Sterling Environmental Engineering, P.C.

**NORTHEAST TREATERS OF NEW YORK, LLC**
**ATHENS, NY**
**BCP #C420029**

# REMEDIAL INVESTIGATION WORK PLAN

***Prepared for:***

Northeast Treaters of New York, LLC
796 Schoharie Turnpike
Athens, New York 12015

***Prepared by:***

Sterling Environmental Engineering, P.C.
24 Wade Road
Latham, New York 12110

October 30, 2014


*"Serving our clients and the environment since 1993"*

**NORTHEAST TREATERS OF NEW YORK, LLC**
**ATHENS, NEW YORK**
**BCP #C420029**

# REMEDIAL INVESTIGATION WORK PLAN

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## 1.0 INTRODUCTION AND PURPOSE

As documented by the New York State Department of Environmental Conservation (NYSDEC by letter dated October 21, 2014, Northeast Treaters of New York, LLC (hereinafter "Northeast Treaters") submitted a complete application for participation in the Brownfield Cleanup Program (BCP) under BCP #C420029. This work plan describes the field work and implementation procedures for completion of a Remedial Investigation (RI) at the Northeast Treaters facility. The RI will be conducted and reported by Sterling Environmental Engineering, P.C. (STERLING), on behalf of Northeast Treaters, in accordance with NYSDEC DER-10 guidelines.

### 1.1 Description of Project

Northeast Treaters operates a pressure treated wood manufacturing facility located on approximately 13 acres on the north side of the Schoharie Turnpike in the Town of Athens, New York. The facility was originally constructed in the mid-1970s. The location of the facility is presented on Figure 1. Figure 2 presents an aerial view of the facility and the parcel boundaries.

For a period of time, the facility utilized chromated copper arsenate (CCA) to pressure treat wood products. The facility switched to a non-hazardous preservative in 2003. The owner seeks to modernize the existing plant in order to remain competitive, energy-efficient and current with today's health and safety standards. In order to implement the upgrade, the owner must construct spread footers with frost walls and piers. In order to construct spread footers with frost walls and piers, the owner must remove a portion of the concrete pad.

The key elements/improvements associated with the proposed facility modernization include:

- In-place capping of a 30 ft. by 57 ft. (1,710 square feet) northern section of the existing drip pad with asphalt pavement.
- Construction of a new 88 ft. x 200 ft. drip pad over the remaining portion of the existing drip pad.
- Construction of a new 88 ft. x 200 ft. building (Process Building) over the entire new drip pad.
- Installing modern, efficient pressure treating equipment over a steel containment structure.
- Consolidating existing bulk storage activities in the Process Building inside an improved secondary containment structure.
- Constructing a new 32 ft. x 50 ft. office to replace the existing offices.
- Limited site grading in the immediate vicinity of the Process Building.
- Implementing a plan to manage stormwater during the construction process.

### 1.2 Facility Background

The existing facility consists of three (3) main buildings: the Lumber Stacking Building, the Process Building, and the Maintenance Building. The facility was originally a saw mill. Atlantic Wood Industries, Inc. (AWII) began operating as a pressure treating wood manufacturing facility in 1979. The facility traditionally engaged in treating architectural and dimensional lumber with a preservative solution of CCA; the facility switched to a non-hazardous preservative in 2003. Wood is treated within an 80 foot long by 6 foot diameter treatment cylinder in the Process Building. The cylinder is filled with solution and a vacuum created to draw solution into the wood. After treatment under pressure, a vacuum in the cylinder extracts excess solution from the wood. After being removed from the cylinder, the wood is stacked in the Process Building.

The drip pad associated with the Process Building, including the concrete floor under the treatment cylinder, drains to a large concrete sump. The entire existing drip pad is contained within the building.

Sumps, located at each end of the treatment tube, collect excess solution from the treatment process and from the drip pad for recycling back into the wood treatment process. The sumps are constructed of concrete and are approximately 8 feet by 8 feet by 3 feet deep.

The hazardous wastes generated at the facility consisted primarily of dry wastes (floor sweepings, etc.) generated from cleaning activities and filterbags used to filter particulate from the material in the CCA solution recycle sump. Even though the facility uses a non-hazardous preservative, under the Federal and New York State hazardous waste regulations, floor sweepings, filter bags, etc. are managed as hazardous waste because they come into contact with the drip pad and sumps, which were in place when the facility used CCA. These hazardous wastes are temporarily stored in a designated area in the Process Building prior to shipment for offsite disposal.

The Process Building also houses four (4) aboveground tanks, consisting of three (3) 18,000 gallon working tanks and an additional 4,800 gallon tank. These tanks are used to store non-hazardous products used in the pressure treating process. The facility is also equipped with several petroleum bulk storage tanks. During this modernization project, the tanks will be taken temporarily out-of-service. The chemical and petroleum tanks will then be relocated to the Process Building in a single bulk storage facility.

## 2.0 SITE DESCRIPTION

The Brownfield Cleanup Program (BCP) area (hereinafter "the Site") is limited to the easternmost portion of the Northeast Treaters facility in the area of the Process Building; totaling approximately 1.68 acres (see Figure 2).

### 2.1 Land Use

The Site is zoned and currently used as an industrial property. Upon completion of remedial activities, the intended use of the Site is industrial for wood product treatment. The intended use of the Site aligns with the visions of the Greene County Comprehensive Economic Development Plan, dated July 2007, to expand the Athens Industrial Park.

### 2.2 Site Topography

The Site is generally flat lying and is located at an elevation of approximately 140 feet above mean sea level (amsl). The surrounding topography located one-half (½) mile to the north, south, and west of the Site is relatively flat and is at an elevation between 130 and 150 feet amsl. The area located one-half (½) mile to the east of the Site is at an elevation of approximately 200 feet amsl and slopes west towards the subject property.

### 2.3 Surface Water, Wetlands, and Floodplains

The nearest surface water, a tributary to Murderers Creek, is located approximately 1,000 feet to the north of the Site. Murderers Creek, a regulated Class C waterbody, is located approximately 1.6 miles to the north of the Site and flows towards Sleepy Hollow Lake, located approximately 1.6 miles to the east of the Site.

Federal and State regulated wetlands (Wetland No. HN-108) are located near the northwesternmost portion of the Northeast Treaters' facility, approximately 500 feet to the northwest of the Site.

The Site is not located in a designated floodway or within one-half (½) mile of a 100 year floodplain.

## 2.4 Geology and Hydrogeology

The geology of the Site consists of Covington and Madalin soils to the west and Kingsbury and Rhinebeck soils to the east. These soils are derived from glaciolacustrine deposits, generally consist of clay and silt, and may be described as poorly drained with varying transmissivities. The Site is not located over, or immediately adjoining, a primary, principal, or sole source aquifer.

