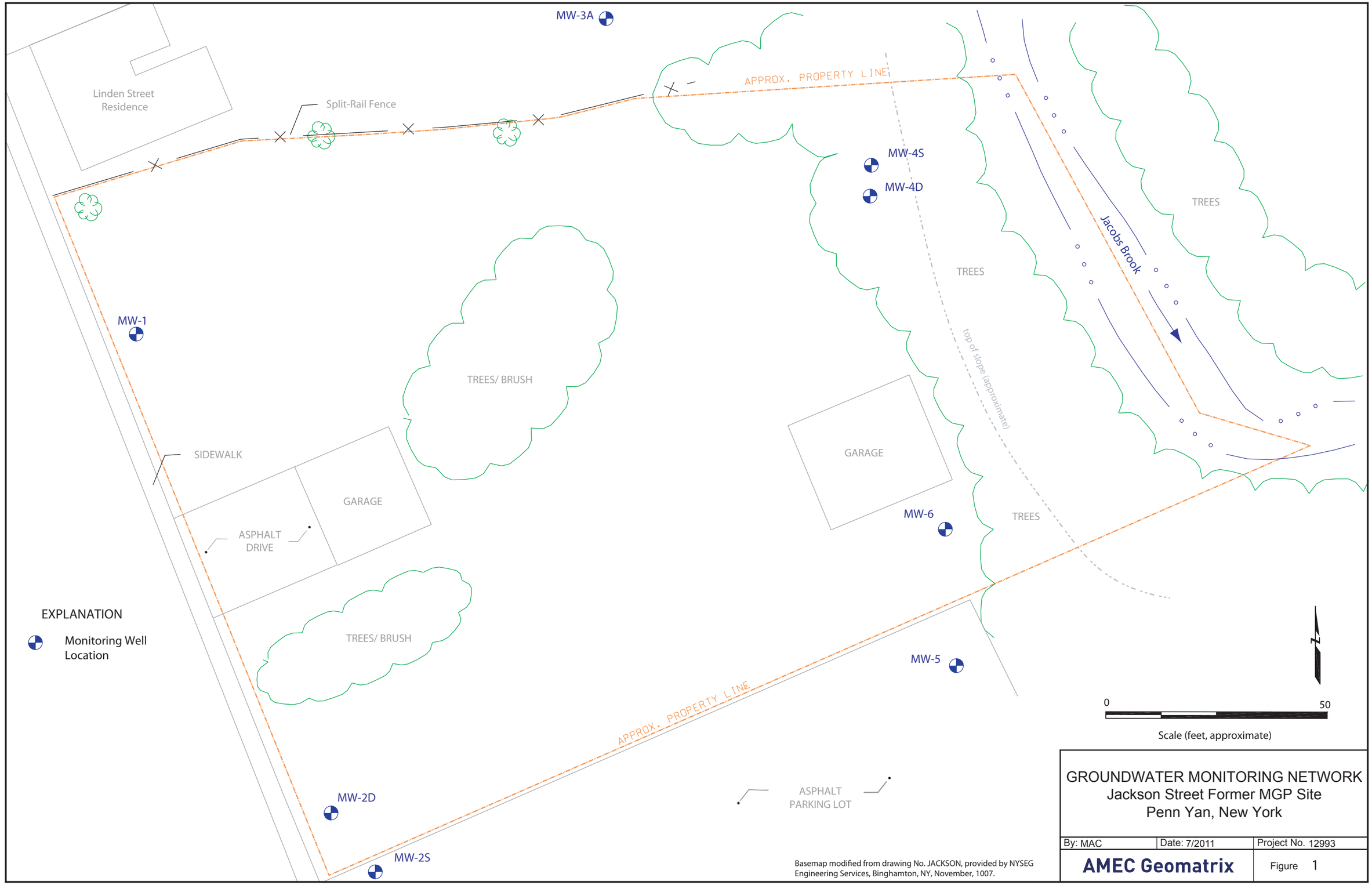
3.4 DISSOLVED OXYGEN (DO) METER

The DO meter will be calibrated daily prior to use, in accordance with the manufacturer's specifications.

3.5 OXIDATION-REDUCTION POTENTIAL (ORP) METER

The ORP meter will be calibrated daily prior to use, in accordance with the manufacturer's specifications.

FIGURES



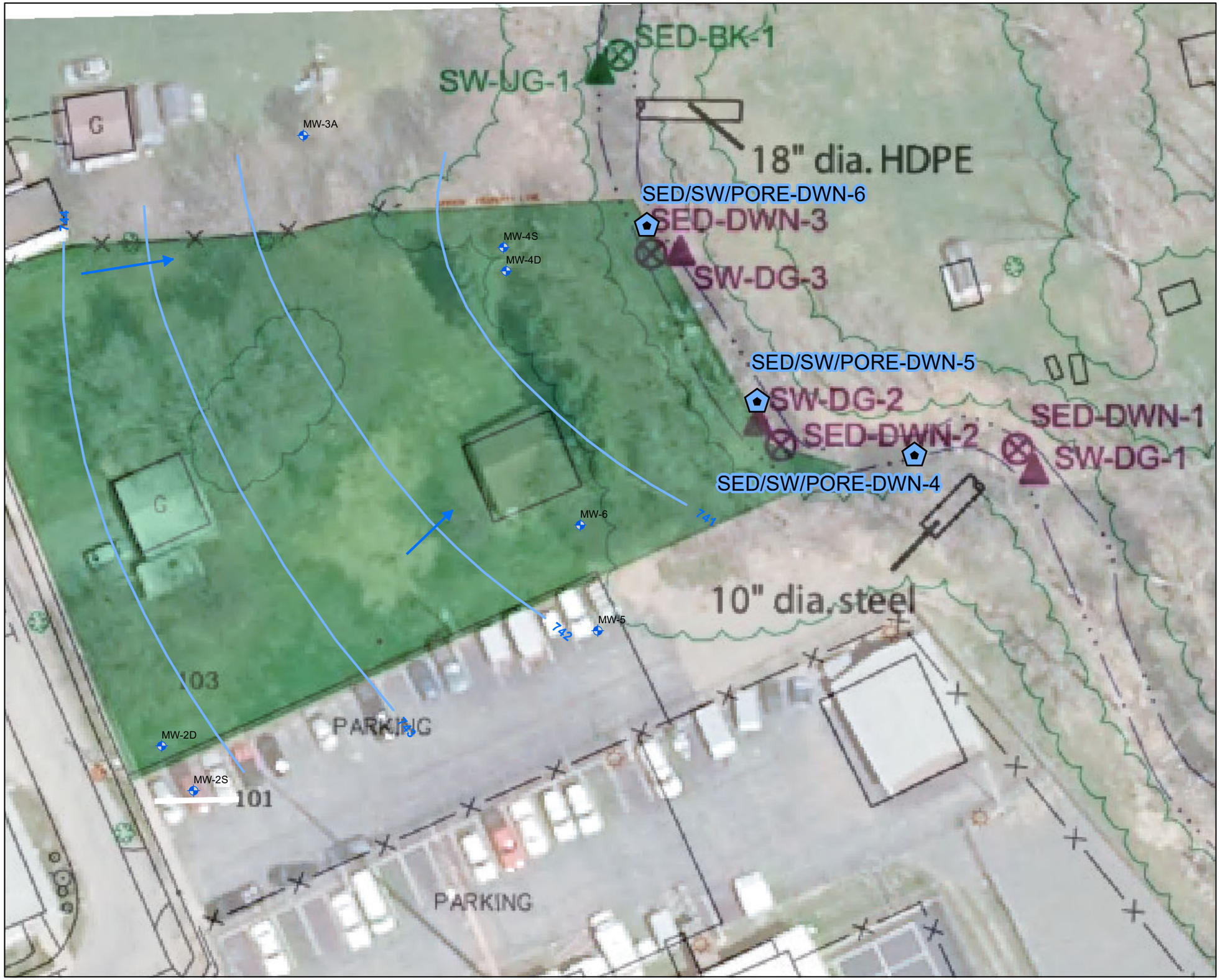
Basemap modified from drawing No. JACKSON, provided by NYSEG Engineering Services, Binghamton, NY, November, 1007.

GROUNDWATER MONITORING NETWORK
Jackson Street Former MGP Site
Penn Yan, New York

By: MAC	Date: 7/2011	Project No. 12993
AMEC Geomatrix		Figure 1

Put network path and drawing No. information here

FIGURE 2



N

LEGEND

- SURFACE/SEDIMENT/PORE WATER SAMPLE LOCATION
- INFERRED GROUNDWATER ELEVATION CONTOUR (DEC. 2021)
- INFERRED GROUNDWATER FLOW DIRECTION (DEC. 2021)

NOTES:
1. BASEMAP ADAPTED FROM RIR, FIGURE 7.
2. GROUNDWATER ELEVATION MEASURED DECEMBER 1, 2021 IN FEET (NAVD 88).
3. ALL LOCATIONS ARE APPROXIMATE.

NEW YORK STATE
ELECTRIC & GAS
CORPORATION
JACKSON STREET
FORMER MGP SITE
PENN YAN, NEW YORK

SEDIMENT/PORE WATER SAMPLE LOCATIONS

0 15 30 60
Feet

JULY 2023

NEU-VELLE LLC

ATTACHMENT 1

Daily Field Forms

DAILY FIELD RECORD

GEOMATRIX

Project and Task Number:	Date:
Project Name:	Field Activity:
Location:	Weather:

PERSONNEL: Name	Company	Time In	Time Out

PERSONAL SAFETY CHECKLIST

	Steel-toed Boots		Hard Hat		Tyvek Coveralls
	Rubber Gloves		Safety Goggles		1/2-Face Respirator

DRUM I.D.	DESCRIPTION OF CONTENTS AND QUANTITY	LOCATION

TIME	DESCRIPTION OF WORK PERFORMED

DAILY FIELD RECORD (continued)

GEOMATRIX

Project and Task Number:	Date:

TIME	DESCRIPTION OF WORK PERFORMED

GEOMATRIX

WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: _____

Sample ID: _____ Duplicate ID: _____

Sample Depth: _____

Project and Task No.: _____

Project Name: _____

Date: _____

Sampled By: _____

Method of Purging: _____

Method of Sampling: _____

Initial Depth to Water: _____

Depth to Water after Sampling: _____

Total Depth to Well: _____

Well Diameter: _____

1 Casing/Borehole Volume: _____
(Circle one)

4 Casing/Borehole Volumes: _____
(Circle one)

Total Casing/Borehole
Volumes Removed: _____

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Dissolved Oxygen (mg/l)	Redox Potential (mV, SSCE)	Remarks (color, turbidity, and sediment)

pH CALIBRATION (choose two)				
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Field Temperature °C				
Instrument Reading				

Model or Unit No.:

SPECIFIC ELECTRICAL CONDUCTANCE CALIBRATION			
KCL Solution (µS/cm=µmhos/cm)	1413 at 25°C	12880 at 25°C	
Field Temperature °C			
Instrument Reading			

Model or Unit No.:

REDOX CALIBRATION		DISSOLVED OXYGEN CALIBRATION	
Standard Solution	468 mV	Salinity %	
Field Temperature °C		Altitude	
Instrument Reading		Instrument Reading	
Model or Unit No.: Ag/AgCl Electrode (SSCE)		Model or Unit No.:	

Notes:

WATER LEVEL MONITORING RECORD

GEOMATRIX

Project Name: _____ Project and Task Number: _____

Date: _____ Measured by: _____ Instrument Used: _____

Note: For you convenience, the following abbreviations may be used.

