Gloversville (Washington Street) Former MGP Site

FULTON COUNTY

GLOVERSVILLE, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: 518026

Prepared for:

National Grid

300 Erie Boulevard West

Syracuse, NY 13202

Prepared by:

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Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

APRIL 2023

CERTIFICATION STATEMENT

I JOSEPH M. SIMONE certify that I am currently a NYS registered professional engineer and that this Site Management Plan for the Gloversville (Washington Street) Former MGP Site was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Joseph M. Simone P.E.

April 14, 2023 DATE

TABLE OF CONTENTS

Gloversville (Washington Street) Former MGP Site

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Table of Contents

Description

TABLE OF CONTENTS (Continued)

Section Description Page

List of Tables

List of Figures

List of Appendices

List of Acronyms

ASP	Analytical Services Protocol
AWQS	Ambient Water Quality Standards and Criteria
BTEX	Benzene, Toluene, Ethyl benzene, Xylene
CERCLA	Comprehensive Environmental Response, Compensation and Liability
CAMP	Act Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
CLP	Contract Laboratory Program
COC	Certificate of Completion
CP	Commissioner Policy
DD	Decision Document
DER	Division of Environmental Remediation
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
EWP	Excavation Work Plan
GHG	Green House Gas
HASP	Health and Safety Plan
IC	Institutional Control
MGP	Manufactured Gas Plant
NAPL	Non-Aqueous Phase Liquid
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
NYCRR	New York Codes, Rules and Regulations
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health
PAH	Administration Polycyclic Aromatic
PCB	Hydrocarbon Polychlorinated Biphenyl
PDI	Pre-Design Investigation
PPE	Personal Protective Equipment Photoionization
PID	Detector
ppm	Parts per million
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RP	Remedial Party
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SMP	Site Management Plan

SOP	Standard Operating Procedures
SOW	Statement of Work
SPDES	State Pollutant Discharge Elimination System
SVI	Soil Vapor Intrusion
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
$\mu g/m^3$	micrograms per cubic meter
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound

ES EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan:

Site Identification:	518026 Gloversville (Washington Street) Former MGP Site, 7 Broadway, Gloversville, New York

Institutional Controls:	1. The property may be used for commercial or industrial use;	
	2. The use of groundwater underlying the property is prohibited without necessary water quality treatment.	
	3. Groundwater and other environmental or public health monitoring must be performed as defined in this SMP.	
	4. All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP.	
	5. Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner.	
	6. Vegetable gardens and farming on the site are prohibited.	
	7. All ECs must be inspected at a frequency and in a manner defined in the SMP.	
	8. The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 6, and any potential impacts that are identified must be monitored or mitigated	
Engineering Controls:	Cover system	
Inspections:		Frequency
Cover inspection		Annually

Site Identification: 518026 Gloversville (Washington Street) Former MGP Site, 7 Broadway, Gloversville, New York

Monitoring:	
Groundwater Monitoring at existing wells	Annually
Maintenance:	
None (no active EC)	
Reporting:	
1. Groundwater Data	Annually
2. Periodic Review Report	Annually

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the Gloversville (Washington Street) Former Manufactured Gas Plant (MGP) Site located in Gloversville, New York (hereinafter referred to as the "Site"). See Figure 1. The Site was in the New York State (NYS) Voluntary Cleanup Program (VCP) Site No. 518026 which was administered by New York State Department of Environmental Conservation (NYSDEC). National Grid entered into the Voluntary Cleanup Agreement (VCA) on July 3, 2001 with the NYSDEC to remediate the site. The VCA terminated on July 13, 2018. The Site is now managed under Order on Consent and Administrative Settlement, Index No.: CO-7-20180629-27 (the "Order"). The Order was entered into between National Grid and the NYSDEC on July 13, 2018.

A figure showing the site location and boundaries of this site is provided in Figure 2. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement provided in Appendix A.

After completion of the remedial work, some contamination was left at this site, which is hereafter referred to as "remaining contamination". Institutional and Engineering Controls (ICs and ECs) have been incorporated into the site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Fulton County Clerk, requires compliance with this SMP and all ECs and ICs placed on the site.

This SMP was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. 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.

It is important to note that:

- 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 (NYSDEC, 2006) and the Order on Consent and Administrative Settlement Index No.: CO-7-20180629-27 for the site, and thereby subject to applicable penalties.

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

This SMP was prepared by GEI Consultants, Inc., P.C., on behalf of National Grid, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the site.

1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shut-down of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.3 Notifications

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

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Order on Consent, 6NYCRR Part 375 and/or Environmental Conservation Law.
- 15-day advance notice of any proposed ground-intrusive activity that the property owner undertakes.
- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

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

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

Table 1 below includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

Table 1: Notifications*

Name	**Contact Information**
NYSDEC Project Manager Scott Deyette	(518) 402-9662 scott.deyette@dec.ny.gov
NYSDEC Regional HW Engineer Russell Huyck	(518) 897-1241 russell.huyck@dec.ny.gov
NYSDEC Site Control Kelly Lewandowski, Chief	(518) 402-9595 kelly.lewandowski@dec.ny.gov
NYSDOH Greg Rys	(315) 866-6879 gregory.rys@health.ny.gov

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

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The site is located in Gloversville, Fulton County, New York and is identified as Section 149.6 Block 16 and Lot 1 on the Fulton County Tax Map (see Figure 2). The site is an approximately 0.18-acre area and is bounded by Washington Street to the north, Family Counseling Center to the south, residential property to the east, and Broadway Street to the west (see Figure 2 – Site Layout Map). The boundaries of the site are more fully described in Appendix A –Environmental Easement. The owner(s) of the site parcel(s) at the time of issuance of this SMP is/are:

Taylor Made Group, LLC.
93 South Boulevard
Gloversville, NY 12078

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: an open lot. The Site is zoned commercial and is currently vacant.

The properties adjoining the Site and in the neighborhood surrounding the Site primarily include commercial and residential properties. The properties immediately south of the Site include commercial properties; the properties immediately north of the Site include commercial properties; the properties immediately east of the Site include residential properties; and the properties to the west of the Site include commercial properties.

2.2.2 Geology

Site geology generally consists of two primary overburden units: fill and a fine-grained silt/sand unit. Fill encountered on-site generally extended to a depth of approximately 8 feet below ground surface (bgs) across the site. The fill consisted of native sand, silt and/or gravel mixed with concrete, brick, mortar, wood, coal pieces, slag, cinders, ash, and tar that was mostly removed during remediation. The silt/sand unit typically extends from approximately 8 feet to the bottom of each boring across the site (up to approximately 40 feet bgs).

A geologic cross section is shown in Figure 5. Site specific boring logs are provided in Appendix C.

2.2.3 Hydrogeology

Groundwater depth is approximately 6 feet bgs and generally flows southwest, consistent with local topography. A groundwater gradient of approximately 0.026 foot per foot (ft/ft) is present across the Site. Hydraulic conductivity is 6.1 feet per day in the overburden silty sand based on slug tests performed during the Pre-Design Investigation (PDI) (GEI, 2014b).

A groundwater contour map is shown in Figure 4. Groundwater elevation data is provided in Table 2. Groundwater monitoring well construction logs are provided in Appendix C.

2.3 Investigation and Remedial History

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 - References.

The MGP was operated between about 1846 and 1888. By 1902, all of the former MGP structures had been removed. By 1905, a lumber yard was operated at the site until

the 1980s. The site is currently an open lot with a gravel drive in the central and southern portion of the site with the remaining surface grass covered.

A Remedial Investigation (RI) at the site was conducted by TRC in May 2011 (TRC, 2011). After GEI completed an Alternatives Analysis Report in June 2013 (GEI, 2013), the selected remedy was established in the Decision Document in October 2013 (NYSDEC, 2013). A PDI was then implemented in September 2014, consistent with the NYSDEC-approved Pre-Design Investigation Work Plan (GEI, 2014a). The results of these investigations are summarized below.

These investigations have found that former MGP operations on-site appear to have resulted in limited impacts to several environmental media on, or adjacent to, the original operations.

Surface soils appear to be minimally impacted based on results of the Site Characterization sampling. The site is presently unused, except by an occasional trespasser. Further, the soils are generally overlain by gravel and/or vegetation.

During investigations, subsurface soil impacts, including the presence of non-aqueous phase liquid (NAPL), were identified in the western portion of the site, extending beneath a section of Broadway Street. These impacts did not appear to pose a risk to current site users but presented a potential exposure issue related to future construction or subsurface utility work in this area.

No specific former MGP structures were identified that contain substantial MGP residuals (e.g. tar, purified waste, or feedstock materials) were identified during investigations.

Investigations indicated that site groundwater was not significantly impacted by former MGP constituents of concern. However, shallow groundwater within the delineated NAPL zone was expected to be impacted and therefore potentially pose an additional means of exposure of construction or subsurface utility workers to volatile contaminants.

Soil vapor testing did not identify vapor intrusion as an issue at the site, since no MGP-related constituents of concern were detected at notable concentrations and the current site use/configuration poses no vapor intrusion potential.

Specific source of the encountered NAPL impacts is unknown but may be associated with an historical discharge from the original gasworks or as a result of a spill from process equipment. Thus, based on available information, it was concluded that there is no evident ongoing source (i.e., leaking structure or other container) for the identified NAPL.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the site as listed in the Decision Document dated October 2013 are as follows:

Groundwater

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

2.5 Remaining Contamination

2.5.1 Soil

Figures 3 and 5 show the horizontal and vertical extent of excavation that was conducted at the site to remove MGP-impacted soils. The sheet pile wall along the west side of the excavation was left in place, as shown on the figures. A demarcation layer of orange snow fencing was placed on the bottom of the excavation prior to backfilling. No visibly impacted soil was present following excavation. A nominal one foot soil cover extends across the remediated zone.

Table 3 and Figures 3 and 5 summarize the results of soil samples that exceed the Unrestricted Use SCOs and the Commercial Use SCOs at the site after completion of remedial action. As shown on Figures 3 and 5 and in Table 3, the remaining contamination consists of soils with concentrations of PAHs above Unrestricted Use and Restricted Commercial Use SCOs, to the west of the site beneath Broadway Street and the sidewalk. BTEX concentrations are also above SCOs in a discrete area in the immediate vicinity of SB35, beneath Broadway Street. A few other remaining locations, including SB1, SB4, SB8, and SB49 also marginally exceed SCOs (Figure 3), but were well below the cleanup objective of 500 ppm total PAHs.

Figure 3 depicts the remaining contamination by highlighting the soil sample locations with analytical results above Unrestricted Use SCOs in yellow, and depicting the

locations that are compliant with Unrestricted Use SCOs using green. The Figure 5 cross-sections show the top elevation and the thickness of the remaining contamination using colored bars at the appropriate corresponding depths on each boring.

The approximate volume of remaining soil contamination is estimated at approximately 530 cubic yards.

Any subsurface work extending beneath Broadway or the sidewalk adjacent to the site will require implementation under the Excavation Work Plan (Appendix D). The natural gas line is located beneath the sidewalk adjacent to the sheet pile. The remaining buried utilities are located beneath the street. There is no demarcation layer under Broadway Street or the sidewalk because no remediation was performed in these areas.

2.5.2 Groundwater

Groundwater contours were interpolated based on the water table elevations observed during the most recent monitoring event in August 2017 and are depicted on Figure 4. Based on the data collected during groundwater sampling, groundwater appears to flow in a southerly/southwesterly direction, consistent with local topography.

Figure 4 summarizes the results of all samples of groundwater after completion of the remedial action. Specifically, Figure 4 provides a summary of groundwater sampling results for total benzene, toluene, ethylbenzene, xylene (BTEX) and total PAH compounds. These data were compared to the NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Criteria (AWQS) (NYSDEC, 1998). No data were above the AWQS criteria. Therefore, no table showing groundwater exceedances has been included in this SMP.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

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

This plan provides:

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

3.2 Institutional Controls

A series of ICs is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the site to commercial or industrial uses only. Adherence to these ICs on the site is required by the Environmental

Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries are shown on Figure 6. These ICs are:

- The property may be used for commercial or industrial use;
- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Fulton County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 6, and any potential impacts that are identified must be monitored or mitigated; and
- Vegetable gardens and farming on the site are prohibited;

3.3 Engineering Controls

3.3.1 Cover (or Cap)

Exposure to remaining contamination at the site is prevented by a cover system placed over the site. This cover system is comprised of:

- a minimum of 12 inches of clean soil overlying clean backfill within the areas that were excavated,
- sidewalk to the west of the area that was excavated, and
- asphalt pavement within Broadway Street to the west of the sidewalk and area that was excavated.

Figure 7 presents the location of the cover system and applicable demarcation layers. The Excavation Work Plan (EWP) provided in Appendix D outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of 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) and associated Community Air Monitoring Plan (CAMP) prepared for the site and provided in Appendix E.

3.3.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10 (NYSDEC, 2009).

3.3.2.1 - Cover (or Cap)

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in accordance with this SMP in perpetuity or until obligations under the Easement are extinguished.

3.3.2.2 - Monitoring Wells associated with Monitored Natural Attenuation

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC with consultation with NYSDOH, until residual groundwater concentrations are found to be consistently below ambient water quality standards, the site SCGs, or have become asymptotic at an acceptable level over an extended period. In the event that monitoring data indicates that monitoring for natural attenuation may no longer be required, a proposal to discontinue monitoring will be submitted by the remedial party. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the site are included in the Quality Assurance Project Plan (QAPP) provided in Appendix F.

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

- Sampling and analysis of all appropriate media (e.g., groundwater);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards; and
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment;

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

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site – wide Inspection

Site-wide inspections will be performed at a minimum of once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix G – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that site records are up to date.

Inspections of all remedial components installed at the site will be conducted. A comprehensive site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- and
- If site records are complete and up to date;

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the site, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the IC/ ECs implemented at the site by a qualified environmental professional, as determined by the NYSDEC. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 Post-Remediation Media Monitoring and Sampling

Samples shall be collected from the existing groundwater monitoring wells as specified below on a routine basis. Sampling locations, required analytical parameters and schedule are provided in Table 4 – Post-Remediation Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Table 4 – Post-Remediation Sampling Requirements and Schedule

Sampling Location	**Analytical Parameters**		**Schedule**
	BTEX (EPA Method 8260C)	PAHs (EPA Method 8270D)	
MW-2	X	X	Annually
MW-3	X	X	Annually
MW-6	X	X	Annually
MW-7	X	X	Annually
MW-8	X	X	Annually

NOTE: MW-1 was abandoned in 2016 prior to remedial activities. MW-4 and MW-5 were destroyed and replaced by MW-8.

Detailed sample collection and analytical procedures and protocols are provided in Appendix H – Field Sampling Plan and Appendix F – Quality Assurance Project Plan. Groundwater samples will be collected from each of the five monitoring wells on an annual basis. Waste will be containerized and stored in a temporary storage unit (e.g. PODS®, clamshell, or fenced area) for holding until disposal.

4.3.1 Groundwater Sampling

Groundwater monitoring will be performed annually to assess the performance of the remedy. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The network of monitoring wells has been installed to monitor upgradient, on-site and downgradient groundwater conditions at the site (Figure 4). The network of on-site and off-site wells has been designed based on the following criteria:

Table 5 summarizes the wells identification number, as well as the purpose, location, depths, diameter and screened intervals of the wells. As part of the groundwater monitoring, 1 upgradient well, 1 side-gradient off-site well and 3 downgradient wells are sampled to evaluate the effectiveness of the remedial system. All these wells are shallow overburden wells.

Table 5 – Monitoring Well Construction Details

Monitoring Well ID	Well Location	Coordinates (Easting, Northing)	Well Diameter (inches)	Elevation (above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
MW-2	Upgradient	533615.18, 1535940.85	2	791.30	791.84	787.84	777.84
MW-3	Downgradient	533544.98, 1535587.82	2	785.15	NA	~782.15	~772.15

MW-6	Downgradient	533508.59, 1535834.63	2	786.32	786.57	782.57	773.07
MW-7	Downgradient	533551.52, 1535856.70	2	787.04	787.47	781.47	765.97
MW-8	Sidegradient	533488.3, 1535870.6	2	786.72	787.5	785.7	775.7

Available monitoring well construction logs are included in Appendix C of this document. Table of sample locations and analytical parameters to be analyzed along with the detection limits and minimum reporting limits to be achieved by the ELAP-certified laboratory is included in the QAPP, Appendix F.

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced, if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC. Well abandonment will be performed in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC.

The sampling frequency may only be modified with the approval of the NYSDEC. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

4.3.2 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix G - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity, etc.) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional detail regarding monitoring and sampling protocols are provided in the site-specific Field Sampling Plan provided as Appendix H of this document.

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

The site remedy does not rely on any mechanical systems, such as groundwater treatment systems, sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

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

However, this site does not warrant a climate change vulnerability assessment based upon its location, site features and setting. There is no waterway located near the site and it is not located in a floodplain, low-lying or low-groundwater recharge area. The site is in an urban area with minimal storm water run-on from the small adjacent up-gradient property. Therefore, site flooding and increased erosion are not a concern for this site. The only engineering control is the soil cover system; thus high winds, electricity and spill/containment releases are not an issue for this site.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the SMP provides a summary of any green remediation evaluations to be completed for the site during site management, and as reported in the Periodic Review Report (PRR).

No active systems will be on site. The soil cover system is the only engineering control. Groundwater monitoring will be conducted annually until the NYSDEC agrees that it is no longer needed. As such, further green remediation evaluations are not needed for this site because minimal waste and emissions will be generated, minimal water and energy will be used, and the land and/or ecosystem will not be disturbed.

7.0 REPORTING REQUIREMENTS

7.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix G. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data, generated for the site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 6 and summarized in the Periodic Review Report.

Table 6: Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Inspection Report	Annually
Periodic Review Report	Annually, or as otherwise determined by the Department

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

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

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection= activities;
- Description of the activities performed;
- Where appropriate, color photographs or sketches showing the approximate= location of any problems or incidents noted (included either on the= checklist/form or on an attached sheet);
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);

- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody= documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables= required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the= last reporting event.

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

7.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the Department beginning sixteen (16) months after the Certificate of Completion is issued. After submittal of the initial Periodic Review Report, the next PRR shall be submitted annually to the Department or at another frequency as may be required by the Department. 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 - Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the= remedy for the site.
- Results of the required annual site inspections and severe condition inspections,= if applicable.

- All applicable site management forms and other records generated for the site= during the reporting period in the NYSDEC-approved electronic format, if not= previously submitted.

- Data summary tables and graphical representations of contaminants of concern=by media (groundwater), 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 in digital format as determined by the NYSDEC.= Currently, data is supplied electronically and submitted to the NYSDEC= EQuIS™ database in accordance with the requirements found at this link:= http://www.dec.ny.gov/chemical/62440.html.

- A site evaluation, which includes the following:

  – The compliance of the remedy with the requirements of the site-specific= Decision Document;

  – Any new conclusions or observations regarding site contamination based=on inspections or data generated by the Monitoring and Sampling Plan for=the media being monitored;

  – Recommendations regarding any necessary changes to the remedy and/or= Monitoring and Sampling Plan; and

  – Trends in contaminant levels in the affected media will be evaluated to= determine if the remedy continues to be effective in achieving remedial= goals as specified by the Decision Document.

  – The overall performance and effectiveness of the remedy.

7.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

"*For each institutional or engineering control identified for 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;*
- *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*
- *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, Wendy L. Moore, P.E., of GEI Consultants, Inc., P.C., 1301 Trumansburg Road, Suite N, Ithaca, NY 14850, am certifying as Owner's/Remedial Party's Designated Site Representative for the site."

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

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

7.3 Corrective Measures Work Plan

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

8.0 REFERENCES

GEI, 2013. Alternatives Analysis Report, Gloversville (Washington Street) Non-Owned Former MGP Site, Gloversville, New York, June 2013.

GEI, 2014a. Pre-Design Investigation Work Plan, Gloversville (Washington Street) Non-Owned Former MGP Site, Gloversville, New York, March 2014.

GEI, 2014b. Pre-Design Investigation Report, Gloversville (Washington Street) Non-Owned Former MGP Site, Gloversville, New York, December 2014.

GEI, 2016. Remedial Action Design Drawings, Gloversville (Washington Street) Non-Owned Former MGP Site, Gloversville, New York, August 2016.

NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

NYSDEC, 2006. 6NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

NYSDEC, 2009. NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation". August 2009.

NYSDEC, 2013. Decision Document, NM – Gloversville Washington St. MGP, Voluntary Cleanup Program, Gloversville, Fulton County, Site No. 518026, October 2013.

NYSDEC, 2018. Order on Consent and Administrative Settlement, Index No.: CO-7-20180629-27. July 2018.

TRC, 2011. Remedial Investigation Report, Gloversville Former MGP Site, Washington Street, Gloversville, NY, Site #518026. May 2011.

Tables

Table 2
Groundwater Elevation Measurements
Gloversville (Washington Street) Former MGP Site
Gloversville, New York

Monitoring Well ID	Well Depth (ft.)	Screened Interval (ft. bgs)	Well Elevation in Feet (Top of PVC)	Depth to Water (ft. bgs) 4/13/2010	Groundwater Elevation (ft.) 4/13/2010	Depth to Water (ft. bgs) 6/19/2012	Groundwater Elevation (ft.) 6/19/2012	Depth to Water (ft. bgs) 8/15/2017	Groundwater Elevation (ft.) 8/15/2017
MW-1	14.00	4-14	788.10	4.58	783.52	2.56	785.54	NA	NA
MW-2	14.00	4-14	791.30	2.48	788.82	4.51	786.79	4.21	787.09
MW-3	13.00	3-13	785.15	3.56	781.59	3.36	781.79	3.12	782.03
MW-4	12.00	2-12	789.15	3.96	785.19	4.32	784.83	NA	NA
MW-5	12.00	2-12	787.60	3.70	783.90	3.54	784.06	NA	NA
MW-6	14.00	4-14	786.65	NI	NI	NI	NI	1.4	785.25
MW-7	16.00	6-16	786.34	NI	NI	NI	NI	1.1	785.24
MW-8	12.00	1.8-11.8	786.72	NI	NI	NI	NI	1.48	785.24

Notes:

NA - well decommissioned/destroyed
NI - well not yet installed
ft. - feet
bgs - below ground surface

Table 3
Remaining Soil Sample Exceedances[1]
Gloversville (Washington Street) Non-Owned Former MGP Site
Gloversville, New York

Sample ID Sample Depth (ft) Sample Date	NYSDEC Part 375 Commercial Soil Cleanup Objectives	NYSDEC Part 375 Unrestricted Soil Cleanup Objectives	SB-01-04 8-10 8/17/2004		SB-01-04 16-18 8/17/2004		SB-04-04 6-8 8/18/2004		SB-04-04 12-14 8/18/2004		SB-04-04 22-24 8/18/2004		SB-05-04 3.5-6 8/18/2004	
VOCs - EPA Method 8260														
Benzene	44	0.06	0.0035	J	0.00026	U	0.00025	U	0.00025	U	0.00025	U	0.00028	U
Ethyl Benzene	390	1	0.0058	J	0.003	J	0.0003	U	0.00031	U	0.0003	U	0.00034	U
m/p-Xylenes	500[2]	0.26	0.018		0.0023	J	0.00063	U	0.00063	U	0.00063	U	0.0007	U
o-Xylene	500[2]	0.26	0.0058	J	0.0021	J	0.00053	U	0.00053	U	0.00053	U	0.00059	U
Toluene	500	0.7	0.0019	J	0.00034	U	0.00032	U	0.00032	U	0.00032	U	0.00035	U
Total BTEX	NE	NE	0.035		0.0074		ND		ND		ND		ND	
SVOCs - EPA Method 8270														
Acenaphthene	500	20	0.24	J	0.0094	U	0.046	J	0.009	U	0.0087	U	0.0098	U
Acenaphthylene	500	100	0.097	J	0.013	U	0.068	J	0.012	U	0.041	J	0.013	U
Anthracene	500	100	0.47		0.01	U	0.23	J	0.0097	U	0.0094	U	0.011	U
Benzo(a)anthracene	5.6	1	0.91		0.0065	U	0.92		0.0062	U	0.057	J	0.18	J
Benzo(a)pyrene	1	1	0.81		0.0074	U	**1.1**		0.007	U	0.048	J	0.29	J
Benzo(b)fluoranthene	5.6	1	**1.3**		0.023	U	**1.2**		0.022	U	0.055	J	0.33	J
Benzo(g,h,i)perylene	500	100	0.21	J	0.019	U	0.49		0.018	U	0.017	U	0.14	J
Benzo(k)fluoranthene	56	0.8	0.46		0.015	U	0.41		0.014	U	0.013	U	0.16	J
Chrysene	56	1	0.96		0.014	U	0.92		0.013	U	0.054	J	0.3	J
Dibenz(a,h)anthracene	0.56	0.33	0.46	U	0.013	U	0.073	J	0.012	U	0.012	U	0.013	U
Fluoranthene	500	100	2.1		0.0059	U	1.1		0.066	J	0.093	J	0.38	J
Fluorene	500	30	0.39	J	0.012	U	0.11	J	0.012	U	0.011	U	0.013	U
Indeno(1,2,3-cd)pyrene	5.6	0.5	0.31	J	0.01	U	**0.55**		0.0099	U	0.0096	U	0.18	J
Naphthalene	500	12	0.66		0.0093	U	0.2	J	0.2	J	0.21	J	0.0097	U
Phenanthrene	500	100	2.1		0.0095	U	0.79		0.11	J	0.13	J	0.27	J
Pyrene	500	100	1.8		0.0076	U	1.2		0.071	J	0.11	J	0.41	J
Total PAHs	NE	NE	12.817		ND		9.407		0.447		0.798		2.64	

Table 3
Remaining Soil Sample Exceedances[1]
Gloversville (Washington Street) Non-Owned Former MGP Site
Gloversville, New York

Sample ID Sample Depth (ft) Sample Date	NYSDEC Part 375 Commercial Soil Cleanup Objectives	NYSDEC Part 375 Unrestricted Soil Cleanup Objectives	SB-05-04 3.5-6 Dup 8/18/2004	SB-05-04 17- 8/18/2004	SB-8-05 4-5 10/19/2005	SB-8A-05 6-8 10/19/2005	SB-32-09 6.8-7.2 5/27/2009	SB-32-09 10.5-11.0 5/27/2009
VOCs - EPA Method 8260								
Benzene	44	0.06	0.0003 U	0.012 U	0.0044 J	0.0025 U	0.053 U	0.06 J
Ethyl Benzene	390	1	0.00037 U	0.012 U	0.025 J	0.013 J	4.2	0.98
m/p-Xylenes	500[2]	0.26	0.00077 U	0.012 U	0.094	0.008 J	24	3.8
o-Xylene	500[2]	0.26	0.00064 U	0.012 U	0.033	0.0035 J	8.2	1.2
Toluene	500	0.7	0.00039 U	0.012 U	0.057	0.0049 J	2.4	0.25
Total BTEX	NE	NE	ND	ND	0.2134	0.0294	38.8	6.29
SVOCs - EPA Method 8270								
Acenaphthene	500	20	0.011 U	0.41 U	0.56	0.15 U	13	0.93 J
Acenaphthylene	500	100	0.067 J	0.41 U	0.29 J	0.13 U	2.2 J	1.1 J
Anthracene	500	100	0.086 J	0.41 U	1.2	2.1	32	5.3 J
Benzo(a)anthracene	5.6	1	0.78	0.41 U	2.1	2.8	**19**	**6.4 J**
Benzo(a)pyrene	1	1	0.9	0.41 U	**1.9**	**2.6**	**13**	**4.4 J**
Benzo(b)fluoranthene	5.6	1	**1.4**	0.41 U	2	2.7	**16**	**6.3 J**
Benzo(g,h,i)perylene	500	100	0.37 J	0.41 U	0.68	1.5	6.1 J	1.7 J
Benzo(k)fluoranthene	56	0.8	0.62	0.41 U	0.91	0.57 J	8 J	1.4 J
Chrysene	56	1	1.7	0.41 U	1.8	2.5	15	5.4 J
Dibenz(a,h)anthracene	0.56	0.33	0.014 U	0.41 U	0.14 J	0.1 U	0.25 U	0.21 U
Fluoranthene	500	100	3.1	0.41 U	3.1	5	52	9.1
Fluorene	500	30	0.069 J	0.41 U	0.7	0.52 J	21	4.2 J
Indeno(1,2,3-cd)pyrene	5.6	0.5	0.48 J	0.41 U	0.64	1.3	**5.7 J**	1.9 J
Naphthalene	500	12	0.011 U	0.41 U	0.79	0.97	130 D	25
Phenanthrene	500	100	2.1	0.41 U	3.2	6.5	92 D	8.7
Pyrene	500	100	2.8	0.41 U	2.8	4.2	36	7.9
Total PAHs	NE	NE	14.472	ND	22.81	33.26	461	89.73

Table 3
Remaining Soil Sample Exceedances[1]
Gloversville (Washington Street) Non-Owned Former MGP Site
Gloversville, New York

Sample ID Sample Depth (ft) Sample Date	NYSDEC Part 375 Commercial Soil Cleanup Objectives	NYSDEC Part 375 Unrestricted Soil Cleanup Objectives	SB-05-04 3.5-6 Dup 8/18/2004	SB-05-04 17- 8/18/2004	SB-8-05 4-5 10/19/2005	SB-8A-05 6-8 10/19/2005	SB-32-09 6.8-7.2 5/27/2009	SB-32-09 10.5-11.0 5/27/2009
VOCs - EPA Method 8260								
Benzene	44	0.06	0.0003 U	0.012 U	0.0044 J	0.0025 U	0.053 U	0.06 J
Ethyl Benzene	390	1	0.00037 U	0.012 U	0.025 J	0.013 J	4.2	0.98
m/p-Xylenes	500[2]	0.26	0.00077 U	0.012 U	0.094	0.008 J	24	3.8
o-Xylene	500[2]	0.26	0.00064 U	0.012 U	0.033	0.0035 J	8.2	1.2
Toluene	500	0.7	0.00039 U	0.012 U	0.057	0.0049 J	2.4	0.25
Total BTEX	NE	NE	ND	ND	0.2134	0.0294	38.8	6.29
SVOCs - EPA Method 8270								
Acenaphthene	500	20	0.011 U	0.41 U	0.56	0.15 U	13	0.93 J
Acenaphthylene	500	100	0.067 J	0.41 U	0.29 J	0.13 U	2.2 J	1.1 J
Anthracene	500	100	0.086 J	0.41 U	1.2	2.1	32	5.3 J
Benzo(a)anthracene	5.6	1	0.78	0.41 U	2.1	2.8	**19**	**6.4 J**
Benzo(a)pyrene	1	1	0.9	0.41 U	**1.9**	**2.6**	**13**	**4.4 J**
Benzo(b)fluoranthene	5.6	1	**1.4**	0.41 U	2	2.7	**16**	**6.3 J**
Benzo(g,h,i)perylene	500	100	0.37 J	0.41 U	0.68	1.5	6.1 J	1.7 J
Benzo(k)fluoranthene	56	0.8	0.62	0.41 U	0.91	0.57 J	8 J	1.4 J
Chrysene	56	1	1.7	0.41 U	1.8	2.5	15	5.4 J
Dibenz(a,h)anthracene	0.56	0.33	0.014 U	0.41 U	0.14 J	0.1 U	0.25 U	0.21 U
Fluoranthene	500	100	3.1	0.41 U	3.1	5	52	9.1
Fluorene	500	30	0.069 J	0.41 U	0.7	0.52 J	21	4.2 J
Indeno(1,2,3-cd)pyrene	5.6	0.5	0.48 J	0.41 U	0.64	1.3	**5.7 J**	1.9 J
Naphthalene	500	12	0.011 U	0.41 U	0.79	0.97	130 D	25
Phenanthrene	500	100	2.1	0.41 U	3.2	6.5	92 D	8.7
Pyrene	500	100	2.8	0.41 U	2.8	4.2	36	7.9
Total PAHs	NE	NE	14.472	ND	22.81	33.26	461	89.73

Table 3
Remaining Soil Sample Exceedances[1]
Gloversville (Washington Street) Non-Owned Former MGP Site
Gloversville, New York

Sample ID Sample Depth (ft) Sample Date	NYSDEC Part 375 Commercial Soil Cleanup Objectives	NYSDEC Part 375 Unrestricted Soil Cleanup Objectives	SB-37-09 9.5-10.0 5/28/2009	SB-37-09 11.1-11.6 5/28/2009	SB-38-09 9.2-9.7 5/28/2009	SB-38-09 10.2-10.6 5/28/2009	SB-39-09 8.5-9.0 5/28/2009	SB-39-09 9.0-10.0 5/28/2009
VOCs - EPA Method 8260								
Benzene	44	0.06	0.073 U	0.0037 U	0.049 U	0.13 U	1.8	0.0023 U
Ethyl Benzene	390	1	32	0.0061 U	2.8	4.3	17	0.0038 U
m/p-Xylenes	500[2]	0.26	210 D	0.12 J	28	40	160 D	0.017 J
o-Xylene	500[2]	0.26	68 D	0.068	9.7	16	65 D	0.0092 J
Toluene	500	0.7	4.5	0.012 J	0.8	1.7 J	24	0.0039 U
Total BTEX	NE	NE	314.5	0.2	41.3	62	267.8	0.0262
SVOCs - EPA Method 8270								
Acenaphthene	500	20	**730**	4.9	27 J	110 J	110	0.72 U
Acenaphthylene	500	100	98 J	4.9	130 J	410	380	0.69 J
Anthracene	500	100	**820**	11	110 J	**550**	490	1.8 J
Benzo(a)anthracene	5.6	1	**410**	3.1 J	**51 J**	**250**	**240**	2.4 J
Benzo(a)pyrene	1	1	**260**	**2.5 J**	**29 J**	**160 J**	**140**	**1.4 J**
Benzo(b)fluoranthene	5.6	1	**320**	2.4 J	**26 J**	**180 J**	**140**	1.8 J
Benzo(g,h,i)perylene	500	100	91 J	1.1 J	12 J	59 J	51 J	0.67 U
Benzo(k)fluoranthene	56	0.8	**110 J**	1.8 J	22 J	**89 J**	**96 J**	0.89 U
Chrysene	56	1	**370**	2.8 J	42 J	**200 J**	**200**	1.7 J
Dibenz(a,h)anthracene	0.56	0.33	**33 J**	0.33 J	2.3 UR	**22 J**	**20 J**	0.5 U
Fluoranthene	500	100	**940**	7.5	100 J	**540**	**540**	4.2 J
Fluorene	500	30	**810**	21	110 J	**540**	450	1 J
Indeno(1,2,3-cd)pyrene	5.6	0.5	**100 J**	1 J	**9.2 J**	**63 J**	**51 J**	0.51 U
Naphthalene	500	12	**2500 D**	80 D	**890 DJ**	**2200 DJ**	**2000 D**	2.6 J
Phenanthrene	500	100	**1500 D**	27 D	200 J	**980**	**880 D**	3.8 J
Pyrene	500	100	**700**	5.2	83 J	400	420	3.5 J
Total PAHs	NE	NE	9792	176.53	1841.2	6753	6208	24.89

Table 3
Remaining Soil Sample Exceedances[1]
Gloversville (Washington Street) Non-Owned Former MGP Site
Gloversville, New York

Sample ID Sample Depth (ft) Sample Date	NYSDEC Part 375 Commercial Soil Cleanup Objectives	NYSDEC Part 375 Unrestricted Soil Cleanup Objectives	SB-40-09 9.8-10.3 5/28/2009	SB-40-09 11.5-12.0 5/28/2009	SB-41-09 6.7-7.2 5/28/2009	SB-41-09 9.0-10.0 5/28/2009	SB-41-09 Dup 9.0-10.0 5/28/2009	SB-42-09 9.5-10.0 5/28/2009
VOCs - EPA Method 8260								
Benzene	44	0.06	20	0.0024 U	0.17	0.0024 J	0.015 J	0.003 U
Ethyl Benzene	390	1	41 D	0.0039 U	0.37	0.0039 J	0.0038 U	0.02 J
m/p-Xylenes	500[2]	0.26	280 D	0.0045 U	0.75	0.0046 J	0.011 J	0.075 J
o-Xylene	500[2]	0.26	120 D	0.0042 U	0.45	0.0043 J	0.0042 U	0.029 J
Toluene	500	0.7	160 D	0.004 U	0.39	0.0041 J	0.025 J	0.012 J
Total BTEX	NE	NE	621	ND	2.13	ND	0.051	0.136
SVOCs - EPA Method 8270								
Acenaphthene	500	20	9.9	0.012 U	13	0.074 J	0.012 U	2 J
Acenaphthylene	500	100	30	0.01 U	4 J	0.068 J	0.065 J	0.065 U
Anthracene	500	100	32	0.047 J	27	0.069 J	0.36 J	0.81 J
Benzo(a)anthracene	5.6	1	**15**	0.02 U	**32**	0.098 J	0.55	1.6 J
Benzo(a)pyrene	1	1	**8.4 J**	0.009 U	**30**	0.067 J	0.38 J	**2 J**
Benzo(b)fluoranthene	5.6	1	**7.9 J**	0.014 U	**33**	0.083 J	0.45	2.2 J
Benzo(g,h,i)perylene	500	100	3.2 J	0.017 U	14	0.069 J	0.15 J	0.91 J
Benzo(k)fluoranthene	56	0.8	5.5 J	0.02 U	14	0.092 J	0.16 J	0.84 J
Chrysene	56	1	13	0.019 U	29	0.083 J	0.48	1.7 J
Dibenz(a,h)anthracene	0.56	0.33	**1.1 J**	0.012 U	**3.9 J**	0.052 J	0.052 J	0.27 J
Fluoranthene	500	100	31	0.051 J	48	0.17 J	1	2.2 J
Fluorene	500	30	32	0.045 J	19	0.071 J	0.079 J	1.5 J
Indeno(1,2,3-cd)pyrene	5.6	0.5	3.1 J	0.014 U	**12**	0.053 J	0.17 J	0.98 J
Naphthalene	500	12	160 D	0.11 J	34	0.071 J	0.014 U	1.2 J
Phenanthrene	500	100	63	0.085 J	69	0.11 J	0.61	2.9
Pyrene	500	100	25	0.049 J	38	0.14 J	0.8	1.7 J
Total PAHs	NE	NE	440.1	0.387	419.9	0.753	5.306	22.81

Table 3
Remaining Soil Sample Exceedances[1]
Gloversville (Washington Street) Non-Owned Former MGP Site
Gloversville, New York

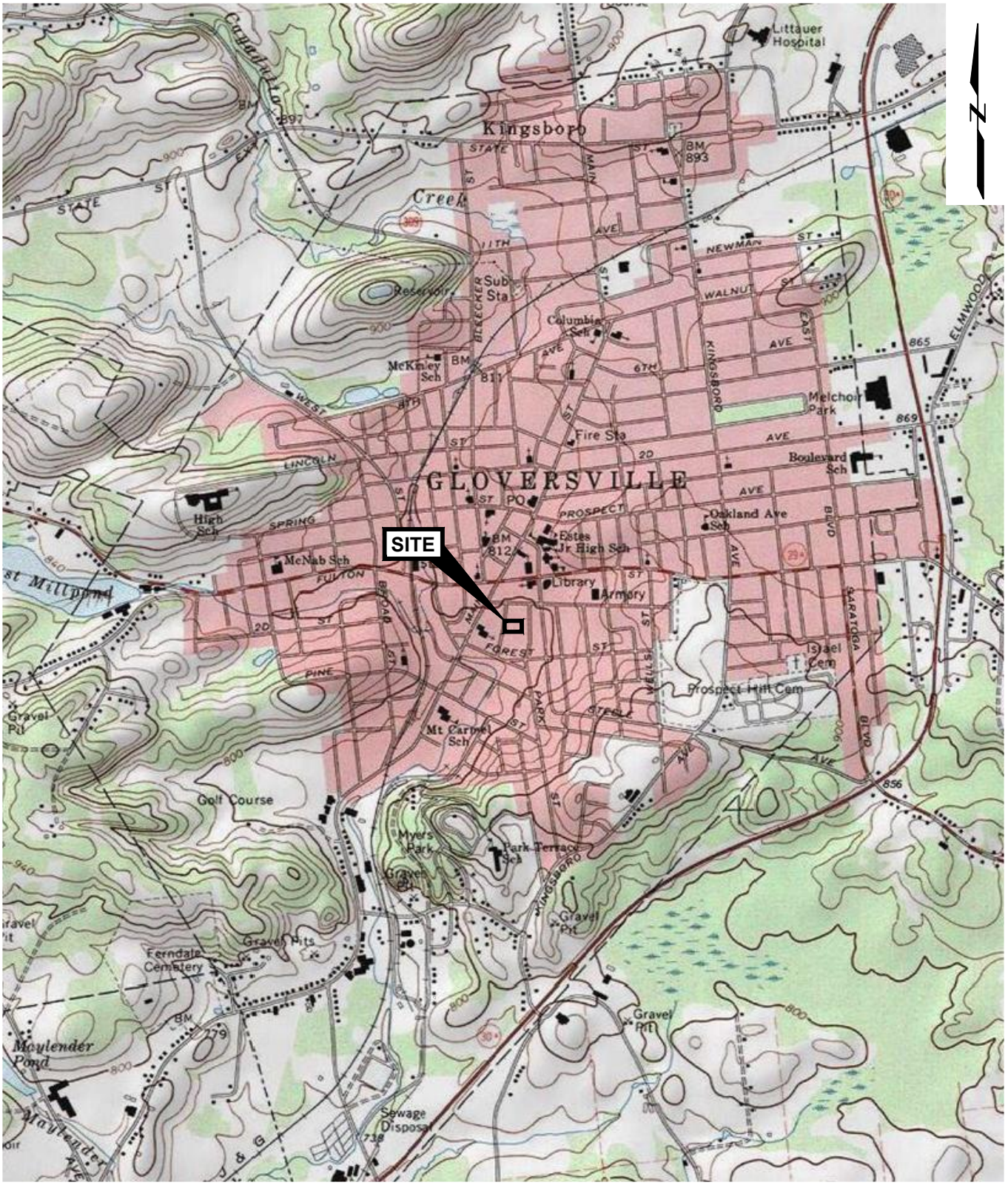
Sample ID Sample Depth (ft) Sample Date	NYSDEC Part 375 Commercial Soil Cleanup Objectives	NYSDEC Part 375 Unrestricted Soil Cleanup Objectives	SB-42-09 10.4-10.9 5/28/2009	SB-43-09 5.0-5.5 5/28/2009	SB-43-09 8.5-9.0 5/28/2009	SB-49-09 4-5 10/5/2009	SB-49-09 6.5-7 10/5/2009
VOCs - EPA Method 8260							
Benzene	44	0.06	0.0023 U	0.003 U	0.0022 U	0.0069 U	0.0069 U
Ethyl Benzene	390	1	0.0037 U	0.0048 U	0.0036 U	0.0069 U	0.0069 U
m/p-Xylenes	500[2]	0.26	0.0043 U	0.019 J	0.0042 U	0.014 U	0.014 U
o-Xylene	500[2]	0.26	0.0041 U	0.022 J	0.004 U	0.0069 U	0.0069 U
Toluene	500	0.7	0.0093 J	0.005 U	0.0038 U	0.0069 U	0.0069 U
Total BTEX	NE	NE	0.0093	0.041	ND	ND	ND
SVOCs - EPA Method 8270							
Acenaphthene	500	20	0.74 J	0.89 J	0.011 U	0.46 U	2.2
Acenaphthylene	500	100	3.9 J	1.2 J	0.0099 U	0.46 U	0.49 U
Anthracene	500	100	9.8	5.3	0.008 U	0.46 U	0.89
Benzo(a)anthracene	5.6	1	**20**	**8.8**	0.067 J	0.46 U	1.8
Benzo(a)pyrene	1	1	**13**	**6.5**	0.059 J	0.46 U	**1.2**
Benzo(b)fluoranthene	5.6	1	**14**	**7.4**	0.063 J	0.46 U	1.6
Benzo(g,h,i)perylene	500	100	4.3	2.5 J	0.016 U	0.46 U	0.67
Benzo(k)fluoranthene	56	0.8	6.5	2.5 J	0.018 U	0.46 U	0.42 J
Chrysene	56	1	18	8.5	0.063 J	0.46 U	2
Dibenz(a,h)anthracene	0.56	0.33	**1.8 J**	**0.85 J**	0.011 U	0.46 U	0.14 J
Fluoranthene	500	100	30	16	0.08 J	0.46 U	4.8 D
Fluorene	500	30	3.1 J	3.5 J	0.015 U	0.46 U	1.3
Indeno(1,2,3-cd)pyrene	5.6	0.5	4.9	2.5 J	0.013 U	0.46 U	0.51
Naphthalene	500	12	0.64 J	1 J	0.014 U	0.46 U	1.4
Phenanthrene	500	100	14	10	0.057 J	0.46 U	7.5 DJ
Pyrene	500	100	23	13	0.073 J	0.46 U	4.4 D
Total PAHs	NE	NE	167.68	90.44	0.462	ND	30.83

Table 3
Remaining Soil Sample Exceedances
Gloversville (Washington Street) Non-Owned Former MGP Site
Gloversville, New York

Notes:

1) Units reported in miligrams per kilograms (mg/kg), or parts per million (ppm).
2) NYSDEC Part 375 Commercial Soil Cleanup Objectives for xylenes apply to any combination of m, p, and o-xylenes.
U = The compound was not detected at the indicated laboratory detection limit.
J = Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL. The concentration given is an approximate value.
D = The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
ND = Not detected above the method detection limits (MDLs).
Shaded concentrations indicate an exceedance of NYSDEC Part 375 Commercial Soil Cleanup Objectives.
Concentrations in **bold** indicate an exceedance of NYSDEC Part 375 Unrestricted Soil Cleanup Objectives.
NE = Criterion has not been established.

Figures



SOURCE: Map created with TOPO! ® © 2001 National Geographic (www.nationalgeographic.com/topo)

Site Management Plan
Gloversville (Washington St.) Non-Owned former MGP Site
Gloversville, New York

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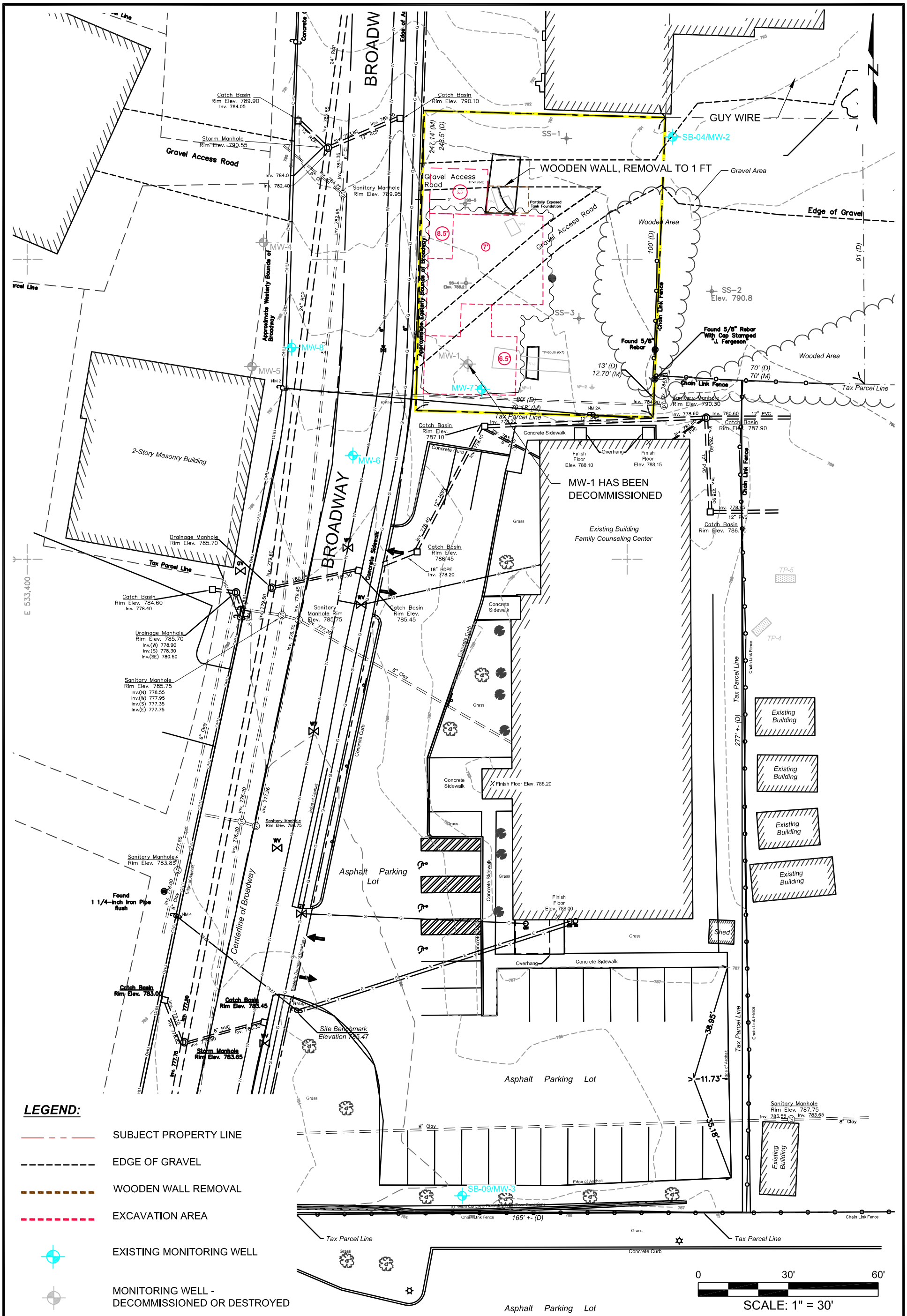
SITE LOCATION MAP

Project 115130 | April 2018 | Fig. 1

\\gtb1v-fs01\ H:\National Grid\Gloversville\SMP\115130-SMP-F1-SLM.dwg - 4/3/2018



LEGEND:

- SUBJECT PROPERTY LINE
- EDGE OF GRAVEL
- WOODEN WALL REMOVAL
- EXCAVATION AREA
- EXISTING MONITORING WELL
- MONITORING WELL - DECOMMISSIONED OR DESTROYED

SOURCE:

1. FIGURE IS BASED ON MAP TITLED, *"FIGURE 1A, CURRENT SITE CONDITIONS"* PREPARED BY TRC, SCALE 1"=30'. DATED 05/19/11.

Site Management Plan
Gloversville (Washington, St.) Non-Owned former MGP Site
Gloversville, New York

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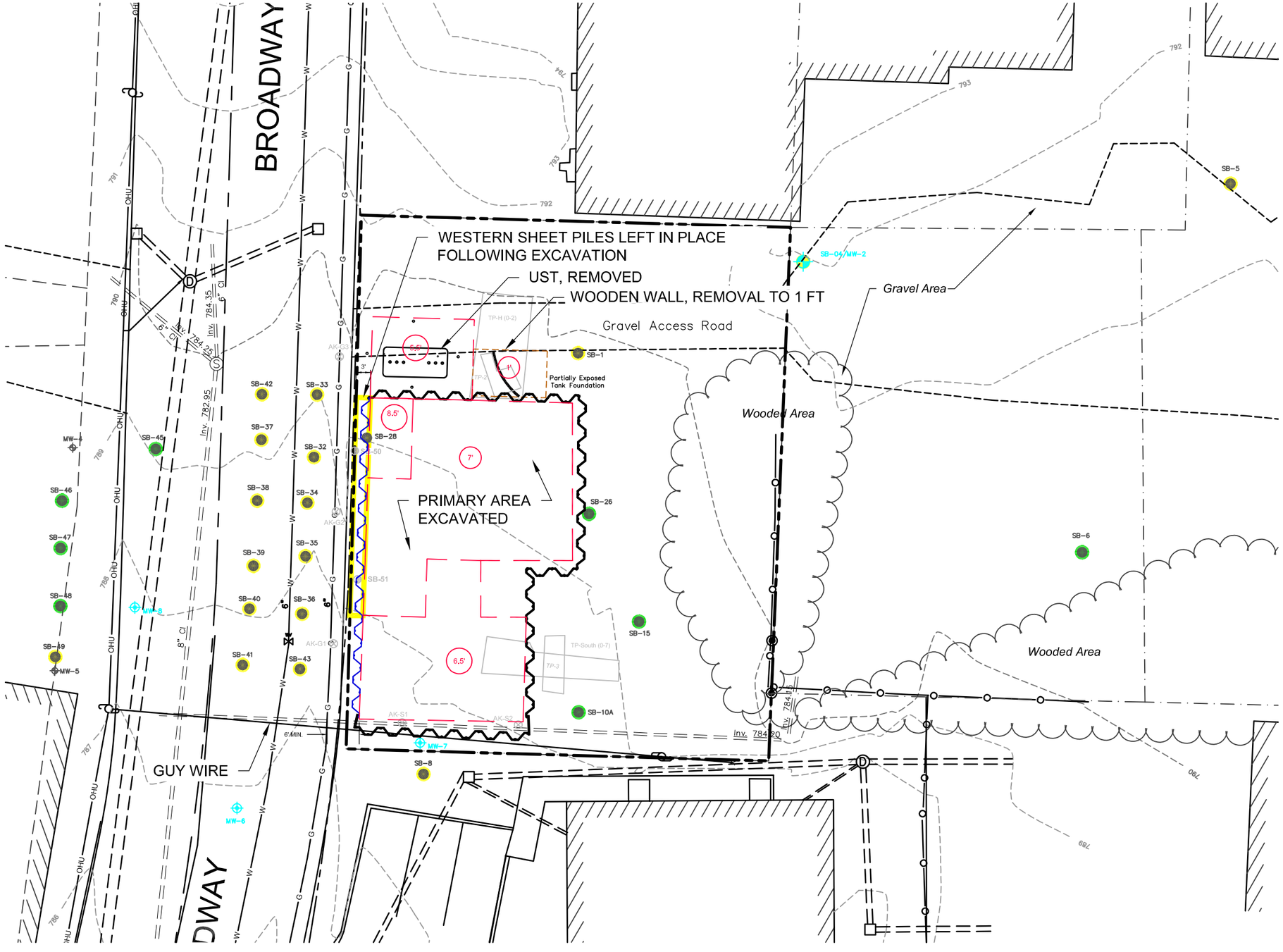
SITE LAYOUT MAP

Project 115130 | NOVEMBER 2020 | Fig. 2

\\geiconsulta \\geiconsultants.com\data\Data_Storage\Working\NATIONAL GRID\115130 Gloversville SMP Implmentation\SMP\SMP\115130-SMP-F2-PLAN MWs.dwg - 11/10/2020



LEGEND:

- SUBJECT PROPERTY LINE
- EDGE OF GRAVEL
- MW-1 — MONITORING WELL EXISTING
- MW-1 — MONITORING WELL - ABANDONED OR DESTROYED
- SB-14 — RI SOIL BORING
- TP-1 — TEST PIT
- WOODEN WALL REMOVAL
- SHEET PILE/ LIMITS OF EXCAVATION (Sheet pile remaining post-remediation is shown in blue)
- AIR KNIFE TO LOCATE GAS LINE AND SURVEY
- AIR KNIFE TO LOCATE SANITARY SEWER AND SURVEY
- GEOTECHNICAL BORINGS
- 1' — DEPTH OF EXCAVATION
- PLANNED EXCAVATION AREA (actual limits extended to sheet pile walls)
- INDICATES LOCATION THAT EXCEEDS UNRESTRICTED USE SCOs
- INDICATES LOCATION COMPLIANT WITH UNRESTRICTED USE SCOs

N

SOURCE:

1. FIGURE IS BASED ON MAP TITLED, *"FIGURE 1A, CURRENT SITE CONDITIONS"* PREPARED BY TRC, SCALE 1"=30'. DATED 05/19/11.
2. PDI SAMPLE LOCATIONS FROM SURVEY BY THEW ASSOCIATES, LAND SURVEYORS, DATED 9/10/14.

0 20' 40'

SCALE: 1" = 20'

Site Management Plan
Gloversville (Washington St.) Non-Owned former MGP Site
Gloversville, New York

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POST REMEDIATION SOIL CONDITIONS

Project 115130 | NOVEMBER 2020 | Fig. 3

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MW-2						
	10/7/2004	11/4/2005	4/13/2010	6/19/2012	4/27/2017	11/15/2018
TOTAL BTEX (ug/L)	ND	ND	ND	ND	ND	ND
TOTAL PAHs (ug/L)	ND	ND	ND	ND	ND	ND

MW-4		
	4/13/2010	6/19/2012
TOTAL BTEX (ug/L)	ND	ND
TOTAL PAHs (ug/L)	ND	1.97[1]

MW-8		
	8/15/2017	11/15/2018
TOTAL BTEX (ug/L)	ND	ND
TOTAL PAHs (ug/L)	ND	ND

MW-5		
	4/13/2010	6/19/2012
TOTAL BTEX (ug/L)	ND	ND
TOTAL PAHs (ug/L)	ND	ND

MW-1				
	10/7/2004	11/4/2005	4/13/2010	6/19/2012
TOTAL BTEX (ug/L)	ND	ND	ND	ND
TOTAL PAHs (ug/L)	ND	ND	ND	5.23[1]

MW-7		
	4/27/2017	11/15/2018
TOTAL BTEX (ug/L)	ND	ND
TOTAL PAHs (ug/L)	ND	ND

MW-6		
	4/27/2017	1/15/2018
TOTAL BTEX (ug/L)	ND	ND
TOTAL PAHs (ug/L)	0.67	1.32

MW-3					
	11/4/2005	4/13/2010	6/19/2012	4/27/2017	11/15/2018
TOTAL BTEX (ug/L)	ND	ND	ND	ND	ND
TOTAL PAHs (ug/L)	ND	ND	ND	ND	ND

LEGEND:

- SUBJECT PROPERTY LINE
- EDGE OF GRAVEL
- MW-1 — MONITORING WELL EXISTING
- MW-1 — MONITORING WELL (DECOMMISSIONED/DESTROYED)
- GROUNDWATER CONTOUR (FEET)
- INFERRED GROUNDWATER CONTOUR (FEET)
- INFERRED DIRECTION OF GROUND WATER FLOW
- 781.92 — ELEVATION (FEET) OF GROUNDWATER (NOVEMBER 2018)

0 40 80

SCALE: 1" = 40'

SOURCE:

FIGURE IS BASED ON MAP TITLED, *"FIGURE 9, GROUND WATER CONTOURS MAP & GROUND WATER ANALYTICAL RESULTS APRIL 13, 2010"* PREPARED BY TRC, SCALE 1"=40'. DATED 07/02/10.

Site Management Plan
Gloversville (Washington St.) Non-Owned former MGP Site
Gloversville, New York

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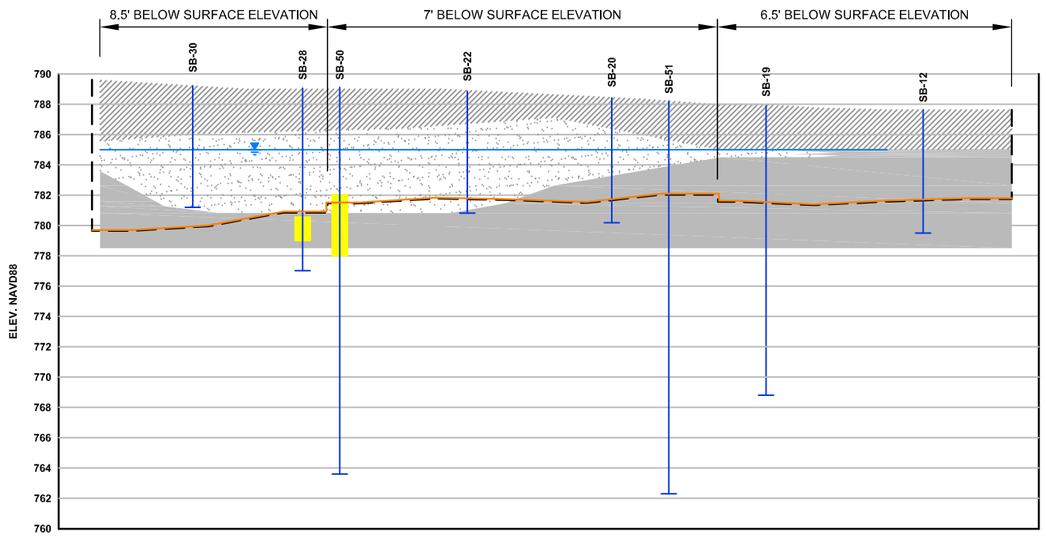
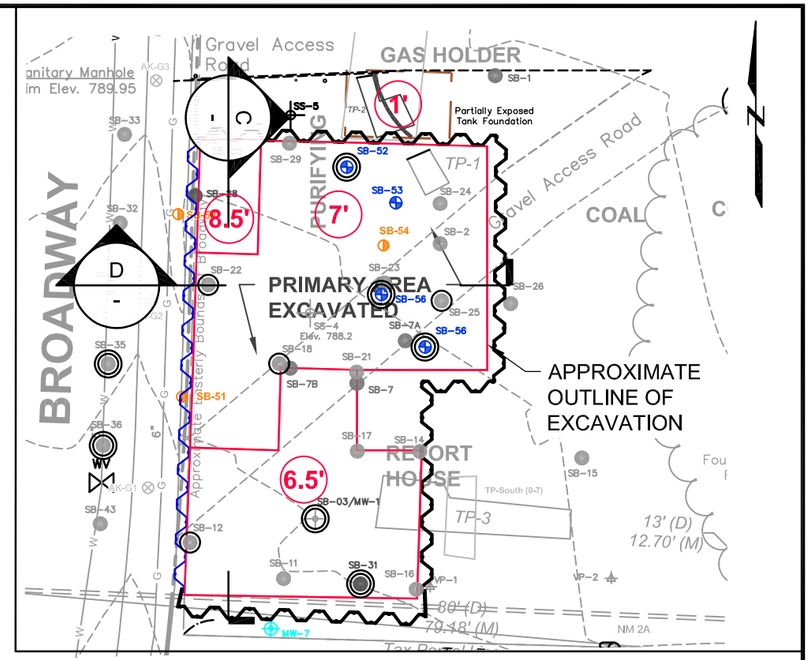
POST - REMEDIATION GROUNDWATER CONDITIONS AND CONTOURS

NOVEMBER 2020 Fig. 4

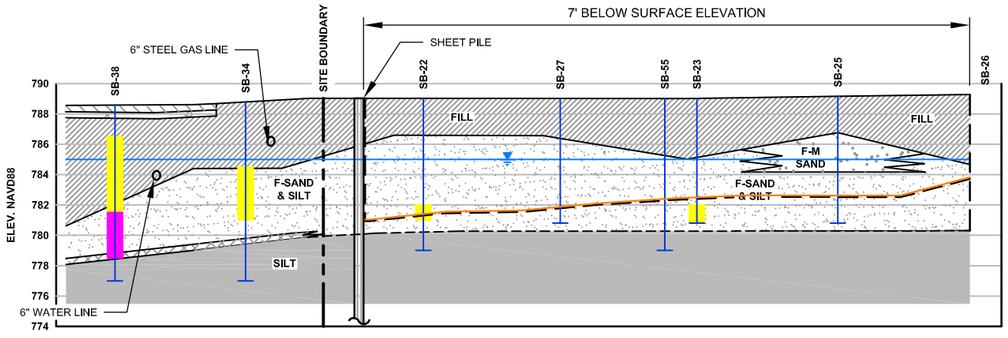
\\geiconsulta \\geiconsultants.com\data\Data_Storage\Working\NATIONAL GRID\115130 Gloversville SMP Implmentation\SMP\SMP\115130-SMP-F4-PLAN Analytical.dwg - 11/12/2020



C / - SECTION
SCALE: 1" = 10' 0 10' 20'



REFERENCE PLAN
0 20' 40'
SCALE: 1" = 20'



D / - SECTION
SCALE: 1" = 10' 0 10' 20'

LEGEND:

- APPROXIMATE LOCATION OF WATER TABLE
- APPROXIMATE LOCATION OF UNDERGROUND UTILITY
- SHEET PILE WALL
- EXCAVATION LIMITS (geology identified inside these limits was replaced with clean fill as part of remediation)
- COATED MATERIAL LENSES
- TAR SATURATED
- BLEBS, GLOBS, SHEEN
- STAINING, ODOR (including smearing from above)
- PETROLEUM IMPACTS - SHEEN, STAINING, ODORS
- DEMARCATION LAYER

SOURCE:

1. PLAN IS BASED ON MAP TITLED, *"FIGURE 1A, CURRENT SITE CONDITIONS"* PREPARED BY TRC, SCALE 1"=30", DATED 05/19/11.

HORIZONTAL SCALE: 1" = 10'
0 10' 20'
0 10' 20'
VERTICAL SCALE: 1" = 10'
NOTE: NO VERTICAL EXAGGERATION

Site Management Plan
Gloversville (Washington St.) Non-Owned former MGP Site
Gloversville, New York

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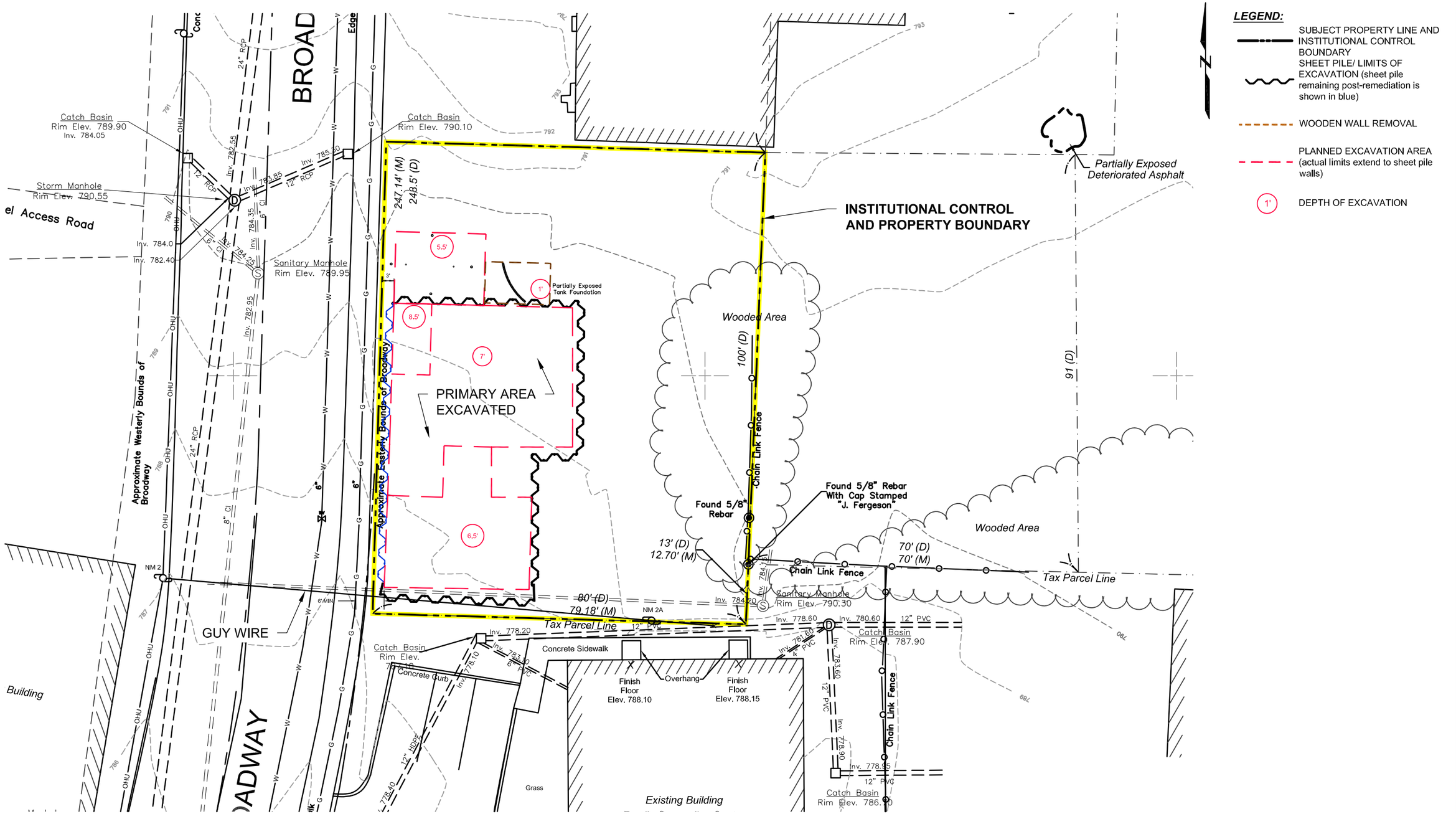
GEOLOGIC CROSS SECTIONS

Project 115130 | NOVEMBER 2020 | Fig. 5

\\geiconsulta \\geiconsultants.com\data\Data_Storage\Working\NATIONAL GRID\115130 Gloversville SMP Implmentation\SMP\SMP CAD Files\115130-SMP-F5-SECTION.dwg - 11/13/2020



SOURCE:

1. FIGURE IS BASED ON MAP TITLED, *"FIGURE 1A, CURRENT SITE CONDITIONS"* PREPARED BY TRC, SCALE 1"=30'. DATED 05/19/11.
2. PDI SAMPLE LOCATIONS FROM SURVEY BY THEW ASSOCIATES, LAND SURVEYORS, DATED 9/10/14.

0 20' 40'

SCALE: 1" = 20'

Site Management Plan
Gloversville (Washington St.) Non-Owned former MGP Site
Gloversville, New York

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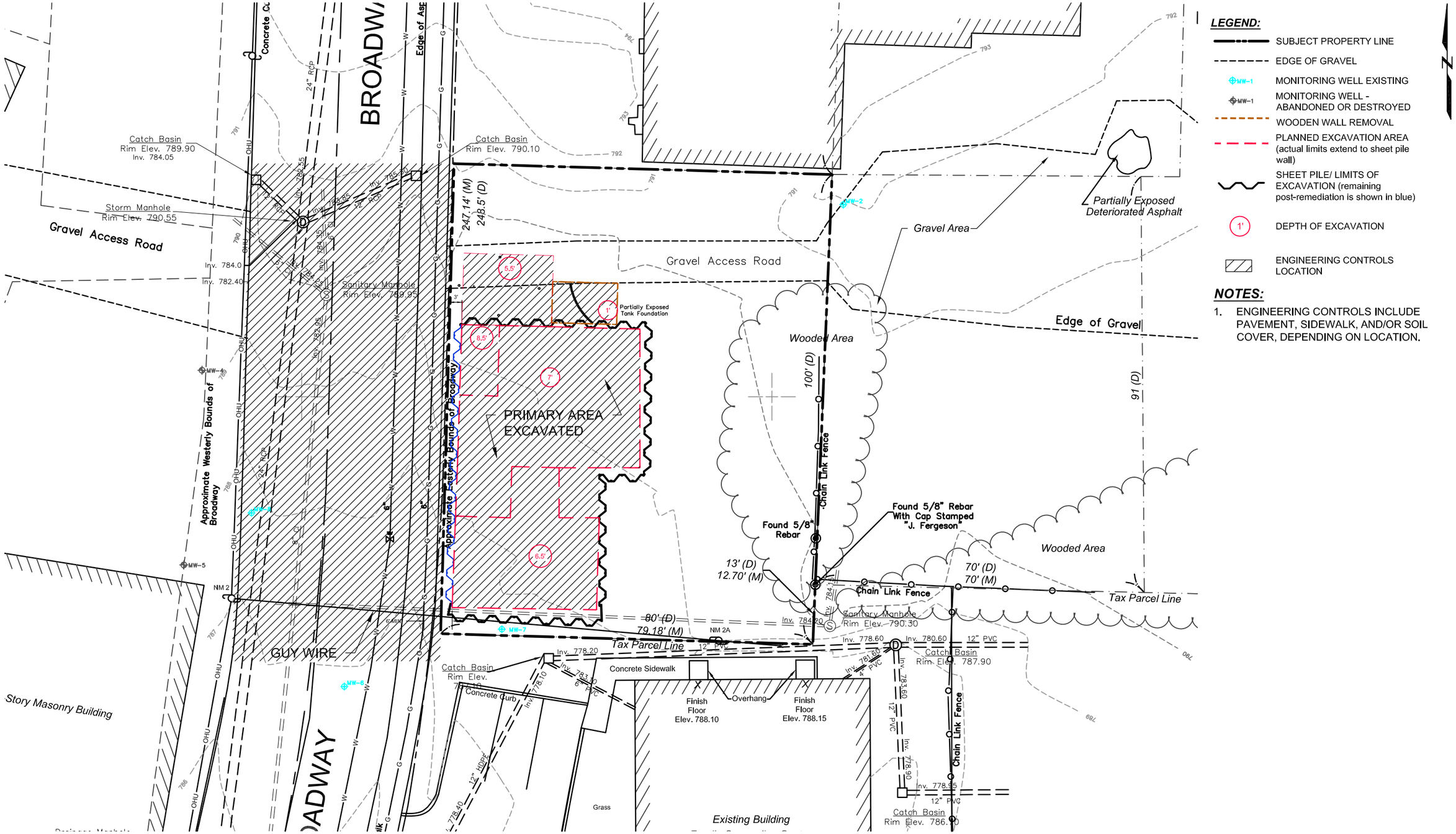
INSTITUTIONAL CONTROL BOUNDARIES

Project 115130 | NOVEMBER 2020 | Fig. 6

\\geiconsulta \\geiconsultants.com\data\Data_Storage\Working\NATIONAL GRID\115130 Gloversville SMP Implmentation\SMP\SMP CAD Files\115130-SMP-F6-ICB.dwg - 11/11/2020



LEGEND:

- SUBJECT PROPERTY LINE
- EDGE OF GRAVEL
- MW-1 MONITORING WELL EXISTING
- MW-1 MONITORING WELL - ABANDONED OR DESTROYED
- WOODEN WALL REMOVAL
- PLANNED EXCAVATION AREA (actual limits extend to sheet pile wall)
- SHEET PILE/ LIMITS OF EXCAVATION (remaining post-remediation is shown in blue)
- 1' DEPTH OF EXCAVATION
- ENGINEERING CONTROLS LOCATION

NOTES:

1. ENGINEERING CONTROLS INCLUDE PAVEMENT, SIDEWALK, AND/OR SOIL COVER, DEPENDING ON LOCATION.

SOURCES:

1. FIGURE IS BASED ON MAP TITLED, *"FIGURE 1A, CURRENT SITE CONDITIONS"* PREPARED BY TRC, SCALE 1"=30'. DATED 05/19/11.
2. PDI SAMPLE LOCATIONS FROM SURVEY BY THEW ASSOCIATES, LAND SURVEYORS, DATED 9/10/14.