## 2.5 Previous Investigations

The Site has been extensively studied by NYSDEC, the United States Environmental Protection Agency (USEPA) and the former Site owner. These studies include: (a) a 1989 "corrective action prior to loss of interim status" (CAPT LOIS) inspection prepared by A.T. Kearney under contract with USEPA; (b) a 1993 preliminary Resource Conservation and Recovery Act (RCRA) facility assessment prepared by TRC under contract with USEPA; and (c) a report entitled *Modified Phase I Environmental Site Assessment and Compliance Audit* dated December 1995 prepared by Groundwater Technology, Inc. at the request of AWII for Northeast Treaters (hereinafter "Phase I Site Assessment"). The Phase I Site Assessment, prepared utilizing American Society for Testing and Materials: Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM E 1527), provides a summary of environmental conditions and includes the results of surficial soil sampling at various locations, as well as the installation of borings to a depth of 13-22 feet. Samples were analyzed for total copper, total chromium, total arsenic, TCLP copper, TCLP chromium and TCLP arsenic.

Surface soils at the Site were found to be impacted to varying degree. The Phase I Site Assessment concluded that "In the opinion of Groundwater Technology, based upon our extensive knowledge of environmental conditions at wood preservation facilities, the results of the analyses performed should not be considered to be of environmental concern."

The Phase I Site Assessment also notes a spill of approximately three (3) pounds of arsenic pentoxide occurred on May 2, 1990. The cleanup was completed under NYSDEC oversight. By letter dated August 21, 1990, the NYSDEC determined the cleanup was complete.

Of perhaps greater note, as a follow-up to the 1989 CAPT LOIS report, investigations of the Site were conducted in 1997 and 1999. The first investigation focused on the area around the sump while the second evaluated broader Site conditions. The latter investigation was conducted by KU Resources, Inc. pursuant to a work plan approved by NYSDEC. The final report, entitled *Report of Findings Sampling Visit Work Plan Implementation* dated April 1999 (hereinafter "KU Resources Report") provides a description of the sampling and reported analytical results. The sampling conducted by KU Resources focused on:

- CCA Solution Recycle Sump (south sump)
- Treating Cylinder Pit (north sump)
- Drip Pad
- Former Underground Tank

Background sampling was also performed. The KU Resources Report observes that the drip pad is compliant with RCRA Subpart W. The sampling results were interpreted to indicate no evidence of continuing releases. However, certain locations were observed with concentrations consistent with incidental drippage through routine handling of treated lumber and CCA. The report further concludes that the observed CCA in soil is not mobile due to the substantial thickness of natural, low permeability

clay unit beneath the gravel fill at the surface. NYSDEC's review of the 1999 investigation and report is summarized by the NYSDEC in a June 13, 2000 letter which concludes the RCRA facility assessment determined that no RCRA corrective action was required and the owner/operator have met all obligations under the RCRA Corrective Action Program. Pursuant to the letter, residual contamination at the property is to be addressed by a closure program implemented at cessation of operations.

On June 23, 2014, STERLING conducted focused sampling of the existing concrete drip pad and subsurface soils associated with the Northeast Treaters facility. The findings of this sampling investigation was summarized in the *Sampling for Chromium and Arsenic in Drip Pad Concrete and Subsoils* report and incorporated into the *Drip Pad Work Plan*, May 16, 2014 and revised September 3, 2014.

The results of the sample investigation can be interpreted to conclude that, during potential facility upgrades, portions of the concrete to be removed from the existing drip pad will be managed as a hazardous waste and must also be treated to meet the Universal Treatment Standards (UTS) to achieve compliance with the Land Disposal Restrictions (LDRs) prior to land disposal. Additionally, soils from beneath and adjacent to the drip pad removed during construction will be managed as non-hazardous solid waste, unless otherwise beneficially used within the Area of Concern.

### 2.6 Primary Contaminants of Concern (COC)

Based upon the Site's documented history and previous investigations conducted at the Northeast Treaters facility, the primary contaminants of concern (COC) are chromium and arsenic in onsite soils.

## 3.0 OBJECTIVES, SCOPE, AND RATIONALE OF INVESTIGATION

The NYSDEC requires the completion of a RI for sites entering the BCP. The primary objectives of this RI are to:

- collect additional soil/fill samples to better delineate the extent of contamination,
- confirm suspected contaminant source areas, and
- verify that all parameters identified in 6 NYCRR Part 375 meet the industrial Soil Cleanup Objectives (SCOs) in the Site's soils for the parameters volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, and PCBs.

The selection and rationale for sample locations described in Section 3.3 is based upon guidance provided in DER-10. Namely, sample locations have been selected in areas of greatest suspected contamination.

### 3.1 Site Mapping

A survey of the Site will be conducted during field investigations to produce a metes and bounds description of the Site. Further, STERLING will utilize a laser rangefinder, a measuring wheel, and/or a handheld Global Positioning System (GPS) unit to identify sample locations. Site maps depicting sample locations will be provided in the RI report.

### 3.2 Groundwater Investigation

A groundwater investigation is not anticipated as previous investigations and the Site's documented historical use do not suggest a reasonable expectation for groundwater contamination. Further, the presence of a wellhead protection area was not identified within a one-half (½) mile radius of the project Site, minimizing the exposure of onsite groundwater to potential receptors. Note, the facility and surrounding properties are serviced by a public water supply.

Finally, the native soils at the Site consist of poorly drained Covington and Madalin soils. These fine grained soils markedly restrain groundwater movement and are expected to restrict the movement of metals such as chromium and arsenic.

### 3.3 Soil Investigation

Based upon a review of previous investigations, it is suspected that the primary COCs consist of chromium and arsenic, which have been found in onsite soils at concentrations above the NYSDEC industrial use soil cleanup objectives (SCOs). As such, the RI will focus primarily on delineating contaminants in onsite soils. The soil investigation will consist of a total of approximately twenty-seven (27) sample locations.

#### 3.3.1 Sump Sample Location

One (1) sampling location will be adjacent to the sump associated with the lumber pressure treatment cylinder. A minimum of five (5) samples will be collected from this location to determine the maximum vertical extent of contamination. One (1) surface soil sample will be collected from immediately below the elevation of the concrete in the fill material. One (1) soil sample will be collected from the midpoint of the fill material. One (1) soil sample will be collected from the interface of fill material and native soil. One (1) soil sample will be collected approximately six (6) inches below the interface of fill material and native soil. Finally, one (1) soil sample will be collected approximately one (1) foot below the interface of fill material and native soil.

This sample location was chosen as historic leaks of CCA in the sump may have introduced chromium and arsenic into the subsurface. Soil samples from the sump sample location will be analyzed for chromium and arsenic only. Note, fill material has been observed below the Process Building, and contaminants, other than chromium and arsenic, have not been documented nor are any other contaminants reasonably expected in fill material below the Process Building.

#### 3.3.2 Drip Pad Sample Locations

Four (4) sample locations will be identified on the concrete drip pad and at locations of greatest suspected contamination (i.e., cracks, joints, and previously unsampled areas). Samples will be collected at one (1) foot intervals (i.e., 1-2', 2-3', 3-4', 4-5', and 5-6') to a total depth of approximately six (6) feet below ground surface (bgs). Samples collected at these locations will only be analyzed for chromium and arsenic to determine the impact to further delineate the vertical and horizontal extent of soil contamination below the drip pad. Note, fill material has been observed below the drip pad, and considering the historical use of the Site, contaminants, other than chromium and arsenic, have not been documented nor are they reasonably expected.