P = Pumping I = Inaccessible D = Dedicated Pump

ST = Steel Tape ES = Electric Sounder MP = Measuring Point WL = Water Level

Well No.	Time	MP Elevation (feet)	Water Level Below MP (feet)	Water Level Elevation (feet)	Previous Water Level Below MP	Remarks

ATTACHMENT 2

Sample Chain-of-Custody Form

CHAIN-OF-CUSTODY RECORD

BUF 10099

PROJECT NAME:			DATE:	PAGE OF
PROJECT NUMBER:	LABORATORY NAME:	CLIENT INFORMATION:	REPORTING REQUIREMENTS:	
RESULTS TO:	LABORATORY ADDRESS:			
TURNAROUND TIME:				
SAMPLE SHIPMENT METHOD:	LABORATORY CONTACT:		GEOTRACKER REQUIRED	YES NO
	LABORATORY PHONE NUMBER:		SITE SPECIFIC GLOBAL ID NO.	

SAMPLERS (SIGNATURE):

DATE	TIME	SAMPLE NUMBER	ANALYSES	CONTAINER TYPE AND SIZE	Soil (S), Water (W), Vapor (V), or Other (O)	Filtered	Preservative Type	Cooled	MS/MSD	No. of Containers	ADDITIONAL COMMENTS

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	TOTAL NUMBER OF CONTAINERS:		
SIGNATURE:			SIGNATURE:			SAMPLING COMMENTS:		
PRINTED NAME:			PRINTED NAME:					
COMPANY:			COMPANY:					
SIGNATURE:			SIGNATURE:					
PRINTED NAME:			PRINTED NAME:					
COMPANY:			COMPANY:					
SIGNATURE:			SIGNATURE:					
PRINTED NAME:			PRINTED NAME:					
COMPANY:			COMPANY:					

90B John Muir Drive, Suite 104
Amherst, New York 14228-1148
Tel 716.565.0624 Fax 716.565.0625

Geomatrix

ATTACHMENT 2

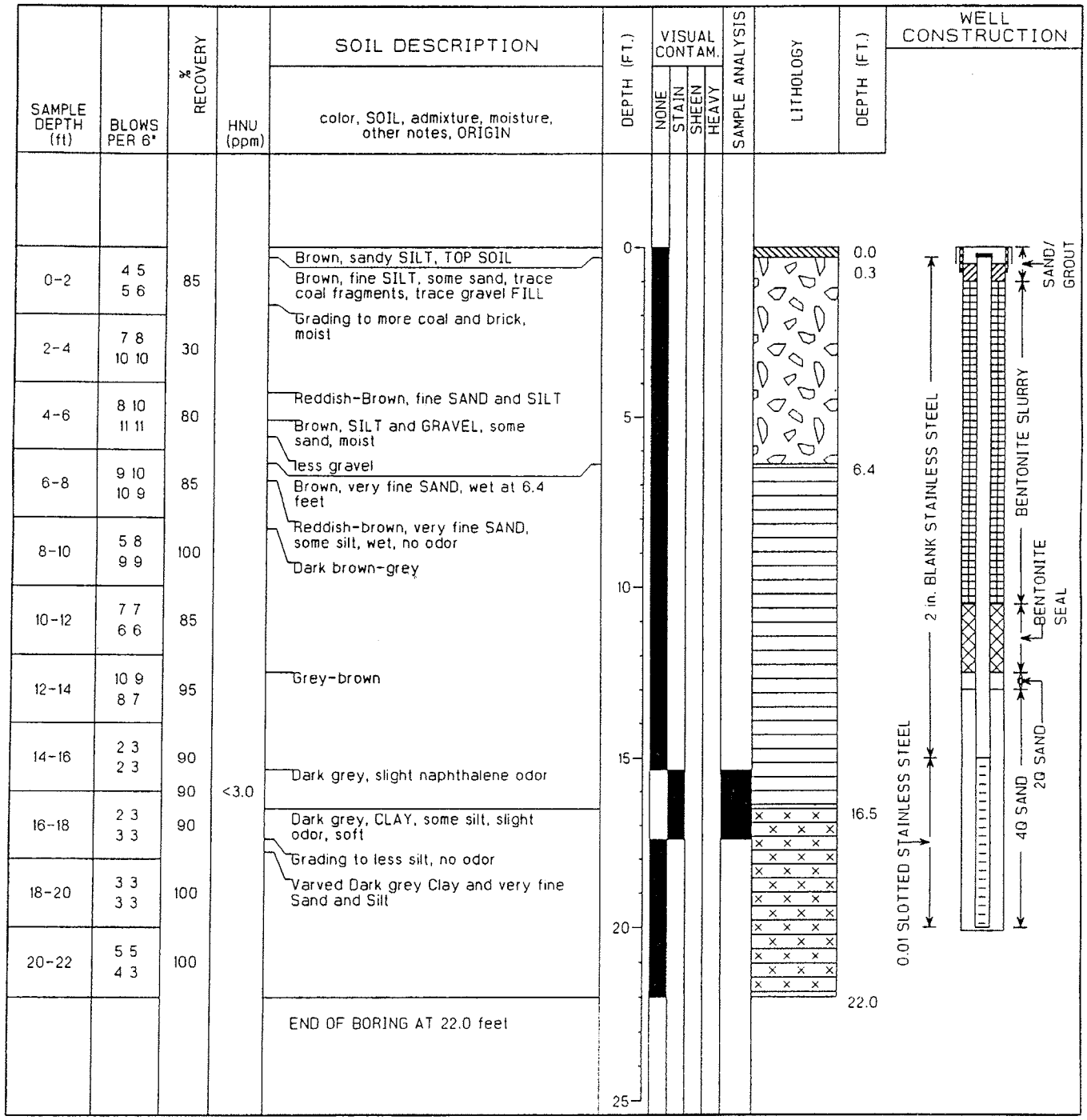
Monitoring Well Completion Logs

BORING LOG MW 1

PROJECT: JACKSON STREET MGP
PROJECT NO: 1284-07-02
LOCATION: PENN YAN, NEW YORK
DATE STARTED: 10/07/91
DATA COMPLETED: 10/07/91
DRILLING CONTRACTOR: NORTH STAR DRILLING
DRILLER: JOE ELY
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON

GROUND ELEVATION: 755.8
PROTECTIVE CASING ELEVATION: 755.8
WELL ELEVATION: 755.0
WATER LEVEL:
DATUM: MEAN SEA LEVEL
WEATHER:
INSPECTOR: MIKE NEJDL
CHECKED BY: ERIK NESS

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	HNU (ppm)	SOIL DESCRIPTION: color, SOIL, admixture, moisture, other notes, ORIGIN
0-2	4 5 5 6	85		Brown, sandy SILT, TOP SOIL Brown, fine SILT, some sand, trace coal fragments, trace gravel FILL
2-4	7 8 10 10	30		Grading to more coal and brick, moist
4-6	8 10 11 11	80		Reddish-Brown, fine SAND and SILT Brown, SILT and GRAVEL, some sand, moist
6-8	9 10 10 9	85		less gravel Brown, very fine SAND, wet at 6.4 feet
8-10	5 8 9 9	100		Reddish-brown, very fine SAND, some silt, wet, no odor Dark brown-grey
10-12	7 7 6 6	85		
12-14	10 9 8 7	95		Grey-brown
14-16	2 3 2 3	90		
		90	<3.0	Dark grey, slight naphthalene odor
16-18	2 3 3 3	90		Dark grey, CLAY, some silt, slight odor, soft Grading to less silt, no odor
18-20	3 3 3 3	100		Varved Dark grey Clay and very fine Sand and Silt
20-22	5 5 4 3	100		
				END OF BORING AT 22.0 feet