0 20' 40'

SCALE: 1" = 20'

Site Management Plan
Gloversville (Washington St.) Non-Owned former MGP Site
Gloversville, New York

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ENGINEERING CONTROLS LOCATION

Project 115130 | NOVEMBER 2020 | Fig. 7

\\geiconsulta \\geiconsultants.com\data\Data_Storage\Working\NATIONAL GRID\115130 Gloversville SMP Implmentation\SMP\SMP CAD Files\115130-SMP-F7-ECL.dwg - 11/11/2020

APPENDIX A – ENVIRONMENTAL EASEMENT

FULTON COUNTY – STATE OF NEW YORK
LEISA M. D'AMORE, COUNTY CLERK
223 West Main Street, Johnstown, NY 12095

COUNTY CLERK'S RECORDING PAGE
*****THIS PAGE IS PART OF THE DOCUMENT – DO NOT DETACH*****

INSTRUMENT #: 2023-79132

Receipt#: 2023489562
Clerk: FC
Rec Date: 01/18/2023 12:23:14 PM
Doc Grp: RP
Descrip: EASEMENT
Num Pgs: 10
Rec'd Frm: STEWART TITLE

Party1: TAYLOR MADE GROUP L L C
Party2: PEOPLE OF THE STATE OF NEW YORK
Town: GLOVERSVILLE

Recording:

Cover Page	5.00
Recording Fee	65.00
Cultural Ed	14.25
Records Management - Coun	1.00
Records Management - Stat	4.75
TP584	5.00
Sub Total:	95.00

Transfer Tax

Transfer Tax	0.00
Sub Total:	0.00
Total:	95.00

****** NOTICE: THIS IS NOT A BILL ******

***** Transfer Tax *****
Transfer Tax #: 1117
Exempt
Consideration: 0.00

Total: 0.00

This sheet constitutes the Clerk endorsement required by section 316A (5) for the Real Property Law of the State of New York

Leisa M. D'Amore
Fulton County Clerk

*****THIS IS NOT AN INVOICE*****

Record and Return To:

BARCLAY DAMON, LLP
ENV.

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

THIS INDENTURE made this 15th day of December, 2022, effective between Owner(s) Taylor Made Group, LLC, a Delaware limited liability company with an office at 93 South Boulevard, Gloversville, New York 12078, County of Fulton, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

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

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

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

WHEREAS, Grantor, is the owner of real property located at the address of 7 Broadway Street in the City of Gloversville, County of Fulton and State of New York, known and designated on the tax map of the County Clerk of Fulton as tax map parcel number: Section 149.006 Block 16 Lot 1, being the same as that property conveyed to Grantor by deed dated September 29, 2017 and recorded in the Fulton County Clerk's Office in Instrument No. 2017-46532. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.1837 +/- acres, and is hereinafter more fully described in the Land Title Survey dated February 2, 2017 and last revised February 12, 2018 prepared by Michael I. Groff, L.L.S. of C.T. Male Associates, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is

extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent and Administrative Settlement Index # CO-7-20180629-27, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

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

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

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

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

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

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

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

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

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

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

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

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

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

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

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

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

D. Grantee hereby acknowledges that the Grantor has entered into an agreement with Niagara Mohawk Power Corporation, d/b/a National Grid, whereby Niagara Mohawk Power Corporation, d/b/a National Grid has agreed to assume certain responsibilities under the SMP. These responsibilities will be distinguished in the SMP and may be modified in accordance with the Department's statutory and regulatory authority. Notwithstanding the foregoing, Grantor shall remain responsible for complying with the obligations herein and in the SMP.

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

F. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

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

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

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

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

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

(i) are in-place;

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

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

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

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

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

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

(7) the information presented is accurate and complete.

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

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, but not limited to:

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

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee

interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

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

B. If any person violates this Environmental Easement, to the extent a Certificate of Completion with respect to the Controlled Property has been issued, the Grantee may revoke it.

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

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

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

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

Parties shall address correspondence to:	Site Number: 518026 Office of General Counsel NYSDEC 625 Broadway Albany New York 12233-5500
With a copy to:	Site Control Section Division of Environmental Remediation NYSDEC 625 Broadway Albany, NY 12233
And a copy to:	Niagara Mohawk Power Corporation

d/b/a National Grid
300 Erie Boulevard West
Syracuse, NY 13202

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

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

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

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

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

11. Consistency with the SMP. In the event and/or to the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

Remainder of Page Intentionally Left Blank

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

TAYLOR MADE GROUP, LLC:

By: Erick Click

Print Name: Erick Click

Title: VP EHS Date: 07.11.22

Grantor's Acknowledgment

STATE OF INDIANA)
) ss:
COUNTY OF Elkhart)

On the 11 day of July, in the year 2022, before me, the undersigned, personally appeared Erick Click, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

G A Williams
Notary Public - State of Indiana

GRANT ANDREW WILLIAMS
Notary Public - Seal
Elkhart County - State of Indiana
Commission Number NP0640710
My Commission Expires Dec 21, 2028

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

By: Andrew Guglielmi
~~Michael J. Ryan~~, Director Andrew O. Guglielmi
Division of Environmental Remediation

Grantee's Acknowledgment

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

On the 15th day of December, in the year 2022 before me, the undersigned, personally appeared ~~Michael J. Ryan~~ Andrew Guglielmi, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Jennifer Andaloro
Notary Public - State of New York

JENNIFER ANDALORO
Notary Public, State of New York
No. 02AN6098246
Qualified in Albany County
Commission Expires January 14, 2024

SCHEDULE "A" PROPERTY DESCRIPTION

DESCRIPTION
ENVIRONMENTAL EASEMENT
LANDS NOW OR FORMERLY OF
TAYLOR MADE GROUP, LLC
CITY OF GLOVERSVILLE, COUNTY OF FULTON, STATE OF NEW YORK
AREA = 8,000± SQUARE FEET OF LAND

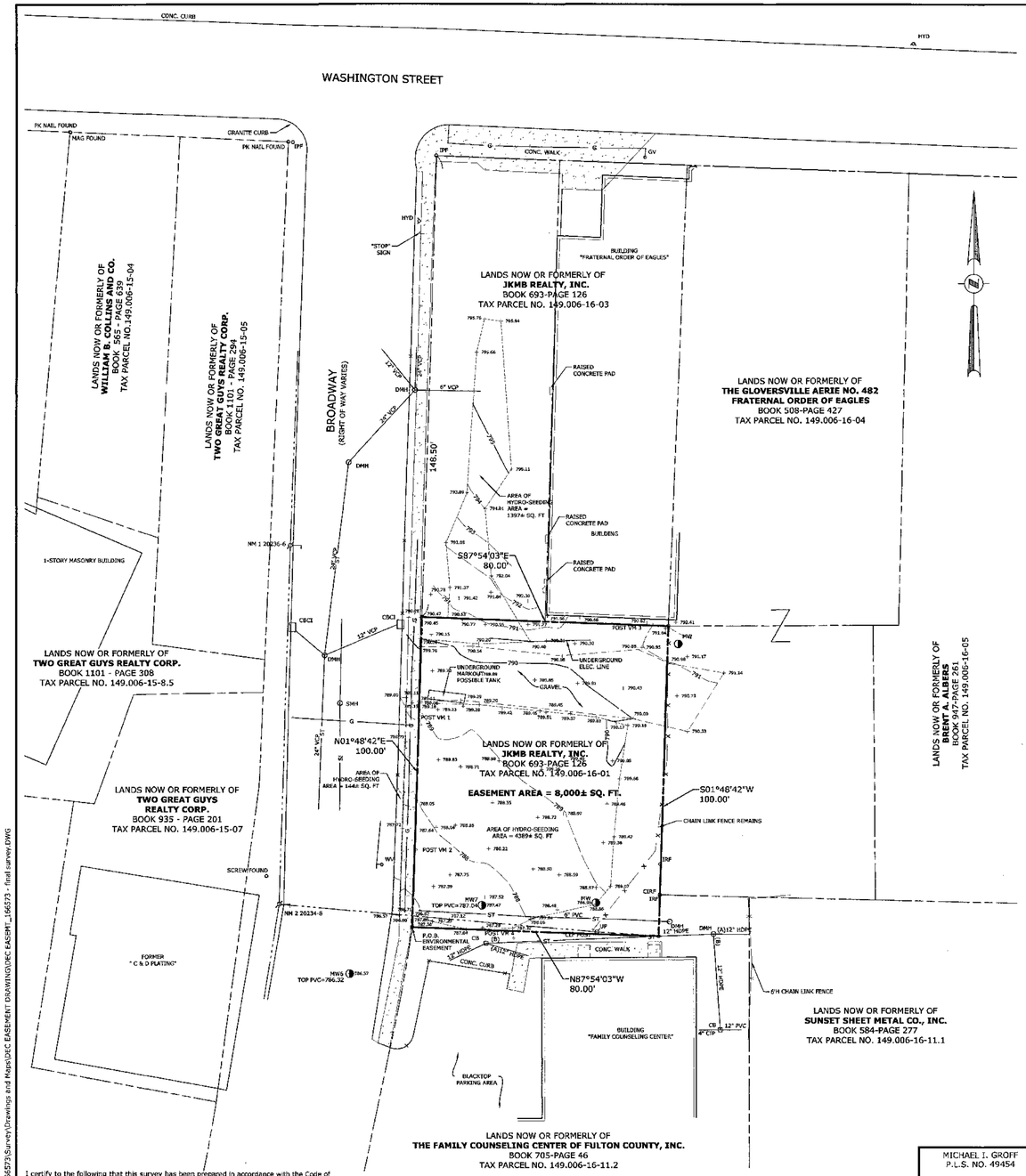
All that certain tract, piece or parcel of land situate in the City of Gloversville, County of Fulton, State of New York, lying Easterly of Broadway and generally South of Washington Street, and being more particularly bounded and described as follows:

BEGINNING at a point on the Easterly road boundary of Broadway at its point of intersection with the division line between the lands now or formerly of Taylor Made Group, LLC as described in Instrument No. 2017-46532 on the North and the lands now or formerly of The Family Counseling Center of Fulton County, Inc. as described in Book 705 of Deeds at Page 46 on the South and runs thence from said point of beginning along the Easterly street boundary of Broadway (variable right-of-way) North 01 deg. 48 min. 42 sec. East 100.00 feet to a point; thence through the said lands now or formerly of Taylor Made Group, LLC South 87 deg. 54 min. 03 sec. East 80.00 feet to a point on the common division line between the said lands now or formerly of Taylor Made Group, LLC on the West and the lands now or formerly of The Gloversville Aerie No. 482 Fraternal Order of Eagles as described in Book 508 of Deeds at Page 427 and the said lands now or formerly of The Family Counseling Center of Fulton County, Inc. on the East; thence South 01 deg. 48 min. 42 sec. West along the last mentioned common division line 100.00 feet to its point of intersection with the above first mentioned division line; thence along said above first mentioned division line North 87 deg. 54 min. 03 sec. West 80.00 feet to the point or place of beginning and containing 8,000± square feet of land.

Record & Return to: Barclay Damon LLP
Barclay Damon Tower
125 East Jefferson Street
Syracuse, NY 13202

XREFS: NONE

PROJECT NUMBER: 16.6573

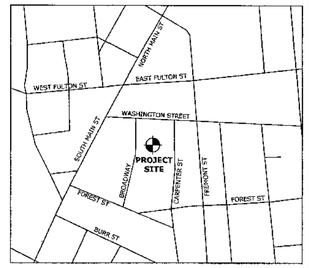


MAP REFERENCES:

1. "Remedial Action Gloversville (Washington Street) Non-Owned Former MGP Site Gloversville, New York, Existing Conditions" prepared by GEI Consultants dated May 13, 2016 and revised to May 13, 2016, GEI Project 115130.
2. "Topographic Survey - Abscope Gloversville Lands Now or Formerly of JKMB Realty, Inc. Prepared For GEI Consultants, Inc. 7 Broadway" City of Gloversville, Fulton County, New York prepared by C.T. Male Associates, Engineering, Surveying, Architecture & Landscape Architecture, D.P.C. dated October 21, 2016, Project No. 16.6573, Dwg. NO. 16-591.

MAP NOTES:

1. Information shown hereon is per Map Reference No. 1.
2. North orientation is Grid North based on the New York State Plane Coordinate System, East Zone, NAD 83/2011 epoch 2010.00 as obtained from GPS observations.
3. The location of underground improvements or encroachments, if any exist, or as shown hereon, are not certified. There may be underground utilities, the existence of which are not known to the undersigned. Size and location of all underground utilities and structures must be verified by the appropriate authorities. Dig Safely New York must be notified prior to conducting test borings, excavation and construction.



SITE LOCATION MAP
NO SCALE

ENVIRONMENTAL EASEMENT DESCRIPTION

LEGEND:

CB	CATCH BASIN
CBCI	CATCH BASIN CURB INLET
DMH	DRAINAGE MANHOLE
GV	GAS VALVE
HYD	HYDRANT
IPF	IRON PIPE FOUND
IRF	IRON ROD FOUND
MH	MANHOLE
MW	MONITOR WELL
POST VM 2	POST WITH VIBRATION MONITOR
SMH	SANITARY MANHOLE
UP	UTILITY POLE
UP W/LIGHT	UTILITY POLE W/LIGHT
WV	WATER VALVE
BCC	BOTTOM OF CONCRETE CURB
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CMP	CORRUGATED METAL PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
NHOA	NUT AT HEAD OF ARROW
VCP	VITRIFIED CLAY PIPE
TCC	TOP OF CONCRETE CURB
OHU	OVERHEAD UTILITY LINE
G	GAS LINE
ST	STORM LINE
SS	SANITARY SEWER LINE
W	WATER LINE

This property is subject to an environmental easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law. THE ENGINEERING AND INSTITUTIONAL CONTROLS for this Easement are set forth in more detail in the Site Management Plan ("SMP"). A copy of the SMP must be obtained by any party with an interest in the property. The SMP can be obtained from New York State Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@dec.ny.gov.

I certify to the following that this survey has been prepared in accordance with the Code of Practice for Land Surveys adopted by the N.Y.S. Association of Professional Land Surveyors as last revised.

The People of The State of New York, acting through their Commissioner of the Department of Environmental Conservation

Michael I. Groff P.L.S. No. 49454 — 6/6/17 Date

"ONLY COPIES OF THIS MAP SIGNED IN RED INK AND EMBOSSED WITH THE SEAL OF AN OFFICER OF C.T. MALE ASSOCIATES OR A DESIGNATED REPRESENTATIVE SHALL BE CONSIDERED TO BE A VALID TRUE COPY".

MICHAEL I. GROFF
P.L.S. NO. 49454

STATE OF NEW YORK · MICHAEL I. GROFF · 049454 · LICENSED LAND SURVEYOR

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
5/24/17	1	UPDATE SURVEY, FINAL TOPO AREAS, SEEDED AREAS	MDD	JAM	
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				

APPROVED:
DRAFTED : MDD
CHECKED : JAM
PROJ. NO : 16.6573
SCALE : 1"=20'
DATE : FEB. 2, 2017

ENVIRONMENTAL EASEMENT SURVEY
LANDS NOW OR FORMERLY OF
JKMB REALTY, INC.
PREPARED FOR
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC)
7 BROADWAY
CITY OF GLOVERSVILLE — FULTON COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, D.P.C.
50 CENTURY HILL DRIVE, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299

SHEET 1 OF 1
DWG. NO: 17-140

CAD DWG. FILE NAME: K:\Projects\16573\Survey\Drawings and Maps\DEC EASEMENT DRAWING\DEC EASEMT_16573 - final survey.DWG

Final Engineering Report
Gloversville (Washington St.) Non-Owned former MGP Site
Gloversville, New York

nationalgrid

GEI Consultants

Project 115130 | December 2017 | Fig. 4

SITE WIDE COVER SYSTEM PLAN

APPENDIX B – LIST OF SITE CONTACTS

Name	Phone/Email Address
Site Owner Taylor Made Group, LLC.	(518)773-9271
Remedial Party National Grid Steven DiLella	(585) 520-5192 Steven.DiLella@us.ngrid.com
Environmental Engineer of Record Joseph M. Simone – GEI (for SMP)	(607) 592-4677 JSimone@geiconsultants.com
Wendy L. Moore – GEI (for PRR)	(607) 216-8966 WMoore@geiconsultants.com
NYSDEC DER ProjectManager Scott Deyette	(518) 402-9662 scott.deyette@dec.ny.gov
NYSDOH Gregory Rys	(315) 866-6879 Gregory.rys@health.ny.gov
NYSDEC Regional HWEngineer Russell Huyck	(518) 897-1241 russell.huyck@dec.ny.gov
NYSDEC Site Control Kelly Lewandowski, Chief	(518) 402-9595 kelly.lewandowski@dec.ny.gov
Remedial Party Attorney Carolyn Rooney – National Grid	(516) 545-3795 Carolyn.Rooney@nationalgrid.com

APPENDIX C
MONITORING WELL BORING AND CONSTRUCTION LOGS

BORING LOG: SB-01

Project Name: Gloversville Former MGP Site
Project Number: 41077
Project Location: Gloversville, NY
Boring Location:

Drilling Company: Lyon Drilling
Drillers: Jeff Grant and Jeff Lyon
TRC Inspector: K. Lauriat

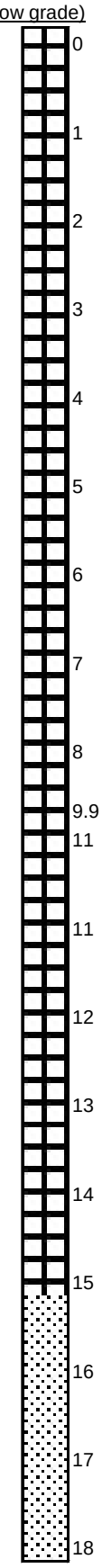
Boring/Well: GLOV-SB-01
Date Started: 8/17/04
Date Completed:8/17/04
PVC Casing Elevation:

Depth (feet)	Recovery (feet)	Blow Counts	PID (ppm)		Soil Description
0-2	1.3	8-14-11-6	ND	0-0.5'	Brown SILT and F-SAND, little f-m gravel, trace m-c sand. Dry, loose, n/o, n/s.
			ND	0.5-0.8'	Black SILT and F-SAND, little m-c sand, f-m gravel. Dry, loose, n/o, n/s.
			ND	0.8-1'	Same as 0-0.5'.
				1-1.3'	Orange SILT and F-SAND, trace m-c sand, f-m gravel. Dry, loose, n/o, n/s.
2-4	1.2	4-3-2-1	ND	0-0.2'	Fall in from above.
			ND	0.2-0.4'	Black SILT and F-SAND, some wood fragments, trace m-c sand. Slightly moist, slightly compact, n/o, n/s.
			ND	0.4-1.2'	Brown/gray F-SAND, some silt, trace m-c sand. Wet @ 1.0' on spoon, slightly compact, n/o, n/s. Note: Water at 3.0'.
4-6	0.8	2-7-4-2	ND	0-0.8'	Brown SILT and F-SAND, little m-c sand, f-c gravel, wood fragments. Wet, loose, n/o, n/s. Slight sheen on water.
6-8	0.3	4-18-31-1	ND	0-0.3'	Brown/black F-SAND, little silt, f-c gravel, trace brick, wood fragments. Wet, loose, slight tar odor, n/s.
8-10	1.2	2-2-50/4	ND	0-1.2'	Brown/black SILT and F-SAND, little m-c sand, f-c gravel, trace brick and ash, wood fragments. Wet, loose, slight tar odor, n/s. Refusal at 9.9' (possibly at bottom of Holder).
10.5-12	1.1	3-37-50/0.1	1.7	0-0.5'	Brown/black SILT and F-M SAND, little c-sand, trace gravel, brick, ash, wood fragments. Wet, slight tar odor, n/s.
			1.5	0.5-1.1'	Wood fragments, little black silt and f-m sand, trace brick, ash. Wet, slight tar odor. Note: Split spoon broke through wood at 11.8'.
12-14	1.1	8-8-9-8	0.5	0-0.4'	Black/brown SILT and F-SAND, little m-c sand, trace brick, ash, wood fragments. Wet, loose, slight tar odor.
			ND	0.4-1.1'	Tan/gray SILT and F-SAND, trace clay, m-sand. Wet, dense, n/o, n/s.
14-16	0.8	5-5-4-5	0.7	0-0.8'	Black/brown SILT and F-SAND, little m-c sand, f-gravel, trace brick, wood. Wet, loose, slight tar odor.
16-18	1.5	8-6-7-6	ND	0-0.5'	Same as above.
			ND	0.5-1.5'	Gray/tan SILT and F-SAND, trace clay, m-sand. Wet, dense, n/o, n/s.
					END OF BORING

Sample Time/Info

0900	Collect sample GLOV-SB-01(8-10) from 8-10' to be analyzed for TCL VOCs, SVOCs, TAL metals, PCBs, total Cn, and TOC.
1000	Collect sample GLOV-SB-01(16-18) from 16-18' for BTEX, PAHs, and total Cn.

Lithology



Legend

Silt and Sand

Fill

BORING LOG: SB-02

Project Name: Gloversville Former MGP Site
Project Number: 41077
Project Location: Gloversville, NY
Boring Location:

Drilling Company: Lyon Drilling
Drillers: Jeff Grant and Jeff Lyon
TRC Inspector: K. Lauriat

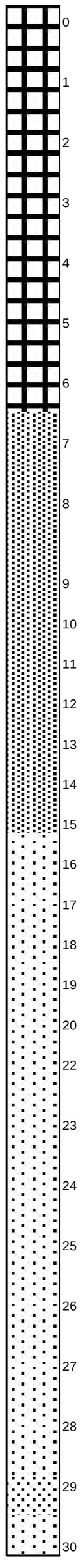
Boring/Well: GLOV-SB-02
Date Started: 8/17/04
Date Completed:8/17/04
PVC Casing Elevation:

Depth (feet)	Recovery (feet)	Blow Counts	PID (ppm)		Soil Description
					(feet below grade)
0-2	1.1	8-12-7-8	ND	0-0.1'	Brown F-M SAND, little silt, c-gravel. Dry, loose, n/o, n/s.
			ND	0.1-0.65'	Orange SILT and F-M SAND, little c-sand and f-gravel, trace light gray silt and f-sand. Dry, loose, n/o, n/s.
			ND	0.65-0.85'	Tan/yellow M-C SAND, tracel silt, dry, loose, n/o, n/s.
			ND	0.85-1.1'	Gray/tan SILT and F-M SAND, little f-gravel, trace wood fragments, brick. Dry, loose, n/o, n/s.
2-4	0.9	8-9-8-3	ND	0-0.25'	Fall in from above.
			ND	0.25-0.9'	Pulverized brick, some tan f-sand and silt, little m-c sand, trace f-gravel. Dry, loose, n/o, n/s.
4-6	1.4	13-7-6-9	14.4	0-0.4'	Black/brown SILT and F-SAND, little m-c sand, trace f-gravel, brick. Slight tar odor, moist, loose.
			ND	0.4-0.75'	Pulverized rock, dry.
			41.7	0.75-1'	Tan/gray F-SAND, some silt, trace m-c sand, tar visible, tar odor, wet, dense.
				1-1.4'	Tan/gray SILT, some f-sand. Slight tar odor, dense, wet.
					Note: Water at 4.7'.
6-8	1.9	3-4-4-3	3.2	0-0.7	Brown/black SILT and F-SAND, little m-c sand, trace f-gravel, brick, wood fragments. Wet, slight tar odor, loose. NAPL visible on side of spoon.
			ND	0.7-1.9'	Tan SILT, some f-sand, wet, dense, n/o, n/s.
8-10	1.4	1-3-6-9	ND	0-0.2'	Fall in from above.
				0.2-1.4'	Tan/gray SILT, some f-sand. Wet, compact, tar odor, n/s.
10-12	2	2-3-3-4	ND	0-2.0'	Tan/gray SILT, some f-sand. Wet, compact, slight tar odor, n/s.
12-14	1.4	2-3-4-3	ND	0-1.4'	Tan/gray SILT, some f-sand. Wet, compact, very slight sheen on water, slight tar odor, n/s.
14-16	2	3-2-3-2	ND	0-1.4'	Tan/gray SILT, some f-sand. Wet, compact, very slight tar odor, n/s.
			ND	1.4-2.0'	Tan F-M SAND with black grains in sand, little silt, trace c-sand. Wet, compact, slight tar odor in water, n/s.
16-18	2	1-2-3-2	ND	0-2.0'	Same as above.
18-20	2	5-6-8-10	ND	0-1.5'	Same as above.
			ND	1.5-2.0'	Tan M-SAND with black grains in sand, little f-sand. Wet, compact, n/o, n/s.
20-22	2	8-9-9-12	ND	0-1.1'	Tan F-M SAND, little silt. Wet, loose, n/o, n/s.
			ND	1.1-2.0'	Tan M-SAND, trace silt, f-c sand. Wet, compact, n/o, n/s.
22-24	2	7-9-13-15	ND	0-1.1'	Tan M-SAND, trace silt, f-c sand. Wet, loose, n/o, n/s.
			ND	1.1-2.0'	Tan F-SAND, trace silt and m-sand. Wet, compact, n/o, n/s.
24-26	2	5-9-7-10	ND	0-2.0'	Tan F-SAND, little m-sand, trace silt. Wet, compact, n/o, n/s.
26-28	2	11-6-7-6	ND	0-2.0'	Tan F-SAND, some m-sand, trace silt. Wet, compact, n/o, n/s.
28-30	2	3-7-8-10	ND	0-1.0'	Tan F-SAND, little m-sand, trace silt. Wet, compact, n/o, n/s.
			ND	1.0-1.4'	Tan SILT and F-SAND, trace m-sand. Wet, compact, n/o, n/s.
			ND	1.4-2.0'	Tan F-SAND, little silt. Wet, compact, n/o, n/s.
					END OF BORING

Sample Time/Info

1155	Collect sample GLOV-SB-02(6-8) from 0.7-1.9' in 6-8' section to be analyzed for BTEX, PAHs, total Cn, and TOC.
1240	Collect sample GLOV-SB-02(20-23) from 20-23' for BTEX, PAHs, and total Cn. Additional volume collected for MS/MSD.

Lithology



Legend

- Silt
- Silt and Sand
- Sand
- Fill

BORING LOG: SB-03/ MW-1

Project Name: Gloversville Former MGP Site
Project Number: 41077
Project Location: Gloversville, NY
Boring Location:

Drilling Company: Lyon Drilling
Drillers: Jeff Grant and Jeff Lyon
TRC Inspector: K. Lauriat

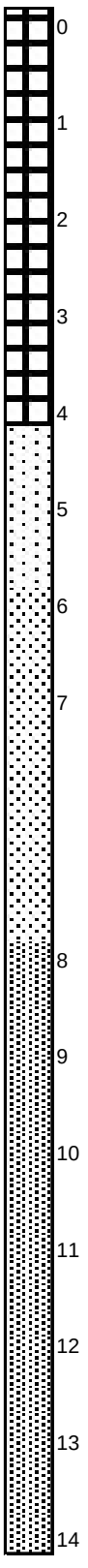
Boring/Well: GLOV-SB-03/MW-1
Date Started: 8/17/04
Date Completed:8/18/04
PVC Casing Elevation:

Depth (feet)	Recovery (feet)	Blow Counts	PID (ppm)	Soil Description
0-2	1.55	4-6-9-14	ND	0-0.95' Dark brown F-M SAND, some silt, little c-sand, trace f-gravel, coal, brick debris. Dry, loose, n/o, n/s.
			ND	0.95-1.35' Tan/light brown SILT and F-M SAND, trace c-sand, f-gravel, brick debris. Dry, loose, n/o, n/s.
			ND	1.35-1.55' Orange SILT and F-M SAND (pulverized brick?), trace tan f-m sand and silt. Dry, loose, n/o, n/s.
2-4	0.8	9-17-50/0.2	ND	0-0.4' Dark brown F-C SAND, little f-m sand, orange silt and f-m sand, trace brick debris. Dry, loose, n/o, n/s.
				0.4-0.8' Black SILT and F-M SAND saturated with weathered tar (not mobile, substance it hardened), trace c-sand, gravel. Moist to wet at bottom of split spoon, loose, but help together with tar, tar odor, black staining.
				Note: Refusal with augers at 4 ft bg. Lyon moved drill rig, offset new boring 5 ft NW of original location, and augered to 4 ft bg.
4-6	0.8	3-2-4-6	ND	0-0.6' Tan F-M SAND, little silt, trace c-sand. Dry, loose, slight tar odor, n/s.
				0.6-0.8' Black F-M SAND, little silt, trace c-sand and f-gravel, coated in tar-like substance, not mobile, causing soil to clump.
				Note: Water at 6.0'.
6-8	1.8	7-6-5-4	ND	0-0.5' Black SILT and F-M SAND, trace c-sand, f-gravel. Coated in tar-like substance. Wet.
			ND	0.5-1.8' Tan/gray SILT and F-SAND, trace m-sand, clay. Wet, slight tar odor, slight sheen on water.
8-10	1.7	6-6-5-5	ND	0-0.45' Fall in from above.
			ND	0.45-1.7' Tan/gray SILT, some f-sand. Wet, compact, slight tar odor, n/s.
10-12	2.0	5-4-5-5	ND	0-0.5' Fall in from above.
			ND	0.5-2.0' Tan SILT, some f-sand. Wet, compact, slight tar odor, n/s.
12-14	2.0	6-7-5-5	ND	0-0.3' Fall in from above.
			ND	0.3-2.0' Tan SILT, little f-sand, trace m-sand. Wet, compact, n/o, n/s.
				END OF BORING.

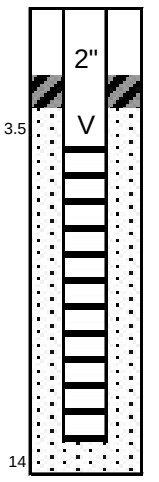
Sample Time/Info

0800	Collect sample GLOV-SB-03(5.5-6.5) from 5.5-6.5' to be analyzed for TCL VOCs, SVOCs, TAL metals, PCBs, total Cn, and TOC.
0815	Collect sample GLOV-SB-03(12.5-14) from 12.5-14' for BTEX, PAHs, and total Cn.

Lithology



Well Monitoring Construction



Legend

- Silt
- Silt and Sand
- Sand
- Fill
- Bentonite Seal
- Screened Section

BORING LOG: SB-04/ MW-2

Project Name: Gloversville Former MGP Site
Project Number: 41077
Project Location: Gloversville, NY
Boring Location:

Drilling Company: Lyon Drilling
Drillers: Jeff Grant and Jeff Lyon
TRC Inspector: K. Lauriat

Boring/Well: GLOV-SB-04/MW-2
Date Started: 8/18/04
Date Completed:8/18/04
PVC Casing Elevation:

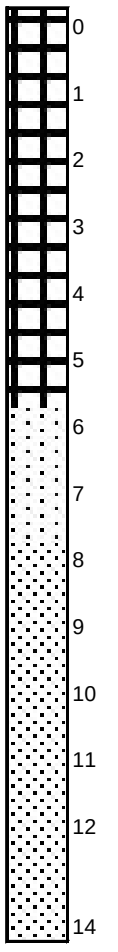
Depth (feet)	Recovery (feet)	Blow Counts	PID (ppm)	Soil Description	
0-2	0.9	5-4-3-3	ND	0-0.6'	Dark brown F-C SAND, little silt, trace f-gravel, root fragments, glass. Dry, loose, n/o, n/s.
			ND	0.6-0.9'	Tan F-M SAND, little silt, trace c-sand. Dry, loose, n/o, n/s.
2-4	0.85	2-1-2-2	ND	0-0.85'	Dark brown SILT and F-M SAND, little f-gravel, trace glass, pulverized rock. Moist at 4 ft bg, n/o, n/s.
4-6	0.5	1-2-2-7	ND	0-0.5'	Medium brown F-M SAND, little silt, trace c-sand, f-gravel, brick debris. Wet, loose, n/o, n/s. Note: Water at 5.0'.
6-8	1.1	6-5-6-6	ND	0-1.1'	Dark brown to gray/brown F-M SAND, little silt, trace c-sand and gravel. Wet, slightly compact, n/o, n/s.
8-10	0.5	6-6-9-11	ND	0-0.5'	Medium brown SILT and F-M SAND. Wet, loose, n/o, n/s.
10-12	1.3	4-7-7-7	ND	0-1.3'	Dark brown/gray brown SILT and F-SAND, trace m-sand. Wet, compact, n/o, n/s.
12-14	2.0	9-6-7-6	ND	0-2.0'	Gray/tan SILT and F-SAND, trace clay. Wet, compact, n/o, n/s.

Sample Time/Info

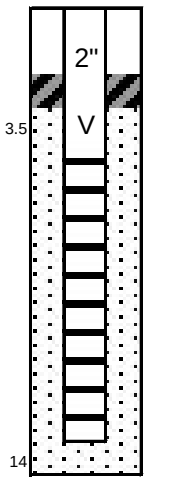
1030 Collect sample GLOV-SB-04(6-8) from 6-8' to be analyzed for for BTEX, PAHs, total Cn, and TOC.

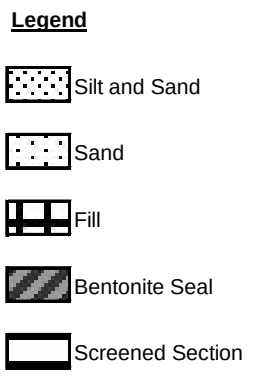
1040 Collect sample GLOV-SB-04(12-14) from 12-14' for BTEX, PAHs, and total Cn. Duplicate collected at this location named GLOV-SB-04(22-24) for same parameters.

Lithology



Well Monitoring Construction





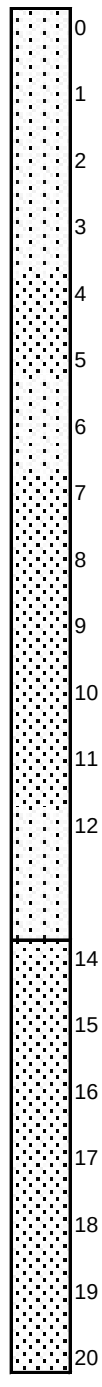
BORING LOG: SB-05

Project Name: Gloversville Former MGP Site
Project Number: 41077
Project Location: Gloversville, NY
Boring Location:

Drilling Company: Lyon Drilling
Drillers: Jeff Grant and Jeff Lyon
TRC Inspector: K. Lauriat

Boring/Well: GLOV-SB-05
Date Started: 8/18/04
Date Completed:8/18/04
PVC Casing Elevation:

Depth (feet)	Recovery (feet)	Blow Counts	PID (ppm)	Soil Description	Lithology
					(feet below grade)
0-2	0.5	7-12-13-14	ND	0-0.5' Brown F-M SAND, little silt, c-sand, trace f-gravel, roots, organic material. Dry, loose, n/o, n/s.	
2-4	0.8	7-9-6-2	ND	0-0.8' Brown F-SAND, some silt, m-sand, little c-sand, trace f-gravel. Wet @ 0.8', loose, n/o, n/s. Note: Water at 4.0'.	
4-6	1.8	1-2-4-5	ND	0-1.5' Dark brown SILT and F-SAND, little m-sand, trace c-sand. Wet, slightly compact, n/o, n/s. 1.5-1.8' Gray F-SAND, little silt, trace m-sand. Wet, compact, n/o, n/s.	
6-8	1.8	8-8-12-12	ND	0-1.0' Brown/black F-M SAND, little silt, trace c-sand. Wet, slightly compact, n/o, n/s. 1.0-1.8' Gray SILT and F-SAND, trace m-sand. Wet, slightly compact, n/o, n/s.	
8-10	1.3	5-7-7-8	ND	0-1.3' Gray SILT and F-SAND, trace m-sand. Wet, compact, n/o, n/s.	
10-12	1.9	8-7-7-7	ND	0-1.9' Gray SILT and F-SAND, trace m-sand. Wet, compact, n/o, n/s.	
12-14	2.0	2-3-5-7	ND	0-2.0' Gray F-SAND, some silt, trace m-sand. Wet, compact, n/o, n/s.	
14-16	1.7	1-3-5-5	ND	0-1.7' Gray SILT and F-SAND, trace clay. Wet, compact, n/o, n/s.	
16-18	2.0	1-3-5-4	ND	0-2.0' Gray SILT and F-SAND, trace clay. Wet, compact, n/o, n/s.	
18-20	1.7	2-4-5-3	ND	0-1.7' Gray SILT and F-SAND, trace clay. Wet, compact, n/o, n/s. END OF BORING	



Legend

Silt and Sand

Sand

Sample Time/Info

1340 Collect sample GLOV-SB-05(3.5-6) from 3.5-6' to be analyzed for BTEX PAHs, and total Cn.

1420 Collect sample GLOV-SB-05(17-20) from 17-20' to be analyzed for TCL VOCs, SVOCs, PCBs, TOC, TAL metals, and total Cn. Additional volume collected for MS/MSD.

BORING/WELL LOG: SB-06

Project Name: Gloversville Former MGP Site
Project Number: 41077
Project Location: Gloversville, NY
Boring Location:

Drilling Company: Lyon Drilling
Drillers: Jeff Grant and Jeff Lyon
TRC Inspector: K. Lauriat

Boring/Well: GLOV-SB-06
Date Started: 8/18/04
Date Completed:8/18/04
PVC Casing Elevation:

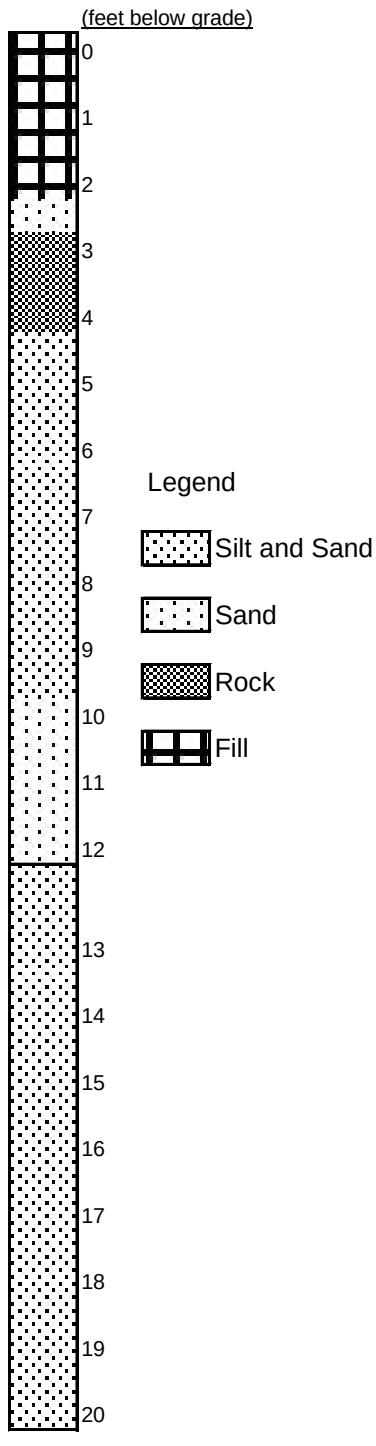
Depth (feet)	Recovery (feet)	Blow Counts	PID (ppm)		Soil Description
0-2	1.4	3-8-5-8	ND	0-1.15'	Tan F-SAND, some silt, m-sand, little c-sand, trace gravel, roots. Dry, loose, n/o, n/s.
			ND	1.15-1.4'	Dark brown SILT and F-M SAND, little c-sand, trace c-gravel, brick, concrete. Dry, loose, n/o, n/s.
2-4	1.5	8-7-4-2	ND	0-1.2'	Tan F-SAND, some silt, m-c sand, trace c-sand, f-gravel. Dry to moist with increasing depth, slightly compact, n/o, n/s.
			ND	1.2-1.5'	Gray pulverized rock, little silt, f-c sand. Wet, loose, n/o, n/s.
					Note: Water at 4.0'.
4-6	1.4	8-5-4-5	ND	0-0.3'	Fall in from above.
				0.3-0.55'	Gray pulverized rock, little silt, f-c sand. Wet, loose, n/o, n/s.
				0.55-1.4'	Black/tan SILT and F-SAND, little m-sand, trace c-sand. Wet, n/o, n/s.
6-8	0.6	18-13-17-16	ND	0-0.6'	Dark brown SILT and F-M SAND, trace c-sand, f-gravel. Wet, loose, n/o, n/s.
8-10	0.9	1-1-2-6	ND	0-0.9'	Gray/tan SILT and F-SAND, trace m-sand. Wet, slightly compact, n/o, n/s.
10-12	2.0	5-7-5-6	ND	0-2.0'	Gray tan F-SAND, some silt, trace m-sand. Wet, compact, n/o, n/s.
12-14	2.0	1-6-7-9	ND	0-2.0'	Tan SILT and F-SAND. Wet, compact, n/o, n/s.
14-16	1.7	4-5-6-7	ND	0-1.7'	Tan SILT and F-SAND. Wet, compact, n/o, n/s.
16-18	2.0	3-5-4-6	ND	0-2.0'	Tan SILT and F-SAND. Wet, compact, n/o, n/s.
18-20	2.0	3-6-3-5	ND	0-2.0'	Tan SILT and F-SAND. Wet, compact, n/o, n/s.

Sample Time/Info

1615 Collect sample GLOV-SB-06(3.5-6) from 3.5-6' to be analyzed for TCL VOCs, SVOCs, TAL metals, PCBs, total Cn, and TOC. Duplicate collected at this location named GLOV-SB-06(35-36) for same parameters.

1700 Collect sample GLOV-SB-06(17-20) from 17-20' for BTEX, PAHs, and total Cn. Additional volume collected for MS/MSD.

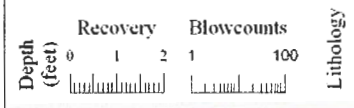
Lithology



PROJECT: Gloversville Former MGP Site Gloversville, NY		BORING NUMBER: SB-07A	TRC Customer-Focused Solutions
BORING LOCATION:		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Lyon Drilling		DATE STARTED: 10/18/05	DATE FINISHED: 10/18/05
DRILLING METHOD: Hollow-stem auger		TOTAL DEPTH (ft.): 20	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Mobil Drill B-61		DEPTH TO WATER: FIRST: 5	COMPL.: NA
SAMPLING METHOD: 24" Split Spoon		LOGGED BY: Liam Bane	
HAMMER WEIGHT: 140 lbs.	DROP: 30 in.	RESPONSIBLE PROFESSIONAL: Doug Martin	REG. NO. xxxx

DEPTH (feet)	Lithology	Recovery (feet)	Blow Counts	PID/FID (ppm)	DESCRIPTION	REMARKS
0–5		0.7	6,7, 8,5	0	0-0.7' Mix of crushed brick and medium/dark brown F-SAND, some Silt m-c Sand, and f-Gravel, slightly moist, no odor	Boring moved two times due to refusal
		0.4	2,8, 9,6	0	0-0.3' Medium brown F-SAND, little m-c sand, silt and brick debris, slightly moist, no odor 0.3-0.4' Black Silt and F-Sand, trace m-sand, slightly moist, no odor	
		1.4	6,7, 8,5	67.2	0-0.6' Medium/dark brown F-SAND, some Silt, trace m-sand and brick, very moist, slight creosote-type odor (fill) 0.6-1.4' Green/gray brown F-Sand and Silt, wet, slight creosote-type odor, sheen burst	Collect sample GLOV-SB-07A(4-6) for BTEX and PAHs
5–10		1	2,4, 6,2	7.2	0-0.3' Dark brown Silt and F-Sand, wet, sheen burst, slight creosote-type odor 0.3-0.7' Light brown Silt and F-Sand, wet, very slight creosote-like odor, no staining	
		1.2	2,5, 4,4	0.7	0-1.2' Light brown SILT, little f-sand, trace clay, wet, no staining, very slight creosote-type odor	
		1.4	2,3, 3,2	0.4	0-1.4' Light brown SILT, little f-sand, wet, very slight creosote-type odor, loose to dense	
10–15		1.4	2,3, 3,4	0.4	0-1.4' Light brown/slight gray SILT, some F-Sand, wet, very slight creosote-type odor	
		2	1,2, 1,2	0.7	0-2.0' Light brown/slight gray SILT, little f-sand, trace clay, wet, very slight creosote type odor, no staining	
15–20		0.6	WOR	0	0-0.6' Medium brown F-M SAND, wet, very slight creosote-type odor, no staining	
		1.2	2,3, 5,6	0	0-1.2' Medium brown F-M SAND, wet, very slight creosote-type odor, no staining	
20–21						

PROJECT: Remedial Investigation		SB-07b	TRC
BORING LOCATION: Washington Street, Gloversville, NY		COORDINATES (CT PLANE SYSTEM - NAD83) EASTERLY:	NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon		DATE STARTED: 10/18/05	DATE FINISHED: 10/18/05
DRILLING METHOD: Hollow Stem Auger		TOTAL DEPTH (ft.): 20	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 75		DEPTH TO WATER (ft): 6.6	GROUND SURFACE ELEVATION (NAVD 88) NM
SAMPLING METHOD: 2" Splitspoon		FIELD LOGGED BY: Liam Bane	

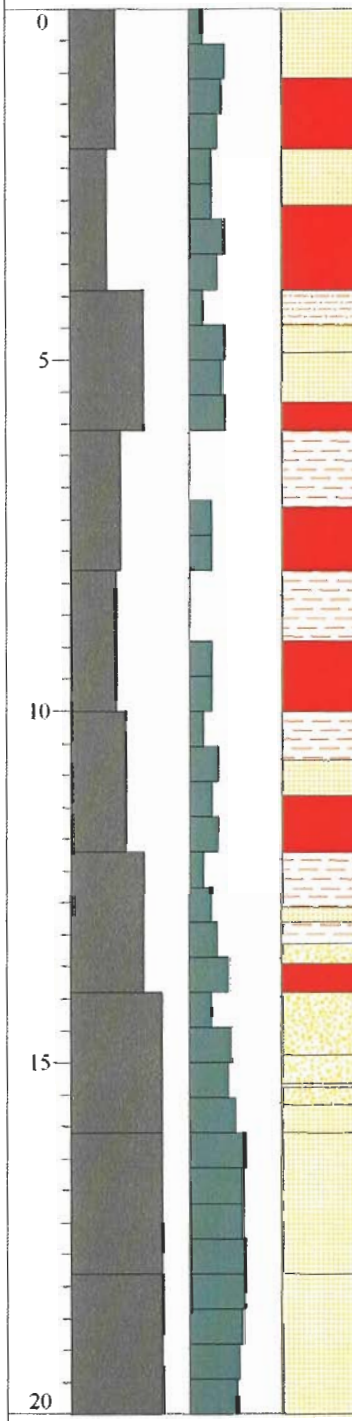


DESCRIPTION	Observed Groundwater
0.0'-0.7' M. dense dark brown F-SAND, some Silt, little m-c Sand and f-Gravel, moist, no odor, no staining.	
0.7'-2.0' No Recovery	
2.0'-2.3' M. dense brown F-SAND, little m-c Sand, trace Silt, brick debris present, moist, no odor, no staining.	
2.3'-2.4' M. dense black SILT + F-SAND, trace m-Sand, moist, no odor.	
2.4'-4.0' No Recovery	
4.0'-4.6' M. dense dark brown F-SAND, some Silt, trace m-Sand, brick pieces present, moist, slight tar odor.	
4.6'-5.4' M. dense greyish brown F-SAND + SILT, wet, tar odor and sheens observed.	
5.4'-6.0' No Recovery	
6.0'-6.3' Loose dark brown F-SAND + SILT, wet, tar odor and sheen observed.	
6.3'-7.0' Loose light brown F-SAND + SILT, wet, tar odor, no staining or sheen observed.	
7.0'-8.0' No Recovery	
8.0'-9.2' Loose light brown F-SAND + SILT, wet, tar odor, no staining or sheen observed.	
9.2'-10.0' No Recovery	
10.0'-11.4' Loose, light brown F-SAND + SILT, wet, tar odor, no staining or sheen observed.	
11.4'-12.0' No Recovery	
12.0'-13.4' Loose light brown SILT, some f-Sand, wet, tar odor, no staining or sheen observed.	
13.4'-14.0' No Recovery	
14.0'-16.0' Loose light brown/grey F-SAND + SILT, trace Clay, wet, slight tar odor, no staining or sheen observed.	
16.0'-16.6' Brown F-M SAND, wet, slight tar odor, no staining or sheen observed.	
16.6'-18.0' No Recovery	
18.0'-19.2' Brown F-M SAND, wet, slight tar odor, no staining or sheen observed.	
19.2'-20.0' No Recovery	

PROJECT: Gloversville Former MGP Site Gloversville, NY		BORING NUMBER: SB-08	TRC Customer-Focused Solutions
BORING LOCATION:		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Lyon Drilling		DATE STARTED: 10/19/05	DATE FINISHED: 10/19/05
DRILLING METHOD: Hollow-stem auger		TOTAL DEPTH (ft.): 20	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Mobil Drill B-61		DEPTH TO WATER: FIRST: 5	COMPL.: NA
SAMPLING METHOD: 24" Split Spoon		LOGGED BY: Liam Bane	
HAMMER WEIGHT: 140 lbs.	DROP: 30 in.	RESPONSIBLE PROFESSIONAL: Doug Martin	REG. NO. XXXX

DEPTH (feet)	Lithology	Recovery (feet)	Blow Counts	PID/FID (ppm)	DESCRIPTION	REMARKS
0–1		1	2,6, 5,4	0	0-1.0' Medium brown F-SAND, little silt, m-c sand and f-c gravel, slightly moist, no odor, no staining	
2–3		0.8	3,3, 6,4	0	0-0.8' Medium brown F-SAND, trace silt and c-gravel, thin band of dark brown silt and f-sand at 0.7', trace brick, slightly moist, no odor, no staining	
4–5		1.6	2,6, 5,6	0	0-0.5' Dark brown Silt and F-Sand, little f-gravel, trace brick, very slight odor (creosote-type), very moist 0.5-0.9' Orange brown F-SAND, trace silt, very moist, no odor, no staining 0.9-1.6' Light brown/slight gray F-SAND, some Silt, trace m-sand, wet, no odor, no staining	Collect sample GLOV-SB-08(4-5) for BTEX and PAHs. Sample taken from 0-0.5'. Duplicate sample collected - GLOV-SB-8a(6-8)
6–7		1.1	1,1, 3,3	0	0--1.1' Light/medium brown SILT, some F-Sand, trace clay, wet, no odor, no staining	
8–9		1	1,1, 3,3	0	0-1.0' Light brown SILT, little f-sand, wet no odor, no staining	
10–11		1.2	2,4, 3,4	0	0-0-0.7' Light brown SILT, little f-sand, wet, no odor, no staining 0.7-1.2' Light brown F-SAND, some Silt, little m-c sand, wet, no odor, no staining	
12–13		1.6	2,3, 4,7	0	0-0.8' Light brown SILT, little f-sand, wet, loose, no odor, no staining 0.8-1.0' Medium brown F-SAND, little silt, trace f-gravel, wet, no odor, no staining 1.0-1.3' Light brown SILT, trace f-sand, wet, no odor, no staining 1.3-1.6' Medium brown F-M SAND, wet, no odor, no staining	
14–15		2	3,8, 7,10	0	0-0.9' Medium brown F-M SAND, little c-sand, trace c-gravel, wet, no odor, no staining 0.9-1.3' Medium/dark brown F-M SAND, some C-Sand and F-Gravel, wet, no odor, no staining 1.3-1.35' Light brown SILT lense, no odor, no staining 1.36-1.6' Medium/dark brown F-M SAND, little f-gravel, wet, no odor, no staining	
16–17		2	16,14, 14,16	0	1.6-2.0' Medium brown F-SAND, wet, no odor, no staining 0-2.0' Medium brown F-SAND, trace m-c sand and f-c gravel, wet, no odor, no staining	
18–19		2	16,14, 12,11	0	0-2.0' Medium brown F-SAND, wet, no odor, no staining	
20–21						

PROJECT: Remedial Investigation		SB-08	TRC
BORING LOCATION: Washington Street, Gloversville, NY		COORDINATES (CT PLANE SYSTEM - NAD83) EASTERLY:	NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon		DATE STARTED: 10/18/05	DATE FINISHED: 10/18/05
DRILLING METHOD: Hollow Stem Auger		TOTAL DEPTH (ft.): 20	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 75		DEPTH TO WATER (ft): 6.6	GROUND SURFACE ELEVATION (NAVD 88) NM
SAMPLING METHOD: 2" Splitspoon		FIELD LOGGED BY: Liam Bane	



DESCRIPTION	Observed Groundwater
0.0'-1.0' Medium brown F-SAND, little silt, m-c sand and f-c gravel, slightly moist, no odor, no stain	
1.0'-2.0' No Recovery	
2.0'-2.8' Medium brown F-SAND, trace silt, and c-gravel, thin band of dark brown silt and f-sand at 2.7 fbg, trace brick, slightly moist, no odor, no stain	
2.8'-4.0' No Recovery	
4.0'-4.5' Dark brown SILT and F-SAND, little f-gravel, trace brick, very slight odor, very moist.	
4.5'-4.9' Orange brown F-SAND, trace silt, very moist, no odor, no stain.	
4.9'-5.6' Light brown with a slight gray hue F-SAND, some silt, trace m-sand, wet, no odor, no stain.	
5.6'-6.0' No Recovery	
6.0'-7.1' Light to medium brown SILT, some F-SAND, trace clay, wet, no odor, no stain.	
7.1'-8.0' No Recovery	
8.0'-9.0' Light brown SILT, little f-sand, wet, no odor, no stain.	
9.0'-10.0' No Recovery	
10.0'-10.7' Light brown SILT, little f-sand, wet, no odor, no stain.	
10.7'-11.2' Light brown F-SAND, some silt, little m-c sand, wet, no odor, no stain.	
11.2'-12.0' No Recovery	
12.0'-12.8' Light brown SILT, little F-SAND, wet, loose, no odor, no stain.	
12.8'-13.0' Medium brown F-SAND, little silt, trace f-gravel, wet, no odor, no stain.	
13.0'-13.3' Light brown SILT, trace f-sand, wet, no odor, no stain.	
13.3'-13.6' Medium brown F-M SAND, wet, no odor, no stain.	
13.6'-14.0' No Recovery	
14.0'-14.9' Medium brown F-M SAND, little c-sand, trace c-gravel, wet, no odor, no stain.	
14.9'-15.3' Medium to dark brown F-M SAND, some c-sand and f-gravel, wet, no odor, no stain.	
15.3'-15.4' Light brown SILT lens, no odor, no stain.	
15.4'-15.6' Medium to dark brown F-M SAND, little f-gravel, wet, no odor, no stain.	
15.6'-16.0' Medium brown F-SAND, wet, no odor, no stain.	
16.0'-18.0' Medium brown F-SAND, trace m-c sand and f-gravel, wet, no odor, no stain.	
18.0'-20.0' Medium brown F-SAND, wet, no odor, no stain.	

PROJECT: **Gloversville Former MGP Site**
Gloversville, NY

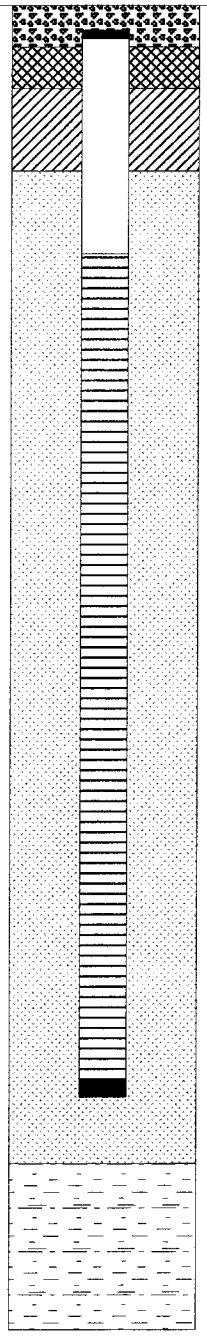
BORING NUMBER: SB-09/MW-03

TRC Customer-Focused Solutions

BORING LOCATION:	GROUND SURFACE ELEVATION AND DATUM:
DRILLING CONTRACTOR: Lyon Drilling	DATE STARTED: 10/19/05 / DATE FINISHED: 10/19/05
DRILLING METHOD: Hollow-stem auger	TOTAL DEPTH (ft.): 16 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Mobil Drill B-61	DEPTH TO WATER: FIRST: 3.7 / COMPL.: NA
SAMPLING METHOD: 24" Split Spoon	LOGGED BY: Liam Bane
HAMMER WEIGHT: 140 lbs. / DROP: 30 in.	RESPONSIBLE PROFESSIONAL: Doug Martin / REG. NO. XXXX

DEPTH (feet)	Lithology	Recovery (feet)	Blow Counts	PID/FID (ppm)	DESCRIPTION
0–1		0.8	1,1, 1,2	0	0-0.7' Dark brown SILT, little f-sand, trace m-c sand and f-gravel, moist, earth odor, no staining 0.7-0.8' Light brown F-SAND, moist, no odor, no staining
2–3		1.2	2,1, 1,1	0	0-0.8' Light brown/orange brown F-SAND, moist, no odor, no staining 0.8-1.0' Ash-like material, wet, no odor 1.0-1.7' Light brown with slight gary hue VF-SAND, wet, no odor, no staining
4–5		0.6	1,1, WOR	0	0-0.1' Dark brown Silt and F-Sand, wet, no odor, no staining 0.1-0.6' Orange brown F-SAND, trace silt, wet, no odor, no staining
6–7		1.2	2,4, 3,3	0	0-1.2' Orange/medium brown F-SAND, little silt, wet, no odor, no staining
8–9		1.7	2,3, 5,5	0	0-1.7' Medium brown F-SAND, little silt, wet, no odor, no staining
10–11		1.2	2,3, 3,4	0	0-0-0.2' Orange brown F-SAND, wet, no odor, no staining 0.2-1.2' Medium (slight gray hue) F-SAND, little silt, wet, no odor, no staining
12–13		1.2	2,4, 4,4	0	0-0.6' Medium/orange brown F-SAND, trace silt, wet, no odor, no staining 0.6-2.0' Medium brown (slight hue) F-SAND, trace silt, wet, no odor
14–15		1.4	3,5, 5,5	0	0-1.4' Medium brown F-SAND, trace silt, wet, no odor, no staining
16–17					

WELL CONSTRUCTION



REMARKS

Flush-mount road box

Concrete (0'-1')

Bentonite Seal (1'-2')

2" PVC Casing ((0'-3')

Collect sample GLOV-SB-09(2-4) for BTEX and PAHs

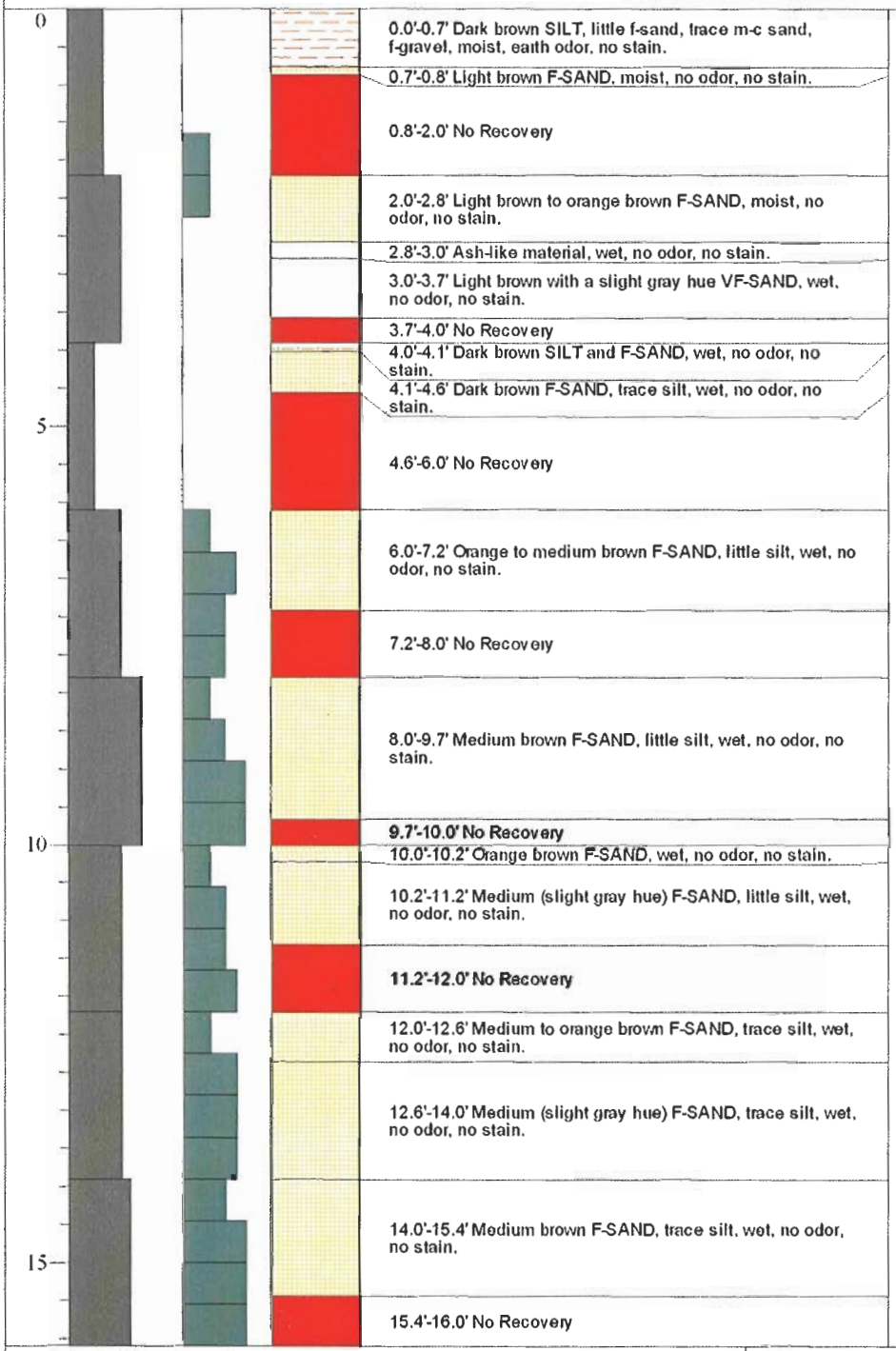
#1 Sand Filter Pack (2'-14')

2" 10 Slot PVC Screen (3'-13')

MONITORING WELL MW-03

Running sands, end of boring

PROJECT: Remedial Investigation		SB-09	TRC
BORING LOCATION: Washington Street, Gloversville, NY		COORDINATES (CT PLANE SYSTEM - NAD83) EASTERLY:	NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon		DATE STARTED: 10/18/05	DATE FINISHED: 10/18/05
DRILLING METHOD: Hollow Stem Auger		TOTAL DEPTH (ft.): 20	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 75		DEPTH TO WATER (ft): 6.6	GROUND SURFACE ELEVATION (NAVD 88) NM
SAMPLING METHOD: 2" Splitspoon		FIELD LOGGED BY: Liam Bane	



DESCRIPTION	Observed Groundwater
0.0'-0.7' Dark brown SILT, little f-sand, trace m-c sand, f-gravel, moist, earth odor, no stain.	
0.7'-0.8' Light brown F-SAND, moist, no odor, no stain.	
0.8'-2.0' No Recovery	
2.0'-2.8' Light brown to orange brown F-SAND, moist, no odor, no stain.	
2.8'-3.0' Ash-like material, wet, no odor, no stain.	
3.0'-3.7' Light brown with a slight gray hue VF-SAND, wet, no odor, no stain.	
3.7'-4.0' No Recovery	
4.0'-4.1' Dark brown SILT and F-SAND, wet, no odor, no stain.	
4.1'-4.6' Dark brown F-SAND, trace silt, wet, no odor, no stain.	
4.6'-6.0' No Recovery	
6.0'-7.2' Orange to medium brown F-SAND, little silt, wet, no odor, no stain.	
7.2'-8.0' No Recovery	
8.0'-9.7' Medium brown F-SAND, little silt, wet, no odor, no stain.	
9.7'-10.0' No Recovery	
10.0'-10.2' Orange brown F-SAND, wet, no odor, no stain.	
10.2'-11.2' Medium (slight gray hue) F-SAND, little silt, wet, no odor, no stain.	
11.2'-12.0' No Recovery	
12.0'-12.6' Medium to orange brown F-SAND, trace silt, wet, no odor, no stain.	
12.6'-14.0' Medium (slight gray hue) F-SAND, trace silt, wet, no odor, no stain.	
14.0'-15.4' Medium brown F-SAND, trace silt, wet, no odor, no stain.	
15.4'-16.0' No Recovery	

PROJECT: **Remedial Investigation**		**SB-10**	TRC
BORING LOCATION: Washington Street, Gloversville, NY		GROUND SURFACE ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon		DATE STARTED: 10/7/08	DATE FINISHED: 10/7/08
DRILLING METHOD: Direct Push		TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe		DEPTH TO WATER: FIRST:	COMPL.
SAMPLING METHOD: 4' Macrocore		LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA	DROP: NA	RESPONSIBLE PROFESSIONAL:	REG. NO.

DEPTH (feet)	Recovery (feet)	PID/FID (ppm)	Samples	Lithology	DESCRIPTION	REMARKS
0	1				0.0'-0.3' Dark brown F-SAND and SILT, grass and roots present, dry.	
1					0.3'-1.0' Dark brown F-M SAND, trace f-gravel, dry, brick pieces present, fill.	
2					1.0'-4.0' No Recovery	
3						
4	1				4.0'-5.0' No Recovery	
5						
6						
7						
8						

PROJECT: Remedial Investigation									SB-10A
BORING LOCATION: Washington Street, Gloversville, NY									COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon									DATE STARTED: 10/7/08 / DATE FINISHED: 10/7/08
DRILLING METHOD: Direct Push									TOTAL DEPTH (ft.): 8 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe									DEPTH TO WATER: ~4.8' / GROUND SURFACE ELEVATION (MSL) 788.9
SAMPLING METHOD: 4' Macrocore									LOGGED BY: Richard Gille
HAMMER WEIGHT: NA					DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.3' F-SAND and SILT, little f-Gravel, roots and grass present, dry.
1							0.3'-2.7' Brown F-M SAND, little Silt, little f-Gravel, brick and coal ash pieces present, dry, no odor, no sheen.
2	3.5	4	87.5%				
3							2.7'-4.0' Black F-SAND, coal pieces, ash.
4				ND	SB-10A (4-4.5)		4.0'-4.8' Black (slight staining) F-SAND, some Silt, wood pieces present, moist, slight odor, no sheen.
5				ND	SB-10A (5-5)		4.8'-8.0' Brown SILT, wet.
6	2.7	4	67.5%				
7							
8							

PROJECT: Remedial Investigation								SB-11
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 10/7/08 / DATE FINISHED: 10/7/08
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 8 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: ~4.0' / GROUND SURFACE ELEVATION (MSL) 787.87
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.3' Brown to dark brown F-SAND and SILT, grass and roots present, dry.
1							0.3'-1.3' Brown to black F-SAND and SILT, coal and slag pieces present, dry.
2	2.8	4	70%				1.3'-2.5' Brown F-SAND and SILT, coal and slag present, brick and stone present, dry.
3							2.5'-4.0' Black coal and F-SAND, very slight odor, moist.
4							4.0'-5.0' Dark brown F-SAND and SILT, wet, no sheen, no odor, fill.
5				ND	SB-11 (5-5.5)		
6	3.1	4	77.5%				5.0'-8.0' Brown SILT, little f-Sand, wet.
7							
8							

PROJECT: Remedial Investigation							SB-12		TRC
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY:	NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 10/7/08		DATE FINISHED: 10/7/08
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 8		MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~2.5'	GROUND SURFACE ELEVATION (MSL) 787.87	
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille		
HAMMER WEIGHT: NA			DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin		

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.3' Brown F-SAND and SILT, little f-Gravel, dry.
1							0.3'-2.4' Dark brown to black F-SAND and SILT, brick and coal pieces present.
2	3.4	4	85%				
3							2.4'-4.0' Black SILT, stained, slight weathered tar odor, wet at 2.5.
4							
5				9.2	SB-12 (5-5.5)		4.0'-5.8' Black SILT, stained, slight weathered tar odor, wet at 2.5.
6	3.5	4	87.5%				
7				ND	SB-12 (7-7.5)		5.8'-8.0' Brown SILT, wet.
8							

PROJECT: Remedial Investigation								SB-13	
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 10/7/08	DATE FINISHED: 10/7/08
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: ~4.0'	GROUND SURFACE ELEVATION (MSL) 788.1
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0	2.1	4	52.5%				0.0'-4.0' Brown F-M SAND, some f-Gravel, little Silt, brick and ash present, dry.
4	3.6	4	90%	83	SB-13 (4.5-5)		4.0'-5.3' Dark brown to black F-SAND and SILT, wet tar present, stained, slight weathered tar odor.
6				0.3	SB-13 (7-7.5)		5.3'-8.0' Brown SILT, wet, no odor, no staining.
8							

PROJECT: Remedial Investigation							SB-14	
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 10/7/08	DATE FINISHED: 10/7/08
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~4.0'	GROUND SURFACE ELEVATION (MSL) 788.9
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA			DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.2' Topsoil, brown F-M SAND, grass and roots present.
1							
2	3	4	75%				0.2'-4.0' Brown F-M SAND, little f-Gravel, little Silt, brick and coal pieces present, dry.
3							
4				2.6	SB-14 (4-4.5)		4.0'-4.5' Black F-M SAND, wet, slight odor, slight staining.
5							
6	3	4	75%	ND	SB-14 (5.5-6)		4.5'-8.0' Brown SILT, wet, no odor, no stain.
7							
8							

PROJECT: Remedial Investigation										SB-15
BORING LOCATION: Washington Street, Gloversville, NY										COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon										DATE STARTED: 10/7/08 / DATE FINISHED: 10/7/08
DRILLING METHOD: Direct Push										TOTAL DEPTH (ft.): 8 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe										DEPTH TO WATER: ~4.0' / GROUND SURFACE ELEVATION (MSL) 789.3
SAMPLING METHOD: 4' Macrocore										LOGGED BY: Richard Gille
HAMMER WEIGHT: NA					DROP: NA					RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.8' Dark brown to black F-M SAND, some f-Gravel, little Silt, slag present, dry.
1							0.8'-2.8' Black to dark brown F-M SAND, slight odor, dry, no sheen.
2	3.4	4	85%				
3							2.8'-4.0' Black coal and Gravel, slight tar odor.
4							4.0'-5.0' Black F-M SAND, some Silt, little f-Gravel, wet, slight odor.
5				ND	SB-15 (4.5-5)		
6	3.5	4	87.5%	ND	SB-15 (6-6.5)		5.0'-8.0' Brown F-SAND and SILT, wet, no odor, no staining.
7							
8							

PROJECT: Remedial Investigation								SB-16	
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 10/7/08	DATE FINISHED: 10/7/08
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: ~4.0'	GROUND SURFACE ELEVATION (MSL) 788.4
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.2' Brown F-SAND and SILT, little f-Gravel, grass and roots present, dry, topsoil.
1							0.2'-1.6' Dark brown F-M SAND, some f-Gravel, little Silt, brick pieces, coal, ash and slag pieces, dry, no odor, no stain.
2	2.8	4	70%				1.6'-2.5' Brown F-M SAND, dry, concrete or solidified ash present.
3							2.5'-4.0' Brown F-M SAND, dry, concrete or solidified ash present, some staining, slight odor.
4				ND	SB-16 (4-4.5)		4.0'-4.6' Dark brown F-M SAND and SILT, slight staining and odor.
5				ND	SB-16 (5-5.5)		4.6'-5.4' Brown F-M SAND, some Silt, wet, no odor, no stain.
6	3.4	4	85%				5.4'-8.0' Brown SILT, little Clay, wet, no odor, no stain.
7							
8							

PROJECT: Remedial Investigation								SB-17	
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY:	NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 10/8/08	DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: ~4.0'	GROUND SURFACE ELEVATION (MSL) 788.8
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.3' Brown F-M SAND, some Silt, little f-Gravel, grass and roots present, dry, topsoil.
1							0.3'-2.6' Brown to dark brown F-M SAND, brick and old mortar, coal pieces present, dry, no odor, no stain.
2	3.4	4	85%				
3							2.6'-3.2' Boulder present, dry.
							3.2'-4.0' Brown to dark brown F-M SAND, brick and old mortar, coal pieces present, dry, no odor, no stain.
4							4.0'-5.1' Dark brown to black, stained, F-M SAND, little f-Gravel, little Silt, wet, slight tar-like odor.
5							5.1'-5.9' Brown F-SAND and SILT, wet, no odor, no stain.
6	2.9	4	72.5%	4	SB-17 (5.9-7.3)		5.9'-6.4' Black (stained) F-SAND and SILT, wet, tar-like odor.
				ND	SB-17 (6.4-6.9)		6.4'-8.0' Brown F-SAND and SILT, wet, no stain, very slight odor.
7							
8							

PROJECT: Remedial Investigation								SB-18
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 10/8/08 / DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 8 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: ~4.3' / GROUND SURFACE ELEVATION (MSL) 788.3
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							
1							
2	1.4	4	35%				0.0'-4.0' Brown F-M SAND, little Silt, cobbles present, brick and wood present, dry.
3							
4							4.0'-4.3' Dark brown F-M SAND, little f-Gravel, trace Silt, moist.
				94.9	SB-18 (4.3-4.8)		4.3'-5.0' Black (stained) F-SAND and SILT, tar residual present, tar odor, slight sheen, wet.
5				1	SB-18 (5-6)		
6	3.2	4	80%				5.0'-8.0' Brown F-SAND and SILT, wet, no odor, no stain.
7							
8							

PROJECT: Remedial Investigation									SB-19
BORING LOCATION: Washington Street, Gloversville, NY									COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon									DATE STARTED: 10/8/08 / DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push									TOTAL DEPTH (ft.): 8 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe									DEPTH TO WATER: ~4.0' / GROUND SURFACE ELEVATION (MSL) 787.9
SAMPLING METHOD: 4' Macrocore									LOGGED BY: Richard Gille
HAMMER WEIGHT: NA					DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.7' Brown F-M SAND, some f-Gravel, coal pieces present, dry, fill.
1							
2	3.1	4	77.5%				0.7'-4.0' Dark brown to black F-SAND, little f-Gravel, little Silt, coal pieces and brick pieces present, dry.
3				12.2	SB-19 (2.6-3.1)		
4							4.0'-4.7' Black to brown F-M SAND, wet, slight staining, slight odor.
5				ND	SB-19 (5-5.5)		
6	3.3	4	82.5%				4.7'-8.0' Brown SILT, wet, no odor, no stain.
7							
8							

PROJECT: Remedial Investigation								SB-20	
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 10/8/08	DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: ~2.8'	GROUND SURFACE ELEVATION (MSL) 788.4
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.2' Brown F-M SAND, little f-Gravel, grass and roots present, topsoil
1							0.2'-1.4' Black to brown F-M SAND, some f-Gravel, brick and coal pieces present, some minor staining, no odor
2	2.8	4	70%				1.4'-4.0' Black F-SAND, little Silt, slight tar-like odor, stained, dry, wet at 2.8 fbg.
3							
4							
5				312	SB-20 (5-5.5)		4.0'-6.0' Black F-SAND, little Silt, stained, sheen observed, strong tar odor, wet, product present.
6	3.1	4	77.5%				
7				7.7	SB-20 (6.5-7)		6.0'-8.0' Brown SILT, wet, some smearing from material above, no odor, no stain.
8							

PROJECT: Remedial Investigation								SB-21	
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 10/8/08	DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: Not Observed	GROUND SURFACE ELEVATION (MSL) 788.8
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0–4	3.2	4	80%				0.0'-4.0' Fill, Dark brown F-M SAND, some f-Gravel, brick and coal pieces present, old mortar, dry.
4–8							4.0'-8.0' REFUSAL at 4 fbg.