Paragraph 3.9(b)(2)(iii) of DER-10 recommends a minimum of one (1) surface sample for each 900 square feet of surface area to characterize soils below a staging area up to 300 feet in perimeter. Paragraph 3.9(b)(2)(iii) of DER-10 also acknowledges that the sample frequency may be reduced for

larger areas. It is estimated that the perimeter of the Site's drip pad is approximately 560 feet and the area is approximately 11,500 square feet. Due to the documented historical use of the Site, the sampling investigations previously conducted, and relatively large perimeter and area of the Site's drip pad, a lower sampling frequency than one sample per 900 square feet will be adequate to characterize soils below the Site's drip pad. Note, four (4) sample locations have been previously analyzed, as described in this section, by STERLING on June 23, 2014. An additional four (4) sample locations equates to a total of eight (8) sample locations and a sample frequency of approximately one (1) sample for every 1,450 square feet of drip pad surface area.

### 3.3.3 Drip Pad Perimeter Sample Locations

A total of thirty-two (32) perimeter sample locations will be identified around the perimeter of the drip pad. The thirty-two (32) sample locations will consist of sixteen (16) sample locations immediately adjacent to the edge of the concrete drip pad and an additional sixteen (16) sample locations offset from the edge of the drip pad by a distance of approximately ten (10) feet.

A minimum of sixteen (16) sample locations will be identified around the perimeter of the concrete drip pad. Sample locations will be identified in the field biased toward suspected locations of greatest contamination (i.e., adjacent to joints and the opening of the treatment cylinder) and spaced approximately one (1) sample for each forty (40) feet of perimeter length. One (1) surface sample will be collected from each sample location, and each sample will only be analyzed for chromium and arsenic to delineate the concentration of chromium and arsenic around the perimeter of the drip pad. Note, samples will be taken immediately adjacent to the edge of the drip pad.

Additionally, as previously stated, an additional minimum of sixteen (16) sample locations will be identified around the perimeter of the drip pad offset from the drip pad by a distance of approximately ten (10) feet. Samples taken at these locations will be identified in the field biased toward suspected locations of greatest contamination (i.e., adjacent to joints and the opening of the treatment cylinder). One (1) surface sample will be collected from each sample location. A total of six (6) samples will be analyzed for all parameters listed under 6 NYCRR Part 375-6.8 to delineate the extent of contamination beyond the perimeter of the drip pad. The six (6) aforementioned samples will consist of four (4) samples taken nearest to the four (4) corners of the drip pad and two (2) samples nearest to the midpoint of the eastern and western edges of the drip pad.

Paragraph 3.9(b)(1)(i) of DER-10 recommends a minimum of one (1) immediately adjacent perimeter sample location for each 30 feet of pad perimeter length for relatively large pads. It is estimated that the perimeter of the Site's drip pad is approximately 560 feet. Sixteen (16) perimeter samples equates to a sample frequency of approximately one (1) sample per each forty (40) feet of perimeter length. Due to the documented historical use of the Site and the sampling investigations previously conducted, a sample frequency of one (1) sample per approximately each forty (40) feet of pad perimeter length will be adequate to characterize soils around the perimeter of the Site's drip pad. Note, up to an additional sixteen (16) samples will be collected at approximately ten (10) feet from the perimeter of the drip pad.

### 3.3.4 Site Perimeter Sample Locations

Approximately six (6) sample locations will be identified between the perimeter of the Process Building and the perimeter of the Site as shown in Figure 3. Note, the southwestern perimeter sample is identified near the location of a PCB transformer. One (1) surface sample will be collected from each sample location, and each sample will be analyzed for all parameters listed under 6 NYCRR Part 375-6.8 to delineate the extent of contamination beyond the drip pad.

### 3.4 Sample Collection

Prior to initiating any subsurface work, a DigSafely.NewYork utility mark-out will be conducted to identify utilities and clear all soil boring locations. Each sample location will be core drilled to remove existing concrete or blacktop. Borings, below the concrete and blacktop cored areas, will be installed using a direct-push Geoprobe® sampling methodology. A two (2) inch ID 5-foot macrocore sampler will be driven to appropriate depths at each sample location. Soils will be collected for laboratory analysis from each borehole via macrocore acetate liners. After sampling is completed, soil cuttings will be returned to each borehole and each borehole will be grouted and patched.

### 3.5 Quality Assurance / Quality Control (QA/QC) Plan

All QA/QC samples will be collected in accordance with the NYSDEC Division of Environmental Remediation DER-10 – Technical Guidance for Site Investigation and Remediation (May 2010), as follows:

- Duplicate and Matrix/Matrix Spike Duplicate samples will be collected at a frequency of one (1) per 20 samples.

## 4.0 HEALTH AND SAFTEY PLANS

A Health and Safety Plan (HASP) for this Site is included as Appendix A. A copy of the HASP will be available at the Site during the investigation and remediation activities.

## 5.0 REPORTING AND SCHEDULE

### 5.1 Reporting

STERLING will notify the NYSDEC at least seven (7) days prior to initiating any RI activities. Any changes to the RI Work Plan activities due to field conditions or other circumstances will be approved by NYSDEC.