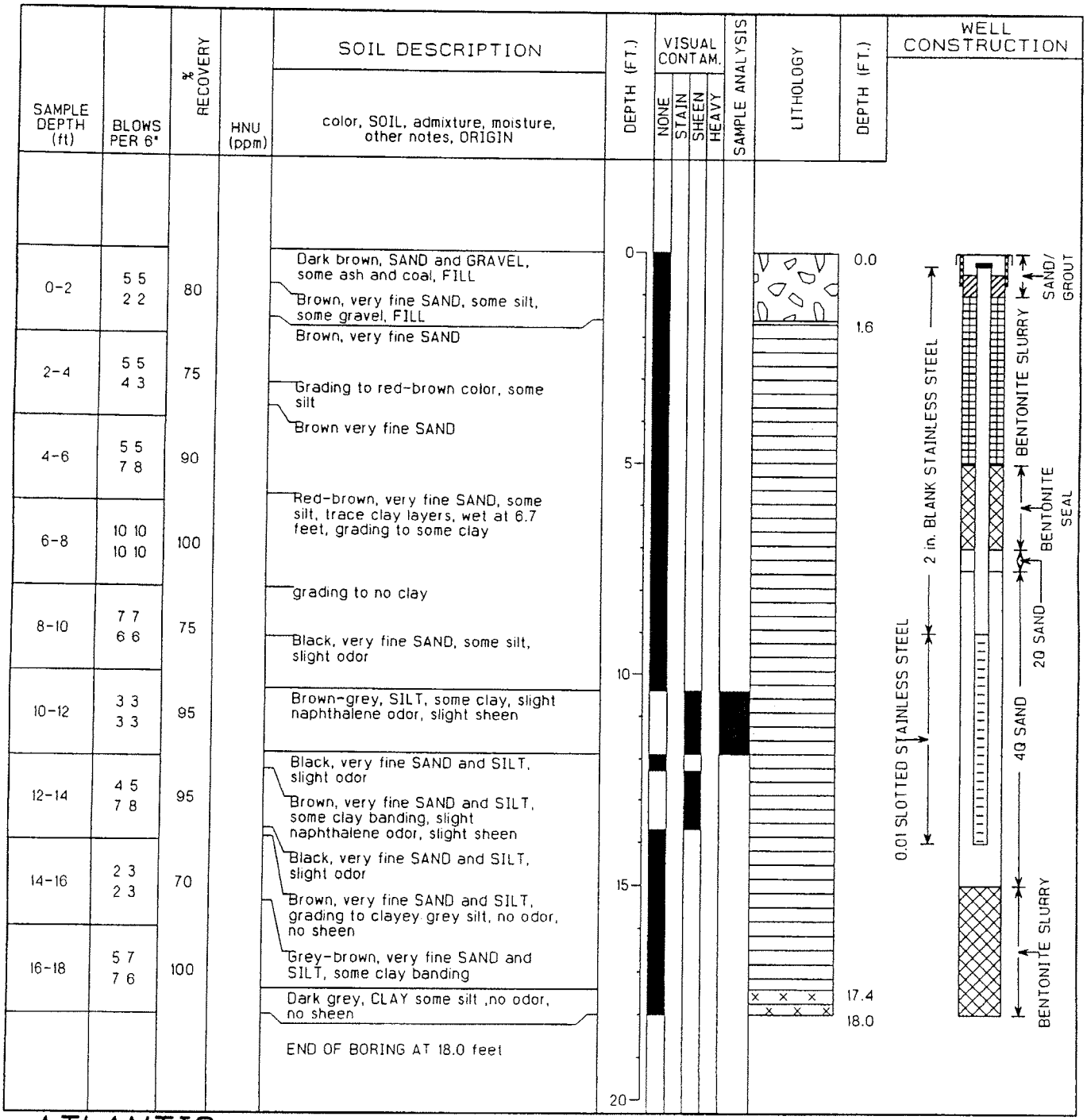
ATLANTIC

BORING LOG MW 2

PROJECT: JACKSON STREET MGP
PROJECT NO: 1284-07-02
LOCATION: PENN YAN, NEW YORK
DATE STARTED: 10/07/91
DATA COMPLETED: 10/08/91
DRILLING CONTRACTOR: NORTH STAR DRILLING
DRILLER: JOE ELY
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON

GROUND ELEVATION: 754.8
PROTECTIVE CASING ELEVATION: 754.8
WELL ELEVATION: 754.3
WATER LEVEL:
DATUM: MEAN SEA LEVEL
WEATHER:
INSPECTOR: MIKE NEJDL
CHECKED BY: ERIK NESS

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	HNU (ppm)	SOIL DESCRIPTION color, SOIL, admixture, moisture, other notes, ORIGIN
0-2	5 5 2 2	80		Dark brown, SAND and GRAVEL, some ash and coal, FILL Brown, very fine SAND, some silt, some gravel, FILL
2-4	5 5 4 3	75		Brown, very fine SAND Grading to red-brown color, some silt
4-6	5 5 7 8	90		Brown very fine SAND
6-8	10 10 10 10	100		Red-brown, very fine SAND, some silt, trace clay layers, wet at 6.7 feet, grading to some clay
8-10	7 7 6 6	75		grading to no clay Black, very fine SAND, some silt, slight odor
10-12	3 3 3 3	95		Brown-grey, SILT, some clay, slight naphthalene odor, slight sheen
12-14	4 5 7 8	95		Black, very fine SAND and SILT, slight odor Brown, very fine SAND and SILT, some clay banding, slight naphthalene odor, slight sheen
14-16	2 3 2 3	70		Black, very fine SAND and SILT, slight odor Brown, very fine SAND and SILT, grading to clayey grey silt, no odor, no sheen
16-18	5 7 7 6	100		Grey-brown, very fine SAND and SILT, some clay banding
				Dark grey, CLAY some silt ,no odor, no sheen END OF BORING AT 18.0 feet



ATLANTIC

BORING LOG MW 3

PROJECT: JACKSON STREET MGP
PROJECT NO: 1284-07-02
LOCATION: PENN YAN, NEW YORK
DATE STARTED: 10/08/91
DATA COMPLETED: 10/08/91
DRILLING CONTRACTOR: NORTH STAR DRILLING
DRILLER: JOE ELY
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON

GROUND ELEVATION: 752.7
PROTECTIVE CASING ELEVATION: 752.7
WELL ELEVATION: 751.6
WATER LEVEL:
DATUM: MEAN SEA LEVEL
WEATHER:
INSPECTOR: MIKE NEJDL
CHECKED BY: ERIK NESS

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	HNU (ppm)	SOIL DESCRIPTION (color, SOIL, admixture, moisture, other notes, ORIGIN)
0-2	11 11	45		Brown, fine SAND and GRAVEL, some silt, trace brick, TOPSOIL
				Brown, ASH and fine SAND, FILL
2-4	11 11	25		Light grey/white and brown, ASH, some fine sand, little coal, trace brown purifier waste, FILL
4-6	2 2 4 6	75		Red-brown, SILT and GRAVEL, trace coal fragments, lens of purifier waste at 4.3, moist, gradng to brown, SILT, some gravel, little clay, moist, FILL
6-8	9 8 7 8	100	1	
8-10	4 7 6 6	60		Brown SILT AND GRAVEL, some clay, moist
10-12	5 5 5 5	100		Grading to brown, SILT, some large gravel, little clay, moist
12-14	7 10 9 11	100		Grading to brown, SILT, some gravel, little clay, moist
14-16	2 4 5 6	95		Grading to brown, SILT, some clay, some gravel, moist
16-18	6 7 8 7	100		Grey-brown, SILT and GRAVEL, some clay, moist
18-20	4 5 7 8	90		Grading to grey-brown, SILT and small GRAVEL, some clay, moist
20-22	2 3 4 7	90		Wet at 18 feet
22-24	4 5 6 6	90		Grey-brown, SILT, some clay, grading to grey-brown, SILT and CLAY, wet
24-26	WOH 2 3 5	100		Red-brown and grey-brown, CLAY, some very fine sand banding, wet
26-28	4 4 5 5	100		
28-30	4 4 4 4	100		Reddish silty lenses from 29.6 to 29.8
				END OF BORING AT 30.0 feet

DEPTH (FT.): 0, 5, 10, 15, 20, 25, 30, 35

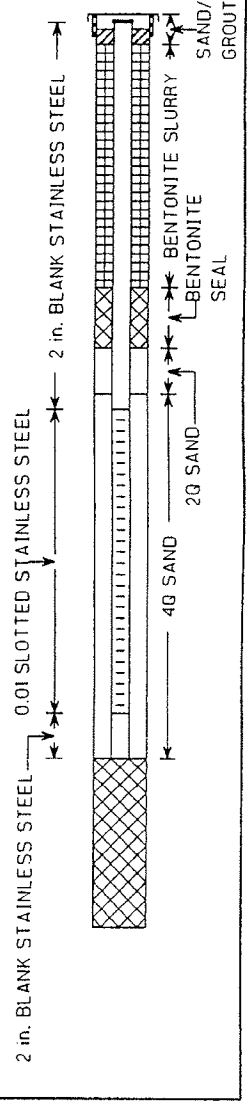
VISUAL CONTAM.: NONE, STAIN, SHEEN, HEAVY

SAMPLE ANALYSIS

LITHOLOGY

DEPTH (FT.): 0.0, 0.6, 6.0, 22.7, 30

WELL CONSTRUCTION



ATLANTIC

BORING LOG MW 3A

PROJECT: JACKSON STREET MGP
PROJECT NO: 1284-07-02
LOCATION: PENN YAN, NEW YORK
DATE STARTED: 10/14/91
DATA COMPLETED: 10/14/91
DRILLING CONTRACTOR: NORTH STAR DRILLING
DRILLER: JOE ELY
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON

GROUND ELEVATION: 753.4
PROTECTIVE CASING ELEVATION: 753.4
WELL ELEVATION: 752.9
WATER LEVEL:
DATUM: MEAN SEA LEVEL
WEATHER:
INSPECTOR: ANNA SULLIVAN
CHECKED BY: ERIK NESS

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	HNU (ppm)	SOIL DESCRIPTION (color, SOIL, admixture, moisture, other notes, ORIGIN)
0-2	4 6 10 11	50		Brown, TOPSOIL, some fine sand, some silt, trace rock fragments (shaly), no odor
Not Sampled				Sampled from flights- Brown, SILT and CLAY, some fine sand
5-7	10 14 14 14	90		Tan, SILT, damp
Not Sampled				Grades to yellow-tan
				Fine sand lense from 6.6 to 6.8
10-12	9 11 10 12	90		Some rock fragments, moist
Not Sampled				Greyish-brown, SILT, moist
				Grey-brown, SILT, wet, slight napthalene odor
15-17	9 8 7 9	90		Rock fragments throughout, moist
Not Sampled				Some brick fragment (wash), moist
20-22	4 6 6 8	100		Grey-dark grey, SILT, some clay, some rock (shale) fragments, moist
Not Sampled				
25-27	5 6 6 8	100		Silt and rock fragments, little fine sands, trace clay
Not Sampled				Grey, silty CLAY, moist, wet at 32.0'
30-32	1 2 2 4	100		
Not Sampled				
35-37	2 2 1 2	100		Grey, silty CLAY, wet, soft and loose, slight odor from 35.6' - 36.7'
Not Sampled				Black/grey, medium SAND and GRAVEL, strong odor from 36.7' to 37.0'
40-42	4 6 11 12	100	12	Brown, silty CLAY, faint odor
				Black, fine to medium SAND and GRAVEL, mild coal tar odor
				END OF BORING AT 42.0 feet

DEPTH (FT.): 0, 5, 10, 15, 20, 25, 30, 35, 40, 45

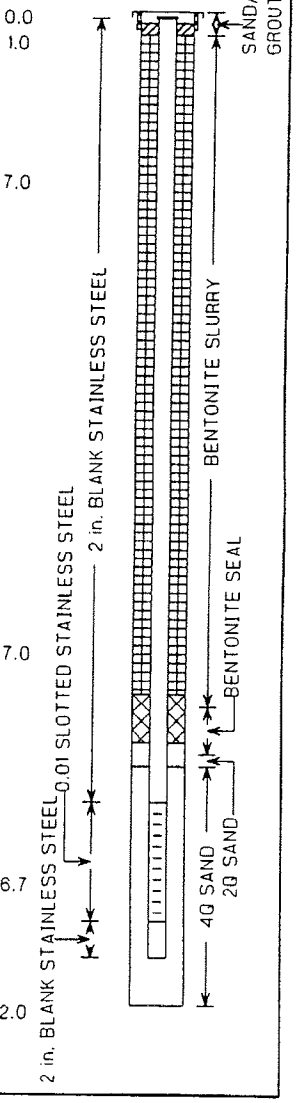
VISUAL CONTAM.: NONE, STAIN, SHEEN, HEAVY