PROJECT: Remedial Investigation							SB-22
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 10/8/08 / DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 8 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~4.0' / GROUND SURFACE ELEVATION (MSL) 789
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.3' Dark brown F-M SAND, little f-Gravel, little Silt, roots and grass, dry, topsoil.
1							0.3'-2.3' Dark brown F-M SAND, little f-Gravel, coal and brick pieces present, dry.
2	3.6	4	90%				
3							2.3'-4.0' Black (stained) F-SAND, some Silt, little f-Gravel, tar present, taffy-like.
4							
5					SB-22 (5.5-6)		4.0'-7.0' Black (stained) F-SAND and SILT, slight sheen, tar-like odor, wet.
6	3.2	4	80%	48.9			
7							7.0'-8.0' Brown F-M SAND, wet, slight odor.
8							8.0'-8.5' Brown F-C SAND, some Silt, wet, product on the water but not in soil, smeared.
9				ND	SB-22 (8.5-9)		
10	3	4	75%				8.5'-12.0' Brown SILT, wet, no odor, no stain.
11							
12							
13							

PROJECT: Remedial Investigation								SB-23
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 10/8/08 / DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 8 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: ~4.0' / GROUND SURFACE ELEVATION (MSL) 788.9
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-1.6' Brown M-SAND, some f-Gravel, brick (0.5-1.5), dry, no odor, no stain.
1							
2	2.5	4	62.5%				1.6'-2.2' Black to brown coal pieces, pulverized brick, dry, no odor, no stain.
3							2.2'-4.0' Wood piece in tip, wet, tar, odor and sheen.
4							4.0'-5.4' Free flowing black TAR, strong odor.
5							
6	2.3	4	57.5%	ND	SB-23 (5.8-6.3)		5.4'-8.0' Brown SILT, wet smear from above.
7							
8							

PROJECT: Remedial Investigation							SB-24
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 10/8/08 / DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 8 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~2.1' / GROUND SURFACE ELEVATION (MSL)
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-1.0' Dark brown to black F-M SAND, some f-Gravel, little c-Sand, little Silt, dry, no odor, no stain.
1							
2	2.1	4	52.5%				1.0'-4.0' Pulverized brick and mortar.
3							
4							
5				ND	SB-24 (5-5.5)		
6	2.1	4	52.5%				4.0'-8.0' Gray to brown SILT, some f-Sand, wet, very slight odor, slight stain.
7							
8							

PROJECT: Remedial Investigation							SB-25	
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 10/8/08	DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~2.7'	GROUND SURFACE ELEVATION (MSL): 789.2
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.6' Dark brown F-M SAND, some f-Gravel, little c-Sand, little Silt, dry, fill.
1							0.6'-1.6' Brown F-M SAND, dry.
2	2.7	4	67.5%				1.6'-2.4' Pulverized brick and mortar.
3							2.4'-4.0' Black (stained) F-M SAND, wet, slight tar odor.
4				224	SB-25 (4-4.5)		4.0'-4.9' Black (stained) F-M SAND, tar present, wet, slight sheen and tar odor.
5							
6	2.8	4	70%	0.7	SB-25 (6-6.5)		4.9'-8.0' Brown F-SAND and SILT, wet, no odor, no stain.
7							
8							

PROJECT: Remedial Investigation							SB-26	
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 10/8/08	DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~2.9'	GROUND SURFACE ELEVATION (MSL) 789.5
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.4' Brown F-M SAND, little f-Gravel, little Silt, grass and roots present, dry.
1							0.4'-1.5' Brown F-M SAND, little f-Gravel, dry, coal and brick fragments present.
2	2.9	4	72.5%				1.5'-2.3' Pulverized brick.
3							2.3'-4.0' Black coal pieces or C-SAND, some c-f Sand, wet, no odor, no stain.
4							4.0'-5.0' Gray F-M SAND, pulverized mortar or slag (light color) present, wet, no odor, no stain.
5							
6	3.2	4	80%	ND	SB-26 (5.5-6)		5.0'-8.0' Brown SILT, wet, no odor, no stain.
7							
8							

PROJECT: Remedial Investigation							SB-27
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 10/8/08 / DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 8 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~2.8' / GROUND SURFACE ELEVATION (MSL) 789.5
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.4' Brown F-M SAND, some Silt, little f-Gravel, grass and roots present, dry, topsoil.
1							0.4'-1.5' Dark brown F-M SAND, some Silt, brick fragments, dry, no odor, no stain.
2	2.8	4	70%				1.5'-2.3' Pulverized brick, dry, no odor, no stain.
3							2.3'-4.0' Black (stained F-SAND, some Silt, slight tar odor, sheen in tip (2.7-2.8) wet.
4				483	SB-27 (4-4.5)		
5							4.0'-6.8' Black (stained) F-SAND, some Silt, wet, tar, sheen and odor.
6	3.2	4	80%				
7							6.8'-8.0' Brown SILT, wet (clean but smearing prevents sampling).
8							
9							
10	3.9	4	97.5%	ND	SB-27 (9.5-10)		8.0'-12.0' Brown SILT, wet (some smear on plastic sleeve).
11							
12							
13							

PROJECT: Remedial Investigation				SB-28			TRC
BORING LOCATION: Washington Street, Gloversville, NY				COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY:		NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon				DATE STARTED: 10/8/08		DATE FINISHED: 10/8/08	
DRILLING METHOD: Direct Push				TOTAL DEPTH (ft.): 8		MEASURING POINT: Ground Surface	
DRILLING EQUIPMENT: Truck-mounted Geoprobe				DEPTH TO WATER: ~3.1'		GROUND SURFACE ELEVATION (MSL) 789.5	
SAMPLING METHOD: 4' Macrocore				LOGGED BY: Richard Gille			
HAMMER WEIGHT: NA			DROP: NA	RESPONSIBLE PROFESSIONAL: Doug Martin			

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.4' Brown F-SAND and SILT, little f-Gravel, grass and roots present, dry, topsoil.
1							0.4'-2.5' Dark brown to black F-M SAND, little f-Gravel, brick fragments, shell, moist, no odor, no stain.
2	3.1	4	77.5%				
3							2.5'-4.0' Black (stained) F-C SAND, coal fragments and brick, wet, slight tar odor at 3-3.1 fbg.
4				53.5	SB-28 (4.5-5)		
5							4.0'-8.0' Black F-M SAND, tar and sheen, tar odor.
6	2	4	50%				
7							
8							8.0'-8.5' Black F-M SAND, tar and sheen, tar odor.
9							8.5'-12.0' Brown SILT, wet, no odor, no stain.
10	1.9	4	47.5%	0.6	SB-28 (9.4-9.9)		
11							
12							
13							

PROJECT: Remedial Investigation										SB-29
BORING LOCATION: Washington Street, Gloversville, NY										COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon										DATE STARTED: 10/8/08 / DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push										TOTAL DEPTH (ft.): 8 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe										DEPTH TO WATER: ~2.9' / GROUND SURFACE ELEVATION (MSL) 789.5
SAMPLING METHOD: 4' Macrocore										LOGGED BY: Richard Gille
HAMMER WEIGHT: NA					DROP: NA					RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0–4	2.9	4	72.5%		SB-29 (4.7-5.2)		0.0'-4.0' Dark brown F-M SAND, little f-Gravel, little Silt, brick fragments, wet at 2.9 fbg, no odor.
4							4.0'-4.2' Black M-GRAVEL, wet, slight odor, no sheen or tar.
4–5							4.2'-4.6' Black (Stained) SILT, wet, slight odor.
5				ND			
6–8	1.3	4	32.5%				4.6'-8.0' Brown SILT, wet, slight odor, no sheens or tar.

PROJECT: Remedial Investigation								SB-30	
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 10/8/08	DATE FINISHED: 10/8/08
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: ~4.0'	GROUND SURFACE ELEVATION (MSL) 789.5
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0	1.2	4	30%				0.0'-4.0' Dark brown to black F-C SAND, little f-Gravel, little Silt, brick fragments, dry, coal pieces.
4	3.1	4	77.5%	16.5	SB-30 (5.8-6.3)		4.0'-5.9' Black (partially stained) F-M SAND, some Silt, wet, slight tar odor.
6							5.9'-6.1' Black (partially stained) F-M SAND, some Silt, wet, slight tar odor, several blips of sheen.
7				ND	SB-30 (6.7-7.1)		6.1'-8.1' Brown SILT, wet.
8							

PROJECT: Remedial Investigation								SB-31	
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY:	NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 10/7/08	DATE FINISHED: 10/7/08
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: ~2.1'	GROUND SURFACE ELEVATION (MSL) 788.1
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.3' Topsoil, dark brown F-SAND + SILT, little f-Gravel, roots and grass present, dry.
1							0.3'-1.6' Dark brown to black F-SAND and SILT, dry.
							1.6'-1.8' Dark brown crushed material.
2	2.1	4	52.5%				1.8'-4.0' Dark brown to black coal pieces, wood, F-SAND and SILT, wet in tip, sight odor, fill.
3							
4							4.0'-5.2' Black F-SAND and SILT, wet, slight tar odor, slight sheen
5				24.5	SB-31 (4.7-5.2)		
							5.2'-5.5' Brown F-SAND, wet, no odor, no sheen.
				ND	SB-31 (5.5-6.0)		
6	3.6	4	90%				5.5'-8.0' Brown SILT, wet.
7							
8							

PROJECT: Remedial Investigation							SB-32		
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY:		NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 5/27/09		DATE FINISHED: 5/27/09
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 12		MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~4.0'	GROUND SURFACE ELEVATION (MSL)	788.9
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille		
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin		

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.5' Asphalt
							0.5'-0.8' Concrete
1							0.8'-2.0' Brown F-M SAND + M-GRAVEL, little Silt, wet
2	4	4	100%				
3							2.0'-4.0' Brick, ash, slag (Clinkers), grey ash, slight tar odor
4							
5							4.0'-6.8' Black ash, Gravel, brick pieces, wet, tar odor
6	3.2	4	80%				
7				57.9	SB-32 (6.8-7.2)		6.8'-8.0' Black ash, Gravel, brick, tar blebs, sheen
8							8.0'-9.0' Light brown SILT, tar present, little F-Sand, wet
9							
10	3.3	4	82.5%				9.0'-11.1' Dark brown organic PEAT+SILT, no tar, no sheen, moist
11				6.2	SB-32 (10.5-11.0)		11.1'-12.0' Brown M-SAND, wet
12							
13							

PROJECT: Remedial Investigation	**SB-33**
BORING LOCATION: Washington Street, Gloversville, NY	COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon	DATE STARTED: 5/27/09 / DATE FINISHED: 5/27/09
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 12 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe	DEPTH TO WATER: ~2.5' / GROUND SURFACE ELEVATION (MSL) 789.1
SAMPLING METHOD: 4' Macrocore	LOGGED BY: Richard Gille
HAMMER WEIGHT: NA / DROP: NA	RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.5' Asphalt
							0.5'-0.9' CONCRETE
1	2.5	2.5	100%				0.9'-2.0' Brown/grey F-M SAND+M-GRAVEL, little Silt, wet
2							2.0'-2.5' Brick, some M-Gravel, wet
3	0.6	1.5	40%				2.5'-4.0' Black ash and slag, wet, slight odor
4							
5							4.0'-7.0' Black ash and slag, some F-M Sand, little C-Sand, wet, slight odor
6	3.5	4	87.5%				
7				2	SB-33 (7.0-7.5)		7.0'-8.0' Black organic SILT, wood, slight odor, wet
8							
9	0	2.3	0%				8.0'-12.0' No Recovery, refusal at 10.3
10							
11							
12							
13							

PROJECT: Remedial Investigation	**SB-34**
BORING LOCATION: Washington Street, Gloversville, NY	COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon	DATE STARTED: 5/27/09 / DATE FINISHED: 5/27/09
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 12 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe	DEPTH TO WATER: ~3.5' / GROUND SURFACE ELEVATION (MSL): 788.5
SAMPLING METHOD: 4' Macrocore	LOGGED BY: Richard Gille
HAMMER WEIGHT: NA / DROP: NA	RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0	1.5	1.5	100%				0.0'-0.5' ASPHALT
							0.5'-0.9' CONCRETE
1							0.9'-1.5' Brown/grey F-M SAND+M-GRAVEL, little Silt, damp
2	2	2.5	80%				1.5'-4.0' Grey ash and slag, brick fragments present, wet, slight odor
3							
4	2.9	4	72.5%	11.3	SB-34 (4.5-5.0)		4.0'-5.1' Black F-SAND+SILT, stained, tar odor, wet
5							5.1'-8.0' Grey-light brown SILT, wet, slight odor, no sheen
6							
7							
8	2.2	4	55%	1.6	SB-34 (8.5-9.0)		8.0'-8.5' Grey-light brown SILT, wet, slight odor, no sheen
							8.5'-9.1' Light brown F-SAND, little Silt, wet, no odor, no staining
9							9.1'-9.6' Brown organic PEAT+SILT, damp
10							9.6'-12.0' Brown M-SAND, wet
11							
12							
13							

PROJECT: Remedial Investigation							SB-35
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 5/27/09 / DATE FINISHED: 5/27/09
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 8.6 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~2.0' / GROUND SURFACE ELEVATION (MSL): 788.2
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.5' ASPHALT
	1.5	1.5	100%				0.5'-0.9' CONCRETE
1							0.9'-1.5' Brown-grey F-M SAND+M-GRAVEL, little Silt, wet
							1.5'-2.0' Brown F-M SAND, wet
2							
	2	2.5	80%				2.0'-4.0' Black-grey ash and slag, some Silt, slight tar odor
3							
4							4.0'-5.0' Black-grey ash and slag, some Silt, slight tar odor
5				430	SB-35 (5.2-5.5)		
	2.2	4	55%				5.0'-8.0' Tar saturated SILT, free tar in sleeve
6							
7							
8							
	0	0.6	0%				8.0'-8.6' No recovery, refusal at 8.6', brick lodged in Macrocore

PROJECT: Remedial Investigation							SB-36		TRC
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY:	NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 5/27/09		DATE FINISHED: 5/27/09
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 9.5		MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~2.2'	GROUND SURFACE ELEVATION (MSL) 787.8	
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille		
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin		

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.5' ASPHALT
	1.3	1.3	100%				0.5'-0.9' CONCRETE
1							0.9'-1.3' Brown-grey F-M SAND, some m-Gravel, little Silt, wet
							1.3'-1.7' Brown F-M SAND, wet
2							1.7'-2.2' Black SILT, slight odor, wet
	1.3	2.7	48.1%				2.2'-4.0' Large piece of WOOD
3							
4							
	0.6	0.6	100%				4.0'-4.6' Black SILT, slight odor, wet, augured through wood to 5.3'
5							4.6'-5.3' WOOD
				116	SB-36 (5.3-5.5)		5.3'-5.5' Black F-SAND+SILT, tar present
							5.5'-6.0' Black SILT, free-flowing tar
6							6.0'-7.5' Grey SILT, stained black, tar odor
	2.5	4	62.5%				
7				3.6			
					SB-36 (7.5-8.0)		7.5'-9.5' Brown F-M SAND, wet, no odor, no stain
8							
9							
10							

PROJECT: Remedial Investigation	**SB-37**
BORING LOCATION: Washington Street, Gloversville, NY	COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon	DATE STARTED: 5/28/09 / DATE FINISHED: 5/28/09
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 12 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe	DEPTH TO WATER: ~2.4' / GROUND SURFACE ELEVATION (MSL) 789.2
SAMPLING METHOD: 4' Macrocore	LOGGED BY: Richard Gille
HAMMER WEIGHT: NA / DROP: NA	RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.5' ASPHALT
1							0.5'-1.0' CONCRETE
2	2.1	3	70%				1.0'-2.4' Brown F-M SAND, wet no odor, no staining
3							2.4'-4.0' Black-grey ash and slag, slight odor, wet
4							
5							
6	1	4	25%				4.0'-8.0' Black(stained) ash and SILT, wet, slight odor
7							
8							8.0'-8.5' Black(stained) ash and SILT, wet, slight odor
9					SB-37 (9.5-10.0)		8.5'-9.7' Brown SILT, wet, saturated with tar
10	3.8	4	95%	79			9.7'-10.1' Brown organic PEAT+SILT, little Clay, moist, some tar
11					SB-37 (11.1-11.6)		10.1'-11.1' Brown PEAT, same as above, no tar odor
12				7			11.1'-12.0' Brown PEAT with an interbedded Silt layer(~1") followed by ~2" layer of peat in end of core
13							

PROJECT: Remedial Investigation									SB-38	TRC
BORING LOCATION: Washington Street, Gloversville, NY									COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY:	NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon									DATE STARTED: 5/28/09	DATE FINISHED: 5/28/09
DRILLING METHOD: Direct Push									TOTAL DEPTH (ft.): 12	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe									DEPTH TO WATER: ~2.3'	GROUND SURFACE ELEVATION (MSL) 788.8
SAMPLING METHOD: 4' Macrocore									LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA					DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.5' ASPHALT
1							0.5'-1.0' CONCRETE
							1.0'-1.5' Brown-grey M-C SAND+M-GRAVEL, little Silt, wet
2							1.5'-2.5' Brown F-M SAND, wet
3	1.8	2.5	72%				2.5'-4.0' Black ash and slag, little Silt, wet, slight odor
4							
5							
6	4	4	100%				4.0'-8.0' Black ash and slag, little Silt, wet, slight odor, tar, sheen and blebs in last 0.3' of core
7							
8							8.0'-8.3' Black ash and slag, little Silt, wet, slight odor, tar, sheen and blebs
							8.3'-8.8' Black SILT, tar sheen, odor, damp
9					SB-38 (9.2-9.7)		8.8'-9.1' Large piece of WOOD
				178			9.1'-10.2' Black SILT, tar, sheen, strong odor
10	2.6	4	65%		SB-38 (10.2-10.6)		
				82			
11							10.2'-12.0' Brown PEAT+SILT, no sheen, slight odor, no tar
12							
13							

PROJECT: Remedial Investigation							SB-39	
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 5/28/09	DATE FINISHED: 5/28/09
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 12	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~1.5'	GROUND SURFACE ELEVATION (MSL) 788.7
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.5' ASPHALT
1							0.5'-1.0' CONCRETE
							1.0'-1.5' F-C SAND+F-GRAVEL, little Silt, wet
2							1.5'-2.2' Brown F-M SAND, trace F-Gravel, wet
3	1.7	2.5	68%				2.2'-4.0' Black ash and slag, slight odor, wet
4							
5							
6	1.1	4	27.5%				4.0'-8.0' Black ash and slag, slightly stronger odor, wet
7							
8							
9				115	SB-38 (8.5-9.0)		8.0'-10.0' Black SILT, stained, wet tar, sheen
				12.2	SB-38 (9.0-10.0)		
10	2	4	50%				
11							10.0'-12.0' No Recovery
12							
13							

PROJECT: Remedial Investigation						SB-40		TRC
BORING LOCATION: Washington Street, Gloversville, NY						COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY:	NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon						DATE STARTED: 5/28/09		DATE FINISHED: 5/28/09
DRILLING METHOD: Direct Push						TOTAL DEPTH (ft.): 12		MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe						DEPTH TO WATER: ~2.3'	GROUND SURFACE ELEVATION (MSL) 788.1	
SAMPLING METHOD: 4' Macrocore						LOGGED BY: Richard Gille		
HAMMER WEIGHT: NA				DROP: NA		RESPONSIBLE PROFESSIONAL: Doug Martin		

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.5' ASPHALT
1							0.5'-1.0' CONCRETE
							1.0'-1.5' Brown F-C SAND+F GRAVEL, little Silt, wet
2							1.5'-2.3' Brown F-M SAND, wet
3	1.8	2.5	72%				2.3'-4.0' Grey SILT, some ash, wet
4							
5							4.0'-6.1' Brown F-SAND, little Silt, inter-mixed with ash and wood
6	3.7	4	92.5%				
7							6.1'-8.0' Black organic SILT, some Peat, sheen, tar blebs
8							
							8.0'-9.0' F-M SAND, some Silt, wet, tar odor, slight sheen
9							
							9.0'-10.5' Black F-SAND+SILT, tar, blebs, sheen, wet
10	4	4	100%	62	SB-40 (9.8-10.3)		
11							10.5'-12.0' Brown SILT, wet, slight odor, no sheens or tar.
				2.5	SB-40 (11.5-12.0)		
12							
13							

PROJECT: Remedial Investigation							SB-41	
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 5/28/09	DATE FINISHED: 5/28/09
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 12	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~1.5'	GROUND SURFACE ELEVATION (MSL) 787.8
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.5' ASPHALT
1							0.5'-1.0' CONCRETE
							1.0'-1.5' Brown F-C SAND+F-GRAVEL, little Silt, wet
2							1.5'-2.1' Brown F-M SAND, wet
3	2.2	2.5	88%				2.1'-4.0' Dark brown-black SILT, wet slight odor
4							
5							
6	3.2	4	80%				4.0'-8.0' Black ash and slag, small pieces of coal, wet, slight odor
7				12.2	SB-41 (6.7-7.2)		
8							8.0'-8.6' Black ash and slag, small pieces of coal, wet, slight odor
9							8.6'-9.3' Dark brown SILT, trace Clay, wet
				ND	SB-41 (9.0-10.0)		
10	3	4	75%				9.3'-12.0' Brown F-SAND+SILT, wet, no sheen
11							
12							
13							

PROJECT: Remedial Investigation	**SB-42**
BORING LOCATION: Washington Street, Gloversville, NY	COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon	DATE STARTED: 5/28/09 / DATE FINISHED: 5/28/09
DRILLING METHOD: Direct Push	TOTAL DEPTH (ft.): 12 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe	DEPTH TO WATER: ~1.7' / GROUND SURFACE ELEVATION (MSL): 789.5
SAMPLING METHOD: 4' Macrocore	LOGGED BY: Richard Gille
HAMMER WEIGHT: NA / DROP: NA	RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.5' ASPHALT
1							0.5'-1.0' CONCRETE
							1.0'-1.7' Brown F-C SAND+F-GRAVEL, little Silt, wet
2	1.5	2.3	65.2%				1.7'-4.0' Brown F-SAND+SILT, ash and coal, wet, no odor, no tar
3							
4	4	4	100%				4.0'-8.0' Black-grey SILT+F-SAND, ash, wood, and coal pieces, no odor, no stain
5							
6							
7							
8	2.9	4	72.5%				8.0'-8.5' Black-grey SILT+F-SAND, ash, wood, and coal pieces, no odor, no stain
9					SB-42 (9.0-10.0)		8.5'-9.5' Grey SILT, stained, slight odor, no tar, no sheen, wet
10				ND			9.5'-10.5' Dark brown PEAT+SILT, little Clay, organics present, wet, some staining, slight odor
11				ND	SB-42 (10.4-10.9)		10.5'-12.0' Grey F-SAND, some Silt, wet, no odor, no sheen
12							
13							

PROJECT: Remedial Investigation								SB-43	
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY:	NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 5/28/09	DATE FINISHED: 5/28/09
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 12	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: ~2.2'	GROUND SURFACE ELEVATION (MSL): 787.7
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.5' ASPHALT
							0.5'-1.0' CONCRETE
1							1.0'-1.5' Brown F-C SAND+F GRAVEL, little Silt, wet
							1.5'-2.2' Brown F-M SAND, trace F-Gravel, wet
2	1.3	3	43.3%				
							2.2'-4.0' Ash and brick fragments, wet
3							
4							4.0'-4.8' Ash and brick fragments, wet
							4.8'-5.5' Dark brown PEAT+SILT, wood present, slight staining, slight odor, wet
5				ND	SB-43 (5.0-5.5)		
							5.5'-6.0' Brown SILT, wet, slight odor, no stain, no sheen
6	2.8	4	70%				
							6.0'-8.0' F-C SAND, little Silt, wet
7							
8							8.0'-9.0' F-C SAND, little Silt, wet
				ND	SB-43 (8.5-9.0)		
9							
10	4	4	100%				9.0'-11.0' Brown F-M SAND, wet
11							11.0'-12.0' Brown SILT, wet
12							
13							

Note: Break In Soil Boring Sequence –
No Boring SB-44 Was Performed

PROJECT: Remedial Investigation							SB-45
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 10/5/09 / DATE FINISHED: 10/5/09
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 12 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~5.8' / GROUND SURFACE ELEVATION (MSL) 789.1
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0					SB-45 (4.0-5.0)		0.0'-0.3' ASPHALT
							0.3'-0.9' CONCRETE
1							
2	1.7	4	42.5%				0.9'-4.0' Brown F-M SAND, little C-Sand, coal pieces, slight dark staining, no odors
3							
4							
5							4.0'-5.8' Brown F-M SAND, little C-Sand, coal pieces, slight dark staining, no odors
6	2.4	4	60%				
7							5.8'-8.0' Brown F-SAND+SILT, wet, no odor, no staining
8							
9							8.0'-9.5' Brown F-SAND+SILT, wet, no odor, no staining,
							9.5'-9.6' PEAT
10	2.6	4	65%				
11							9.6'-12.0' Brown M-SAND, little Silt, little F-Sand, wet no odor, no staining
12							
13							

PROJECT: Remedial Investigation							SB-46	
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 10/5/09	DATE FINISHED: 10/5/09
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~4.0'	GROUND SURFACE ELEVATION (MSL) 788.8
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0					SB-46 (3.5-4.0)		0.0'-0.5' Brown F-M SAND, little Silt, dry, grass roots, no odor, no staining
1							0.5'-1.1' Dark brown to black F-SAND, coal and brick fragments, dry, no odor, no staining
2	3.3	4	82.5%	ND			1.1'-2.3' Brown F-M SAND, some Silt, trace Clay, dry, no odor, no staining
							2.3'-2.6' Black ash and slag
3							2.6'-4.0' Brown M-SAND, moist, no odor, no staining
4							
5							4.0'-6.8' Brown-grey M-SAND, some F-Sand, little Silt, wet, no odor, no staining
6	3.9	4	97.5%				
7							6.8'-8.0' Dark grey F-SAND, some Silt, ash and pieces of porcelein (possibly fall-back), damp, no odor, no staining
8							

PROJECT: Remedial Investigation							SB-47	
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:	
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 10/5/09	DATE FINISHED: 10/5/09
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~4.0'	GROUND SURFACE ELEVATION (MSL) 787.9
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0–1	1.2	1.2	100%				0.0'-1.2' Brown F-M SAND, little Silt, grass roots, dry, no odor, no staining
1–2							1.2'-2.2' Concrete encountered, drillers will try to auger through
2–3	0.4	1.8	22.2%				2.2'-4.0' Concrete chunks
4–6	3.8	4	95%				4.0'-6.5' Grey-brown M-SAND, some F-Sand, little Silt, wet, no odor, no staining
6–7							6.5'-7.1' Dark grey SILT, coal pieces (fall-back) and peat, damp, no odor
7–8					SB-47 (7.3-7.8)		7.1'-8.0' Dark brown F-M SAND, wet

PROJECT: Remedial Investigation								SB-48
BORING LOCATION: Washington Street, Gloversville, NY								COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY: NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon								DATE STARTED: 10/5/09 / DATE FINISHED: 10/5/09
DRILLING METHOD: Direct Push								TOTAL DEPTH (ft.): 8 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe								DEPTH TO WATER: ~2.7' / GROUND SURFACE ELEVATION (MSL) 787.5
SAMPLING METHOD: 4' Macrocore								LOGGED BY: Richard Gille
HAMMER WEIGHT: NA				DROP: NA				RESPONSIBLE PROFESSIONAL: Doug Martin

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.4' Brown F-M SAND, moss+roots, dry, no odor, no staining
							0.4'-1.0' ASPHALT
1							1.0'-1.5' Light brown F-SAND, little Cobbles, dry, no odor, no staining
2	3.2	4	80%				1.5'-2.7' Brown-grey SILT, moist, no odor, no staining
							2.7'-2.9' Brick ash and coal pieces, wet
3							2.9'-4.0' Brown-grey F-SAND, wet, no odor, no staining
4							
5							4.0'-6.1' Brown-grey F-M SAND, little Silt, wet, no odor, no staining
6	3.8	4	95%				
							6.1'-6.9' Black F-SAND+SILT, damp, organic matter present, slight organic odor
7					SB-48 (7.3-7.8)		6.9'-8.0' Brown F-M SAND, wood pieces present, damp
8							

PROJECT: Remedial Investigation							SB-49	
BORING LOCATION: Washington Street, Gloversville, NY							COORDINATES (NY PLANE SYSTEM - NAD83) EASTERLY:	NORTHERLY:
DRILLING CONTRACTOR: Lyon Drilling/Harry Lyon/Jeff Lyon							DATE STARTED: 10/5/09	DATE FINISHED: 10/5/09
DRILLING METHOD: Direct Push							TOTAL DEPTH (ft.): 8	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Truck-mounted Geoprobe							DEPTH TO WATER: ~2.5'	GROUND SURFACE ELEVATION (MSL) 787.8
SAMPLING METHOD: 4' Macrocore							LOGGED BY: Richard Gille	
HAMMER WEIGHT: NA				DROP: NA			RESPONSIBLE PROFESSIONAL: Doug Martin	

Depth (feet)	Recovery (feet)	Penetration (feet)	Recovery %	PID (ppm)	Sample Interval	Lithology Symbol	DESCRIPTION
0							0.0'-0.2' Dark brown F-SAND+F-GRAVEL, dry, grass and roots present, no odor, no staining
							0.2'-0.6' Dark brown F-SAND+F-GRAVEL, dry, no odor, no staining
1							
2	2.7	4	67.5%				0.6'-4.0' Dark brown-grey-black F-M SAND, ash, brick and wood fragments, wet at 2.5'
3							
4				11.7			4.0'-5.0' Black M-SAND, little Silt, slight sheen and oil-like odor, 11.7 ppm
5							5.0'-6.1' Brown M-SAND, little Silt, wet, no odor, no staining
6	3.1	4	77.5%		SB-49 (6.5-7.0)		
7							6.1'-8.0' Brown F-SAND, little Silt, wet, no odor, no staining
8							

TEST PIT LOG

Sheet 1 of 1

PROJECT NO. 41007	CLIENT Niagara Mohawk	TEST PIT NO. TP-01 South of former holder	
LOCATION Gloversville Former MGP Site		ELEVATION & DATUM	
CONTRACTOR Lyon Drilling	OPERATOR Jeff Grant	TRC INSPECTOR Kate Lauriat	
EQUIPMENT Backhoe		DATE START/COMPLETION 8/16/2004 8/16/2004	STATUS backfilled
SAMPLER TYPE Mulitrae Plus		TOTAL DEPTH 6.5 ft bg	WATER LEVEL OBS. STAB. 6.5 ft bg

DEPTH (ftbg)	WATER (ftbg)	SAMPLE DESCRIPTION	PID (ppmv)
1		Fill and miscellaneous demolition debris (brick, mortar, metal) black silt with coal tar odor.	ND
6.5		Gray sand and silt.	ND
		Test pit dimensions 12'x3.5x6.5'	

TEST PIT LOG

Sheet 1 of 1

PROJECT NO. 41007	CLIENT Niagara Mohawk	TEST PIT NO. TP-02 Along edge of exposed holder	
LOCATION Gloversville Former MGP Site		ELEVATION & DATUM	
CONTRACTOR Lyon Drilling	OPERATOR Jeff Grant	TRC INSPECTOR Kate Lauriat	
EQUIPMENT Backhoe		DATE START/COMPLETION 8/16/2004 8/16/2004	STATUS backfilled
SAMPLER TYPE Mulitrae Plus		TOTAL DEPTH 11 ftbg inside holder 13 ftbg outside holder	WATER LEVEL OBS. 5 ft bg STAB.

DEPTH (ftbg)	WATER (ftbg)	SAMPLE DESCRIPTION	PID (ppmv)
1		Edge of holder exposed, sheet metal liner inside of a wood wall, sand and silt, miscellaneous demolition debris (brick, mortar, metal).	ND
6		Cast iron pipe running NW-SE along the outside edge of holder. Silt and sand, possibly stained.	ND
11/13		Gray silt at base of test pit, possibly stained, no product visible.	ND
		Excavate to hard surface at 11 ft bg inside the holder (bottom not visible due to water).	
		Excavate to 13 ft bg outside the holder. Gray silt at base of test pit, possibly stained Test pit dimensions 12'x5x13'	

TEST PIT LOG

Sheet 1 of 1

PROJECT NO. 41007	CLIENT Niagara Mohawk	TEST PIT NO. TP-03 Southwest corner of property.	
LOCATION Gloversville Former MGP Site		ELEVATION & DATUM	
CONTRACTOR Lyon Drilling	OPERATOR Jeff Grant	TRC INSPECTOR Kate Lauriat	
EQUIPMENT Backhoe		DATE START/COMPLETION 8/16/2004 8/16/2004	STATUS backfilled
SAMPLER TYPE Mulitrae Plus		TOTAL DEPTH	WATER LEVEL OBS. STAB. 4-5 ftbg

DEPTH (ftbg)	WATER (ftbg)	SAMPLE DESCRIPTION	PID (ppmv)
1		Brown sand and silt, gravel, trace coal and brick debris.	ND
3.5		Layer of brick in northeast portion of test pit, possibly edge of building foundation. Tan sand beneath brick, followed by black fill, coal, and ash. Slight petroleum odor associated with fill beneath brick wall.	ND
5		Cast iron pipe approximately 6-8 inches in diameter running NW-SE, purpose pipe is unknown.	ND
7		Tan silt and sand.	ND
		Test pit dimensions 26'x5.5'x7'	

GEI Consultants

GEI Consultants, Inc.
1301 Trumansburg Road
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Ithaca, NY 14850
(607) 216-8955

CLIENT: National Grid
PROJECT: Gloversville PDI
CITY/STATE: Gloversville, New York
GEI PROJECT NUMBER: 115130-1-1106

WELL CONSTRUCTION LOG

PAGE 1 of 1

AK-G1

GROUND SURFACE ELEVATION (FT): 785.40
LOCATION: AK-G1
NORTHING (FT): 1535869 EASTING (FT): 533527
TOTAL DEPTH (FT): 5.0
DRILLED BY: Parratt-Wolff
DATUM VERT. / HORZ.: NAVD 88 / NAD83
LOGGED BY: G. Schmidt
DATE START / END: 9/2/2014 - 9/2/2014
DRILLING DETAILS: Hollow Stem Auger / VOC Master System 4000
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	SAMPLE INFO: PEN/REC FT/FT	SAMPLE INFO: PID (ppm)	STRATA	VISUAL IMPACTS	SOIL / BEDROCK DESCRIPTION
	0	0-5	5.0/5.0				TOPSOIL, concrete.
785				0.2			NARROWLY GRADED SAND (SP); ~90% sand, fine, ~10% fines; dry to moist, light brown, FILL.
				0.1			
				0.1			
	5						End of Boring at 5 feet.

NOTES:

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NA = NOT AVAILABLE
WOH= WEIGHT OF HAMMER
WOR= WEIGHT OF RODS

ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET

NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

CANASTOTA LOG GLOVERSVILLE 2014.GPJ NG GINT DATA TEMPLATE.GDT 12/1/14

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WELL CONSTRUCTION LOG

PAGE 1 of 1

AK-G2

GROUND SURFACE ELEVATION (FT): 786.50
LOCATION: AK-G2
NORTHING (FT): 1535894 EASTING (FT): 533528
TOTAL DEPTH (FT): 2.5
DRILLED BY: Parratt-Wolff
DATUM VERT. / HORZ.: NAVD 88 / NAD83
LOGGED BY: G. Schmidt
DATE START / END: 9/2/2014 - 9/2/2014
DRILLING DETAILS: Hand Auger / VOC Master System 4000
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	SAMPLE INFO: PEN/REC FT/FT	SAMPLE INFO: PID (ppm)	STRATA	VISUAL IMPACTS	SOIL / BEDROCK DESCRIPTION
	0	0-2.5	2.5/2.5				CONCRETE.
				0.1			NARROWLY GRADED SAND (SP); ~90% sand, fine, ~10% fines; dry to moist, light brown, FILL.
785				0.0			
							End of Boring at 2.5 feet.

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WELL CONSTRUCTION LOG

PAGE 1 of 1

AK-G3

GROUND SURFACE ELEVATION (FT): 787.20
LOCATION: AK-G2
NORTHING (FT): 1535923 EASTING (FT): 533528
TOTAL DEPTH (FT): 2.5
DRILLED BY: Parratt-Wolff
DATUM VERT. / HORZ.: NAVD 88 / NAD83
LOGGED BY: G. Schmidt
DATE START / END: 9/2/2014 - 9/2/2014
DRILLING DETAILS: Hand Auger / VOC Master System 4000
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	SAMPLE INFO: PEN/REC FT/FT	SAMPLE INFO: PID (ppm)	STRATA	VISUAL IMPACTS	SOIL / BEDROCK DESCRIPTION
	0	0-2.5	2.5/2.5				CONCRETE.
				0.1			NARROWLY GRADED SAND WITH SILT (SP); ~90% sand, fine, ~10% fines; dry to moist, light brown, FILL.
				0.1			
785							
							End of Boring at 2.5 feet.

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WOH= WEIGHT OF HAMMER
WOR= WEIGHT OF RODS

ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET

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WELL CONSTRUCTION LOG

PAGE 1 of 1

AK-S1

GROUND SURFACE ELEVATION (FT): 783.60
LOCATION: AK-S1
NORTHING (FT): 1535855 **EASTING (FT):** 533540
TOTAL DEPTH (FT): 5.0
DRILLED BY: Parratt-Wolff
DATUM VERT. / HORZ.: NAVD 88 / NAD83
LOGGED BY: G. Schmidt
DATE START / END: 9/2/2014 - 9/2/2014
DRILLING DETAILS: Hand Auger / VOC Master System 4000
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	SAMPLE INFO: PEN/REC FT/FT	SAMPLE INFO: PID (ppm)	STRATA	VISUAL IMPACTS	SOIL / BEDROCK DESCRIPTION
	0	0-5	5.0/5.0				TOPSOIL.
				0.1			NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~15% fines, ~5% gravel, fine to coarse, subrounded; moist to wet, brown, FILL, many brick fragments.
				0.1			
780				0.1			
	5						End of Boring at 5 feet.

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WOR= WEIGHT OF RODS

ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET

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CANASTOTA LOG GLOVERSVILLE 2014.GPJ NG GINT DATA TEMPLATE.GDT 12/1/14

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WELL CONSTRUCTION LOG

PAGE 1 of 1

AK-S2

GROUND SURFACE ELEVATION (FT): 784.00
LOCATION: AK-S2
NORTHING (FT): 1535854 **EASTING (FT):** 533562
TOTAL DEPTH (FT): 5.0
DRILLED BY: Parratt-Wolff
DATUM VERT. / HORZ.: NAVD 88 / NAD83
LOGGED BY: G. Schmidt
DATE START / END: 9/2/2014 - 9/2/2014
DRILLING DETAILS: Hand Auger / VOC Master System 4000
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	SAMPLE INFO: PEN/REC FT/FT	SAMPLE INFO: PID (ppm)	STRATA	VISUAL IMPACTS	SOIL / BEDROCK DESCRIPTION
	0	0-5	5.0/5.0				TOPSOIL.
				0.2			NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~5% gravel, fine to coarse, subrounded, ~5% fines; moist to wet, brown, FILL, many brick fragments.
				0.1			
				0.1			
780							
	5						End of Boring at 5 feet.

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WOH= WEIGHT OF HAMMER
WOR= WEIGHT OF RODS

ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET

NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
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CANASTOTA LOG GLOVERSVILLE 2014.GPJ NG GINT DATA TEMPLATE.GDT 12/1/14

GEI Consultants, Inc. 1301 Trumansburg Road Suite N Ithaca, NY 14850 (607) 216-8955	CLIENT: National Grid PROJECT: Gloversville PDI CITY/STATE: Gloversville, New York GEI PROJECT NUMBER: 115130-1-1106	WELL CONSTRUCTION LOG PAGE 1 of 2	SB-50

GROUND SURFACE ELEVATION (FT): 789.60 LOCATION: SB-50
NORTHING (FT): 1535905 EASTING (FT): 533531 TOTAL DEPTH (FT): 26.0
DRILLED BY: Parratt-Wolff DATUM VERT. / HORZ.: NAVD 88 / NAD83
LOGGED BY: G. Schmidt DATE START / END: 9/3/2014 - 9/5/2014
DRILLING DETAILS: Hollow Stem Auger / Truck Mount
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN/REC FT/FT	BLOWS (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	SOIL / BEDROCK DESCRIPTION
	0	0-3	3.0/3.0		1.4 0.2			TLO	TOPSOIL. NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded, ~10% fines; slight tar-like odor, dry to moist, FILL, many brick and wood fragments.
									Blind auger - no sampling conducted.
785	5	4-6	2.0/1.6	1-2-1-1	94.6 30.8			TLO	NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, fine, ~20% fines; moderate tar-like odor, moist to wet, dark brown, blackish-brown staining throughout, few ash and brick fragments.
		6-8	2.0/1.4	1-1-1-1	32.5 323			TLO TLO	NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, fine, ~20% fines; moderate tar-like odor, wet, dark brown, blackish-brown staining. SILT WITH SAND (ML); ~75% fines, ~25% sand, fine; moderate tar-like odor, wet, light brown, blackish-brown staining.
780	10	8-10	2.0/1.9	2-2-10-12	34.6 27.2			TLO TLO	SILT WITH SAND (ML); ~75% fines, ~25% sand, fine; moderate tar-like odor, wet, light brown, blackish-brown staining. SILT WITH SAND (ML); ~75% fines, ~25% sand, fine; slight tar-like odor, wet, light brown.
		10-12	2.0/0.6	2-2-4-5	31.0 51.2			TLO	SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; slight tar-like odor, wet, light brown.
775	15	12-14	2.0/1.2	7-7-7-5	21.3 18.1			TLO	SILT WITH SAND (ML); ~75% fines, ~25% sand, fine; slight tar-like odor, wet, light brown.
		14-16	2.0/0.7	7-7-5-4	14.2				

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CANASTOTA LOG GLOVERSVILLE 2014.GPJ NG GINT DATA TEMPLATE.GDT 12/1/14

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WELL CONSTRUCTION LOG

PAGE 2 of 2

SB-50

ELEV. FT.	DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN/REC FT/FT	BLOWS (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	SOIL / BEDROCK DESCRIPTION
	15				7.8				
		16-18	2.0/1.1	5-4-4-3	10.3			TLO	SILT WITH SAND (ML); ~75% fines, ~25% sand, fine; slight tar-like odor, wet, light brown.
					2.4				
		18-20	2.0/1.7	4-5-5-7	17.1				NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, fine, ~20% fines; wet, brown.
770					1.1				
	20	20-22	2.0/2.0	5-5-11-11	97.8				NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, fine, ~20% fines; wet, light brown.
					3.8				
		22-24	2.0/2.0	3-5-3-5	14.2				
					14.0				
765		24-26	2.0/2.0	10-11-11-15	15.2				
	25				1.8				
									End of Boring at 26 feet.

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WELL CONSTRUCTION LOG

PAGE 1 of 2

SB-51

GROUND SURFACE ELEVATION (FT): 788.30
LOCATION: SB-51
NORTHING (FT): 1535881 EASTING (FT): 533532
TOTAL DEPTH (FT): 26.0
DRILLED BY: Parratt-Wolff
DATUM VERT. / HORZ.: NAVD 88 / NAD83
LOGGED BY: G. Schmidt
DATE START / END: 9/3/2014 - 9/4/2014
DRILLING DETAILS: Hollow Stem Auger / Truck Mount
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN/REC FT/FT	BLOWS (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	SOIL / BEDROCK DESCRIPTION
	0	0-3	4.0/3.0		0.1 0.2			TLO	TOPSOIL. NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded, ~10% fines; slight tar-like odor, dry to moist, brown, FILL, many brick fragments.
785									Blind auger - no sampling conducted.
	5	4-6	2.0/0.4	4-2-4-8	72.2 20.2			TLO	NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded, ~10% fines; slight tar-like odor, moist to wet, brown, FILL, many wood and brick fragments.
		6-8	2.0/1.3	8-8-6-6	3.8 1.5			TLO	SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; slight tar-like odor, wet, light brown.
780		8-10	2.0/1.6	4-5-3-4	8.1 5.5				
	10	10-12	2.0/1.3	4-4-4-5	0.4 0.0				SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; wet, light brown.
		12-14	2.0/1.3	4-4-5-6	0.8 0.4				
775		14-16	2.0/1.7	2-3-4-4	5.3				
	15								

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WELL CONSTRUCTION LOG

SB-51

ELEV. FT.	DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN/REC FT/FT	BLOWS (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	SOIL / BEDROCK DESCRIPTION
	15				0.5				NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, fine, ~20% fines; wet, light brown.
		16-18	2.0/1.5	6-7-4-4	2.6				
					0.5				
770		18-20	2.0/2.0	3-4-7-8	1.2				
					0.8				
	20	20-22	2.0/2.0	8-10-15-14	1.4				
					0.0				
		22-24	2.0/2.0	9-10-12-16	6.5				
765					7.4				
		24-26	2.0/2.0	4-8-8-12	21.7				
	25				1.0				

End of Boring at 26 feet.

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WELL CONSTRUCTION LOG

PAGE 1 of 1

SB-52

GROUND SURFACE ELEVATION (FT): 789.40
LOCATION: SB-52
NORTHING (FT): 1535912 **EASTING (FT):** 533552
TOTAL DEPTH (FT): 10.0
DRILLED BY: Parratt-Wolff
DATUM VERT. / HORZ.: NAVD 88 / NAD83
LOGGED BY: G. Schmidt
DATE START / END: 9/3/2014 - 9/4/2014
DRILLING DETAILS: Hollow Stem Auger / Truck Mount
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN/REC FT/FT	BLOWS (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	REMARKS	SOIL / BEDROCK DESCRIPTION
	0	0-3	3.0/3.0		2.5 5.8			TLO		TOPSOIL. NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded, ~10% fines; slight tar-like odor, dry to moist, brown, FILL, many brick and wood fragments.
										Blind auger - no sampling conducted.
785	5	4-6	2.0/1.3	3-3-4-4	70.2 1.8			TLO TLO	Env. Sample ID= SB-52(5-6)	NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded, ~10% fines; moderate tar-like odor, dry to moist, brown, FILL, blackish-brown staining. NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~15% fines, ~5% gravel, fine to coarse, subrounded; slight tar-like odor, wet, brown.
		6	2.0/1.4	7-8-8-9	4.5 1.3					NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~15% fines, ~5% gravel, fine to coarse, subrounded; wet, brown.
780	10	8-10	2.0/1.3	9-10-10-12	4.2 0.6					SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; wet, light brown. End of Boring at 10 feet.

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WELL CONSTRUCTION LOG

PAGE 1 of 1

SB-53

GROUND SURFACE ELEVATION (FT): 789.30
LOCATION: SB-53
NORTHING (FT): 1535907 **EASTING (FT):** 533558
TOTAL DEPTH (FT): 10.0
DRILLED BY: Parratt-Wolff
DATUM VERT. / HORZ.: NAVD 88 / NAD83
LOGGED BY: G. Schmidt
DATE START / END: 9/3/2014 - 9/4/2014
DRILLING DETAILS: Hollow Stem Auger / Truck Mount
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN/REC FT/FT	BLOWS (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	REMARKS	SOIL / BEDROCK DESCRIPTION
	0	0-4	4.0/4.0		0.8					TOPSOIL. NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded, ~10% fines; dry to moist, brown, FILL, many brick and wood fragments.
					0.0					
					0.0					
785		4-6	2.0/1.1	4-4-8-8	0.1			TLO	Env. Sample ID= SB-53(5-6)	NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded, ~10% fines; wet, brown, FILL, many brick and wood fragments. SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; slight tar-like odor, wet, dark brown.
	5				5.2					
		6-8	2.0/1.4	4-6-4-7	0.0					SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; wet, light brown.
					0.2					
		8-10	2.0/1.3	4-8-9-8	0.0					
780					0.0					
	10									End of Boring at 10 feet.

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IN. = INCHES
FT. = FEET

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MLO = MUSTY LIKE ODOR

CANASTOTA LOG GLOVERSVILLE 2014.GPJ NG GINT DATA TEMPLATE.GDT 12/1/14

GEI Consultants

GEI Consultants, Inc.
1301 Trumansburg Road
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CLIENT: National Grid
PROJECT: Gloversville PDI
CITY/STATE: Gloversville, New York
GEI PROJECT NUMBER: 115130-1-1106

WELL CONSTRUCTION LOG

PAGE 1 of 2

SB-54

GROUND SURFACE ELEVATION (FT): 789.30 **LOCATION:** SB-54
NORTHING (FT): 1535900 **EASTING (FT):** 533555 **TOTAL DEPTH (FT):** 26.0
DRILLED BY: Parratt-Wolff **DATUM VERT. / HORZ.:** NAVD 88 / NAD83
LOGGED BY: G. Schmidt **DATE START / END:** 9/3/2014 - 9/4/2014
DRILLING DETAILS: Hollow Stem Auger / Truck Mount
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN/REC FT/FT	BLOWS (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	SOIL / BEDROCK DESCRIPTION
	0	0-3	4.0/3.0		1.4			TLO	TOPSOIL. NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% gravel, fine to coarse, subrounded, ~10% fines; slight tar-like odor, dry to moist, brown, FILL, many brick and wood fragments.
					2.1				Blind auger - no sampling conducted.
785	5	4-6	2.0/0.0	21-16-9-7	NA				No recovery.
		6-8	2.0/0.0	4-8-8-6	NA				No recovery.
		8-10	2.0/1.1	5-3-10-3	172.0			TLO	SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; slight tar-like odor, wet, light brown.
780					28.7				
	10	10-12	2.0/1.3	19-9-12-11	112.0				
					47.6				
		12-14	2.0/1.5	10-7-10-10	55.1			TLO	SILT WITH SAND (ML); ~75% fines, ~25% sand, fine; slight tar-like odor, wet, light brown.
					38.4				
775	15	14-16	2.0/1.0	15-12-12-6	58.2				

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WELL CONSTRUCTION LOG

PAGE 2 of 2

SB-54

ELEV. FT.	DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN/REC FT/FT	BLOWS (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	SOIL / BEDROCK DESCRIPTION
	15				12.9				
		16-18	2.0/1.6	6-6-8-8	19.8				
					12.3				NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, fine, ~20% fines; wet, light brown.
		18-20	2.0/1.7	2-5-7-7	14.6				
770					5.2				
	20	20-22	2.0/1.8	7-10-11-9	17.1				
					3.4				
		22-24	2.0/2.0	12-12-15-15	22.1				
					17.8				
765		24-26	2.0/2.0	8-8-11-11	27.8				
	25				47.3				

End of Boring at 26 feet.

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WELL CONSTRUCTION LOG

PAGE 1 of 1

SB-55

GROUND SURFACE ELEVATION (FT): 788.80
NORTHING (FT): 1535895 EASTING (FT): 533554
DRILLED BY: Parratt-Wolff
LOGGED BY: G. Schmidt
DRILLING DETAILS: Hollow Stem Auger / Truck Mount
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

LOCATION: SB-55
TOTAL DEPTH (FT): 10.0
DATUM VERT. / HORZ.: NAVD 88 / NAD83
DATE START / END: 9/3/2014 - 9/3/2014

ELEV. FT.	DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN/REC FT/FT	BLOWS (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	REMARKS	SOIL / BEDROCK DESCRIPTION
	0	0-4	4.0/4.0		0.1 0.0					TOPSOIL. NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~15% fines, ~5% gravel, fine to coarse, subrounded; dry to moist, brown, FILL, many brick and wood fragments.
785		4-6	2.0/0.9	9-5-6-7	0.0 4700			TLO TLO	Env. Sample ID= SB55(5-6)	NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~15% fines, ~5% gravel, fine to coarse, subrounded; moderate tar-like odor, wet, brown, FILL, many brick, coal, and wood fragments.
	5	6-8	2.0/1.5	8-8-7-10	3508 17.1			TLO TLO		SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; moderate tar-like odor, wet, dark brown, blackish-brownish staining. SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; moderate tar-like odor, wet, blackish-brownish staining. SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; moderate tar-like odor, wet, light brown.
780		8-10	2.0/1.5	14-12-10-10	0.5 97.3					
	10									End of Boring at 10 feet.

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WELL CONSTRUCTION LOG

PAGE 1 of 1

SB-56

GROUND SURFACE ELEVATION (FT): 789.00
LOCATION: SB-56
NORTHING (FT): 1535888 **EASTING (FT):** 533561
TOTAL DEPTH (FT): 10.0
DRILLED BY: Parratt-Wolff
DATUM VERT. / HORZ.: NAVD 88 / NAD83
LOGGED BY: G. Schmidt
DATE START / END: 9/2/2014 - 9/4/2014
DRILLING DETAILS: Hollow Stem Auger / Truck Mount
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFORMATION: TYPE and NO.	PEN/REC FT/FT	BLOWS (/6 in.)	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	REMARKS	SOIL / BEDROCK DESCRIPTION
	0	0-4	4.0/4.0		0.1 0.0					TOPSOIL. NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~15% fines, ~5% gravel, fine to coarse, subrounded; dry to moist, brown, FILL, many brick and wood fragments.
785		4-6	2.0/0.5	12-20-18-14	0.1 4.8			TLO	Env. Sample ID= SB56(5-6)	NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~15% fines, ~5% gravel, fine to coarse, subangular; slight tar-like odor, wet, brown, FILL, many brick fragments.
	5	6-8	2.0/1.5	8-8-10-10	0.0 0.0			TLO		SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; slight tar-like odor, wet, light brown.
		8-10	2.0/1.4	12-12-12-14	0.0 0.0					SILT WITH SAND (ML); ~70% fines, ~30% sand, fine; wet, light brown.
780	10									End of Boring at 10 feet.

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CANASTOTA LOG GLOVERSVILLE 2014.GPJ NG GINT DATA TEMPLATE.GDT 12/1/14

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GEI PROJECT NUMBER: 115130-1-1106

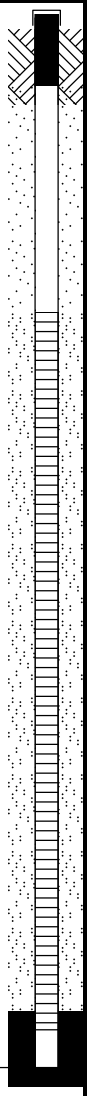
WELL CONSTRUCTION LOG

PAGE 1 of 1

MW-6

GROUND SURFACE ELEVATION (FT): 786.57 **LOCATION:**
NORTHING (FT): 1535835 **EASTING (FT):** 533509 **TOTAL DEPTH (FT):** 14.0
DRILLED BY: Geologic **DATUM VERT. / HORZ.:** NAVD 88 / NAD83
LOGGED BY: G. Schmidt **DATE START / END:** 4/10/2017 - 4/10/2017
DRILLING DETAILS: Hollow Stem Auger / Truck Mount
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN/REC FT/FT	PID (ppm)	STRATA	WELL DETAILS
	0	S1	2.0/0.9	0.0		FILL, Asphalt and concrete.
				0.0		NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~15% fines, ~5% gravel, fine to coarse, subangular; dry, brown.
785		S2	2.0/0.4	0.0		NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, fine, ~20% fines; moist, brown.
				0.0		
		S3	2.0/0.0	NA		No Recovery.
	5					
		S4	2.0/0.6	0.0		NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~15% fines, ~5% gravel, fine to coarse, subangular; wet, brown.
780				0.0		
		S5	2.0/1.9	0.0		
				0.0		SILTY SAND (SM); ~85% fines, ~15% sand, fine; wet, brown.
	10	S6	2.0/2.0	0.0		
				0.0		
775						NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, ~20% fines; wet, brown.
		S7	2.0/2.0	0.0		NARROWLY GRADED SAND WITH SILT (SP-SM); ~85% sand, fine, ~15% fines; wet, brown.
				0.0		
						End of Boring at 14 feet.



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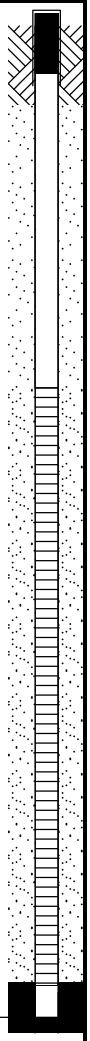
WELL CONSTRUCTION LOG

PAGE 1 of 1

MW-7

GROUND SURFACE ELEVATION (FT): 787.47 **LOCATION:**
NORTHING (FT): 1535857 **EASTING (FT):** 533552 **TOTAL DEPTH (FT):** 16.0
DRILLED BY: Geologic **DATUM VERT. / HORZ.:** NAVD 88 / NAD83
LOGGED BY: G. Schmidt **DATE START / END:** 4/10/2017 - 4/10/2017
DRILLING DETAILS: Hollow Stem Auger / Truck Mount
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN/REC FT/FT	PID (ppm)	STRATA	WELL DETAILS
	0	S1	2.0/0.5	0.0 0.0		NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~85% sand, fine, ~10% fines, ~5% gravel, fine to coarse, subangular; dry, brown, FILL.
785		S2	2.0/1.2	0.0 0.0		
	5	S3	2.0/1.5	0.0 0.0		NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~85% sand, fine, ~10% fines, ~5% gravel, fine to coarse, subangular; moist, brown, FILL.
		S4	2.0/1.8	0.0 0.0		NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~85% sand, fine, ~10% fines, ~5% gravel, fine to coarse, subangular; moist, brown. NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~15% fines, ~5% gravel, fine to coarse, subangular; wet, brown.
780		S5	2.0/1.4	0.0 0.0		SILTY SAND (SM); ~85% fines, ~15% sand, fine; wet, brown.
	10	S6	2.0/1.3	0.0 0.0		
775		S7	2.0/1.7	0.0 0.0		
	15	S8	2.0/1.3	0.0		NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, fine, ~20% fines; wet, brown.
						End of Boring at 16 feet.



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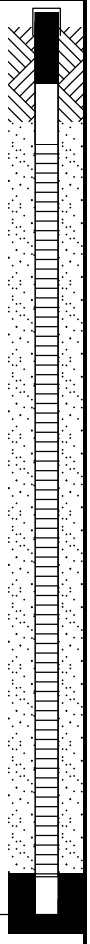
WELL CONSTRUCTION LOG

PAGE 1 of 1

MW-8

GROUND SURFACE ELEVATION (FT): 787.50 **LOCATION:**
NORTHING (FT): 1535871 **EASTING (FT):** 533488 **TOTAL DEPTH (FT):** 12.0
DRILLED BY: Geologic **DATUM VERT. / HORZ.:** NAVD 88 / NAD83
LOGGED BY: G. Schmidt **DATE START / END:** 7/31/2017 - 7/31/2017
DRILLING DETAILS: Hollow Stem Auger / Truck Mount
WATER LEVEL DEPTHS (FT):
GENERAL NOTE:

ELEV. FT.	DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN/REC FT/FT	PID (ppm)	STRATA	WELL DETAILS
	0		0.5/0.0	NA		ASPHALT.
			0.8/0.0	NA		CONCRETE.
		S1	1.7/1.3	0.0		NARROWLY GRADED SAND WITH SILT (SP-SM); ~85% sand, fine, ~15% fines, non plastic; moist, brown.
785				0.0		
		S2	1.5/1.2	0.0		
				0.0		
	5	S3	1.5/1.0	0.0		NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~80% sand, fine, ~10% fines, non plastic, ~5% gravel, fine to coarse, subrounded; wet, dark brown.
				0.0		
		S4	2.0/1.8	0.0		
780				0.0		
		S5	2.0/0.0	0.0		No Recovery.
				0.0		
	10	S6	2.0/2.0	0.0		NARROWLY GRADED SAND WITH SILT (SP-SM); ~85% sand, fine, ~15% fines, non plastic; wet, brown.
				0.0		
						End of Boring at 12 feet.



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CANASTOTA WELL LOG GLOVERSVILLE_2014.GPJ NG GINT DATA TEMPLATE.GDT 9/6/17

Test Pit Log

TP-South (0-7)

GEI Consultants

GEI PROJECT NO: 115130	**TEST PIT DESIGNATION:** TP-South 0-7	**SURFACE ELEVATION:**
CLIENT: National Grid	**SITE LOCATION OR AREA:** South central portion of site	**START DATE:** 9/5/2014
SITE NAME: Gloversville (Washington Street)	**EQUIPMENT USED:** Mini Excavator	**FINISH DATE:** 9/5/2014
GEOLOGIST: Garrett Schmidt	**OPERATOR:** Parratt Wolff	**START TIME:** 0840
DEPTH WATER ENCOUNTERED: NA	**TOTAL DEPTH:** 7 feet	**FINISH TIME:** 0940

DEPTH (FEET)	SAMPLE DEPTH (FEET)	PID HEADSPACE (PPM)	SOIL LITHOLOGY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0			Topsoil: 0-3"	
					Fill: (SP-SM): 3"-29": 75% Fine SAND, 15% Fines, 10% fine to course subrounded Gravel. Many Ash, Coal, Wood, and Brick fragments. Dry to moist, brown, slight tar-like odor.	Ash layer
2		0.7				Many Ash, Coal, Wood, and Brick fragments
3		0	FILL		Fill: (SP-SM): 29"-5': 80% Fine SAND, 20% Fines. Moist, light brown, some brick fragments.	
4		0				Some Brick fragments
5		0.3				
6		0	ML		Silty Sand (ML) 5'-7': 75% Fines, 25% Fine SAND. Light brown, wet, slight tar-like odor.	
7		0				

Comments: No analytical samples collected

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Test Pit Log

TP-H(0-2)

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GEI PROJECT NO: 115130	**TEST PIT DESIGNATION:** TP-H(0-2)	**SURFACE ELEVATION:**
CLIENT: National Grid	**SITE LOCATION OR AREA:** Within gravel access road, approximately 30' east of Broadwa	**START DATE:** 9/4/2014
SITE NAME: Gloversville (Washington Street)	**EQUIPMENT USED:** Mini Excavator	**FINISH DATE:** 9/4/2014
GEOLOGIST: Garrett Schmidt	**OPERATOR:** Parratt Wolff	**START TIME:** 1100
DEPTH WATER ENCOUNTERED: NA	**TOTAL DEPTH:** 2.5 feet	**FINISH TIME:** 1145

DEPTH (FEET)	SAMPLE DEPTH (FEET)	PID HEADSPACE (PPM)	SOIL LITHOLOGY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
		0			FILL: (SP-SM): 0-2.5': 80% Fine SAND, 10% Fines, 10% fine to course subrounded Gravel. Dry to moist, moderate tar-like odor, brown, many brick fragments, wood fragments, and ash.	Wooden holder wall exposed approximately 6" bgs. Black, brown stained soil. Holder Diameter - 20' Holder wall width - 4.4" Test pit excavation dimensions: 20' west side, 4.5' north side, 18' east side, and 4.5' south side.
1		0.1				
	N/A		FILL			
2		0.4				
		0.9				

Comments: No analytical samples collected.

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1301 Trumansburg Road
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Ithaca, New York 14850

APPENDIX D – EXCAVATION WORK PLAN (EWP)

This Excavation Work Plan (EWP) provides a general guide to excavation activities at the Site. Event-specific work plans with information regarding the location, extent and specific soil management activities will be prepared for major excavation activities and submitted to NYSDEC for review and approval.

EMERGENCY EXCAVATIONS

In the event of a situation where excavation is needed to protect life or property (i.e. blowing gas from the natural gas line), immediate excavation may take place to the extent necessary to safely eliminate the threat to life or property. At a minimum, workers must don appropriate personal protective equipment (PPE) to minimize contact with the excavated soil and any excavated soil must remain on site and be covered with poly. Notification must be made to the contacts below as soon as reasonably possible and all other requirements below should be implemented to the extent practicable.

D-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination undertaken by the site owner, the site owner or their representative will notify the NYSDEC. Table 1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

Table 1: Notifications*

Central Office NYSDEC Representative Scott Deyette	(518) 402-9662 scott.deyette@dec.ny.gov
Regional Office NYSDEC Representative Russell Huyck	(518) 897-1241 russell.huyck@dec.ny.gov
NYSDEC Site Control Kelly Lewandowski, Chief	(518) 402-9595 kelly.lewandowski@dec.ny.gov
NYSDOH Gregory Rys	(315) 866-6879 Gregory.rys@health.ny.gov

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

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for 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 to be encountered 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;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix E of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

True emergency work pertaining to the utilities in the road under Broadway Street adjacent to the site can take place with some generic precautions including wearing appropriate PPE, placing any excavated soil on poly and covering with poly. Notification will need to be made to National Grid and NYSDEC as soon as possible.

D-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all

excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil. Further discussion of off-site disposal of materials and on-site reuse is provided in Sections D-6 and D-7 of this Appendix.

D-3 SOIL STAGING METHODS

Soil stockpiles will be lined with poly or a tarp and 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 the NYSDEC.

D-4 MATERIALS EXCAVATION AND LOAD-OUT

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

The owner of the property and National Grid and its contractors are 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, as appropriate. 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 Truck wash waters will be collected and disposed of off-site in an appropriate manner.

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.

D-5 MATERIALS TRANSPORT OFF-SITE

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

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

Truck transport routes are as follows: Proceed north on Broadway Street from the site; turn right (east) onto Washington Street, turn left (north) onto Freemont Street, then continue east on East Fulton Street (Drawing 2 of the Remedial Design Drawings [GEI, 2016]). All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall 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.

D-6 MATERIALS DISPOSAL OFF-SITE

All material 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 material from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the

NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

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

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

D-7 MATERIALS REUSE ON-SITE

Chemical criteria for on-site reuse of material are listed in the table in NYSDEC DER-10 Section 5.4(e)4. 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. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

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

D-8 FLUIDS MANAGEMENT

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

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, but is not anticipated at this time.

D-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the RAWP and decision document. The existing cover system is comprised of a minimum of 12 inches of clean soil over clean fill material, asphalt pavement, and concrete covered sidewalk, depending on location. The demarcation layer, consisting of orange snow fencing material will be replaced to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this SMP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP.

D-10 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. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

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

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Appendix 5 of DER-10. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

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

D-11 STORMWATER POLLUTION PREVENTION

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 the NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

D-12 EXCAVATION CONTINGENCY PLAN

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

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

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to

NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

D-13 COMMUNITY AIR MONITORING PLAN

The air sampling stations will generally be placed based on prevailing wind conditions. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least one downwind monitoring stations. The Community Air Monitoring Plan (CAMP) is located in Appendix E.

Real-time air monitoring for volatile compounds and particulates will be conducted at the perimeter of the exclusion zone. The following procedures will be implemented during field activities as appropriate:

- Volatile organic compounds will be monitored at the downwind perimeter of the exclusion zone on a continuous basis.
  - 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 will 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 will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided 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 shut down.
- Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. 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 level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu g/m^3$) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques provided downwind PM-10 particulate levels do not exceed 150 $\mu g/m^3$ above the upwind level and 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 $\mu g/m^3$ above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work can resume provided dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 $\mu g/m^3$ of the upwind level and preventing visible dust migration.

- All manual readings taken will be recorded in the field logbook and be available for State (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

D-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site. Specific odor control methods to be used on a routine basis will include limiting area of open excavation and size of soil stockpiles, shrouding open excavations with tarps and other covers, spraying BioSolve® or similar odor suppressants and using foam to cover odorous soil in stockpiles prior to covering with a tarp. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of

work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams or BioSolve to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

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

D-15 DUST CONTROL PLAN

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

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger 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.

D-16 OTHER NUISANCES

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.