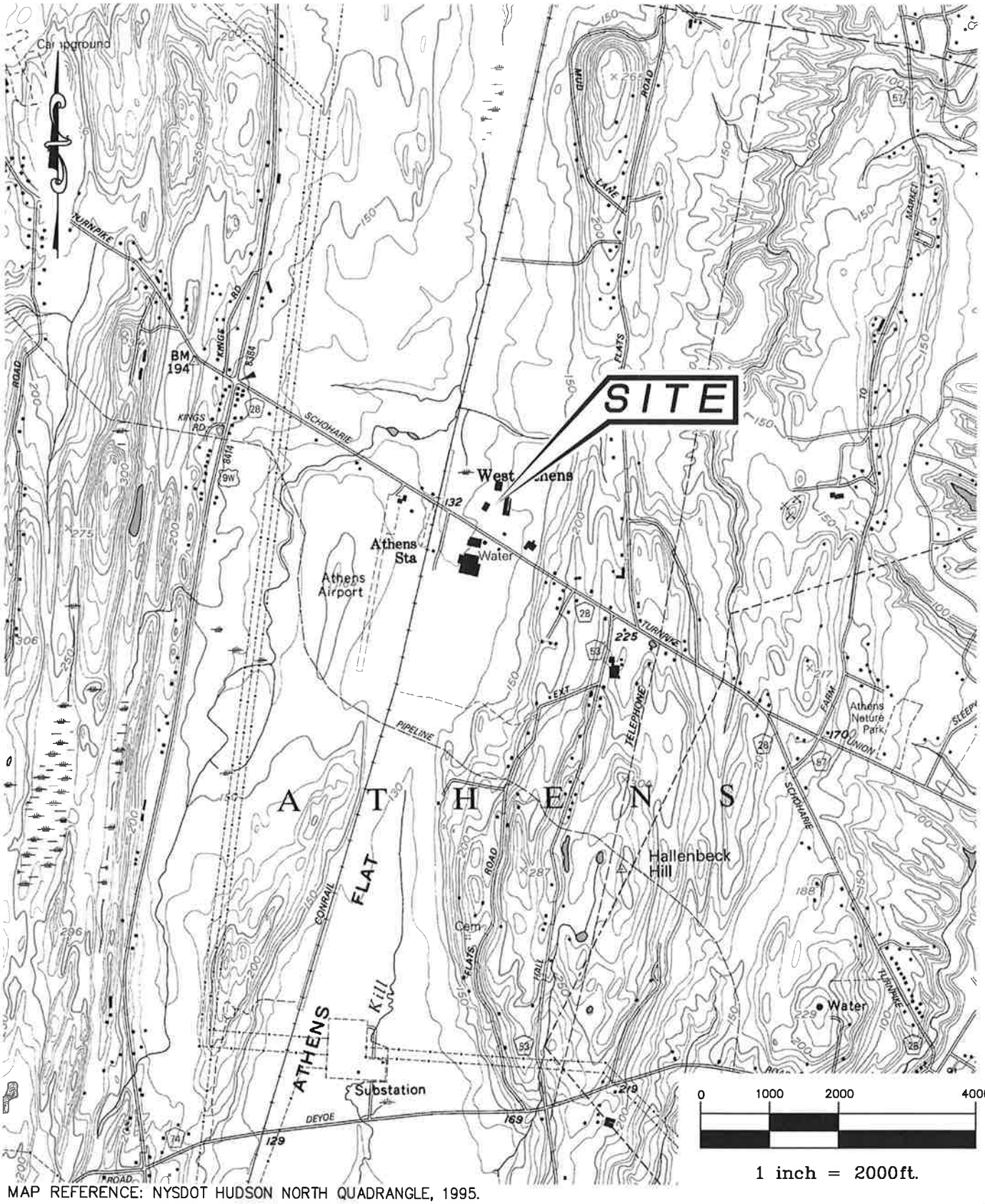
The RI Report will be submitted to the NYSDEC in electronic (pdf) format and hard copy. All generated data will be submitted in NYSDEC's Electronic Data Deliverable (EDD) format, using the software application EQuIS.

### 5.1 Schedule

The tasks required to complete the RI and subsequent development of the Site are summarized in Appendix B.

2014-08\Reports\Remedial Investigation Work Plan_txt.doc

# FIGURES




MAP REFERENCE: NYSDOT HUDSON NORTH QUADRANGLE, 1995.

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SITE LOCATION MAP

# NORTHEAST TREATERS

SCHOHARIE TURNPIKE

TOWN OF ATHENS GREENE CO., N.Y.

| PROJ. No.: 2014-08 | DATE: 4/21/14 | SCALE: 1" = 2000' | DWG. NO. 2014-08001 | FIGURE 1 |
|---|---|---|---|---|


LEGEND:

APPROXIMATE PROPERTY BOUNDARY

0 100 200 400

1 inch = 200 ft.

MAP REFERENCE: NEW YORK STATEWIDE DIGITAL ORTHOIMAGERY PROGRAM, PHOTOGRAPHY CIRCA 2013

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SUBJECT PROPERTY AND SITE MAP

NORTHEAST TREATERS

SCHOHARIE TURNPIKE

TOWN OF ATHENS GREENE CO., N.Y.

| PROJ. No.: 2014-08 | DATE: 10/28/14 | SCALE: 1" = 200' | DWG. NO. 2014-08002 | FIGURE 2 |
|---|---|---|---|---|


LEGEND:

| | |
|---|---|
| ○ SUMP-01 | SUMP SAMPLE LOCATION |
| ◎ DP-01 | DRIP PAD SAMPLE LOCATION |
| ● DPP-01 | DRIP PAD PERIMETER SAMPLE LOCATION |
| ◉ SP-01 | SITE PERIMETER SAMPLE LOCATION |
| ◒ S,C-01 | DRIP PAD SAMPLE LOCATION (SAMPLED JUNE 23, 2014) |
| ——— | SITE BOUNDARY |

0 30 60 120

1 inch = 60 ft.

MAP REFERENCE: NEW YORK STATEWIDE DIGITAL ORTHOIMAGERY PROGRAM, PHOTOGRAPHY CIRCA 2013


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SAMPLE LOCATION MAP

# NORTHEAST TREATERS

SCHOHARIE TURNPIKE

TOWN OF ATHENS GREENE CO., N.Y.

| PROJ. No.: | DATE: | SCALE: | DWG. NO. | FIGURE |
|---|---|---|---|---|
| 2014-08 | 10/23/14 | 1" = 60' | 2014-08006 | 3 |

# APPENDIX A

# HEALTH AND SAFETY PLAN
# (HASP)

Sterling Environmental Engineering, P.C.

**NORTHEAST TREATERS OF NEW YORK, LLC**
**ATHENS, NY**
**BCP #C420029**

# HEALTH AND SAFETY PLAN (HASP)

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# HEALTH AND SAFETY PLAN (HASP)

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## 1.0 GENERAL INFORMATION

The Health and Safety Plan (HASP) identifies specific measures to be taken to ensure that hazardous substances or conditions do not adversely impact the health and safety of personnel and the general community (public) for Site operations. The HASP is intended to identify potential hazards and appropriate precautions as defined by OSHA 29 CFR 1910.120 (Hazardous Waste Operations and Emergency Response).

All personnel working on this project must read this HASP, acknowledge understanding of this plan, and abide by its requirements.

In general, personnel are responsible for complying with all regulations and policies applicable to the work they are performing. The Project Manager is authorized to stop work if any personnel/subcontractor fails to adhere to the required health and safety procedures.

In addition to this HASP, each contractor must provide a HASP that addresses minimum training requirements for activities specific to the project and identified potential hazards specific to the project that are not discussed herein.

## 2.0 DESIGNATION OF RESPONSIBILITIES

Implementing this HASP is the responsibility of the Project Manager. The Project Manager will be designated prior to any Site activities and can be the contractor hired for a particular project, or an independent consultant hired by the Owner.

The Project Manager is responsible for:

- Ensuring the availability, use, and proper maintenance of specified personal protective equipment, decontamination, and other health or safety equipment.
- Maintaining a high level of safety awareness among personnel/subcontractors and communicating pertinent matters to them promptly.
- Ensuring all field activities are performed in a manner consistent with this HASP.
- Monitoring for dangerous conditions during field activities.
- Ensuring proper decontamination of personnel and equipment.
- Coordinating with emergency response personnel and medical support facilities.
- Initiating immediate corrective actions in the event of an emergency or unsafe condition.
- Notifying the New York State Department of Environmental Conservation (NYSDEC) and project owner of any emergency, unsafe condition, problem encountered, or exception to the requirements of this HASP.
- Recommending improved health and safety measures to the NYSDEC.

The Project Manager must be present for all intrusive investigative activities. However, the presence of the Project Manager shall in no way relieve any person or company of its obligations to comply with the requirements of the HASP and all applicable Federal, State and local laws and regulations.

All personnel involved in the project must be familiar with and conform to the safety protocols prescribed in this HASP, and communicate any relevant experience or observations to the Project Manager to ensure that these valuable inputs improve overall safety. Individual project members are the key elements in ensuring health and safety compliance. Every project member is considered responsible for implementing and following this HASP.

## 3.0 SITE PROPERTY SPECIFIC HEALTH AND SAFETY CONCERNS

### 3.1 Suspected Contaminant Hazards

Concentrations of chromium and arsenic above industrial soil cleanup objectives (SCOs) are known to be present at the Northeast Treaters of New York, LLC (Northeast Treaters) property. Documented historical use of the property and previous investigations conducted at the property suggest that organic vapors and/or explosive gases are not a concern at the Northeast Treaters property.

Although unlikely, unknown or unexpected materials of a hazardous nature may be encountered during ground intrusive activities. No work will be conducted if field observations or field measurements indicate that there is potential uncontrolled exposure to undefined hazards, or that exposures may exceed protection afforded by the requirements in this HASP.

### 3.2 Personal Protective Equipment (PPE)

Suspected hazards that may be encountered by workers during ground intrusive and construction activities, action levels and corresponding required actions, and the PPE level required for workers is as follows:

**TABLE 1**

**AIR MONITORING METHODS, ACTION LEVELS, AND PROTECTIVE LEVELS FOR PERSONNEL**

| Hazard | Monitoring Unit | Action Level | Protective Levels/Action | Monitoring Schedule |
|---|---|---|---|---|
| Dust | Particulate Monitor Miniram or Equivalent | < 5 mg/m$^3$ above background in the breathing zone. | Level D-Continue Work | Continuous for ground intrusive activities. |
| | | 5-10 mg/m$^3$ above background in the breathing zone. | Level C-Continue Work | |
| | | > 10 mg/m$^3$ above background in the breathing zone. | STOP WORK EVACUATE AREA (1) | |

(1) For all circumstances where work is stopped, the NYSDEC must be notified.

No work is anticipated requiring Levels B or A PPE and very limited work in Level C. If air monitoring results require PPE upgrades from Level D, then only medically qualified, trained personnel experienced in the use and limitations of air purifying or supplied air respirators will be used. Air purifying respirators with High-Efficiency Particulate Air (HEPA) filters, capable of removing particles of 0.3 micron or larger from air at 99.97% or greater efficiency, should be used when exposure to dust is a potential risk.

Unless the Project Manager directs otherwise, respirators used for organic vapors or particulates should have cartridges changed after eight (8) hours of use, or at the end of each shift, or when any indication of

breakthrough or excessive resistance to breathing is detected. OSHA regulations require a Respiratory Protection Program for companies that require employees to enter areas where respirators are required and such Respiratory Protection Programs must address the requirements for replacement of cartridges.

### 3.3 Suspected Safety Hazards

Suspected safety hazards include those inherent with the operation of heavy equipment such as drill rigs or excavators, and proximity to excavations. Inspections to ensure appropriate safety measures are in place and the use of lockout and tagout procedures during maintenance of this equipment will control these inherent hazards. Personal protective equipment (PPE) including hard hats, safety shoes and eye protection will be worn to augment other safety precautions.

Drilling rigs and excavators must not operate closer than thirty (30) feet to any overhead lines, measured directly between any part of the equipment and the lines themselves except where electrical distribution and transmission lines have been de-energized and visibly grounded at the point of work, or where insulating barriers have been erected to prevent physical contact with the lines. If drilling or excavating is required within thirty (30) feet of any overhead lines, a written work plan must be provided by the contractor or other equipment operator that includes special measures designed to mitigate the risks and is in accordance with 29 CFR 1926.550(a)(15). The work plan must be reviewed and approved by written signature by the Project Manager.

Care must be taken to ensure loose clothing does not get tangled in any moving equipment associated with drilling rigs or excavators.

All excavations will be maintained to prevent access by unauthorized persons and will be filled or fenced off by the end of the workday. Absolutely no one will be permitted in the excavations, except the operator of equipment where the operator is always located above ground level. If equipment breaks down within the excavation, the equipment will have to be towed out of the excavation for repair. All subsurface samples will be obtained by operation of the excavating equipment and will be collected from the excavator bucket.

### 3.4 Excavator and Drill Rig Operations

Excavation will be performed with a track-mounted excavator or backhoe. To conduct soil borings, a hollow-stem auger or direct push drilling rig will be used. Working with or near this equipment poses potential hazards, including being struck by or pinched/caught by equipment, potentially resulting in serious physical bodily harm or inhaling dust from concrete coring.

In particular, the following precautions will be used to reduce the potential for injuries and accidents:

- The inspection of excavator and drill rig brakes, hydraulic lines, light signals, fire extinguishers, fluid levels, steering, tires, horn, and other safety devices will be conducted prior to the initial mobilization and checked routinely throughout the project.

- Excavator and drill rig cabs will be kept free of all non-essential items and all loose items will be secured.

- Excavators and drill rigs will be provided with necessary safety equipment, including seat belts.

- Drill rig cables and auger flight connections will be checked for evidence of wear. Frayed or broken cables or defective connections will be replaced immediately.

- Parking brakes will be set before shutting off any heavy equipment or vehicle.

- All employees will be briefed on the potential hazards prior to the start of each excavation or drilling project.

### 3.5 Adverse Weather

Drilling or excavating is dangerous during electrical storms. All field activity must terminate during thunderstorms. Extreme heat and cold, ice and heavy rain can produce unsafe conditions for drilling work. Such conditions, when present, will be evaluated on a case-by-case basis to determine if work shall terminate.

### 3.6 Fire and Explosion

Use of gasoline or diesel powered equipment increases the risk of fire and explosion hazards. Contractors will be required to store diesel fuel and gasoline in metal cans with self-closing lids and flash arrestors.

### 3.7 Requirement to Conduct Utility Mark Out

Prior to the start of any subsurface work, underground utilities and piping that may pose a potential hazard will be identified and located. DigSafely.NewYork or equivalent service will be called and underground utilities will be located and marked. Also, the location of privately owned utility lines will be determined.

In the event a pipe or line is struck, work will stop and the Emergency Action Plan will be implemented (see Section 5.0).

### 3.8 Confined Space Entry

Confined space entry is not anticipated for excavating and sampling activities. If a project requires confined space entry, a specific HASP will be implemented.

"Confined Space" is defined as a space that:

1. *"is large enough and so configured that an employee can bodily enter and perform assigned work;*
2. *has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and*
3. *is not designed for continuous employee occupancy."*

### 3.9 Excavation and Sampling Work Zones

One of the basic elements of an effective HASP is the delineation of work zones for each ground intrusive location. The purpose of establishing work zones is to:

- Reduce the accidental spread of hazardous substances by workers or equipment from the contaminated areas to the clean areas;
- Confine work activities to the appropriate areas, thereby minimizing the likelihood of accidental exposures;

- Facilitate the location and evacuation of personnel in case of an emergency; and
- Prevent unauthorized personnel from entering controlled areas.

Although a work site may be divided into as many zones as necessary to ensure minimal employee exposure to hazardous substances, this HASP uses the three (3) most frequently identified zones: the Exclusion Zone, Decontamination Zone, and Support Zone. Movement of personnel and equipment between these zones should be minimized and restricted to specific access control points to minimize the spreading of contamination.

- Exclusion Zone

  During investigative work, the Exclusion Zone is the immediate excavation, test pit, borehole, or other area where contamination is either known or expected to occur and where the greatest potential for exposure exists.

  Unprotected onlookers will be restricted from the excavation location so that they are at least twenty-five (25) feet upwind or fifty (50) feet downwind of excavation or drilling activities.

- Decontamination Zone

  During investigative work, a Decontamination Zone will be established at the perimeter of the Exclusion Zone, and will include the personnel, equipment and supplies that are needed to decontaminate equipment. The size will be selected by the Project Manager to conduct the necessary decontamination activities. Personnel and equipment in the Exclusion Zone must pass through this zone before leaving or entering the Support Zone. The necessary decontamination must be completed in this zone and the requirements are described in Section 6.0. This zone should always be established and maintained upwind of the Exclusion Zone.

- Support Zone

  During investigative work, the areas located beyond the Decontamination Zone will be considered the Support Zone. Break areas, operational direction and support facilities will be located in this area. Eating and drinking will be allowed only in the Support Zone.

### 3.10 Natural Hazards

Work that takes place in the natural environment may be affected by plants and animals that are known to be hazardous to humans. Spiders, bees, wasps, hornets, ticks, poison oak and poison ivy are only some of the hazards that may be encountered. Individuals who may potentially be exposed to these hazards should be made aware of their existence and instructed in their identification. Emergencies resulting from contact with a natural hazard should be handled through the normal medical emergency channels. Individuals who are sensitive or allergic to these types of natural hazards should indicate their susceptibility to the Project Manager.

### 3.11 Heat and Cold Stress Hazards

If work is to be conducted during the winter, cold stress is a concern to the health and safety of personnel. Because disposable clothing such as Tyvek does not "breathe", perspiration does not evaporate and the suits can become wet. Wet clothes combined with cold temperatures can lead to hypothermia. If the air temperature is less than 40 degrees Fahrenheit (°F) and a worker's clothes become wet due to perspiration, the worker must change to dry clothes.

### 3.12 Signs and Symptoms of Cold Stress

- **Incipient frostbite**: is a mild form of cold stress characterized by sudden blanching or whitening of the skin.

- **Chilblain:** is an inflammation of the hands and feet caused by exposure to cold moisture. It is characterized by a recurrent localized itching, swelling, and painful inflammation of the fingers, toes, or ears. Such a sequence produces severe spasms, accompanied by pain.

- **Second-degree frostbite** is manifested by skin which has a white, waxy appearance and is firm to the touch. Individuals with this condition are generally not aware of its seriousness, because the underlying nerves are frozen and unable to transmit signals to warm the body. Immediate first aid and medical treatment are required.

- **Third-degree frostbite** will appear as blue, blotchy skin. This tissue is cold, pale and solid. Immediate medical attention is required.

- **Hypothermia** develops when body temperature falls below a critical level. In extreme cases, cardiac failure and death may occur. Immediate medical attention is warranted when the following symptoms are observed:

    - Involuntary shivering;
    - Irrational behavior;
    - Slurred speech;
    - Sluggishness; and
    - Loss of consciousness.

### 3.13 Preventing Cold Related Illness/Injury

- Train personnel to identify the signs and symptoms of cold stress. Require field personnel to wear proper clothing for cold, wet and windy conditions, including layers that can be adjusted to changing weather conditions. It is important to keep hands and feet dry.

- Field personnel working in extremely cold conditions must take frequent short breaks in warm, dry shelters to allow their body temperature to increase. If possible, field work should be scheduled during the warmest part of the day. The buddy system should be used so that personnel can assist each other in recognizing signs of cold stress.

- Drink warm, sweet beverages and avoid drinks with caffeine and alcohol. Eat warm, high-calorie foods.

- Personnel with medical conditions such as diabetes, hypertension or cardiovascular disease or who take certain medications, may be at increased risk for cold stress.

### 3.14 Treatment of Cold Related Injuries

If cold stress symptoms are evident, the affected person must move into a warm, dry sheltered area and all wet clothing should be removed and replaced with dry clothing. If frostbite is suspected, the affected person should be treated by trained medical personnel.

### 3.15 Signs and Symptoms of Heat Stress

Wearing PPE also puts a worker at a considerable risk for developing heat stress. This can result in health effects ranging from heat fatigue to serious illness or death. Consequently, regular monitoring, remaining hydrated and other precautions are vital.

- **Heat Rash** may result from continuous exposure to heat and humid air.

- **Heat Cramps** are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include:

    - Muscle spasms; and
    - Pain in the hands, feet and abdomen.

- **Heat Exhaustion** occurs from increased stress on various body organs, including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include:

    - Pale, cool, and moist skin;
    - Heavy sweating; and
    - Dizziness, fainting, and nausea.

- **Heat Stroke** is the most serious form of heat stress. Temperature regulation fails, and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury or death occurs. Competent medical help must be obtained. Signs and symptoms are:

    - Red, hot, and unusually dry skin;
    - Lack of or reduced perspiration;
    - Dizziness and confusion;
    - Strong, rapid pulse; and
    - Loss of consciousness.

### 3.16 Preventing Heat Related Illness/Injury

Proper training and preventive measures will help avert serious illness and loss of work productivity. Preventing heat stress is particularly important because once someone suffers from heat stroke or heat exhaustion that person may be predisposed to additional heat injuries. To avoid heat stress, the following steps should be taken:

- Have workers drink sixteen (16) oz. (0.5 liter) of fluid (preferably water or diluted drinks) before beginning work. Urge workers to drink a cup or two every fifteen (15) to twenty (20) minutes, or at each monitoring break. A total of 1 to 1.6 gallons (four (4) to six (6) liters) of fluid per day are recommended, but more may be necessary to maintain body weight.

- If possible, adjust work schedules to avoid the hottest parts of the day.

- Encourage workers to maintain an optimal level of physical fitness.

- Shelter (air-conditioned, if possible) or shaded areas should be provided to protect personnel during rest periods.

- Train workers to recognize, identify, and treat heat stress.

For workers wearing standard work clothes, recommendations for monitoring and work/rest schedules are those approved by American Conference of Governmental Industrial Hygienists (ACGIH) and National Institute of Occupational Safety and Health (NIOSH). Workers wearing semi-permeable PPE or impermeable PPE should be monitored when the temperature in the work area is above 70°F.

### 3.17 Noise Hazards

Work that involves the use of heavy equipment such as a drill rig or excavator can expose workers to noise during field activities that can result in noise-induced hearing loss. The Project Manager will monitor the noise exposure and will determine whether noise protection is warranted for each of the workers. The Project Manager will ensure that either ear muffs or disposable foam earplugs are available and are used by the workers in the immediate vicinity of the field operation as required.

### 3.18 Slip, Trip and Fall Hazards

Ground intrusive locations can contain a number of slip, trip and fall hazards for workers, such as:

- Holes, pits, or ditches
- Excavation faces
- Slippery surfaces
- Steep grades
- Uneven grades
- Snow and ice
- Sharp objects

All workers must be instructed to keep back three (3) feet from the top edge of excavation faces.

Drill auger sections will be stored on the transport vehicle as long as possible to avoid creating a trip hazard. Drill auger sections and other tools will be stored in neat arrangements convenient to the driller, but sufficiently distant from the immediate area around the drill rig to minimize trip hazards.

Workers will be instructed to look for potential safety hazards and immediately inform the Project Manager regarding any new hazards. If the hazard cannot be immediately removed, actions must be taken to warn workers about the hazard.

### 3.19 Modifications to this Plan

Requirements and guidelines in this HASP are subject to modification by the Project Manager in response to additional information obtained during field work regarding the potential for exposure to hazards.

## 4.0 MEDICAL SURVEILLANCE PROGRAM

### 4.1 General

Workers who participate in field activities that meet the following criteria will be included in the Medical Surveillance Program:

- All who may be exposed to hazardous substances or health hazards at or above permissible exposure limits, without regard to the use of respirators, for thirty (30) days or more per year, as required by 1926.65(f)(2)(i-iv).

- All who wear a respirator for thirty (30) days or more every year as required by 1926.62(f)(2)(i-iv).

- All who are injured because of overexposure from an incident involving hazardous substances or health hazards.

### 4.2 Frequency of Medical Exams

Medical examinations and consultations will be provided on the following schedule to the workers who meet the above listed general qualifications:

- Prior to assignment to a work site, if any of the criteria noted above are anticipated.

- At least once every twelve (12) months, unless the physician believes a longer interval (not greater than two (2) years) is appropriate.

- As soon as possible upon notification that a worker has developed signs or symptoms indicating possible overexposure to hazardous materials.

## 5.0 EMERGENCY ACTION PLAN

Workers will use the following standard emergency procedures. The Project Manager will be notified of any emergency and be responsible for ensuring that the appropriate procedures are followed and that the Project Manager is notified. A first aid kit, an eye wash unit that can provide a minimum flow rate of 0.4 GPM for fifteen (15) minutes, and a fire extinguisher rated 20A-B-C (or higher) will be readily available to workers. All workers will be trained in use of emergency supplies. Questions regarding procedures and practices described in the HASP should be directed to the Project Manager.

### 5.1 Notification

Any symptoms of adverse health, regardless of the suspected cause, are to be immediately reported to the Project Manager.

Upon the occurrence of an emergency, including an unplanned chemical release, fire or explosion, workers will be alerted and the area evacuated immediately. The Project Manager will notify the ambulance service, fire department and/or police department, as required. Emergency contact telephone numbers are provided below. Re-entry to the work area will be limited to those required to assist injured workers or for firefighting or spill control. Anyone entering the work area following an emergency incident must wear appropriate protective equipment.

## 5.2 Emergency Services

| Contact Name | Telephone Number |
|---|---|
| Emergency Services | 911 |
| Owner: Northeast Treaters of New York, LLC | (518) 945-2660 |
| Columbia Memorial Hospital | (518) 828-7601 |
| Poison Control Center | (800) 222-1222 |
| NYSDEC Spills Emergency Response Program | (800) 457-7362 |

A map showing the preferred route to the hospital with written directions is presented in Appendix A-1; and written directions are also included on the map.

The following alarm systems will be utilized to alert workers to evacuate the restricted area:

- Direct Verbal Communication
- Radio Communication or Equivalent
- Portable or Fixed Telephone

The following standard hand signals will also be used as necessary:

| Hand Signal | Message |
|---|---|
| Hand gripping throat | Can't breathe/out of air |
| Grip co-worker's wrist | Leave area immediately, no debate! |
| Hands on top of head | Need assistance |
| Thumbs up | Yes/O.K. |
| Thumbs down | No/Problem |

Upon activation of an alarm, workers will proceed to a designated assembly area. The designated assembly area will be determined on a daily basis by the Project Manager and updated as necessary depending upon work conditions, weather, air monitoring, etc. The location of the designated assembly area will be clearly marked and communicated to employees daily or upon relocation of the area. Workers gathered in the designated assembly area will remain there until their presence has been noted. A tally of workers on the daily restricted area access roster will be made as necessary to ensure all workers have been properly evacuated and accounted for.

Workers may return to the designated work area following authorization by the Project Manager.

## 5.3 Personal Injury

If anyone within a work area is injured and cannot leave the restricted area without assistance, emergency medical services will be notified (see Section 5.0) and appropriate first aid will be administered by certified Emergency Medical Technicians (EMTs).

### 5.4 Fire/Explosion

Upon the occurrence of a fire beyond the incipient stage or an explosion anywhere on the worksite property, the fire department will be alerted and all personnel moved to a safe distance from the involved area.

### 5.5 Equipment Failure

If any equipment fails to operate properly, the Project Manager will determine the effect of this failure on continuing operations. If the failure affects the safety of workers (e.g., failure of monitoring equipment) or prevents completion of the planned tasks, all workers will leave the work area until appropriate corrective actions have been taken.

### 5.6 Record Keeping

The Project Manager will maintain records of reports concerning occupational injuries and illnesses in accordance with 29 CFR 1904.

## 6.0 DECONTAMINATION

### 6.1 Contamination Prevention Methods

The Project Manager will make all workers aware of the potential for contamination. The following procedures will be established to minimize contact with waste:

- Workers will not walk through areas obvious of contamination;
- Workers will not directly touch potentially hazardous substances;
- Workers will wear gloves when touching soil or waste;
- Workers will wear disposable outer garments where appropriate; and
- Excavated soils will be placed on plastic sheeting and covered with plastic sheeting at the end of the workday.

### 6.2 Decontamination Methods

#### 6.2.1 Cleaning of Field Sampling Equipment

All equipment and tools used to collect samples for chemical analyses, including spatulas, spoons, scoops, trowels, split-spoons, augers, etc. will be decontaminated using the following procedures:

- non-phosphate detergent wash;
- potable water or distilled/deionized water rinse; and
- air or oven-dry.

If the equipment is to be stored for future use, allow to dry and then wrap in aluminum foil (shiny-side out) or seal in plastic bags.

Collect or dispose of all decontamination fluids in accordance with site/project-specific requirements.

### 6.2.2 Personal Clothing Decontamination

All footwear worn in and around the contamination area will be washed down using soap and water to remove soil or oily residue remnants. If disposable gloves, boots or suits (such as Tyvek® suits) are worn, such are to be removed and disposed in a designated 55-gallon drum or garbage bag onsite for future disposal. Any other clothing that comes in contact with the potentially contaminated material should not be worn more than 24-hours and should be washed prior to wearing again.

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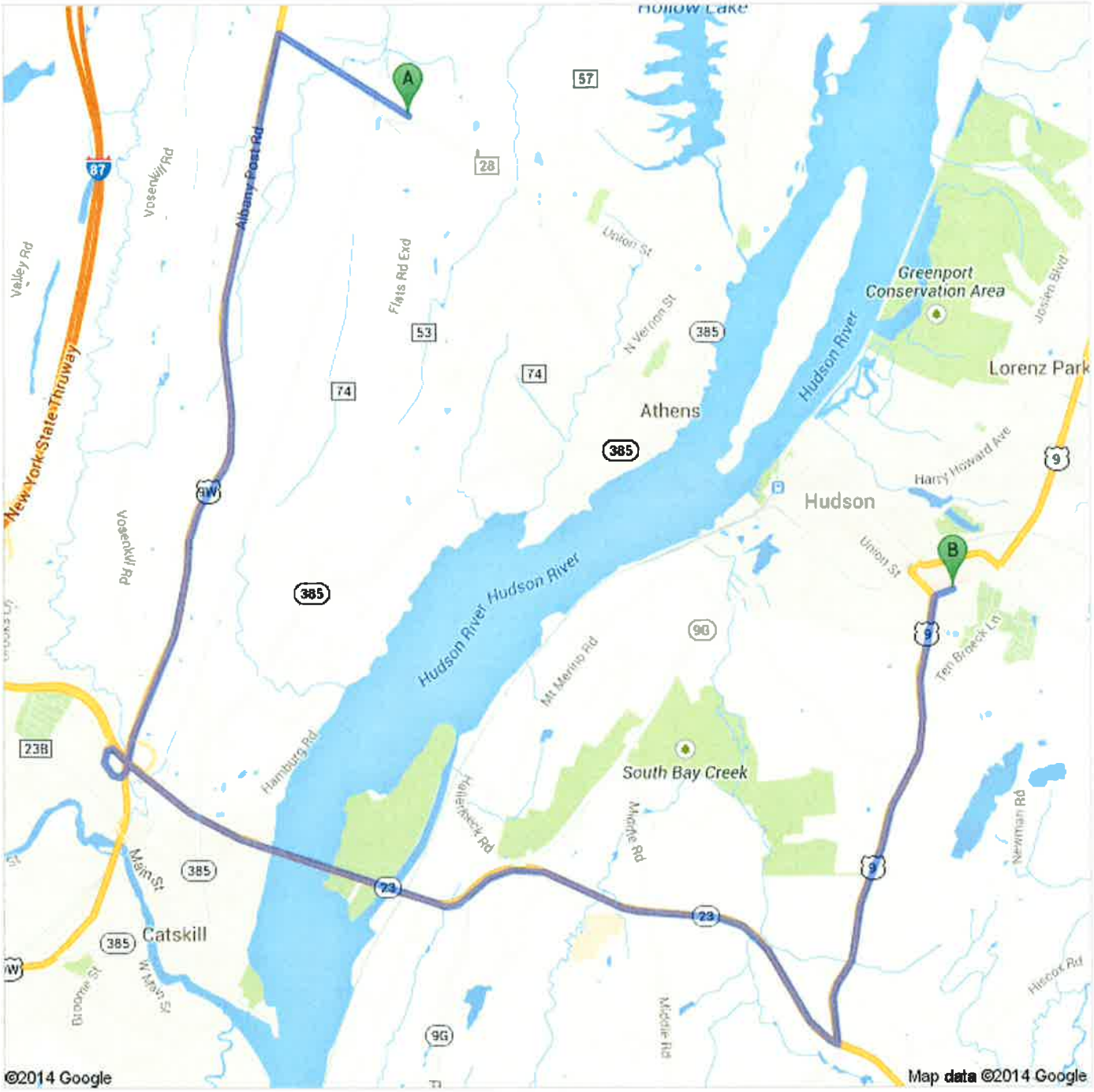
# APPENDIX A-1

# DIRECTIONS TO COLUMBIA MEMORIAL HOSPITAL

Google

**Directions to Columbia Memorial Hospital: Vigna Lauren MD**
71 Prospect Ave, Hudson, NY 12534
**13.1 mi** – about **18 mins**



**Northeast Treaters of NY LLC**
796 Schoharie Turnpike, Athens, NY 12015

| | | |
|---|---|---|
| 1. | Head **northwest** on **Schoharie Turnpike**<br>About 1 min | go 0.9 mi<br>total 0.9 mi |
| 2. | Turn left onto **US-9W S/Albany Post Rd S**<br>About 5 mins | go 4.3 mi<br>total 5.2 mi |
| 3. | Slight right onto the **NY-23** ramp to **Cairo/Hudson** | go 0.3 mi<br>total 5.5 mi |
| 4. | Turn right onto **NY-23 E** (signs for **State Highway 23 E**)<br>Partial toll road<br>About 7 mins | go 4.8 mi<br>total 10.3 mi |
| 5. | Turn left onto **U.S. 9 N**<br>About 4 mins | go 2.7 mi<br>total 13.0 mi |
| 6. | Slight right onto **Prospect Ave**<br>Destination will be on the left | go 0.1 mi<br>total 13.1 mi |

**Columbia Memorial Hospital: Vigna Lauren MD**
71 Prospect Ave, Hudson, NY 12534

# APPENDIX B

# PROJECT SCHEDULE

# Northeast Treaters of New York, LLC
# Facility Modernization Schedule
# Updated 10/23/2014

| Action | Days | Start | Finish |
|---|---|---|---|
| Brownfield Cleanup Program (BCP) Application | 14 | 9/23/2014 | 10/7/2014 |
| Remedial Investigation (RI) Submittal to DEC | 28 | 9/23/2014 | 10/21/2014 |
| BCP Public Comment | 30 | 10/8/2014 | 11/7/2014 |
| Submit RI Work Plan to DEC | 5 | 10/24/2014 | 10/29/2014 |
| BCP Agreement | 7 | 11/8/2014 | 11/15/2014 |
| Address DEC Review Comments on RI Workplan and Resubmit | 14 | 11/14/2014 | 11/28/2014 |
| RI Sampling | 46 | 11/15/2014 | 12/31/2014 |
| RI Report | 72 | 12/29/2014 | 3/11/2015 |
| Remedial Design (RD) | 45 | 3/1/2015 | 4/15/2015 |
| RD Approval | 30 | 4/15/2015 | 5/15/2015 |
| Drip Pad Building Demolition | 5 | 7/26/2015 | 7/31/2015 |
| Final Engineering Report | 61 | 8/1/2015 | 10/1/2015 |
| Receive Certificate of Completion | 72 | 10/1/2015 | 12/12/2015 |