SAMPLE ANALYSIS

LITHOLOGY

DEPTH (FT.): 0.0, 1.0, 7.0, 27.0, 36.7, 42.0

WELL CONSTRUCTION



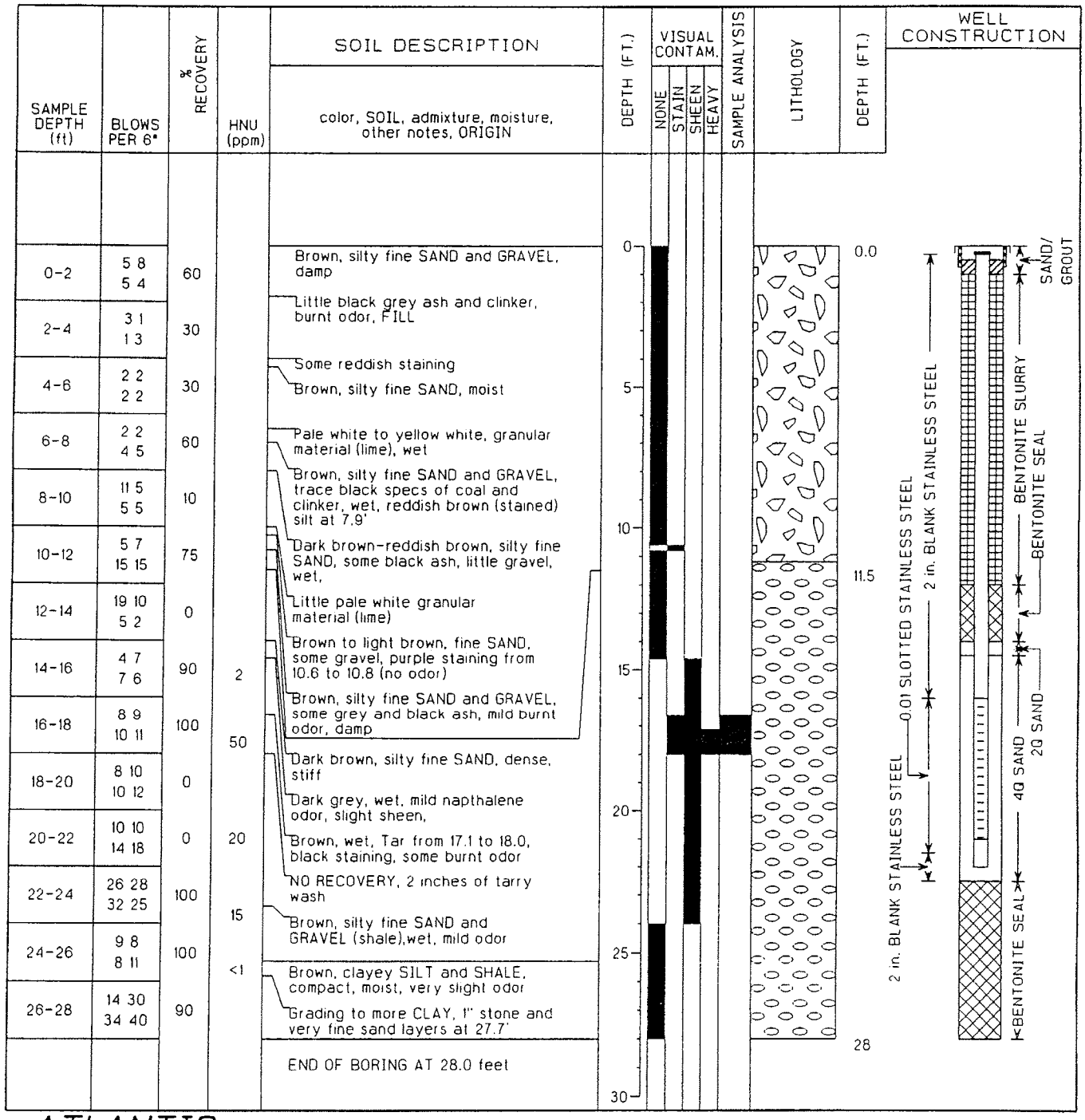
ATLANTIC

BORING LOG MW 4

PROJECT: JACKSON STREET MGP
PROJECT NO: 1284-07-02
LOCATION: PENN YAN, NEW YORK
DATE STARTED: 10/10/91
DATA COMPLETED: 10/10/91
DRILLING CONTRACTOR: NORTH STAR DRILLING
DRILLER: JOE ELY
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON

GROUND ELEVATION: 754.3
PROTECTIVE CASING ELEVATION: 754.3
WELL ELEVATION: 753.2
WATER LEVEL:
DATUM: MEAN SEA LEVEL
WEATHER:
INSPECTOR: MIKE NEJDL
CHECKED BY: ERIK NESS

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	HNU (ppm)	SOIL DESCRIPTION: color, SOIL, admixture, moisture, other notes, ORIGIN
0-2	5 8 5 4	60		Brown, silty fine SAND and GRAVEL, damp
2-4	3 1 1 3	30		Little black grey ash and clinker, burnt odor, FILL
4-6	2 2 2 2	30		Some reddish staining Brown, silty fine SAND, moist
6-8	2 2 4 5	60		Pale white to yellow white, granular material (lime), wet
8-10	11 5 5 5	10		Brown, silty fine SAND and GRAVEL, trace black specs of coal and clinker, wet, reddish brown (stained) silt at 7.9'
10-12	5 7 15 15	75		Dark brown-reddish brown, silty fine SAND, some black ash, little gravel, wet,
12-14	19 10 5 2	0		Little pale white granular material (lime)
14-16	4 7 7 6	90	2	Brown to light brown, fine SAND, some gravel, purple staining from 10.6 to 10.8 (no odor)
16-18	8 9 10 11	100	50	Brown, silty fine SAND and GRAVEL, some grey and black ash, mild burnt odor, damp
18-20	8 10 10 12	0		Dark brown, silty fine SAND, dense, stiff
20-22	10 10 14 18	0	20	Dark grey, wet, mild napthalene odor, slight sheen, Brown, wet, Tar from 17.1 to 18.0, black staining, some burnt odor
22-24	26 28 32 25	100		NO RECOVERY, 2 inches of tarry wash
24-26	9 8 8 11	100	15	Brown, silty fine SAND and GRAVEL (shale),wet, mild odor
26-28	14 30 34 40	90	<1	Brown, clayey SILT and SHALE, compact, moist, very slight odor Grading to more CLAY, 1" stone and very fine sand layers at 27.7'
				END OF BORING AT 28.0 feet



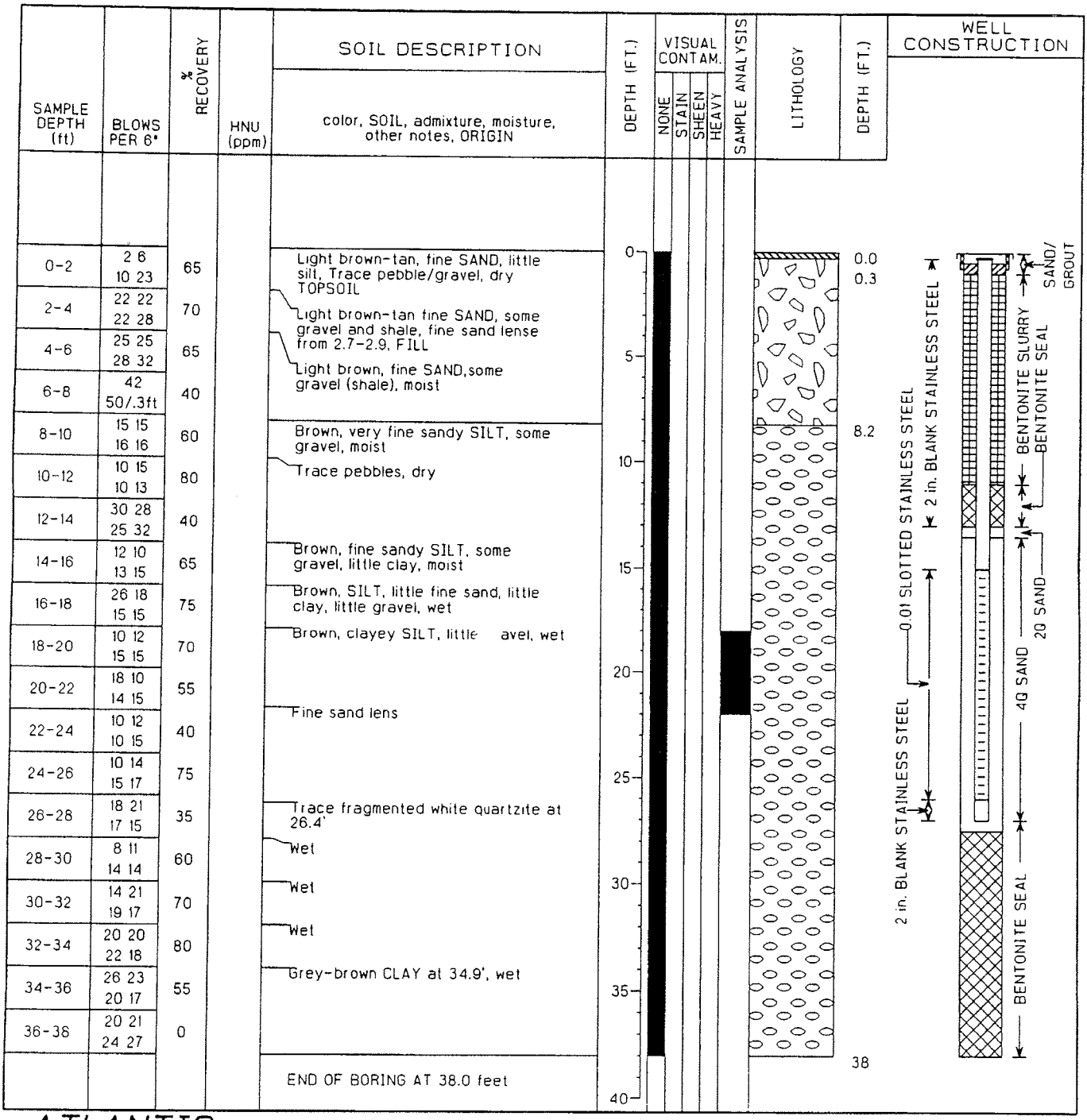
ATLANTIC

BORING LOG MW 5

PROJECT: JACKSON STREET MGP
PROJECT NO: 1284-07-02
LOCATION: PENN YAN, NEW YORK
DATE STARTED: 10/09/91
DATA COMPLETED: 10/09/91
DRILLING CONTRACTOR: NORTH STAR DRILLING
DRILLER: JOE ELY
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON

GROUND ELEVATION: 751.5
PROTECTIVE CASING ELEVATION: 751.5
WELL ELEVATION: 755.7
WATER LEVEL:
DATUM: MEAN SEA LEVEL
WEATHER:
INSPECTOR: MIKE NEJDL
CHECKED BY: ERIK NESS