APPENDIX E – HEALTH AND SAFETY PLAN AND COMMUNITY AIR MONITORING PLAN

GEI Consultants

Consulting
Engineers and
Scientists

Health and Safety Plan

Gloversville (Washington Street) Former MGP Site

7 Broadway Street, Gloversville, New York

NYSDEC Site # 518026

Prepared For:
National Grid
300 Erie Boulevard West
Syracuse, New York 13202

Submitted by:
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1301 Trumansburg Road, Suite N
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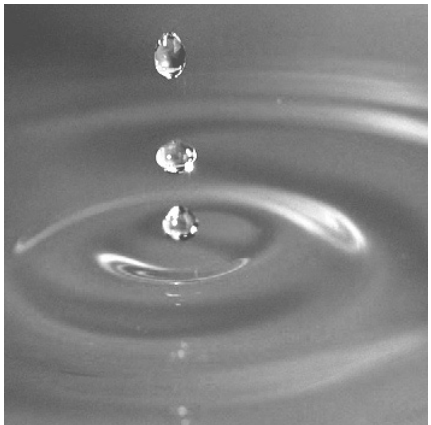
607-216-8955

November 2020

Project No. 115130



Wendy Moore
Project Manager

Jeena Sheppard
Regional Safety Manager

Table of Contents

Tables

Appendices

1. Emergency Contact Information

Table 1. Emergency Contact Information

Important Phone Numbers	
Local Police:	911
Fire Department:	911
Ambulance:	911
State Police or County Sheriff:	911
Hospital and Occupational Clinic Information *(See Attached Maps and Directions in Appendix A)*	
Local Hospital and Urgent Care/OccupationalHealth Clinic: Nathan Littauer Hospital – Gloversville Center 99 E State Street Gloversville, NY 12078	(518) 725-8621 emergency (518) 775-4073 occupational medicine
Contacts	
Project Manager: Wendy Moore	(607) 216 8966 office (315) 751 2835 cell
Safety Director: Steve Hawkins	(860) 368-5348 office (860) 916-4167 cell
Regional Safety Manager : Jeena Sheppard	(856) 291-5663 office (856) 298-7138 cell
GEI People Team:	(781) 721-4117 Boston (916) 631-4596 Sacramento
Medcor Triage	1-800-775-5866
Client Contact: Steven DiLella	(585) 520-5192 cell
Other Information	
Contractor Requesting/Performing Utility Clearance: N/A +/or TBD Utility Clearance Ticket Number: N/A +/or TBD	
Nearest Telephone Location (or alternate means of communication)	On-site Cellular

2. Background

Project Name: Gloversville (Washington Street) Former MGP Site

Project Location: 7 Broadway Street, Gloversville, New York

GEI Project No: 115130

This Health and Safety Plan (HASP) establishes policies and procedures to protect GEI Consultants, Inc. (GEI) personnel from the potential hazards posed by the activities at the Gloversville (Washington Street) Former MGP Site in Gloversville, New York. Reading of the HASP is required of on-site GEI personnel and will be reviewed by GEI subcontractors. Subcontractors will prepare their own site-specific HASP and may use this as a guide. The plan identifies measures to minimize accidents and injuries, which may result from project activities or during adverse weather conditions. Additionally, federal, state and local representatives, as well as National Grid employees may be required to sign and adhere to this HASP, depending on the nature of their presence on site during activities conducted by GEI. A copy of this HASP will be maintained on site for the duration of the work.

Included in Section 1 and Appendix A is a route to the nearest medical facility from the site with directions and contact information. Safety data sheets (SDS), specific to chemicals that may be encountered while working at the site, are in Appendix B. Appendix C details the signs, symptoms, care and procedures to both heat and cold stress. Appendix D includes the Tailgate Safety Briefing form, the Project Safety Briefing form, the Accident/Incident Report Form and the Near Miss Reporting Form. Appendix E contains the GEI Health and Safety (H&S) Standard Operating Procedures (SOPs) that apply to this project. Also included in Appendix E is the COVID-19 Field Work Guidance.

Employees should review National Grid's Safety Procedure, Contractor Safety Requirements for reference. This document represents policies and safety-related work methods unique to National Grid and they may be more stringent than OSHA regulations. Contractors must follow these requirements as well as their own rules or regulations that meet or exceed OSHA and other regulatory requirements.

2.1 Site Description

The Site is located in a commercial area to the southeast of the intersection of Washington Street and Broadway in Gloversville, Fulton County, New York. The Site is owned by one private owner. National Grid performs environmental response actions as a third party under an existing Consent Order for non-owned MGP sites with the NYSDEC.

The Site is currently defined as the 0.18 acre tax parcel located at 7 Broadway. The Site is an unimproved vacant lot. It is bordered to the north by a brick warehouse, to the east by a gravel and grass lot behind a commercial row building, to the south by the Family Counseling Center of Fulton County, and to the west by Broadway. A gravel drive is present on the central and southern portions of the Site and the remaining ground surface of the site is grass covered. Access to the Site is presently unrestricted.

2.2 Scope of Field Work

Activities conducted at the Gloversville (Washington Street) Site consist of the following tasks:

- Groundwater gauging, sampling and well maintenance including NAPL gauging and removal, if any accumulation is found
- Annual site inspection

If additional field activities are proposed, this HASP will be amended as necessary.

3. GEI Health and Safety Policy

GEI is committed to providing a safe and healthy work environment for its employees. To maintain a safe work environment, GEI has established an organizational structure and a Corporate Health and Safety Program to promote the following objectives:

- Reduce the risk of injury, illness, and loss of life to GEI employees.
- Maintain compliance with federal, state, and other applicable safety regulations; and minimize GEI employees' work exposure to potential physical, chemical, biological, and radiological hazards.

Safety policy and procedure on any one project cannot be administered, implemented, monitored, and enforced by any one individual. The total objective of a safe, accident free work environment can only be accomplished by a dedicated, concerted effort by every individual involved with the project from management down to all employees.

Each GEI employee must understand their value to the company; the costs of accidents, both monetary, physical, and emotional; the objective of the safety policy and procedures; the safety rules that apply to the safety policy and procedures; and what their individual role is in administering, implementing, monitoring, and compliance of their safety policy and procedures. This allows for a more personal approach to compliance through planning, training, understanding, and cooperative effort, rather than by strict enforcement. If for any reason an unsafe act persists, strict enforcement will be implemented.

4. Potential Hazards

The potential hazards associated with site conditions and activity hazards related to GEI on-site activities have been identified in this section.

4.1 Special Site Conditions or Concerns

- Traffic – Two wells are located within the right of way: Broadway Street. One well is adjacent to a parking lot.
- Drill Rig/Equipment – Drilling contractor will use truck-mounted rotary drill rigs. Specific attention given to rotating equipment, pinch points, and overhead equipment. Drilling is not expected, but may be necessary should wells be decommissioned or replaced.
- Biohazards (insect bites, poison ivy, etc.) – Site is in an urban area, but poison ivy and insects may be present.
- Hazardous weather conditions – Heat stress, cold stress, slippery surfaces, and snow or icy conditions are possible dangers.

Safety equipment will include: First aid kit, fire extinguisher, adequate supply of drinking water and electrolyte fluids, hand cleaner, insect repellent (as needed), sunscreen (as needed), and cell phone. Traffic safety devices (traffic cones and high visibility vest) are needed when working on Broadway Street.

4.2 Activity Hazard Analysis

The potential hazards for this project associated with site conditions and activity hazards associated with GEI on-site activities have been identified in Table 2. General hazards and control measures that are applicable to all site activities are identified in the General Hazards section. The site-specific tasks, potential hazards, and control measures established to reduce the risk of injury or illness are identified in the Activity Hazard section of Table 2. Health and Safety SOPs for routine hazards and common site conditions are referenced in the table below and included in Appendix E.

Table 2. Activity Hazard Analysis

General Hazards These Hazards Apply to All Site Activities	Control Measure
Chemical / Contaminant Exposure – Skin and eye injury/irritation	• Wear protective coveralls (e.g. Tyvek) with shoe covers, safety glasses, face shield, Nitrile gloves. • Dispose of gloves after use and wash hands. • Avoid contact with pooled liquids and limit contact with contaminated soils/groundwater. • See SOP HS-009
Heat stress – Fainting, Fatigue, Heat Stroke	• Increase water intake while working. • Increase number of rest breaks and/or rotate workers in shorter work shifts. Rest in cool, dry areas. • Watch for signs and symptoms of heat exhaustion and fatigue. • Plan work for early morning or evening during hot months. • Use ice vests when necessary. • In the event of heat stroke, bring the victim to a cool environment and initiate first aid procedures. • See Appendix C of the HASP
Cold Stress – Hypothermia, Frostbite	• Take breaks in heated shelters when working in extremely cold temperatures. • Drink warm liquids to reduce the susceptibility to cold stress. • Wear protective clothing (recommended three layers: an outside layer to break the wind, a middle layer to provide insulation, and an inner layer of cotton of synthetic weave to allow ventilation). • Wear a hat and insulated boots. • Keep a change of dry clothing available in case clothes become wet. • Do heavy work during the warmer parts of the day and take breaks from the cold. • If possible shield work areas from drafts of wind and use insulating material on equipment handles when temperatures are below 30°F • Watch for symptoms of cold stress. (see Appendix C in HASP)
Inclement Weather	• Listen to local forecasts for warnings about specific weather hazards such as tornados, thunder storms, and flash floods. • If the storms produce thunder and/or lightning, leave the work area immediately and move to a safe area. • Discuss an action plan prior to the severe weather. • Wear appropriate PPE for the type of weather that could be encountered. • Stop work until conditions are suitable. Take cover in vehicles or shelter as appropriate. • See SOP HS-010

General Hazards These Hazards Apply to All Site Activities	Control Measure
Coronavirus- COVID-19	• Maintain a distance of 6 feet from others. • If tasks needed to be performed close to others, wear appropriate PPE including a face mask (surgical or cloth), gloves, and eye protection. • When travelling to project site, travel in separate vehicles. • Frequent washing of hands with soap and warm water for 20 seconds. If soap is not available, use hand sanitizer with 60% alcohol. • Wipe down surfaces such as equipment surfaces, vehicle steering wheel, gear shifter, controls and door handles with disinfectant routinely before and after use. • Wear Nitrile gloves as frequently as possible. • Wash hands after gloves removal. • Do not shake hands, hug, or engage in other personal contact.
Vehicular Traffic – Struck by injury, crushing	• Increase visibility of the work area to others by using cones, flags, barricades, proper lighting and caution tape to define work area. • Use a "spotter" to locate oncoming vehicles. • Use vehicle to block work area. • Engage police detail for all work conducted in appropriate areas. • Wear high-visibility, reflective vest at all times. • Maintain minimum DOT defined distances to other traffic lanes. • See SOP HS-016.
Driving	• Employees must wear their safety belt while in a moving vehicle. • Vehicle accidents will be reported in accordance with GEI's accident reporting procedures. • Vehicles will be properly maintained and safely operated (refer to GEI's Fleet Maintenance Program). • Employees will follow safe driving behaviors, which include limiting distractions such as manipulating radios or other equipment that may cause a distraction. Employees will not exceed the posted speed limit and will maintain a safe distance between other vehicles. • Use defensive driving techniques. • Driving distance and time after a 12-hour shift will not exceed 30 miles or 30 minutes (whichever is greater). 1. See SOP HS-004
Insects – Bites, Stings, Allergic Reactions	• Apply insect repellent prior to performing field work and as often as needed throughout the work shift • Wear proper protective clothing (work boots, socks and light colored clothing) • Wear shoes, long pants with bottoms tucked into boots or socks, and a long-sleeved shirt when outdoors for long periods of time, or when many insects are most active (between dawn and dusk). • When walking in wooded areas, avoid contact with bushes, tall grass, or brush as much as possible • Field personnel who may have insect allergies will have bee sting allergy medication on site and will provide this information to the SSM and the Safety Director prior to commencing work. • Field personnel will perform a self-check at the end of the day for ticks. • See SOP HS-001

General Hazards These Hazards Apply to All Site Activities	Control Measure
Physical Injury – Slips, Trips and Falls	• Wear PPE that properly fits, is in good condition and appropriate for the activities and hazards. • Maintain good visibility of the work area. • Avoid walking on uneven, steeply sloped or debris ridden ground surfaces. • Plan tasks prior to preforming them including an activity hazard analysis. • Keep trafficked areas free from slip/trip/fall hazards. • Maintain weed growth in sampling areas, especially on slopes. • Wear shoes with traction. • Avoid traversing steep areas in slippery conditions. • Do not carry heavy objects to sampling areas, on steeply sloped areas, or where steep areas must be traversed to arrive at sample points.
Poisonous Plants - Poison Ivy, Poison Oak, and Poison Sumac	• Avoid areas infested with poisonous plants. • Use a barrier cream to provide some protection. • Wash exposed clothing separately in hot water with detergent. • After use, clean tools, and soles of boots with rubbing alcohol or soap and lots of water. • Immediately wash with soap and water any areas that come into contact with poisonous plants. • If exposed to a poisonous plant, wash with soap and water or a product such as Technu. First aid kits are available in the company vehicles. ♦ See SOP HS-001

Activity	Potential Hazard	Control Measures
Groundwater Sampling	Contaminant Exposure, Heavy Lifting, Repetition, Slips/Trips/Falls	• Wear hardhat; high visibility reflective safety vest; steel-toed, steel-shank boots or composite toe and shank; safety glasses and Nitrile/neoprene gloves. • Dispose of gloves after use and wash hands. • User proper lifting techniques. • Take regular breaks and do not work in unusual positions for long periods of time. • Keep trafficked areas free from slip/trip/fall hazards.

Activity	Potential Hazard	Control Measures
Carrying Equipment	Heavy lifting, strains/sprains, slips/trips/falls, pinch points	• Use proper lifting techniques as defined in the heavy lifting activity analysis below • Wear the proper type of glove to protect hands against sharp edges and skin/soft tissue injuries • Wear appropriate footwear • Be aware of hard to grip and hold items that may force your hand or wrist into awkward, stressful positions and cause disorders like tendinitis or carpal tunnel syndrome • Take breaks when carrying items frequently and/or for long distances • Do not over reach when picking up or placing items. • Use the buddy system when necessary • When climbing ladders, maintain three points of contact at all times. DO NOT carry equipment up or down ladders unless it is in a secure backpack or similar hands-free shoulder-strap bag or case. Lower or raise larger equipment by crane or rope
Drum Handling	Contaminant Contact Cuts or Abrasions Heavy Lifting , Slips/Trips/Falls	• Wear proper PPE during sampling including nitrile gloves and safety glasses and face shield as appropriate. • Use proper dollies or drum moving tools. • Use applicable tools to open/close drum lids. • Do not handle drums with bulging sides. • Dispose of gloves after use and wash hands. • Wear work gloves over nitrile gloves. • Use proper lifting techniques. • Ask fellow worker for help. • Keep trafficked areas free from slip/trip/fall hazards. • See SOP HS-003
Non-Powered Hand Tools Use (loppers, pruning shears, machete, and honeysuckle hopper)	Cuts/Scrapes, Slips/Trips/Falls, Heavy Lifting, Repetition, caught-in-between equipment, pinch points	• Wear appropriate PPE including: gloves, steel toed/shank safety boots, safety glasses, high visibility reflective clothing, and hard hat (as necessary). • Keep hands away from pinch points or cutting parts • Use proper lifting techniques. • Do not remove equipment guards on equipment. • Take regular breaks and do not work in unusual positions for long periods of time. • Inspect equipment or tools prior to use. Tag and remove from service if tool is damaged.

Personal Protective Equipment (PPE) is the initial level of protection based on the activity hazards and site conditions which have been identified. Upgrades to respiratory protection may be required based on the designated Action Levels found in Section 9. If site conditions suggest the existence of a situation more hazardous than anticipated, the site personnel will evacuate the immediate area. The hazard, the level of precautions, and the PPE will then be reevaluated with the assistance and approval of the Safety Director and the Project Manager (PM).

4.3 Personal Safety

Field activities have the potential to take employees into areas which may pose a risk to personal safety. The following websites (sources) have been researched to identify potential crime activity in the area of the project:

- www.cityrating.com/crimestatistics.asp

  Gloversville crime statistics report an overall upward trend in crime based on data from 18 years with violent crime increasing and property crime increasing. Based on this trend, the crime rate in Gloversville for 2020 is expected to be higher than in 2016.

  The city violent crime rate for Gloversville in 2016 was higher than the national violent crime rate average by 57.11% and the city property crime rate in Gloversville was higher than the national property crime rate average by 21.52%.

  In 2016 the city violent crime rate in Gloversville was higher than the violent crime rate in New York by 65.82% and the city property crime rate in Gloversville was higher than the property crime rate in New York by 92.69%.

- www.crimemapping.com

  Zero crime records were found during a search for the City of Gloversville for the duration January 1, 2020 through October 29, 2020.

To protect yourself, take the following precautions:

- If deemed necessary by the PM, use the buddy system (teams of a minimum of two persons present);
- Let the Site Safety Manager (SSM) know when you begin work in these areas and when you leave;
- Call in regularly;
- Pay attention to what is going on around you; and
- If you arrive in an area and it does not look safe to get out of your vehicle, lock the doors and drive off quickly but safely.

Employees must not knowingly enter into a situation where there is the potential for physical and violent behaviors to occur. If employees encounter hostile individuals or a confrontation develops in the work area, suspend work activities, immediately leave the area of concern, and contact local 911 for assistance. Notify the SSM and Safety Team (Safety Director and Regional Safety Managers – SafetyTeam@geiconsultants.com) of any incidents once you are out of potential danger.

In the event of an emergency, prompt communications with local emergency responders is essential. At least one charged and otherwise functioning cell phone to facilitate emergency communications will be on-site. Confirmation of cellular phone operation will be confirmed at the start of each working day.

4.3.1 Coronavirus (COVID-19)

GEI field employees will follow the GEI COVID-19 Field Guidance in Appendix F and the National Grid Covid-19 Plan in Appendix G.

Distancing

COVID-19 spreads from person-to-person primarily through droplets that are emitted from the initial person to a distance of 6 feet.

- Maintain a distance of at least 6 feet (2 meters) from others. This includes during site meetings and breaks and while performing work tasks. Meetings should be held outside or by phone/video.
- Minimize the number of employees in one location to the extent possible. Follow local restrictions for maximum number of people congregated in one location at a time.
- If tasks need to be performed close to others (within 6 feet) and that cannot be avoided, wear appropriate PPE including a face mask (surgical or cloth), gloves, and eye protection.

  NOTE: Face masks are not a substitute for distancing. Masks are meant to protect others in case you are infected. Contact the Safety Team (safetyteam@geiconsultants.com) to discuss any special circumstances and the PPE warranted.

- Wear nitrile gloves as much as practicable and change them frequently. As practicable, wash your hands or use sanitizer between glove changes. Wash your hands after wearing gloves.
- Minimize and stagger time in office spaces to performing essential duties such as picking up and dropping off equipment and samples. If you need to spend more time in a project office (e.g., a construction trailer), it's important that the workspace allows for proper social distancing.
- When traveling to project sites, travel in separate vehicles. Do not travel in the same vehicle.

Hygiene Practices

The hygiene practices we have been instructed to perform more routinely apply to performing field work as well, such as:

- Frequent hand washing with soap and warm water for 20 seconds. If soap and water are not readily available, use hand sanitizer (containing 60% alcohol) until soap and water can be used. If sanitizer is not available, bringing gallon containers of water and soap may be a good substitute.
- If you are filling water bottles (for drinking or hand washing) keep the bottle away from the spigot to avoid transfer of germs or contaminants.
- Wipe down surfaces with disinfectant on a routine basis (at least once per day). This includes field equipment and other items that may have previously been used by others. This is especially important while working in construction trailers. When using company and personal vehicles, wipe surfaces including the steering wheel, gear shifter, controls, and door handles before and after use.
- Wear nitrile gloves as frequently as possible. Hand washing is necessary after removing gloves.
- When greeting others avoid handshaking, hugging, or other personal contact. A greeting from a distance such as a wave is suggested.
- Avoid sharing field equipment and other materials with others. Before using field equipment or putting it away, wipe it down with disinfectant or wash it with soap and water. Note, use extra caution using disinfectants while collecting environmental samples to ensure that the samples are not compromised.

4.3.2 Handling Drums and Containers

Regulations for handling drums and containers are specified by Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.120(j). Potential hazards associated with handling drums include vapor generation, fire, explosions, and possible physical injury. Handling of drums/containers during the site investigation and remediation activities may be necessary. If drum/container handling is necessary, it will be performed in accordance with applicable regulations.

4.3.3 Electrical Hazards

Utilities

The site may have shallow, buried utilities and also overhead utilities in certain areas. It will be necessary for parties disturbing the existing ground surface and conducting operations with heavy equipment having high clearances to exercise caution in performing project-related work with respect to the presence of utilities. Utility companies with active, buried lines in the site area will be asked by the Contractor performing intrusive activities to mark their facilities. Employees will use these data to choose work locations.

Underground Utilities

No excavating, drilling, boring, or other intrusive activities will be performed until an underground utility survey, conducted by knowledgeable persons or agencies, has been made. This survey will identify underground and in-workplace utilities such as the following:

- Electrical lines and appliances
- Telephone lines
- Cable television lines
- Gas line
- Pipelines
- Steam lines
- Water line
- Sewer lines
- Pressurized air lines

The location of utilities will be discussed with GEI employees and subcontractors during a site safety briefing. Identified utilities should be marked or access otherwise restricted to avoid chance of accidental contact.

Even when a utility search has been completed, drilling, boring, and excavation should commence with caution until advanced beyond the depth at which such utilities are usually located. Utilities will be considered "live" or active until reliable sources demonstrate otherwise.

Overhead Utilities

Overhead transmission and distribution lines will be carried on towers and poles which provide adequate safety clearance over roadways and structures. Clearances will be adequate for the safe movement of vehicles and for the operation of construction equipment.

Overhead or above-ground electric lines should be considered active until a reliable source has documented them to be otherwise. Elevated work platforms, ladders, scaffolding, man-lifts, and drill or vehicle superstructures will be erected a minimum of 20 feet (the actual distance is dependent upon the voltage of the line) from overhead electrical lines until the line is de-energized, grounded, or shielded so arcing cannot occur between the work location or superstructure.

4.3.4 Heat Stress

Employees may be exposed to the hazards associated with heat stress when ambient temperatures exceed 70ºF. Employees should increase water intake while working in conditions of high heat. Enough water should be available so that each employee can consume 1 quart of water per hour. In addition, they should increase number of rest breaks and/or rotate employees in shorter work shifts. Employees should rest in cool, dry, shaded areas for at least 5 minutes. Employees should not wait until they feel sick to cool down. Watch for signs and symptoms of heat exhaustion and fatigue. In the event of heat stroke, bring the victim to a cool environment, call for help, and initiate first aid procedures

The procedures to be followed regarding avoiding heat stress are provided in Appendix C – Heat Stress Guidelines and in GEI's Heat Stress program.

4.3.5 Cold Stress

Employees may be exposed to the hazards of working in cold environments. Potential hazards in cold environments include frostbite, trench foot or immersion foot, hypothermia, as well as slippery surfaces, brittle equipment, and poor judgment. The procedures to be followed regarding avoiding cold stress are provided in Appendix C – Cold Stress Guidelines and in GEI's Cold Stress program.

4.3.6 Noise

Noise is a potential hazard associated with the operation of heavy equipment, power tools, pumps, and generators. Employees who will perform suspected or established high noise tasks and operations will wear hearing protection. If deemed necessary by the SSM, the Safety Director will be consulted on the need for additional hearing protection and the need to monitor sound levels for site activities. Other employees who do not need to be in proximity of the noise should distance themselves from the equipment generating the noise.

4.3.7 Hand and Power Tools

In order to complete the various tasks for the project, personnel may use hand and power tools. The use of hand and power tools can present a variety of hazards, including physical harm from being struck by flying objects, being cut or struck by the tool, fire, and electrocution. Work gloves, safety glasses, and hard hats will be worn by the operating personnel when using hand and power tools and Ground Fault Circuit Interrupter (GFCI)-equipped circuits will be used for power tools.

4.3.8 Slips, Trips, and Falls

Working in and around the site may pose slip, trip, and fall hazards due to slippery and uneven surfaces. GEI employees will wear proper foot gear and will employ good work practice and housekeeping procedures to minimize the potential for slips, trips, and falls.

4.3.9 Manual Lifting

Manual lifting of objects and equipment may be required. Failure to follow proper lifting technique can result in back injuries and strains. Employees should use a buddy system and/or power equipment to lift heavy loads whenever possible and should evaluate loads before trying to lift them (i.e., they should be able to easily tip the load and then return it to its original position). Carrying heavy loads with a buddy and proper lifting techniques include: 1) make sure footing is solid; 2) make back straight with no curving or slouching; 3) center body over feet; 4) grasp the object firmly and as close to your body as possible; 5) lift with legs; and 6) turn with your feet, don't twist.

4.3.10 Projectile Objects and Overhead Dangers

Overhead dangers, including but not limited to falling debris and equipment, can occur while operating drill rigs. GEI employees will maintain a minimum distance from large overhead operations and to maintain proper communication with heavy equipment operators and their handlers, should work necessitate their presence beyond the minimum safety distance. Proper PPE will be worn during these types of activities including steel-toed/shank boots, safety vests, and hard hats.

4.4 Chemical Hazards

The characteristics of compounds at the site are discussed below for information purposes. Adherence to the safety and health guidelines in this HASP should reduce the potential for exposure to the compounds discussed below.

4.4.1 Coal Tar and Coal Tar Products

Coal tar products, which are semi-volatile organic compounds (SVOCs) consist of a mixture of acenaphthene, acenaphthylene, anthracene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluorethene, benz(a)pyrene, benzo(e)pyrene, benzo(g,h,i)peryline, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3cd)pyrene, 2-methyl naphthalene, naphththalene, phenanthrene, phenols, pyrene.

Coal tar products and other SVOCs are present at the Site within impacted soil and groundwater and possibly as a dense non-aqueous phase liquid (DNAPL) by-product of gas

production within soils, former manufactured gas plant (MGP) structures, and abandoned pipelines.

Coal tar products such as those listed above may cause contact dermatitis. Direct contact can be irritating to the skin and produce itching, burning, swelling, and redness. Direct contact or exposure to the vapors may be irritating to the eyes. Conjunctivitis may result from prolonged exposure. Coal tar is considered to be very toxic, if ingested. High levels of exposure to coal tar, though not anticipated during work activities conducted during this project, may increase the risk of cancer including lung, kidney, and skin cancer. Naphthalene is also an eye and skin irritant and can cause nausea, headache, fever, anemia, liver damage, vomiting, convulsions, and coma. Poisoning may occur by ingestion of large doses, inhalation, or skin absorption.

The major route of entry for the work activities to be conducted at this Site is through direct contact. Exposure is most likely when handling soil and water samples. Inhalation may occur when the soil is disturbed causing respirable and nuisance dust particles to become airborne.

4.4.2 Cyanide

Cyanide compounds are common by-products of manufactured gas production. Hydrogen cyanide is toxic because it is a chemical asphyxiate. It replaces the oxygen in the blood and thereby suffocates the cells. Ferro cyanides are not considered toxic because the hydrogen cyanide ion is bound too tightly to the iron and cannot therefore replace the oxygen. It takes a great amount of heat and/or acid to release cyanide gas from the ferro cyanide molecule; therefore, hydrogen cyanide is not a concern at this Site. However, it is National Grid policy to monitor for hydrogen cyanide during earth-disturbing activities at sites where MGP-related contaminants have been found.

4.4.3 Heavy Metals

Exposure to high concentrations of arsenic can cause dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, and hyper pigmentation of skin. Chronic exposure to arsenic has resulted in lung cancer in humans.

Exposure to high concentrations of aluminum can cause irritation of the eyes, skin, and the respiratory system.

Exposure to high concentrations of antimony can cause irritation of eyes, skin, nose, throat, and mouth; coughing; dizziness; headache; nausea, vomiting, diarrhea; stomach cramps; insomnia; anorexia; and could be unable to smell properly. Chronic exposure to antimony can produce respiratory effects that include antimony pneumoconiosis (inflammation of the lungs due to irritation caused by the inhalation of dust), alterations in pulmonary function,

chronic bronchitis, chronic emphysema, inactive tuberculosis, pleural adhesions, irritation; cardiovascular effects (increased blood pressure, altered EKG readings and heart muscle damage) and gastrointestinal disorders in humans.

Exposure to high concentrations of beryllium can result in "beryllium sensitization", which is an allergic response to beryllium. Symptoms of the disease include cough, shortness of breath, fatigue, fevers, skin rash, and night sweats. In the later stages, lung tissue becomes scarred. In severe cases, the right side of the heart may be strained due to increased pressure in the pulmonary artery from lung damage.

Exposure to high concentrations of cadmium can cause acute symptoms such as pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness and pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; loss of the sense of smell), mild anemia; and is considered a potential occupational carcinogen.

Exposure to chromium can cause acute symptoms such as irritation of the eyes, nose and throat as well as wheezing and coughing. Chronic effects include nosebleeds, nasal congestion, dermatitis, and loss of sight.

Exposure to high concentrations of copper through inhalation can cause irritation of the eyes, nose, pharynx, nasal septum. Ingestion may cause a metallic taste. Skin irritation may result from direct contact with skin. Damage to the liver and kidneys may occur.

No adverse health effects are associated with environmental exposure to iron. Target organs for iron via ingestion of iron (most often in supplement form) are the liver, cardiovascular system, and kidneys. Exposure to high concentrations of iron through ingestion can cause salivation nausea, vomiting, diarrhea, and abdominal pain.

Exposure to lead may cause acute symptoms such as eye irritation, weakness, weight loss, abdominal pain, and anemia. Chronic exposure to lead may result in kidney disease, effects to the reproductive system, blood forming organs, and CNS.

Lead and arsenic are regulated by specific OSHA standards. They are 29 CFR 1910.1025/1926.52 and 29 CFR 1910.1018/1926.1118, respectively. These standards include specific requirements for air monitoring, signs and labels, training and medical surveillance.

Exposure to high concentrations of manganese can cause manganism, metal fume fever, flu-like fever, and kidney damage.

Exposure to high concentrations of nickel may cause sensitization dermatitis, allergic asthma, and pneumonitis. Exposure to mercury can cause dizziness, salivation nausea, vomiting,

diarrhea, constipation, emotional disturbance, and kidney injury. Chronic exposure to mercury can cause CNS damage.

Exposure to high concentrations of selenium can cause mucous membrane irritation, coughing, sneezing, shortness of breath, chills, headaches, hypotension, and CNS depression. Chronic exposure to selenium could cause bronchial irritation, gastrointestinal distress, excessive fatigue, and skin discoloration.

Exposure to high concentrations of thallium can cause nausea, diarrhea, abdominal pain, vomiting; tremor; chest pain, pulmonary edema; convulsions, psychosis; liver, kidney damage; and alopecia.

Vanadium may cause greenish-black discoloration of the tongue, and is possibly carcinogenic to humans. Long-term or repeated exposure to vanadium may have effects on the respiratory tract, resulting in chronic rhinitis and chronic bronchitis.

Exposure to high concentrations of zinc through ingestion can cause abdominal pain, nausea, vomiting, and diarrhea. Chronic exposure can lead to low blood pressure, jaundice, and seizures.

These metals are at environmental concentrations and are not expected to be at concentrations that exposure symptoms would occur. As with SVOCs, the primary route of exposure is through inhalation of dust particles when soil is disturbed and becomes airborne.

4.4.4 Hydrogen Sulfide

Hydrogen sulfide is another common by-product of manufactured gas production. Exposure to lower concentrations can result in eye irritation, a sore throat and cough, shortness of breath, and fluid in the lungs. These symptoms usually go away in a few weeks. Long-term, low-level exposure may result in fatigue, loss of appetite, headaches, irritability, poor memory, and dizziness. Breathing very high levels (> 800 parts per million [ppm]) of hydrogen sulfide can cause death within just a few breaths. The primary route of exposure is through inhalation and therefore respiratory protection is the primary control against exposure to hydrogen sulfide.

4.4.5 Volatile Organic Compounds

Volatile organic chemicals (VOCs), such as benzene, toluene, ethyl benzene, and xylene (BTEX) are present as soil and groundwater contaminants, and in some cases chemical components in non-aqueous phase liquids (NAPL) such as oil or tar within soils and abandoned pipelines. These compounds are at environmental concentrations and are not expected to be at concentrations that exposure symptoms would occur. These compounds generally have a depressant effect on the Central Nervous System (CNS), may cause chronic

liver and kidney damage, and some are suspected human carcinogens. Benzene is a known human carcinogen. Acute exposure may include headache, dizziness, nausea, and skin and eye irritation. The primary route of exposure to VOCs is through inhalation and therefore respiratory protection is the primary control against exposure to VOCs.

4.4.6 Evaluation of Organic Vapor Exposure

Air monitoring reduces the risk of overexposure by indicating when action levels have been exceeded and when PPE must be upgraded or changed. Action Levels for VOCs and associated contingency plans for the work zone are discussed within Section 9 of this HASP.

Exposure to organic vapors will be evaluated and/or controlled by:

- Monitoring air concentrations for organic vapors in the breathing zone with a photoionization detector (PID) or a flame ionization detector (FID).
- When possible, engineering control measures will be utilized to suppress the volatile organic vapors. Engineering methods can include utilizing a fan to promote air circulation, utilizing volatile suppressant foam, providing artificial ground cover, or covering up the impacted material with a tarp to mitigate volatile odors.
- When volatile suppression engineering controls are not effective and organic vapor meters indicate concentrations above the action levels, then appropriate respiratory protection (i.e., air purifying respirator with organic vapor cartridge) will be employed.

4.4.7 Evaluation of Skin Contact and Absorption

Skin contact by contaminants may be controlled by use of proper hygiene practices, PPE, and good housekeeping procedures. The proper PPE (e.g., Tyvek, gloves, safety glasses) as described in Section 5 will be worn for activities where contact with potential contaminated media or materials are expected.

SDSs for decontamination chemicals and laboratory reagents that may be used on site are included in Appendix B. Specific chemical hazards information from the occupational health sources are summarized in Table 3.

Table 3. Chemical Data

Compound	CAS #	ACGIH TLV	OSHA PEL	Route of Exposure	Symptoms of Exposure	Target Organs	Physical Data
Arsenic	7440-38-2	0.01 mg/m^3	0.01 mg/m^3 A.L. 0.005 mg/m^3	Inhalation Skin Absorption Ingestion Skin Contact	Ulceration of nasal septum, dermatitis, GI disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin, potential carcinogen	Liver, kidneys, skin, lungs, lymphatic system	Metal: Silver-ray or tin-white, brittle, odorless solid FP: N/A IP: N/A LEL: N/A UEL: N/A VP: 0 mm
Benzene	71-43-2	0.5 ppm (Skin)	1 ppm TWA 5 ppm STEL	Inhalation Skin Absorption Ingestion Skin Contact	Irritation of eyes, skin, nose, respiratory system, giddiness, headache, nausea; staggering gait, fatigue, anorexia, weakness, dermatitis, bone marrow depression, potential carcinogen	Eyes, skin, CNS, bone marrow, blood	FP: 12°F IP: 9.24 eV LEL: 1.2% UEL: 7.8% VP: 75 mm
Copper	7440-50-8	1.0 mg/m^3	1.0 mg/m^3	Inhalation Ingestion Skin Contact	Irritation of eyes, nose, pharynx; nasal septum perf; metallic taste, skin irritation	Respiratory system, eyes, skin, liver, kidneys (increase risk with Wilson's disease)	Reddish, lustrous, malleable, odorless solid FP: NA IP: NA LEL: NA UEL NA VP: 0 mm
Ethylbenzene	100-41-4	100 ppm	100 ppm	Inhalation Ingestion Skin Contact	Eye, skin, mucous membrane irritation; headache; dermatitis, narcosis; coma	Eyes, skin, respiratory system, CNS	FP: 55°F IP: 8.76 eV LEL: 0.8% UEL: 6.7% VP: 7 mm
Hydrogen Cyanide (HCN)	74-90-8	4.7 ppm (5 mg/m^3) STEL [skin]	10 ppm (11 mg/m^3) [skin]	Inhalation Skin Absorption Ingestion Skin and/or Eye Contact	Asphyxia; weakness, headache, confusion; nausea, vomiting; increased rate and depth of respiration or respiration slow and gasping; thyroid, blood changes	CNS, CVS, thyroid, blood	Colorless or pale blue liquid or gas (above 78oF) with a bitter almond-like odor. FP: N/A IP: N/A LEL: N/A UEL: N/A VP: 630 mmHg

Table 3. Chemical Data

Compound	CAS #	ACGIH TLV	OSHA PEL	Route of Exposure	Symptoms of Exposure	Target Organs	Physical Data
Hydrogen Sulfide (H_2S)	7783-06-4	10 ppm TWA, 15 ppm STEL	20 ppm C, 50 ppm [10-min. Maximum peak]	Inhalation Skin and/or Eye Contact	Irritation of eyes, respiratory system; apnea, coma, convulsions; conjunctivitis, eye pain, lacrimation (discharge of tears), photophobia (abnormal visual intolerance to light), corneal vesiculation; dizziness, headache, fatigue, irritability, insomnia; gastrointestinal disturbance; liquid: frostbite	Eyes, respiratory system, CNS	Colorless gas with a strong odor of rotten eggs. FP: N/A IP: N/A LEL: N/A UEL: N/A VP: 17.6 atm
Iron	7439-89-6	1.0 mg/m^3	NA	Inhalation Ingestion Skin Contact	Irritation of eyes, skin, mucus membrane, abdominal pain, diarrhea, vomit, possible liver damage	Eyes, skin, respiratory system, liver, GI tract	Appearance and odor vary dependent upon specific soluble iron salt. FP: NA IP: NA LEL: NA UEL: NA VP: 4 mm
Lead	7439-92-1	0.050 mg/m^3	0.05 mg/m^3 A.L. 0.03 mg/m^3	Inhalation Ingestion Skin Contact	Weakness, insomnia; facial pallor; pale eye, anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis of wrist and ankles; irritated eyes, hypotension	Eyes, GI tract, CNS, kidneys, blood, gingival tissue	A heavy, ductile, soft, gray solid. FP: N/A IP: N/A LEL: N/A UEL: N/A VP: 0 mm
Manganese	7439-96-5	TWA 1 mg/m^3 ST 3 mg/m^3	C 5 mg/m^3	Inhalation, ingestion	Manganism; asthenia, insomnia, mental confusion; metal fume fever: dry throat, cough, chest tightness, dyspnea (breathing difficulty), rales, flu-like fever; low-back pain; vomiting; malaise (vague feeling of discomfort); lassitude (weakness, exhaustion); kidney damage	Respiratory system, central nervous system, blood, kidneys	A lustrous, brittle, silvery solid. FP: NA LEL: NA UEL: Na VP: 0 mmHg
Mercury	7439-97-6	0.025 mg/m^3	0.10 mg/m^3	Inhalation Skin Absorption Ingestion Skin Contact	Irritated eyes and skin, chest pain, cough, difficulty breathing, bronchitis, pneumonitis, tremor, insomnia, irritability, indecision, headache, fatigue, weakness, stomatitis, salivation, gastrointestinal disturbance, weight loss, proteinuria	Eyes, skin, respiratory tract, CNS	Silver-white, heavy odorless liquid. FP: N/A IP: N/A LEL: N/A UEL: N/A VP: 0.0012 mm

Table 3. Chemical Data

Compound	CAS #	ACGIH TLV	OSHA PEL	Route of Exposure	Symptoms of Exposure	Target Organs	Physical Data
Naphthalene	91-20-3		10 ppm (50 mg/m^3) TWA	Inhalation Skin Absorption Ingestion Skin and/or Eye Contact	Irritation eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage	Eyes, skin, blood, liver, kidneys, CNS	FP: 174°F IP: 8.12 eV LEL: 0.8% UEL: 6.7% VP: 0.08 mm
PAH's as Coal Tar Pitch Volatiles (CTPV)	65996-93-2	0.2 mg/m^3	0.2 mg/m^3	Inhalation Ingestion Skin Contact	Irritant to eyes, swelling, acne contact dermatitis, chronic bronchitis	Respiratory system, CNS, liver, kidneys, skin, bladder, carcinogen	Black or dark brown amorphous residue.
Selenium	7782-49-2	0.2 mg/m^3	0.2 mg/m^3	Inhalation Ingestion Skin Contact	Irritant to eyes, skin, nose and throat, visual disturbance, headache, chills, fever, breathing difficulty, bronchitis, metallic taste, garlic breath, GI disturbance, dermatitis, eye and skin burns	Eyes, skin, respiratory system, liver, kidneys, blood spleen	Amorphous or crystalline, red to gray solid. FP: N/A IP: N/A LEL: N/A UEL: N/A VP: 0 mm
Toluene	108-88-3	50 ppm	200 ppm	Inhalation Skin Absorption Ingestion Skin Contact	Eye, nose irritation; fatigue, weakness, confusion, euphoria, dizziness, headache; dilated pupils, tearing of eyes; nervousness, muscle fatigue, insomnia, tingling in limbs; dermatitis	Eyes, skin, respiratory system, CNS, liver, kidneys	FP: 40°F IP: 8.82 eV LEL: 1.1% UEL:7.1% VP: 21 mm
Xylene	1330-20-7	100 ppm	100 ppm	Inhalation Skin Absorption Ingestion Skin Contact	Eye, skin, nose, throat irritation; dizziness, excitement, drowsiness; incoordination, staggering gait; corneal damage; appetite loss, nausea, vomiting, abdominal pain; dermatitis	Eyes, skin, respiratory system, CNS, GI tract, blood, liver, kidneys	FP: 90°F IP: 8.56 eV LEL: 0.9% UEL: 6.7% VP: 9 mm

Table 3. Chemical Data

Compound	CAS #	ACGIH TLV	OSHA PEL	Route of Exposure	Symptoms of Exposure	Target Organs	Physical Data
Zinc	1314-13-2	5.0 mg/m^3	5.0 mg/m^3	Inhalation	Metal fume fever: chills, muscle ache, nausea, fever, dry throat, cough; weak, lass; metallic taste; head; blurred vision; low back pain; vomit; fatigue; malaise; tight chest; dysphoria, decreased pulmonary function	Respiratory System	White odorless solid. FP: NA IP: NA LEL: NA UEL: NA VP: 0 mm

Abbreviations:

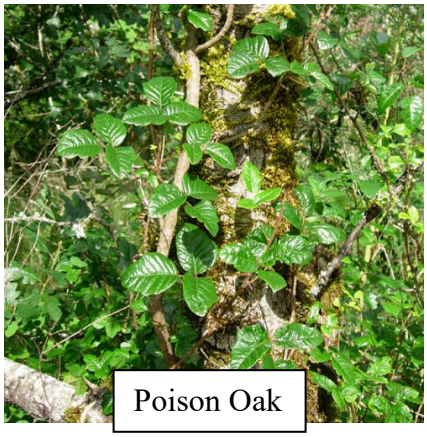
°F = degrees Fahrenheit
ACGIH = American Conference of Industrial Hygienists
A.L. = Action Level
atm = atmosphere
C = ceiling limit, not to be exceeded
CAS # = chemical abstract services number
CNS = Central Nervous System
CTPV = Coal Tar Pitch Volatiles
CVS = Cardiovascular System
eV = electron volt
f/cc = fibers per cubic centimeter
FP = Flash point
GI = Gastro-intestinal
H2S = Hydrogen Sulfide
HCN = Hydrogen Cyanide
hr. = hour
IP = Ionization Potential
LEL = Lower explosive limit
mg/m^3 = micrograms per cubic meter
min = minute
mm = millimeter
mmHg = millimeters of mercury
N/A = not applicable
OSHA = Occupational Safety and Health Administration
PAH = Polycyclic Aromatic Hydrocarbons
PCB = Polychlorinated Biphenyls
PEL = Permissible exposure limit
ppm = parts per million
Skin = significant route of exposure
STEL = Short-term exposure limit (15 minutes)
TWA = Time-weighted average (8 hours)
VP = vapor pressure approximately 68°F in mm Hg

4.5 Biological Hazards

Areas of the site are landscaped. Therefore, employees working on this project should be aware of the potential biological hazards at this site. Each is discussed in detail below:

4.5.1 Poisonous Plants

Persons working on the site should be aware of the possible presence of poisonous plants and insects. Poison ivy is a climbing plant with leaves that consist of three glossy, greenish leaflets. Poison ivy has conspicuous red foliage in the fall. Small yellowish-white flowers appear in May through July at the lower leaf axils of the plant. White berries appear from August through November. Poison ivy is typically found east of the Rockies. Poison oak is similar to poison ivy, but its leaves are oak-like in form. Poison oak occurs mainly in the south and southwest. Poison sumac typically occurs as a small tree or shrub and may be 6 to 20 feet in height. The bark is smooth, dark and speckled with darker spots. Poison sumac is typically found in swampy areas and east of the Mississippi. The leaves have 7 to 13 smooth-edged leaflets and drooping clusters of ivory-white berries that appear in August and last through spring.



Poison Oak

Poison Ivy

Poison Sumac

The leaves, roots, stems and fruit of these poisonous plants contain urushiol. Contact with the irritating oil causes an intensely itching skin rash and characteristic, blister-like lesions. The oil can be transmitted on soot particles when burned and may be carried on the fur of animals, equipment, and apparel.

Proper identification of these plants is the key to preventing contact and subsequent dermatitis. Wear long sleeves and pants when working in wooded areas. In areas of known infestation, wear Tyvek coveralls and gloves. Oils are easily transferred from one surface to another. If you come in contact with these poisonous plants, wash exposed areas immediately with cool water to remove the oils. Some commercial products such as Tecnu's Poison Oak-n-Ivy Cleanser claim to further help with the removal of oils.

4.5.2 Ticks

Lyme Disease

Ticks are bloodsuckers, attaching themselves to warm-blooded vertebrates to feed. Deer ticks are associated with the transmission the bacteria that causes Lyme disease. Female deer ticks are about ¼-inch in length and are black and brick red in color. Males are smaller and all black. If a tick is not removed, or if the tick is allowed to remain for days feeding on human blood, a condition known as tick paralysis can develop. This is due to a neurotoxin, which the tick apparently injects while engorging. This neurotoxin acts upon the spinal cord causing incoordination, weakness, and paralysis.

The early stages of Lyme disease, which can develop within a week to a few weeks of the tick bite, are usually marked by one or more of these signs and symptoms:

- Tiredness
- Chills and fever
- Headache
- Muscle and/or join pain
- Swollen lymph glands
- Characteristic skin rash (i.e. bullseye rash)

Rocky Mountain Spotted Fever

Rocky Mountain spotted fever is spread by the American dog tick, the lone-star tick, and the wood tick, all of which like to live in wooded areas and tall, grassy fields. The disease is most common in the spring and summer when these ticks are active, but it can occur anytime during the year when the weather is warm.

Initial signs and symptoms of the disease include sudden onset of fever, headache, and muscle pain, followed by development of a rash. Initial symptoms may include fever, nausea, vomiting, severe headache, muscle pain, and/or lack of appetite.

The rash first appears 2 to 5 days after the onset of fever and is often not present or may be very subtle. Most often it begins as small, flat, pink, non-itchy spots on the wrists, forearms,

and ankles. These spots turn pale when pressure is applied and eventually become raised on the skin. Later signs and symptoms include rash, abdominal pain, joint pain, and/or diarrhea.

The characteristic red, spotted rash of Rocky Mountain spotted fever is usually not seen until the 6th day or later after onset of symptoms, and this type of rash occurs in only 35% to 60% of patients with Rocky Mountain spotted fever. The rash involves the palms or soles in as many as 50% to 80% of patients; however, this distribution may not occur until later in the course of the disease.

Prevention

Tick season lasts from April through October; peak season is May through July. You can reduce your risk by taking these precautions:

- During outside activities, wear long sleeves and long pants tucked into socks. Wear a hat, and tie hair back.
- Use insecticides to repel or kill ticks. Repellents containing the compound n,n-diethyl-meta-toluamide (DEET) can be used on exposed skin except for the face, but they do not kill ticks and are not 100% effective in discouraging ticks from biting. Products containing permethrin kill ticks, but they cannot be used on the skin -- only on clothing. When using any of these chemicals, follow label directions carefully.
- After outdoor activities, perform a tick check. Check body areas where ticks are commonly found: behind the knees, between the fingers and toes, under the arms, in and behind the ears, and on the neck, hairline, and top of the head. Check places where clothing presses on the skin.
- Remove attached ticks promptly. Removing a tick before it has been attached for more than 24 hours greatly reduces the risk of infection. Use tweezers and grab as closely to the skin as possible. Do not try to remove ticks by squeezing them, coating them with petroleum jelly, or burning them with a match. Keep ticks in a zip-lock baggie in case testing needs to be performed.
- Report any of the above symptoms and all tick bites to the PM and Safety Team for evaluation.

4.5.3 Mosquito- Borne Disease – West Nile Virus

West Nile encephalitis is an infection of the brain caused by the West Nile virus, which is transmitted by infected mosquitoes. Following transmission from an infected mosquito, West Nile virus multiplies in the person's blood system and crosses the blood-brain barrier to reach the brain. The virus interferes with normal CNS functioning and causes inflammation of the brain tissue. However, most infections are mild, and symptoms include fever, headache, and body aches. More severe infections may be marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness,

paralysis, and rarely, death. Persons over the age of 50 have the highest risk of severe disease.

Prevention centers on public health action to control mosquitoes and on individual action to avoid mosquito bites. To avoid being bitten by the mosquitoes that cause the disease, use the following control measures:

If possible, stay inside between dusk and dark. This is when mosquitoes are most active. When outside (between dusk and dark), wear long pants and long-sleeved shirts. Spray exposed skin with an insect repellent, preferably containing DEET.

4.5.4 Wasps and Bees

Wasps (hornets and yellow-jackets) and bees (honeybees and bumblebees) are common insects that may pose a potential hazard to the field team if work is performed during spring, summer, or fall. Bees normally build their nests in the soil. However, they use other natural holes such as abandoned rodent nests or tree hollows. Wasps make a football-shaped, paper-like nest either below or above the ground. Yellow-jackets tend to build their nests in the ground, but hornets tend to build their nests in trees and shrubbery. Bees are generally more mild-mannered than wasps and are less likely to sting. Bees can only sting once while wasps sting multiple times because their stinger is barbless. Wasps sting when they feel threatened. By remaining calm and not annoying wasps by swatting, you lessen the chance of being stung.

Wasps and bees inject a venomous fluid under the skin when they sting. The venom causes a painful swelling that may last for several days. If the stinger is still present, carefully remove it with tweezers. Some people may develop an allergic reaction (i.e. anaphylactic shock) to a wasp or bee sting. If such a reaction develops, seek medical attention at once. If a GEI employee is allergic to bees or wasps notify the SSM and if, needed, the location of the epi pen.

4.5.5 Sun Exposure

Employees are encouraged to liberally apply sunscreen, with a minimum broad-spectrum sun protection factor (SPF) of 30, when working outdoors to avoid sunburn and potential skin cancer, which is associated with excessive sun exposure to unprotected skin. Additionally, employees should wear safety glasses that offer protection from ultraviolet A and B (UVA/UVB) rays.

5. Personal Protective Equipment

The PPE specified in Table 4 represents PPE selection required by 29 CFR 1910.132, and is based on the Activity Hazard Analysis of Section 4 (Table 2). Specific information on the selection rationale activity can be found in the GEI Health and Safety Manual.

The PPE program addresses elements, such as PPE selection based on site hazards, use and limitations, donning and doffing procedures, maintenance and storage, decontamination and disposal, training and proper fitting, inspection procedures prior to / during / and after use, evaluation of the effectiveness of the PPE program, and limitations during temperature extremes, heat stress, and other appropriate medical considerations. A summary of PPE for each level of protection is in Table 4.

Table 4. Site-Specific PPE

Task	PPE Level	Site-Specific Requirements	Respirator
Mobilization/Demobilization			
Reconnaissance	D	Hard hat, safety glasses, steel toe/shank safety boot, reflective vest, leather work gloves, hearing protection as needed	D - None
Mobilization/Demobilization of Equipment and Supplies	D	Hard hat, safety glasses, steel toe/shank safety boot, reflective vest, leather work gloves, hearing protection as needed	D – None
Construction			
Drilling, Groundwater Well decommissioning, repair and Installation, Sampling	D	Hard hat, safety glasses, steel toe/shank safety boot with overboot as needed, reflective vest, leather work gloves as needed, nitrile gloves, hearing protection as needed, Tyvek as needed, face coverings as required	Level D initially, Level C-If action levels exceeded (see Section 9 of HASP)

Use of Level A or Level B PPE is not anticipated. If conditions indicating the need for Level A or Level B PPE are encountered, personnel will leave the site and this HASP will be revised with oversight of the Safety Director or GEI personnel will not re-enter the site until conditions allow.

For most work conducted at the site, Level D PPE will include long pants, hard hats, safety glasses with side shields, and steel toe/shank or EH-rated safety boots. If intrusive work is conducted in areas where non-aqueous phase liquid (NAPL) or tar-saturated soil is anticipated, employees will wear, at a minimum, modified Level D PPE, which can include Tyvek coveralls and safety boots with overboots.

5.1 OSHA Requirements for PPE

Personal protective equipment used during the course of this field investigation must meet the following OSHA standards:

Table 5. OSHA Standards for PPE

Type of Protection	Regulation	Source
Eye and Face	29 CFR 1910.133	ANSI Z87.1 1968
Respiratory	29 CFR 1910.134	ANSI Z88.1 1980
Head	29 CFR 1910.135	ANSI Z89.1 1969
Foot	29 CFR 1910.136	ANSI Z41.1 1999 or ASTM F-2412-2005, and ASTM F-2413-2005

CRF = Code of Federal Regulations
ANSI = American National Standards Institute
ASTM = American Society for Testing and Materials

On-site GEI personnel who have the potential to don a respirator must have a valid fit test certification and documentation of medical clearance. The Safety Director will maintain such information on file for on-site personnel. The PM will obtain such information from the subcontractor's site supervisor prior to the initiation of such work. Both the respirator and cartridges specified for use in Level C protection must be fit-tested prior to use in accordance with OSHA regulations (29 CFR 1910.134). Air purifying respirators cannot be worn under the following conditions:

- Oxygen deficiency (less than 20.7%).
- Imminent Danger to Life and Health (IDLH) concentrations.
- If contaminant levels exceed designated use concentrations.

6. Key Project Personnel/Responsibilities and Lines of Authority

6.1 GEI Personnel

- Wendy Moore — Project Manager & Project Engineer
- Jerry Peake — Site Safety Manager
- Jerry Peake/Nick Louis/TBD — Field Personnel
- Steve Hawkins — Safety Director
- Jeena Sheppard — Regional Safety Manager

The implementation of health and safety at this project location will be the shared responsibility of the PM, the Safety Director, Regional Safety Manager, the Site Safety Manager (SSM), other GEI personnel implementing the proposed scope of work.

6.1.1 GEI Project Manager

The PM is responsible for confirming that the requirements of this HASP are implemented. Some of the PM's specific responsibilities include:

- Conducting and documenting the Project Safety Briefing for GEI project employees and forwarding the signed form (Appendix D) to the Safety Team;
- Verifying that the GEI staff selected to work on this program are sufficiently trained for site activities;
- Assuring that personnel to whom this HASP applies, including subcontractor personnel, have received a copy of it;
- Providing the Safety Director with updated information regarding conditions at the site and the scope of site work;
- Providing adequate authority and resources to the on-site SSM to allow for the successful implementation of necessary safety procedures;
- Supporting the decisions made by the SSM and Safety Director;
- Maintaining regular communications with the SSM and, if necessary, the Safety Director;
- Verifying that the subcontractors selected by GEI to work on this program have completed GEI environmental, health and safety requirements and has been deemed acceptable for the proposed scope of work; and

- Coordinating the activities of GEI subcontractors and confirming that they are aware of the pertinent health and safety requirements for this project.

6.1.2 GEI Safety Director

The Safety Director is the individual responsible for the review, interpretation, and modification of this HASP. Modifications to this HASP which may result in less stringent precautions cannot be undertaken by the PM or the SSM without the approval of the Safety Director. Specific duties of the Safety Director include:

- Writing, approving, and amending the HASP for this project;
- Advising the PM and SSM on matters relating to health and safety on this site;
- Recommending appropriate PPE and safety equipment to protect personnel from potential site hazards;
- Conducting accident investigations; and
- Maintaining regular contact with the PM and SSM to evaluate site conditions and new information which might require modifications to the HASP.

6.1.3 GEI Site Safety Manager

GEI field staff are responsible for implementing the safety requirements specified in this HASP. However, one person will serve as the SSM. The SSM will be on-site during all activities covered by this HASP. The SSM is responsible for enforcing the requirements of this HASP once work begins. The SSM has the authority to immediately correct situations where noncompliance with this HASP is noted and to immediately stop work in cases where an immediate danger is perceived. Some of the SSM's specific responsibilities include:

- Conducting/attending the Project Safety Briefing prior to beginning work, and subsequent safety meetings as necessary;
- Conduct Safety Tailgate meeting in accordance with National Grid requirements (can be combined with "pre-entry") briefing for site-related work;
- Verifying that personnel to whom this HASP applies have attended and participated in the Project Safety Briefing and subsequent safety meetings that are conducted during the implementation of the program;
- Maintaining a high level of health and safety consciousness among employees implementing the proposed activities;
- Procuring the air monitoring instrumentation required and performing air monitoring for investigative activities;
- Procuring and distributing the PPE and safety equipment needed for this project for GEI employees;

- Verifying that PPE and health and safety equipment used by GEI is in good working order;
- Verifying that the selected contractors are prepared with the correct PPE and safety equipment and supplies;
- Notifying the PM of noncompliance situations and stopping work in the event that an immediate danger situation is perceived;
- Monitoring and controlling the safety performance of personnel within the established restricted areas to confirm that required safety and health procedures are being followed;
- Stopping work in the event that an immediate danger situation is perceived; and
- Reporting accident/incident and preparing accident/incident reports, if necessary.

6.1.4 GEI Field Personnel

GEI field personnel covered by this HASP are responsible for following the health and safety procedures specified in this HASP and for performing their work in a safe and responsible manner. Some of the specific responsibilities of the field personnel are as follows:

- Reading and signing the HASP in its entirety prior to the start of on-site work;
- Attending and actively participating in the required Project Safety Briefing prior to beginning on-site work and any subsequent safety meetings that are conducted during the implementation of the program;
- Stopping work in the event that an immediate danger situation is perceived;
- Bringing forth any questions or concerns regarding the content of the HASP to the PM or the SSM, prior to the start of work;
- Reporting accidents, injuries, and illnesses, regardless of their severity, to the SSM, Safety Director, and HR; and
- Complying with the requirements of this HASP and the requests of the SSM.

6.1.5 Lines of Authority will be as follows:

On site – GEI will have responsibility for safety of its employees during the work performed at the site. GEI's field representative will have a cell phone available to contact the appropriate local authorities, in the event of an emergency. GEI's field representative will be available for communication with the GEI PM and with the Client's representative.

GEI employees have the authority to stop work activities if an unanticipated hazard is encountered or a potential unsafe condition is observed. The GEI employee should contact the Safety Director and the Project Manager to discuss the stop work conditions and potential control methods that can be implemented.

6.2 Subcontractors

Should GEI subcontract with any firms to assist in performing work, GEI requires its subcontractors to work in a responsible and safe manner. Subcontractors hired by GEI are required to submit documentation of their safety practices as part of GEI's Subcontractor Management Program for evaluation and approval before the start of work. Subcontractors for this project will be required to develop their own HASP for protection of their employees, but, at a minimum, must adhere to applicable requirements set forth in this HASP.

7. Training Requirements

7.1 HAZWOPER Training

In accordance with OSHA Standard 29 CFR 1910.120 "Hazardous Waste Operations and Emergency Response" (HAZWOPER) responders will, at the time of job assignment, have received a minimum of 40 hours of initial health and safety training for hazardous waste site operations. At a minimum, the training will have consisted of instruction in the topics outlined in the standard. Personnel who have not met the requirements for initial training will not be allowed to work in any site activities in which they may be exposed to hazards (chemical or physical). Proof of training will be submitted to the PM or his/her representative prior to the start of field activities.

7.2 Annual 8-Hour Refresher Training

Annual 8-hour refresher training will be required of hazardous waste site field personnel in order to maintain their qualifications for fieldwork. The training will cover a review of 29 CFR 1910.120 requirements and related company programs and procedures. Proof of current 8-hour refresher training will be submitted to the PM or his/her representative prior to the start of field activities.

7.3 Supervisor Training

Personnel acting in a supervisory capacity will have received 8 hours of instruction in addition to the initial 40-hour training. In addition, supervisors will have 1 year of field experience and training specific to work activities (i.e., sampling, construction observation, etc.)

7.4 Site-Specific Training

Prior to commencement of field activities, the PM or the SSM will verify GEI field personnel assigned to the project will have completed training that will specifically address the activities, procedures, monitoring, and equipment used in the site operations. It will include site and facility layout, hazards, and emergency services at the site, and will highlight the provisions contained within this HASP and applicable GEI H&S SOPs (Appendix E). This training will be documented on the Project Safety Briefing Form Appendix D). The signed form will be forwarded to the Safety Team at SafetyTeam@geiconsultants.com. In addition, GEI personnel will sign the plan to document that they understand the hazards and control measures presented and agree to comply with the procedures established in the HASP. Personnel that have not received project-specific training will not be allowed on-site.

7.5 On-Site Safety Briefings

Other GEI personnel will be given health and safety briefings daily by the SSM or field representative to assist GEI personnel in safely conducting work activities. The briefing will include GEI subcontractors. The briefings can include information on new operations to be conducted, changes in work practices, or changes in the site's environmental conditions, as well as periodic reinforcement of previously discussed topics. The briefings will also provide a forum to facilitate conformance with safety requirements and to identify performance deficiencies related to safety during daily activities or as a result of safety inspections. Documentation of these briefings will be recorded in the GEI field book, if the project duration is less than 5 days. If the project is longer than 5 days, the Tailgate Safety Briefing Form (Appendix D) will be used to document briefings. The meetings will also be an opportunity to periodically update the employees on monitoring results.

7.6 First Aid and CPR

The PM will verify that GEI field staff has current certifications in first aid and Cardiopulmonary Resuscitation (CPR), so that emergency medical treatment is available during field activities. The training will be consistent with the requirements of the American Red Cross Association. GEI employees also attend annual Bloodborne Pathogens training in compliance with OSHA regulations.

8. Medical Surveillance Program

GEI maintains a continuous, corporate, medical surveillance program that includes a plan designed specifically for field personnel engaged in work at sites where hazardous or toxic materials may be present. GEI's Safety Director and is responsible for the administration and coordination of medical evaluations conducted for GEI's employees at branch office locations. Comprehensive examinations are given to GEI field personnel on an annual or biennial basis (as determined to be appropriate by the Safety Director) participating in hazardous waste operations. The medical results of the examinations aid in determining the overall fitness of employees participating in field activities.

Under the Safety Director's supervision, field personnel undergo a complete initial physical examination, including a detailed medical and occupational history, before they participate in hazardous waste site investigations. Extensive annual/biennial reexaminations are also performed. Upon completion of these tests, personnel are certified by an occupational health physician as to whether they are fit for field work in general and fit to use respiratory protection.

If a GEI employee or other project worker shows symptoms of exposure to a hazardous substance and wishes to be rechecked, he/she will be directed to the nearest area hospital or medical facility.

GEI subcontractor personnel that will enter any active waste handling or other active non-"clean" area must certify that they are participating in a medical surveillance program that complies with OSHA regulations for hazardous waste operations (i.e., 29 CFR 1910.120 and 29 CFR 1926.65). Proof of medical clearance will be submitted to the GEI PM or SSM prior to the start of field activities.

9. Atmospheric Monitoring

Should intrusive activities be performed at the site (e.g., monitoring well decommissioning or installation), air monitoring will be performed to identify and quantify airborne levels of hazardous substances and safety and health hazards in order to determine the appropriate level of worker protection needed on-site in the event that intrusive work is conducted. Work requiring air monitoring includes the installation and/or abandonment of monitoring wells, DNAPL recovery wells, oxygen injection wells, and soil vapor points. Additionally, PID screening of the well head space will be conducted during groundwater sampling activities.

GEI will conduct work zone monitoring for on-site GEI employees during intrusive activities only. GEI will monitor and document daily site conditions and operations and inform field representatives of results. ***If Action Levels are exceeded, the SSM will immediately implement site action(s) according to Table 6 below and notify the PM and Safety Team***.

The following air monitoring equipment will be on site:

- PID with 10.6 eV lamp or equivalent
- Particulate Meter (PM-10 capable)
- Multi-gas meter: lower explosive limit (LEL) / oxygen (O_2) / hydrogen sulfide (H_2S) / hydrogen cyanide (HCN) meter

9.1 Equipment Use

9.1.1 Calibration

Air monitoring equipment will be calibrated and maintained in accordance with manufacturer's requirements. Calibrations will be recorded in the project notes daily or on a daily calibration form.

9.1.2 Photoionization Detector

Organic vapor concentrations will be measured using a PID during intrusive activities. During intrusive operations, organic vapor concentrations will be measured continuously. Organic vapor concentrations will be measured upwind of the work site(s) to determine background concentrations at least twice a day, (once in the morning and once in the afternoon). The SSM will interpret monitoring results using professional judgment and according to the alert and Action Limits set forth in the associated Site Work Plan.

9.2 Particulate Meter

A particulate meter will be used to measure airborne particulate matter during intrusive activities. Monitoring will be continuous, and readings will be averaged over a 15-minute period for comparison with the Action Levels. Monitoring personnel will make a best effort to collect dust monitoring data from downwind of the intrusive activity. If off-site sources are considered to be the source of the measured dust, upwind readings will also be collected.

9.2.1 Multi-Gas Meter

A multi-gas meter will be used to monitor for combustible gases and O_2 content in the work zone during intrusive activities. The meter will also be equipped with an H_2Ssensor and an HCN sensor. H_2S monitoring will be completed every 15 minutes or, if a sulfur odor is present, monitoring will be continuous. HCN monitoring will be completed every 15 minutes or, if an almond odor is detected, monitoring will be continuous.

9.3 Action Levels

Table 6 provides a summary of real time air monitoring Action Levels and contingency plans for work zone activities. The below Action Levels are determined by halving the Permissible Exposure Limits (PELs) or Threshold Limit Values (TLVs) as set forth by OSHA and the American Conference of Government Industrial Hygienists (ACGIH). O_2 values are based on the maximum use limits of a full-face respirator if oxygen were being displaced by a chemical.

Table 6. Real-Time Work Zone Air Monitoring Action Levels

Air Monitoring Instrument	Action Level (above background)	Site Action
PID	1.0 ppm	Use detector tube for benzene or zNose to verify if concentration is benzene. No respiratory protection is required if benzene is not present.
PID	1.0 - 10 ppm	Use Sensodyne detector tube for naphthalene or zNose to verify if concentration is naphthalene. No respiratory protection is required if naphthalene is not present.
	10 – 50 ppm	No respiratory protection is required if benzene or naphthalene is not present.
	50 – 100 ppm	Stop work, withdrawal from work area, institute engineering controls, if levels persist, upgrade to Level C.
	> 100 ppm	Stop work, withdraw from work area, notify PM and Safety Team.
O_2 Meter	< 20.7%	Stop work, withdraw from work area, ventilate area, notify PM and Safety Team.
	> 21.1%	Stop work, withdraw from work area, notify PM and Safety Team.
H_2S Meter	< 5.0 ppm	No respiratory protection is required.
	> 5.0 ppm	Stop work, cover excavation, withdraw from work area, institute engineering controls, notify PM and Safety Team.
HCN Meter	< 1.0 ppm	Run CMS Drager tube. Continue monitoring with real-time meter and continue work if CMS Drager tube reading is less than 2.0 ppm.
	> 1.0 ppm HCN Concentrations < 2.0 ppm	Run CMS Drager tube and confirm concentration is less than 2.0 ppm, notify PM and Safety Team. Run CMS tube for sulfur dioxide, hydrogen sulfide, and phosphine chip potential interferences. Continue to monitor with real-time meter.
	> 2.0 ppm	Stop work and move (with continuous HCN monitoring meter) at lease 25 ppm upwind of the excavation until continuous meter reads less than 1 ppm, notify PM and Safety Team. Run CMS Drager hydrogen cyanide chip and re-evaluate activity, continue monitoring with a real-time meter, resume work if concentrations read less than 1.0 ppm.
Lower Explosive Limit	< 10% LEL	Investigate possible causes, allow excavation to ventilate, use caution during procedures.
	> 10% LEL	Stop work, allow excavation/borehole to ventilate to < 10% LEL, if ventilation does not result in a decrease to < 10% LEL, withdraw from work area, notify PM and Safety Team.
Carbon Monoxide	> 35 ppm	Stop work, withdraw from work area, ventilate area, notify PM and Safety Team.
Particulate Meter	150 µg/m^3	Implement work practices to reduce/minimize airborne dust generation, e.g., spray/misting of soil with water.

10. Site Control

10.1 Buddy System

GEI personnel should be in line-of-site or communication contact with another on-site person. The other on-site person should be aware of his or her role as a "buddy" and be able to help in the event of an emergency. A copy of this plan will be given to any person acting as a GEI "buddy" for informational purposes.

10.2 Sanitation for Temporary Work Sites

Sanitation requirements identified in the OSHA Standard 29 CFR 1926.51 "Sanitation" specifies that employees working at temporary project sites have at least one sanitary facility available to them. Temporary sanitary facilities including toilets are not available on-site, but gas stations are located within ½ mile of the Site, at 207 W Fulton Street and 107 E Fulton Street.

10.3 Smoking

Smoking is prohibited at or in the vicinity of hazardous operations or materials. Where smoking is permitted, safe receptacles will be provided for smoking materials.

10.4 Alcohol and Drug Abuse Prevention

Alcohol and drugs will not be allowed on the site. Project personnel under the influence of alcohol or drugs will not be allowed to enter the site.

11. Incident Reporting

GEI will report incidents involving GEI personnel or subcontractor personnel, such as: lost time injuries, injuries requiring medical attention, near miss incidents, fires, fatalities, accidents involving the public, chemical spills, vehicle accidents, and property damage. The following steps must be followed when an incident occurs:

1. For incidents involving life-threatening situations or serious injury that require emergency response personnel (Police, Fire, EMS), call 9-1-1 from a safe area.
2. **Stop work** activity to address any injury, illness, property damage, spill or other emergency.
3. **Immediately** report any incidents to your Supervisor/Project Manager and a Regional Health & Safety Officer.
4. The PM will immediately (or no later than 1 hour) inform the CHSO and the Project-Specific National Grid Representative of any accident, incident, injury or near miss.

5. If your injury is not life-threatening, call Medcor Triage at 1-800-775-5866 to speak with a medical professional following any injury or illness.
6. Complete an incident report using the GEI Incident Report Form located on the GEI Safety Smartphone App, GEI Connections intranet page, or in the project HASP. **A DRAFT incident reort must be completed and submitted to the Project-Specific National Grid Representative within 4 hours of the incident.**
7. A FINAL Incident Report will be submitted within 24 hours via email to the Project-Specific National Grid PM, National Grid Regional Safety Lead, and/or the person to whom the verbal notification was initially provided.

   A representative with knowledge of the incident should be available to provide incident information until the investigation is completed by National Grid.

   All work will be suspended until contact is made with the Project-Specific PM so that National Grid can assess if continued work suspension or if a stand down is necessary. If the National Grid PM cannot be reached, contact the National Grid SIR Regional Safety Lead as noted in the table below.

Name	Region	Phone Numbers	E-Mail
William Ryan	Downstate NY	W- (516) 545-2586 C - (516) 790-1660	William.Ryan@nationalgrid.com
Brian Stearns	Upstate NY	W- (315) 428-5731 C - (315) 461-7892	Brian.Stearns@nationalgrid.com
Elizabeth Greene	MA/RI	W- (781) 907-3656 C - (781) 248-6469	Elizabeth.Greene@nationalgrid.com

8. Resume work activity if all steps above have been completed and it is safe to do so.

For vehicle accidents involving another vehicle or damage to property, the employee will take pictures of each vehicle or property involved in the incident and obtain a police report. In some municipalities police will not be dispatched to a non-injury accident, but every effort needs to be made to try and obtain the report.

The Incident Report Form and the Near Miss Reporting Form can be found in Appendix D, on the GEI Health and Safety smartphone app, or on the Safety page of the GEI Intranet. To report subcontractor injuries or incidents, follow the same verbal reporting procedures and submit an email describing the event to the PM and the Safety Team.

11.1 Injury Triage Service

If a GEI employee experiences a work-related injury that is not life-threatening, the employee will initiate a call to Medcor Triage at 1-800-775-5866. The injured employee will detail any medical symptoms or complaints which will be evaluated by a Registered Nurse (RN) specially trained to perform telephonic triage. The RN will recommend first aid self-treatment or refer the injured employee for an off-site medical evaluation by a health professional at a clinic within GEI's workers compensation provider network. GEI employees are still required to follow our Accident Reporting procedures as listed above.

11.2 Client-Specific Reporting Requirements

Flow Chart for Accident Reporting on National Grid Sites

Employee	GEI reports incidents involving GEI personnel or subcontractor personnel including lost time injuries, injuries requiring medical attention, near miss incidents, fires, fatalities, accidents involving the public, and property damage.
⇩	
Employee	The report is made to the GEI PM verbally within 2 hours of the incident.
⇩	
PM	The PM **immediately** notifies the CHSO, Human Resources and the Project-Specific National Grid Representative for the incident. In addition the PM will notify the GEI National Grid Client Manager.
⇩	
CHSO	The CHSO informs the President, COO and Regional Manager of the incident.
⇩	
Employee	The GEI Accident/Incident Report form is completed by the injured employee and submitted to the CHSO and HR within ***12 hours*** of the incident.
⇩	
PM with assist from CHSO or RHSO	A ***DRAFT*** Incident Report Form found in the appendix of the HASP is completed and submitted to the Project-Specific National Grid Representative **within 24 hours** of the incident.
⇩	
RHSO	The GEI Regional Health and Safety Officer initiates an accident investigation within 24 hours of the receipt of the accident report.
⇩	
RHSO	The accident investigation report is submitted to the CHSO for approval.
⇩	
CHSO	Incidents are reported to the Operations Committee each month in the H&S

12. Decontamination Procedures

12.1 Decontamination Equipment Requirements

The following equipment, if required, should be in sufficient supply to implement decontamination procedures for GEI's equipment.

- Buckets
- Alconox detergent concentrate
- Hand pump sprayers
- Long handled soft bristle brushes
- Large sponges
- Cleaning wipes for respirators
- Bench or stool(s)
- Methanol and/or Nitric Acid
- Liquid detergent and paper towels
- Plastic trash bags

13. Supplemental Contingency Plan Procedures

13.1 Hazard Communication Plan

GEI personnel have received hazard communication training as part of their annual health and safety training and new employee health and safety orientation training. Hazardous materials used on the site will be properly labeled, stored, and handled. SDS will be available to potentially exposed employees.

13.2 Fire

In the event of a fire personnel will evacuate the area. GEI's field representative will contact the local fire department with jurisdiction and report the fire. Notification of evacuation will be made to the PM and the Safety Team. The field representative will account for GEI personnel and subcontractor personnel and report their status to the PM.

13.3 Medical Support

In case of minor injuries, on-site care will be administered with the site first aid kit. For serious injuries, call 911 and request emergency medical assistance. Seriously injured persons should not be moved, unless they are in immediate danger. Notify the PM and the Safety Team of the emergency.

Section 1 and Table 1 of this HASP contain detailed emergency information, including directions to the nearest hospital, and a list of emergency services and their telephone numbers. In addition, Appendix A includes maps to the hospital and/or occupational health clinic. GEI field personnel will carry a cellular telephone.

13.4 Severe Weather

The contingency plan for severe weather includes reviewing the expected weather to determine if severe weather is in the forecast. Severe weather includes high winds over 40 miles per hour (mph), heavy rains or snow squalls, thunderstorms, tornados, and lightning storms. If severe weather is approaching, the decision to evacuate GEI personnel and subcontractor personnel from the site will be the responsibility of GEI's field representative. Notification of evacuation will be made to the PM and the Safety Team. The field representative will account for GEI personnel and subcontractor personnel and report their status to the PM. If safe, work can resume 30 minutes after the last clap of thunder or flash of lightening.

13.5 Spills or Material Release

If a hazardous waste spill or material release occurs, if safe, the SSM or their representative will immediately assess the magnitude and potential seriousness of the spill or release based on the following:

- SDS for the material spilled or released;
- Source of the release or spillage of hazardous material;
- An estimate of the quantity released and the rate at which it is being released;
- The direction in which the spill or air release is moving;
- Personnel who may be or may have been in contact with the material, or air release, and possible injury or sickness as a result;
- Potential for fire and/or explosion resulting from the situation; and
- Estimates of area under influence of release.

If the spill or release is determined to be within the on-site emergency response capabilities, the SSM will verify implementation of the necessary remedial action. If the release is beyond the capabilities of the site personnel, personnel will be evacuated from the immediate area and the local fire department will be contacted. The SSM will notify the PM and the Safety Team.

14. Health and Safety Plan Sign-Off

GEI personnel conducting site activities will be familiar with the information in this HASP. After reviewing this plan, please sign the copy in the project files, and bring a copy of the plan with you to the site. By signing this site-specific HASP, you are agreeing that you have read, understand, and will adhere to the provisions described in this plan while working on the Project site below.

Site Name: Gloversville (Washington Street) Former MGP Site

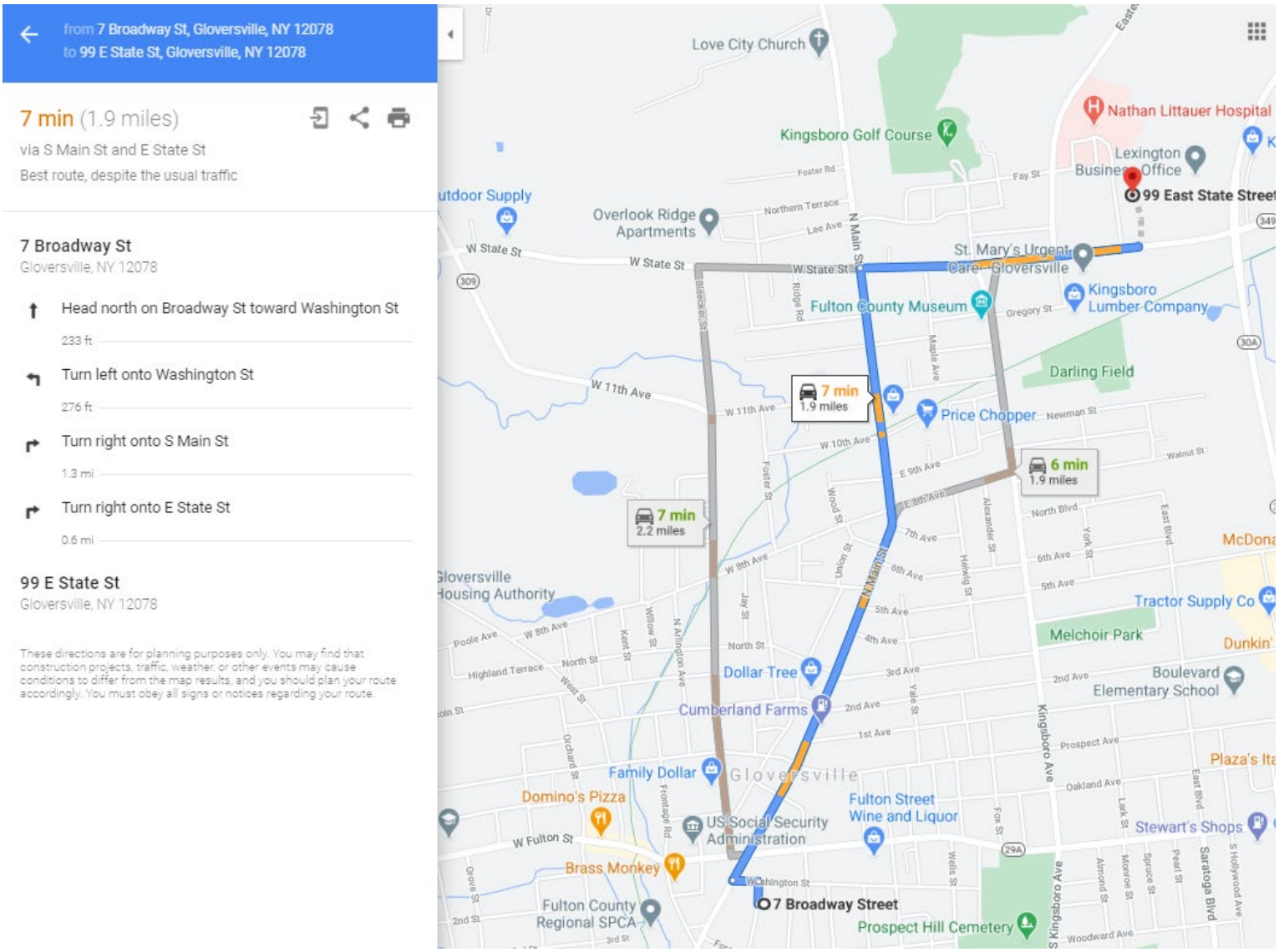
Investigation: Site Management Plan Activities

GEI Project No: 115130

Print Name	Signature
Project Manager: Wendy Moore	

Appendix A

Map to Hospital and Occupational Health Clinic



Appendix B

Safety Data Sheets

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

1 Identification of the substance/mixture and of the supplier

1.1 Product identifier

Trade Name: Alconox
Synonyms:
Product number: Alconox

1.2 Application of the substance / the mixture : Cleaning material/Detergent

1.3 Details of the supplier of the Safety Data Sheet

Manufacturer
Alconox, Inc.
30 Glenn Street
White Plains, NY 10603
1-914-948-4040

Supplier
Not Applicable

Emergency telephone number:
ChemTel Inc
North America: 1-800-255-3924
International: 01-813-248-0585

2 Hazards identification

2.1 Classification of the substance or mixture:

In compliance with EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments.

Hazard-determining components of labeling:
Tetrasodium Pyrophosphate
Sodium tripolyphosphate
Sodium Alkylbenzene Sulfonate

2.2 Label elements:

Skin irritation, category 2.
Eye irritation, category 2A.

Hazard pictograms:

Signal word: Warning

Hazard statements:
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements:
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P321 Specific treatment (see supplemental first aid instructions on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P501 Dispose of contents and container as instructed in Section 13.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

Additional information: None.

Hazard description

Hazards Not Otherwise Classified (HNOC): None

Information concerning particular hazards for humans and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:

The classification is according to EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments, and extended by company and literature data. The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

3 Composition/information on ingredients

3.1 Chemical characterization : None

3.2 Description : None

3.3 Hazardous components (percentages by weight)

Identification	Chemical Name	Classification	Wt. %
CAS number: 7758-29-4	Sodium tripolyphosphate	Skin Irrit. 2 ; H315 Eye Irrit. 2; H319	12-28
CAS number: 68081-81-2	Sodium Alkylbenzene Sulfonate	Acute Tox. 4; H303 Skin Irrit. 2 ; H315 Eye Irrit. 2; H319	8-22
CAS number: 7722-88-5	Tetrasodium Pyrophosphate	Skin Irrit. 2 ; H315 Eye Irrit. 2; H319	2-16

3.4 Additional Information : None.

4 First aid measures

4.1 Description of first aid measures

General information: None.

After inhalation:

Maintain an unobstructed airway.

Loosen clothing as necessary and position individual in a comfortable position.

After skin contact:

Wash affected area with soap and water.

Seek medical attention if symptoms develop or persist.

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes.

Remove contact lens(es) if able to do so during rinsing.

Seek medical attention if irritation persists or if concerned.

After swallowing:

Rinse mouth thoroughly.

Seek medical attention if irritation, discomfort, or vomiting persists.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

4.2 Most important symptoms and effects, both acute and delayed

None

4.3 Indication of any immediate medical attention and special treatment needed:

No additional information.

5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

For safety reasons unsuitable extinguishing agents : None

5.2 Special hazards arising from the substance or mixture :

Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Advice for firefighters

Protective equipment:

Wear protective eye wear, gloves and clothing.
Refer to Section 8.

5.4 Additional information :

Avoid inhaling gases, fumes, dust, mist, vapor and aerosols.
Avoid contact with skin, eyes and clothing.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures :

Ensure adequate ventilation.
Ensure air handling systems are operational.

6.2 Environmental precautions :

Should not be released into the environment.
Prevent from reaching drains, sewer or waterway.

6.3 Methods and material for containment and cleaning up :

Wear protective eye wear, gloves and clothing.

6.4 Reference to other sections : None

7 Handling and storage

7.1 Precautions for safe handling :

Avoid breathing mist or vapor.
Do not eat, drink, smoke or use personal products when handling chemical substances.

7.2 Conditions for safe storage, including any incompatibilities :

Store in a cool, well-ventilated area.

7.3 Specific end use(s):

No additional information.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

8 Exposure controls/personal protection

8.1 Control parameters :

7722-88-5, Tetrasodium Pyrophosphate, OSHA TWA 5 mg/m3.

8.2 Exposure controls

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.

Respiratory protection:

Not needed under normal conditions.

Protection of skin:

Select glove material impermeable and resistant to the substance.

Eye protection:

Safety goggles or glasses, or appropriate eye protection.

General hygienic measures:

Wash hands before breaks and at the end of work.
Avoid contact with skin, eyes and clothing.

9 Physical and chemical properties

Appearance (physical state, color):	White and cream colored flakes - powder	**Explosion limit lower:** **Explosion limit upper:**	Not determined or not available. Not determined or not available.
Odor:	Not determined or not available.	**Vapor pressure at 20°C:**	Not determined or not available.
Odor threshold:	Not determined or not available.	**Vapor density:**	Not determined or not available.
pH-value:	9.5 (aqueous solution)	**Relative density:**	Not determined or not available.
Melting/Freezing point:	Not determined or not available.	**Solubilities:**	Not determined or not available.
Boiling point/Boiling range:	Not determined or not available.	**Partition coefficient (n-octanol/water):**	Not determined or not available.
Flash point (closed cup):	Not determined or not available.	**Auto/Self-ignition temperature:**	Not determined or not available.
Evaporation rate:	Not determined or not available.	**Decomposition temperature:**	Not determined or not available.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

Flammability (solid, gaseous):	Not determined or not available.	**Viscosity**:	a. Kinematic: Not determined or not available. b. Dynamic: Not determined or not available.
Density at 20°C:	Not determined or not available.		

10 Stability and reactivity

10.1 Reactivity : None

10.2 Chemical stability : None

10.3 Possibility hazardous reactions : None

10.4 Conditions to avoid : None

10.5 Incompatible materials : None

10.6 Hazardous decomposition products : None

11 Toxicological information

11.1 Information on toxicological effects :

Acute Toxicity:

Oral:

: LD50 > 5000 mg/kg oral rat - Product .

Chronic Toxicity: No additional information.

Skin corrosion/irritation:

Sodium Alkylbenzene Sulfonate: Causes skin irritation. .

Serious eye damage/irritation:

Sodium Alkylbenzene Sulfonate: Causes serious eye irritation .

Tetrasodium Pyrophosphate: Rabbit - Risk of serious damage to eyes .

Respiratory or skin sensitization: No additional information.

Carcinogenicity: No additional information.

IARC (International Agency for Research on Cancer): None of the ingredients are listed.

NTP (National Toxicology Program): None of the ingredients are listed.

Germ cell mutagenicity: No additional information.

Reproductive toxicity: No additional information.

STOT-single and repeated exposure: No additional information.

Additional toxicological information: No additional information.

12 Ecological information

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

12.1 Toxicity:

Sodium Alkylbenzene Sulfonate: Fish, LC50 1.67 mg/l, 96 hours.
Sodium Alkylbenzene Sulfonate: Aquatic invertebrates, EC50 Daphnia 2.4 mg/l, 48 hours.
Sodium Alkylbenzene Sulfonate: Aquatic Plants, EC50 Algae 29 mg/l, 96 hours.
Tetrasodium Pyrophosphate: Fish, LC50 - other fish - 1,380 mg/l - 96 h.
Tetrasodium Pyrophosphate: Aquatic invertebrates, EC50 - Daphnia magna (Water flea) - 391 mg/l - 48 h.

12.2 Persistence and degradability: No additional information.

12.3 Bioaccumulative potential: No additional information.

12.4 Mobility in soil: No additional information.

General notes: No additional information.

12.5 Results of PBT and vPvB assessment:

PBT: No additional information.

vPvB: No additional information.

12.6 Other adverse effects: No additional information.

13 Disposal considerations

13.1 Waste treatment methods (consult local, regional and national authorities for proper disposal)

Relevant Information:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities. (US 40CFR262.11).

14 Transport information

14.1 UN Number: None
ADR, ADN, DOT, IMDG, IATA

14.2 UN Proper shipping name: None
ADR, ADN, DOT, IMDG, IATA

14.3 Transport hazard classes:
ADR, ADN, DOT, IMDG, IATA

Class: None
Label: None
LTD. QTY: None

US DOT
Limited Quantity Exception: None

Bulk:
RQ (if applicable): None
Proper shipping Name: None
Hazard Class: None
Packing Group: None
Marine Pollutant (if applicable): No additional information.

Non Bulk:
RQ (if applicable): None
Proper shipping Name: None
Hazard Class: None
Packing Group: None
Marine Pollutant (if applicable): No additional information.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

	Comments: None	**Comments:** None
14.4	**Packing group:** ADR, ADN, DOT, IMDG, IATA	None
14.5	**Environmental hazards** :	None
14.6	**Special precautions for user:**	None
	Danger code (Kemler):	None
	EMS number:	None
	Segregation groups:	None
14.7	**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.	
14.8	**Transport/Additional information:**	
	Transport category:	None
	Tunnel restriction code:	None
	UN "Model Regulation":	None

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.

North American

SARA

Section 313 (specific toxic chemical listings): None of the ingredients are listed.
Section 302 (extremely hazardous substances): None of the ingredients are listed.

CERCLA (Comprehensive Environmental Response, Clean up and Liability Act) Reportable

Spill Quantity: None of the ingredients are listed.

TSCA (Toxic Substances Control Act):

Inventory: All ingredients are listed.
Rules and Orders: Not applicable.

Proposition 65 (California):

Chemicals known to cause cancer: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Canadian

Canadian Domestic Substances List (DSL):
All ingredients are listed.

EU

REACH Article 57 (SVHC): None of the ingredients are listed.

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

Germany MAK: Not classified.

Asia Pacific

Australia

Australian Inventory of Chemical Substances (AICS): All ingredients are listed.

China

Inventory of Existing Chemical Substances in China (IECSC): All ingredients are listed.

Japan

Inventory of Existing and New Chemical Substances (ENCS): All ingredients are listed.

Korea

Existing Chemicals List (ECL): All ingredients are listed.

New Zealand

New Zealand Inventory of Chemicals (NZOIC): All ingredients are listed.

Philippines

Philippine Inventory of Chemicals and Chemical Substances (PICCS): All ingredients are listed.

Taiwan

Taiwan Chemical Substance Inventory (TSCI): All ingredients are listed.

16 Other information

Abbreviations and Acronyms: None

Summary of Phrases

Hazard statements:

H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements:

P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P321 Specific treatment (see supplemental first aid instructions on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P501 Dispose of contents and container as instructed in Section 13.

Manufacturer Statement:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

NFPA: 1-0-0

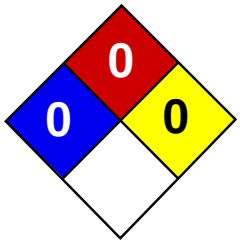
Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

Effective date: 12.08.2015 **Revision** : 12.10.2015

Trade Name: Alconox

HMIS: 1-0-0



Material Safety Data Sheet
Water, Deionized MSDS

Section 1: Chemical Product and Company Identification

Product Name: Water, Deionized

Catalog Codes: SLW1015

CAS#: 7732-18-5

RTECS: ZC0110000

TSCA: TSCA 8(b) inventory: Water

CI#: Not available.

Synonym: Dihydrogen oxide

Chemical Name: Water

Chemical Formula: H2O

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Water	7732-18-5	100

Toxicological Data on Ingredients: Not applicable.

Section 3: Hazards Identification

Potential Acute Health Effects:
Non-corrosive for skin. Non-irritant for skin. Non-sensitizer for skin. Non-permeator by skin. Non-irritating to the eyes. Non-hazardous in case of ingestion. Non-hazardous in case of inhalation. Non-irritant for lungs. Non-sensitizer for lungs. Non-corrosive to the eyes. Non-corrosive for lungs.

Potential Chronic Health Effects:
Non-corrosive for skin. Non-irritant for skin. Non-sensitizer for skin. Non-permeator by skin. Non-irritating to the eyes. Non-hazardous in case of ingestion. Non-hazardous in case of inhalation. Non-irritant for lungs. Non-sensitizer for lungs. CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available.

Section 4: First Aid Measures

Eye Contact: Not applicable.

Skin Contact: Not applicable.

Serious Skin Contact: Not available.

Inhalation: Not applicable.

Serious Inhalation: Not available.

Ingestion: Not Applicable

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances: Not Applicable

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Section 7: Handling and Storage

Precautions: No specific safety phrase has been found applicable for this product.

Storage: Not applicable.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Not Applicable

Personal Protection: Safety glasses. Lab coat.

Personal Protection in Case of a Large Spill: Not Applicable

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Odorless.

Taste: Not available.

Molecular Weight: 18.02 g/mole

Color: Colorless.

pH (1% soln/water): 7 [Neutral.]

Boiling Point: 100°C (212°F)

Melting Point: Not available.

Critical Temperature: Not available.

Specific Gravity: 1 (Water = 1)

Vapor Pressure: 2.3 kPa (@ 20°C)

Vapor Density: 0.62 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not applicable

Solubility: Not Applicable

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Not available.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact.

Toxicity to Animals:
LD50: [Rat] - Route: oral; Dose: > 90 ml/kg LC50: Not available.

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans:
Non-corrosive for skin. Non-irritant for skin. Non-sensitizer for skin. Non-permeator by skin. Non-hazardous in case of ingestion. Non-hazardous in case of inhalation. Non-irritant for lungs. Non-sensitizer for lungs. Non-corrosive to the eyes. Non-corrosive for lungs.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Water

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):
This product is not classified according to the EU regulations. Not applicable.

HMIS (U.S.A.):

Health Hazard: 0

Fire Hazard: 0

Reactivity: 0

Personal Protection: a

National Fire Protection Association (U.S.A.):

Health: 0

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Not applicable. Lab coat. Not applicable. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:33 PM

Last Updated: 11/01/2010 12:00 PM

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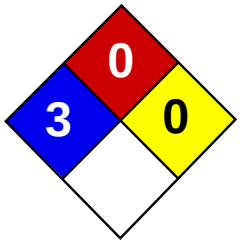

Material Safety Data Sheet
Nitric Acid, 10% w/w MSDS

Section 1: Chemical Product and Company Identification

Product Name: Nitric Acid, 10% w/w

Catalog Codes: SLN1330

CAS#: Mixture.

RTECS: Not applicable.

TSCA: TSCA 8(b) inventory: Nitric acid, 70%; Water

CI#: Not applicable.

Synonym:

Chemical Name: Not applicable.

Chemical Formula: Not applicable.

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Water	7732-18-5	93
Nitric acid, fuming	7697-37-2	7

Toxicological Data on Ingredients: Nitric acid, fuming: VAPOR (LC50): Acute: 67 ppm 4 hour(s) [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant), of ingestion, of inhalation. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
Very hazardous in case of skin contact (corrosive, irritant, permeator), of eye contact (irritant), of ingestion, of inhalation. Non-sensitizer for skin. CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist

may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs. Repeated or prolonged inhalation of vapors may lead to chronic respiratory irritation.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:
If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical got on the victim's exposed skin, such as the hands : Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive to explosive in presence of reducing materials, of combustible materials, of organic materials.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

Large Spill:
Corrosive liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up Keep container dry. Do not ingest. Do not breathe gas/fumes/ vapour/spray. Never add water to this product In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes Keep away from incompatibles such as reducing agents, combustible materials, metals, alkalis. May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package.

Storage:
May corrode metallic surfaces. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package. Corrosive materials should be stored in a separate safety storage cabinet or room.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
Nitric acid, fuming TWA: 2 CEIL: 4 (ppm) TWA: 5 CEIL: 10 (mg/m3) Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Disagreeable and choking. (Strong.)

Taste: Not available.

Molecular Weight: Not applicable.

Color: Clear Colorless.

pH (1% soln/water): Acidic.

Boiling Point: The lowest known value is 82.6°C (180.7°F) (Nitric acid, fuming). Weighted average: 98.78°C (209.8°F)

Melting Point: May start to solidify at -41.6°C (-42.9°F) based on data for: Nitric acid, fuming.

Critical Temperature: Not available.

Specific Gravity: Weighted average: 1.02 (Water = 1)

Vapor Pressure:
The highest known value is 45 mm of Hg (@ 20°C) (Nitric acid, fuming). Weighted average: 19.46 mm of Hg (@ 20°C)

Vapor Density: The highest known value is 0.62 (Air = 1) (Water).

Volatility: Not available.

Odor Threshold: The highest known value is 0.29 ppm (Nitric acid, fuming)

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Easily soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances:
Extremely reactive or incompatible with alkalis. Highly reactive with metals. Reactive with reducing agents, combustible materials. Slightly reactive to reactive with organic materials, acids.

Corrosivity:
Highly corrosive in presence of steel, of aluminum, of zinc, of copper. Corrosive in presence of stainless steel(304). Slightly corrosive to corrosive in presence of stainless steel(316). Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute toxicity of the vapor (LC50): 957 ppm 4 hour(s) (Rat) (Calculated value for the mixture).

Chronic Effects on Humans: The substance is toxic to lungs, mucous membranes.

Other Toxic Effects on Humans: Very hazardous in case of skin contact (corrosive, irritant, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 8: Corrosive liquid.

Identification: : Nitric acid, solution (Nitric acid, fuming) : NA2031 PG: II

Special Provisions for Transport: Marine Pollutant

Section 15: Other Regulatory Information

Federal and State Regulations:
Pennsylvania RTK: Nitric acid, 70% Massachusetts RTK: Nitric acid, 70% TSCA 8(b) inventory: Nitric acid, 70%; Water SARA 302/304/311/312 extremely hazardous substances: Nitric acid, 70% SARA 313 toxic chemical notification and release reporting: Nitric acid, 70% CERCLA: Hazardous substances.: Nitric acid, 70%;

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC). CLASS E: Corrosive liquid.

DSCL (EEC):
R26- Very toxic by inhalation. R35- Causes severe burns.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 0

Personal Protection:

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 11:00 AM

Last Updated: 05/21/2013 12:00 PM

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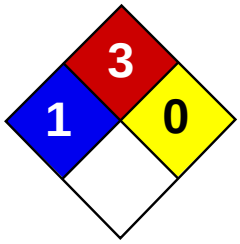


Material Safety Data Sheet
Methyl alcohol MSDS

Section 1: Chemical Product and Company Identification

Product Name: Methyl alcohol

Catalog Codes: SLM3064, SLM3952

CAS#: 67-56-1

RTECS: PC1400000

TSCA: TSCA 8(b) inventory: Methyl alcohol

CI#: Not applicable.

Synonym: Wood alcohol, Methanol; Methylol; Wood Spirit; Carbinol

Chemical Name: Methanol

Chemical Formula: CH3OH

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Methyl alcohol	67-56-1	100

Toxicological Data on Ingredients: Methyl alcohol: ORAL (LD50): Acute: 5628 mg/kg [Rat]. DERMAL (LD50): Acute: 15800 mg/kg [Rabbit]. VAPOR (LC50): Acute: 64000 ppm 4 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator). Severe over-exposure can result in death.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer). CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Classified POSSIBLE for human. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to eyes. The substance may be toxic to blood, kidneys, liver, brain, peripheral nervous system, upper respiratory tract, skin, central nervous system (CNS), optic nerve. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 464°C (867.2°F)

Flash Points: CLOSED CUP: 12°C (53.6°F). OPEN CUP: 16°C (60.8°F).

Flammable Limits: LOWER: 6% UPPER: 36.5%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Highly flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Explosive in presence of open flames and sparks, of heat.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

Special Remarks on Fire Hazards:
Explosive in the form of vapor when exposed to heat or flame. Vapor may travel considerable distance to source of ignition and flash back. When heated to decomposition, it emits acrid smoke and irritating fumes. CAUTION: MAY BURN WITH NEAR INVISIBLE FLAME

Special Remarks on Explosion Hazards:
Forms an explosive mixture with air due to its low flash point. Explosive when mixed with Choroform + sodium methoxide and diethyl zinc. It boils violently and explodes.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:
Flammable liquid. Poisonous liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids.

Storage:
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 200 from OSHA (PEL) [United States] TWA: 200 STEL: 250 (ppm) from ACGIH (TLV) [United States] [1999] STEL: 250 from NIOSH [United States] TWA: 200 STEL: 250 (ppm) from NIOSH SKIN TWA: 200 STEL: 250 (ppm) [Canada] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Alcohol like. Pungent when crude.

Taste: Not available.

Molecular Weight: 32.04 g/mole

Color: Colorless.

pH (1% soln/water): Not available.

Boiling Point: 64.5°C (148.1°F)

Melting Point: -97.8°C (-144°F)

Critical Temperature: 240°C (464°F)

Specific Gravity: 0.7915 (Water = 1)

Vapor Pressure: 12.3 kPa (@ 20°C)

Vapor Density: 1.11 (Air = 1)

Volatility: Not available.

Odor Threshold: 100 ppm

Water/Oil Dist. Coeff.: The product is more soluble in water; log(oil/water) = -0.8

Ionicity (in Water): Non-ionic.

Dispersion Properties: See solubility in water.

Solubility: Easily soluble in cold water, hot water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ingnition sources, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, metals, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Can react vigorously with oxidizers. Violent reaction with alkyl aluminum salts, acetyl bromide, chloroform + sodium methoxide, chromic anhydride, cyanuirc chlorite, lead perchlorate, phosphorous trioxide, nitric acid. Exothermic reaction with sodium hydroxide + chloroform. Incompatible with beryllium dihydride, metals (potassium and magnesium), oxidants (barium perchlorate, bromine, sodium hypochlorite, chlorine, hydrogen peroxide), potassium tert-butoxide, carbon tetrachloride, alkali metals, metals (aluminum, potassium magnesium, zinc), and dichlormethane. Rapid autocatalytic dissolution of aluminum, magnesium or zinc in 9:1 methanol + carbon tetrachloride - sufficiently vigorous to be rated as potentially hazardous. May attack some plastics, rubber, and coatings.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 5628 mg/kg [Rat]. Acute dermal toxicity (LD50): 15800 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 64000 4 hours [Rat].

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Classified POSSIBLE for human. Causes damage to the following organs: eyes. May cause damage to the following organs: blood, kidneys, liver, brain, peripheral nervous system, upper respiratory tract, skin, central nervous system (CNS), optic nerve.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

Passes through the placental barrier. May affect genetic material. May cause birth defects and adverse reproductive effects(paternal and maternal effects and fetotoxicity) based on animal studies.

Special Remarks on other Toxic Effects on Humans:

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 29400 mg/l 96 hours [Fathead Minnow].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation:
Methanol in water is rapidly biodegraded and volatilized. Aquatic hydrolysis, oxidation, photolysis, adsorption to sediment, and bioconcentration are not significant fate processes. The half-life of methanol in surfact water ranges from 24 hrs. to 168 hrs. Based on its vapor pressure, methanol exists almost entirely in the vapor phase in the ambient atmosphere. It is degraded by reaction with photochemically produced hydroxyl radicals and has an estimated half-life of 17.8 days. Methanol is physically removed from air by rain due to its solubility. Methanol can react with NO2 in pollulted to form methyl nitrate. The half-life of methanol in air ranges from 71 hrs. (3 days) to 713 hrs. (29.7 days) based on photooxidation half-life in air.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Methyl alcohol UNNA: 1230 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Methyl alcohol Illinois toxic substances disclosure to employee act: Methyl alcohol Illinois chemical safety act: Methyl alcohol New York release reporting list: Methyl alcohol Rhode Island RTK hazardous substances: Methyl alcohol Pennsylvania RTK: Methyl alcohol Minnesota: Methyl alcohol Massachusetts RTK: Methyl alcohol Massachusetts spill list: Methyl alcohol New Jersey: Methyl alcohol New Jersey spill list: Methyl alcohol Louisiana spill reporting: Methyl alcohol California Directors List of Hazardous Substances (8CCR 339): Methyl alcohol Tennesse Hazardous Right to Know : Methyl alcohol TSCA 8(b) inventory: Methyl alcohol SARA 313 toxic chemical notification and release reporting: Methyl alcohol CERCLA: Hazardous substances.: Methyl alcohol: 5000 lbs. (2268 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC). Class D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R11- Highly flammable. R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R39- Danger of very serious irreversible effects. R39/23/24/25- Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. S7- Keep container tightly closed. S16- Keep away from sources of ignition - No smoking. S36/37- Wear suitable protective clothing and gloves. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References:
-SAX, N.I. Dangerous Properties of Indutrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984. -Material safety data sheet emitted by: la Commission de la SantÃ© et de la SÃ©curitÃ© du Travail du QuÃ©bec. -Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. LOLI, HSDB, RTECS, HAZARDTEXT, REPROTOX databases

Other Special Considerations: Not available.

Created: 10/10/2005 08:23 PM

Last Updated: 05/21/2013 12:00 PM

Material Safety Data Sheet: **Simple Green® All-Purpose Cleaner and Simple Green® Scrubbing Pad**
Version No. 13005-12B Date of Issue: February 2012 *ANSI-Z400.1-2003 Format*

Section 1: PRODUCT & COMPANY IDENTIFICATION

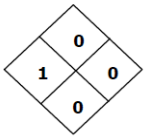
Product Name: Simple Green® All-Purpose Cleaner
Additional Names: Simple Green® Concentrated Cleaner Degreaser Deodorizer
Simple Green® Scrubbing Pad (Fluid in pad only)

Manufacturer's Part Number: **Please refer to page 4*

Company: Sunshine Makers, Inc.
15922 Pacific Coast Highway
Huntington Beach, CA 92649 USA
Telephone: 800-228-0709 ● 562-795-6000 Fax: 562-592-3830
Emergency Phone: Chem-Tel 24-Hour Emergency Service: 800-255-3924

Section 2: HAZARDS IDENTIFICATION

Emergency Overview: **CAUTION. Irritant. This is a Green colored liquid with a sassafras added odor. Scrubbing pad is a green fibrous rectangle infused with Simple Green Cleaner.**



NFPA/HMIS Rating:
Health = 1 = slight
Fire, Reactivity, and Special = 0 = minimal

Potential Health Effects

Eye Contact: Mildly irritating.
Skin Contact: No adverse effects expected under typical use conditions. Prolonged exposure may cause dryness. Chemically sensitive individuals may experience mild irritation.
Ingestion: May cause stomach or intestinal irritation if swallowed.
Inhalation: No adverse effects expected under typical use conditions. Adequate ventilation should be present for prolonged usage in small enclosed areas.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Percent Range
Water	7732-18-5	≥ 78%
2-butoxyethanol	111-76-2	≤ 5%
Ethoxylated Alcohol	68439-46-3	≤ 5%
Tetrapotassium Pyrophosphate	7320-34-5	≤ 5%
Sodium Citrate	68-04-2	≤ 5%
Fragrance	Proprietary Mixture	≤ 1%
Colorant	Proprietary Mixture	≤ 1%

Section 4: FIRST AID MEASURES

If Inhaled: If adverse effect occurs, move to fresh air.
If on skin: If adverse effect occurs, rinse skin with water.
If in eyes: Flush with plenty of water. After 5 minutes of flushing, remove contact lenses, if present. Continue flushing for at least 10 more minutes. If irritation persists seek medical attention.
If ingested: Drink plenty of water to dilute.

Section 5: FIRE FIGHTING MEASURES

This formula is stable, non-flammable, and will not burn. No special procedures necessary

Flammability: Non-flammable
Flash Point: Non-flammable

Suitable Extinguishing Media: Use Dry chemical, CO2, water spray or "alcohol" foam.
Extinguishing Media to Avoid High volume jet water.
Special Exposure Hazards: In event of fire created carbon oxides, oxides of phosphorus may be formed.
Special Protective Equipment: Wear positive pressure self-contained breathing apparatus; Wear full protective clothing.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: See section 8 – personal protection.

Environmental Precautions: Do not allow into open waterways and ground water systems.

Method for Clean Up: Dilute with water and rinse into sanitary sewer system or soak up with inert absorbent material.

Section 7: HANDLING AND STORAGE

Handling: Keep container tightly closed. Ensure adequate ventilation. Keep out of reach of children.

Storage: Keep in cool dry area.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limit Values:	OSHA PEL	ACGIH TLV
2-butoxyethanol	TWA 50 ppm (240 mg/m^3)	20 ppm (97 mg/m^3)
Tetrapotassium Pyrophosphate		5 mg/m^3

Exposure Controls:
Eye Contact: Use protective glasses if splashing or spray-back is likely.
Respiratory: Use in well ventilated areas.
Skin Contact: Prolonged exposure or dermal sensitive individuals should use protective gloves.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Green Liquid	**Vapor Pressure:**	18 mmHg @20°C; 23.5 mmHg @26°C	
Odor:	Added Sassafras odor	**Density:**	8.5 lb/gal;	
Specific Gravity:	1.010 ± 0.010	**Water Solubility:**	100%	
pH:	9.5 ± 0.5	**VOC composite Partial Pressure:**		TBD
Boiling Point:	~210°F (98 °C)	**VOC:**	CARB Method 310	3.8%
Freezing Point:	~ 32°F (0 °C)		SCAQMD Method 313	2.8%
Nutrient Content:	Phosphorous: 0.28% Chloride: ~110 ppm	Sulfur: ~180 ppm Fluorine: ~90 ppm		

Section 10: STABILITY AND REACTIVITY

Stability:	Stable
Materials to Avoid:	None known
Hazardous Decomposition Products:	Normal products of combustion - CO, CO2; Oxides of Phosphorous may occur.

Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Oral LD_{50} (rat) > 5 g/kg body weight
Dermal LD_{50} (rabbit) > 5 g/kg body weight
Toxicity calculated from ingredients using OECD SERIES ON TESTING AND ASSESSMENT Number 33

Carcinogens: No ingredients are listed by OSHA, IARC, or NTP as known or suspected carcinogens.

Section 12: ECOLOGICAL INFORMATION

Hazard to wild mammals:	Low, based on toxicology profile
Hazard to avian species:	Low, based on toxicology profile
Hazard to aquatic organisms:	Low, based on toxicology profile
Chemical Fate Information:	Readily Biodegradable per OECD 301D, Closed Bottle Test

Section 13: DISPOSAL CONSIDERATIONS

Appropriate Method for Disposal:

Unused Product:	*Dilute with water to use concentration and dispose by sanitary sewer.
Used Product:	*This product can enter into clarifiers and oil/water separators. Used product may be hazardous depending on the cleaning application and resulting contaminants.
Empty Containers:	*Triple-rinse with water and offer for recycling if available in your area. Otherwise, dispose as non-hazardous waste.

*Dispose of used or unused product, and empty containers in accordance with the local, State, Provincial, and Federal regulations for your location. Never dispose of used degreasing rinsates into lakes, streams, and open bodies of water or storm drains.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT) / Canadian TDG: Not Regulated
IMO / IDMG: Not classified as Dangerous
ICAO/ IATA: Not classified as Dangerous
ADR/RID: Not classified as Dangerous

U.N. Number	Not Required	Proper Shipping Name:	Detergent Solution
Hazard Class:	Non-Hazardous	Marine Pollutant:	No

Section 15: REGULATORY INFORMATION

All components are listed on: EINECS, TSCA, DSL and AICS Inventory.
No components listed under: Clean Air Act Section 112; Clean Water Act 307 & 311

SARA Title III: 2-butoxyethanol is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 as Category N230 – Certain Glycol Ethers.

RCRA Status: Not a hazardous waste CERCLA Status : No components listed

State Right To Know Lists

2-butoxyethanol Illinois, Massachusetts, New Jersey, Pennsylvania, Rhode Island

WHMIS Classification – Category D, subcategory 2B, eye irritant

Name	Toxic Substances List – Schedule 1 – CEPA (Canadian Environmental Protection Act)	NPRI Inventory
2-butoxyethanol	Yes	No

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by Canada's Controlled Products Regulation.

Section 16: OTHER INFORMATION

Questions about the information found on this MSDS should be directed to:
SUNSHINE MAKERS, INC. – TECHNICAL DEPARTMENT
15922 Pacific Coast Hwy. Huntington Beach, CA 92649
Phone: 800/228-0709 [8am-5pm Pacific time, Mon-Fri] *Fax:* 562/592-3830 *Email:* infoweb@simplegreen.com

CAGE CODE 1Z575
GSA/FSS - CONTRACT NO. GS-07F-0065J
Scrubbing Pad GSA/BPA - CONTRACT NO. GS-07F-BSIMP
National Stock Numbers & Industrial Part Numbers:

	Part Number	NSN	Size
Simple Green	13012	7930-01-342-5315	24 oz spray (12/case)
	13005	7930-01-306-8369	1 Gallon (6/case)
	13006	7930-01-342-5316	5 Gallon
	13016	7930-01-342-5317	15 Gallon
	13008	7930-01-342-4145	55 Gallon
	13103	N/A	2oz samples
	13225	N/A	2.5 Gallon
	13275	N/A	275 Gallon tote
	48049	N/A	1 Gallon Conc. w/ 32oz dilution
Scrubbing Pad	10224	7930-01-346-9148	Each (24/case)

Retail Numbers:

Part Number	Size
13002	16 oz Trigger (12/case)
13005	1 Gallon (6/case)
13013	24 oz Trigger (12/case)
13014	67 oz / 2 L (6/case)
13033	32 oz Trigger (12/case)
80007	Tier display holding 13005 (36/Tier)

part number is for both industrial and retail

****International Part Numbers May Differ.**

DISCLAIMER: The information provided with this MSDS is furnished in good faith and without warranty of any kind. Personnel handling this material must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of this material and the safety and health of employees and customers. Sunshine Makers, Inc. assumes no additional liability or responsibility resulting from the use of, or reliance on this information.

Appendix C

Heat Stress and Cold Stress Guidelines

Heat Stress Guidelines

Form	Signs & Symptoms	Care	Prevention[3]
Heat Rash	Tiny red vesicles in affected skin area. If the area is extensive, sweating can be impaired.	Apply mild lotions and cleanse the affected area.	Cool resting and sleeping areas to permit skin to dry between heat exposures.
Heat Cramps	Spasm, muscular pain (cramps) in stomach area and extremities (arms and legs).	Provide replacement fluids with minerals (salt) such as Gatorade.	Adequate salt intake with meals[1]. ACCLIMATIZATION[2]
Heat Exhaustion	Profuse sweating, cool (clammy) moist skin, dizziness, confusion, pale skin color, faint, rapid shallow breathing, headache, weakness, and/or muscle cramps.	Remove from heat, sit or lie down, rest, replace lost water with electrolyte replacement fluids (water, Gatorade) take frequent sips of liquids in amounts greater than required to satisfy thirst.	ACCLIMATIZATION[2] Adequate salt intake with meals[1], only during early part of heat season. Ample water intake, frequently during the day.
Heat Stroke	HOT Dry Skin. Sweating has stopped. Mental confusion, dizziness, nausea, chills, severe headache, collapse, delirium, and/or coma.	HEAT STROKE IS A MEDICAL EMERGENCY • Remove from heat. • COOL THE BODY AS RAPIDLY AS POSSIBLE by immersing in cold (or cool) water, or splash with water and fan. • Call for Emergency Assistance. • Observe for signs of shock.	ACCLIMATIZATION[2] Initially moderate workload in heat (8 to 14 days). Monitor worker's activities.

Footnotes:

1.) American diets are normally high in salt, sufficient to aid acclimatization. However, during the early part of the heat season, (May, June), one extra shake of salt during one to two meals per day may help, so long as this is permitted by your physician. Check with your personal physician.

2.) ACCLIMATIZATION - The process of adapting to heat is indicated by worker's ability to perform hot jobs less fluid loss, lower concentrations of salt loss in sweat, and a reduced core (body) temperature and heart rate.

3.) Method to Achieve Acclimatization - Moderate work or exercise in hot temperatures during early part of heat season. Adequate salt (mineral) and water intake. Gradually increasing work time in hot temperatures. Avoid alcohol. Normally takes 8 to 14 days to achieve acclimatization. Lost rapidly, if removed from strenuous work (or exercise) in hot temperature for more than approximately 5 days.

Cold Stress Guidelines

Stress	Symptoms	What to do
Mild Hypothermia	• Body Temp 98 to 90°F • Shivering • Lack of coordination, stumbling, fumbling hands • Slurred speech • Memory loss • Pale, cold skin	• Move to warm area • Stay active • Remove wet clothes and replace with dry clothes or blankets • Cover the head • Drink warm (not hot) sugary drink

Moderate Hypothermia	• Body temp 90 to 86°F
	• Shivering stops
	• Unable to walk or stand
	• Confused and/or irrational
		• All of the above, plus:
		  ○ Call 911
		  ○ Cover all extremities completely
		  ○ Place very warm objects, such as hot packs on the victim's head, neck, chest, and groin

Severe Hypothermia	• Body temp 86 to 78°F • Severe muscle stiffness • Very sleepy or unconscious • Ice cold skin • Death	• Call 911 • Treat victim very gently • Do not attempt to re-warm
Frostbite	• Cold, tingling, stinging, or aching feeling in the frostbitten area, followed by numbness • Skin color turns red, then purple, then white or very pale skin • Cold to the touch • Blisters in severe cases	• Call 911 • Do not rub the area • Wrap in soft cloth • If help is delayed, immerse in warm (not hot) water
Trench Foot	• Tingling, itching, or burning sensation • Blisters	• Soak feet in warm water, then wrap with dry cloth bandages • Drink a warm (not hot) sugary drink

Appendix D

Forms

GEI Consultants
Geotechnical
Environmental
Water Resources
Ecological

Flow Chart for Accident Reporting

Employee	GEI reports incidents involving GEI personnel or subcontractor personnel including lost time injuries, injuries requiring medical attention, near miss incidents, fires, fatalities, accidents involving the public, and property damage.
Employee	The report is made to the GEI PM verbally within 2 hours of the incident.
PM	The PM **immediately** notifies the CHSO, Human Resources and the Project-Specific National Grid Representative for the incident. In addition the PM will notify the GEI National Grid Client Manager.
CHSO	The CHSO informs the President, COO and Regional Manager of the incident.
Employee	The GEI Accident/Incident Report form is completed by the injured employee and submitted to the CHSO and HR within ***12 hours*** of the incident.
PM with assist from CHSO or RHSO	A ***DRAFT*** Incident Report Form found in the appendix of the HASP is completed and submitted to the Project-Specific National Grid Representative **within 24 hours** of the incident.
RHSO	The GEI Regional Health and Safety Officer initiates an accident investigation within 24 hours of the receipt of the accident report.
RHSO	The accident investigation report is submitted to the CHSO for approval.
CHSO	Incidents are reported to the Operations Committee each month in the H&S report.

GEI Consultants

Daily Safety Briefing Log and Site Visitor Sign-In

Project Number:	**Project Name:**
[1]Date:	**Time:**
Briefing Conducted by:	**Signature:**

This sign-in log documents the tailgate briefing conducted in accordance with the site specific HASP. Personnel who perform work operations on site are required to attend each briefing and to acknowledge receipt of each briefing, daily.

TOPICS COVERED (check all those covered):

- ☐ General PPE Usage
- ☐ Hearing Conservation
- ☐ Respiratory Protection
- ☐ Personal Hygiene
- ☐ Exposure Guidelines
- ☐ Decon Procedures
- ☐ Confined Space
- ☐ Slips, Trips, Falls
- ☐ Heat Stress
- ☐ Cold Stresses
- ☐ Site Control
- ☐ Work Zones
- ☐ Lockout/Tagout
- ☐ Excavation Safety
- ☐ Confined Space
- ☐ Traffic Safety
- ☐ Changes to the HASP
- ☐ Initial Review of Hazard Evaluation
- ☐ Emergency Procedures (include route to hospital)
- ☐ Other (Specify):
- ☐ Other (Specify):

Daily Safety Topic Description:

Personnel Sign-in List

Printed Name	Signature	Company Name	Time-In	Time-Out

[1] This form is applicable for *only* 1 day of site activity.

GEI Consultants

Accident/Incident Report Form

Please complete this form and send it to your Branch Manager, HR and CHSO ***within 24 hours*** of the incident.

SECTION A — ACCIDENT/INCIDENT DETAILS

EMPLOYEE INFORMATION:

Name: _____

Home Address: _____
Street Address City State Zip Code

Contact Information: ( ) _____ ( ) _____
Primary Secondary

Date of Birth: _____

Date of Hire: _____

Branch: _____

Supervisor: _____

OTHER INJURED (IF APPLICABLE):

Name: _____

Home Address: _____
Street Address City State Zip Code

Contact Information: ( ) _____ ( ) _____
Primary Secondary

Date of Birth: _____

Date of Hire: _____

Branch: _____

Supervisor: _____

Date and Time Accident/Incident	Date and Time Reported
____ /____ /____ Month Day Year	____ /____ /____ Month Day Year
____ A.M. ____ P.M.	____ A.M. ____ P.M.

LOCATION OF INCIDENT/ACCIDENT

Project Name: _____

Client and Location: _____

or _____

Office Location: _____

INCIDENT TYPE: (Check All That Applies)

- Personal Injury/Illness
- Vehicle Accident
- Property Damage
- Environmental Spill
- Other

WITNESS INFORMATION

Name: _____

Contact Number: _____

Company: _____

WHAT HAPPENED TO THE INJURED PARTY: ☐First Aid Administered ☐Refused Treatment/Transport ☐Transported to Hospital ☐Returned to Work ☐ Went Home ☐ Went to Physician ☐ Unknown

Clinic/Hospital or Treating Physician: _____ Phone: _____
Name Street Address City State Zip Code

SECTION B — PERSONAL INJURY

Cause of Injury: _____

Part of Body Injured: _____ Multiple Injuries: ☐Y ☐N

Was PPE worn when injured? : ☐Y ☐N What PPE was worn? _____

WAS INJURY A RESULT OF THE USE A MOTOR VEHICLE: ☐ **YES** ☐ **NO** **(If yes, complete Section C)**

GEI Consultants

Accident/Incident Report Form

Please complete this form and send it to your Branch Manager, HR and CHSO ***within 24 hours*** of the incident.

SECTION C — AUTO ACCIDENT ONLY

DRIVER/VEHICLE INFORMATION

Name of Insured: _____

Department: _____

Driver's License Number: _____

DOB: ____/____/____ State: _____

Description of Vehicle: License Plate Number: _____

Make: _____ Model: _____ Year:_____ Color:_____

Owner: _____

Name of Other Driver: _____

Driver's License Number: _____

State: _____

Description of Vehicle: License Plate Number: _____

Make: _____ Model:_____ Year: _____ Color:_____

Insurance Carrier: _____

Policy Number: _____ Ph. Number:_____

SECTION D — PROPERTY DAMAGE OR CHEMICAL RELEASE ONLY

Type of Damage(s): _____

Cause of Damage(s): _____

Type of Chemical Released (if known): _____

Quantity of Chemical Released: _____

Spill Measures Employed: _____

SECTION E — NATURE OF ACCIDENT/INCIDENT AND EXTENT OF INJURIES/DAMAGES

(Please give a detailed description of what happened. Attach a sketch or picture if applicable)

_____

_____

_____

_____

_____

_____

_____

_____

_____

I hereby certify that the above information is true and correct to my understanding of this accident/incident.

_____ _____

Employee/Preparer's Name **Date and Time**

NEAR MISS REPORT

A near miss is a potential hazard or incident that has not resulted in any personal injury. Unsafe working conditions, unsafe employee work habits, improper use of equipment, or use of malfunctioning equipment have the potential to cause work related injuries. It is everyone's responsibility to report and/or correct these potential accidents/incidents immediately. Please complete this form as a means to report these near-miss situations. Send a copy of the completed form to the Project Manager, Regional Health and Safety Officer and the Corporate Health and Safety Officer.

Location: _____ Site Name: _____

Date: _____ Time: _____ ☐ a.m. ☐ p.m.

Weather conditions, site operations taking place during near miss. _____

Please check all appropriate conditions:

☐ Unsafe Act ☐ Unsafe equipment

☐ Unsafe Condition ☐ Unsafe use of equipment

Description of incident or potential hazard: _____

Employees or sub-contractors involved if applicable._____

Employee Signature _____ Date _____

Print Name _____

NEAR MISS INVESTGATION

Description of the near-miss condition: _____
Causes (primary & contributing) _____
Corrective action taken (Remove the hazard, replace, repair, or retrain in the proper procedures for the task) _____
Actions not yet taken_____

Signed: _____ Date Completed: _____

Print Name
Not completed for the following reason: _____Date:_____

GEI Consultants

GEI Health and Safety Manual Acknowledgement form

By checking the box below, I acknowledge that I have reviewed GEI Consultants Inc.'s Health and Safety manual. I understand that I am responsible for knowing and abiding by the policies and provisions contained therein. Violations of the policies can result in disciplinary action which may include discharge.

I further understand that if I have any questions regarding these policies and provisions that I can contact either GEI's Corporate Health and Safety Officer or my Regional Health and Safety Officer.

☐ I acknowledge the review of GEI Consultants Inc.'s Health and Safety manual.

Review of GEI Health and Safety SOPs

By checking the box below, I acknowledge that I have reviewed GEI Consultants, Inc.'s Health and Safety standard operating procedures (SOPs) and will abide by these policies. Violations of the policies can result in disciplinary action which may include discharge.

I further understand that if I have any questions regarding these SOPs that I can contact either GEI's Corporate Health and Safety Officer or my Regional Health and Safety Officer.

☐ I acknowledge that I have reviewed GEI's Health and Safety SOPs.

Name: _____

Date: _____

Appendix E

GEI's Health and Safety SOPs

Applicable GEI H&S SOPs *(check all that apply)*				
☒ Biological Hazards – 001		☐ Ladders -011		☐ Mobile Equipment – 021
☐ Bloodborne Pathogens – 002		☒ Noise Exposure -012		☐ Aquatic Ecological Survey & Electrofishing -022
☒ Container Management – 003		☐ Nuclear Density Gauge Operation -013		☐ Scaffolding - 023
☐ Driver Safety -004		☒ Utility Markout-014		☐ Wilderness Safety - 024
☐ Electrical Safety Lock Out Tag Out -005		☐ Respirator Fit Test Procedure-015		☒ Manual Lifting – 025
☐ Excavation Trenching - 006		☒ Traffic Hazards -016		☐ Hazard Identification - 026
☒ Non-Powered Hand Tools -008a		☐ Water Safety – 017		☐ Confined Space Entry for Sanitary Sewers – 027
☐ Powered Hand Tools – 008b		☒ Working Around Heavy Equipment – 018		☐ Safe Trailer Use – 028
☐ Hazardous Substances Management -009		☐ Rail Safety -019		☒ COVID-19 Field Work Guidance
☒ Inclement Weather – 010		☐ Aerial Lift – 020		

STANDARD OPERATING PROCEDURES

SOP No. HS-001 Biological Hazards

1.1 Objective

The objective of this Standard Operating Procedure (SOP) is to prevent or limit the potential for GEI personnel to encounter biological hazards during field activities.

1.2 General

This SOP is intended for use by employees engaged in work with the potential for contact with biological hazards such as animals, insects, plants, and sewage. The site-specific health and safety plan (HASP) should include a hazard assessment for the project that identifies the potential for encounters with biological hazards and the control methods to be implemented by GEI employees. These hazards must be reviewed in the project safety briefing and documented on the Project Safety Briefing form, found on the Safety page of the GEI intranet.

1.3 Mammals

During some site operations, animals such as stray or domesticated dogs or cats, raccoons, snakes, bears, rats, bats, etc. may be encountered. Employees should use discretion and attempt to avoid contact with animals. If these animals present a problem, efforts will be made to remove these animals from the site by contacting a licensed animal control technician.

1.3.1 Rabies

The rabies virus is transmitted through the bite of an infected animal or contact with saliva or brain/nervous system tissue of an infected animal. The rabies virus infects the central nervous system, causing disease in the brain. The early symptoms of rabies in people are fever, headache, and general weakness or discomfort. As the disease progresses, more specific symptoms appear and may include insomnia, anxiety, confusion, slight or partial paralysis, excitation, hallucinations, agitation, hypersalivation (increase in saliva), difficulty swallowing, and hydrophobia (fear of water). Death usually occurs within days of the onset of these symptoms.

If you are bitten or think you may be exposed, wash any wounds immediately and thoroughly with soap and water. Then go to the hospital emergency room and notify the Project Manager and the People Safety Team. The doctor, possibly in consultation with the state or local health department, will decide if you need a rabies vaccination. Decisions to start series of vaccinations will be based on your type of exposure and the animal you were exposed to, as well as laboratory and surveillance information for the geographic area where the exposure occurred. If possible have someone document what type of animal it was, how it was behaving prior to the bite, what caused it to bite the

employee, and if it's not a domestic animal that would be easy to find again in the future, try to get animal control on site to capture it. An Incident Report Form must be completed and submitted, per GEI's Incident reporting procedures. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

1.4 Insects and Arachnids

Insects, including bees, wasps, hornets, mosquitoes, ticks, spiders, etc., may be present at a job site making the chance of a bite/sting possible. Some individuals may have a severe allergic reaction to an insect bite or sting that can result in a life-threatening condition. Some insect bites can transmit diseases such as Lyme disease or a virus such as West Nile. The following is a list of preventive measures:

- Apply insect repellent prior to performing field work and as often as needed throughout the work shift.
- Wear proper personal protective equipment (PPE), including protective clothing (work boots, socks, and light colored clothing).
- Wear shoes, long pants with bottoms tucked into boots or socks, and a long-sleeved shirt when outdoors for long periods of time, or when many insects are most active (between dawn and dusk).
- When walking in wooded areas, avoid contact with bushes, tall grass, or brush as much as possible.
- Field personnel who have or may have insect allergies must have insect allergy medication onsite and must inform the Site Safety Officer (SSO) and the People and Safety Team of their particular allergy prior to commencing work.
- Field personnel should perform a self-check at the end of the day for ticks.

1.4.1 Tick-borne Diseases

Lyme Disease

Lyme disease is caused by infection from a deer tick that carries a spirochete (a bacterium). During the painless tick bite, the spirochete may be transmitted into the bloodstream, often after feeding on the host for 12 to 24 hours. The ticks that cause the disease are often no bigger than a poppy seed or a comma in newsprint. The peak months for human infection are from May to September.

Symptoms appear in three stages. First symptoms usually appear from 2 days to a few weeks after a person is bitten by an infected tick. Symptoms usually consist of a ring-like red rash on the skin where the tick was attached. The rash is often bulls-eye like with red around the edges and clear in the center. The rash may be warm, itchy, tender, and/or "doughy." This rash appears in only 60 to 80 percent of infected persons. An infected

person also has flu-like symptoms of a stiff neck, chills, fever, sore throat, headache, fatigue, and joint pain. These symptoms often disappear after a few weeks.

The second stage symptoms, which occur weeks to months later include meningitis, severe headache, drooping of the muscles on the face, called Bell's Palsy, encephalitis, numbness, withdrawal, and lethargy. These symptoms may last for several weeks to several months. Third stage symptoms, which occur months or years later include arthritis, heart problems, and loss of memory. The third stage symptoms may mimic multiple sclerosis and Alzheimer's disease.

When in areas that could harbor deer ticks, employees should wear light color clothing, and visually check themselves and check and be checked by another employee when coming from wooded or vegetated areas. If a GEI employee has a tick bite, the People and Safety Team and Project Manager must be contacted immediately. The employee will be offered the option for medical treatment by a physician, which typically involves antibiotics. An Incident Report form must be completed in compliance with the Incident Reporting procedures. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

If personnel feel sick or have signs similar to those mentioned above, the SSO and the People and Safety Team must be notified immediately.

Figure 1: From left to right, the deer tick adult female, adult male, nymph, and larva on a centimeter scale.

How to Remove a Tick

A tick can be removed from the skin by pulling gently at the head with tweezers. If tweezers are not available, use tissue paper or cloth to grasp the tick. It is important to grasp the tick as close to the site of attachment and use a firm steady pull to remove it. Wash hands immediately after with soap and water. The affected area should also be washed with soap and water, then disinfected with an antiseptic wipe, if available. All mouth parts must be removed from the skin. If the tick was removed by breaking off the

mouth parts, an irritation or infection may occur because the organism that is causing the disease can still enter the body through the skin.

Treatment for Lyme Disease

Treatment with antibiotics is effective and recovery is usually complete. For first stage symptoms, antibiotics are usually given orally. However, treatment for second and third stage symptoms is prolonged and recovery may take longer. Antibiotic treatment is usually provided intravenously for second and third stage Lyme disease.

Babesiosis

The deer tick can also cause Babesiosis, an infection of the parasite Babesia Microti. Symptoms of Baesiosis may not be evident, but may also include fever, fatigue and hemolytic anemia lasting from several days to several months. Babesiosis is most commonly diagnosed in the elderly or in individuals whose immune systems are compromised. If there are no signs or symptoms of Babesiosis, usually no treatment it needed. If an employee believes they might have Babesiosis they'll see a physician to be tested. Treatment usually consists of taking prescription medications for 7 to 10 days.

Ehrlichiosis

Ehrlichiosis is a tick-borne disease which can be caused by either of two different organisms. Human monocytic ehrlichiosis (HME) is caused by *Ehrlichia chaffeensis*, which is transmitted by the lone star tick (*Amblyomma americanum*). Human granulocytic anaplasmosis (HGA), previously known as human granulocytic ehrlichiosis (HGE), is caused by *Anaplasma phagocytophilia*, which is transmitted by the deer tick (*Ixodes scapularis*).

Ehrlichiosis is transmitted by the bite of infected ticks, including the deer tick and the lone star tick. The symptoms of HME and HGE are the same and usually include fever, muscle aches, weakness and headache. Patients may also experience confusion, nausea, vomiting and joint pain. Unlike Lyme disease or Rocky Mountain spotted fever, a rash is not common. Infection usually produces mild to moderately severe illness, with high fever and headache, but may occasionally be life-threatening or even fatal. Symptoms appear 1 to 3 weeks after the bite of an infected tick. However, not every exposure results in infection. For those that become infected a drug called Doxcycline will be prescribed.

Rocky Mountain Spotted Fever

Rocky Mountain spotted fever is a tick-borne disease caused by a rickettsia (a microbe that differs somewhat from bacteria and virus). In the eastern United States, children are infected most frequently, while in the western United States, disease incidence is highest among adult males. Disease incidence is directly related to exposure to tick-infested habitats or to infested pets. Rocky Mountain spotted fever is characterized by a sudden onset of moderate to high fever (which can last for 2-3 weeks), severe headache, fatigue, deep muscle pain, chills and rash. The rash begins on the legs or arms, may include the

soles of the feet or palms of the hands and may spread rapidly to the trunk or rest of the body. Symptoms usually appear within 2 weeks of the bite of an infected tick. Like Ehrlichiosis the prescription drug Doxcycline is the first line treatment option.

1.4.2 Mosquito-Borne Disease

West Nile Virus
West Nile Virus is a mosquito-borne infection transmitted through the bite of an infected mosquito. The symptoms of West Nile Virus can be asymptomatic (no symptoms) or in more serious cases can lead to West Nile Fever. West Nile Fever can include fever, headache, tiredness, body ache, an occasional rash on the trunk of the body, and swollen lymph glands, In severe cases, people have developed West Nile Encephalitis or Meningitis which symptoms include fever, headache, neck stiffness, tremors, coma, and in some cases death. The incubation period for the disease is usually 2 to 15 days. The symptoms can range from a few days to several weeks. Most mosquitoes are not infected and the chance of infection from a mosquito bite of an on-site employee is very small.

1.5 Repellants

The following precautions will be used to help reduce the risk of mosquito bites:

Reduce mosquito-breeding areas by making sure wheelbarrows, buckets, and other containers are turned upside down when not used so that they do not collect standing water. According to the Environmental Protection Agency (EPA), many mosquitoes can breed in pooled water that's minimal enough to fill a bottle cap.

Wear shoes, long pants with bottoms tucked into boots or socks, and a long-sleeved shirt when outdoors for long periods of time, or when many mosquitoes are most active (between dawn and dusk).

Use mosquito repellant according to the manufacturer's directions when outdoors for long periods of time and when mosquitoes are most active.

Centers for Disease Control and Prevention (CDC) evaluation of information contained in peer-reviewed scientific literature and data available from the EPA has identified several EPA-registered products that provide repellent activity sufficient to help people avoid the bites of disease carrying mosquitoes. Products containing these active ingredients typically provide reasonably long-lasting protection:

- **DEET** (Chemical Name: N,N-diethyl-m-toluamide or N,N-diethly-3-methyl-benzamide)
- **Picaridin** (KBR 3023, Chemical Name: 2-(2-hydroxyethyl)-1-piperidinecarboxylic acid 1-methylpropyl ester)

- **Oil of Lemon Eucalyptus** or **PMD** (Chemical Name: para-Menthane-3,8-diol) the synthesized version of oil of lemon eucalyptus
- **IR3535** (Chemical Name: 3-[N-Butyl-N-acetyl]-aminopropionic acid, ethyl ester)
- **Permethrin** (3-Phenoxybenzyl (1RS)-cis,trans-3-(2,2-dichlorovinyl) -2,2-dimethylcyclopropanecarboxylate) **–** Permethrin kills ticks and can be used on clothing (but not skin)

The EPA characterizes the active ingredients DEET and Picaridin as "conventional repellents" and Oil of Lemon Eucalyptus, PMD, and IR3535 as "biopesticide repellents", which are derived from natural materials.

In general, higher concentrations of active ingredient provide longer duration of protection, regardless of the active ingredient, although concentrations above approximately 50 percent do not offer a marked increase in protection time. Products with less than 10 percent active ingredient may offer only limited protection, often from 1 to 2 hours. Products that offer sustained release or controlled release (micro-encapsulated) formulations, even with lower active ingredient concentrations, may provide longer protection times. Regardless of what product you use, if you start to get mosquito bites reapply the repellent according to the label instructions or remove yourself from the area with biting insects if possible.

Clothing and other products can be purchased pre-treated, or products can be treated using EPA-registered products. Permethrin is the only pesticide approved by the EPA for these uses. Permethrin binds tightly to the fabrics, resulting in little loss during washing and minimal transfer to the skin. Permethrin is poorly absorbed through the skin, although sunscreens and other products may increase the rate of skin absorption.

If you decide to use permethrin-treated clothing, consider these tips:

- Read the application instructions carefully and apply the product according to the label directions. Do not over-treat products.
- Permethrin treatments are only intended for use on fabrics; do not apply them directly to the skin or other items.
- Do not apply permethrin to clothing while it is being worn.
- Apply the product to clothing outdoors in well ventilated areas that are protected from wind.
- Hang treated fabrics outdoors and allow them to dry completely before wearing them.
- Wash permethrin treated clothing separately from other clothing items.

1.6 Poisonous Plants

The potential for contact with poisonous plants, such as poison ivy, oak, and sumac exists when performing fieldwork in wooded or boggy areas. Urushiol, an oily organic allergen found in plants, can cause an allergic reaction when in contact with the leaves or vines.

Poison ivy can be found as vines on tree trunks or as upright bushes. Poison ivy consists of three leaflets with notched edges. Two leaflets form a pair on opposite sides of the stalk, and the third leaflet stands by itself at the tip. Poison ivy is red in the early spring and turns shiny green later in the spring. Poison ivy grows throughout much of North America, including all states east of the Rocky Mountains. It is normally found in wooded areas, especially along edge areas where the tree line breaks and allows sunshine to filter through. It also grows in exposed rocky areas, open fields, and disturbed areas.

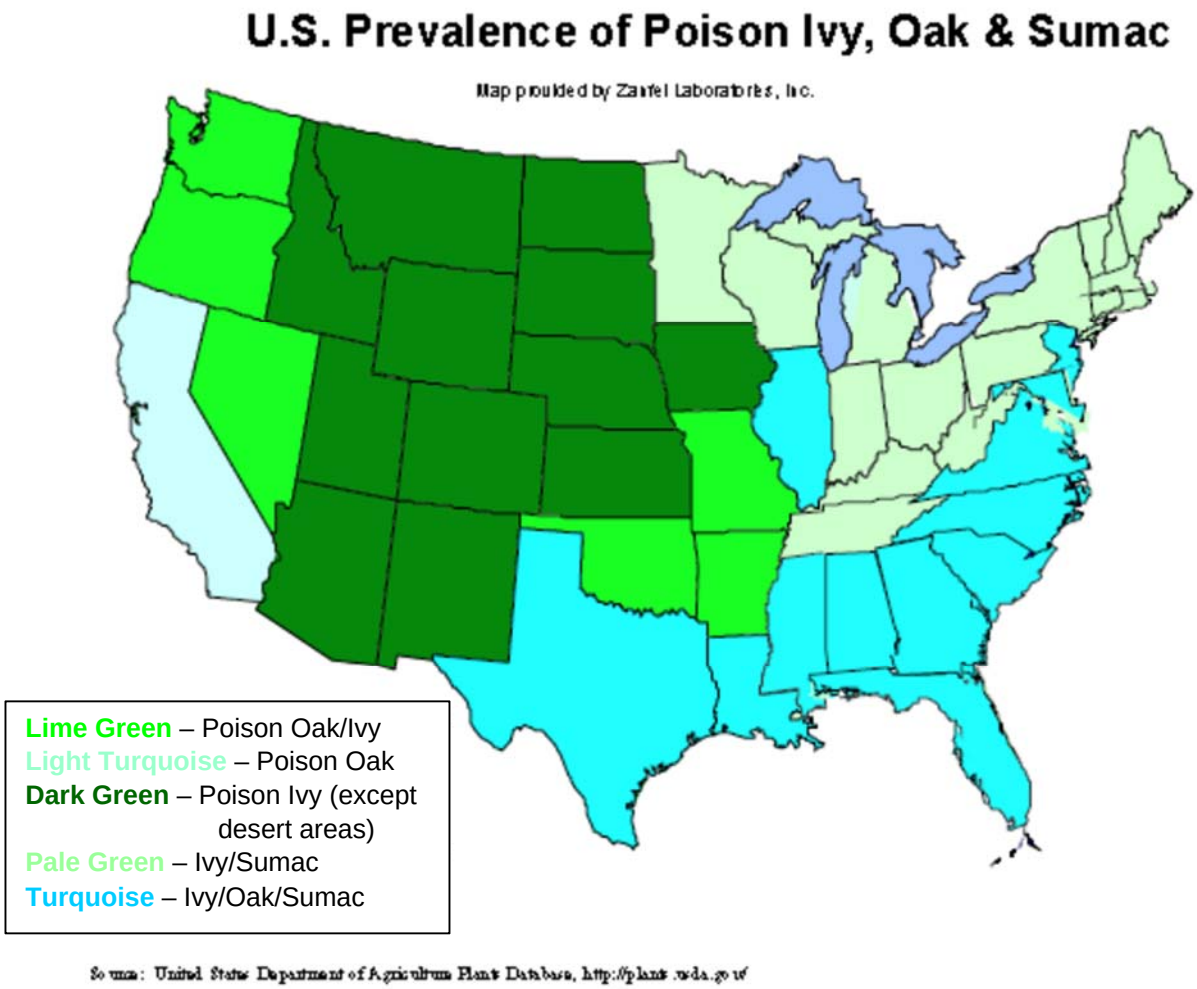
Poison oak can be present as a sparsely-branched shrub. Poison oak can grow anywhere in the United States with the exception of Hawaii, Alaska, and some southwest areas that have desert climates. Poison oak is similar to poison ivy in that it has the same leaflet configuration; however, the leaves have slightly deeper notches.

Poison sumac can be present in the form of a flat-topped shrub or tree. It has fern-like leaves, which are velvety dark green on top and pale underneath. The branches of immature trees have a velvety “down.” Poison sumac has white, “hairy” berry clusters. Poison sumac grows exclusively in very wet or flooded soils, usually in swamps and peat bogs, in the eastern United States.

Poison Ivy

Poison Oak

Poison Sumac



To prevent exposure to these poisonous plants:

- Wear proper PPE, including long sleeves, long pants, boots, and gloves.
- Barrier skin creams, such as lotion containing bentoquatum (Tecnu®), may offer some protection prevent the occurrence of exposure symptoms.
- Contact with poison ivy, sumac, or oak may lead to a skin rash, characterized by reddened, itchy, blistering skin which needs first aid treatment. Employees with known allergies should identify themselves to the SSO or Project Manager prior to starting field work as a precautionary measure. If you believe you have contacted one of these plants:
    - Immediately wash skin thoroughly with soap and water, taking care not to touch your face or other body parts.
    - Contact the People and Safety Team and Project Manager immediately after caring for affected skin.

  - Wash exposed clothing separately in hot water with detergent.

- After use, clean tools, and soles of boots with rubbing alcohol or soap and lots of water. Urushiol can remain active on the surface of objects for up to 5 years.
- If a rash occurs, contact the People and Safety Team and complete and submit an Incident Report Form. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

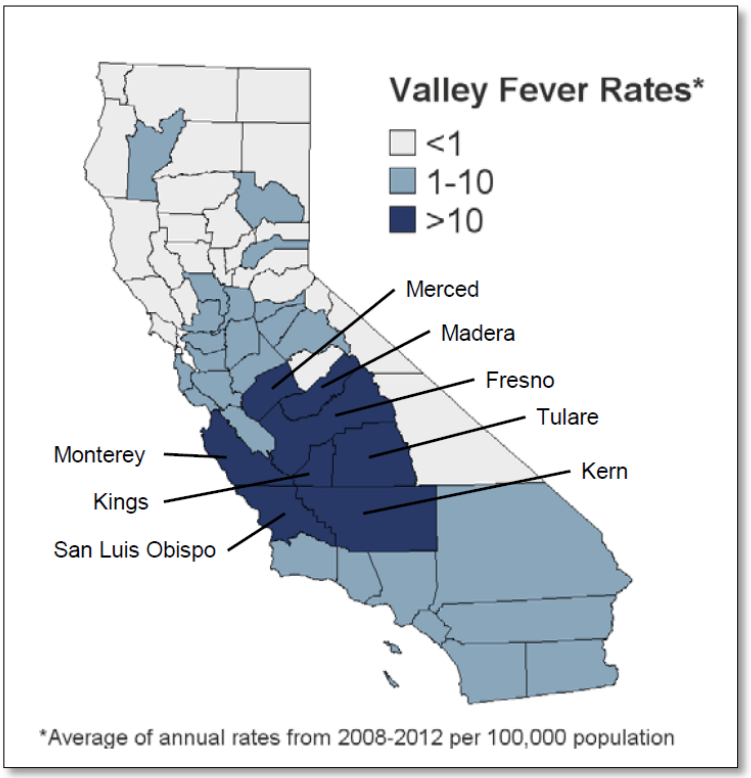
1.7 Sewage and Bacterial Impacted Sediments

Some project work may be conducted at sites that serve or have served as a combined sewer overflow and consequently may have received untreated sanitary sewage from numerous sources. Decomposed sewage can potentially be encountered within sites and their sediments. Sediments could contain soil and marine microorganisms, and bacterium associated with sewage. Many of these bacterium can cause illness through ingestion, direct contact, or the inhalation of a bio-aerosol possibly in the form of dust. Potential respiratory exposure to biological agents can also occur through the inhalation of aerosols produced during sediment handling activities. PPE as identified in the site-specific HASP will be worn to minimize potential exposures. Employees will follow the decontamination or disposal procedures identified in the HASP.

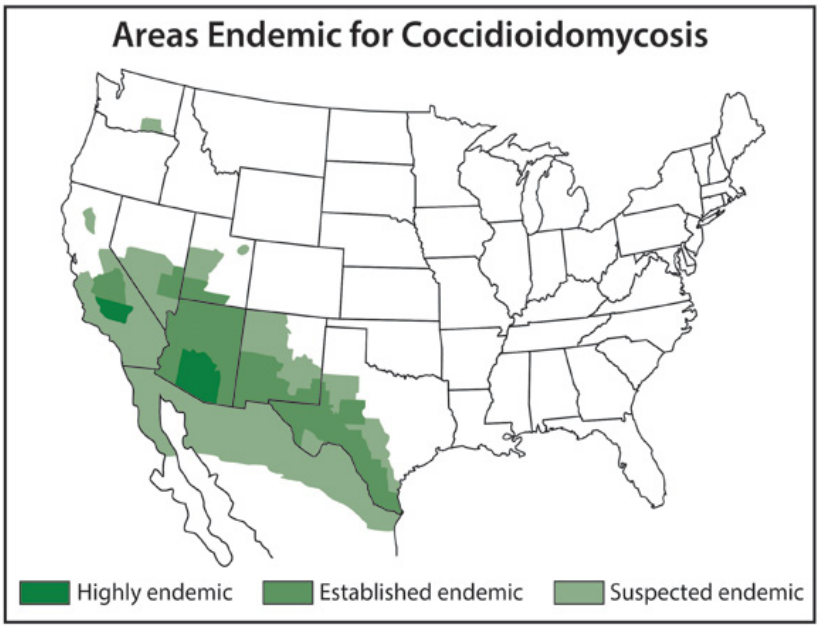
1.7.1 Fungal Spores in Soil – Valley Fever

Valley Fever is an illness that usually affects the lungs. It is caused by the fungus *Coccidioides immitis* that lives in the top 2 to 12 inches of soil in many parts of California. When fungal spores are present, any work activity that disturbs the soil, such as digging, grading, or other earth moving operations, or vehicle operation on dirt roads, can cause the spores to become airborne, therefore increasing the risk of Valley Fever. All employees on sites where the fungus is present, and who are exposed to dusty conditions and wind-blown dusts are at increased risk of becoming infected.

Valley Fever fungal spores are too small to be seen, and there is no reliable way to test the soil for spores before working in a particular place. Valley Fever can be found throughout the southwestern United States, parts of Mexico, and South America. Some California counties consistently have Valley Fever fungus present in the soil. In these regions Valley Fever is considered endemic. Health departments track the number of cases of Valley Fever illness that occur. This information is used to map illness rates as seen on the figures below from the Center of Disease Control Valley Fever Awareness website.



Rates of reported Valley Fever cases in California counties from 2008–2012. Darkest colored counties had the highest rates of Valley Fever.



When present, symptoms usually occur between 7 to 21 days after breathing in spores, and can include:

- Cough
- Fever
- Chest pain
- Headache
- Muscle aches
- Rash on upper trunk or extremities
- Joint pain in the knees or ankles
- Fatigue

Symptoms of Valley Fever can be mistaken for other diseases such as the flu (influenza) and TB (tuberculosis), so it is important for employees to obtain medical care for an accurate diagnosis and possible treatment.

While there is no vaccine to prevent Valley Fever, the following important steps must be taken in order to limit risk:

- Determine if the worksite is in an endemic area. Contact the local health department for more information about the risk in the county GEI is performing work that may disturb soils.
- Prepare work plans and work practices that reduce employee's exposure, which may include:
    - Provide air conditioned cabs with properly maintained dust filters for vehicles that generate heavy dust and make sure employees keep windows and vents closed.
    - Suspend work during heavy winds.
- When exposure to dust is unavoidable, National Institute for Occupational Safety and Health (NIOSH)-approved respiratory protection with particulate filters rated as N95, N99, N100, P100, or High Efficiency Particulate Air (HEPA) must be provided. The Project Manager must work with the Safety Team to develop and implement a respiratory protection program in accordance with California's Occupational Safety and Health Administration (Cal/OSHA's) Respiratory Protection standard (8 CCR 5144) for the project.
- Take measures to reduce transporting spores offsite, such as:
    - Clean tools, equipment, PPE, and vehicles before transporting offsite.
    - If employee's clothing is likely to be heavily contaminated with dust, provide coveralls and change rooms, and showers where possible.

1.8 Injury Reporting

If a GEI employee suffers an injury, bite, or sting on the job that is not life threating, call Medcor Triage at 1-800-775-5866 to speak with a medical professional. Then, immediately report the injury to the Supervisor/Project Manager and Regional Safety Officer.

After verbal notification has been made, an Incident Report Form is to be completed by the employee and/or Supervisor/Project Manager and submitted to the People & Safety Team immediately following care of the incident. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

Upon notification from a Branch or Office Manager, Human Resources, and/or the receipt of the Incident Report Form, the Regional Health & Safety Officer (RHSO) will conduct an investigation and evaluation on what happened and how and why it happened. The Corporate Health and Safety Officer (CHSO) will then recommend (as necessary) engineering controls, personal protection equipment, training or other appropriate measures to minimize the potential for future injuries. The CHSO/RHSO may develop educational information based on lessons learned for distribution to GEI employees.

1.9 Limitations

Follow safety procedures as defined in the site-specific HASP. Appropriate PPE must be worn correctly to provide the intended level of protection.

1.10 References

http://www.cdc.gov/ncidod/dvbid/westnile/index.htm
http://www.cdc.gov/ncidod/dvbid/westnile/qa/insect_repellent.htm
http://www.epa.gov/pesticides/health/mosquitoes/insectrp.htm
http://www.cdc.gov/niosh/topics/lyme/
Protecting Yourself from Ticks and Mosquitoes, NIOSH Fast Facts, Publication No. 2010-119
http://npic.orst.edu/pest/mosquito/ptc.html
http://www.cdc.gov/features/valley-fever-10-things/
https://www.cdph.ca.gov/HealthInfo/discond/Documents/VFGeneral.pdf
https://blog.epa.gov/blog/tag/mosquitoes/

1.11 Attachments

None

1.12 Contact

Health&SafetyTeam@geiconsultants.com

1.13 Review History

- June 2016
- June 2014
- November 2013
- October 2010

STANDARD OPERATING PROCEDURES

SOP NO. HS-003 Container Management

1.1 Objective

This Standard Operating Procedure (SOP) has been developed to minimize the potential for injuries to GEI employees performing container and drum handling and sampling, through proper use of engineering and administrative controls, personal protective equipment (PPE), and education.

1.2 General

This SOP is intended for use by employees engaged in work with the management of containers that may contain hazardous substances or contaminated media. The site-specific health and safety plan (HASP) should include a hazard assessment and control methods to be implemented by GEI employees. These hazards should be reviewed in the project safety briefing and documented on the Project Safety Briefing form, found on the Safety page of the GEI intranet.

Hazardous substances and contaminated media will be handled, transported, labeled, and disposed of in accordance with this paragraph. Drums and containers will meet the appropriate United States Department of Transportation (DOT), Occupational Safety and Health Administration (OSHA), and Environmental Protection Agency (EPA) regulations for the wastes that they contain.

Site operations will be organized to minimize the amount of drum or container movement. Prior to movement of drums or containers, employees exposed to the transfer operation will be notified of the potential hazards associated with the contents of the drums or containers. Unlabeled drums and containers will be considered to contain hazardous substances and handled accordingly until the contents are positively identified and labeled.

Fire extinguishing equipment meeting the requirements of 29 CFR Part 1910, Subpart L, shall be on hand and ready for use to control incipient fires.

DOT specified salvage drums or containers and suitable quantities of proper absorbent will be kept available and used in areas where spills, leaks, or ruptures may occur. Where spills may occur, a spill containment program, which may be part of the HASP, will be implemented to contain and isolate the entire volume of the hazardous substance being transferred.

1.3 Opening Drums and Containers

The following procedures will be followed in areas where drums or containers are being opened:

- Employees not actually involved in opening drums or containers will be kept a safe distance from the drums or containers being opened.
- If employees must work near or adjacent to drums or containers being opened, a suitable shield that does not interfere with the work operation will be placed between the employee and the drums or containers being opened to protect the employee in case of accidental release.
- GEI employees will not handle or attempt to open bulging containers. Employees will not stand upon or work from drums or containers. GEI will contract with a hazardous waste company to handle, manage, and dispose of a bulging drum.

1.4 Material Handling Equipment

Several types of equipment can be used to move drums: (1) a drum grappler attached to a hydraulic excavator; (2) a small front-end loader, which can be either loaded manually or equipped with a bucket sling; (3) a rough terrain forklift; (4) a roller conveyor equipped with solid rollers; and (5) drum carts designed specifically for drum handling. GEI employees will not operate heavy equipment to move drums. This will be handled by an authorized subcontractor.

The following procedures can be used to maximize worker safety during drum handling and movement:

- Train personnel in proper lifting and moving techniques to prevent back injuries.
- Make sure the vehicle selected has sufficient rated load capacity to handle the anticipated loads, and make sure the vehicle can operate smoothly on the available road surface.
- Air condition the cabs of vehicles to increase operator efficiency; protect the operator with heavy splash shields.
- Supply operators with appropriate respiratory PPE when needed. Normally either a combination SCBA/SAR with the air tank fastened to the vehicle, or an airline respirator, and an escape SCBA are used because of the high potential hazards of drum handling. This improves operator efficiency and provides protection in case the operator must abandon the equipment.
- Have overpacks ready before any attempt is made to move drums.
- Before moving anything, determine the most appropriate sequence in which the various drums and other containers should be moved. For example, small

containers may have to be removed first to permit heavy equipment to enter and move the drums.

- Exercise extreme caution in handling drums that are not intact and tightly sealed.

- Ensure that operators have a clear view of the roadway when carrying drums. Where necessary, have ground workers available to guide the operator's motion.

1.5 Leaking, Open, and Deteriorated Drums

If a drum containing a liquid cannot be moved without rupture, immediately transfer its contents to a sound drum using a pump designed for transferring that liquid. Contract an approved vendor to immediately use an over pack container if the:

- Leaking drum contains sludge or semi-solids;

- Open drum contains liquid or solid waste;

- Deteriorated drum can be moved without rupture.

1.6 Radioactive Wastes

GEI does not routinely handle or manage radioactive waste. If required to do so for a project, procedures will be approved by the Corporate Health and Safety Officer (CHSO) and Regional Health and Safety Officer (RHSO).

1.7 Shock-Sensitive Wastes

GEI employees will not handle shock-sensitive waste. Shock-sensitive waste or chemicals may explode with friction, movement or heat. Some chemicals are shock-sensitive by nature-, others become shock-sensitive through drying, decomposition, or slow reactions with oxygen, nitrogen, or the container. Some chemicals that are, or can, become shock-sensitive will have that hazard noted in the safety data sheet (SDS).

- Drums and containers containing packaged laboratory wastes will be considered to contain shock-sensitive or explosive materials until they have been characterized. *Caution: Shipping of shock-sensitive wastes may be prohibited under U.S. Department of Transportation regulations. Shippers will refer to 49 CFR 173.21 and 173.50.*

1.8 Laboratory Waste Packs

It is unlikely that GEI employees work in an environment where laboratory waste packs are used. However if one is found, do not handle or open it. Complete the incident reporting form to identify finding the pack and then work with the Project Manager to find the appropriate means of disposal.

1.9 Sampling of Drum and Container Contents

Sampling of containers and drums will be done in accordance with a site-specific sampling plan that will be developed in conjunction with a site-specific HASP.

1.10 Staging Areas

Drums and containers will be identified and classified prior to packaging for shipment. Drum or container staging areas will be kept to a minimum number as approved by the client to safely identify and classify materials and prepare them for transport. Staging areas will be provided with adequate access and egress routes. Bulking of hazardous wastes will be permitted only after a thorough characterization of the materials has been completed and approved by the Client. GEI employees will not sign manifests unless a written authorization agreement is in place with the Client.

1.11 Shipment and Training

Shipment of materials to off-site treatment, storage, or disposal facilities involves the entry of waste hauling vehicles into the site. U.S. Department of Transportation (DOT) regulations (49 CFR Parts 171-178) and EPA regulations (40 CFR Part 263) for shipment of wastes must be complied with. Employees managing hazardous waste on behalf of a client must complete annual RCRA training and triannual DOT hazardous materials training. Training must be current and a manifest agreement with the client must be in place before employees can sign hazardous waste manifests on behalf of a client.

1.12 Tank and Vault Procedures

GEI employees do not routinely sample vaults and tanks. Entry procedures will be coordinated and approved by the CHSO and RHSO.

1.13 Injury Reporting

If a GEI employee suffers an injury on the job that is not life threating, call Medcor Triage at 1-800-775-5866 to speak with a medical professional. Then, immediately report the injury to the Supervisor/Project Manager and Regional Health & Safety Officer (RHSO).

After verbal notification has been made, an Incident Report Form is to be completed by the employee and/or Supervisor/Project Manager and submitted to the People & Safety Team immediately following care of the incident. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

Upon notification from a Branch or Office Manager, Human Resources, and/or the receipt of the Incident Report Form, the RHSO will conduct an investigation and evaluation on what happened and how and why it happened. The Corporate Health & Safety Officer (CHSO) will then recommend (as necessary) engineering controls, personal protection equipment, training or other appropriate measures to minimize the

potential for future injuries. The CHSO/RHSO may develop educational information based on lessons learned for distribution to GEI employees.

1.14 Limitations

Follow safety procedures as defined in the site-specific HASP. Appropriate PPE must be worn correctly to provide the intended level of protection and appropriate training must be current

1.15 References

OSHA 1910.120 Hazardous Waste Operations and Emergency Response (j) Handling of Drums and Containers

1.16 Attachment

None.

1.17 Contact

Health&SafetyTeam@geiconsultants.com

1.18 Review History

- June 2016
- May 2014
- November 2013
- October 2011
- Initial Version Date Unknown

STANDARD OPERATING PROCEDURE
HS-004 Driver Safety

1.1 Objective

GEI has implemented a Safe Driving Program to encourage safe driving habits and promote the ongoing safety of our staff and the communities where we work. For more information, refer to the Operation of Vehicles section of GEI's Employee Handbook.

This Standard Operating Procedure (SOP) provides requirements and recommendations to minimize the potential risks while operating or riding in a motor vehicle.

1.2 General

GEI employees will adhere to the following requirements when operating a vehicle while conducting business on behalf of GEI. These requirements apply to GEI-owned, rental, and personal vehicles used to conduct GEI business:

- Employees must maintain a valid and current driver's license.
- Employees using a personal vehicle for work-related travel must have proper insurance coverage that meets the requirements in the state in which they reside.
- Employees must wear their safety belt while in a moving vehicle.
- Vehicle incidents will be reported in accordance with GEI's Incident Reporting procedures (*refer to* GEI's Safety App for smart phones or the Safety page on the GEI intranet.).
- Vehicles will be properly maintained and safely operated (*refer to* GEI's Fleet Maintenance Program).
- Employees will follow safe driving behaviors, which include limiting distractions such as manipulating radios or other equipment that may cause a distraction. Employees should not exceed the posted speed limit and should maintain a safe distance between other vehicles.
- When parking a vehicle at a job site, the employee should position the vehicle in a manner which reduces or eliminates the need to operate the vehicle in reverse. It is recommended, a safety cone should be placed at the rear of the vehicle after parking the vehicle and be removed prior to moving the vehicle. This precautionary measure makes the employee aware of other vehicles, equipment, and structures within the backup radius of the vehicle.

When driving an unfamiliar vehicle (rental or GEI-owned), it is the driver's responsibility to orient themselves to the vehicle by:

- Walking around the vehicle to observe the condition of the vehicle and hazards that could be within the travel path.
- Becoming familiar with the size of the vehicle.
- Note if the vehicle has anti-lock braking system (ABS[1]).
- Adjusting mirrors (rear and side).
- Adjust seats to be situated as far back as safely practical, away from the air bag, located in the steering wheel.
- Becoming familiar with dashboard, center console, and steering controls.
- Locating the turn signals, windshield wipers, lights, emergency flashers, and the heating, air conditioning, and defrost controls.

1.3 Driving Defensively

Driving defensively means not only taking responsibility for oneself and actions but also keeping an eye on "the other guy." Good defensive drivers may be able to anticipate what the other driver will do next. GEI recommends the following guidelines to help reduce risks while driving:

- Do not start the vehicle until each passenger and any belongings are secured in the vehicle.
- Remember that driving above or below the speed limit can increase the likelihood of a collision.
- Be aware of impaired drivers; if a car is straddling the center line, weaving, making wide turns, stopping abruptly, or responding slowly to traffic signals, the driver may be impaired or using a cellular telephone. Avoid an impaired driver by turning right at the nearest corner or exiting at the nearest exit.
    - If it appears that an oncoming car is crossing into your lane, pull over to the roadside, sound the horn, and flash the headlights.
    - If an unsafe or suspicious driver is observed, notify the police.
- Follow the rules of the road. Do not contest the "right of way" or try to race another car during a merge. Always be respectful of other motorists.

[1] ABS is a mechanism that allows the wheels on a vehicle to maintain contact with the surface of the road, based on inputs from the driver (braking), to prevent the wheels from locking up (ceasing rotation) and to avoid an uncontrolled skid.

- Allow large vehicles, including tractor trailers, extra breaking distance, turning radius, and avoid traveling in the other driver's blind spots.
- Do not follow too closely. GEI employees should use a minimum of "3-second following distance."
- While driving, be cautious, aware, and responsible.
- Use extra caution, observe road signs, and reduce speed in construction areas and school zones.
- Always be aware of pedestrians, bicyclists, and motorcyclists.

1.4 Cellular Phone Use and Other Distractions

Refer to the *Portable Communication Device Use While Driving* section of the GEI Employee Handbook for GEI's policy on the use of cellular telephones while operating a vehicle.

1.5 Drugs and Alcohol

The use of illegal drugs or alcohol is prohibited when driving a vehicle on GEI business. Be aware of the side effects of prescription and over-the-counter medications which can impair an employee's ability to drive.

1.6 Adverse Driving Conditions

When operating a vehicle, its possible adverse driving conditions may be encountered. Below is a list of possible conditions and how they can be mitigated.

1.6.1 Driving at Night

Vision maybe limited at night due to impairment of the driver's depth perception, color recognition, and peripheral vision. Another factor adding danger to night or early morning driving is fatigue. Drowsiness makes driving more difficult by dulling concentration and slowing reaction time. Effective measures to minimize these hazards by preparing the car and following guidelines:

- Check the headlights to ensure they are properly aimed. If you notice the headlights are not properly aimed, report it to the Branch Manager, or if applicable the rental car agent. Misaimed headlights blind other drivers and reduce the driver's ability to see the road.
- In addition to the known hazards of consuming alcohol prior to driving, night driving can potentially be affected because the recovery rate of glare from headlights is prolonged. Thus reducing your ability to see.

- Smoking in GEI vehicles and rentals is not permitted. When driving a personal vehicle for business, avoid smoking while driving. Nicotine and carbon monoxide may hamper night vision.
- Observe driving safety as soon as the sun goes down. Twilight is one of the most difficult times to drive, because the eyes' pupils are constantly changing to adapt to the growing darkness Always use headlights at dusk and at dawn; lights will not help the driver see better in early twilight, but they will make it easier for other drivers to see your car. Drive at a speed that allows you to see the road that is within the headlights span. Driving in a manner that prevents you from seeing hazards as they are illuminated is known as overdriving the headlights; it may be necessary for the driver to reduce speed to be prepared to brake within the illuminated area of the headlights.
- If an oncoming vehicle does not lower beams from high to low, avoid glare by watching the right edge of the road and using it as a steering guide.
- The driver should make frequent stops for light snacks and exercise. If the driver is too tired to drive, stop in a safe area and get some rest.

1.6.2 Snow/Freezing Conditions

When snow and ice are present, be prepared by following these winter driving safety tips.

1.6.2.1 Prepare the Vehicle Before a Snowstorm

- Check under the hood and take a look at the vehicles cooling system. Make sure the vehicle contains adequate antifreeze and the hoses are in good condition.
- Test heaters and defrosters ahead of time to make sure they are in good working condition.
- Test the windshield wipers and check the condition of the wiper blades. If wipers leave streaks on the windshields, replace the blades at the next possible opportunity. Keep the receipt to expense the cost with GEI or with the car rental company.
- It is recommended that a windshield washer/antifreeze solution is used during winter conditions.
- Check the lights on the vehicle and periodically clear them of snow and dirt.
- Vehicle batteries need extra power in cold conditions. Make sure the battery's terminals are clean and cables are secure.
- Determine if the vehicle has a anti-lock brake (ABS) system.
- Keep the gas tank at least half-full in the winter to help avoid gas line freeze up.

1.6.2.2 Driving During and After a Snowstorm

- Wear sunglasses to aid in limiting reflection from snow.
- Be aware of blind spots created by snow banks.
- Be extra cautious of pedestrians and other vehicles in intersections.
- Allow extra time for braking and increase the distance between your car and the car immediately in front of the car.
- Reduce speed and do not exceed the posted limit.
- If the tires starts to lose traction, remove the foot off the gas and gradually reduce speed. Accelerate slowly once traction is regained.
- If the vehicle starts to skid, and does not have anti-lock brakes, steer into the skid. This will bring the back end of the car in line with the front. Avoid using the brakes. If the vehicle does have anti-lock brakes, firmly brake as you steer into the skid.

1.6.3 Driving In the Rain

To prevent losing control of the car on wet pavement, take these preventive measures.

- Prevent skids by driving slowly and carefully, especially on curves.
- Steer and brake with a light touch.
- When necessary to stop or slow, do not brake hard or lock the wheels.
- Maintain mild pressure on the brake pedal.

Skidding
If the car begins to skid, ease the foot off the gas, and carefully steer the car in the direction you want the front of the car to go. For cars without anti-lock brakes, avoid using the brakes. This procedure, known as “steering into the skid,” will bring the back end of the car in line with the front. If the car has anti-lock brake systems (ABS), brake firmly as you steer into the skid.

Hydroplaning
Hydroplaning happens when the water in front of the tires builds up faster than the car’s weight can push it out of the way. The water pressure causes the car to lose contact with the road surface and slide on a thin layer of water between the tires and the road. At this point, the car can be completely out of contact with the road, making it possible for the driver to skid or drift out of the lane, or even off the road.

To avoid hydroplaning, keep the tires properly inflated and maintain good tread on the tires. If tires need to be replaced on a company vehicle, notify the branch manager or their designee. Slow down when roads are wet, and stay away from puddles. Try to drive in the tire tracks left by the cars in front of the vehicle. If the car begins to hydroplane, do not brake or turn suddenly. This could throw the car into a skid. Ease the foot off the gas until the car slows; accelerate slowly once traction is regained. If braking is needed, do so gently with light pumping actions. If the car has ABS, brake normally; the car's computer will mimic a pumping action, as necessary.

If weather conditions worsen to the point where the driver is not comfortable driving, pull the vehicle over to a safe location until conditions improve. Do not drive during severe weather conditions. Do not attempt to drive on roads with standing water or that have been flooded. Find an alternate route if these conditions exist.

1.6.4 Off Road

If operation of a vehicle is required off public or private roads or in situations where four-wheel-drive vehicles are required, the appropriate vehicle for the situation will be used.

Be sure any gear or equipment is secured inside the vehicle so it doesn't bounce around while the vehicle is off-road.

- Know the underside of the vehicle. Look under the vehicle and learn where the lowest-hanging parts are located so they are not damaged.
- Scout tricky terrain on foot. Don't hesitate to get out of the vehicle to examine, up close, the terrain and soil conditions. And be sure to scout out what's on the other side of a hill ahead of time so there are no surprises.
- Drive cautiously. Drive, "as slow as possible, as fast as necessary." Remember to use the gears to efficiently manage engine power, braking, and torque.
- Create a mental picture. Look ahead and visualize the paths to the vehicle will travel. Follow those paths.
- Drive straight up and down hills. Avoid diagonal lines that put the vehicle in a situation where it might roll.

1.7 Driver Training

GEI employees are required to complete driver safety training every 3 years. This training is managed by the People Team and will be assigned through GEI's e-learning provider.

1.8 Injury Reporting

GEI employees will report incidents involving GEI personnel or subcontractor personnel, such as: lost time injuries, injuries requiring medical attention, near miss incidents, fires, fatalities, accidents involving the public, chemical spills, vehicle accidents, and property damage. The following steps must be followed when an incident occurs:

1. In life-threatening situations, immediately call 9-1-1.
2. Stop work activity to address any injury, illness, property damage, spill or other emergency.
3. **Immediately** report any incidents to your Supervisor/Project Manager and Regional Health & Safety Officer.
4. If your injury or illness is not life-threatening, call Medcor Triage at 1-800-775-5866 to speak with a medical professional.
5. Complete an Incident Report Form **immediately** after addressing the incident. Report forms are available on GEI's Safety App (for smart phones) and on the Safety page on the GEI intranet.

For vehicle accidents involving another vehicle or damage to property, the employee will take pictures of each vehicle or property involved in the incident and obtain a police report. In some municipalities police will not be dispatched to a non-injury accident, but every effort needs to be made to try and obtain the report.

1.8.1 Injury Triage Service

If a GEI employee experiences a work-related injury that is not life-threatening, the employee will initiate a call to Medcor Triage at 1-800-775-5866. The injured employee will detail any medical symptoms or complaints which will be evaluated by a Registered Nurse (RN) specially trained to perform telephonic triage. The RN will recommend first aid self-treatment or refer the injured employee for an off-site medical evaluation by a health professional at a clinic within GEI's workers compensation provider network. GEI employees are still required to follow our Accident Reporting procedures as listed above.

1.9 Limitations

Follow safety procedures as defined in the site-specific HASP.

1.10 References

National Safety Council
Oklahoma Safety Council
GEI Consultants, Inc. Employee Handbook

1.11 Attachments

None

1.12 Contact

SafetyTeam@geiconsultants.com

1.13 Review History

- December 2017
- November 2016
- May 2014
- November 2013
- January 2011

STANDARD OPERATING PROCEDURES

SOP No. HS-008a Non-Powered Hand Tools

1.1 Objective

This Standard Operating Procedure (SOP) is intended for use by employees working with non-powered hand tools. The site-specific health and safety plan (HASP) should include a hazard assessment for the project that identifies the hazards associated with the non-powered hand tools that will be used. These hazards should be reviewed during the project safety briefing and documented on the Project Safety Briefing form, found on the Safety page of the GEI intranet.

1.2 General

Misuse of hand tools accounts for the majority of accidents and injuries involving hand tools. Only use a tool for the task which it was designed for. If the right tool isn't available contact the Project Manager and discuss what is needed. Improper maintenance is another leading cause of injuries. Employees using hand tools may be exposed to a number of other potentially serious hazards: falling objects (i.e., objects can fall as a result of contact with tools or objects which are abrasive or splash), harmful dust, fumes mists, vapors, and gases, as well as contact with electrical power sources.

1.2.1 Condition of Tools

All hand tools, whether furnished by GEI or the employee, will be maintained in safe working condition. All hand tools must be inspected before use. Never use a tool if its handle has splinters, burrs, cracks, splits or if the head of the tool is loose. Never use impact tools such as hammers, chisels, punches or steel stakes having mushroomed (flattened) heads. Tag worn, damaged or defective tools "Out of Service" and do not use them; notify your Branch Manager or Project Manager so that the tool can be replaced or repaired. If the tools cannot be repaired they will be disposed of properly. GEI does not issue or permit the use of unsafe hand tools.

1.2.2 Personal Protective Equipment

Employees using hand tools will be provided with the personal protective equipment (PPE) necessary to protect them from the hazard of the tool as well as the associated hazards with using the tool. (i.e., projectile debris, dust, etc.). <u>All employees will wear work gloves, steel toe or composite toe boots, and safety glasses at a minimum</u>. In addition, face shields and hearing protection may be required. Most hand injures can be avoided with the proper use of PPE. PPE must be maintained in good condition, kept clean and properly stored when not in use. More information regarding PPE is located in Section 6 of GEI's Corporate Health and Safety Program.

1.2.3 General Safe Practices

Never wear sandals, open-toed or canvas shoes when working with tools. Always tie back long hair. Avoid loose-fitting clothes which might become entangled in a tool. Always remove rings and other jewelry. Make sure your grip and footing are secure when using large tools. Never carry tools up ladders; use a tool belt, hoist, or a rope. Use extra caution when using tools at heights – a falling tool could kill a co-worker. Always pass a tool to another person by the handle – never toss it to them. Never use a tool with hands are wet, oily, or greasy. Select ergonomically-designed tools for work tasks when movements are repetitive and forceful. Always make sure observers are at a safe distance. Always secure work with a vice, clamp, or other support.

1.3 Non-Power Hand Tools

Non-powered hand tools include anything from axes to wrenches. Even though the tool is powered by human inertia, injuries from improper use of non-powered hand tools often involve severe disabilities.

1.3.1 Knives

Only use a knife with a sharpened blade. Pull the knife through the object and away from your body; pulling motions are easier to manage. Never use a knife if its handle has splinters, burrs, cracks, splits or if the blade is loose. Knives should never be used as screwdrivers, pry bars, or can openers. Never pick up knives by their blades. Always carry knives with their tips/points toward the floor. Never carry knives, scissors, or other sharp tools in pockets. Never attempt to catch a falling knife. When not in use, knives should be stored in sheaths. Box cutters will be self-retracting.

1.3.2 Wrenches

Never use wrenches that are bent, cracked, badly chipped, or having loose or broken handles. Discard any wrench with spread or battered jaws; if the handle is bent; or if a wrench has broken or battered points and notify your Branch Manager so that a replacement can be made. Never slip a pipe over a single head wrench handle to increase leverage. Never use a shim to make a wrench fit. Pull on a wrench using a slow, steady motion. Do not use push force on a wrench; you could lose your balance if the wrench slips.

1.3.3 Screwdrivers

Always match the size and type of screwdriver blade to fit the head of the screw. Do not hold the work piece against your body while using a screwdriver. Never put your fingers near the tip of a screwdriver when tightening a screw. Never use a screwdriver to make a starting hole for screws. Never use a screwdriver as a chisel, pry bar, or nail puller. When performing electrical work, always use an insulated screwdriver. Never use a screwdriver to test the charge of a battery.

1.3.4 Hammers

Never use a hammer if your hands are oily, greasy or wet. Always check behind you before swinging a hammer. Use a claw hammer for pulling nails. Never strike nails or other objects with the "cheek" of the hammer. Do not strike a hardened steel surface, such as a cold chisel, with a claw hammer. Never strike one hammer against another hammer. Never use a hammer as a wedge or a pry bar.

1.3.5 Pliers

Never use pliers which are cracked, broken, or sprung. Never use pliers as a wrench or a hammer. Do not attempt to force pliers by using a hammer on them. Never slip a pipe over the handles of pliers to increase leverage. When performing electrical work, always use insulated pliers. When using diagonal cutting pliers, shield loose pieces of cut material from flying into the air by using a cloth or your gloved hand.

1.3.6 Snips

Never use snips as a hammer, screwdriver, or pry bar. Always wear safety glasses or safety goggles when using snips to cut materials. Always wear work gloves when cutting materials with snips. Keep the blade aligned by tightening the nut and bolt of the snips. Never use straight cut snips to cut curves. Always use the locking clip on the snips when you have finished using them. Never leave or store snips in the open position.

1.3.7 Hand Saws

Always keep handsaws sharp and free of rust to prevent them from binding or jumping. Never carry a saw by the blade. Always hold the work piece firmly against a work table. Keep control of saws by releasing downward pressure at the end of the stroke. Never use an adjustable blade saw such as a hacksaw, coping saw, keyhole saw, or bow saw, if the blade is not taut. Oil saw blades after each use. Never force the saw through the cut as this may cause the saw to buckle or fly out of the groove and cause injury.

1.3.8 Chisels

Only use sharpened chisels. Never use chisels having mushroomed (flattened) striking heads. Whenever possible, hold a chisel by using a tool holder. Clamp small work pieces in a vise and chip towards the stationary jaw of the vise. Chip or cut away from yourself and keep both hands in back of the cutting edge. Always wear safety glasses or a face shield.

1.3.9 Vise and Clamps

Never use a vise having worn or broken jaw inserts, or having cracks or fractures in the body of the vise. Position the work piece in the vise so the entire face of the jaw supports the work piece. When clamping a long work piece in a vise, support the far end of the work piece by using an adjustable pipe stand or saw horse. Never slip a pipe over the handle of a vise to increase leverage. Never use a C-clamp for hoisting materials. Never use a C-clamp as a permanent fastening device.

1.3.10 Jacks

A manufacture's rated capacity must be clearly marked on all jacks and all jacks must have a stop indicator. When using a jack, never exceed the capacity of the stop indicator. Jacks should be lubricated and inspected regularly. When setting up a jack, ensure the base is centered on a firm, level surface. The jack head should also be placed against a level surface. Lift force should be applied evenly. Put a block under the base of the jack when the foundation is not firm. If it seems likely the cap could slip, place a block between the jack cap and load. Immediately block the load after it is lifted.

1.4 Injury Reporting

If a GEI employee suffers an injury on the job that is not life threating, call Medcor Triage at 1-800-775-5866 to speak with a medical professional. Then, immediately report the injury to the Supervisor/Project Manager and Regional Safety Officer.

After verbal notification has been made, an Incident Report Form is to be completed by the employee and/or supervisor/project manager and submitted to the People & Safety Team immediately following care of the incident. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

Upon notification from a Branch or Office Manager, Human Resources, and/or the receipt of the Incident Report Form, the Regional Health & Safety Officer (RHSO) will conduct an investigation and evaluation on what happened and how and why it happened. The Corporate Health & Safety Officer (CHSO) will then recommend (as necessary) engineering controls, personal protection equipment, training or other appropriate measures to minimize the potential for future injuries. The CHSO/RHSO may develop educational information based on lessons learned for distribution to GEI employees.

1.5 Limitations

Follow safety procedures as defined in the site-specific HASP or in the manufacturer's specifications. Appropriate PPE must be worn correctly to provide the intended level of protection. If a hand tool is being used that is not identified in this SOP consult the manufacturer's literature and contact the Safety Team so we can include the information in a future version of this SOP.

1.6 References

OSHA Standards for the Construction Industry, Subpart I
Risk Analytics, LLC Hand Tools Training, 2006

1.7 Attachments

None

1.8 Contact

Health&SafetyTeam@geiconsultants.com

1.9 Review History

- July 2016
- May 2014
- August 2011
- October 2010
- One revision date unable to be found

STANDARD OPERATING PROCEDURES

SOP No. HS-010 Inclement Weather

1.1 Objective

This Standard Operating Procedure (SOP) is intended for use by employees engaged in work with the potential to be affected by inclement weather. The site-specific health and safety plan (HASP) should include a hazard assessment for the project that identifies the potential for working in inclement weather and the control methods to be implemented by GEI employees. These hazards should be reviewed in the project safety briefing and documented on the Project Safety Briefing form, found on the Safety page of the GEI intranet.

1.2 General

Employees should be aware of local weather conditions and monitor advisories issued by the National Weather Service and other local reporting services. Depending on location and season, storms are capable of producing heavy rain, floods, extreme temperatures, high wind conditions, lighting, tornados, and/or snowfall.

1.2.1 Heavy Rain

If working or driving in a rain storm, use extreme caution. When driving, turn your low beam lights on when the rainfall becomes heavy. Employees should be aware of the following:

- Heavy rain decreases visibility, especially when driving.
- Surfaces and tools become slippery.
- If you are working in the rain and your clothes become wet there is a risk of hypothermia when exposed to winds, even in warm temperatures.
- If the storms are going to produce thunder and/or lightning, leave the work area immediately and move to a safe area.
- Use your best judgment to determine if the rainfall becomes too heavy to continue working safely.

1.2.2 Lightning

Lightning can strike as far as 10 miles from the area where it is raining. That's approximately the distance you can hear thunder. **If you can hear thunder, you are within striking distance. Seek safe shelter immediately.** This can be within a building or vehicle. Wait 30 minutes after the last clap of thunder or flash of lightning before going outside again.

1.2.3 Flooding

Flooding may occur as a result of heavy rain in a short period of time. Flooding can be particularly acute in canyon areas where dry creek beds can turn into raging rivers from rainfall in distant or higher elevation areas. Be aware of this and your surroundings and move to a safe place if you begin to see signs that flooding may occur. Signs of potential flooding include sudden appearance of water in dry creek beds, increased water flow in rivers or streams, or quick rise in water levels.

Do not attempt to drive through areas or streets that are flooded. Seek alternate routes. Be particularly cautious at night when flooded areas are difficult to see. Urban flooding can stop traffic; increase the potential for traffic accidents; and can trap people in vehicles.

1.2.4 Extreme Temperatures

Work activities may take place in extreme heat or cold. Be prepared if these conditions are anticipated. Have the appropriate personal protective equipment (PPE) available; exercise proper fluid intake; and take breaks to prevent heat and cold stress. For more information about these conditions see the heat stress and cold stress programs found in GEI's Health and Safety Program.

1.2.5 High Winds, Tropical Storms, and Tornados

High Winds can be extremely dangerous. Appropriate measures will be taken to secure equipment and loose items when working in windy conditions. The project manager should be contacted about the weather conditions and, if necessary, work should be postponed.

Tropical storms are described as storms with sustained winds ranging from 39 to 73 miles per hour (mph) and hurricanes produce sustained winds that exceed 74 mph. When winds approach 40 mph (gale force winds) twigs begin to break off of trees and vehicles will veer off of the road. When winds approach 40 mph or the GEI employee feels unsafe based on the activities being performed, stop work and seek shelter as soon as possible. Blowing or falling debris and overhanging limbs/signs can be a significant hazard. If possible, avoid driving in these conditions; 70 percent of injuries during hurricanes are a result of vehicle accidents. Note that tall or elevated equipment will have manufacturer's safe operating wind speeds defined that could be less than 40 mph. The operator's manual should be consulted prior to operation of the equipment.

A tornado is a violent, dangerous, rotating column of air that is in contact with both the surface of the earth and a cumulonimbus cloud or, in rare cases, the base of a cumulus cloud. The Fujita Scale is used to rate the intensity of a tornado by examining the damage caused by the tornado after it has passed over a man-made structure. Based on the Fujita Scale, or F-Scale, numbers begin at F0: 40-72 mph and go to F6: 319-379 mph (F6 is

generally theoretical). Nearly three-fourths of tornados are on the weak F0-F1 scale with just over two-thirds of deaths resulting from the violent F4-F5 tornados.

If a tornado is seen, stop work and seek shelter immediately. If a tornado siren is sounded move immediately to safety indoors and then move to a windowless interior space, basement, stairwell, or designated fall-out shelter. Windows should not be opened before an oncoming tornado. If there is no shelter available, seat belt yourself into your stationary vehicle or seek a depression or low spot on the land surface.

1.2.6 Snowfall and Ice Conditions

Working in the winter months may result in activities taking place during periods of snowfall or icy conditions. If you are working during or after snow has fallen, dress appropriately for the conditions. Snow and ice can cause working surfaces to become slippery. Clear snow and ice from work areas to prevent slip hazards. Use caution when performing snow or ice removal activities to prevent injuries. Driving in snowy and icy conditions is also hazardous. Reduce speed and use caution if you must drive in these conditions.

If the weather conditions deteriorate and you do not feel safe working in these conditions, stop work, move to a safe indoor location, and contact your project manager to let them know the weather, work conditions, and your location.

1.3 Injury Reporting

If a GEI employee suffers an injury on the job that is not life threating, call Medcor Triage at 1-800-775-5866 to speak with a medical professional. Then, immediately report the injury to the Supervisor/Project Manager and Regional Safety Officer.

After verbal notification has been made, an Incident Report Form is to be completed by the employee and/or Supervisor/Project Manager and submitted to the People & Safety Team immediately following care of the incident. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

Upon notification from a Branch or Office Manager, Human Resources, and/or the receipt of the Incident Report Form, the Regional Health & Safety Officer (RHSO) will conduct an investigation and evaluation on what happened and how and why it happened. The Corporate Health and Safety Officer (CHSO) will then recommend (as necessary) engineering controls, personal protection equipment, training or other appropriate measures to minimize the potential for future injuries. The CHSO/RHSO may develop educational information based on lessons learned for distribution to GEI employees.

1.4 Limitations

Follow safety procedures as defined in the site-specific HASP. Appropriate PPE must be worn correctly to provide the intended level of protection. Protection in extreme weather conditions can best be accomplished if the conditions are anticipated and actions are taken. Monitor local weather conditions prior to starting work.

1.5 References

Center for Disease Control and Prevention – Natural Disasters and Severe Weather
http://www.bt.cdc.gov/disasters/

National Lightning Safety Institute

NOAA, National Weather Service

Office of Climate, Water, and Weather Services

1.6 Attachment

None

1.7 Contact

Safety Team
Health&SafetyTeam@geiconsultants.com

1.8 Review History

- Previous revision dates were not documented
- May 2014
- July 2016

STANDARD OPERATING PROCEDURES

SOP No. HS-012 Noise Exposures

1.1 Objective

This Standard Operating Procedure (SOP) is intended for use by employees engaged in work with elevation noise levels. The site-specific health and safety plan (HASP) should include a hazard assessment for the project that identifies the potential for work in loud environments and the control methods to be implemented by GEI employees. These hazards should be reviewed in the project safety briefing and documented on the Project Safety Briefing form, found on the Safety page of the GEI intranet.

1.2 General

Working in loud environments can cause hearing damage and loss if the proper protection is not in place. The following procedures describe methods to mitigate unhealthy noise levels and protect hearing.

1.3 Hazard Identification

If projects involve noise levels above OSHA regulations, employees should take steps to remove the noise exposure. Common sources of elevated noise levels are heavy equipment, power tools, pumps, and generators. GEI has an established Hearing Conservation Program located in the GEI Health and Safety Program.

1.4 Risk Identification

Hearing protection is required if noise levels in a work area are known to be above 85 decibels (dB), which can be measured with a noise meter. When decibel levels are not known, hearing protection is required if you need to raise your voice to talk to someone standing within a normal speaking distance from you.

1.5 Mitigation

There are three options that can be used to help mitigate a noise hazard:

1.) Remove the hazard by taking away the source of the noise.

2.) Remove the employee from the source of the noise.

3.) Provide the employee with appropriate personal protective equipment (PPE).

The first option for employee protection is to remove the hazard by taking away the source of the noise or using engineering controls to reduce the level.

If this cannot be accomplished, the next control measure is to remove the employee from the source. This can be done by moving the work area to a quieter location or distancing the employee from the noise source. For example, GEI employees do not need to be standing next to an operating drill rig or other heavy equipment. By distancing themselves from heavy equipment or other noise sources the need for hearing protection can be eliminated/reduced.

The final option, if the above two options aren't feasible, disposable ear plugs that are made available to GEI employees are to be used. Additional means of hearing protection will be provided, such as ear muffs, if the disposable ear plugs are not adequate.

When using hearing protection, employees will need to make a greater effort to be aware of the surroundings which may include moving equipment, traffic, and other site hazards.

1.6 Proper Use of Hearing Protection

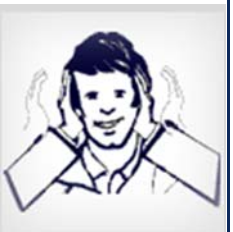
DISPOSABLE EAR PLUG FITTING INSTRUCTIONS

Before fitting any ear plugs, make sure your hands are clean.
Foam ear plugs are disposable and not intended for reuse.

Hold the ear plug between your thumb and forefinger. Roll and compress the entire ear plug to a small, crease-free cylinder. While still rolling, use your other hand to reach over your head and pull up and back on your outer ear. This straightens the ear canal, making way for a snug fit.

Insert the ear plug and hold for 20 to 30 seconds. This allows the ear plug to expand and fill your ear canal.

Test the fit. In a noisy environment, and with earplugs inserted, cup both hands over your ears and release. You should not notice a significant difference in the noise level. If the noise seems to lessen when your hands are cupped over your ears, your ear plugs are not fitted properly. Carefully remove the earplugs (see instructions below) and refit following instructions, above.



Always remove ear plugs slowly, twisting them to break the seal. If you remove them too quickly, you could damage your ear drum.

REUSABLE EAR PLUG FITTING INSTRUCTIONS

Before fitting any ear plugs, make sure your hands are clean.

Reusable ear plugs should be inspected and cleaned often in soapy water. If they become hard, torn, or deformed they should be discarded and replaced.

Reach around your head and pull up and back on your outer ear. This straightens out the ear canal, making way for a snug fit. Hold the stem end of the ear plug and insert it well inside your ear canal until you feel it sealing and the fit is comfortable.

Test the fit. In a noisy environment, and with ear plugs inserted, cup both hands over your ears and release. You should not notice a significant difference in the noise level. If the noise seems to lessen when your hands are cupped over your ears, your ear plugs are not fitted properly. Carefully remove the ear plugs (see instructions below) and refit following instructions, above.

Always remove ear plugs slowly, twisting them to break the seal. If you remove them too quickly, you could damage your ear drum.

1.7 Injury Reporting

If a GEI employee suffers an injury on the job that is not life threating, call Medcor Triage at 1-800-775-5866 to speak with a medical professional. Then, immediately report the injury to the Supervisor/Project Manager and Regional Safety Officer.

After verbal notification has been made, an Incident Report Form is to be completed by the employee and/or Supervisor/Project Manager and submitted to the People & Safety

Team immediately following care of the incident. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

Upon notification from a Branch or Office Manager, People Team, and/or the receipt of the Incident Report Form, the Regional Health & Safety Officer (RHSO) will conduct an investigation and evaluation on what happened and how and why it happened. The Corporate Health and Safety Officer (CHSO) will then recommend (as necessary) engineering controls, personal protection equipment, training or other appropriate measures to minimize the potential for future injuries. The CHSO/RHSO may develop educational information based on lessons learned for distribution to GEI employees.

1.8 Limitations

Follow safety procedures as defined in the site-specific HASP. Appropriate PPE must be worn correctly to provide the intended level of protection.

1.9 References

OHSA 29 CFR 1910.95 – Occupational Noise Exposure

OHSA 29 CFR 1926.101 – Hearing Protection

Texas American Safety Company (TASCO)

1.10 Attachments

None

1.11 Contact

Health&SafetyTeam@geiconsultants.com

1.12 Review History

- June 2016
- May 2014
- November 2013
- February 2011
- November 2010

STANDARD OPERATING PROCEDURE

SOP HS-014 Utility Mark-out

1.1 Objective

This Standard Operating Procedure (SOP) provides guidance for utility mark-out procedures related to drilling, excavation, or other sub-surface or intrusive activities to avoid injury to GEI employees or property damage. This SOP is applicable when GEI is responsible for its operation or our subcontractor's operation for utility mark-out. A utility mark out is when paint, flags or other markers are put in place to identify the location of an underground utility.

Clients or local agencies may have additional requirements or procedures to mark out of utilities. If local utility mark-out procedures differ from those described within this SOP, applicable state or municipal regulations should be followed.

1.2 General

This SOP is intended for use by employees engaged in work with sub-surface or intrusive activities. The site-specific health and safety plan (HASP) should include a hazard assessment for the project that identifies the potential for subsurface hazards and the control methods to be implemented by GEI employees. These hazards should be reviewed in the project safety briefing and documented on the Project Safety Briefing form, found on the Safety page of the GEI intranet.

1.2.1 Contractor/GEI Responsibilities

- The contractor or GEI employee will pinpoint each exploration area with white paint, flags, or stakes. personal protection equipment (PPE), including eye protection when using spray paint will be worn.
- Exploration locations should be marked-out with sample identification number(s) and type of sample (e.g., boring, test-pit, or monitoring well).
- The contractor compiles information about the work areas on a request form specified by the state utility mark-out program and submits it. Work area location maps can be sent to the utility mark-out program to clarify locations.
- The mark-out program customer service representative will provide a mark-out ticket number and a list of utilities notified upon receipt of the request information. This information will be recorded on the GEI documentation form in Appendix B and/or in other project documents.
- If known, the contractor or GEI employee will also notify non-member utility operators (e.g., apartment complexes, commercial complexes, railroads with communication cables, etc.).

1.2.2 Utility Mark Outs

- Utility companies or their sub-contractors will only mark-out, or clear, utilities under their responsibility. Generally, this means that they will only mark-out utilities within the public right-of-way up to private property boundaries. Information needed to determine the location of utilities on private properties will be requested from the property owner. This may include available property drawings or as-built figures. If this information is not available, additional non-intrusive surveys of the property may be required by a private utility locator to find underground utilities by using techniques such as ground penetrating radar (GPR).
- American Public Works Association (APWA) Uniform Color Code For Marking Underground Utility Lines are:
    1. **White** – Proposed Excavation
    2. **Pink** – Temporary Survey Markings
    3. **Red** – Electric Power Lines, Cables, Conduit and Lighting Cables
    4. **Yellow** – Gas, Oil, Steam, Petroleum, and Gaseous Material
    5. **Orange** – Communications, Alarm, Signal Lines, Cables or Conduit
    6. **Blue** – Water
    7. **Purple** – Radioactive Materials
    8. **Green** – Sanitary and Storm Sewers and Drain Lines

1.2.3 Utility Mark Out Review

- Before the intrusive work activities begin, the contractor or GEI employee will verify that each utility company has completed a utility location for the work area or the location has been cleared by a private locator and record this on the mark-out request information sheet.
- A visual survey of the project area will be done prior to the start of intrusive activities. This visual inspection will be done to identify signs, manholes, utility boxes, or other evidence of an underground utility is present and has been considered.
- The contractor or GEI employee can begin work on the scheduled work date and time if the utility operators have responded, taking care to find and preserve markings that have been made.
- Completed clearance documentation will be located on the excavation site during excavation activities and kept in project files.

1.2.4 Excavations

- When excavating near a buried utility, observe the approximate location around that utility.
- If exposing a utility, proper support and protection must be provided so that the utility will not be damaged.
- If the excavation work requires significant spans of the utility to be exposed, it is the contractor's responsibility to support the infrastructure (to prevent sagging or collapse) as needed. Contact the utility operator for support, guidance, or assistance.
- When the excavation is complete, provide proper backfill for utilities that have been exposed.
- Take care not to damage the conduit or protective coating of a utility. If the damage occurs, leave the damaged utility exposed and immediately call the utility owner.
- If a gas line is encountered, everyone will be evacuated according to the site evacuation procedures and the contractor must notify police, fire, and emergency personnel. No attempt should be made to tamper with or correct the damaged utility. All site personnel are to evacuate to the site's predetermined meeting point or a location a minimum of 300 feet away from the incident location.
- If the contractor needs to dig within the approximate location of a combustible, hazardous fluid, or gas line (natural gas, propane or gasoline), soft digging is required (hand digging, vacuum extraction) to a maximum depth of 5 feet. The approximate location is defined as 24 inches on either side of the designated center line of the utility if the diameter is not provided or 24 inches from each outside edge if the diameter is provided.

1.3 Injury Reporting

If a GEI employee suffers an injury on the job that is not life threating, call Medcor Triage at 1-800-775-5866 to speak with a medical professional. Then, immediately report the injury to the Supervisor/Project Manager and Regional Health & Safety Officer (RHSO).

After verbal notification has been made, an Incident Report Form is to be completed by the employee and/or Supervisor/Project Manager and submitted to the People & Safety Team immediately following care of the incident. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

Upon notification and/or the receipt of the Incident Report Form, RHSO will conduct an investigation and evaluation on what happened and how and why it happened. The Corporate Health and Safety Officer (CHSO) will then recommend (as necessary) engineering controls, personal protection equipment, training or other appropriate measures to minimize the potential for future injuries. The CHSO/RHSO may develop educational information based on lessons learned for distribution to GEI employees.

1.4 Limitations

- Follow safety procedures as defined in the site-specific HASP. Appropriate PPE must be worn correctly to provide the intended level of protection.
- Mark-out notification time usually does not include holidays. Make sure holidays are considered and mark-out time is scheduled accordingly. Under no circumstances are intrusive activities allowed to be performed prior to the required mark-out.
- Do not use white paint if precipitation is eminent. Consider using stakes if snow is predicted.

1.5 References

Reference the website for the "Call Before You Dig – 811" for the utility mark-out agency for the state you working in prior to site work. If you have issues locating the appropriate agency, contact the Safety Team for assistance.

1.6 Attachments

Attachment A – Standard Utility Color Codes

Attachment B – GEI Utility Clearance Documentation Form

1.7 Contact

Health&SafetyTeam@geiconsultants.com

1.8 Review History

- June 2016
- May 2014
- November 2013
- February 2011
- November 2010

ATTACHMENT A

COLOR CODE FOR UTILITY MARKING

(BASED ON 'THE AMERICAN PUBLIC WORKS ASSOCIATION' RECOMMENDATIONS AND THE ANSI STANDARD Z-53.1 FOR SAFETY COLORS)

UTILITY	COLOR
PROPOSED EXCAVATION	WHITE
ELECTRIC POWER LINES, CABLES, CONDUIT AND LIGHTING CABLES	RED
POTABLE WATER	BLUE
STEAM, CONDENSATE, GAS OR OIL COMPRESSED AIR	YELLOW
TELECOMMUNICATIONS, ALARM OR SIGNAL LINES, CABLES OR CONDUIT	ORANGE
TEMPORARY SURVEY MARKINGS	PINK
SEWER AND STORM DRAINS	GREEN
CHILLED WATER, RECLAIMED WATER, IRRIGATION AND SLURRY LINES	PURPLE
OTHER	LIGHT BLUE

ATTACHMENT B

Utility Clearance Documentation

Please print clearly. *For more room, use back of page.*

Client: _____

GEI Project Name & Number: _____

Site: _____

Excavation/Drilling Location ID: _____

Excavator/Driller: _____

GEI PM: _____ GEI Field Team Leader: _____

Utility Drawings Reviewed: _____

Provided By: _____ Reviewed By: _____

Utility Clearance Call Date: _____ Name of Utility: _____

Utility Clearance Call Date: _____ Name of Utility: _____

Utility Clearance Received from (utility & rep name): _____ Date: _____

Utility Clearance Received from (utility & rep name): _____ Date: _____

Company that completed clearance: _____ Date: _____

GEI Staff Responsible for Oversight: _____

Metal Detector Survey (yes/no): _____ Drilling Location Cleared by: _____

Contractor Name: _____ Company Name: _____

Contractor Signature: _____ Date: _____

GEI Staff Responsible for Oversight: _____

Private Location Clearance Required (yes/no): _____ Date: _____

Contractor Name: _____ Company Name: _____

Contractor Signature: _____ Date: _____

Methods used for utility location (i.e. GPR, electronic pipe location) _____

GEI Staff Responsible for Oversight: _____

Hand clearing Performed (yes/no): _____ Methods: _____ Date: _____

Contractor Name: _____ Company Name: _____

Contractor Signature: _____ Date: _____

GEI Staff Responsible for Oversight: _____

GEI Consultants, Inc. Representative (name & title): _____

GEI Consultants, Inc. Representative Signature: _____ Date: _____

Based upon the best available information, appropriate utility clearance procedures were performed for the invasive work specified. If client ordered site specific deviations from existing GEI utility clearance procedures, they are approved by the client signature below:

Client Representative (name & title): _____

Client Representative Signature: _____ Date: _____

Notes:

STANDARD OPERATING PROCEDURES

SOP No. HS-016 Traffic Hazard Management

1.1 Objective

The objective of this Standard Operating Procedure (SOP) is to prevent or limit the potential for GEI personnel to encounter traffic hazards during field activities.

1.2 General

This SOP is intended for use by employees engaged in work with the potential for traffic hazards. The site-specific health and safety plan (HASP) will include a hazard assessment for the project that identifies the potential for exposure to traffic hazards and the control methods to be implemented by GEI employees, including review or attainment of necessary permits, traffic control plans, and flagger/police detail requirements for the local jurisdiction. Routine checks of the work zone will be made to ensure there are adequate levels of protection. These hazards will be reviewed in the project safety briefing and documented on the Project Safety Briefing form, found on the Safety page of the GEI intranet.

1.3 Traffic Hazard Management

Traffic Hazard Management is the process of identifying and managing the potential risks associated with the movement of traffic through, around, or past a work area. This Traffic Hazard Management SOP is designed to assist employees in identifying and managing these hazards. Work areas should be as safe as possible. It is the responsibility of GEI employees to follow the Traffic Hazard Management SOP and adhere to these safety standards. Safety is not negotiable.

Under no circumstances are GEI employees permitted to commence work in a situation that the employee believes or knows their health and safety, or the health and safety of others, is at risk.

Major risk factors for work site Traffic Hazard Management include:

- The speed of traffic moving through a work site.
- The distance and clearance between moving traffic, workers, vehicles and equipment, and over-head power lines.
- Traffic volume and vehicle composition.
- Nature and conditions at the work site and approaches to the work site.

- Other factors such as the time of day, sight distance, weather, presence of pedestrians, or cyclists, and the type of work being carried out.
- Other hazards in proximity to the work site (e.g., power lines, open excavations) that may have conflicting safety management measures that need to be considered when developing the HASP.

1.4 Site Preparation

The following management measures will be considered whenever working in traffic areas. In addition, remain aware of the amount of traffic around the working area. The work space should be large enough for the job to be completed safely. Check permit, traffic control plans, and flagger/police detail requirements for the local jurisdiction. Perform routine checks of the work zone to make sure there are adequate levels of protection.

1.4.1 Traffic Barriers and Warning Signs

GEI employees will comply with the U.S. Department of Transportation's (DOT) Manual on Uniformed Traffic Control Devices (MUTCD) and/or state regulations for temporary traffic barriers (cones, barriers) and sign placement when required for working in traffic areas. Clearly define the work site by placing traffic barriers around the work space to indicate the space that is needed to safely perform the work. The traffic barrier will help make the work site more visible to other workers, pedestrians, cyclists, and moving vehicles. Place traffic barriers in such a way as to give yourself and equipment adequate space to work within the barriers. OSHA suggests placing the first warning sign at a distance calculated to be 4 to 8 times (in feet) the speed limit (in MPH).

1.4.2 Adequate Light

Requirements for night conditions and work areas with poor visibility are similar to day requirements. However there are a number of additional things to consider, such as visibility of the work site to advancing traffic and sufficient lighting. OSHA requires lighting for workers on foot and equipment operators to be at least 5-foot-candles or greater.

Visibility of the work area can be increased by employing the following measures:

- Using parked vehicles hazard and flashing lights.
- Wearing reflective personal protective equipment (PPE), such as a safety vest, in good condition.
- Providing adequate lighting to illuminate the work area with lights positioned so that there is no glare to approaching drivers.
- Placing reflective advance warning signs and traffic barriers so that they are visible to road users.

1.4.3 Distance from the Nearest Traffic Lane

Work areas located along roadsides will have a minimum clearance as defined by DOT's MUTCD and/or state or local DOT regulations for traffic barrier and sign placement.

1.4.4 PPE

The proper PPE, as outlined in the project HASP, will be worn when appropriate. The color/type of safety vest will comply with site regulations.

1.5 Equipment Operation

Vehicles and heavy equipment operators should use a spotter when possible if it is necessary to drive in reverse to reduce risk of collision with oncoming traffic. If it is necessary to drive against the flow of traffic make sure this area is within the work zone and properly blocked off from oncoming traffic.

1.6 Pedestrian Safety

When working near pedestrian traffic, a safe alternate pedestrian route will be established. Refer to local regulations when establishing pedestrian walkways.

1.7 Injury Reporting

If a GEI employee suffers an injury on the job that is not life threating, call Medcor Triage at 1-800-775-5866 to speak with a medical professional. Then, immediately report the injury to the Supervisor/Project Manager and Regional Health & Safety Officer (RHSO).

After verbal notification has been made, an Incident Report Form is to be completed by the employee and/or Supervisor/Project Manager and submitted to the People & Safety Team immediately following care of the incident. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

Upon notification from a Branch or Office Manager, Human Resources, and/or the receipt of the Incident Report Form, the RHSO will conduct an investigation and evaluation on what happened and how and why it happened. The Corporate Health and Safety Officer (CHSO) will then recommend (as necessary) engineering controls, personal protection equipment, training or other appropriate measures to minimize the potential for future injuries. The CHSO/RHSO may develop educational information based on lessons learned for distribution to GEI employees.

1.8 Limitations

Follow safety procedures as defined in the site-specific HASP, federal DOT, and local jurisdictions. Appropriate PPE must be worn correctly to provide the intended level of protection.

1.9 References

DOT's Manual on Uniformed Traffic Control Devices (2009 Edition)

Hazard Exposure and Risk Assessment Matrix for Hurricane Response and Recovery Work: https://www.osha.gov/SLTC/etools/hurricane/work-zone.html

1.10 Attachments

None

1.11 Contact

Health&SafetyTeam@geiconsultants.com

1.12 Review History

- November 2016
- May 2014
- November 2013
- August 2011
- October 2010 Initially HS-027 Traffic Hazards

STANDARD OPERATING PROCEDURES

SOP No. HS-018 Working Around Heavy Equipment

1.1 Objective

The objective of this Standard Operating Procedure (SOP) is to prevent or limit the physical hazards when working around heavy equipment.

1.2 General

This SOP is intended for use by employees engaged in work with the potential for working near heavy equipment. The project site-specific health and safety plan (HASP) should include a hazard assessment for working near heavy equipment to be implemented by GEI employees. These hazards should be reviewed in the project safety briefing and documented on the Project Safety Briefing form, found on the Safety page of the GEI intranet.

1.3 Heavy Equipment Precautions

Heavy equipment (e.g., excavators, backhoes, drill rigs, etc.), can present many physical hazards that can result in serious injury or death if the proper safety precautions are not followed. The following is a list of precautions to be aware of when working around heavy equipment:

- Wear appropriate personal protective equipment (PPE), including at a minimum reflective, high-visibility safety vest, hard hat, safety glasses, and steel/composite toe boots.
- Always keep your distance from moving equipment.
- Do not assume the operator knows where you are or where you are going.
- Make sure to make eye contact and receive acknowledgement of your presence with the operator.
- Avoid working near heavy equipment, but if unavoidable, communicate your location with the operators. If using hand signals, discuss the signals with the equipment operator prior to starting work.
- Watch for moving equipment. Construction sites can have a lot of activity and equipment may be moving in an unpredictable manner.
- Do not rely on back-up or other alarms. They may not be working or you may not hear them with the noise of other activities taking place in the area.
- Stay out of the swing radius of cranes, excavators, or other equipment that swings or rotates.
- Do not walk beside a moving vehicle, the vehicle may turn, slip, or the load may shift causing the vehicle to go off course.
- Do not ride on the outside of a moving equipment.

- Never walk under or stand too close to a load suspended by cranes or hoists.
- Do not walk behind a piece of equipment that is backing up without acknowledgment from the operator it is safe to proceed. If working next to heavy equipment is unavoidable, be aware of the hazards including pinch points and moving parts. Use a spotter to watch the work area for moving equipment.
- If necessary, ask the operator to stop equipment operation to perform your work tasks.
- Verify the location and operation of emergency shut-off devices on the equipment.
- Be aware of the fuels and chemicals associated with the equipment. Have a spill prevention and response plan in place that includes the appropriate containment materials (i.e., spill kit).
- Do not wear loose fitting clothing when working around moving equipment (i.e., drill rig augers).
- Do not operate heavy equipment.
- Do not use cellular telephones near operating equipment.

1.4 Injury Reporting

If a GEI employee suffers an injury on the job that is not life threating, call Medcor Triage at 1-800-775-5866 to speak with a medical professional. Then, immediately report the injury to the Supervisor/Project Manager and Regional Safety Officer.

After verbal notification has been made, an Incident Report Form is to be completed by the employee and/or Supervisor/Project Manager and submitted to the People & Safety Team immediately following care of the incident. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

Upon notification from a Branch or Office Manager, Human Resources, and/or the receipt of the Incident Report Form, the Regional Health & Safety Officer (RHSO) will conduct an investigation and evaluation on what happened and how and why it happened. The Corporate Health and Safety Officer (CHSO) will then recommend (as necessary) engineering controls, personal protection equipment, training or other appropriate measures to minimize the potential for future injuries. The CHSO/RHSO may develop educational information based on lessons learned for distribution to GEI employees.

1.5 Limitations

Follow safety procedures as defined in the site-specific HASP. Appropriate PPE must be worn correctly to provide the intended level of protection.

1.6 References

OSHA 29 CFR 1926.600 – Subpart O; Motor Vehicles, Mechanized Equipment, and Marine Operations.

www.toolboxtopics.com/Construction/ (Viewed 10/16)

Caterpillar Safety – http://safety.cat.com/ (Viewed 10/16)

1.7 Attachments

None

1.8 Contact

Health&SafetyTeam@geiconsultants.com

1.9 Review History

- October 2016
- May 2014
- November 2013
- August 2011
- October 2010

STANDARD OPERATING PROCEDURES

SOP No. HS-025 Manual Lifting

1.1 Objective

The purpose of this Standard Operating Procedure (SOP) is to identify and reduce potential work-related musculoskeletal disorder (WMSD) hazards. The SOP is intended to comply with state regulations and safe work practices developed by the Occupational Safety and Health Administration (OSHA). Modifications to meet these requirements will be made to this program as changing laws or regulations dictate.

1.2 General

Lifting heavy items is one of the leading causes of injury in the workplace. Overexertion and cumulative trauma when lifting are significant factors for injuries. When employees use smart lifting practices and work in their “power zone”, they are less likely to suffer from back sprains, muscle pulls, wrist/elbow/spinal and other injuries caused by lifting heavy objects. Common things to consider prior to lifting an object are: weight of the object, awkward postures, high-frequency and long duration lifting, inadequate handholds, and physical/environmental factors.

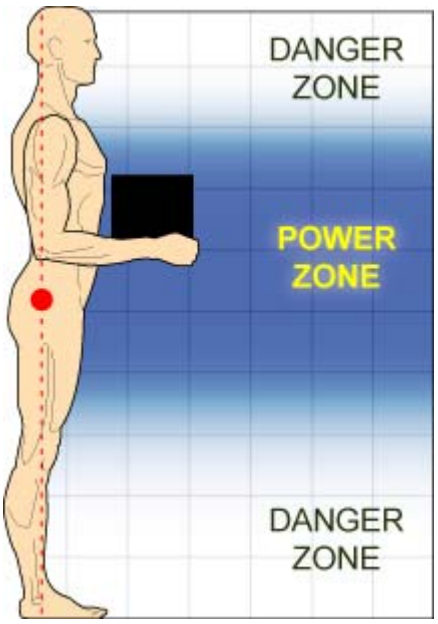


Figure 1: Lifting Power Zone

1.3 Safe Lifting Guidelines

The following safe lifting guidelines will be followed by employees involved in manual lifting activities:

- Before manual lifting is performed, a hazard assessment must be completed. The assessment must consider size, bulk, and weight of the object(s), if mechanical lifting equipment is required, if two-man lift is required, whether vision is obscured while carrying and the walking surface and path where the object is to be carried.
- Get a co-worker to help if equipment or other item is too heavy to lift.
- If possible, use powered equipment instead of manually lifting heavy materials. Lifting equipment such as dollies, hand trucks, lift-assist devices, jacks, or carts can be provided for employees.
- Reduce lifts from shoulder height and from floor height by repositioning the shelf or bin to closer to the power zone.
- Make sure walkways are clear of tripping hazards before moving materials.
- Use your legs and keep your back in a natural position while lifting. Keep the load close to your torso.

- Test the load to be lifted to estimate its weight, size, and bulk and to determine the proper lifting method.
- Do not twist while carrying a load. Instead, shift your feet and take small steps in the direction you want to turn.
- Make sure there are appropriately marked and sufficiently safe clearances for aisles and at loading docks or passageways where mechanical-handling equipment is used.
- Properly stack loose or unboxed materials which might fall from a pile by blocking, interlocking, or limiting the height of the pile to prevent falling hazards.
- Bags, containers, bundles, etc. should be stored in tiers that are stacked, blocked, interlocked, and limited in height so that they are stable and secure to prevent sliding or collapse.

- Storage areas should be kept free from accumulation of materials that could lead to tripping, fire, or explosion.
- Work methods and stations should be designed to minimize the distance between the person and the object being handled.

Supervisors should periodically evaluate work areas and employees' work techniques to assess the potential for and prevention of injuries. New operations should be evaluated to engineer out hazards before work processes are implemented.

1.4 Regulations

OSHA does not have a standard which sets limits on how much a person may lift or carry. They do however state that lifting loads heavier than about 50 pounds will increase the risk of injury.

The National Institute for Occupational Safety and Health (NIOSH) has developed a mathematical model that helps predict the risk of injury based on the weight being lifted and other criteria. The NIOSH model is based on previous medical research into the compressive forces needed to cause damage to bones and ligaments of the back. The mathematical model is incorporated in the *Applications Manual for the Revised NIOSH Lifting Equation*, which can be found on the NIOSH website (http://www.cdc.gov/niosh/docs/94-110/). It should be noted, however, that this NIOSH document provides only voluntary guidelines.

If there is a situation that arises where an employee is required to perform manual lifting on a reoccurring basis, the NIOSH Lifting Equation will be used to determine the appropriate weight that employee can safely lift. The lifting equation establishes a maximum load of 50 pounds for employees that are less likely to have to lift something, and don’t have to do any long distance travel or maneuvering of the item. This 50 pounds is then adjusted to account for:

- how often the employee is lifting
- twisting the back during lifting
- the vertical distance the load is lifted
- the distance of the load from the body
- the distance the employee must move while lifting the load
- how easy it is to hold onto the load

GEI uses 50 pounds as a standard. However each individual should not attempt to carry loads heavier than they can safely manage.

1.5 Training

Training will include general principles of ergonomics, correct manual lifting techniques to avoid musculoskeletal injuries, recognition of hazards and injuries, procedures for reporting hazardous conditions, and methods and procedures for early reporting of injuries.

1.6 Lifting Assistance

If employees are assigned a task that involves repetitive lifting and carrying of equipment the Safety Team and Project Manager should be contacted to conduct an ergonomic evaluation. The task should be discussed to determine if there is an alternative method that can be used. The alternative method should institute an engineering or administrative control to reduce/limit the amount of lifting that is required of the employee. Some examples include providing smaller containers to reduce the weight of what needs to be lifted; providing a device that helps carry awkwardly-shaped objects easier; or using a winch, fork lift, or other device to lift the item(s) for the employee.

1.7 Injury Reporting

Injuries experienced during manual lifting activities should receive prompt medical attention. If a GEI employee suffers an injury on the job that is not life threating, call Medcor Triage at 1-800-775-5866 to speak with a medical professional. Then, immediately report the injury to the Supervisor/Project Manager and Regional Health and Safety Officer.

After verbal notification has been made, an Incident Report Form is to be completed by the employee and/or Supervisor/Project Manager and submitted to the People & Safety Team immediately following care of the incident. This form is available on the Safety App (smart phones) and on the Safety page on the GEI intranet.

Upon notification from a Branch or Office Manager, Human Resources, and/or the receipt of the Incident Report Form, the Regional Health & Safety Officer (RHSO) will conduct an investigation and evaluation on what happened and how and why it happened. The Corporate Health & Safety Officer (CHSO) will then recommend (as necessary) engineering controls, personal protection equipment, training or other appropriate measures to minimize the potential for future musculoskeletal injuries. The CHSO/RHSO may develop educational information based on lessons learned for distribution to GEI employees.

1.8 Limitations

Follow safety procedures for manual lifting.

1.9 References

OSHA Technical Manual (OTM), Section VII: Chapter 1 - Back Disorders and Injuries
https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=29936 (Viewed 7/12/2016)
https://www.osha.gov/SLTC/etools/electricalcontractors/materials/heavy.html (Viewed 7/12/2016)

1.10 Attachments

None

1.11 Contact

Health&SafetyTeam@geiconsultants.com

1.12 Review History

- July 2016
- August 2014

Appendix F

COVID Supplement

Coronavirus COVID-19 Preparedness for Field Work & Project Sites

TO ACCOMPANY PROJECT HASPs and DISCUSS WITH PROJECT TEAMS

Field work will continue to be performed so long as project sites are accessible, and the work can be performed safely. If you have a question about project or site accessibility, ask the GEI project manager and/or client contact about whether there are any access restrictions in place. If your project is suspended, contact your project manager and branch manager to discuss other assignments.

While working in an outdoor environment is better than enclosed areas, the primary precautions we need to continue to take are distancing and good hygiene.

1.0 COVID-19 and Symptoms

DO NOT report to work if you are sick.

- If you experience a fever or symptoms associated with COVID-19 (fever, cough, shortness of breath), stay at home and contact your licensed healthcare provider. Notify your branch manager and Julie Jennings before returning to the workplace.
- If you, a household member, or someone you have come into first-hand contact with has a confirmed COVID-19 diagnosis, **DO NOT** come to work. Notify your branch manager and Julie Jennings **without delay** for specific instructions, including the requirements for returning to work.

2.0 Distancing & PPE

COVID-19 spreads from person-to-person primarily through droplets that are emitted from the initial person to a distance of 6 feet.

- Maintain a distance of at least ***6 feet (2 meters)*** from others. This includes during site meetings and breaks and while performing work tasks. Meetings should be held outside or by phone/video.
- Minimize the number of employees in one location to the extent possible. Follow local restrictions for maximum number of people congregated in one location at a time.
- If tasks need to be performed close to others (within 6 feet) and that cannot be avoided, wear appropriate PPE including a face mask (surgical or cloth), gloves, and eye protection.

  NOTE: Face masks are not a substitute for distancing. Masks are meant to protect others in case you are infected. Contact the Safety Team (safetyteam@geiconsultants.com) to discuss any special circumstances and the PPE warranted.
- Wear nitrile gloves as much as practicable and change them frequently. As practicable, wash your hands or use sanitizer between glove changes. Wash your hands after wearing gloves.
- Minimize and stagger time in office spaces to performing essential duties such as picking up and dropping off equipment and samples. If you need to spend more time in a project office (e.g., a construction trailer), it's important that the workspace allows for proper social distancing.
- When traveling to project sites, travel in separate vehicles. Do not travel in the same vehicle.

3.0 Hygiene Practices

Practice the following:

- Frequent hand washing with soap and warm water for 20 seconds, especially after being in a public place, or after blowing your nose, coughing or sneezing. Bringing containers of water and soap with you is a good solution if it isn't present at the project site. If soap and water are not readily available, use hand sanitizer (containing 60% alcohol) until soap and water can be used.

- Cover coughs or sneezes with a tissue, then dispose of the tissue in the trash and wash hands. Cough/sneeze into your elbow if a tissue is not available.
- Avoid touching your face with your hands.
- Restroom availability may be limited. Many public locations are now closed or do not allow access into buildings. Identify accessible restrooms prior to beginning work. If unavailable, portable restrooms should be considered.
- When filling water bottles (for drinking or hand washing) keep the bottle away from the spigot to avoid transfer of germs or contaminants. Do not share water bottles.
- Wipe down surfaces with disinfectant routinely (at least once per day). This includes field equipment and other items that may have been used by others. This is especially important while working in construction trailers. When using company and personal vehicles, wipe surfaces including the steering wheel, gear shifter, controls, and door handles ***before and after*** use.
- Handshaking, hugging, or other personal contact to greet others is prohibited. Use greeting from a distance such as a wave.
- Avoid sharing field equipment and other materials with others. Before using field equipment or putting it away, wipe it down with disinfectant or wash it with soap and water. Take extra caution using disinfectants while collecting environmental samples to ensure that the samples are not compromised.
- Do not share PPE including personal hand sanitizer dispensers. Use best practices to minimize contact when using publicly shared dispensers.

More detail on ways to protect yourself through distancing and hygiene can be found at MIT Medical's website: https://medical.mit.edu/three-ways-to-protect

4.0 Use of Public Places

- If your project requires you to stay in a hotel, practice the disinfecting precautions described above.
- If you will be eating food/drinks, order take-out or use delivery services at restaurants. Wash your hands before eating.
- Minimize the use of public transportation traveling to and from project sites. Use your personal vehicle (preferred), GEI vehicle, or a ride service such as Lyft.
- If you have concerns, discuss them with the project manager, your supervisor, branch manager, and/or with your Regional Safety Manager (RSM) or with Steve Hawkins, Safety Director.

5.0 Resources

Additional information can be found through the resources below:

- Centers for Disease Control and Prevention (CDC)
  https://www.cdc.gov/coronavirus/2019-ncov/index.html
- Public Health Agency of Canada
  https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19.html
- Provincial and Local Agency Resources
  https://www.ontario.ca/page/2019-novel-coronavirus#section-0
- World Health Organization
  https://www.who.int/emergencies/diseases/novel-coronavirus-2019

6.0 Communication and Reporting

The precautions included in this guidance and in other GEI's employee communications should be practiced at all project site locations and offices. While COVID-19 related information is not expected to be reported through GEI's incident reporting process, the expectation is that all employees will communicate any inconsistencies or concerns with practices at project sites to their project manager, supervisor, branch manager, and RSM. This will allow us to make corrections/updates and provide proper protective measures.

Information about preventing COVID-19 exposure is changing regularly. The information included in this guide are general steps we can take while performing field assignments and should be included in HASPs and safety briefings. If you have specific situations, questions, or concerns please discuss them with the Project Manager, your RSM, or Steve Hawkins.

Stay safe and healthy.

Appendix G

National Grid COVID-19 Plan

FORWARD

National Grid's vision is to be a world-class safety organization, with zero injuries every day. A critical component of achieving this vision is the careful development, implementation and maintenance of safety procedures. This guidance document, COVID-19 Health and Safety Plan, describes pandemic response measures, taken by National Grid, to help prevent the spread of COVID-19.

Questions regarding this guidance should be referred to National Grid's Safety Department.

Record of Change

Revision	Date	Description
Initial	4/28/2020	Initial creation
1	5/06/2020	Updated Job Brief Checklist to reflect current face covering requirements, vehicle cleaning guide correction
2	6/18/2020	Updates made to add the daily symptom check process, removed the job brief checklist, updated face covering requirements, and state requirements.

Table of Contents

1.0 SCOPE OF HEALTH & SAFETY PLAN

National Grid has developed the following Health & Safety Plan to uniformly apply pandemic response measures to help prevent the spread of the COVID-19 virus. National Grid field personnel and crews have been provided the included information and communications.

2.0 PROJECT PERSONNEL

2.1 Roles and Responsibilities:

National Grid shall be responsible for the safety of all its employees and will ensure COVID-19 pandemic measures are in place. Key National Grid personnel are as follows:

Incident Command Structure

The National Grid Incident Command Structure (ICS) was activated within all Business Units of National Grid's US Operations to respond to the COVID-19 pandemic in March 2020. Members of the ICS reviewed and approved all operational decisions, with the Incident Commander ultimately responsible for these decisions. The Incident Commander relied upon subject matter experts within the ICS, including the Operations Officer, the Safety and Health Officer, to help set standards and guidance for protective measures to be used to limit the spread of the COVID-19 virus. These Officers, in turn, utilized the expertise of other members of the organization within Operations, Safety, and Health, to assess risks associated with the work being performed and provide guidance on the most effective measures to be used by employees to protect themselves, their coworkers, our customers, and members of the public.

Oversight responsibilities of the Incident Command Structure (ICS) were transitioned to the Plan Forward team upon ICS dissolution in May 2020. Responsibility for recommendation of standards and guidance was transferred to the Safety and Health teams at National Grid, in conjunction with input from Operations and Support Services teams, as necessary.

Field Supervisor

The Field Supervisor shall have the responsibility for monitoring and enforcing National Grid COVID-19 pandemic measures and shall ensure that all employees have received and reviewed this Health & Safety plan.

- Serve as the appointed supervisor to oversee field personnel and ensure pandemic measures are being followed
- Ensure field personnel have the appropriate pandemic supplies

- Disseminate all new National Grid COVID-19 communications to all field employees
- Where non-compliance is observed, take prompt corrective action; and
- Have the authority to order a safety stop in the event of a serious safety issue.

Crew Leader

The National Grid crew leader shall be in charge of the day-to-day details of the work to be performed, effectively acting as COVID-19 Safety Officer for the site; they shall ensure that work is performed in accordance with National Grid COVID-19 pandemic measures.

- Walk the job site at the start of each day to ensure a safe work environment;
- Where non-compliance is observed, take prompt corrective action; and
- Have the authority to order a safety stop in the event of a serious safety issue.
- Perform the daily job safety briefing before commencing work, whenever a visitor arrives to the job site and if there is a significant change in the work or extended break.

Employees

National Grid employees are responsible for following all COVID-19 pandemic measures;

- Each employee is responsible for reporting to supervision any symptoms of COVID-19, any direct contact with an individual confirmed to have COVID-19 or is in quarantine.
- Each employee is obligated to call a safety stop when a hazardous condition is observed.
- All workers shall conduct a self-assessment utilizing the COVID-19 daily symptom checklist (App A) and adhere to the guidance outlined in this plan.

National Grid Field Safety Representative

National Grid Field Safety Representative's conduct routine and random crew visits to National Grid job sites. The National Grid Field Safety Department shall act as a resource for National Grid Field Personnel to effectively implement this COVID-19 Health & Safety Plan and will be available on an as needed basis for inquiries related to this plan.

3.0 COVID-19 PANDEMIC RESPONSE MEASURES

3.1 COVID-19 Symptoms

COVID-19 Symptoms may include the following:

- Cough, shortness of breath, of difficulty breathing
- Chills, feverish or fever of 100.3 or greater
- Generalized muscle pain or aches, fatigue or headaches

Other possible symptoms include; sore throat, runny/stuffy nose, or recent loss of taste or smell, nausea, vomiting, or diarrhea.

ZERO Tolerance for sick employees:

If you, or a person in your home, is experiencing any of the above symptoms or are feeling sick please do not come to work.

3.2 Hygiene and Social Distancing

- Wash your hands often with soap and water for at least 20 seconds, especially after using the restroom, before eating, and after blowing your nose, coughing, or sneezing. Hand washing is the best way to prevent the spread of viruses.
- If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol. Always wash hands with soap and water if hands are visibly dirty.
- If drying of hands is necessary, single use disposable towels or rags shall be used. No sharing of these drying materials should be allowed amongst crew members and used materials should be disposed immediately after use.
- Proper hand washing/sanitizing products will be provided to all employees.
- Maintain a minimum of 6’ social distance from other employees on site while performing work and during routine breaks. When work tasks prevent this ensure proper face coverings are continued to be worn and proper hygiene.
- During routine breaks, when face coverings are removed for eating and drinking, maintaining 6’ social distance will be enforced by crew members.
- Be sure to use your own water bottle. Do not share. Avoid touching your eyes, nose, and mouth.
- Cover your cough or sneeze with a tissue, then throw the tissue in the trash.
- Clean and disinfect frequently touched objects and surfaces, including vehicles and equipment, using a disinfecting cleaning spray or wipe, if not available use soap and water solution.
- All cleaning product trash and potentially contaminated PPE will be stored in a trash bag and immediately disposed of at a National Grid facility at the end of each shift, trash should not accumulate in any National Grid vehicle. Immediately

wash hands upon disposing of trash bag.

3.3 COVID-19 PPE and Face Coverings

- Face coverings are a requirement for all National Grid employees. Face coverings must be worn by all employees:
  - When working in public/outdoor places face coverings must be worn when 6-ft social distancing cannot be maintained at all times. (Unless required by a local mandate)
  - Even when maintaining social distancing is possible, a face covering must always be in your possession. (your hand, pocket, around your neck, etc.)
  - When working in a customer's premises.
  - When 6-ft social distancing is not able to be maintained with a co-worker, customer or member of the public in a National Grid facility, barn/yard, work location or company vehicle.
- Non-Fire-Retardant/Arc Rated Face Covering– use when there is no potential for a gas ignition or electric arc flash (company supplied or personal face covering)
- Fire Retardant Face Covering – use when there is potential for a gas ignition or electric arc flash
- Additional COVID-19 PPE guidance is provided in the attached Premise Entry Guidelines
- Massachusetts Only: All construction workers will be required to wear cut-resistant gloves or the equivalent, except where state or safety mandates state otherwise

3.4 COVID-19 Virus Risk Assessment and Adopted Measures

National Grid's prescribed measures (work practices, PPE, hygiene) were selected based upon the risk assessments completed by subject matter experts and reported up through the ICS for approval. They are based upon CDC and OSHA guidance, as well as input from Operations, Safety, and Health team members, and are believed to address all risks posed to our workforce, as well as to our customers and members of the public, when jobs are conducted in public places. These measures are reviewed on a continuous basis, for both effectiveness and to ensure the latest guidance is incorporated, with changes made, as necessary, after these reviews.

3.5 Worksite Travel

Employees should attempt to travel to and from worksites in separate vehicles if practical and sufficient parking exists.

When separate travel is not an option employees should:

- Limit to 2 people in a vehicle if possible

- Be seated as far apart as possible
- Must wear face coverings
- Drive with open windows if possible

4.0 COVID-19 REPORTING PROCESS

4.1 COVID-19 Daily Symptom Checklist

All employees shall utilize the daily COVID-19 symptom check via myCority or IVR, which replaces the existing similar review (job briefs) that had been taking place. All visitors to the job site will likewise be required to complete a COVID-19 symptom check prior to entry on the job site. Please refer to the COVID-19 Daily Symptom Check guidance document in App A.

4.2 COVID-19 Incident Reporting

To ensure the safety of all employees and the public any employee shall immediately contact their Supervisor and National Grid Employee Services if one of the following conditions occur:

- Employee is exhibiting symptoms of COVID-19
- Employee has been in close contact of another individual with COVID-19
- Employee has been in close contact of another individual who is currently being quarantine for a suspected case of COVID-19

Close contact is defined as being within 6' of a sick individual for more than 15 minutes.

Please refer to the COVID-19 Suspected/Confirmed Positive Process guidance document in App A.

Appendix A – National Grid COVID-19 Communications

COVID-19 Daily Symptom Check

All employees who are not working from home, must undergo a daily symptom checking protocol to monitor potential symptoms and/or exposure to COVID-19. Employees working from home, must identify themselves as such daily. Visitors, contracted employees and contractors working at our facilities must also perform symptom checks.

In addition to state mandates and CDC guidance regarding symptom checks, scientific evidence shows that adherence to daily monitoring can be highly effective in promoting individual awareness of mild symptoms and help ill individuals prevent the spread of the virus to others. As a community, daily adherence by all will also provide a level of assurance to all employees regarding their welfare in the workplace.

If you have a network sign-on and have access to a company device:			
And today you are working….	Is a daily symptom check required?	Symptom Check Method	Additional Time Entry Instructions
At home	No	N/A	**(1) Each day you work at home, you must enter "home" in the comments section of your time entry**
At a NG office, or entering a NG office for any length of time or working at a NG facility, jobsite or field location	Yes	**(2) Web-based questionnaire**	N/A
If you do not have a network sign-on or do not have access to a company device:			
And today you are working….	Is a daily symptom check required?	Symptom Check Method	Additional Time Entry Instructions
At a NG office, or entering an NG office for any length of time or working at a NG facility, jobsite or field location	Yes	**(3) Phone questionnaire (IVR)**	N/A

Symptom-checks must be performed either before leaving home or immediately upon arrival at the workplace. Self-checks are only required once per day and do not need to be repeated if you are called back to work, unless you develop symptoms.

If you answer yes to any questions, stay home or leave the workplace, notify your supervisor and call Employee Services at **888-483-2123** to be referred to a company Nurse Practitioner.

It is important that every employee perform their applicable activity (either a symptom check or time entry with comments of "home") each and every work day.

COVID-19 Daily Symptom Check – IVR

To Complete the COVID-19 symptom check by phone (IVR), have your Employee ID number ready and follow the instructions below. If you don't know your Employee ID number, please contact your supervisor.

- Call 833-986-1441
- When prompted enter your Employee ID number. Once your Employee ID number is verified, you will be prompted to answer the questions below. Please note, that these questions may change in response to scientific or government guidance.
- If your Employee ID number is not verified, you will be prompted to re-enter your Employee ID number. If still not verified, you will be instructed to contact your Supervisor to obtain a valid Employee ID number and the call will disconnect.
- You must answer all questions by:
    - ***Saying Yes or pressing 1***
    - ***Saying No or pressing 2***

In the past 14 days: *1. Have you been experiencing any cough, shortness of breath, or difficulty breathing?* *2. Have you been experiencing any chills, felt feverish, or had a fever of 100.3 or greater?* *3. Have you been experiencing any (generalized) muscle pain/aches, fatigue, or headaches?* *4. Have you been experiencing any sore throat, runny/stuffy nose, or recent loss of taste or smell?* *5. Have you been experiencing nausea, vomiting, or diarrhea?*
6. Have you tested positive for COVID-19 in the past 14 days?
7. Have you been in close or proximate contact (less than 6 feet) in the past 14 days with anyone who has tested positive for COVID-19 or who has or had symptoms of COVID-19?
8. Have you been directed to quarantine or isolate by the any Department of Health or a healthcare provider in the past 14 days?
9. For Rhode Island Employees - Have you returned to Rhode Island from an area still under a stay-at-home order or another similar type of restriction in the past 14 days?

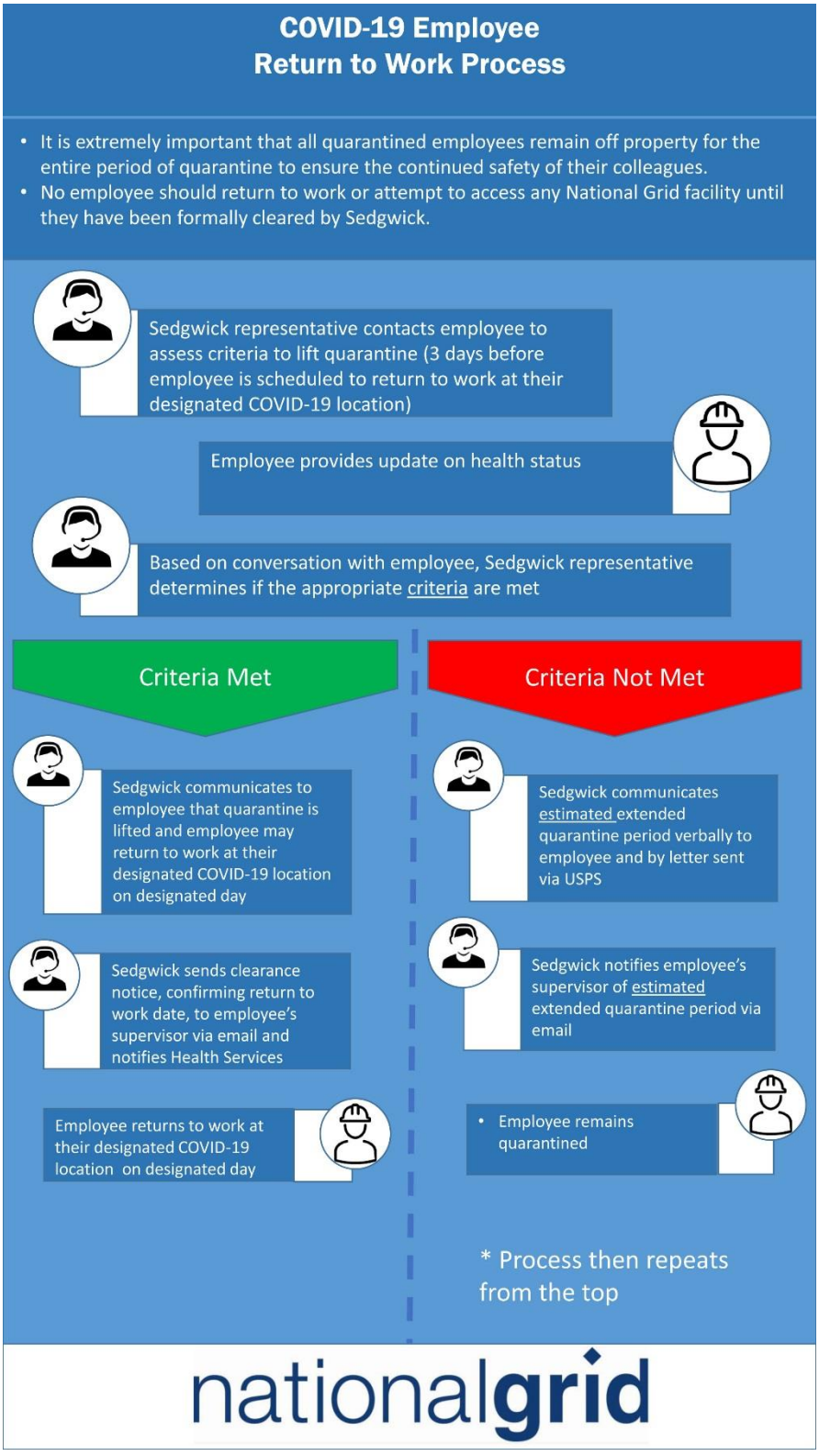
Once complete you will hear the following message:

If you answer “Yes” to any of the questions, please leave the work location, contact your supervisor and call Employee Services at (888) 483-2123. If you feel that you have symptoms related to COVID-19 please contact your healthcare provider. Thank you and have a nice day. (The call will then disconnect).

All responses collected will be maintained in a secure and confidential manner in accordance with applicable laws.

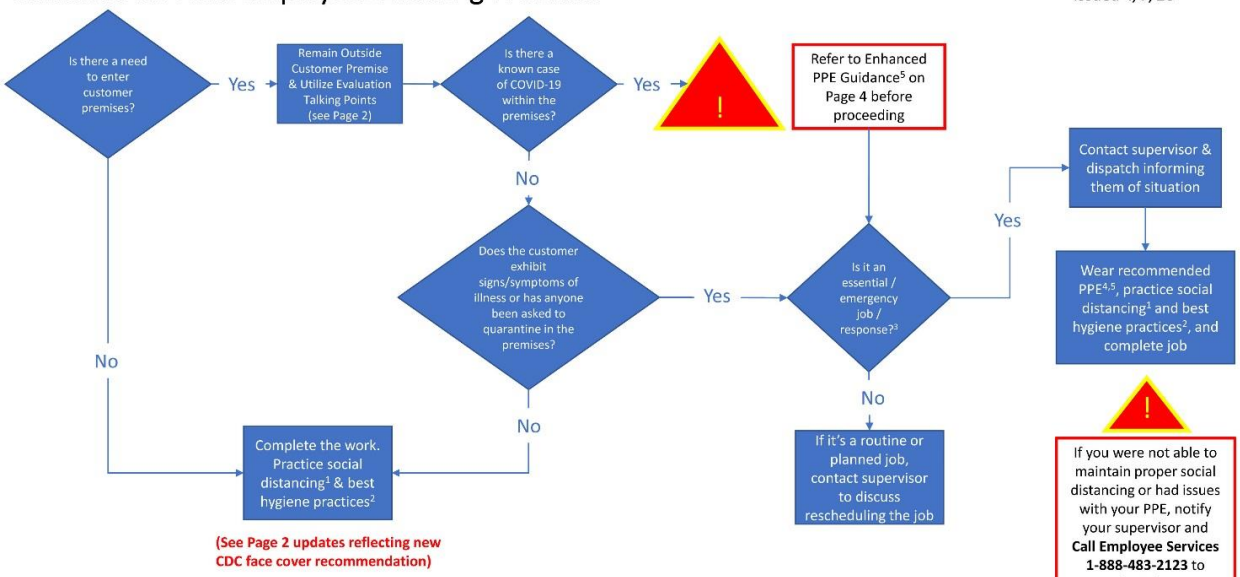
For technical issues, please check the IT Portal visit the Virtual Techbar, or call the

IT Service Desk at 1-877-373-1112


COVID-19 Employee
Return to Work Process
It is extremely important that all quarantined employees remain off property for the entire period of quarantine to ensure the continued safety of their colleagues.
No employee should return to work or attempt to access any National Grid facility until they have been formally cleared by Sedgwick.
Sedgwick representative contacts employee to assess criteria to lift quarantine (3 days before employee is scheduled to return to work at their designated COVID-19 location)
Employee provides update on health status
Based on conversation with employee, Sedgwick representative determines if the appropriate criteria are met
Criteria Met
Criteria Not Met
Sedgwick communicates to employee that quarantine is lifted and employee may return to work at their designated COVID-19 location on designated day
Sedgwick sends clearance notice, confirming return to work date, to employee's supervisor via email and notifies Health Services
Employee returns to work at their designated COVID-19 location on designated day
Sedgwick communicates estimated extended quarantine period verbally to employee and by letter sent via USPS
Sedgwick notifies employee's supervisor of estimated extended quarantine period via email
Employee remains quarantined
* Process then repeats from the top
nationalgrid

Guidance for Field Employees Entering Premises

Issued 4/7/20



See Page 2 for additional information on Talking Points, CDC Recommendations for (1) Social Distancing and (2) Best Hygiene Practices
See Page 3 for National Grid (3) Emergency Work at a Premises and (4) Standard PPE Guidance
See Page 4 for National Grid (5) Enhanced PPE Guidance

Issued 4/8/20

Talking Points - Engage Customer

Prior to entry, engage the customer and advise of social distancing practices. Here are some questions and statements.

- Does someone within the premises have a known case of COVID-19? Has someone within the premises tested positive for the COVID-19 virus?

(IF ANSWER IS 'YES' TO EITHER OF THE ABOVE QUESTIONS, REFER TO ENHANCED PPE GUIDANCE ON PAGE 4)

- Do you mind if I follow the social distancing practice today?
- Is anyone currently sick inside the premises?
- If you are feeling sick, would you mind remaining in another room while I am working This is a best practice policy my company is recommending. Can you tell me where your equipment is located?
- I will do my job, keep you updated and tell you when I am done

(1) Social Distancing

- Maintain at least 6 feet distance between yourself and the customer at all times
- Where social distancing measures cannot be maintained, face cover can be worn to help limit the spread of the virus (see National Grid's Face Cover Guidance for details)

(2) Best Hygiene Practices

- Face covering can be worn in public settings where social distancing measures cannot be maintained (see National Grid's Face Cover Guidance for details)
- Use alcohol-based hand sanitizer (at least 60% alcohol), before and after each home visit; OR wash hands using soap and water for 20 seconds

Issued 4/8/20

(3) Emergency Work at a Premises

On arrival, assess the premise/situation in its entirety and consider these questions.

- Is it a multi-unit building?
  - Is the unit where work is required affected?
- What work can be done without interaction/entry?
- Is entry through a side or back door possible to limit exposure?
- Can make safe actions be taken without interaction/entry?
  - Securing Outside Meter/Curb Valve
- Would a hardship be caused by isolating the service?

Note: These questions and considerations are meant to help guide in the decision making process. There may be instances where access to a premise cannot be avoided in order to address immediate public safety concerns. Please reference the Social Distancing and applicable PPE Guidance in all situations.

(4) Standard PPE Guidance for Entering a Premises (No Known COVID-19 cases are present)

- Avoid touching ANYTHING in customer premises other than company equipment and customer equipment related to the job
- Wear disposable latex or nitrile gloves to prevent touching contaminated surfaces
- Latex or nitrile gloves should be donned before entering the home
  - If work gloves are needed to perform the task, remove disposable latex or nitrile gloves and dispose of them. Don work gloves and perform task. Once task is complete remove work gloves and store them. Don a new pair of disposable latex or nitrile gloves to exit the home.
- Remove latex or nitrile gloves and dispose in way that won't create other opportunities for exposure
- Immediately wash / sanitize hands after removing latex or nitrile gloves
- All other PPE normally required for the work being performed should be used

3

Issued 4/8/20

(5) Enhanced PPE Guidance for Entering a Premise (Where a Known COVID-19 Case is Present)

The most effective way to protect the employees from contracting the virus is physical distance; if at all possible, the customer diagnosed with COVID-19 should be asked to move to a separate room before premises entry. When available and practicable, the following PPE items may be used at the premises with a known COVID-19 case present. These PPE items can be used in combination with our Social Distancing and Best Hygiene Practices to limit the spread of the virus.

- N-95 / KN-95 mask (see Page 5 for pictures of typical N-95 / KN-95 masks available)
- Reusable Face Shield
- Disposable Surgical Gloves (nitrile or latex)
- All other PPE required for doing the work (i.e. safety glasses, hard hat, etc.)
- If desired, FR-rated balaclava may be worn to provide additional protection while working

The following steps should be taken while conducting work in the premises:

- Prepare a paper or plastic bag for disposal of used PPE prior to entering the premises.
- Avoid touching ANYTHING in customer premises other than company equipment and customer equipment related to the job.
- Wear disposable latex or nitrile gloves to prevent touching contaminated surfaces.
- Any PPE should be donned before entering the home.
- If a mask is in use, avoid touching your face or adjusting the mask.
- If work gloves are needed to perform the task, remove disposable latex or nitrile gloves and dispose of them. Don work gloves and perform task. Once task is complete remove work gloves and store them. Don a new pair of disposable latex or nitrile gloves to exit the home.

Once work is completed in the home, follow these steps to safely remove the PPE items

- Remove face shield, taking care to avoid touching your face. Clean / disinfect and store properly.
- Remove mask from the back of the head first, taking care to avoid touching your face. Place used mask in a bag and dispose in normal trash.
- If balaclava has been worn, remove covering from back of head, similar to removal of mask.
- Remove latex or nitrile gloves (turn inside out while removing) and place in a bag. Dispose of bag in normal trash.
- Immediately wash / sanitize hands after removing latex or nitrile gloves, following Best Hygiene Practices.

4

Issued 4/8/20

Typical N-95 / KN-95 masks

5

**Where N-95 face coverings are mandated, training will be provided in accordance with OSHA guidelines.

Safeguarding your Vehicle

Now, more than ever, with COVID-19, precautions to safeguard your vehicle when transferring the vehicle to another employee, or when taking your vehicle in for maintenance, is very important.

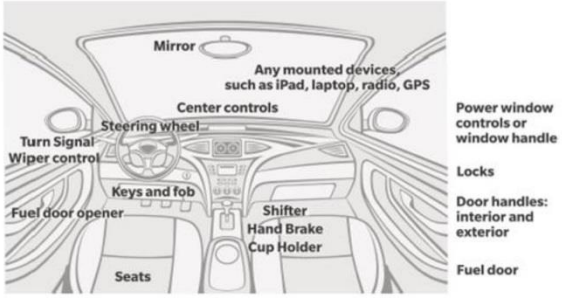
Here are some high-touch areas that should **never** be missed:

• Mirror • Center controls • Keys and fob • Wiper control • Climate control • Audio controls • Hand brake • Seats *(driver/passenger)*/Seatbelts • Fuel door opener • Windows • Headrests • Armrests	• All mounted devices *(any and all electronic devised used - i.e. iPad, laptop, radio, GPS, phone chargers)* • Steering wheel • Headlight • All cabin lighting controls • Shifter • Cup holder • Door handle*(inside and out)*/Window control/locks • Air vent • Sun visors

Use disinfectant wipes, diluted bleach solution, or damp soapy water wipes when cleaning all hard surfaces throughout the vehicle.

To guide your efforts when cleaning the vehicle, think about where droplets would fall when you sneeze or cough (*for example: do you turn your head to the side?) and remember to think about your own personal safety:*

- Be sure to wash your hands for **20 seconds** after completing the cleaning process.
- If you take your vehicle home at night, be sure to lock it to prevent it from being compromised.
- Make sure you have a mask and gloves (when/where appropriate).



Before you leave or enter the vehicle – here's a checklist to keep you safe and your team members safe as well:

Activity to Safeguard	☑
Keys / Fob	
Door Handles (interior/exterior)	
Steering Wheel, Shift Lever, Brake Lever, Wiper Stalk, Turn Signal Stalk	
Air Vents, Console, Dashboard, Cup Holder	
Exterior and Interior Fueling Latch, Cover, Cap	
Seats, Seatbelts, Headrests	
Mirrors, Windows, Window Controls	
Interior Lights	
Sun Visors	
Passenger and Driver Door Armrests, Grab Handles, Seat Adjusters	
All Electronic Devices used while in vehicle (iPads, Navigation Systems, Phone Chargers, Laptops, etc.)	

Additional considerations for crew trucks:

Handles on bin doors	
Equipment controls within Bucket (lower / upper) or Digger	

**** Please consider any other touch point identified by a crew member but not listed***

Safety Health Environmental nationalgrid

Contract Employees COVID-19 Reporting Process

Health Services does not typically manage the absences of our contract employees, "contractors". However, to protect our employees, we are screening sick/exposed contractors to determine if they have come into contact with National Grid employees, or if a facilities/vehicle deep cleaning is required. Contract employees are required to call Employee Services (ES) (888) 483-2123 directly. If the contractor does not call Employee Services, the National Grid supervisor may call ES to report the contractor out of work and to initiate contact tracing.

Contractors must be cleared to return to work (RTW) at National Grid by their employer. Per National Grid best practices, we are recommending a 14-day quarantine beginning on the date of notification for all contractors who are sick or believe they have been exposed to COVID-19.

Reporting Process:

1. Contractors call Employee Services **(888) 483-2123** for screening
2. Nurse Practitioner (NP) screens the contractor to determine National Grid close contacts, or if a National Grid facility or vehicle requires deep cleaning. NP obtains employer name and contact email from contractor
3. NP advises contractor to contact their doctor and their employer
4. An email will be sent to National Grid supervisor and the contractor's employer with quarantine start and end date (see email below)
5. Contractor must follow employer's RTW process and complete recommended quarantine (and be symptom free for 3 days)
6. NP will notify any National Grid close contacts to quarantine for 14 days and email National Grid supervisor(s)
7. After 14 days have elapsed, the contractor's employer must send an email to NP confirming that the contractor has returned to work, i.e., all RTW notifications and documentation must be forwarded to Mary Brown, NP Mary.Brown2@nationalgrid.com

Supervisor:

If you are calling Employee Services to report a contractor out of work so that we may initiate contact tracing, or a facilities deep cleaning, please be prepared to answer the following questions when speaking with the NP regarding your contractor:

- Contract employee name
- Contract Employer
- Contract Employer supervisor and email address
- Last date contractor was on National Grid worksite
- National Grid employees the contractor has been in close contact with
- Facilities/vehicle deep cleaning required

email sent to supervisor when contractor is taken out of work for quarantine:

RE: Quarantine **Confidential**

The contract employee "contractor" listed below has been quarantined and cannot report to a National Grid worksite until they have completed the recommended quarantine. This contractor will follow their employer's process for return to work. After the recommended quarantine has elapsed, and the contractor has been cleared to return to work by their employer, please send email to (Mary.Brown2@nationalgrid.com) to let us know the contractor is back on site.

Contract Employee Name:
Department/Contractor company:
National Grid Supervisor:
Quarantine start date:
End Date:

GEI Consultants

Consulting
Engineers and
Scientists

Community Air Monitoring Plan

Gloversville (Washington Street) Former MGP Site

Gloversville, New York
NYSDEC Site # V00476

Submitted to:
National Grid, USA
300 Erie Boulevard West
Syracuse, NY 13202

Submitted by:
GEI Consultants, Inc., P.C.
1301 Trumansburg Road, Suite N
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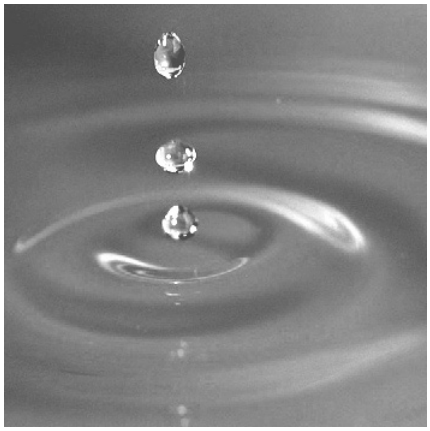
November 2020
Project #115130-1-1113



Wendy Moore, P.E.
Project Manager

Joseph M. Simone, P.E.
Senior Engineer

Table of Contents

Tables

Attachments

Abbreviations and Acronyms

CAMP	Community Air Monitoring Plan
COC	Constituents of Concern
GEI	GEI Consultants, Inc., P.C.
HASP	Health and Safety Plan
MGP	Manufactured Gas Plant
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	Polycyclic Aromatic Hydrocarbons
PDI	Pre-Design Investigation
PID	Photoionization Detector
ppm	Parts per Million
SMP	Site Management Plan
SVOC	Semi-Volatile Organic Compounds
VOC	Volatile Organic Compounds
$\mu g/m^3$	Micrograms per cubic meter

1. Introduction

This document presents the Community Air Monitoring Plan (CAMP) that will be implemented during the Site Management Plan (SMP) of the National Grid Non-Owned Former Manufactured Gas Plant (MGP) site, located in the City of Gloversville, New York. A CAMP is required by the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) at sites where ground-intrusive activities may result in airborne release of contaminants. Towards that end, community air monitoring will be performed for total volatile organic compound vapors (VOCs), and for particulates (dust) if or when ground-intrusive activities are implemented at the site.

The Gloversville (Washington Street) Former MGP site is located on Broadway Street in the City of Gloversville, New York (Figure 1). The Site is owned by one private owner and is being managed by National Grid under an existing Consent Order for non-owned MGP sites with the NYSDEC. It is located in a commercial area to the southeast of the intersection of Washington Street and Broadway Street. The Site is currently defined as the 0.18 acre tax parcel located at 7 Broadway (Figure 2).

The SMP field work is scheduled to be performed beginning in 2020, as described in the Site Management Plan. The SMP field work involves surface cover inspections and groundwater monitoring. Because this work doesn't involve ground-intrusive activities, community air monitoring will only be performed during any potential future ground disturbing activities, such as monitoring well decommissioning, repair and/or replacement on an as-needed basis.

The objectives of this CAMP are to:

- Ensure that the airborne concentrations of constituents of concern (COC) are minimized to protect the community;
- Provide an early warning system so that potential emissions can be controlled on site at the source; and
- Measure and document the concentrations of airborne COC to confirm compliance with the specified limits.

This CAMP is a companion document to GEI's site-specific Health and Safety Plan (HASP). The HASP is a separate document and is directed primarily toward protection of on-site workers within the designated work zones.

2. Air Monitoring Equipment, Methods, and Action Levels

This section provides instructions for conducting the CAMP. Discussed are the COC to be monitored, the equipment to be used, where sampling is to be performed, and the action limits. For the Gloversville MGP site, community air monitoring will be performed for total VOCs and particulates (dust) during potential future ground disturbing activities related to the Site Management Plan.

In addition to the community air monitoring, work/exclusion zone monitoring will be performed during work activities where impacted soil or groundwater may be encountered. The exclusion zone air monitoring requirements, equipment, and action levels are described in the site-specific HASP for this project. Note, however, that the work zone air monitoring and the community air monitoring are conducted as part of the overall site control program. When work zone VOC or particulate readings are found to exceed the downwind CAMP limits, the field staff will check the upwind and downwind air monitoring instruments to assess whether control measures will be required.

2.1 Monitoring Locations

Two community air monitoring locations will be established at the start of each workday when ground-intrusive activities are conducted – one upwind of the work area, and one downwind of the work area/exclusion zone. The purpose of the upwind station will be to determine the background concentration of VOCs and particulates at the worksite. The downwind monitoring station will be used to assess compliance with the NYSDEC/NYSDOH specified action limits for VOCs and particulates. The upwind VOC and dust measurements will be subtracted from the downwind measurements in order to compare the downwind instrument readings to the CAMP action levels.

The location of each monitoring station will be noted on the ***Community Air Monitoring Daily Data Sheet*** (Daily Data Sheet) (Attachment A). The locations of the instruments may be changed during the day to adapt to changing wind directions. Each location will be noted on the Data Sheet, along with the start and stop time at each location. Field personnel will be prepared to move the equipment to multiple locations in the event that there is little wind, if the wind direction changes frequently, or if there is a change to the location of the most sensitive downwind receptor location.

If necessary, precautions to minimize the release of VOCs and particulates will be taken at the work zone, and engineering or work controls used to protect the downwind receptor. These controls for minimizing releases from the work zone are discussed in Section 3.

2.2 Air Monitoring Equipment

The monitoring instruments will be calibrated at the start of each workday, and again during the day if the performance of an instrument is in question. The time and method of calibration will be noted on the Daily Data Sheet. Both the photoionization detectors (PIDs) and particulate meters will be mounted on a tripod in a vented protective case, and programmed to record 15-minute averages. A monitoring technician will check the instrumentation at each of these locations regularly during the work-day to ensure that they are operating properly.

2.2.1 VOC Monitoring Equipment

VOC monitoring will be performed using PIDs (RAE Systems MiniRAE™ or equivalent) equipped with a 10.2 or 10.6 eV bulb. The instruments will be set to record 15-minute running average concentrations. The PIDs will be equipped with an audible alarm to indicate an exceedance of the action level of 5 ppm total VOCs.

2.2.2 Particulate (Dust) Monitoring Equipment

Particulate monitoring will be performed using meters set to measure 10 micron and finer particulates (PM-10). Particulates will be monitored using an MIE DataRAM DR-2000l, TSI DustTrak™, or equivalent, which is capable of measuring PM-10. The equipment used will be set to record 15-minute running average concentrations, for comparison to the action levels.

In addition to the instrument readings, fugitive dust migration will be visually assessed during all work activities, and the observations recorded. Per NYSDEC requirements, visible dust migration will not be allowed. If visible dust is observed to be migrating from the work zone, the work will be stopped and dust control measures implemented.

2.3 Monitoring Action Levels and Responses

The action levels and responses for VOCs and particulates are presented in Table 1.

Table 1. Air Monitoring Response Levels and Actions

VOCs	
Response Level	**Actions**
>1 ppm at the wall of an occupied structure or at an air intake	▪ Check the indoor air concentration and compare with background measurements taken previously
>5 ppm above background for 15-minute average	▪ Temporarily halt work activities ▪ Continue monitoring, especially inside of occupied structures ▪ If VOC levels decrease (per instantaneous readings) below 5 ppm over background, work activities can resume
Persistent levels >5 ppm over background but <25 ppm	▪ Halt work activities ▪ Identify source of vapors ▪ Corrective action to abate emissions ▪ Continue monitoring ▪ Resume work activities if VOC levels 200 feet downwind of the property boundary or half the distance to the nearest potential receptor is <5 ppm for a 15-minute average
>25 ppm at the perimeter of the work area	▪ Shut down work

Particulates	
Response Level	**Actions**
>100 µg/m^3 above background for 15-minute average or visual dust observed leaving the site	▪ Apply dust suppression ▪ Continue monitoring ▪ Continue work if downwind PM-10 particulate levels are <150 µg/m^3 above upwind levels and no visual dust leaving site
>150 µg/m^3 above background for 15-minute average	▪ Stop work ▪ Re-evaluate activities ▪ Continue monitoring ▪ Continue work if downwind PM-10 particulate levels are <150 µg/m^3 above upwind levels and no visual dust leaving site

Sources:

- NYSDOH Community Air Monitoring Plan, December 2009, as published in NYSDEC DER-10, Appendix 1A, 2010.
- Fugitive Dust and Particulate Monitoring, NYSDEC DER-10, Appendix 1B, 2010.
- Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures, NYSDOH.

All data will be downloaded to a computer on a daily basis and saved for review. The data will be provided to the NYSDEC and/or the NYSDOH upon request at any stage of the project.

If VOC or particulate action levels are observed to be exceeded during the work day, the event, the source and corrective actions taken will be recorded on the Daily Data Sheet and reported to the on-site NYSDEC representative. If an on-site representative is not present, exceedances will be noted in the daily report to the NYSDEC project manager within one business day.

Table 2. Emergency Contacts and Telephone Numbers

Fire, Police, Ambulance		911
NYSDEC Contact	Scott Deyette – Project Manager	(518) 402-9662 (office) (518) 461-3721 (cell)
GEI Contacts	Wendy Moore – Project Manager Jerry Peake – Field Team Leader	(315)751-2835 (cell) (607) 793-6424 (cell)
National Grid Contact	Steven DiLella – Project Manager	(585) 520-5192 (cell)

2.4 Odor Monitoring

The field investigation personnel will record observations of odors generated during the implementation of the Work Plan. When odors attributable to the exposing of impacted media are generated in the work area during intrusive activities such as soil borings or excavation of test pits, observations will also be made at the downwind limit of the MGP site. The observations will be made to assess the potential for significant odors reaching on-site receptors or being transmitted off site. The downwind odor monitoring will be performed in conjunction with the PID and dust monitoring program described in this CAMP.

Upon detection of odors at the site perimeter, site controls, starting in the work area, will be implemented. The site controls described in Section 3 will be used to assist with odor mitigation. Note that the goal of the Odor Mitigation Plan is to minimize and to prevent, where practicable, the off-site migration of odors. Due to the short distances between any work area at the site and the on-site receptors property line, site controls will be implemented proactively when odors are detected in the breathing zone at any work area.

There are no action levels specified for odors. In the event that odors persist at the downwind receptors or property line after control measures are carried-out, the odor conditions will be discussed with the National Grid and NYSDEC project managers.

3. Control Procedures

This section outlines the procedures to be used to control VOCs, odors, and particulates that may be generated during the SMP field activities. The monitoring program includes one potential technique that may generate odors: soil excavations. The remainder of this section is intended to provide site managers, representatives of NYSDEC and NYSDOH, and the public with information summarizing typical odor control options, and to provide some guidance for their implementation. A description of potential sources of odors and methods to be used for odor control are presented in the following sections.

3.1 Potential Sources of Odors and VOCs

Generally, the residuals encountered at former MGP sites are well defined. They are related to residual coal tar-like materials and petroleum, and principally contain VOCs, polycyclic aromatic hydrocarbons (PAHs), and a number of inorganic constituents, including metal-complexed cyanide compounds, and metals. Constituents of MGP tar or petroleum products can produce odor emissions during investigation activities when they are unearthed during backhoe test pits and soil borings. When this occurs, VOCs and light-end semi-volatile organic compounds (SVOCs) can volatilize into the ambient air. Some MGP residuals can cause distinctive odors that are similar to mothballs, roofing tar, or asphalt driveway sealer. It is important to note that the CAMP will provide for continual monitoring of VOCs and particulates during the field work to monitor for any potential release of constituents which may exceed the exposure limits for downwind receptors.

3.2 General Site Controls

Several general excavation or drilling procedure site controls that might be implemented in the future include:

- Every effort will be made to minimize the amount of time that impacted material is exposed to ambient air at the site.
- Drill cuttings from the hollow-stem auger borings will be containerized as soon as possible during completion of each soil boring.
- 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.

3.4 Building Controls

Controls for minimizing the impacts to occupied buildings include deferral of work to times when building occupants are not present or at a minimum.

4. Documentation and Reporting

The attached Daily Data Sheet will be filled out each day to record all of the details of the CAMP work. The form will be used to record the following information:

- Date and weather, with significant changes noted which may affect the positioning of the meters or recording of the data;
- Calibration results for the instruments;
- Locations of the upwind and downwind monitoring stations, and any changes made to the locations during the day to adjust for changing work locations or wind directions; and
- Any significant readings made during the day, such as exceedances which occur and their causes.

Additional information will be noted in the project fieldbook(s), as necessary.

The electronic measurements from the PIDs and dust meters will be downloaded each day, reviewed, and archived. Exceedances of the action levels, if any, and the actions to be taken to mitigate the situations, will be discussed immediately with the on-site representatives, or reported within one business day to the NYSDEC project manager (if on-site NYSDEC oversight is not provided). The results of the daily CAMP monitoring will also be discussed in the daily written report to the NYSDEC project manager. Summaries of all air monitoring data will be provided to the NYSDEC or the NYSDOH upon request.

CAMP odor monitoring results will be recorded in the field log book and/or the Daily Data Sheet, and will also be available for review by the state agencies.

Attachment A

Community Air Monitoring Daily Data Sheet

Community Air Monitoring Daily Data Sheet

Date:

Site:

Project Number:

Weather:

Monitoring Start Time:

End Time:

Monitoring Station Location	Time (24 hour)	CAMP PID (ppm)	CAMP Particulate (mg/m3)	Wind Direction	Work Zone PID (ppm)	Work Zone Particulate (mg/m3)	Activity	Comments

Notes:

INSTRUMENT INFORMATION **Time** **Span and Agent**

PID Model: **Serial Number:** **Calibration:**

PID Model: **Serial Number:** **Calibration:**

Dust meter model: **Serial Number:** **Calibration:**

Dust meter model: **Serial Number:** **Calibration:**

Notes for Map on Reverse Side:

Circle Work Area. Show start and end times if there are multiple work areas.

↗ wind direction | **U** Upwind Station | **D** Downwind Station

Monitoring Completed By (print and sign): _____

APPENDIX F – QUALITY ASSURANCE PROJECT PLAN

GEI Consultants

Consulting
Engineers and
Scientists

Quality Assurance Project Plan

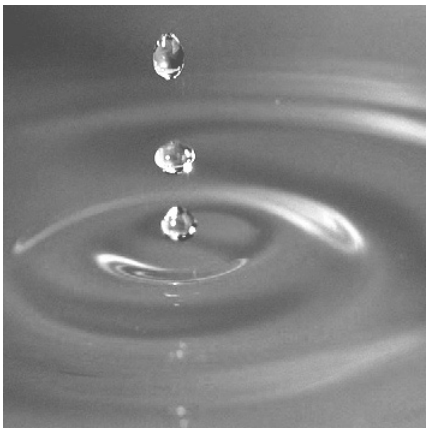
Gloversville (Washington Street) Former MGP Site

Gloversville, New York
NYSDEC Site # 518026

Submitted to:
National Grid
300 Erie Boulevard West
Syracuse, NY 13202

Submitted by:
GEI Consultants, Inc., P.C.
1301 Trumansburg Road, Suite N
Ithaca, NY 14850

November 2020
Project #115130-1-1113



Wendy L. Moore, P.E.
Project Manager

Joseph M. Simone, P.E.
Senior Engineer

Table of Contents

Table of Contents (cont'd)

Tables

Figures

Abbreviations and Acronyms

ASP	Analytical Service Protocols
ASTM	American Society for Testing and Materials
BTEX	Benzene, Toluene, Ethylbenzene, Total Xylenes
CAR	Corrective Action Request
CERCLA	Comprehensive Environmental Response, Compensations and Liability Act
CHMM	Certified Hazardous Materials Manager
CLP	Contract Laboratory Protocol
CRQL	Contract Required Quantitation Limits
DQO	Data Quality Objective
DRO	Diesel Range Organics
DUSR	Data Usability Summary Report
EDD	Electronic Data Deliverable
EIMS	Environmental Information Management System
ELAP	Environmental Laboratory Approval Program
EPA	United States Environmental Protection Agency
FSAP	Field Sampling and Analytical Plan
GC/MS	Gas Chromatography/Mass Spectroscopy
GEI	GEI Consultants, Inc., P.C.
GRO	Gasoline Range Organics
HASP	Health and Safety Plan
LCS	Labortory Control Sample
MDL	Method Detection Limit
MGP	Manufactured Gas Plant
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NIST	National Institute of Standards and Technology
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	Polycyclic Aromatic Hydrocarbons
PAH 34	PAHs defined by EPA for Sediment Toxicity Evaluation
PCB	Polychlorinated Biphenyl
PDI	Pre-Design Investigation
P.G.	Professional Geologist
PM	Project Manager
PQL	Practical Quantification Limit
QA	Quality Assurance
QAO	Quality Assurance Officer
QAPP	Quality Assurance Project Plan
QC	Quality Control
RL	Reporting Limit

RPD	Relative Percent Difference
SD	Standard Deviation
SMP	Site Management Plan
SOP	Standard Operating Procedure
SVOC	Semi-Volatile Organic Compound
TIC	Tentatively Identified Compound
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbon
VOC	Volatile Organic Compound

Quality Assurance Glossary

"Analytical Services Protocol" or "ASP" means the New York State Department of Environmental Conservation (NYSDEC's) compendium of approved United States Environmental Protection Agency (EPA) and NYSDEC laboratory methods for sample preparation and analysis and data handling procedures.

"Confirmatory sample" means a sample taken after remedial action is expected to be complete to verify that the cleanup requirements have been met. This term has the same meaning as "post remediation sample."

"Contract laboratory program" or "CLP" means a program of chemical analytical services developed by the EPA to support Comprehensive Environmental Response, Compensations and Liability Act (CERCLA).

"Data Usability Summary Report, (DUSR)" is a document that provides a thorough evaluation of the analytical data to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and use.

"Effective solubility" means the theoretical aqueous solubility of an organic constituent in groundwater that is in chemical equilibrium with a separate phase mixed product (product containing several organic chemicals). The effective solubility of a particular organic chemical can be estimated by multiplying its mole fraction in the product mixture by its pure phase solubility.

"Environmental Laboratory Accreditation Program" or "ELAP" means a program conducted by the New York State Department of Health (NYSDOH), which certifies environmental laboratories through on-site inspections and evaluation of principles of credentials and proficiency testing.

"Intermediate sample" means a sample taken during the investigation process that will be followed by another sampling event to confirm that remediation was successful or to confirm that the extent of contamination has been defined to below a level of concern.

"Method detection limit" or "MDL" means the minimum concentration of a substance that can be measured and reported with a 99 percent confidence that the analyte concentration is greater than zero and is determined from the analysis of a sample in a given matrix containing the analyte.

"Non-targeted compound" means a compound detected in a sample using a specific analytical method that is not a targeted compound, a surrogate compound, a system monitoring compound or an internal standard compound.

"Practical quantitation level" or "PQL" means the lowest quantitation level of a given analyte that can be reliably achieved among laboratories within the specified limits of precision and accuracy of a given analytical method during routine laboratory operating conditions.

"PAH" means polycyclic aromatic hydrocarbon as defined by EPA Method 8270D.

"Quality assurance" or "QA" means the total integrated program for assuring the reliability of monitoring and measurement data, which includes a system for integrating the quality planning, quality assessment and quality improvement efforts to meet data end-use requirements.

"Quality Assurance Project Plan" or "QAPP" means a document, which presents in specific terms the policies, organization, objectives, functional activities, and specific quality assurance/quality control activities designed to achieve the data quality goals or objectives of a specific project or operation.

"Quality control" or "QC" means the routine application of procedures for attaining prescribed standards of performance in the monitoring and measurement process.

"Semi-volatile organic compound" or "SVOC" means compounds amenable to analysis by extraction of the sample with an organic solvent. For the purposes of this section, semi-volatiles are those target compound list compounds identified in the statement of work in the current version of the EPA Contract Laboratory Program.

"Target analyte list" or "TAL" means the list of inorganic compounds/elements designated for analysis as contained in the version of the EPA Contract Laboratory Program Statement of Work for Inorganics Analysis, Multi-Media, Multi-Concentration in effect as of the date on which the laboratory is performing the analysis. For the purpose of this chapter, a Target Analyte List scan means the analysis of a sample for Target Analyte List compounds/elements.

"Targeted compound" means a hazardous substance, hazardous waste, or pollutant for which a specific analytical method is designed to detect that potential contaminant both qualitatively and quantitatively.

"Tentatively identified compound" or "TIC" means a non-targeted compound detected in a sample using a Gas Chromatography/Mass Spectroscopy (GC/MS) analytical method, which has been tentatively, identified using a mass spectral library search. An estimated concentration of the TIC is also determined.

"Unknown compound" means a non-targeted compound, which cannot be tentatively identified. Based on the analytical method used, the estimated concentration of the unknown compound may or may not be determined.

"Volatile organics" means organic compounds amenable to analysis by the purge and trap technique. For the purposes of this chapter, analysis of volatile organics means the analysis of a sample for either those priority pollutants listed as amenable for analysis using EPA method 8260C or those target compounds identified as volatiles in the version of the EPA "Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration" in effect as of the date on which the laboratory is performing the analysis.

1. Project Description

This Quality Assurance Project Plan (QAPP) specifies the quality control and quality assurance procedures to ensure the generation of statistically valid data. All procedures are equivalent to those specified in the *United States Environmental Protection Agency's QA/R-5 "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations," "Test Methods for Evaluating Solid Waste," EPA SW-846, Third Edition*, and its promulgated updates, and New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocols (ASP) to be used to ensure that data from the Site Management Plan (SMP) at the Gloversville (Washington Street) Former Manufactured Gas Plant (MGP) site in Gloversville, New York are precise, accurate, representative, comparable, and complete. An ELAP-certified laboratory will be used for the analysis of the samples. However, should forensic analysis be needed, National Grid may negotiate with the NYSDEC for the use of specialty analytical services.

1.1 Introduction

A description of the Gloversville (Washington Street) Former MGP site is included in the Site Management Plan. MGP-related residuals are present at the site based on sampling during the Remedial Investigation. Ongoing sampling is required to monitor remaining contamination following remedial activities. Additional information regarding the impacts observed at the site is included in the Remedial Action Work Plan.

1.2 Scope of Work

The scope of work for the sampling is described in the project SMP. Groundwater samples will be collected during the ongoing monitoring. These samples will be analyzed using EPA SW-846 Methods with NYSDEC ASP Category B laboratory data deliverables. Samples submitted for Toxicity Characteristic Leaching Procedure (TCLP) analysis will be analyzed using *EPA SW-846 "Test Methods for Evaluating Solid Waste," November 1986, 3rd edition* (and subsequent updates).

1.3 Data Quality Objectives

Data Quality Objectives (DQOs) are qualitative and quantitative statements to ensure that data of known and appropriate quality are obtained during sampling and analysis activities. Data developed during the site investigation will be used to fulfill the overall objectives of the program.

1.3.1 Data Quality Levels

There are five analytical levels of data quality which may be used to accomplish these site objectives. They are typically designated as follows:

- Level I - field screening or analysis using portable instruments, calibrated to non-compound specific standards
- Level II - field analysis using portable instruments, calibrated to specific compounds
- Level III - non-Contract Laboratory Program (ASP-CLP) laboratory methods
- Level IV - ASP-CLP Routine Analytical Services methods
- Level V - non-standard analytical methods

To meet the specific objectives of this project, Levels I, IV and V data quality objectives will be utilized.

Level I - Field Screening Methods

Level I screening will be performed for health and safety purposes according to procedures provided in the site-specific Health and Safety Plan (HASP) as well as to qualitatively assess the presence of volatile organic compounds (VOCs) in soil at the site.

Level IV - CLP/ASP Methodologies

Soil samples will be analyzed according to the EPA SW-846 Methods following procedures specified in the most recent edition of the NYSDEC ASP (July, 2005). Analytical reports will be prepared in accordance with NYSDEC ASP Category B laboratory data deliverable specifications. This level of data quality will ensure the generation of legally, and technically defensible data for project use. Level IV data will also be provided for the hazardous characteristics testing. If available cyanide is analyzed, a CLP-equivalent data package will be prepared for this analysis.

Level V - Non-Standard Analytical Methods

Samples may be analyzed using non-standard analytical methods should forensic analyses be needed. If these analyses are proposed for the PDI, the analyses to be performed and the methods to be used will be discussed with, and approved by the NYSDEC prior to sample collection.

2. Project Organization

The SMP sampling will be performed for National Grid by GEI Consultants, Inc., P.C., an environmental consultant (the Consultant). GEI will arrange for the analytical services and provide on-site field representative to perform the groundwater sampling. The Consultant will also perform the data interpretation and reporting tasks.

Key contacts for this project are as follows:

National Grid Project Manager:

Steven DiLella
National Grid
300 Erie Blvd. West
Syracuse, New York 13202
Cell: (585) 520-5192

Consultant Senior Project Manager (GEI):

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Cell: (607) 592-4677

Consultant Project Manager (GEI):

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Glastonbury, Connecticut 06033
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Laboratory Representative (TestAmerica):

David Dunlap
TestAmerica - Pittsburgh
RIDC Park
301 Alpha Drive
Pittsburgh, Pennsylvania 15238-2907
Telephone: (412) 963-7058
Fax: (412) 963-2468

3. Quality Assurance/Quality Control Objectives for Measurement of Data

3.1 Introduction

The quality assurance and quality control (QA/QC) objectives for all quantitative measurement data include precision, accuracy, representativeness, completeness, and comparability. These objectives are defined in the following subsections. They are formulated to meet the requirements of the NYSDEC ASP and EPA SW-846. The analytical methods and Contract Required Quantitation Limits (CRQLs) are provided in Section 7.

3.2 Precision

Precision is an expression of the reproducibility of measurements of the same parameter under a given set of conditions. Specifically, it is a quantitative measurement of the variability of a group of measurements compared to their average value [EPA, 1987]. Precision is usually stated in terms of standard deviation, but other estimates such as the coefficient of variation (relative standard deviation), range (maximum value minus minimum value), relative range, and relative percent difference (RPD) are common.

For this project, field sampling precision will be determined by analyzing coded duplicate samples (labeled so that the laboratory does not recognize them as duplicates) for the same parameters, and then, during data validation (Section 8), calculating the RPD for duplicate sample results.

Analytical precision will be determined by the laboratory by calculating the RPD for the results of the analysis of internal QC duplicates and matrix spike duplicates. The formula for calculating RPD is as follows:

$$RPD = \frac{|V1 - V2|}{(V1 + V2)/2} \times 100$$

where:

RPD = Relative percent difference.
V1, V2 = The two values to be compared.

|V1 - V2| = The absolute value of the difference between the two values.
(V1 + V2)/2 = The average of the two values.

The DQOs for analytical precision, calculated as the RPD between duplicate analyses, are presented in Table 1.

3.3 Accuracy

Accuracy is a measure of the degree of agreement between a measured value and the true or expected value of the quantity of concern (Taylor, 1987), or the difference between a measured value and the true or accepted reference value. The accuracy of an analytical procedure is best determined by the analysis of a sample containing a known quantity of material, and is expressed as the percent of the known quantity which is recovered or measured. The recovery of a given analyte is dependent upon the sample matrix, method of analysis, and the specific compound or element being determined. The concentration of the analyte relative to the detection limit of the analytical method is also a major factor in determining the accuracy of the measurement. Concentrations of analytes which are close to the detection limits are less accurate because they are more affected by such factors as instrument "noise". Higher concentrations will not be as affected by instrument noise or other variables and thus will be more accurate.

Sampling accuracy may be determined through the assessment of the analytical results of field blanks and trip blanks for each sample set. Analytical accuracy is typically assessed by examining the percent recoveries of surrogate compounds that are added to each sample (organic analyses only), and the percent recoveries of matrix spike compounds added to selected samples and laboratory blanks. Additionally, initial and continuing calibrations must be performed and accomplished within the established method control limits to define the instrument accuracy before analytical accuracy can be determined for any sample set.

Accuracy is normally measured as the percent recovery (%R) of a known amount of analyte, called a spike, added to a sample (matrix spike) or to a blank (blank spike). The %R is calculated as follows:

$$\%R = \frac{SSR - SR}{SA} \times 100$$

where:

%R = Percent recovery.

SSR = Spike sample result: concentration of analyte obtained by analyzing the sample with the spike added.
SR = Sample result: the background value, i.e., the concentration of the analyte obtained by analyzing the sample.
SA = Spiked analyte: concentration of the analyte spike added to the sample.

The acceptance limits for accuracy for each parameter are presented in Table 1.

3.4 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter which is most concerned with the proper design of the sampling program (EPA, 1987). Samples must be representative of the environmental media being sampled. Selection of sample locations and sampling procedures will incorporate consideration of obtaining the most representative sample possible.

Field and laboratory procedures will be performed in such a manner as to ensure, to the degree that is technically possible, that the data derived represents the in-place quality of the material sampled. Every effort will be made to ensure chemical compounds will not be introduced into the sample via sample containers, handling, and analysis. Decontamination of sampling devices will be performed between samples as outlined in the Field Sampling and Analysis Plan (FSAP). Analysis of field blanks, trip blanks, and method blanks will also be performed to monitor for potential sample contamination from field and laboratory procedures.

The assessment of representativeness also must consider the degree of heterogeneity in the material from which the samples are collected. Sampling heterogeneity will be evaluated during data validation through the analysis of coded field duplicate samples. The analytical laboratory will also follow EPA-approved procedures to assure the samples are adequately homogenized prior to taking aliquots for analysis, so the reported results are representative of the sample received.

Chain-of-custody procedures will be followed to document that contamination of samples has not occurred during container preparation, shipment, and sampling. Details of blank, duplicate, and chain-of-custody procedures are presented in Sections 4 and 5.

3.5 Completeness

Completeness is defined as the percentage of measurements made which are judged to be valid [EPA, 1987]. The QC objective for completeness is generation of valid data for at least 90 percent of the analyses requested. Completeness is defined as follows for all sample measurements:

$$\%C = \frac{V}{T} \times 100$$

where:

%C = Percent completeness.
V = Number of measurements judged valid.
T = Total number of measurements.

3.6 Comparability

Comparability expresses the degree of confidence with which one data set can be compared to another (EPA, 1987). The comparability of all data collected for this project will be ensured by:

- Using identified standard methods for both sampling and analysis phases of this project.
- Requiring traceability of all analytical standards and/or source materials to the EPA or National Institute of Standards and Technology (NIST).
- Requiring that all calibrations be verified with an independently prepared standard from a source other than that used for calibration (if applicable).
- Using standard reporting units and reporting formats including the reporting of QC data.
- Performing a complete data validation on a representative fraction of the analytical results, including the use of data qualifiers in all cases where appropriate.
- Requiring that all validation qualifiers be used any time an analytical result is used for any purpose.

These steps will ensure all future users of either the data or the conclusions drawn from them will be able to judge the comparability of these data and conclusions.

4. Sampling Program

4.1 Introduction

The sampling program was developed to provide analytical and field data that can be used to satisfy the project objectives (as outlined in Section 1.2). This section presents sample container preparation procedures, sample preservation procedures, sample holding times, and field QC sample requirements. Sample locations, and the number of environmental and QC samples to be collected, are summarized in Table 2. The sampling procedures are presented in the FSAP.

4.2 Analytical Methods

The laboratory samples for each media and the chemical analyses to be performed, including the QA/QC samples, are included in Table 2. These analyses are summarized below.

4.2.1 Groundwater Analyses

The groundwater samples will be analyzed for the following parameters:

- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270D
- Benzene, toluene, ethylbenzene and total xylenes (BTEX) by EPA Method 8260C

4.3 Sample Container Preparation and Sample Preservation

Sample containers delivered to the field will be new and certified clean by the vendor. Copies of the sample container QC analyses will be provided by the laboratory for each container lot used to obtain samples. The containers will be tagged, and the appropriate chemical preservatives will be added. The types of containers are shown in Table 3.

Samples shall be preserved according to the preservation techniques listed in Table 3. Preservatives will be added to the sample bottles by the laboratory prior to their shipment in sufficient quantities to ensure that proper sample pH is met. Following sample collection, the sample bottles should be placed on ice in the shipping cooler, cooled to 4° ± 2° C with ice, and delivered to the laboratory within 48 hours of collection under chain-of-custody. Chain-of-custody procedures are described in Section 5.

4.4 Sample Holding Times

The sample holding times for organic and inorganic parameters are listed in Table 3 and are in accordance with the NYSDEC ASP requirements. Holding times for TCLP samples are given in Table 4. The NYSDEC ASP holding times must be strictly adhered to by the field and laboratory personnel.

4.5 Field Quality Control Samples

Field QC samples will consist of a series of blanks and duplicates that will be collected to assess field sampling and decontamination performance. Two types of blanks to assess the collection of field samples will be collected and submitted to the laboratory for analyses (trip and equipment blanks). In addition, the precision of the laboratory analytical procedures will be assessed by collecting coded field duplicates and matrix spike/matrix spike duplicates (MS/MSDs). The blanks will include:

a. **Trip blanks** - A Trip Blank will be prepared before the sample containers are sent by the laboratory. The trip blank will consist of one or more 40-ml VOA vials containing EPA Type 2 water, that accompanies all water sample bottles into the field and back to the laboratory. A trip blank will be included in each shipping container of water samples for volatiles analysis. The trip blank will be analyzed for VOCs to assess any contamination from sampling, storage, transport, and internal laboratory procedures.

b. **Equipment blanks** - Equipment blanks are collected to determine the effectiveness of the decontamination procedures for sampling equipment. Equipment blanks are collected by passing EPA Type 2 water provided by the laboratory through decontaminated sampling equipment. It is usually collected as a last step in the decontamination procedure, prior to taking an environmental sample. The equipment blank will be analyzed for all of the parameters of interest. The equipment blanks will be taken at a frequency of one per 20 field samples.

The duplicates will consist of:

a. **Coded field duplicate** - To determine the representativeness of the sampling methods, coded field duplicates will be collected. The samples are termed "coded" because they will be labeled in such a manner that the laboratory will not be able to determine that they are duplicate samples. This will eliminate any possible bias that could arise. The coded field duplicates will be taken at a frequency of one duplicate per 20 field samples.

b. **Matrix spike/matrix spike duplicate** - MS/MSD samples (MS/MSD for organics; MS and laboratory duplicate for inorganics) will be taken at a frequency of one pair per 20 field samples. These samples are used to assess the effect of the sample matrix

on the recovery of target compounds or target analytes. The percent recoveries and relative percent differences (RPDs) are listed in Table 1.

5. Sample Tracking and Custody

5.1 Introduction

This section presents sample custody procedures for both the field and laboratory. Implementation of proper custody procedures for samples generated in the field is the responsibility of field personnel. Both laboratory and field personnel involved in the chain-of-custody and transfer of samples will be trained on the purpose of the chain-of-custody and specific procedures prior to implementation.

Evidence of sample traceability and integrity is developed by implementation of, and adherence to, the chain-of-custody procedures. These procedures document the sample traceability from the selection and preparation of the sample containers by the laboratory, to sample collection, to sample shipment, to laboratory receipt and analysis. The sample custody flowchart is presented in Figure 1. A sample is considered to be in a person's custody if the sample is:

- In a person's possession
- Maintained in view after possession is accepted and documented
- Locked and tagged with Custody Seals so that no one can tamper with it after having been in physical custody
- In a secured area which is restricted to authorized personnel

5.2 Field Sample Custody

A chain-of-custody record (Figure 2 or equivalent) accompanies the sample containers from selection and preparation at the laboratory, during shipment to the field for sample containment and preservation, and during return to the laboratory. Triplicate copies of the chain-of-custody must be completed for each sample set collected.

The chain-of-custody lists the field personnel responsible for taking samples, the project name and number, the name of the analytical laboratory to which the samples are sent, and the method of sample shipment. The chain-of-custody also lists a unique description of every sample bottle in the set. If samples are split and sent to different laboratories, a copy of the chain-of-custody record will be sent with each sample.

The REMARKS space on the chain-of-custody is used to indicate if the sample is an MS/MSD, or any other sample information for the laboratory. Since they are not specific to any one sample point, trip and equipment blanks are indicated on separate rows. Once all bottles are properly accounted for on the form, a sampler will write his or her signature and the date and time on the first RELINQUISHED BY space. The sampler will also write the method of shipment, the shipping cooler identification number, and the shipper air bill number on the top of the chain-of-custody. Errors will be crossed out with a single line in ink and initialed and dated by the author.

One copy of the chain-of-custody is retained by sampling personnel and the other two copies are put into a sealable plastic bag and taped inside the lid of the shipping cooler. The cooler lid is closed, custody seals provided by the laboratory are affixed to the latch and across the back and front lids of the cooler, and the person relinquishing the samples signs their name across the seal. The seal is taped, and the cooler is wrapped tightly with clear packing tape. It is then relinquished by field personnel to personnel responsible for shipment, typically an overnight carrier. The chain-of-custody seal must be broken to open the container. Breakage of the seals before receipt at the laboratory may indicate tampering. If tampering is apparent, the laboratory will contact the Project Manager, and the sample(s) will not be analyzed.

5.3 Laboratory Sample Custody

The Project Manager or Field Team Leader will notify the laboratory of upcoming field sampling activities, and the subsequent shipment of samples to the laboratory. This notification will include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival.

The following laboratory sample custody procedures will be used:

- The laboratory will designate a sample custodian who will be responsible for maintaining custody of the samples, and for maintaining all associated records documenting that custody.
- Upon receipt of the samples, the custodian will check cooler temperature, and check the original chain-of-custody documents and compare them with the labeled contents of each sample container for correctness and traceability. The sample custodian will sign the chain-of-custody record and record the date and time received.
- Care will be exercised to annotate any labeling or description errors. In the event of discrepant documentation, the laboratory will immediately contact the Project Manager or Field Team Leader as part of the corrective action process. A qualitative assessment of each sample container will be performed to note any anomalies, such as

broken or leaking bottles. This assessment will be recorded as part of the incoming chain-of-custody procedure.

- The samples will be stored in a secured area and, if required, stored at a temperature of 4°± 2° C.
- A laboratory tracking record will accompany the sample or sample fraction through final analysis and final storage for control.
- A copy of the tracking record will accompany the laboratory report and will become a permanent part of the project records.

6. Calibration Procedures

6.1 Field Instruments

All field analytical equipment will be calibrated immediately prior to each day's use. The calibration procedures will conform to manufacturer's standard instructions and are described in the FSAP. This calibration will ensure that the equipment is functioning within the allowable tolerances established by the manufacturer and required by the project. Records of all instrument calibration will be maintained by the Field Team Leader in a notebook. Copies of all the instrument manuals will be maintained on site by the Field Team Leader. Calibration procedures for instruments used for monitoring health and safety hazards (e.g., photo-ionization detector and explosimeter) are provided in the Health and Safety Plan. More frequent calibration may be needed depending on conditions encountered in the field.

6.2 Laboratory Instruments

The laboratory will follow all calibration procedures and schedules as specified in the sections of the EPA SW-846 and NYSDEC ASP and subsequent updates as they apply to the instruments used for the analytical methods listed in Section 7.

7. Analytical Procedures

7.1 Introduction

Samples will be analyzed according to methods approved by the NYSDEC Analytical Services Protocol (ASP) program or EPA SW-846 "*Test Methods for Evaluating Solid Waste," November 1986, 3rd edition*, and subsequent updates. The methods to be used for the laboratory analysis of water and soil samples are listed in Table 2. These methods were selected because they attain the DQOs required for the project, and the quantitation limits that are listed in Table 5. If TCLP analyses are to be run, the quantitation limits are listed in Table 6.

Should an analytical method be required that is outside the scope to the references cited above, the method used will be published by a nationally recognized authority (e.g., EPA, API) and approved for use by the regulatory agency.

The Project Manager shall ensure that laboratories (primary or subcontracted) generating data in support of National Grid remediation and investigative projects maintain the relevant state and federal government regulatory accreditations, certifications, and/or registrations to perform the required analyses.

8. Data Reduction, Assessment, and Reporting

8.1 Data Reduction

Data collected during the field investigation will be reduced in accordance with NYSDEC ASP protocols. The procedures for identification and quantification of the analytes will be specified in the NYSDEC ASP or EPA SW-846 *"Test Methods for Evaluating Solid Waste,"* November 1986, 3rd edition and subsequent updates and peer reviewed by laboratory supervising personnel.

8.2 Data Quality Assessment

NYSDEC generally recommends two levels of data review for data collected during site investigations. The basic review is a Data Usability Summary Report (DUSR). Current NYSDEC policy is to require a DUSR for data collected during investigations on most sites. The more rigorous full data validation procedure is called for at sites where the data will be used in litigation. The laboratory deliverables (i.e., NYSDEC ASP Category B) are the same in both cases, and a DUSR can be upgraded to full validation at a later time if necessary. For this investigation, a DUSR will be generated.

Based on the results of data assessment, the validated analytical results reported by the laboratory will be assigned one of the following usability flags by the data validator:

- U The analyte was analyzed for, but was not detected above the level of the reported samples quantitation limit.
- UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be inaccurate or imprecise.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J- (Inorganics) The result is an estimated quantity, likely to be biased low. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ (Inorganics) The result is an estimated quantity, likely to be biased high. The associated numerical value is the approximate concentration of the analyte in the sample.
- N Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling events.

- NJ Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.
- R The data are unusable. The sample results are rejected due to serious deficiencies in the ability to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Trained and experienced data assessors, who meet NYSDEC approval criteria, will perform the data assessment. Resumes of people performing data assessments and generating DUSRs will be provided to NYSDEC for review and approval.

8.2.1 Data Usability Summary Report

Data for this investigation will be evaluated in accordance with the "*EPA National Functional Guidelines for Organic Data Review*," October 1999 and "*EPA Validation Functional Guidelines for Inorganic Data Review*," October 2004. A DUSR will be generated in accordance with the NYSDEC guidelines. The data validator will be an independent third party person and will meet the qualification requirements stated in Section 2.0 (b) of Appendix 2B of DER-10. The data validator will not perform the duties of the Quality Assurance Officer (QAO).

A DUSR will be prepared which will include a review and an evaluation of all the analytical results. To ensure compliance with the analytical method protocols the following will be reviewed:

- Chain-of-custody forms
- Holding times
- Initial and continuing calibrations
- Blanks
- Laboratory control standards and matrix spikes
- Surrogate recoveries
- Matrix interference checks
- Field and laboratory duplicates
- Sample data

The DUSR will contain a description of the samples and parameters reviewed. Any deficiencies identified during the review will be noted and the effect on the generated data will be discussed. Any re-sampling or re-analysis recommendations will then be made to the

investigation's Project Manager. The results of the evaluation will be incorporated into the final investigative report.

8.2.2 Data Validation

The determination to validate data will be made based on the presence of data anomalies, suspect data, or laboratory issues. Unless required to address anomalies, the data will be subject to the DUSR process and will not be subject to full validation. Where necessary, data will be validated in accordance with the "*EPA National Functional Guidelines for Organic Data Review*," October 1999 and "*EPA Validation Functional Guidelines for Inorganic Data Review*," October 2004. If applicable, a data validation report will be prepared and reviewed by the QAO before issuance. A resume for the GEI QAO is attached (Figure 4). The data validation report will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain-of-custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method. A detailed assessment of each sample delivery group will follow. For each of the organic analytical methods, the following will be assessed:

- Holding times
- Instrument tuning
- Instrument calibrations
- Blank results
- System monitoring compounds or surrogate recovery compounds (as applicable)
- Internal standard recovery results
- MS and MSD results
- Field duplicate results
- Target compound identification
- Result calculations
- Pesticide cleanup (if applicable)
- Compound quantitation and reported detection limits
- System performance
- Results verification

For each of the inorganic compounds, the following will be assessed:

- Holding times
- Calibrations
- Blank results
- Interference check sample
- Laboratory check samples
- Duplicates
- Matrix spike(s)
- Furnace atomic absorption analysis QC
- ICP serial dilutions
- Results verification and reported detection limits
- Result calculations

8.3 Data Reporting

The data package provided by the laboratory will contain all items discussed above in a "CLP-equivalent" format. Data quality issues will be discussed in a case narrative included with the data report. The completed copies of the chain-of-custody records (both external and internal) accompanying each sample from time of initial bottle preparation to completion of analysis shall be attached to the analytical reports.

One copy of the analytical data packages in an electronic disk deliverable format will be provided by the laboratory approximately 30 days after receipt of a complete sample delivery group. The Project Manager will immediately arrange for filing of the package, the data validation, the preparation of the DUSR, and the preparation of the data summary tables. These tables will form the database for the assessment of the extent of the MGP-related impacts at the site.

8.3.1 NYSDEC Data Submittal

The NYSDEC has implemented an Environmental Information Management System (EIMS). The EIMS uses the database software application EQuIS™ from EarthSoft® Inc.

The data submitted to the Department of Environmental Remediation will be in the NYSDEC-approved Electronic Data Deliverable (EDD). New data will be submitted on a continuous basis immediately after data validation occurs but in no event more than 90 days after the data has been submitted to the Consultant. The field and character lengths for the disk deliverable are in Table 7. The EDD format will be provided by the NYSDEC.

9. Internal Quality Control Checks and Frequency

9.1 Quality Assurance Batching

Each set of up to 20 samples submitted to the laboratory will be analyzed concurrently with associated calibration standards, method blanks, MS/MSD or laboratory duplicates, and QC check samples (if required by the protocol). Note that the MS/MSD samples will be provided with the field samples and identified by the field personnel.

9.2 Calibration Standards and Surrogates

All organic standard and surrogate compounds are checked by the method of mass spectrometry for correct identification and gas chromatography for degree of purity and concentration. All standards are traceable to a source of known quality certified by the EPA or NIST, or other similar nationally-recognized program. When the compounds pass the identity and purity tests, they are certified for use in standard and surrogate solutions. Concentrations of the solutions are checked for accuracy before release for laboratory use. Standard working solutions are replaced monthly or more frequently, based upon data indicating deterioration. No stock or working standard will be used past the manufacturer's expiration date.

9.3 Organic Blanks and Matrix Spike

Analysis of blank samples verifies that the analytical method does not introduce contaminants or detect "false positives". The blank water can be generated by reverse osmosis and Super-Q filtration systems, or distillation of water containing $KMnO^4$. The matrix spike is generated by addition of analyte and surrogate standards to a designated field sample.

9.4 Trip and Field Blanks

Trip blanks and equipment blanks will be utilized in accordance with the specifications in Section 4. These blanks will be analyzed to provide a check on sample bottle preparation and to evaluate the possibility of atmospheric or cross-contamination of the samples.

10. Quality Assurance Performance Audits and System Audits

10.1 Introduction

Quality assurance audits may be performed by the project quality assurance group under the direction and approval of the project QAO. These audits will be implemented to evaluate the capability and performance of project and subcontractor personnel, items, activities, and documentation of the measurement system(s). Functioning as an independent body and reporting directly to corporate QA management, the QAO may plan, schedule, and approve system and performance audits based upon procedures customized to the project requirements. At times, the QAO may request additional personnel with specific expertise from company and/or project groups to assist in conducting performance audits. However, these personnel will not have responsibility for the project work associated with the performance audit.

10.2 System Audits

System audits may be performed by the QAO or designated auditors, and encompass a qualitative evaluation of measurement system components to ascertain their appropriate selection and application. In addition, field and laboratory QC procedures and associated documentation may be audited. These audits may be performed once during the performance of the project. However, if conditions adverse to quality are detected or if the Project Manager requests, additional audits may occur.

10.3 Performance Audits

The laboratory is required to perform periodic analyses of Performance Evaluation samples to maintain NELAP accreditation and/or state regulatory certifications. Performance Evaluation samples obtained from an EPA-approved vendor or a state agency must be analyzed by the laboratory at least semi-annually.

10.4 Formal Audits

Formal audits refer to any system or performance audit that is documented and implemented by the QA group. These audits encompass documented activities performed by qualified lead auditors to a written procedure or checklists to objectively verify that QA requirements have been developed, documented, and instituted in accordance with contractual and project

criteria. Formal audits may be performed on project and subcontractor work at various locations.

Audit reports will be written by auditors who have performed the site audit after gathering and evaluating all data. Items, activities, and documents determined by lead auditors to be out of compliance shall be identified at exit interviews conducted with the involved management. Compliance deviation will be logged, and documented through audit findings which are attached to and are a part of the integral audit report. These audit finding forms are directed to management to satisfactorily resolve the noncompliance in a specified and timely manner.

The Project Manager has overall responsibility to ensure that all corrective actions necessary to resolve audit findings are acted upon promptly and satisfactorily. Audit reports must be submitted to the Project Manager within 15 days of completion of the audit. Serious deficiencies will be reported to the Project Manager within 24 hours. All audit checklists, audit reports, audit findings, and acceptable resolutions are approved by the QAO prior to issue. Verification of acceptable resolutions may be determined by re-audit or documented surveillance of the item or activity. Upon verification acceptance, the QAO will close out the audit report and findings.

11. Preventive Maintenance Procedures and Schedules

11.1 Preventive Maintenance Procedures

Equipment, instruments, tools, gauges, and other items requiring preventive maintenance will be serviced in accordance with the manufacturer's specified recommendations and written procedure developed by the operators.

A list of critical spare parts will be established by the operator. These spare parts will be available for use in order to reduce downtime, if any. A service contract for rapid instrument repair or backup instruments may be substituted for the spare part inventory.

11.2 Schedules

Written procedures will establish the schedule for servicing critical items in order to minimize the downtime of the measurement system. The laboratory will adhere to the maintenance schedule, and arrange any necessary and prompt service. Required service will be performed by qualified personnel.

11.3 Records

Logs shall be established to record and control maintenance and service procedures and schedules. All maintenance records will be documented and traceable to the specific equipment, instruments, tools, and gauges. Records produced shall be reviewed, maintained, and filed by the operators at the laboratories. The QAO may audit these records to verify complete adherence to these procedures.

12. Corrective Action

12.1 Introduction

The following procedures have been established to ensure that conditions adverse to quality, such as malfunctions, deficiencies, deviations, and errors, are promptly investigated, documented, evaluated, and corrected.

12.2 Procedure Description

When a significant condition adverse to quality is noted at site, laboratory, or subcontractor location, the cause of the condition will be determined and corrective action will be taken to preclude repetition. Condition identification, cause, reference documents, and corrective action planned to be taken will be documented and reported to the QAO, Project Manager, Field Team Leader, and involved contractor management, at a minimum. Implementation of corrective action is verified by documented follow-up action.

All project personnel have the responsibility, as part of the normal work duties, to promptly identify, solicit approved correction, and report conditions adverse to quality. Corrective actions will be initiated as follows:

- When predetermined acceptance standards are not attained
- When procedure or data compiled are determined to be deficient
- When equipment or instrumentation is found to be faulty
- When samples and analytical test results are not clearly traceable
- When QA requirements have been violated
- When designated approvals have been circumvented
- As a result of system and performance audits
- As a result of a management assessment
- As a result of laboratory/field comparison studies
- As required by EPA SW-846, and subsequent updates, or by the NYSDEC ASP

Project management and staff, such as field investigation teams, remedial response planning personnel, and laboratory groups monitor on-going work performance in the normal course of daily responsibilities. Work may be audited at the sites, laboratories, or contractor

locations. Activities, or documents ascertained to be noncompliant with QA requirements will be documented. Corrective actions will be mandated through audit finding sheets attached to the audit report. Audit findings are logged, maintained, and controlled by the Task Manager.

Personnel assigned to QA functions will have the responsibility to issue and control Corrective Action Request (CAR) Forms (Figure 3 or similar). The CAR identifies the out-of-compliance condition, reference document(s), and recommended corrective action(s) to be administered. The CAR is issued to the personnel responsible for the affected item or activity. A copy is also submitted to the Project Manager. The individual to whom the CAR is addressed returns the requested response promptly to the QA personnel, affixing his/her signature and date to the corrective action block, after stating the cause of the conditions and corrective action to be taken. The QA personnel maintain the log for status of CARs, confirms the adequacy of the intended corrective action, and verifies its implementation. CARs will be retained in the project file for the records.

Any project personnel may identify noncompliance issues; however, the designated QA personnel are responsible for documenting, numbering, logging, and verifying the close out action. The Project Manager will be responsible for ensuring that all recommended corrective actions were implemented and effective, documented, and approved.

References

EPA, 1986. SW-846 "Test Method for Evaluating Solid Waste," dated November 1986 and subsequent updates. U.S. Environmental Protection Agency, Washington, D.C.

EPA, 1987. Data Quality Objectives for Remedial Response Actions Activities: Development Process, EPA/540/G-87/003, OSWER Directive 9355.0-7B U.S. Environmental Protection Agency, Washington, D.C.

EPA, 2001. CLP Organics Data Review and Preliminary Review based on CLP/SOW OLM04.2. SOP No. HW-6, Revision 12 dated September 2005. EPA Region II.

EPA, 2005. Evaluation of Metals Data for the Contract Laboratory Program (CLP) based on SOW - ILM05.3. SOP No. HW-2, Revision 13, dated January 1992. EPA Region II.

Taylor, J. K., 1987. Quality Assurance of Chemical Measurements. Lewis Publishers, Inc., Chelsea, Michigan.

Tables

Table 1
Quality Control Limits for Soil Samples

Laboratory Accuracy and Precision							
Analytical Parameters	**Analytical Method[a]**	**Matrix Spike (MS) Compounds**	**MS/MSD[b] % Recovery**	**MS/MSD RPD[c]**	**LCS[d] % Recovery**	**Surrogate Compounds**	**Surrogate % Recovery**
VOCs (e)	8260C	1,1-Dichloroethane	70-142	22	70-142	Toluene-d8	71-125
		Trichloroethene	79-121	24	79-121	p-Bromofluorobenzene	72-126
		Benzene	78-122	25	78-122	1,2-Dichloroethane-d4	64-126
		Toluene	74-123	25	74-123		
		Chlorobenzene	79-118	25	79-118		
SVOCs (f)	8270D	Phenol	36-110	25	36-110	Nitrobenzene-d5	35-113
		2-Chlorophenol	38-104	26	38-104	2-Fluorobiphenyl	43-119
		1,4-Dichlorobenzene	34-120	30	34-120	p-Terphenyl-d14	51-125
		N-Nitroso-di-n-propylamine	46-120	20	46-120	Phenol-d5	36-116
		1,2,4-Trichlorobenzene	39-105	24	39-105	2-Fluorophenol	30-107
		4-Chloro-3-methylphenol	49-125	20	49-125	2,4,6-Tribromophenol	46-129
		Acenaphthene	53-119	16	53-119		
		4-Nitrophenol	44-137	25	44-137		
		2,4-Dinitrotoluene	55-125	19	55-125		
		Pentachlorophenol	33-136	27	33-136		
		Pyrene	51-133	25	51-133		
PCBs	8082A	PCB 1016	59-154	50	59-154	Decachlorobiphenyl	34-148
		PCB 1260	51-179	50	51-179	Tetrachloro-m-xylene	35-134
Pesticides	8081A	4,4'-DDD	45 - 129	18	45 - 129	DCB Decachlorobiphenyl	42 - 146
		4,4'-DDE	49 - 120	16	49 - 120	Tetrachloro-m-xylene	37 - 136
		4,4'-DDT	47 - 145	17	47 - 145		
		Aldrin	35 - 120	24	35 - 120		
		alpha-BHC	49 - 120	19	49 - 120		
		alpha-Chlordane	45 - 120	13	45 - 120		
		beta-BHC	46 - 120	17	46 - 120		
		delta-BHC	45 - 123	14	45 - 123		
		Dieldrin	47 - 120	13	47 - 120		
		Endosulfan I	29 - 125	16	29 - 125		
		Endosulfan II	39 - 121	17	39 - 121		
		Endosulfan sulfate	43 - 120	14	43 - 120		
		Endrin	44 - 127	19	44 - 127		
		Endrin aldehyde	33 - 120	23	33 - 120		
		Endrin ketone	50 - 150	14	50 - 150		
		gamma-BHC (Lindane)	50 - 120	20	50 - 120		
		gamma-Chlordane	51 - 120	14	51 - 120		
		Heptachlor	47 - 120	16	47 - 120		
		Heptachlor epoxide	44 - 122	17	44 - 122		
		Methoxychlor	46 - 152	14	46 - 152		
		Chlordane (technical)	51 - 120	14	51 - 120		
		Toxaphene	47 - 120	16	47 - 120		
Inorganics (i)	6010B and 7471A (metals)	Inorganic Analyte	75-125 (j)	20 (k)	80-120	NA	NA
	9012 A (Total Cyanide)		75-125 (j)	20 (k)	80-120	NA	NA
	9016 (Free Cyanide)		75-125 (j)	20 (k)	80-120	NA	NA

(a) Analytical Methods: NYSDEC ASP-CLP Methods with Category B data deliverables, NYSDEC, 2000 and EPA SW-846, 3rd edition, Revision 1, November 1990,
(b) Matrix Spike/Matrix Spike Duplicate
(c) Relative Percent Difference
(d) Laboratory Control Sample
(e) Target Compound List Volatile Organic Compounds
(f) Target Compound List Semi-Volatile Organic Compounds
(g) Limits are advisory only
(h) Target Analyte List Inorganics (metals and cyanide)
(i) Matrix spike only
(j) Laboratory duplicate RPD
NA - Not Applicable

Table 2
Summary of Sampling and Analytical Program

Matrix	Parameter	Analytical Method	Field Samples				QC Blanks		Total
			Field Samples	Field Duplicate	MS/MSD[(a)] (Total)	Sub- Total	Trip Blank	Equip-ment Blank	
Groundwater Samples	BTEX	EPA SW 8260C	5	1	1	7	1	1	9
	PAHs	EPA SW 8270D	5	1	1	7	NA	1	8
Hazardous Characterization	TPH DRO/GRO	EPA 1311	1	NA	NA	1	NA	NA	1
	Total VOCs	EPA SW 8260C	1	NA	NA	1	NA	NA	1
	Total SVOCs	EPA SW 8270D	1	NA	NA	1	NA	NA	1
	Total Metals[(b)]	EPA SW 6010B/7470A	1	NA	NA	1	NA	NA	1
	Total PCBs	EPA SW 8082	1	NA	NA	1	NA	NA	1
	Total Cyanide	EPA SW 9010	1	NA	NA	1	NA	NA	1
	Percent Sulfur	ASTM D129-64	1	NA	NA	1	NA	NA	1
	BTU Content	ASTM D240-87	1	NA	NA	1	NA	NA	1

(a) Matrix spike / matrix spike duplicate for organic analyses; matrix spike and laboratory duplicate for inorganic analysis.

(b) arsenic, barium, cadmium, chromium (total), lead, mercury, selenium, silver, antimony, beryllium, nickel, thallium, vanadium, and zinc

* The number of duplicates, MS/MSD, and field QC samples can be reduced if these samples are obtained in conjunction with the sampling of other media during the sampling event.

\+ Rinse blanks not required if dedicated sampling equipment is used.

NA Not applicable.

Table 3
Toxicity Characteristics Leaching Procedure Sample Holding Times

Analytical Parameter	From: Sample Collection To: TCLP Extraction*	From: TCLP Extraction To: Preparative Extraction	From: Preparative Extraction To: Determinative Analysis
Volatiles	14 days	NA	14 days from date of TCLP extraction
Semi-Volatiles	14 days	7 days	40 days

NA Not Applicable
*Times shown are from verified time of sample receipt.

Table 4A
Project Quantitation Limits
Soil, Sediment and Groundwater VOCs

		Quantitation Limits		New York State Standard or Guidance Values
Analysis/Compound	**Method**	**Water (ug/L)**	**Soil/Sediment (ug/Kg)**	**Water (ug/L)**
Volatile Organics				
1,1,1-Trichloroethane	8260B	1.0	5	5
1,1,2,2-Tetrachloroethane	8260B	1.0	5	5
1,1,2-Trichloroethane	8260B	1.0	5	1
1,1,2-Trichloro-1,2,2-trifluord	8260B	1.0	5	5
1,1-Dichloroethane	8260B	1.0	5	5
1,1-Dichloroethene	8260B	1.0	5	5
1,2-Dibromoethane	8260B	1.0	5	NL
1,2-Dichlorobenzene	8260B	1.0	5	3
1,2-Dichloroethane	8260B	1.0	5	0.6
1,2-Dichloropropane	8260B	1.0	5	1
1,2-Dibromo-3-chloropropan	8260B	1.0	5	0.04
1,2,4-Trichlorobenzene	8260B	1.0	5	5
1,3-Dichlorobenzene	8260B	1.0	5	3
1,4-Dichlorobenzene	8260B	1.0	5	3
2-Butanone (MEK)	8260B	5.0	5	50
2-Hexanone	8260B	5.0	5	50
4-Methyl-2-pentanone(MIBK	8260B	5.0	5	NL
Acetone	8260B	5.0	20	50
Benzene	8260B	1.0	5	1
Bromodichloromethane	8260B	1.0	5	50
Bromoform	8260B	1.0	5	50
Bromomethane	8260B	1.0	5	5
Carbon Disulfide	8260B	1.0	5	60
Carbon Tetrachloride	8260B	1.0	5	5
Chlorobenzene	8260B	1.0	5	5
Chloroethane	8260B	1.0	5	5
Chloroform	8260B	1.0	5	7
Chloromethane	8260B	1.0	5	5
Cyclohexane	8260B	1.0	5	NL
cis-1,2-Dichloroethene	8260B	1.0	5	5
cis-1,3-Dichloropropene	8260B	1.0	5	0.4
Dibromochloromethane	8260B	1.0	5	5
Dichlorodifluoromethane	8260B	1.0	5	5
Ethylbenzene	8260B	1.0	5	5
Isopropylbenzene	8260B	1.0	5	5
Methyl acetate	8260B	1.0	5	NL
Methylene Chloride	8260B	1.0	5	5
Methylcyclohexane	8260B	1.0	5	NL
Methyl tert-butyl ether	8260B	1.0	5	10
Styrene	8260B	1.0	5	5
Tetrachloroethene	8260B	1.0	5	5
Toluene	8260B	1.0	5	5
trans-1,2-Dichloroethene	8260B	1.0	5	5
trans-1,3-Dichloropropene	8260B	1.0	5	0.4
Trichloroethene	8260B	1.0	5	5
Trichlorofluoromethane	8260B	1.0	5	5
Vinyl Chloride	8260B	1.0	5	2
Xylenes(total)	8260B	3.0	15	5

NL = Not Listed

Note: RLs and MDLs are subject to change due to % moisture, matrix interference, and dilution factors

Table 4B
Project Quantitation Limits
Soil and Groundwater SVOCs

Analysis/Compound	Method	Quantitation Limits Water (ug/L)	Quantitation Limits Soil (ug/Kg)	New York State Standard or Guidance Values Water (ug/L)
Semi-Volatile Organics				
1,1'-Biphenyl	8270C	10	330	5
2,2'-oxybis(1-chloropropane)	8270C	10	330	5
2,4,5-Trichlorophenol	8270C	10	330	1
2,4,6-Trichlorophenol	8270C	10	330	1
2,4-Dichlorophenol	8270C	10	330	1
2,4-Dimethylphenol	8270C	10	330	1
2,4-Dinitrophenol	8270C	50	1600	1
2,4-Dinitrotoluene	8270C	10	330	5
2,6-Dinitrotoluene	8270C	10	330	5
2-Chloronaphthalene	8270C	10	330	10
2-Chlorophenol	8270C	10	330	1
2-Methylnaphthalene	8270C	10	330	NL
2-Methylphenol	8270C	10	330	1
2-Nitrolaniline	8270C	50	1600	5
2-Nitrophenol	8270C	10	330	1
3,3'-Dichlorobenzidine	8270C	50	1600	5
3-Nitroaniline	8270C	50	1600	5
4-Bromophenyl-phenyl ether	8270C	10	330	NL
4-Chloro-3-methylphenol	8270C	10	330	NL
4-Chloroaniline	8270C	10	330	5
4-Chlorophenyl phenyl ether	8270C	10	330	NL
4-Methylphenol	8270C	10	330	1
4-Nitroaniline	8270C	50	1600	5
4-Nitrophenol	8270C	50	1600	1
4,6-Dinitro-2-methylphenol	8270C	50	1600	NL
Acenaphthene	8270C	10	330	20
Acenaphthylene	8270C	10	330	NL
Acetophenone	8270C	10	330	NL
Anthracene	8270C	10	330	50
Atrazine	8270C	10	330	7.5
Benzo(a)anthracene	8270C	10	330	0.002
Benzo(a)pyrene	8270C	10	330	ND
Benzo(b)fluoranthene	8270C	10	330	0.002
Benzo(g,h,i)perylene	8270C	10	330	NL
Benzo(k)fluoranthene	8270C	10	330	0.002
Benzaldehyde	8270C	10	330	NL
bis(2-Chloroethoxy) methane	8270C	10	330	5
bis(2-Chloroethyl) ether	8270C	10	330	1
bis(2-ethylhexyl)phthalate	8270C	10	330	5
Butyl benzyl phthalate	8270C	10	330	50
Caprolactum	8270C	10	330	NL
Carbazole	8270C	10	330	NL
Chrysene	8270C	10	330	0.002
Di-n-butyl phthalate	8270C	10	330	50
Di-n-octyl phthalate	8270C	10	330	NL
Dibenz(a,h)anthracene	8270C	10	330	NL
Dibenzofuran	8270C	10	330	NL
Diethyl phthalate	8270C	10	330	50
Dimethyl phthalate	8270C	10	330	50
Fluoranthene	8270C	10	330	50
Fluorene	8270C	10	330	50
Hexachlorobenzene	8270C	10	330	0.4
Hexachlorobutadiene	8270C	10	330	0.5
Hexachlorocyclopentadiene	8270C	50	1600	5
Hexachloroethane	8270C	10	330	5
Indeno(1,2,3-cd)pyrene	8270C	10	330	0.002
Isophorone	8270C	10	330	50
N-Nitroso-n-propylamine	8270C	10	330	50
N-nitrosodiphenylamine	8270C	10	330	50
Naphthalene	8270C	10	330	10
Nitrobenzene	8270C	10	330	0.4
Pentachlorophenol	8270C	50	1600	1
Phenanthrene	8270C	10	330	50
Phenol	8270C	10	330	1
Pyrene	8270C	10	330	50

ND = Non-detect
NL = Not Listed
Note: RLs and MDLs are subject to change due to % moisture, matrix interference, and dilution factors

Table 4C
Project Quantitation Limits
Soil, Sediment and Groundwater PCBs, Metals and Cyanide, Pesticides, and Herbicides

		Quantitation Limits		New York State Standard or Guidance Values
Analysis/Compound	**Method**	**Water (µg/L)**	**Soil/Sediment (mg/kg)**	**Water (µg/L)**
Metals				
Antimony	6010B	10	1	3
Arsenic	6010B	10	1.0	25
Barium	6010B	200	2.00	1,000
Beryllium	6010B	4	0.40	3
Cadmium	6010B	5	0.50	5
Chromium	6010B	5	0.50	50
Copper	6010B	25	2.5	200
Lead	6010B	3	0.3	25
Mercury	7470A/7471A	0.2	0.037	0.7
Nickel	6010B	40	4.00	100
Selenium	6010B	5	0.5	10
Silver	6010B	5	0.50	50
Thallium	6010B	10	1.0	0.5
Zinc	6010B	20	2.0	2,000
Vanadium	6010B	50	5.00	NL
Cobalt	6010B	50	5.00	NL
Aluminum	6010B	200.00	20	NL
Calcium	6010B	5000.0	500	NL
Iron	6010B	100.00	10	300
Magnesium	6010B	5000.0	500	35,000
Manganese	6010B	15	1.50	300
Potassium	6010B	5000.0	500	NL
Sodium	6010B	5000.0	500	20,000
Cyanide (Total)	9012A	10	1.0	200
Free Cyanide	9016	1.1	0.62	NA

Table 4C
Project Quantitation Limits
Soil, Sediment and Groundwater PCBs, Metals and Cyanide, Pesticides, and Herbicides

Analysis/Compound	Method	Water (µg/L)	Soil/Sediment (mg/kg)	Water (µg/L)
PCBs				
Aroclor 1016	8082	0.176	0.049	0.09
Aroclor 1221	8082	0.176	0.049	0.09
Aroclor 1232	8082	0.176	0.054	0.09
Aroclor 1242	8082	0.176	0.540	0.09
Aroclor 1254	8082	0.25	0.049	0.09
Aroclor 1260	8082	0.25	0.117	0.09
Aroclor 1262	8082	0.25	0.529	0.09
Aroclor 1268	8082	0.25	0.053	0.09
Analysis/Compound	**Method**	**Water (µg/L)**	**Soil/Sediment (mg/kg)**	**Water (µg/L)**
Pesticides				
4,4'-DDD	8081A	0.05	0.0016	0.15
4,4'-DDE	8081A	0.05	0.0016	0.10
4,4'-DDT	8081A	0.05	0.0016	0.10
Aldrin	8081A	0.05	0.0016	NA
alpha-BHC	8081A	0.05	0.0016	0.20
alpha-Chlordane	8081A	0.05	0.0016	NL
beta-BHC	8081A	0.05	0.0016	NL
delta-BHC	8081A	0.05	0.0016	NL
Dieldrin	8081A	0.05	0.0016	0.002
Endosulfan I	8081A	0.05	0.0016	42
Endosulfan II	8081A	0.05	0.0016	42
Endosulfan sulfate	8081A	0.05	0.0016	42
Endrin	8081A	0.05	0.0016	NA
Endrin aldehyde	8081A	0.05	0.0016	NA
Endrin ketone	8081A	0.05	0.0016	NA
gamma-BHC (Lindane)	8081A	0.05	0.0016	0.20
gamma-Chlordane	8081A	0.05	0.0016	NL
Heptachlor	8081A	0.05	0.0016	0.40
Heptachlor epoxide	8081A	0.05	0.0016	0.2
Methoxychlor	8081A	0.05	0.0016	40
Chlordane (technical)	8081A	0.5	0.0167	NL
Toxaphene	8081A	0.5	0.0167	3

Table 4C
Project Quantitation Limits
Soil, Sediment and Groundwater PCBs, Metals and Cyanide, Pesticides, and Herbicides

Analysis/Compound	Method	Water (µg/L)	Soil/Sediment (mg/kg)	Water (µg/L)
Herbicides				
2,4,5-T	8151A	0.5	0.0167	35
2,4-D	8151A	0.5	0.0167	70
Dalapon	8151A	0.5	0.0167	NA
Dichlorprop	8151A	0.5	0.0167	NA
Dinoseb	8151A	0.5	0.0167	0.007
Pentachlorophenol	8151A	0.5	0.0167	1
Picloram	8151A	0.5	0.0167	0.5
Silvex (2,4,5-TP)	8151A	0.5	0.0167	0.05

Table 5
TCLP
Practical Quantitation Limits (PQLs)

TCLP VOLATILE	SW-846 Analysis	Water (ug/L)
Benzene	8260C	5
Carbon Tetrachloride	8260C	5
Chloroform	8260C	5
1,2-Dichlorethane	8260C	5
1,1-Dichloroethene	8260C	5
2-Butanone	8260C	100
Tetrachloroethene	8260C	5
Trichloroethene	8260C	5
Vinyl Chloride	8260C	100

TCLP SEMI-VOLATILE	SW-846 Analysis	Water (ug/L)
2-Methylphenol	3510 / 8270D	10
3 & 4-Methylphenol	3510 / 8270D	10
1,4-Dichlorobenzene	3510 / 8270D	10
2,4-Dinitrotoluene	3510 / 8270D	10
Hexachlorobutadiene	3510 / 8270D	10
Hexachloroethane	3510 / 8270D	10
Hexachlorobenzene	3510 / 8270D	10
Nitrobenzene	3510 / 8270D	10
Pentachlorophenol	3510 / 8270D	50
Pyridine	3510 / 8270D	ND
2,4,5-Trichlorophenol	3510 / 8270D	10
2,4,6-Trichlorophenol	3510 / 8270D	10

TCLP METALS	SW-846 Analysis	Water (mg/L)
Arsenic	3010 / 6010	0.05
Barium	3010 / 6010	0.002
Cadmium	3010 / 6010	0.004
Chromium	3010 / 6010	0.007
Lead	3010 / 6010	0.04
Selenium	3010 / 6010	0.07
Silver	7760 / 6010	0.007
Mercury	7470	0.0002

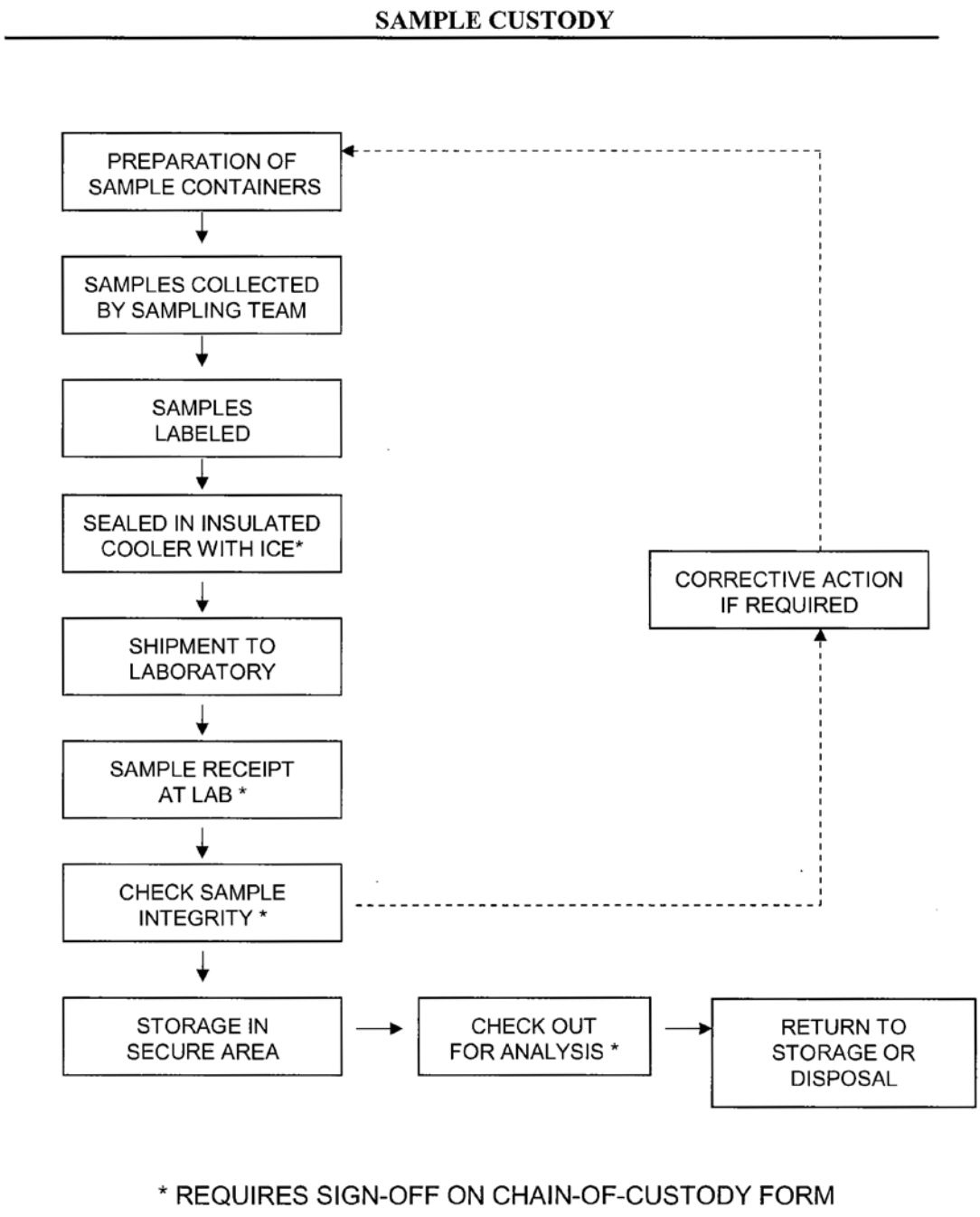
ND - Not Determined

Table 6
Field and Character Lengths for Disk Deliverable

Description	Length	Format
Field Sample ID (as shown on COC)	15	Character
CAS. No. (including -'s)	10	Character
Parameter Name	31	Character
Concentration	13	Numeric
Qualifier	4	Character
Units	8	Character
SDG	8	Character
Lab Sample ID	15	Character
Date Sampled (from COC)	D	Date
Matrix (soil/water/air)	5	Character
Method Detection Limit	13	Numeric
Method Code	8	Character
Lab Code	6	Character

Figures

FIGURE 1


SAMPLE CUSTODY
PREPARATION OF SAMPLE CONTAINERS
SAMPLES COLLECTED BY SAMPLING TEAM
SAMPLES LABELED
SEALED IN INSULATED COOLER WITH ICE*
SHIPMENT TO LABORATORY
SAMPLE RECEIPT AT LAB *
CHECK SAMPLE INTEGRITY *
STORAGE IN SECURE AREA
CHECK OUT FOR ANALYSIS *
RETURN TO STORAGE OR DISPOSAL
CORRECTIVE ACTION IF REQUIRED
* REQUIRES SIGN-OFF ON CHAIN-OF-CUSTODY FORM

Chain-of-Custody Record

Laboratory:

Laboratory Job #
(Lab use only)

GEI Consultants

1301 Trumansburg Road, Suite N
Ithaca, New York
TEL: 607-216-8955

Project Information

Project Name:

Project Number:

Project Location:

Project Manager:

Send Report to:

Send Faxed Results to:

Send EDD to:

Page ____ of ____

Preservative

Analysis

Sample Handling

Sample Field Filtered
YES NO NA

Sampled Shipped With Ice
YES NO

MCP PRESUMPTIVE CERTAINTY REQUIRED -- YES NO

If Yes, Are MCP Analytical Methods Required? YES NO

If Yes, Are Drinking Water Samples Submitted? YES NO

If Yes, Have You Met Minimum Field QC Requirements? YES NO

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials	Sample Specific Remarks

Turnaround Time (Business days):

Normal _____ **Other**_____

10 Day_____ **7 Day**_____

5 Day_____ **3 Day**_____

Before submitting rush turnaround samples, you **must** notify the laboratory to confirm that the TAT can be

MCP Level Needed: GEI requires the most stringent Method 1 MCP standard be met for all analytes whenever possible.

Additional Requirements/Comments/Remarks:

Relinquished by: (signature)	Date :	Time:	Received by: (signature)
Relinquished by: (signature)	Date :	Time:	Received by: (signature)
Relinquished by: (signature)	Date :	Time:	Received by: (signature)

14 MCP Metals = Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium (total), Lead, Mercury, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc.

Figure 2

FIGURE 3 Corrective Action Request

CORRECTIVE ACTION REQUEST
Number: _____ Date: _____
TO: _____ You are hereby requested to take corrective actions indicated below and as otherwise determined by you to (a) resolve the noted condition and (b) to prevent it from recurring. Your written response is to be returned to the project quality assurance manager by _____
CONDITION:
REFERENCE DOCUMENTS:
RECOMMENDED CORRECTIVE ACTIONS:
_____ _____ _____ _____ _____ _____ Originator Date Approval Date Approval Date
RESPONSE
CAUSE OF CONDITION
CORRECTIVE ACTION (A) RESOLUTION (B) PREVENTION (C) AFFECTED DOCUMENTS
C.A. FOLLOWUP: CORRECTIVE ACTION VERIFIED BY: _____ DATE:_____

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Figure 4

LORIE MACKINNON
DATA VALIDATOR

resume

Ms. MacKinnon is a Senior Data Quality Manager with 26 years of experience at GEI and six years of organic and inorganic laboratory experience. She has experience in United States Environmental Protection Agency (EPA) Regions 1, 2, 4, and 9. With 31 years of combined laboratory and validation experience she has a strong understanding of various analyses which include, but are not limited to, VOCs, SVOCs, Pesticides, PCBs, Herbicides, Dioxins/Furans, specialty analyses including GS/MS/SIM and various air analyses, metals, cyanide, and various wet chemistry analyses.

She is able to provide a review of laboratory data and assist in developing QA procedures for projects. She serves as a laboratory liaison to provide technical advocacy for projects due to her working knowledge of all laboratory procedural practices including analytical methodology and sample matrix related issues and their effect on data usability and data package reporting level requirements.

EDUCATION
B.A., Chemistry, Boston University

EXPERIENCE IN THE INDUSTRY
32 years

EXPERIENCE WITH GEI
26 years

PREVIOUS LABORATORY EXPERIENCE
National Environmental Testing:
6 Years

RELEVANT PROJECT EXPERIENCE

GEI Consultants, Inc. – June 1993 to present

Data Validator, GEI Consultants, Inc. As part of the Data Management team Ms. MacKinnon performs organic and inorganic data validation in accordance with EPA Regions 1, 2, and 9, EPA National Functional Guidelines, and New Jersey DEP Guidelines. Responsible for in-house review of all project data. Proficient in Microsoft Access.

Self-employed Contractor Data Validator - June 1993 – February 2015

As a contractor data validator, she performed data validation in accordance with the EPA Region 1, Region 2, and Region 4, EPA National Functional Guidelines, and New Jersey Department of Environmental Protection (DEP) Guidelines for environmental consulting firms. Responsible for producing data validation reports and data spreadsheets.

National Environmental Testing (NET), formerly Cambridge Analytical Associates – June 1987 – June 1993

Ms. MacKinnon has held several positions with NET, As an **Independent Consultant** she performed methods development and validation for EPA Method 218.6, Hexavalent Chromium Analysis by High Performance Liquid Chromatography, and EPA Method 610,

GEI Consultants

Figure 4

Polynuclear Aromatic Hydrocarbon Analysis by High Performance Liquid Chromatography. Developed standard operating procedures for both methods, allowing NET to offer these analytical procedures as routine services.

In addition, Ms. MacKinnon was an **Inorganic Contract Laboratory Protocol (CLP) Coordinator.** Responsible for CLP data management and data package review for the inorganic laboratory to ensure a high level of data quality, and a **Quality Assurance Coordinator**. She was responsible for developing and overseeing the laboratory quality assurance and quality control practices to ensure that a high level of data quality is achieved. Responsible for the submission of performance evaluation samples from external regulating agencies and managing a program of internal performance evaluation audits for the Cambridge Division and subcontract laboratories. Acted as the primary contact for state and program-specific certification programs and, as such, was responsible for communicating all audit and performance evaluation sample results and corrective action responses.

Supervisor, Wet Chemistry Laboratory. Responsible for training and performance of all laboratory technicians, as well as troubleshooting and instrument maintenance. Duties also included the scheduling of inorganic work in house, and reviewing and reporting all analytical results. Responsible for the preparation, analysis, and reporting of cyanide under EPA CLP protocol.

Project Manager. Responsibilities included defining the scope of work with a variety of industrial, engineering and governmental clients, developing price quotations, outlining the required quality control/quality assurance procedures, arranging sampling and analytical schedules with the laboratory director and managers, and monitoring the project to its completion, including data review and report production.

Lead Project Chemist. Performed method development, validation, and residue analysis for several pesticide registration studies. Analyses included the use of gas chromatography and high-performance liquid chromatography.

Associate Scientist. Performed inorganic analyses on environmental and industrial samples. Analytical skills included quantitation of analytes by inductively coupled argon emissions spectroscopy and atomic absorption spectroscopy under EPA CLP protocols.

APPENDIX G
SITE MANAGEMENT FORMS

SITE INSPECTION FORM

Gloversville (Washington Street) Former Manufactured Gas Plant Site

SITE INSPECTION DATE: _____ **TIME OF ARRIVAL**: _____

DEPARTURE: _____

WEATHER: _____

_____

National Grid Representative(s): _____

INSPECTION TYPE: **Annual Inspection or Emergency Inspection**

(if emergency indicate event that required an inspection): _____

Are the Institutional Controls in place, performing properly, and remain effective?

Does the Site comply with NYSDEC-approved Site Management Plan? Yes / No

Has ownership of the property changed since the last inspection? Yes / No

(Verify with Real Estate and Survey Departments)

Are there any changes to intended site use (Commercial Or Industrial) Yes / No

which would affect the SMP or institutional controls?

Is site used for agricultural purpose or vegetable gardens? Yes / No

Is groundwater used as source of potable or process water onsite Yes / No

If yes to the above – does water go through the necessary water quality treatment? Yes/No

SITE INSPECTION FORM

Gloversville (Washington Street) Former Manufactured Gas Plant Site

Are the Engineering Controls in place, performing properly, and remain effective?

Surface Cover Intact (i.e. no evidence of erosion, excavations), including concrete sidewalk and paved street west of the site? Yes / No

GENERAL SITE OBSERVATIONS:

Have there been any changes to the property since the last inspection?

(i.e. new equipment, residential buildings or facilities, changes in site topography, erosion, etc.)

NOTE:

Inspections should be made a minimum once a year and within 5 days of an emergency, such as a natural disaster or an unforeseen failure or damage to the building occurs. Inspections will be conducted by National Grid (or their agent) and results reported to NYSDEC.

COMPLETED BY:	**REVIEWED BY:**
SIGNATURE:	**SIGNATURE**

Depth Measurement and Well Condition Log
Gloversville (Washington Avenue) Former MGP

Monitoring Well ID	Well Depth (ft.)	Screened Interval (ft. bgs)	Depth to Water _____ DATE	Presence of NAPL and Pumping Activities (if applicable) (Note 1)	Well Integrity Assessment Notes (Note 2)
MW-2	14.00	4-14			
MW-3	13.00	3-13			
MW-6	14.00	4-14			
MW-7	16.00	6-16			
MW-8	12.00	1.8-11.8			

Notes:

ft. - feet
bgs - below ground surface

1. NAPL is not expected at this site. Use an oil interface probe to check for LNAPL and DNAPL. If present, record the depth and thickness of each. Attempt to remove via pumping or bailing and record removal efforts, including volume of NAPL removed.

2. Note the condition of the well (e.g., good or repairs needed). Provide detail if repairs are needed (e.g., redevelop, the number of new bolts, new j-plug and size, replacement of cracked or otherwise damaged surface completion, etc.).

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MONITORING WELL SAMPLING RECORD

PID Reading _____ Job Name _____

Job Number _____ By _____ Date _____

Location _____ Measurement Datum _____

Well Number _____

Pre-Development Information Time (start) _____

Water Level _____ Total Depth of Well _____

One Purge Vol _____ Three Well Volume _____

Water Characteristics

Color _____ Clear ____ Cloudy ____

Odor ____ None ____ Weak ____ Moderate ____ Strong

Any films or immiscible material ____ None

Volume (gal)	Time	pH	Temp (EC)	Spec. Conductance (ΦS/cm)	Turbidity (NTU)	DO Conc. (mg/L)	ORP (mV)	TDS

Total Volume Removed (gal) _____ pH _____

Temperature (EC) _____ Specific Conductance (ΦS/cm) _____

DO Concentration (mg/L) _____ ORP (mV) _____

_____ TDS _____

Post Development Information Time (Finished) _____

Water Level _____ Total Depth of Well _____

Approximate Volume Removed (gal) _____

Water Characteristics

Color _____ Clear ____ Cloudy ____

Odor ____ None ____ Weak ____ Moderate ____ Strong

Any films or immiscible material ____ None

_____

Comments:

Chain-of-Custody Record

Laboratory:

Laboratory Job #
(Lab use only)

GEI Consultants

1301 Trumansburg Rd., Suite N
Ithaca, NY 14850
TEL: (607) 216-8955
FAX: (607) 274-7577

Project Information

Project Name:

Project Number:

Project Location:

Project Manager:

Page ____ of ____

Send Report to: Paul Silva

Send Faxed Results to:

Send EDD to: labdata @geiconsultants.com

Preservative

Analysis

Sample Handling

Sample Field Filtered
YES NO NA

Sampled Shipped With Ice
YES NO

MCP PRESUMPTIVE CERTAINTY REQUIRED -- YES NO

If Yes, Are MCP Analytical Methods Required? YES NO

If Yes, Are Drinking Water Samples Submitted? YES NO

If Yes, Have You Met Minimum Field QC Requirements? YES NO

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials	Sample Specific Remarks

Turnaround Time (Business days):

Normal _____ Other_____
10 Day_____ 7 Day_____
5 Day_____ 3 Day_____

Before submitting rush turnaround samples, you **must** notify the laboratory to confirm that the TAT can be

MCP Level Needed: GEI requires the most stringent Method 1 MCP standard be met for all analytes whenever possible.

Additional Requirements/Comments/Remarks:

Relinquished by: (signature)	Date :	Time:	Received by: (signature)
Relinquished by: (signature)	Date :	Time:	Received by: (signature)
Relinquished by: (signature)	Date :	Time:	Received by: (signature)

14 MCP Metals = Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium (total), Lead, Mercury, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc.

Figure 4

APPENDIX H – FIELD SAMPLING PLAN

GEI Consultants

Consulting
Engineers and
Scientists

Field Sampling and Analytical Plan

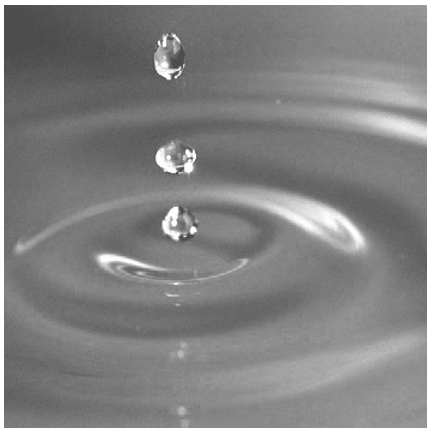
Gloversville (Washington Street) Former MGP Site

Gloversville, New York
NYSDEC Site # 518026

Submitted to:
National Grid, USA
300 Erie Boulevard West
Syracuse, NY 13202

Submitted by:
GEI Consultants, Inc., P.C.
1301 Trumansburg Road, Suite N
Ithaca, NY 14850

November 2020
Project #: 115130-1-1121



Wendy Moore, P.E.
Project Manager

Joseph M. Simone, P.E.
Senior Engineer

Table of Contents

Abbreviations and Acronyms

ASTM	American Society for Testing and Materials
bgs	Below ground surface
BTEX	Benzene, Toluene, Ethyl benzene, Xylene
CAMP	Community Air Monitoring Plan
DNAPL	Dense Non-Aqueous Phase Liquid
DRO	Diesel Range Organics
EPA	United States Environmental Protection Agency
FSAP	Field Sampling and Analytical Plan
GEI	GEI Consultants, Inc., P.C.
GRO	Gasoline Range Organics
HASP	Health and Safety Plan
HSA	Hollow-Stem Auger
MGP	Manufactured Gas Plant
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NAPL	Non-Aqueous Phase Liquid
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PDI	Pre-Design Investigation
PID	Photoionization Detector
PPE	Personal Protection Equipment
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
TPH	Total Petroleum Hydrocarbon
USCS	Unified Soil Classification System
VOC	Volatile Organic Compound

1. Introduction

This Field Sampling and Analytical Plan (FSAP) presents the methods and procedures to be used for performing the annual sampling at the Gloversville (Washington Street) Former Manufactured Gas Plant (MGP) site located in the City of Gloversville, New York.

1.1 Overview of Field Activities

The following field activities will be performed:

- **Groundwater Sampling** – Five groundwater samples will be collected, one from each monitoring well.
- **Groundwater Elevation and NAPL Gauging** – groundwater within each of the five monitoring wells will be gauged for depth to water and presence/thickness of non-aqueous phase liquid (NAPL).

2. General Field Guidelines

2.1 Site Hazards

Potential on-site surface hazards, such as sharp objects, overhead power lines, energized areas, and building hazards will be identified prior to initiation of the field work. The potential hazards at the site will be identified during a site reconnaissance by the project team on the first day of the investigation field activities. Additional safety measures to be undertaken for the work performed during the investigation are described in the site-specific Health and Safety Plan (HASP).

2.2 Underground Utilities

Underground utilities, including electric lines, gas lines, storm and sanitary sewers, and communication lines will be identified prior to initiation of drilling and other subsurface work (e.g., decommissioning and/or reinstallation of monitoring wells). Underground utility location will be accomplished as follows:

- All data points will be flagged or marked-out with white paint.
- Dig Safely of New York 800-272-4480 will be contacted to initiate the locating activities. New York State law requires that Dig Safely of New York be notified at least two working days, and not more than 10 working days, before subsurface work is performed.
- Companies and municipalities with subsurface utilities present will locate and mark-out all subsurface utility lines.
- GEI will also utilize a utility locating subcontractor to assist with the utility locating task.

2.3 Field Log Books

All field activities will be carefully documented in field log books and/or on the forms provided in the Site Management Plan. Entries will be of sufficient detail that a complete daily record of significant events, observations, and measurements is developed. The field log book will provide a legal record of the activities conducted at the site. Accordingly:

- Field books will be assigned a unique identification number.
- Field books will be bound with consecutively numbered pages.
- Field books will be controlled by the Site Manager while field work is in progress.
- Entries will be written with waterproof ink.
- Entries will be signed and dated at the conclusion of each day of field work.

- Erroneous entries made while field work is in progress will be corrected by the field person that made the entries. Corrections will be made by drawing a line through the error, entering the correct information, and initialing the correction.
- Corrections necessary after departing the field will be made by the person who entered the original information. Corrections will be made by drawing a line through the error, entering the correct information, and initialing and dating the time of the correction.

At a minimum, daily field book entries will include the following information:

- Location of field activity
- Date and time of entry
- Names and titles of field team members on site and site contacts
- Names, titles of any site visitors, as well as the date and time entering and leaving the site
- Weather information, for example: temperature, cloud coverage, wind speed, and direction
- Purpose of field activity
- A detailed description of the field work conducted
- Sample media (soil, sediment, groundwater, etc.)
- Sample collection method
- Number and volume of sample(s) taken
- Description of sampling point(s)
- Volume of groundwater removed before sampling
- Preservatives used
- Analytical parameters
- Date and time of collection
- Sample identification number(s)
- Sample distribution (e.g., laboratory)
- Field observations
- All field measurements made during soil screening with the photoionization detector (PID), and groundwater sampling (pH, temperature, conductivity, turbidity, etc.)
- References for all maps and photographs of the sampling site(s)
- Information pertaining to sample documentation such as:
  - Dates and method of sample shipments
  - Chain-of-custody record numbers
  - Federal Express or UPS air bill numbers

3. Field Equipment Decontamination and Management of Investigation-Derived Residuals

3.1 Decontamination Area

A temporary decontamination area lined with polyethylene sheeting will be constructed for personal decontamination and for decontamination of heavy equipment (e.g., drill rig), if or when used. Wash water collected from the decontamination activities will be pumped from the pad with a sump pump or trash pump into 55-gallon drums or a bulk tank; and managed as described in Section 3.3.

3.2 Equipment Decontamination

The following procedures will be used to decontaminate heavy equipment, if or when used:

- All drilling equipment including the backhoe bucket, and drilling rig; augers; bits; rods; tools; split-spoon samplers; soil core collection tubes and tremie pipes will be cleaned with a high-pressure washing unit before beginning work.
- Tools, drill rods, samplers, and augers will be placed on polyethylene plastic sheets following pressure washing. Direct contact with the ground will not be allowed.
- All augers, samplers, rods, and tools will be decontaminated between each drilling location.
- The back of the drill rig and all tools, augers, and rods will be decontaminated at the completion of the work and prior to leaving the site.

3.2.1 Sampling Equipment Decontamination

Suggested Materials

- Potable water
- Phosphate-free detergent (such as Alconox™ or Simple Green™)
- De-ionized water
- Aluminum foil
- Plastic/polyethylene sheeting
- Plastic buckets and brushes
- Personal protective equipment (PPE) in accordance with the HASP

Procedures

- Prior to sampling, all non-dedicated sampling equipment (bowls, spoons, interface probes, etc.) will be washed with potable water and a phosphate-free detergent (such as Alconox™). Decontamination may take place at the sampling location as long as all liquids are contained in pails, buckets, etc.
- The sampling equipment will then be rinsed with potable water followed by a de-ionized water rinse.
- Between rinses, equipment will be placed on polyethylene sheets or aluminum foil, if necessary. Washed equipment will not be placed directly on the ground.
- Equipment will be wrapped in polyethylene plastic or aluminum foil for storage or transportation from the designated decontamination area to the sampling location.

3.3 Management of Investigation-Derived Residuals

3.3.1 Decontamination Fluids and Development and Purge Water

Hot-water pressure wash, decontamination, and development and purge water will be collected in 55-gallon drums. The drums will be labeled as "pending analysis – investigation-derived residual decontamination and purge water" and temporarily stored on wooden pallets in a plastic-lined containment area pending characterization and proper disposal.

3.3.2 Drill Cuttings

Drill cuttings, if generated, will be contained in 55-gallon drums or in a covered roll-off container. The drums or covered roll-off container will be labeled as "pending analysis – investigation-derived residual – soil from drill cuttings". If drums are used, they will be temporarily stored on wooden pallets in a plastic-lined containment area pending characterization and proper disposal.

3.3.3 Personal Protective Equipment

PPE will be placed in 55-gallon drums or a lined cardboard yard box for proper disposal.

3.3.4 Dedicated Sampling Equipment

Used groundwater sampling equipment (e.g., disposable polyethylene bailer and polypropylene tubing) will be placed in the 55-gallon drums or cardboard yard boxes for disposal.

4. Groundwater Sampling Procedures

4.1 Introduction

Procedures for obtaining samples of groundwater are described in this section. Groundwater samples will be collected using low-flow, low-stress purge and sampling methods.

4.2 Groundwater Sampling

The number and frequency of the samples that will be collected for laboratory analysis from each well and the analytical parameters are listed in the Site Management Plan.

Required Equipment and Supplies

- Field book
- Project plans
- PPE in accordance with the HASP
- Electronic oil/water interface probe
- Disposable polyethylene bailers and low-flow sampling pump
- Polypropylene rope
- Temperature, conductivity, and pH meter
- Turbidity meter
- Flow-through cell
- Decontamination supplies
- Peristaltic or submersible pump capable of achieving low-flow rates (i.e., 0.5 liters per minute or less)
- Plastic tubing
- Plastic sheeting
- PID
- Clear tape, duct tape
- Coolers and ice
- Laboratory sample bottles
- Federal Express or UPS labels

4.2.1 Groundwater Sampling Method

Purging

- Prior to sampling, the static water level and thickness of any LNAPL or DNAPL will be measured to the nearest 0.01 foot from the surveyed well elevation mark on the top of the PVC casing with a decontaminated oil/water interface probe. NAPL presence will be confirmed using a clear bailer or a weighted string. The measurement will be recorded in the field book.
- The probe will be decontaminated between uses.
- Groundwater from the well will be purged until field parameters stabilize. Field parameters are considered stable when three consecutive readings are within the stabilization criteria for that parameter. The stabilization criteria are as follows: 3% for conductivity and temperature, and 0.1 unit for pH. The target turbidity values will be <10 NTUs, if possible.
- The flow rate measurement will be approximately 0.5 liter per minute or less.
- If the parameters do not stabilize, then the next step for the sampling will be to remove up to three well volumes, or to purge wells for at least 1 hour prior to sampling.
- If a well goes dry before the required volumes are removed, it will be allowed to recover, and sampled when it recovers sufficiently.
- Purge water will be managed and disposed of properly.

Sampling

- Samples will be collected using dedicated ¼- or ⅜-inch polyethylene tubing.
- Prior to filling the sample bottles, the final temperature, pH, and conductivity will be measured within a flow-through cell. Turbidity will be measured with a hand-held turbidity meter. All measurements will be recorded in the field book.
- Three 40-ml VOA vials with Teflon™ lined septa and hydrochloric acid as a preservative will be filled for analysis of volatile organic compounds (VOCs). The VOA vials will be filled to ensure that no bubbles are in the sample. Two 1-liter amber glass sample bottles for semi-volatile organic compound (SVOC) analysis.
- The sample containers will be labeled, placed in a laboratory-supplied cooler, and packed on ice (to maintain a temperature of 4˚ C). The cooler will be shipped overnight or delivered to the laboratory for analysis.
- Chain-of-custody procedures will be followed as outlined in the QAPP using the chain-of-custody form included in the Site Management Plan, or similar form.
- Well sampling data will be recorded on the Groundwater Sampling Record included in the Site Management Plan, or similar form.

5. Field Instruments and Calibration

All field analytical equipment will be calibrated immediately prior to each day's use and more frequently if required. The calibration procedures will conform to manufacturer's standard instructions. This calibration will ensure that the equipment is functioning within the allowable tolerances established by the manufacturer and required by the project. All instrument calibrations will be documented in the project field book and in an instrument calibration log. Records of all instrument calibration will be maintained by the Field Team Leader. Copies of all of the instrument manuals will be maintained on site by the Field Team Leader. All changes to instrumentation will be noted in the field log book.

The following field instruments will be used during the investigation:

- YSI multi-parameter flow through cell or equivalent

5.1 pH Meter

- Calibration of the pH meter must be performed at the start of each day of use, and after very high or low readings as required by this Plan, according to manufacturer's instructions.
- National Institute of Standards and Technology - traceable standard buffer solutions which bracket the expected pH range will be used. The standards will be pH of 4.0, 7.0, and 10.0 standard units.
- The use of the pH calibration must be used to set the meter to display the value of the standard being checked.
- The calibration data must be recorded in the project field book.

5.2 Specific Conductivity Meter and Temperature Probe

- Calibration checks using the conductivity standard must be performed at the start of each day of use, after five to 10 readings or after very high or low readings as required by this Plan, according to manufacturer's instructions.
- The portable conductivity meter must be calibrated using a reference solution of 200 µohms/cm (or the manufacturer's specified concentration) on a daily basis. The date and lot number of the reference solution must be recorded. Readings must be within 5% to be acceptable.
- The thermometer of the meter must be calibrated against the field thermometer on a weekly basis.

5.3 Turbidity Meter

- The turbidity meter must be checked at the start of each day of use according to manufacturer's instructions.

6. Analytical Program

6.1 Environmental Sample Analyses

The laboratory samples for each media and the chemical analyses to be performed, including the quality assurance/quality control (QA/QC) samples, are summarized in the Site Management Plan.

6.1.1 Groundwater Analyses

The groundwater samples will be analyzed for the following parameters:

- Benzene, toluene, ethylbenzene, xylene (BTEX) by EPA Method 8260C
- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270D

6.2 Field Quality Control Samples

Field quality control samples will be collected and analyzed to document the accuracy and precision of the samples. The quality control samples are described as follows:

- **Trip Blank**: One trip blank will accompany each shipment of samples for VOC analysis sent to the laboratory. The trip blank will be analyzed to test for any contaminants introduced while samples are being stored or transported to the laboratory. The trip blanks will be analyzed for volatiles only.
- **Field Equipment Blanks**: The purpose of the equipment blank is to detect any contamination from sampling equipment, cross-contamination from previously sampled locations, and contamination caused by conditions at sampling locations (e.g., airborne contaminants). One equipment blank will be collected for every 20 samples collected during sampling. The samples will be collected by pouring analyte-free water, prepared in the laboratory, over decontaminated sampling equipment and collecting it in sample jars. The blanks will be collected in the vicinity of a sample location. This field blank will be analyzed for BTEX and PAHs. An equipment blank will not be collected if sampling is conducted with dedicated sampling equipment.
- **Field Duplicates**: Field duplicates are collected to determine the precision of the soil samples collected. This is achieved by compositing soil and splitting it evenly between separate sample jars. Duplicate samples will be collected and analyzed for BTEX and PAHs. The minimum required number of field duplicates is one for every 20 samples.
- **Matrix Spikes (MS), and Matrix Spike Duplicates (MSD)**: These samples are laboratory quality control samples and will be completed as part of the laboratory analytical batch quality control. These samples will be collected in the same manner as

the field duplicates and at a frequency of one MS/MSD sample per 20 field samples. Both the MS and MSD will be collected at the same sample location.

6.3 Sample Location Numbering System

Monitoring wells will be numbered consecutively beginning with MW-1. Individual samples will also be designated with a depth code (see below).

6.4 Sample Identification

Each sample will be given a unique alphanumeric identifier in accordance with the following classification system:

SAMPLE IDENTIFICATION

LL* Sample Type	NN* Sample Number	N-N Depth Code	LL QC Identifier

	Solid	Water
Sample Type:	MW – Monitoring Well Boring SB – Soil Boring BSS – Background Surface Sediment SD – Surface Sediment (0-6 inches) SDC – Deeper Sediment (>6 inches)	MW – Monitoring Well
Sample Number:	Number referenced to a sample location map.	
Depth Code:	Depth in feet of sample interval (0-0.5, 2-4, 10-12, etc.)	
QC Identifier:	TB – Trip Blank EB – Equipment Blank	MS – Matrix Spike MSD–Matrix Spike Duplicate MB – Matrix Blank

* L = Letter
* N = Number

Field duplicate samples will be assigned identifiers that do not allow the laboratory to distinguish them as field duplicates. Each sample container will be labeled prior to packing for shipment. The sample identifier, site name, date and time of sampling, and analytical parameters will be written on the label in waterproof ink and recorded in the field book. The sample container will be labeled with the proper sample identifier as soon as the sample is taken to avoid confusion about the sample location/identifier.

6.5 Chain-of-Custody

- A chain-of-custody record (as provided in the Site Management Plan, or similar) will accompany the sample containers during selection and preparation at the laboratory, during shipment to the field, and during return shipment to the laboratory.
- The chain-of-custody will include the sample identities of each sample container and the analytical parameters for each, and will list the field personnel that collected the samples,

preservation method, the project name and number, the name of the analytical laboratory that will receive the samples, and the method of sample shipment.

- If samples are split and sent to different laboratories, such as to a specialty laboratory for fingerprint analysis, a copy of the chain-of-custody record will be sent with each sample shipment.
- The chain-of-custody will be completed by field personnel as samples are collected and packed for shipment.
- Erroneous markings will be crossed-out with a single line and initialed by the author.
- The REMARKS space will be used to indicate if the sample is an MS, MSD, or matrix duplicate.
- Trip and field blanks will be listed on separate rows.
- After the samples have been collected and sample information has been listed on the chain-of-custody form, the method of shipment, the shipping cooler identification number(s), and the shipper airbill number will be entered on the chain-of-custody.
- Finally, a member of the sampling team will write his/her signature, the date, and time on the first RELINQUISHED BY space.
- One copy of the chain-of-custody will be retained by sampling personnel. The other copy and the original will be sealed in a plastic bag and taped inside the lid of the shipping cooler.
- Sample shipments will be refrigerated at 4˚C, typically by packing with bagged ice, to preserve the samples during shipment.
- After the shipping cooler is closed, custody seals provided by the laboratory will be affixed to the latch and across the front and back of the cooler lid, and signed by the person relinquishing the samples to the shipper.
- The seal will be covered with clear tape, and the cooler lid will be secured by wrapping with packing tape.
- The cooler will be relinquished to the shipper, typically an overnight carrier.
- The chain-of-custody seal must be broken to open the container. Breakage of the seals before receipt at the laboratory may indicate tampering. If tampering is apparent, the laboratory will contact the Project Manager, and the samples will not be analyzed until directed to do so.
- The samples must be delivered to the laboratory within 48 hours of collection.

6.6 Sample Documentation

The field team leader will retain a copy of the chain-of-custody, and, in addition, the field team leader will ensure that the following information about each sample is recorded in the field book:

- Sample identifier
- Identification of sampled media (e.g., soil, sediment, groundwater)
- Sample location with respect to known reference point
- Physical description of sample location
- Field measurements, (e.g., pH, temperature, conductivity, and water levels)
- Date and time of collection
- Sample collection method
- Volume of groundwater purged before sampling
- Number of sample containers
- Analytical parameters
- Preservatives used
- Shipping information:
  - Dates and method of sample shipments
  - Chain-of-custody Record numbers
  - Federal Express/UPS Air Bill numbers
  - Sample recipient (e.g., laboratory name)

APPENDIX I
RESPONSIBILITIES of OWNER
and REMEDIAL PARTY

Responsibilities

The responsibilities for implementing the Site Management Plan ("SMP") for the Gloversville (Washington Street) Former MGP site (the "site"), number 518026, are divided between the site owner(s) and a Remedial Party, as defined below. The owner(s) is/are currently listed as:

Taylor Made Group, LLC. (the "owner").
93 South Boulevard
Gloversville, NY 12078
518-773-9271

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

National Grid
300 Erie Boulevard West
Syracuse, New York 13202

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

Site Owner's Responsibilities:

1) The owner shall follow the provisions of the SMP as they relate to the owner's future construction and excavation at the site.

2) In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that it has done nothing to interfere or cause non-compliance with the Institutional Controls set forth in an Environmental Easement and that, to the best of the owner's knowledge, they remain in place. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the

RP to include the certification in the site's Periodic Review Report (PRR) certification to the NYSDEC.

3) In the event the site is delisted, the owner remains bound by the Environmental Easement and shall submit, upon request by the NYSDEC, a written certification that, to the best of the owner's knowledge, the Environmental Easement is still in place and the owner has done nothing to interfere or cause non-compliance with the Institutional Controls set forth in the Environmental Easement.

4) The owner shall grant access to the site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.

5) The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3-Notifications.

6) In the event some action or inaction by the owner adversely impacts the site, the owner must notify the site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3-Notifications and (ii) coordinate the performance of necessary corrective actions with the RP. For the purposes of this section, "adversely impacts" shall mean any activity at the property that would interfere with, disturb, damage, or destroy any component of the site management of the site (i.e., monitoring, Institutional Controls, Engineering Controls).

7) The owner must notify the RP and the NYSDEC of any change in ownership of the site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the site property. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 2.4 of the SMP. A
60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

8) The owner will conduct mowing on behalf of the RP. The RP remains ultimately responsible for maintaining the engineering controls.

9) In accordance with the tenant notification law, within 15 days of receipt from the Remedial Party, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on

the site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

10) Future site owners and RPs and their successors and assigns are required to carry out the activities set forth above.

Remedial Party Responsibilities

1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the site.

2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.

3) Before accessing the site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the site visit and/or any final report produced.

4) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).

5) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html .

6) The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section 1.3 - Notifications of the SMP.

7) Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.

8) Any change in use, change in ownership, change in site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the Department to discuss the need to update such documents.

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

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