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	HNU (ppm)	SOIL DESCRIPTION: color, SOIL, admixture, moisture, other notes, ORIGIN
0-2	2 6 10 23	65		Light brown-tan, fine SAND, little silt, Trace pebble/gravel, dry TOPSOIL
2-4	22 22 22 28	70		Light brown-tan fine SAND, some gravel and shale, fine sand lense from 2.7-2.9, FILL
4-6	25 25 28 32	65		
6-8	42 50/.3ft	40		Light brown, fine SAND, some gravel (shale), moist
8-10	15 15 16 16	60		Brown, very fine sandy SILT, some gravel, moist
10-12	10 15 10 13	80		Trace pebbles, dry
12-14	30 28 25 32	40		
14-16	12 10 13 15	65		Brown, fine sandy SILT, some gravel, little clay, moist
16-18	26 18 15 15	75		Brown, SILT, little fine sand, little clay, little gravel, wet
18-20	10 12 15 15	70		Brown, clayey SILT, little avel, wet
20-22	18 10 14 15	55		
22-24	10 12 10 15	40		Fine sand lens
24-26	10 14 15 17	75		
26-28	18 21 17 15	35		Trace fragmented white quartzite at 26.4'
28-30	8 11 14 14	60		Wet
30-32	14 21 19 17	70		Wet
32-34	20 20 22 18	80		Wet
34-36	26 23 20 17	55		Grey-brown CLAY at 34.9', wet
36-38	20 21 24 27	0		
				END OF BORING AT 38.0 feet



ATLANTIC

BORING LOG BH 1

PROJECT: JACKSON STREET MGP
PROJECT NO: 1284-07-02
LOCATION: PENN YAN, NEW YORK
DATE STARTED: 10/11/91
DATA COMPLETED: 10/11/91
DRILLING CONTRACTOR: NORTH STAR DRILLING
DRILLER: JOE ELY
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON

GROUND ELEVATION: 755.75
PROTECTIVE CASING ELEVATION:
WELL ELEVATION:
WATER LEVEL:
DATUM: MEAN SEA LEVEL
WEATHER:
INSPECTOR: MIKE NEJDL
CHECKED BY: ERIK NESS

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	HNU (ppm)	SOIL DESCRIPTION: color, SOIL, admixture, moisture, other notes, ORIGIN
0-2	4 5 4 4	60		Brown, silty fine SAND, some brick, trace coal dust, moist, TOPSOIL
				Light brown, silty fine SAND and GRAVEL, trace ash, coal and brick moist, FILL
2-4	1 1 2 2	25		
4-6	5 4 4 3	55		Light brown (reddish),little clay, trace glass, moist
6-8	4 9 7 5	85		Dark brown, silty medium SAND, some gravel, little clinker, moist
				Light brown grading to light reddish brown, clayey SILT and GRAVEL, trace brick and wood fragments, soft, moist
8-10	3 3 3 3	90		
10-12	3 4 4 5	60		Dark brown grading to light reddish brown, dark stain from 8.9 to 9.1
				Dark brown to reddish clayey SILT and GRAVEL, some very fine sand lense
12-14	5 5 8 8	80	1-2	
				Dark brown grading to grey brown, trace charcoal, moist, light sweet odor
14-16	8 8 14 9	50		Some very fine sand, little shale fragments , medium grading to light sweet odor
16-18	6 6 6 7	85		Light grey, silty very fine SAND, wet
				Dark grey, clayey SILT and GRAVEL, wet
18-20	4 3 5 5	90		Light grey silty very fine sand lens from 18.0 to 16.1' and 16.4 to 16.5', wet
20-22	3 4 4 5	100		Some fine sand lens, moist, wet at 20.0
				Dark grey, silty CLAY, some gravel, stiff, wet
22-24	3 4 3 4	100		Little gravel
24-26	4 3 4 4	100		Varved, reddish grey CLAY and fine sandy silt lens
				Thicker sandy silt lens
26-28	5 5 6 6	100		
			1	Mild odor (fuel oil/naptha) in last 2 sand lens
				END OF BORING AT 28.0 feet

DEPTH (FT.): 0, 5, 10, 15, 20, 25, 30

VISUAL CONTAM.: NONE, STAIN, SHEEN, HEAVY

SAMPLE ANALYSIS

LITHOLOGY

DEPTH (FT.): 0.0, 0.6, 12.0, 24.0, 28

WELL CONSTRUCTION: GROUT/BENTONITE SLURRY

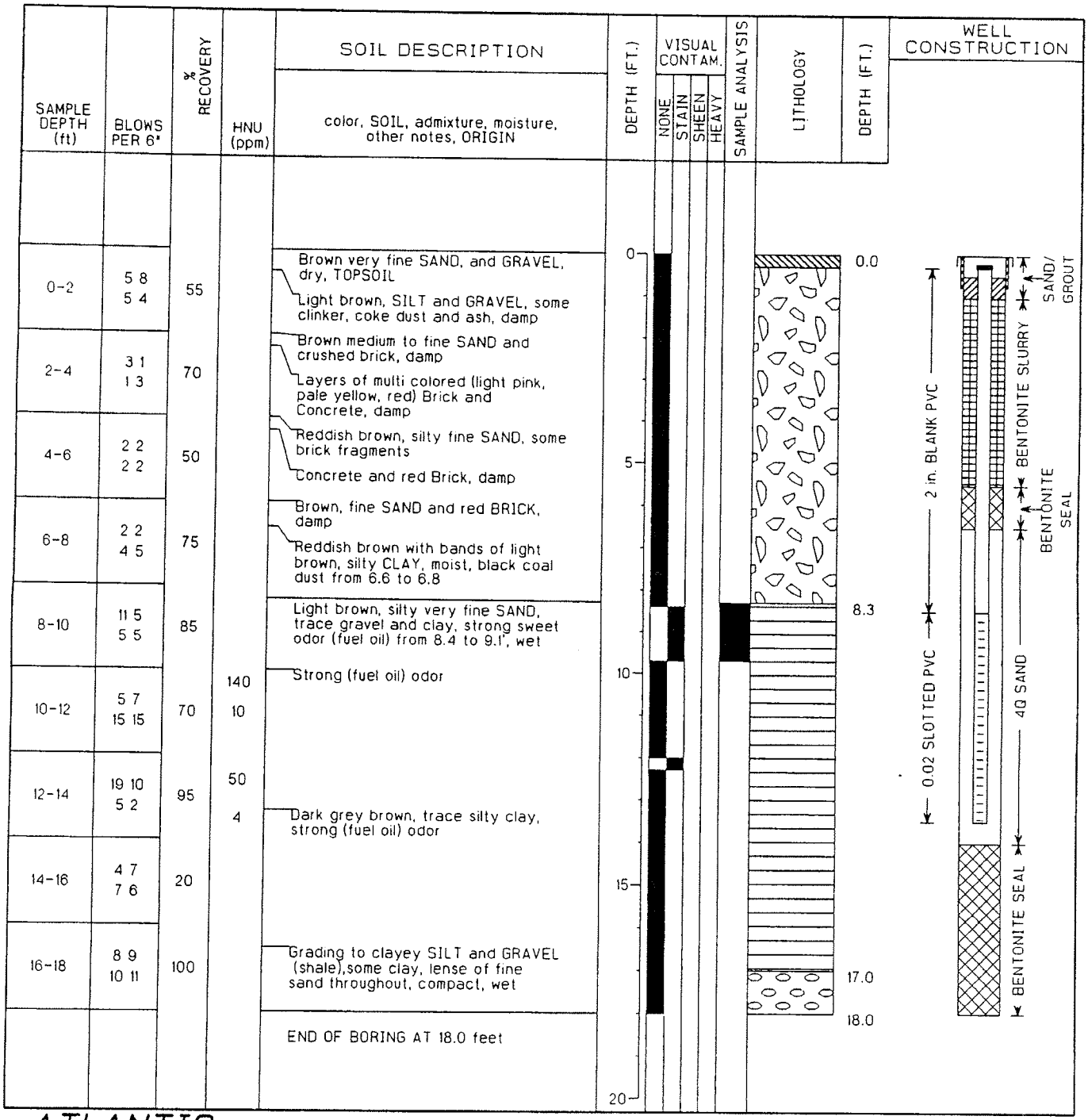
ATLANTIC

BORING LOG BH 2

PROJECT: JACKSON STREET MGP
PROJECT NO: 1284-07-02
LOCATION: PENN YAN, NEW YORK
DATE STARTED: 10/10/91
DATA COMPLETED: 10/10/91
DRILLING CONTRACTOR: NORTH STAR DRILLING
DRILLER: JOE ELY
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON

GROUND ELEVATION: 755.9
PROTECTIVE CASING ELEVATION: 755.9
WELL ELEVATION: 755.7
WATER LEVEL:
DATUM: MEAN SEA LEVEL
WEATHER:
INSPECTOR: MIKE NEJDL
CHECKED BY: ERIK NESS

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	HNU (ppm)	SOIL DESCRIPTION (color, SOIL, admixture, moisture, other notes, ORIGIN)
0-2	5 8 5 4	55		Brown very fine SAND, and GRAVEL, dry, TOPSOIL Light brown, SILT and GRAVEL, some clinker, coke dust and ash, damp
2-4	3 1 1 3	70		Brown medium to fine SAND and crushed brick, damp Layers of multi colored (light pink, pale yellow, red) Brick and Concrete, damp
4-6	2 2 2 2	50		Reddish brown, silty fine SAND, some brick fragments Concrete and red Brick, damp
6-8	2 2 4 5	75		Brown, fine SAND and red BRICK, damp Reddish brown with bands of light brown, silty CLAY, moist, black coal dust from 6.6 to 6.8
8-10	11 5 5 5	85		Light brown, silty very fine SAND, trace gravel and clay, strong sweet odor (fuel oil) from 8.4 to 9.1', wet
10-12	5 7 15 15	70	140 10	Strong (fuel oil) odor
12-14	19 10 5 2	95	50 4	Dark grey brown, trace silty clay, strong (fuel oil) odor
14-16	4 7 7 6	20		
16-18	8 9 10 11	100		Grading to clayey SILT and GRAVEL (shale), some clay, lense of fine sand throughout, compact, wet
				END OF BORING AT 18.0 feet



ATLANTIC

BORING LOG BH 3

PROJECT: JACKSON STREET MGP
PROJECT NO: 1284-07-02
LOCATION: PENN YAN, NEW YORK
DATE STARTED: 10/15/91
DATA COMPLETED: 10/15/91
DRILLING CONTRACTOR: NORTH STAR DRILLING
DRILLER: JOE ELY
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON

GROUND ELEVATION: 754.7
PROTECTIVE CASING ELEVATION:
WELL ELEVATION:
WATER LEVEL:
DATUM: MEAN SEA LEVEL
WEATHER:
INSPECTOR: ANNA SULLIVAN
CHECKED BY: ERIK NESS

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	HNU (ppm)	SOIL DESCRIPTION: color, SOIL, admixture, moisture, other notes, ORIGIN
				INSIDE GAS HOLDER
0-2	3 3 4 2	42.5		Dark brown , sandy TOPSOIL, trace coal
2-4	3 3 3 3	20		Some small brick fragments, some coal/ash and glass, FILL
4-6	1 1 ? ?	25		Dark brown/grey, sandy SILT, moist, FILL Burnt COAL and BRICK FRAGMENTS, FILL
6-8	1 1 8 17	32		Brown/grey, sandy SILT and shale and coal fragments, wet, FILL Lighter grey/brown, fine to medium SAND, trace brick, moist, slight tar odor, FILL
8-10	12 6 5 5	45		Dark grey, SAND, little silt, trace glass, FILL Light grey/brown, RUBBLE, some sand, faint odor
10-12	WH WH 3 3	60	5	BRICK and GRAVEL, some silt, little clay, possible bottom of holder at 10.4 to 10.8', FILL Dark grey, SILT, some gravel, very slight odor
12-14	5 5 5 5	87	3-4	Some clay, slight odor at 13.0'
14-16	5 3 3 3	100	4 4-9	Grey, slight odor Grey, CLAY, some silt and gravel, slight odor
				END OF BORING AT 16.0 feet

DEPTH (FT.): 0, 5, 10, 15, 20

VISUAL CONTAM.: NONE, STAIN, SHEEN, HEAVY

SAMPLE ANALYSIS

LITHOLOGY

DEPTH (FT.): 0.0, 10.0, 16.0

WELL CONSTRUCTION: GROUT/BENTONITE SLURRY

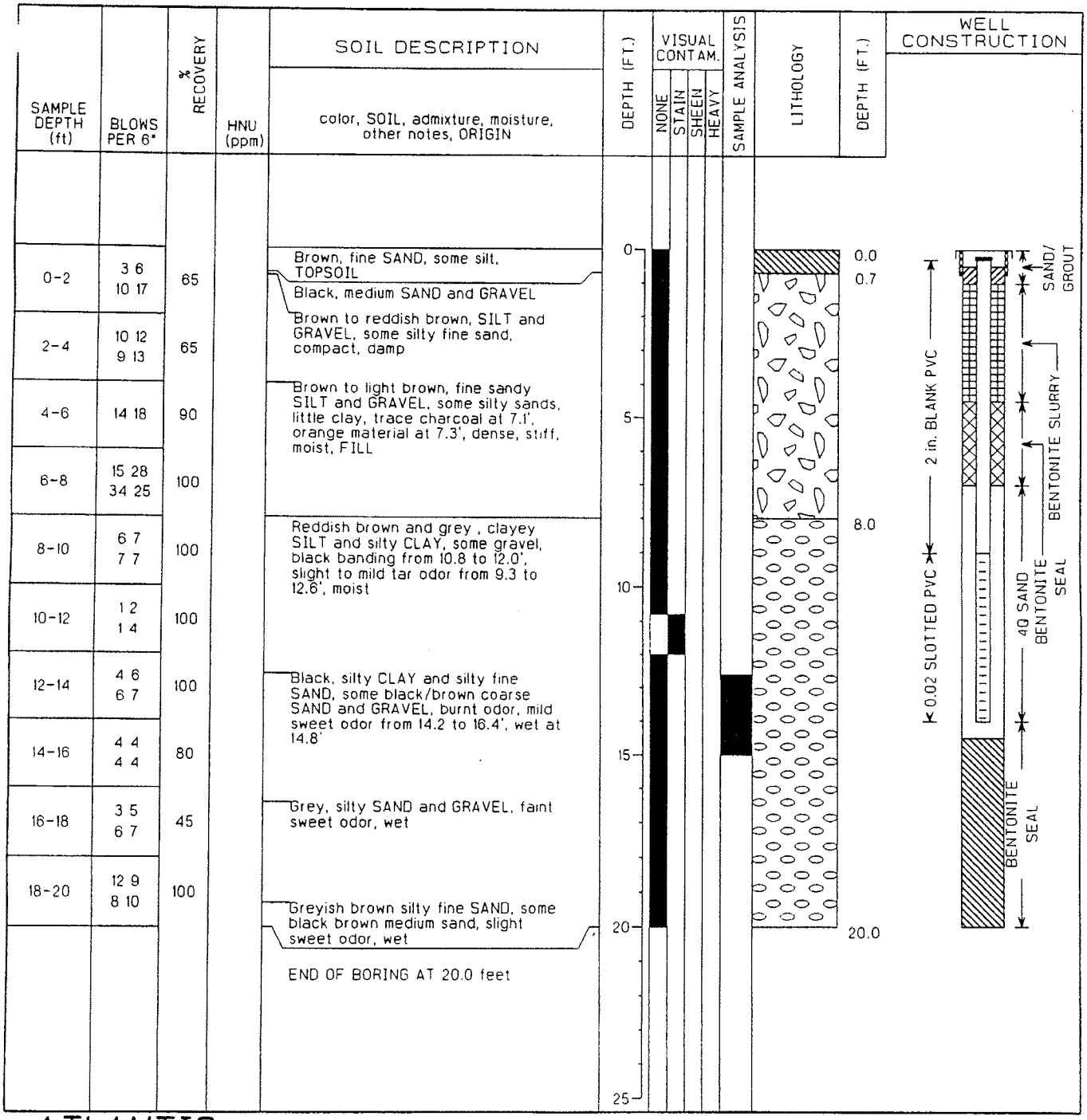
ATLANTIC

BORING LOG BH 4

PROJECT: JACKSON STREET MGP
PROJECT NO: 1284-07-02
LOCATION: PENN YAN, NEW YORK
DATE STARTED: 10/10/91
DATA COMPLETED: 10/10/91
DRILLING CONTRACTOR: NORTH STAR DRILLING
DRILLER: JOE ELY
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON

GROUND ELEVATION: 754.7
PROTECTIVE CASING ELEVATION: 754.7
WELL ELEVATION: 754.3
WATER LEVEL:
DATUM: MEAN SEA LEVEL
WEATHER:
INSPECTOR: MIKE NEJDL
CHECKED BY: ERIK NESS

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	HNU (ppm)	SOIL DESCRIPTION: color, SOIL, admixture, moisture, other notes, ORIGIN
0-2	3 6 10 17	65		Brown, fine SAND, some silt, TOPSOIL Black, medium SAND and GRAVEL
2-4	10 12 9 13	65		Brown to reddish brown, SILT and GRAVEL, some silty fine sand, compact, damp
4-6	14 18	90		Brown to light brown, fine sandy SILT and GRAVEL, some silty sands, little clay, trace charcoal at 7.1', orange material at 7.3', dense, stiff, moist, FILL
6-8	15 28 34 25	100		
8-10	6 7 7 7	100		Reddish brown and grey, clayey SILT and silty CLAY, some gravel, black banding from 10.8 to 12.0', slight to mild tar odor from 9.3 to 12.6', moist
10-12	1 2 1 4	100		
12-14	4 6 6 7	100		Black, silty CLAY and silty fine SAND, some black/brown coarse SAND and GRAVEL, burnt odor, mild sweet odor from 14.2 to 16.4', wet at 14.8'
14-16	4 4 4 4	80		
16-18	3 5 6 7	45		Grey, silty SAND and GRAVEL, faint sweet odor, wet
18-20	12 9 8 10	100		Greyish brown silty fine SAND, some black brown medium sand, slight sweet odor, wet
				END OF BORING AT 20.0 feet



ATLANTIC

BORING LOG BH 5

PROJECT: JACKSON STREET MGP
PROJECT NO: 1284-07-02
LOCATION: PENN YAN, NEW YORK
DATE STARTED: 10/11/91
DATA COMPLETED: 10/11/91
DRILLING CONTRACTOR: NORTH STAR DRILLING
DRILLER: JOE ELY
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON

GROUND ELEVATION: 754.7
PROTECTIVE CASING ELEVATION:
WELL ELEVATION:
WATER LEVEL:
DATUM: MEAN SEA LEVEL
WEATHER:
INSPECTOR: MIKE NEJDL
CHECKED BY: ERIK NESS

SAMPLE DEPTH (ft)	BLOWS PER 6"	% RECOVERY	HNU (ppm)	SOIL DESCRIPTION color, SOIL, admixture, moisture, other notes, ORIGIN
0-2	3 3 3 6	55		Brown silty sand, TOPSOIL
				Brown, sandy SILT, damp
2-4	6 7 8 12	60		Brown, silty, fine to coarse SAND and GRAVEL, damp
4-6	16 16 20 24	75		
6-8	21 23 20 20	80		Dark brown, sandy SILT and GRAVEL, trace clay, moist
8-10	8 14 19 14	90		Grey brown, clayey SILT and GRAVEL, moist
10-12	6 5 6 5	75		Grey brown, SILT and GRAVEL, some sand and clay, wet
12-14	6 5 5 5	100		Brown, very fine SAND, some silt, some gravel, wet
14-16	1 2 1 2	100		Grey brown, SILT and GRAVEL, some clay, some coarse sand, wet
16-18	2 2 4 5	95		Grading to CLAY and SILT, trace coarse sand
18-20	3 3 3 3	90		Brown, varved CLAY and silty very fine SAND, wet
20-22	WH WH 1 3	65		Grey
				Grey, very fine SAND, some silt
22-24	6 7 13 13	90		Grey-black, medium SAND, trace black mineral specs
24-26	14 15 19 11	100		Grey-black, medium SAND, trace gravel (shale)
26-28	7 10 12 14	70		Grey, SILT and GRAVEL (shale), some clay, some coarse sand, dense
28-30	9 11 7 14	40		
30-32	8 10 6 6	45		Possible very slight sweet fuel odor
32-34	7 8 9 10	30		Grey, SILT and GRAVEL, some clay, no odor
34-36	9 11 11 9	0		
36-38	3 16 16 16	50		Grey, SILT and GRAVEL (shale), some very fine sand, some clay
38-40	9 12 14 15	100		
				END OF BORING AT 40.0 feet

DEPTH (FT.): 0, 5, 10, 15, 20, 25, 30, 35, 40, 45

VISUAL CONTAM.: NONE, STAIN, SHEEN, HEAVY

SAMPLE ANALYSIS

LITHOLOGY

DEPTH (FT.): 0.0, 0.8, 2.7, 14.0, 19.2, 40

WELL CONSTRUCTION: BENTONIT/GROUT SLURRY

ATLANTIC

PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-10**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/18/07	DATE FINISHED: 9/18/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 40.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 16 feet	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES Sample No.	Sample	Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1–2	1		NA	0	**TOPSOIL** brown, damp fine sand with silt, rootlets, loose **FILL** brown to tan brown damp fine sand with little silt and fine to medium rounded gravel, little coal dust, trace brick, coal slag and CLM present as fine sand to fine angular gravel size fragments.	
3–6	2		NA	0		
7–9				300		
10–12	3		NA		Fill material as above. moderate tar like odor at 11' bgs. Visible staining on gravel.	
13–14	4		NA	175		
15–16					Laboratory Sample 15 to 16'	
17–18	5		NA	175	**Sandy SILT (ML)** light grey to grey, fine sand with little silt, firm, becoming saturated at 15.5' bgs, high dilatency, strong tar like odor	
19–22	6		NA	140	**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** gray, damp fine to medium sand with rounded to subangular gravel, little medium plasticity fines, soft (poorly consolidated), no staining, unique non tar-like volatile hydrocarbon-type odor.	
23–26	7		NA	75		
27–29				5		
30–32	8		NA		grading to **SILTY CLAY (CL)** grey, damp med. to high plasticity fines with trace silt, , no staining or odors. Laboratory Sample 31 to 32'	
33–34	9		NA	0	**Well graded SAND with SILT and GRAVEL (SW-SM)** grey, saturated fine to med. sand with med. rounded to subrounded gravel, little silt, loose, no staining or odors	
35–38	10		NA	0.3		
39–42					End of boring at 40.0' bgs.	

PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-13**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/17/07	DATE FINISHED: 9/17/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 3.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1				0	Hand excavate with shovel between 0' and 3' bgs.	
2					-**FILL** Brown fine sand with silty soil matrix, trace fine rounded gravel, some coal fragments, glass. Trace of white, hard, friable material present as coarse sand to fine gravel-size fragments. Resembles partially fired coal. Dry to damp throughout.	
3						
4					Advance 2" dia. stainless steel hand auger from 2.5' to 3.0' bgs. Native soil encountered between 2.5' to 3.0' bgs, consisting of loose light brown fine sand, little silt, trace fine angular gravel (TILL), dry to damp. No staining or odors present.	
5					Laboratory sample 2.5 to 3'	
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PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-14**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/17/07	DATE FINISHED: 9/17/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 3.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1				0	Hand excavate with shovel between 0' and 3' bgs.	
2					-**FILL** Brown fine sand with silty soil matrix, trace fine rounded gravel, some coal fragments, glass. Trace of white, hard, friable material present as coarse sand to fine gravel-size fragments. Resembles partially fired coal. Dry to damp throughout.	
3						
4					Advance 2" dia. stainless steel hand auger from 3' to 4' bgs. Native soil encountered between 3' and 4' bgs, consisting of loose light brown fine sand, little silt, trace fine angular gravel, dry to damp. No staining or odors present. Laboratory sample 3 to 3.5'	
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PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-15**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/17/07	DATE FINISHED: 9/17/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 4.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1				0	Hand excavate with shovel between 0' and 3' bgs.	
2					-**FILL** Light brown fine sand with silty soil matrix, trace fine rounded gravel, some coal fragments, glass. Trace of white, hard, friable material present as coarse sand to fine gravel-size fragments. Resembles partially fired coal. Dry to damp throughout.	
3						
4					Advance 2" dia. stainless steel hand auger from 3' to 4' bgs. No staining or odors present.	
5					Laboratory sample 3 to 3.5'	
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PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-16**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/17/07	DATE FINISHED: 9/17/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 4.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1				0	Hand excavate with shovel between 0' and 2' bgs.	
2					-**FILL** Light brown fine sand with silty soil matrix, trace fine rounded gravel, some coal fragments, glass. Trace of white, hard, friable material present as coarse sand to fine gravel-size fragments. Resembles partially fired coal. Dry to damp throughout.	
3						
4					Advance 2" dia. stainless steel hand auger from 2' to 4' bgs. No staining or odors present. Laboratory sample 3.5 to 4'	
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PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-17**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/20/07	DATE FINISHED: 9/20/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 16.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 11 feet	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1					**TOPSOIL** brown, damp fine sand with silt, rootlets, loose	
2	1		NA	0	**FILL** brown to tan brown damp fine sand with little silt and fine to medium rounded gravel, little concrete present as fine angular gravel, little wood fiber trace brick, coal slag and CLM. No odors or staining.	
3						
4						
5						
6	2		NA	0		
7						
8						
9						
10	3		NA	0		
11						
12						
13				0.8	some brick returned in sampler (possibly base of gas holder) little sheen on brick with moderate coal tar like odor.	
14	4		NA			
15				22	**SILTY CLAY (CL)** grey, damp med. to high plasticity fines with trace silt, slight coal tar like odor, no staining.	
16					End of boring at 16' bgs.	
17					Laboratory Sample 15 to 16'	
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PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-18**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/21/07	DATE FINISHED: 9/21/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 16.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 10 feet	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1–5	1		NA	0	**FILL** brown to tan brown damp fine sand with little silt and fine to medium rounded gravel, little concrete present as fine angular gravel, little wood fiber trace brick, coal slag and CLM. Slight septic odor at 7.5' bgs.	
6–9	2		NA	0		
10–12	3		NA	0	some brick returned in sampler (base of gas holder?) slight coal tar like odor, no sheens or staining present.	
13–16	4		NA	1	**SILTY CLAY (CL)** grey, damp med. to high plasticity fines with trace silt, moderate coal tar like odor, no staining. Grading to med. to coarse sand bottom 6" of sampler.	
17					End of boring at 16' bgs.	

BORING SOIL BORING LOGS.GPJ (6/08)

PROJECT: Jackson Street Former MGP Site Penn Yan, New York		**Log of Boring No. BH-19**	
BORING LOCATION:		ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.		DATE STARTED: 9/21/07	DATE FINISHED: 9/21/07
DRILLING METHOD: 2 3/4" diameter HSA		TOTAL DEPTH: 16.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850		DEPTH TO WATER: FIRST	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)		LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer	DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1–4	1		NA	0	**Well graded SAND with SILT (SW-SM) (FILL)** grey, damp fine to medium sand with silt, some medium plasticity fines, trace fine rounded gravel, soft (poorly consolidated), no staining or odors	
5–8	2		NA	0	**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** brown to gray brown, damp fine to medium sand with some rounded to subangular gravel, little medium plasticity fines, hard throughout, no staining or odors.	
9–12	3		NA	0		
13–16	4		NA	0	Laboratory Sample 14 to 15'	
17–42					End of boring at 16.0' bgs.	

BORING SOIL BORING LOGS.GPJ (6/08)

PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-20**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/21/07	DATE FINISHED: 9/21/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 20.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 10.5 feet	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter. Surface Elevation: fmsl	DRILLING REMARKS
1					**TOPSOIL** brown, damp fine sand with silt, rootlets, loose	
2	1		NA	0	**FILL** brown to tan brown damp fine sand with little silt and fine to medium rounded gravel, little concrete present as fine angular gravel, few large (>2" diameter) coal pieces, some coal slag and CLM. , no staining or odors present.	
3						
4						
5						
6	2		NA	0		
7						
8						
9						
10	3		NA	0		
11						
12						
13						
14	4		NA	0		
15						
16					grey till and brick mixed with fill material, little staining and sheens associated with brick at 15' bgs. moderate coal tar odor.	
17				0.1		
18	5		NA	5	**SILTY CLAY (CL)** grey, damp med. to high plasticity fines with trace silt, slight coal tar like odor, no staining.	
19				16		
20				2.0	Laboratory Sample 18 to 19'	
21					End of boring at 20' bgs.	
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PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-21**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/21/07	DATE FINISHED: 9/21/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 16.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1					**TOPSOIL** brown, damp fine sand with silt, rootlets, loose	
2	1		NA	0	**FILL** brown to tan brown damp fine sand with little silt, little ceramic debris, little CLM. , no staining or odors present.	
3						
4						
5						
6	2		NA	0		
7						
8					**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** tan brown, damp fine to medium sand with rounded to subangular gravel, little medium plasticity fines	
9						
10	3		NA	0	decreasing gravel content (<10%) below 8' bgs.	
11						
12						
13						
14	4		NA	0	Laboratory Sample 14 to 15'	
15				1.5	slight coal tar like odor at 15' bgs.	
16						
17					End of boring at 16' bgs.	
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PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-22**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/21/07	DATE FINISHED: 9/21/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 20.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 9 feet	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1					**TOPSOIL** brown, damp fine sand with silt, rootlets, loose	
2	1		NA	0	**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** tan brown grading to grey, damp fine to medium sand with rounded to subangular gravel, little medium plasticity fines, hard throughout.	
3						
4						
5						
6	2		NA	0		
7						
8						
9				0.1	slight coal tar like odor between 8' and 10' bgs.	
10	3		NA	0		
11				2.0		
12						
13						
14	4		NA	0	**SILTY CLAY (CL)** grey, damp med. to high plasticity fines with trace silt, strong coal tar like odor, no staining.	
15				30	**Poorly Graded SAND with SILT (SW)** gray, saturated fine to med. sand with trace silt, loose, moderate coal tar like odor, light sheens.	
16					Laboratory Sample 15 to 16'	
17					Laboratory Sample 18.5 to 19.5'	
18	5		NA	0		
19				11		
20					Trace native gray TILL material bottom 6" of sampler between 19.5 and 20.0' bgs. No impact.	
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22					End of boring at 20' bgs.	
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PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-23**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/21/07	DATE FINISHED: 9/21/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 24.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 6.5 feet	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1–2	1		NA	0	**TOPSOIL** brown, damp fine sand with silt, rootlets, loose **Well graded SAND with SILT (SW) (SILTY SAND)** tan brown , damp fine to medium sand with silt, trace med. rounded gravel, no staining or odors present, weakly varved.	
6	2		NA	0	▽	
10	3		NA	0		
14	4		NA	0	**Poorly Graded SAND with SILT and GRAVEL (SW-SM)** gray, saturated fine to med. sand with silt and med. subangular gravel, hard throughout, no staining or odors present. Laboratory Sample 15 to 16'	
18	5		NA	0		
22	6		NA	0		
24					End of boring at 24' bgs.	

BORING SOIL BORING LOGS.GPJ (6/08)

PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-24**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/24/07	DATE FINISHED: 9/24/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 40.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 7.5 feet	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1					**TOPSOIL** brown, damp fine sand with silt, rootlets, loose	
2	1		NA	0	**FILL** brown to tan brown damp fine sand with little silt, little concrete debris, little CLM and coal fragments , no staining or odors present.	
3						
4						
5						
6	2		NA	0		
7						
8					**Poorly Graded SAND with SILT (SW)** gray, saturated high dilatency fine to med. sand with trace silt, loose	
9						
10	3		NA	0.2		
11						
12						
13					slight musty and coal tar like odors at 13' bgs within native sand and silt.	
14	4		NA	0.1		
15						
16						
17					**SILTY CLAY (CL)** grey, damp med. to high plasticity fines with trace silt,	
18	5		NA	5.0	soft throughout, moderate coal tar like odor, no staining.	
19						
20						
21						
22	6		NA	20	Laboratory Sample 22 to 23'	
23						
24						
25						
26	7		NA	20	grading into **Poorly Graded SAND with SILT (SW)** gray, high dilatency	
27					fine sand with trace silt, loose. Moderate coal tar odors present above 28' bgs.	
28					No staining, sheens or odors below 28' bgs.	
29						
30	8		NA	0.1		
31						
32					Laboratory Sample 32 to 33'	
33						
34	9		NA	0		
35					Locally higher clay content	
36						
37						
38	10		NA	0		
39						
40						
41					End of boring at 40' bgs.	
42						

BORING SOIL BORING LOGS.GPJ (6/08)

PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-6**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/20/07	DATE FINISHED: 9/20/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 40.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 9.7 feet	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1–2	1		NA	0	**FILL** light brown, dry fine sand with little silt (regraded native material), trace brick, soft throughout.	
3–6	2		NA	0	**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** brown to gray brown, damp fine to medium sand with some rounded to subangular gravel, little medium plasticity fines, soft firm throughout, no staining or odors.	
7–10	3		NA	0	grading to **SILTY CLAY (CL)** grey, damp med. to high plasticity fines with trace silt, no staining or odors.	
11–14	4		NA	0	Laboratory sample 12 to 12.5'	
15–18	5		NA	0	Laboratory sample 17.5 to 18.5' **Poorly Graded SAND (SP)** gray, saturated med. to coarse sand, trace silt, loose, no staining or odors.	
19–22	6		NA	0	**Poorly Graded SAND (SP)** gray, saturated med. to coarse sand, trace silt, loose, no staining or odors.	
23–26	7		NA	0	**TILL** as above. No staining or odors.	
27–30	8		NA	0		
31–34	9		NA	0		
35–38	10		NA	0		
39–42					End of Boring at 40' bgs.	

PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-7**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/24/07	DATE FINISHED: 9/24/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 40.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
					Surface Elevation: fmsl	
1					**TOPSOIL** brown, damp fine sand with silt, rootlets, loose	
2	1		NA	0	**FILL-** brown to tan brown damp fine sand with little silt and fine to medium rounded gravel, little concrete present as fine angular gravel, trace brick, coal slag and CLM. No odors or staining.	
3						
4						
5						
6	2		NA	0		
7					**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** brown, damp fine to medium sand with rounded to subangular gravel, little medium plasticity fines, soft (poorly consolidated), no staining, slight non tar-like volatile hydrocarbon-type odor.	
8						
9						
10	3		NA	0		
11				3.5	moderate coal tar like odor within till unit between 10' and 28' bgs	
12						
13						
14	4		NA	0		
15				3.5		
16					grading to **SILTY CLAY (CL)** , grey, damp med. to high plasticity fines with trace silt, , moderate coal tar like odor, no staining.	
17				3		
18	5		NA		grading to **SILTY CLAY (CL)** , grey, damp med. to high plasticity fines with trace silt, locally transitional with till unit, with thin (< 6") zones of sandy-silt with little med. rounded gravel, moderate coal tar like odor, no staining. Laboratory Sample 19 to 20'	
19				20		
20						
21						
22	6		NA	20		
23						
24						
25						
26	7		NA	3	**Poorly graded SAND (SP)** grey brown, saturated med. sand, trace silt, loose, moderate coal tar odor with light sheen on water. Slightly finer grained top 1.0' of unit. Laboratory Sample 29 to 30'	
27						
28						
29					**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** brown, damp fine to medium sand with rounded to subangular gravel, little medium plasticity fines, firm to hard throughout, no staining,	
30	8		NA	0.1		
31						
32						
33						
34	9		NA	0		
35						
36						
37						
38	10		NA	0		
39						
40						
41					End of boring at 40.0' bgs.	
42						

PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Boring No. BH-8**	
BORING LOCATION:	ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/20/07	DATE FINISHED: 9/20/07
DRILLING METHOD: 2 3/4" diameter HSA	TOTAL DEPTH: 40.0 fbgs	MEASURING POINT:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 12.5 feet	COMPL.
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES Sample No.	Sample	Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter. Surface Elevation: fmsl	DRILLING REMARKS
1					**TOPSOIL** brown, damp fine sand with silt, rootlets, loose	
2	1		NA	0	**FILL-** brown to tan brown damp fine sand with little silt and fine to medium rounded gravel, little concrete present as fine angular gravel, little wood fiber trace brick, coal slag and CLM. No odors or staining.	
3						
4						
5						
6	2		NA	0		
7						
8						
9						
10	3		NA	0	**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** grey, damp fine to medium sand with rounded to subangular gravel, some medium plasticity fines, soft (poorly consolidated), no staining, slight non tar-like volatile hydrocarbon-type odor.	
11						
12						
13						
14	4		NA	0	grading to **SILTY CLAY (CL)** grey, damp med. to high plasticity fines with trace silt and fine to medium rounded gravel, slight coal tar like odor, no staining.	
15				0.1		
16						
17						
18	5		NA	0.2		
19						
20						
21						
22	6		NA	0	**Poorly graded SAND (SP)** grey brown, saturated med. sand, trace silt, loose.	
23						
24						
25						
26	7		NA	0	**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** brown, damp med. plasticity fines with fine sand and silt, some med. angular to subrounded gravel, firm to hard throughout, no staining, very slight coal tar like odor.	
27						
28						
29					No odors present below 29' bgs.	
30	8		NA	2.4		
31						
32						
33						
34	9		NA	3.2		
35						
36						
37						
38	10		NA	3.0		
39						
40						
41					End of boring at 40.0' bgs.	
42						

PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Well No. BH-11/ MW-4D**	
BORING LOCATION:	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/19/07	DATE FINISHED: 9/19/07
DRILLING METHOD: 4 1/4" dia. HSA	TOTAL DEPTH: 40.0 fbgs	SCREEN INTERVAL: 29.5-39.5 fbgs
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 13.5 ft COMPL.	CASING: 2" PVC
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES Sample No.	Sample	Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
					Surface Elevation: fmsl	1.5 foot stickup
1						
2	1		NA	0	**FILL-** brown to tan brown damp fine sand with little silt and fine to medium rounded gravel, few rootlets and wood fiber, little coal dust, trace brick and CLM present as fine sand to fine angular gravel size fragments. loose throughout. Slight tar like odor at 7.0' bgs.	
3						
4						
5						Cement/ bentonite slurry grout to surface
6	2		NA	0		
7				1.5		
8						
9						
10	3		NA	0		2" diameter schedule 40 PVC riser
11						
12						
13						
14	4		NA	1.5	**Sandy SILT (ML)** light brown, fine sand with little silt, firm, slight tar like odor. Slightly coarser grained with med. sand between 16 and 16.7', with strong tar like odor, heavy staining and sheens on groundwater in sampler sleeve.	
15				7.5		
16						
17					Laboratory Sample 15 to 16'	
18	5		NA	3		
19						
20					**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** gray, damp fine to medium sand with rounded to subangular gravel, little medium plasticity fines, soft (poorly consolidated), no staining, slight tar-like odor between 17' and 20' bgs. No odors or staining below 20' bgs.	
21						
22	6		NA	0		
23						
24						
25						
26	7		NA	0		3/8" diameter hydrated bentonite chips
27						
28						
29						
30	8		NA	0	Laboratory Sample 30 to 32'	
31						
32						2" diameter schedule 40 PVC well screen, 0.010" slot.
33						
34	9		NA	0		
35						#00N silica filter sand
36						
37						
38	10		NA	0		
39						
40						
41						
42						

PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Well No. BH-12/ MW-6**	
BORING LOCATION:	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/19/07	DATE FINISHED: 9/19/07
DRILLING METHOD: 4 1/4" dia. HSA	TOTAL DEPTH: 40.0 fbgs	SCREEN INTERVAL: 29.5-39.5 fbgs
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 14 ft COMPL.	CASING: 2" PVC
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
					Surface Elevation: fmsl	flush-mount surface casing
1-4	1		NA	0	**FILL-** brown, dry fine sand with little silt and few low plasticity fines, few rootlets and wood fiber, trace brick and CLM present as fine sand to fine angular gravel size fragments, firm throughout.	
5-8	2		NA	0	**Sandy SILT (ML)** light brown, fine sand with little silt, firm, slight tar like odor.	Cement/ bentonite slurry grout to surface
9-12	3		NA	0	**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** gray, damp fine to medium sand with rounded to subangular gravel, little medium plasticity fines, soft (poorly consolidated), no staining, slight tar-like odor between 17' and 20' bgs. No odors or staining below 20' bgs.	2" diameter schedule 40 PVC riser
13-16	4		NA	0	locally dominated by fine sand at 14' bgs. No staining or odors.	
17-20	5		NA	0		
21-24	6		NA	0	Laboratory Sample 23 to 24'	
25-28	7		NA	0		3/8" diamter hydrated bentonite chips
29-32	8		NA	0		
33-36	9		NA	0		2" diameter schedule 40 PVC well screen, 0.010" slot.
37-40	10		NA	0		#00N silica filter sand
41-42					End of Boring at 40' bgs.	

WELL_OVM SOIL BORING LOGS.GPJ (6/08)

PROJECT: Jackson Street Former MGP Site Penn Yan, New York	**Log of Well No. BH-9/ MW-2D**	
BORING LOCATION:	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling, Inc.	DATE STARTED: 9/18/07	DATE FINISHED: 9/18/07
DRILLING METHOD: 4 1/4" dia. HSA	TOTAL DEPTH: 40.0 fbgs	SCREEN INTERVAL: 29.5-39.5 fbgs
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 9.2 ft COMPL.	CASING: 2" PVC
SAMPLING METHOD: 4' Acetate Sleeves (Direct Push)	LOGGED BY: MAC	
HAMMER WEIGHT: 140# Autohammer DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1-2	1		NA	0	**TOPSOIL** brown, damp fine sand with silt, rootlets, loose **SILTY SAND (ML)** tan, tan-brown to grey-brown fine sand with silt, no odors or staining. Upper 2.0' shows evidence of regrading.
3-6	2		NA	0	**SILTY CLAY (CL)** dark grey brown damp low plasticity fines (50%) with silt, firm.
7-8					As above (SILTY SAND).
9-10	3		NA	0	
11-14	4		NA	0	
15-18	5		NA	0	**SILTY CLAY (CL)** grey brown damp low plasticity fines (50%) with silt, firm.
19-22	6		NA	0	grading to damp grey-brown med. plasticity **CLAY** with trace silt, firm
23-26	7		NA	0	**Well graded SAND with SILT and GRAVEL (SW-SM) (TILL)** light grey to grey brown, damp fine to medium sand with rounded to subangular gravel, soft, no staining or odors.
27-30	8		NA	0	some coarse angular gravel within TILL.
31-34	9		NA	0	
35-38	10		NA	0	grading to **SILTY CLAY (CL)** , grey, damp, med. to high plasticity fines with silt, trace fine angular gravel, no staining or odors.
39-40					End of boring at 40.0' bgs.
41-42					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS