

**Alternative Analysis/Remedial Work Plan
Cornerstone Enterprises
Pawling, New York**

BCP Site No. C314116

Prepared for

Cornerstone Enterprises, Inc.
21 West Main Street
Pawling, NY

Prepared by

Greenstar Environmental Solutions, LLC
6 Gellatly Drive
Wappingers Falls, New York 12590
(845) 223-9944

September 2012
Revision: 3

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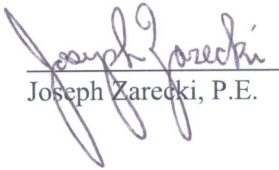
September 2012
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CERTIFICATION STATEMENT

This Certification Statement applies to the following document:

- Alternative Analysis/Remedial Work Plan, Revision 3, Cornerstone Enterprises, Pawling, New York dated September 2012

"I Joseph Zarecki P.E., certify that I am currently a NYS registered professional engineer and that this Alternatives Analysis/Remedial Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.


Joseph Zarecki, P.E.

61468-1
NYS Professional Engineer No.

09-24-12
Date



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1.0 INTRODUCTION

This Alternative Analysis and Remedial Work Plan (AA/RWP) Report has been prepared by Greenstar Environmental Solutions LLC (Greenstar) on behalf of Cornerstone Enterprises, Incorporated to evaluate different remedial approaches for the property (site) located at 33 East Main Street in the Village of Pawling, Dutchess County, New York (BCP No. C314116). The remedies discussed are based on the results of the Remedial Investigation (RI) that was conducted in 2007, 2008 and 2011 and the subsequent RI Report for the site accepted by the New York State Department of Environmental Conservation (NYS DEC). The Alternative Analysis and Remedial Work Plan Report has been developed to fulfill the requirements of NYS DEC DER-10 Technical Guidance for Site Investigation and Remediation (DER-10) with the guidance of the NYS DEC Draft Brownfield Program Cleanup Guide (BPC).

1.1 REPORT ORGANIZATION

The Alternative Analysis and Remedial Work Plan (AA/RWP) Report is organized as follows. Section 1 presents an introduction and overview of the Site. Section 2 provides the Site history and summary of previous Site investigations. Section 3 summarizes the work completed and the results of the Remedial Investigation (RI). Section 4 summarizes the remedial goal and remedial action objectives for the Site. Section 5 summarizes the alternative analysis assessing remedial alternatives. Section 6 provides recommendations for the selected remedy from the site. Section 7 provides the Remedial Work Plan for the chosen remedy.

1.2 SITE LOCATION

The Cornerstone Enterprises property is located at 33 East Main Street in the Village of Pawling, Dutchess County, New York. The area around the Site is a mixed use of residential, commercial and light industrial buildings. Figure 1 shows the location of the Site. Figure 2 shows the Site layout.

The site is 0.19-acre in size situated on the south side of East Main Street. The site includes one unoccupied two-story building with an approximate size of 10,000 square feet. The site also includes parking areas in the northern and eastern part of the property. A tributary to the East Branch Croton River borders the eastern property boundary and flows to the south (Figure 2). The Site is bordered to the west by a former gas filling station (now St. Johns Church Rectory), and an active gas station and car repair facility is operating across Main Street northeast of the Site (Citgo and Dutchess Auto Body and Service Center). Mixed use commercial buildings are located north of the site across Main Street, along the west side of Coulter Avenue where a former gas station was present.

2.0 SITE DESCRIPTION AND HISTORY

The Site is a former gas filling station that operated as an automotive maintenance facility and retail gasoline station until 1985. An auto ramp existed previously along the east side of the building to move cars onto the second floor of the building. A stone retaining wall is present along the stream (a tributary to the East Branch of the Croton River). Two clay terracotta pipes are present. One discharge pipe runs through the stone retaining wall and a second is located in the stream bank adjacent to the southernmost end of the retaining wall. The drainpipes are assumed to be remnants of former drains within the Site building. A third discharge pipe has been identified adjacent to the building foundation at the southern end of the building which originates from a floor drain within the building. Four underground storage tanks (USTs) were previously in place at the Site including three 1,000 gallon gasoline and one 550-gallon waste oil UST. The USTs were removed as part of an Interim Remedial Measure (IRM) completed in 2008.

The stream along the eastern side of the Site emerges from a culvert that crosses underneath East Main Street. The stream flows within the continuation of this culvert which runs underneath the active gas station on the northeast side of East Main Street. Street drains from East Main Street and Coulter Avenue flow directly into the culvert (and stream) and the stream also receives direct drainage from several other roads and industrial and commercial properties upgradient of the Site. The stream has a surface water classification and use designation of Class C. The stream flows in a southerly direction along the Site for approximately 80 ft. Site features are shown on Figure 2.

The current property owner, Cornerstone Enterprises, Incorporated (Cornerstone) purchased the property and entered into a Brownfield Cleanup Program with the New York State Department of Environmental Conservation (NYS DEC) in January 2007 to investigate and remediate the property (BCP # C314116, NYS DEC Spill Number 90-12530). The Site is planned for redevelopment for use as commercial/retail space (first floor) and residential apartments (second floor). This redevelopment will be performed to comply with requirements for Restricted Residential Use.

3.0 REMEDIAL INVESTIGATION AND EXPOSURE ASSESSMENT SUMMARY

3.1 REMEDIAL INVESTIGATION

3.1.1 Summary of Work Completed

The following investigation and remedial activities have been completed at the Site:

- In July 2007 a Remedial Investigation Work Plan was approved by NYS DEC (Conrad Geoscience, 2007). The RI work included soil and groundwater sampling, floor drain tracing and sampling.
- In August 2007 RI field work was completed which included collecting 24 subsurface soil samples from soil borings (GB-1 through GB-24) located throughout the Site in areas of potential petroleum discharge or spillage. Ten temporary monitoring wells were installed (GW-1 through GW-10). A floor drain on the first floor of the building was traced and its discharge point was found adjacent to the south side of the building. One soil sample was collected in the vicinity of the floor drain inside the building (GBSH-1)
- In January 2008 six surface soil samples were collected from a depth of 0 to 2 inches below ground surface at locations underneath and adjacent to the former auto ramp depicted in historical Sanborn Fire Insurance Maps.
- In April and May 2008 Interim Remedial Measures were implemented to remove 4 USTs at the Site. Petroleum impacted soil from the UST excavation was removed to a depth of approximately 10 to 13 ft below ground surface (ft bgs) and disposed of off-site. Post excavation samples were collected and the excavation was backfilled with fill material although no analytical samples of the fill were collected prior to placement. Impacted soil at the floor drain discharge at the rear of the building was removed to a depth of approximately three ft bgs. On the southeast side of the Site, in the area of the former auto ramp, approximately 1 foot of soil was removed and confirmatory samples were collected. Ten groundwater samples were collected from the temporary wells that were installed in August 2007 (GW-1 through GW-10).
- In June 2008, a survey of private wells servicing homes and businesses within a 0.5-mile radius of the subject property was performed (Conrad Geoscience, 2008). Businesses and homes in the Village receive potable water from a public water supply. The survey found that the private well nearest to the Site is approximately 1,450 feet to the east. This well is not downgradient of the site and is not expected to be impacted by the site.
- The NYS DEC requested that additional investigation be performed to successfully complete the RI and fully delineate the nature and extent of contamination on-site..

- In October 2010 a second Remedial Investigation Work Plan was approved by NYS DEC to perform soil, fill, groundwater and stream sediment testing (Zarecki and Associates, 2010).
- In April 2011 a meeting was held with NYS DEC to discuss the Remedial Investigation Work Plan. The scope of the RI Work Plan was reduced to eliminate sampling for pesticide/PCB/cyanide from three soil borings (SB-2, SB- 4 and SB-5) and from two groundwater samples (MW-2 and MW-4). Vapor samples specified in the RI Work Plan were postponed until building renovations were complete and a sub-slab depressurization system has been installed.
- In May 2011 the RI sampling was completed by Greenstar as per the 2010 RI Work Plan and April 2011 meeting with NYS DEC. A summary of sampling completed during 2011 is provided on Table 2 of the RI Report (Greenstar, 2011). This RI Report summarizes, in a single comprehensive document, the results of the above investigation activities.
- In October 2011 a Draft Remedial Investigation Report (Greenstar, 2011), summarizing in a single comprehensive document the above investigation activities, was submitted to the NYS DEC for approval. The NYS DEC approved the RI Report in a letter dated 18 April 2012. A summary of the results of the RI is described in the below section.

3.1.2 Remedial Investigation Results

The following conclusions and recommendations presented in the RI Report (Greenstar 2012) based on a comprehensive review of previous investigations at the Site:

3.1.2.1 Soil and Fill

- Based on post-excavation samples collected in 2007 and 2008 concentrations of VOC, SVOC and metals in soil samples above restricted residential SCOs remain in select locations. The highest concentrations of VOC and SVOC were noted in samples PE-6 and PE-10 located along the building foundation, and at PE-21 located at the property line in the southwest corner of the site. Concentrations of lead and mercury above restricted residential SCOs were noted at post-excavation samples PE-5D and SS-2D located at the ramp excavation.
- Based on the results of the 2011 RI, Site soil and fill is not impacted by VOC, SVOC, pesticides, PCBs, cyanide or hexavalent chromium. Concentrations of these contaminants in the soil and fill samples were below NYS DEC criteria (i.e., restricted residential and SCOs for soil, restricted residential and groundwater protection SCOs for fill).
- No free product or petroleum sheens were observed in the soil borings.

3.1.2.2 Groundwater

- No concentrations of pesticides, PCBs, or cyanide were detected in groundwater.
- No free product or petroleum sheens were observed in Site monitoring wells.
- Concentrations of VOC above AWQS criteria were noted at three wells (GW-9, GW-10, MW-6), and lead at one well (GW-10). These wells are side gradient from the UST excavation (GW-10), and located on the southwest and southern property boundary (GW-9, MW-6). Groundwater sample results from monitoring wells located within the UST excavation and in other Site areas do not show impacts by VOC or lead. Based on groundwater flow patterns and spatial distribution of VOC, the impacted groundwater in wells GW-9, GW-10 and MW-6 is moving onto the Site from the west where a gasoline station was located.

3.1.2.3 Sediment

- No concentrations of VOC, PCBs or cyanide were detected above ALCT values.
- Concentrations of one SVOC (benzo(a)anthracene) was above ALCT values in the four sediment samples (STS-1 through STS-4). This compound is found in materials used in constructing paved surfaces such as roads and parking lots and this compound is considered to be unrelated to the Site.
- Concentrations of two pesticides (chlordane and heptachlor) were detected above ALCT values at two sample locations, including the upgradient sample. The presence of these pesticides is considered to be unrelated to the Site.
- Concentrations of two metals (iron and nickel) were detected between low effect and severe effect ALCT values (iron in upgradient sample STS-4 and nickel at STS-3). The presence of iron in the upgradient sample indicates this metal is unrelated to the Site. Nickel concentrations at STS-3 may be Site related or could be originating from industrial areas upgradient of the Site. Nickel is not commonly found from a petroleum release and is more likely to originate from auto body/auto repair work occurring immediately upgradient of the Site (at the Citgo / Dutchess Auto Body and Service Center). The concentration of nickel is at the lower end of the range between the low effect and severe effect ALCT values and the sediment is not considered as significantly impacted at STS-3. Nickel concentrations were below low effect ALCT values in the two samples collected further downstream (STS-1 and STS-2).

3.1.2.4 Sub-Slab Vapor or Indoor Air

- Currently the building is not habitable and has numerous openings to the outside. therefore no indoor air or sub-slab vapor samples have been collected.

3.2 HUMAN HEALTH EXPOSURE ASSESSMENT

A qualitative human health exposure assessment was completed for the Site as per the procedures listed in DER-10. The purpose of the qualitative human health exposure assessment was to evaluate and document how people might be exposed to Site related contaminants and to identify and characterize the potentially exposed populations now and under reasonably anticipated future use of the Site. The current and planned use of the Site was considered in this assessment, in conjunction with the analytical data collected during the RI. The property owner is planning on renovating the existing structure to permit commercial use on the first floor, and apartments on the second floor.

The human health exposure assessment is summarized on Table 1 provided in Appendix A (from the RI Report, Greenstar 2012) for direct contact with surface or subsurface soils, ingestion of groundwater, direct contact with groundwater, or inhalation of air. Based on this assessment, no exposure pathways exist for the Site. Because the Site will be redeveloped to achieve restricted residential conditions, access to Site soil, groundwater and stream sediment will be minimal. Neighboring properties are connected to public water and a well survey completed in 2008 indicates no potable water supply wells are present within 1,450 ft of the Site. A sub-slab depressurization system will be installed at the Site during renovation and confirmatory indoor air samples will be collected to ensure the system is operating properly prior to occupation. Based on these factors no human health exposure concerns are present at this Site.

4.0 REMEDIATION GOALS AND REMEDIAL ACTION OBJECTIVES

4.1 Remediation Goals

The remediation goal for the Site is to remediate the Site in a manner that is protective of human health and the environment for contaminants deriving from onsite activities. The Remedial Investigation found the contaminants detected in the groundwater did not originate from onsite activities. Therefore remediation or long-term monitoring of groundwater are not included in remedial action objectives for the Site. Hazards associated from the volatilization of compounds from groundwater will be addressed in the proposed remedies.

4.2 Remedial Action Objectives

The Remedial Action Objectives (RAOs) from NYS DEC have been used to develop alternative remediation approaches for the Site. The Remedial Action Objectives for impacted media for the Site are as follows:

4.2.1 Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

4.2.2 Soil Vapor

RAOs for Public Health Protection

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

5.0 ALTERNATIVES ANALYSIS

The approach for selecting an appropriate remedial alternative for a Site consists of developing a list of potentially applicable remedial technologies, screening the list of technologies, assembling a focused list of remedial alternatives, and evaluating the remedial alternatives with regards to the remediation goals and Remedial Action Objectives. AA/RWP activities will be conducted in accordance with the NYS DEC DER-10 Technical Guidance for Site Investigation and Remediation with reference to the soil cleanup objectives (SCOs) provided in Part 6 NYCRR Part 375.

5.1 REMEDIAL ALTERNATIVES

Applicable remedial alternatives for two alternative remedies are discussed and evaluated in this section with regards to the following:

- Overall protection of human health and the environment;
- Compliance with SCGs;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume with treatment;
- Short-term effectiveness;
- Land Use,
- Community Acceptance,
- Implementability; and
- Cost.

5.1.1 Track 1 Unrestricted Use

Summary of Remedy

A Track 1 Unrestricted Use alternative would necessitate remediation of all soil/fill where concentrations exceed SCOs for unrestricted use provided in Table 2 of Appendix A. An Unrestricted Use remedy cannot rely on institutional or engineering controls, soil excavation of these areas of Site soil is considered to be the most applicable remedy to achieve this goal.

The soil excavation would remediate select locations identified with concentrations above unrestricted use SCOs in the 2007 and 2008 post excavation sampling (no additional impacts to soil above unrestricted use SCOs were identified during the 2011 investigation). The total volume of impacted soil needing removal is estimated at 100 cubic yards of material. Excavating impacted soil along the building foundation of the building and below the building will require building demolition and removal to provide access to impacted soils. Confirmatory soil samples will be collected to ensure all soil above unrestricted use SCOs has been removed. Once removed the excavated soil will be transported offsite for disposal, and clean fill will be brought in to backfill the excavations.

Alternative Evaluation

Overall Protection of Human Health and the Environment

The alternative would achieve the corresponding SCOs, which are designed to be protective of human health under any reuse scenario.

Compliance with SCGs

The alternative would be undertaken in accordance with applicable, relevant, and appropriate standards, guidance, and criteria. This alternative would achieve compliance with SCGs as unrestricted SCOs would be met.

Long-term effectiveness and permanence

The alternative would achieve removal of all residual impacted soil/fill; therefore, no soil/fill exceeding the unrestricted use SCOs would remain on the Site. As such, the alternative would provide long-term effectiveness and permanence. Post-remedial monitoring and certifications would not be required.

Reduction of toxicity, mobility or volume with treatment

Through removal of all impacted soil/fill, the alternative would permanently and significantly reduce the toxicity, mobility, and volume of Site contamination.

Short-term effectiveness

The short-term adverse impacts and risks to the community, workers, and environment during implementation of the alternative are not considered significant and are controllable, but would increase the duration of time community, workers, and the environment is exposed to fugitive dust and off-site exposures during remediation.

Land Use

The alternative would not change historical land use for this property.

Community Acceptance

The community acceptance criterion will be evaluated after the public review of the remedy selection process as part of the final selection/approval of the remedy for the site.

Implementability

No technical Implementability issues would be encountered in construction of the alternative. Administrative implementability issues may include the need for rezoning of the area, since

residential, agricultural, and other unrestricted uses are not consistent with current zoning or the reasonably anticipated future use of the Site.

Cost

The total projected cost estimate for this remedial alternative is \$213,000. Cost estimate details are provided in Appendix B.

5.1.2 Track 4 Restricted Use Alternative

Summary of Remedy

A Track 4 Restricted Use alternative would implement engineering and institutional controls to achieve the SCOs for restricted residential use provided in Table 2 of Appendix A. No additional cleanup activities would be performed beyond what has already been completed as part of the IRM. The remedy would include the following:

- Installation of a two foot thick soil cover or paving over existing Site soils (which could also include a combination of building footprints and paved surfaces) to eliminate direct contact with contamination remaining in the on-site soil.
- Installation of a sub-slab depressurization system to mitigate against any vapor intrusion concerns for site buildings. Confirmatory monitoring will be collected after the installation to confirm the proper operation of the mitigation system.
- An Environmental Easement will be enacted with the NYS DEC which will include restrictions for future property use (i.e., restricted residential) and provide access to the site for NYS personnel. The easement will require a Site Management Plan (SMP) be developed for continued operation, maintenance and assessment of the engineering controls installed on the Site.

Alternative Evaluation

Overall Protection of Human Health and the Environment

The alternative successfully achieves the SCOs for restricted residential use, is fully protective of human and environmental health and achieves the applicable RAOs for the site.

Compliance with SCGs

The alternative successfully meets applicable standards, guidance, and criteria for restricted residential use.

Long-term effectiveness and permanence

The alternative would achieve SCOs for restricted residential use for surface soil. The Environmental Easement ensures the Site will continue to meet applicable standards, guidance and criteria to remain protective of human health and the environment.

Reduction of toxicity, mobility or volume with treatment

Post-excavation samples collected as part of the IRM in 2007 and 2008 indicated only limited area of contamination exceeding SCOs for restricted residential use remained (no additional areas of soil contamination were found during the 2011 RI). The initial excavation significantly and permanently reduced the toxicity and volume of Site contamination.

The installation of a soil cap and paved areas limits possible exposure impacting human health and environment, and limit the migration of contamination through surface runoff.

Monitoring of the sub-slab depressurization system will be conducted to ensure the remedial measure is protective of human health.

Short-term effectiveness

The short-term adverse impacts and risks to the community, workers, and environment during implementation of the alternative are not considered significant. Work completed as part of this alternative will follow a Health and Safety Plan and a Community Air Monitoring Plan approved for the Site to limit the potential for exposure and physical injuries.

Land Use

The alternative would not change historical land use for this property.

Community Acceptance

The community acceptance criterion will be evaluated after the public review of the remedy selection process as part of the final selection/approval of the remedy for the site.

Implementability

No technical or administrative implementability issues are for seen to be associated with the implementation of the n alternative.

Cost

The total projected cost estimate for this remedial alternative is \$23,500. Cost estimate details are provided in Appendix B.

6.0 RECOMMENDED REMEDY

Based on the Alternatives Analysis evaluation, the Track 4 Restricted Use remedy satisfies the remedial action objectives for the site. The remedy is protective of human health and the environment and will be more cost effective. Therefore the implementation of the Track 4 Restricted Use remedy is the recommended final remedial approach for the Site.

7.0 REMEDIAL WORK PLAN

7.1 Project Plans and Specifications

The site plan to implement the requirements of the remedy are provided in Appendix C. The plans meet the requirements of the BCP and follow the technical guidance in DER-10. The sub-slab depressurization system will be designed following the guidance in the NYS DOH *Vapor Intrusion Guidance* (VIG).

7.2 Institutional & Engineering Controls

7.2.1 Soil Cover and Asphalt Cap

A two foot thick soil cover and/or asphalt pavement will be placed over exposed soils at the Site. The cap will eliminate direct contact with contamination remaining in the on-site soil and will be completed in accordance with the site plan provided in Appendix C. Where clean soil or fill is necessary to meet the requirements of the specifications, a Soil/Fill Management Plan will be used to guide remedial activities. The remedial activities will require limited importation of fill for grading prior to paving. No excavations that may encounter impacted soil are planned. The Soil/Fill Management Plan is provided in Appendix D.

7.2.2 Sub-Slab Depressurization System

A sub-slab depressurization system (SSDS) will be installed during the building renovation to eliminate the human health risks from potential vapor intrusion. The sub-slab depressurization system will consist of a blower(s) designed to create negative pressure to remove sub-slab vapors from under the building slab. The sub-slab depressurization system will be designed as part of building renovations.

The SSDS in the on-site building will be installed without prior soil vapor intrusion sampling due to the potential for soil vapor intrusion to occur based on environmental sampling on-site and under the building. After the SSDS is installed the negative pressure field under the building will be demonstrated by performance tested (i.e., pressure field extension testing) to verify that an adequate pressure differential has been created across the entire slab. One indoor air sample will be collected for analysis to provide documentation that the SSDS has effectively mitigated any potential impacts via the soil vapor intrusion pathway. The indoor air sample will be collected during the heating season (November 15th – March 31st) as per the procedures outlined in the Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYS DOH 2006). The SSDS is required to run continuously and will require annual performance certification until such time that environmental sampling indicates operation of the system is unnecessary.

7.2.3 Environmental Easement

An environment easement will be established for the property as per NYS DEC *DER 33 / Institutional Controls: A Guide to Drafting and Recording Institutional Controls* (DER-33). The easement will restrict property usage to restricted residential or commercial use only and provide future access to the Site for DEC personnel and the easement will also restrict the use of groundwater as a source of potable or process water without necessary treatment. The easement will require a Site Management Plan (SMP) be developed for continued operation, maintenance and assessment of the engineering controls installed on the Site. The SMP will not be included as part of this AA/RWP, and will be submitted as a separate report once approval for the AA/RWP has been received from the NYS DEC. The NYC DEC provided environmental easement form, environmental easement checklist and notice of environmental easement form will be filed and submitted to the appropriate parties. The environmental easement will be provided separately to NYS DEC.

7.2.4 Groundwater Monitoring

The RI completed for the Site found the contaminants detected in the groundwater did not originate from onsite activities and are moving onto the Site from the former gasoline filling station west of the Site (now St. Johns Church property). Groundwater contamination is not related to this Site and therefore no groundwater monitoring will be required as part of the Institution and Engineering Controls for the Site. Site monitoring wells GW-9, GW-10, and MW-6 will be preserved in case NYS DEC completes future groundwater monitoring for sites upgradient of this property. The monitoring wells not being preserved for use by the Department to monitor the upgradient spill (MW-1, MW-2, MW-3, MW-4, MW-5 and GW-1) will be decommissioned in accordance with the Department's CP-43 Commissioner's Policy on Groundwater Monitoring Well Decommissioning Procedures during the Remedial activities.

7.3 Health and Safety Plan and Community Air Monitoring Program

A Health and Safety Plan for the Site was developed to address safety hazards for the remedial activities outlined in section 7.0. The Health and Safety Plan for remedial activities is provided in Appendix E.

A Community Air Monitoring Program (CAMP) has been developed from the NYS DOH Generic Community Air Monitoring Plan for use during the remedial activities to protect the downwind community from fugitive air borne particles and volatile organic compounds. The CAMP for remedial activities to be performed on the Site is provided in Appendix F.

7.4 Schedule

Project activities described in this RI/AA Work Plan will begin after receipt of written approval for the Final AA/RWP by the NYSDEC.

The preliminary schedule for the implementation of the remedial action is detailed below.

Activity	Date due to NYS DEC
Site Management Plan approved by DEC	To be determined
Construction Completed for soil cap and asphalt paving	16 October 2012
Draft Final Engineering Report	26 October 2012

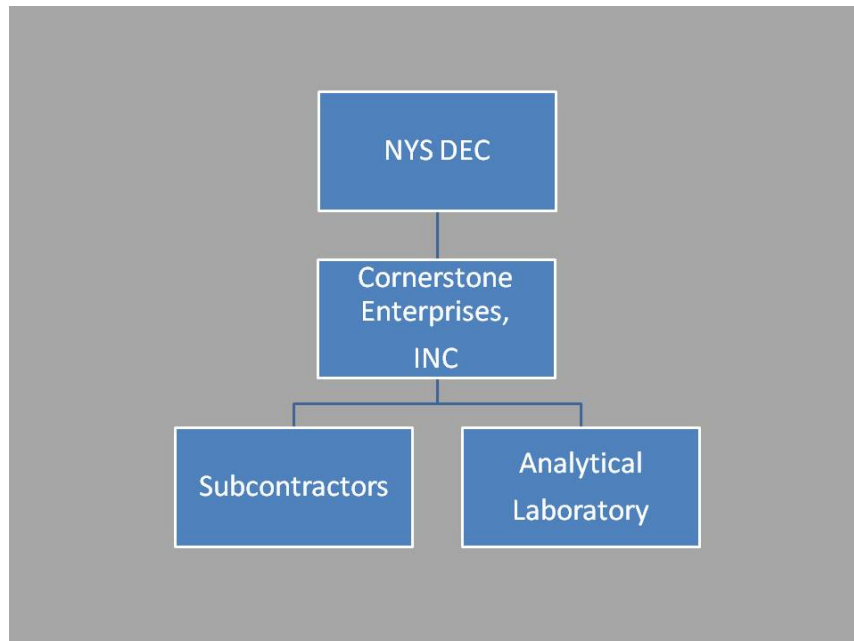
7.5 Reporting

As accordance with reporting requirements outlined in the BCP, a Preconstruction Notice to the Department will be submitted to the NYS DEC at least 20 days prior to the initiation of remediation activities. In addition, a Final Engineering Report (FER) will be submitted after the soil cap and environmental easement have been completed. The sub-slab depressurization system will be installed after the building has been renovated. The schedule for building renovation has not yet been determined. Therefore the FER will be issued before the sub-slab depressurization system has been installed.

As in accordance with reporting requirements outline DER-10, within 90 days after completion of construction activities at the Site, a Remedial Action Report will be submitted to the NYS DEC detailing the remedial activities completed at the Site. Once per year an Annual Certification will be submitted to the NYS DEC to certify the institutional and engineering controls used for the remedy at the Site are still in place and have not been altered.

7.6 Project Organization

The organization for the project is as follows:



REFERENCES

Conrad Geosciences Corp., 2007. Remedial Investigation Work Plan, 33 East Main Street, Village of Pawling, New York.

Conrad Geosciences Corp., 2008. Remedial Investigation and Interim Remedial Measure Report, 33 East Main Street, Village of Pawling, New York. June.

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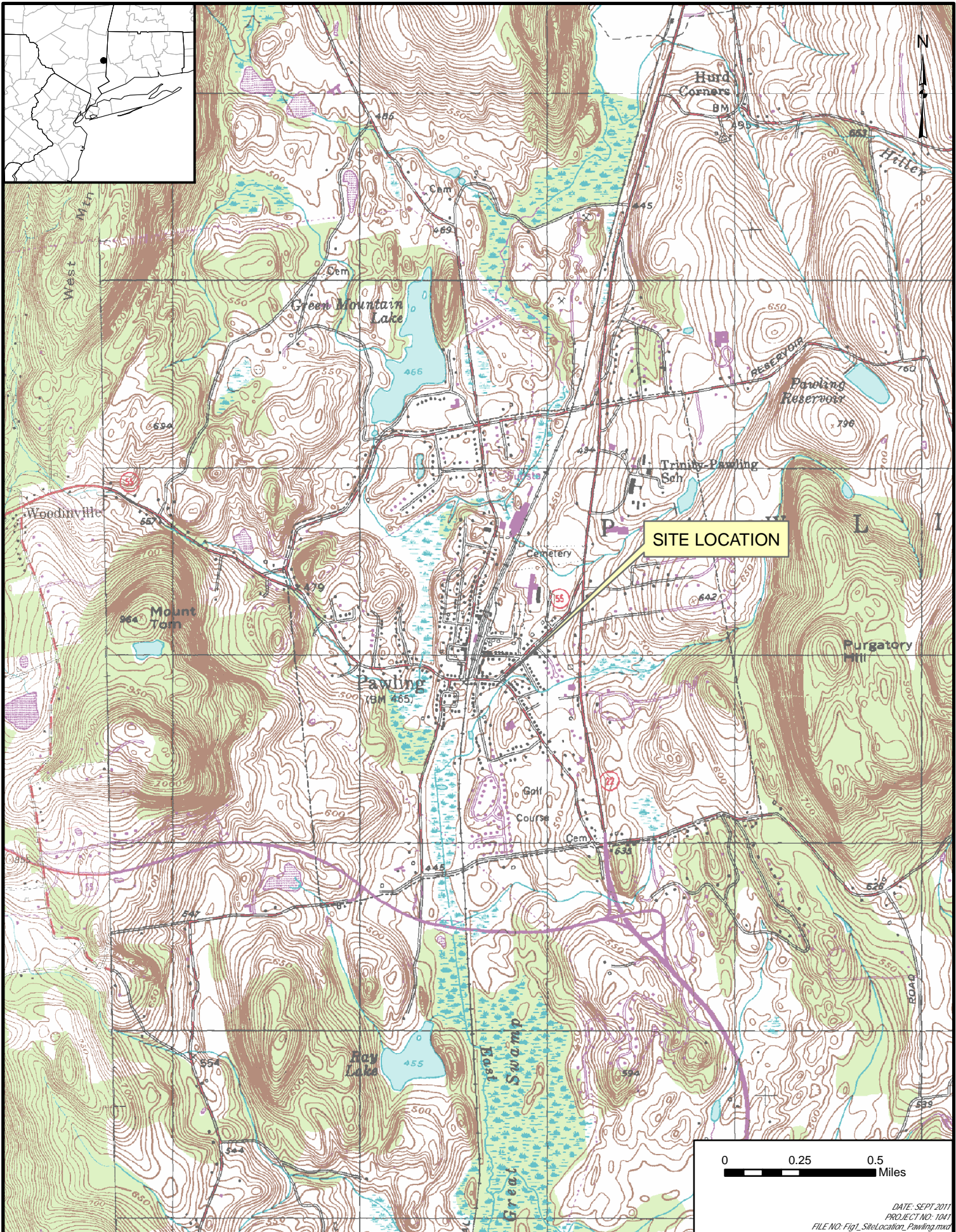
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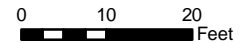
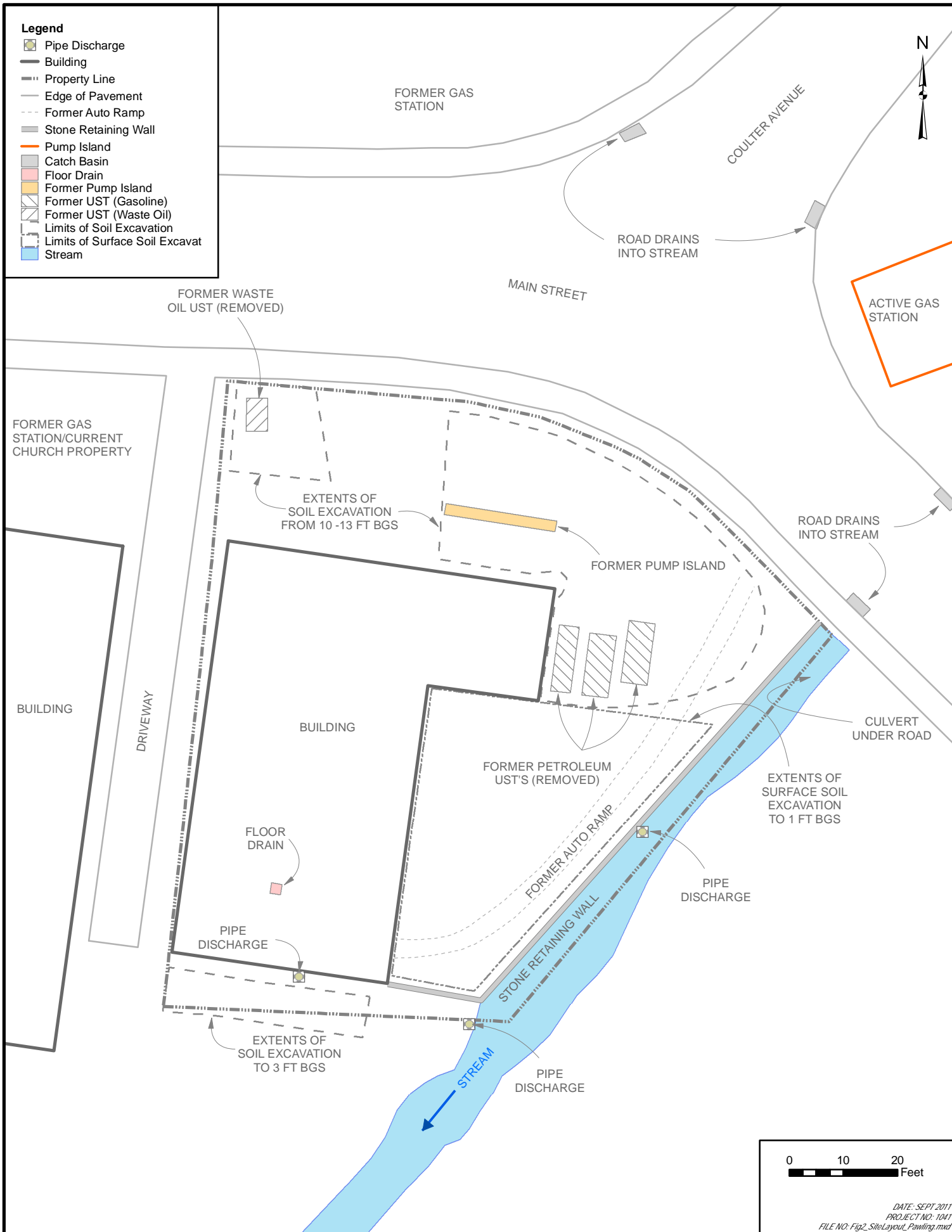
NYS DOH 2006. Guidance for Evaluating Soil Vapor Intrusion in the State of New York. May

Zarecki and Associates LLC, 2010. Cornerstone Enterprises, Incorporated, Dutchess County, New York, Final Remedial Investigation Work Plan. October.



Legend

-  Pipe Discharge
-  Building
-  Property Line
-  Edge of Pavement
-  Former Auto Ramp
-  Stone Retaining Wall
-  Pump Island
-  Catch Basin
-  Floor Drain
-  Former Pump Island
-  Former UST (Gasoline)
-  Former UST (Waste Oil)
-  Limits of Soil Excavation
-  Limits of Surface Soil Excavation
-  Stream



DATE: SEPT. 2011
 PROJECT NO: 1041
 FILE NO: Fig2_SiteLayout_Pawling.mxd

Appendix A

Table - Human Health Exposure Assessment and Part 375 Soil Cleanup Objectives

TABLE 1
HUMAN HEALTH EXPOSURE ASSESSMENT
CORNERSTONE ENTERPRISES, INC
PAWLING, NEW YORK

Environmental Media & Exposure Route	Human Exposure Assessment
Direct contact with surface or subsurface soils (and accidental ingestion)	<p>People will not come into contact with contaminated surface or subsurface soil for the following reasons:</p> <ul style="list-style-type: none"> • The property will be re-developed to achieve restricted residential conditions to limit exposure to site soil. After renovation the site area will be under the building or will be paved. No exposed soil will be present after building renovations are completed. • Building renovations will be limited to repairs to the existing building and will not include significant excavation work.
Ingestion of groundwater	<p>People will not ingest contaminated surface groundwater for the following reasons:</p> <ul style="list-style-type: none"> • A well search completed in 2008 indicated no potable water wells are present within 1,450 ft away from the Site. • Village residents and businesses are connected to the public water supply.
Direct contact with groundwater	<p>People will not come into contact with contaminated surface groundwater for the following reasons:</p> <ul style="list-style-type: none"> • Building renovations will be limited to repairs to the existing building and will not include significant excavation work. Therefore no human exposure to groundwater will occur during renovation. After building renovation the site will be paved and no exposure route for groundwater will be present.
Inhalation of air (exposures related to soil vapor intrusion)	<p>People will not come into contact with contaminated soil vapor for the following reasons:</p> <ul style="list-style-type: none"> • A sub-slab depressurization system will be installed as part of the building redevelopment to mitigate any vapor impacts which could be present. • After installation, performance testing will be used to demonstrate the negative pressure field under the building is adequate to mitigate soil vapor impacts. One indoor air sample will be collected during the heating season to confirm no impacts related to site contamination are present in indoor air.
Other	<p>People will not come into contact with stream sediment or surface water for the following reasons:</p> <ul style="list-style-type: none"> • The property will be re-developed to achieve restricted residential conditions. Exposure routes to surface water or stream sediment will be restricted. • The stream is very shallow and is not suitable for recreation. • The stream receives drainage from numerous industrial properties, roads and parking lots upgradient of the Site. Samples collected during the RI indicate sediment impacts are nominal and are not likely to be attributable to the Site.

Table 2 – Part 375 Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Groundwater
		Residential	Restricted Residential	Commercial	Industrial		
Metals							
Arsenic	7440-38-2	16 ^f	16 ^f	16 ^f	16 ^f	13 ^f	16 ^f
Barium	7440-39-3	350 ^f	400	400	10,000 ^d	433	820
Beryllium	7440-41-7	14	72	590	2,700	10	47
Cadmium	7440-43-9	2.5 ^f	4.3	9.3	60	4	7.5
Chromium, hexavalent ^h	18540-29-9	22	110	400	800	1 ^c	19
Chromium, trivalent ^h	16065-83-1	36	180	1,500	6,800	41	NS
Copper	7440-50-8	270	270	270	10,000 ^d	50	1,720
Total Cyanide ^h		27	27	27	10,000 ^d	NS	40
Lead	7439-92-1	400	400	1,000	3,900	63 ^f	450
Manganese	7439-96-5	2,000 ^f	2,000 ^f	10,000 ^d	10,000 ^d	1600 ^f	2,000 ^f
Total Mercury		0.81 ^l	0.81 ^l	2.8 ^l	5.7 ^l	0.18 ^f	0.73
Nickel	7440-02-0	140	310	310	10,000 ^d	30	130
Selenium	7782-49-2	36	180	1,500	6,800	3.9 ^f	4 ^f
Silver	7440-22-4	36	180	1,500	6,800	2	8.3
Zinc	7440-66-6	2200	10,000 ^d	10,000 ^d	10,000 ^d	109 ^l	2,480
PCBs/Pesticides							
2,4,5-TP Acid (Silvex)	93-72-1	58	100 ^a	500 ^b	1,000 ^c	NS	3.8
4,4'-DDE	72-55-9	1.8	8.9	62	120	0.0033 ^c	17
4,4'-DDT	50-29-3	1.7	7.9	47	94	0.0033 ^c	136
4,4'-DDD	72-54-8	2.6	13	92	180	0.0033 ^c	14
Aldrin	309-00-2	0.019	0.097	0.68	1.4	0.14	0.19
alpha-BHC	319-84-6	0.097	0.48	3.4	6.8	0.04 ^e	0.02
beta-BHC	319-85-7	0.072	0.36	3	14	0.6	0.09
Chlordane (alpha)	5103-71-9	0.91	4.2	24	47	1.3	2.9
delta-BHC	319-86-8	100 ^a	100 ^a	500 ^b	1,000 ^c	0.04 ^e	0.25
Dibenzofuran	132-64-9	14	59	350	1,000 ^f	NS	210
Dieldrin	60-57-1	0.039	0.2	1.4	2.8	0.006	0.1
Endosulfan I	959-98-8	4.8 ^l	24 ^l	200 ^l	920 ^l	NS	102
Endosulfan II	33213-65-9	4.8 ^l	24 ^l	200 ^l	920 ^l	NS	102
Endosulfan sulfate	1031-07-8	4.8 ^l	24 ^l	200 ^l	920 ^l	NS	1,000 ^c
Endrin	72-20-8	2.2	11	89	410	0.014	0.06
Heptachlor	76-44-8	0.42	2.1	15	29	0.14	0.38
Lindane	58-89-9	0.28	1.3	9.2	23	6	0.1
Polychlorinated biphenyls	1336-36-3	1	1	1	25	1	3.2
Semivolatiles							
Acenaphthene	83-32-9	100 ^a	100 ^a	500 ^b	1,000 ^c	20	98
Acenaphthylene	208-96-8	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	107
Anthracene	120-12-7	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	1,000 ^c
Benz(a)anthracene	56-55-3	1 ^f	1 ^f	5.6	11	NS	1 ^f
Benzo(a)pyrene	50-32-8	1 ^f	1 ^f	1 ^f	1.1	2.6	22
Benzo(b)fluoranthene	205-99-2	1 ^f	1 ^f	5.6	11	NS	1.7
Benzo(g,h,i)perylene	191-24-2	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	1,000 ^c
Benzo(k)fluoranthene	207-08-9	1	3.9	56	110	NS	1.7
Chrysene	218-01-9	1 ^f	3.9	56	110	NS	1 ^f
Dibenz(a,h)anthracene	53-70-3	0.33 ^c	0.33 ^c	0.56	1.1	NS	1,000 ^c
Fluoranthene	206-44-0	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	1,000 ^c
Fluorene	86-73-7	100 ^a	100 ^a	500 ^b	1,000 ^c	30	386
Indeno(1,2,3-cd)pyrene	193-39-5	0.5 ^f	0.5 ^f	5.6	11	NS	8.2
m-Cresol	108-39-4	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	0.33 ^c
Naphthalene	91-20-3	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	12
o-Cresol	95-48-7	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	0.33 ^c
p-Cresol	106-44-5	34	100 ^a	500 ^b	1,000 ^c	NS	0.33 ^c
Pentachlorophenol	87-86-5	2.4	6.7	6.7	55	0.8 ^c	0.8 ^c
Phenanthrene	85-01-8	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	1,000 ^c
Phenol	108-95-2	100 ^a	100 ^a	500 ^b	1,000 ^c	30	0.33 ^c
Pyrene	129-00-0	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	1,000 ^c

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Groundwater
		Residential	Restricted Residential	Commercial	Industrial		
Volatiles							
1,1,1-Trichloroethane	71-55-6	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	0.68
1,1-Dichloroethane	75-34-3	19	26	240	480	NS	0.27
1,1-Dichloroethene	75-35-4	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	0.33
1,2-Dichlorobenzene	95-50-1	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	1.1
1,2-Dichloroethane	107-06-2	2.3	3.1	30	60	10	0.02 ^f
cis-1,2-Dichloroethene	156-59-2	59	100 ^a	500 ^b	1,000 ^c	NS	0.25
trans-1,2-Dichloroethene	156-60-5	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	0.19
1,3-Dichlorobenzene	541-73-1	17	49	280	560	NS	2.4
1,4-Dichlorobenzene	106-46-7	9.8	13	130	250	20	1.8
1,4-Dioxane	123-91-1	9.8	13	130	250	0.1 ^e	0.1 ^e
Acetone	67-64-1	100 ^a	100 ^b	500 ^b	1,000 ^c	2.2	0.05
Benzene	71-43-2	2.9	4.8	44	89	70	0.06
Butylbenzene	104-51-8	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	12
Carbon tetrachloride	56-23-5	1.4	2.4	22	44	NS	0.76
Chlorobenzene	108-90-7	100 ^a	100 ^a	500 ^b	1,000 ^c	40	1.1
Chloroform	67-66-3	10	49	350	700	12	0.37
Ethylbenzene	100-41-4	30	41	390	780	NS	1
Hexachlorobenzene	118-74-1	0.33 ^c	1.2	6	12	NS	3.2
Methyl ethyl ketone	78-93-3	100 ^a	100 ^a	500 ^b	1,000 ^c	100 ^a	0.12
Methyl tert-butyl ether	1634-04-4	62	100 ^a	500 ^b	1,000 ^c	NS	0.93
Methylene chloride	75-09-2	51	100 ^a	500 ^b	1,000 ^c	12	0.05
n-Propylbenzene	103-65-1	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	3.9
sec-Butylbenzene	135-98-8	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	11
tert-Butylbenzene	98-06-6	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	5.9
Tetrachloroethene	127-18-4	5.5	19	150	300	2	1.3
Toluene	108-88-3	100 ^a	100 ^a	500 ^b	1,000 ^c	36	0.7
Trichloroethene	79-01-6	10	21	200	400	2	0.47
1,2,4-Trimethylbenzene	95-63-6	47	52	190	380	NS	3.6
1,3,5-Trimethylbenzene	108-67-8	47	52	190	380	NS	8.4
Vinyl chloride	75-01-4	0.21	0.9	13	27	NS	0.02
Xylene (mixed)	1330-20-7	100 ^a	100 ^a	500 ^b	1,000 ^c	0.26	1.6

Values from Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

All soil cleanup objectives (SCOs) are in parts per million (ppm). NS=Not specified. See Technical Support Document (TSD). Footnotes

^a The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

^b The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

^c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

^d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

^e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

^f For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

^g This SCO is derived from data on mixed isomers of BHC.

^h The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

ⁱ This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.

^j This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts).

Appendix B

Cost Estimates for Remedial Alternatives







Estimate of Remedial Costs
Cornerstone Enterprises, Inc.
33 East Main Street, Pawling, NY

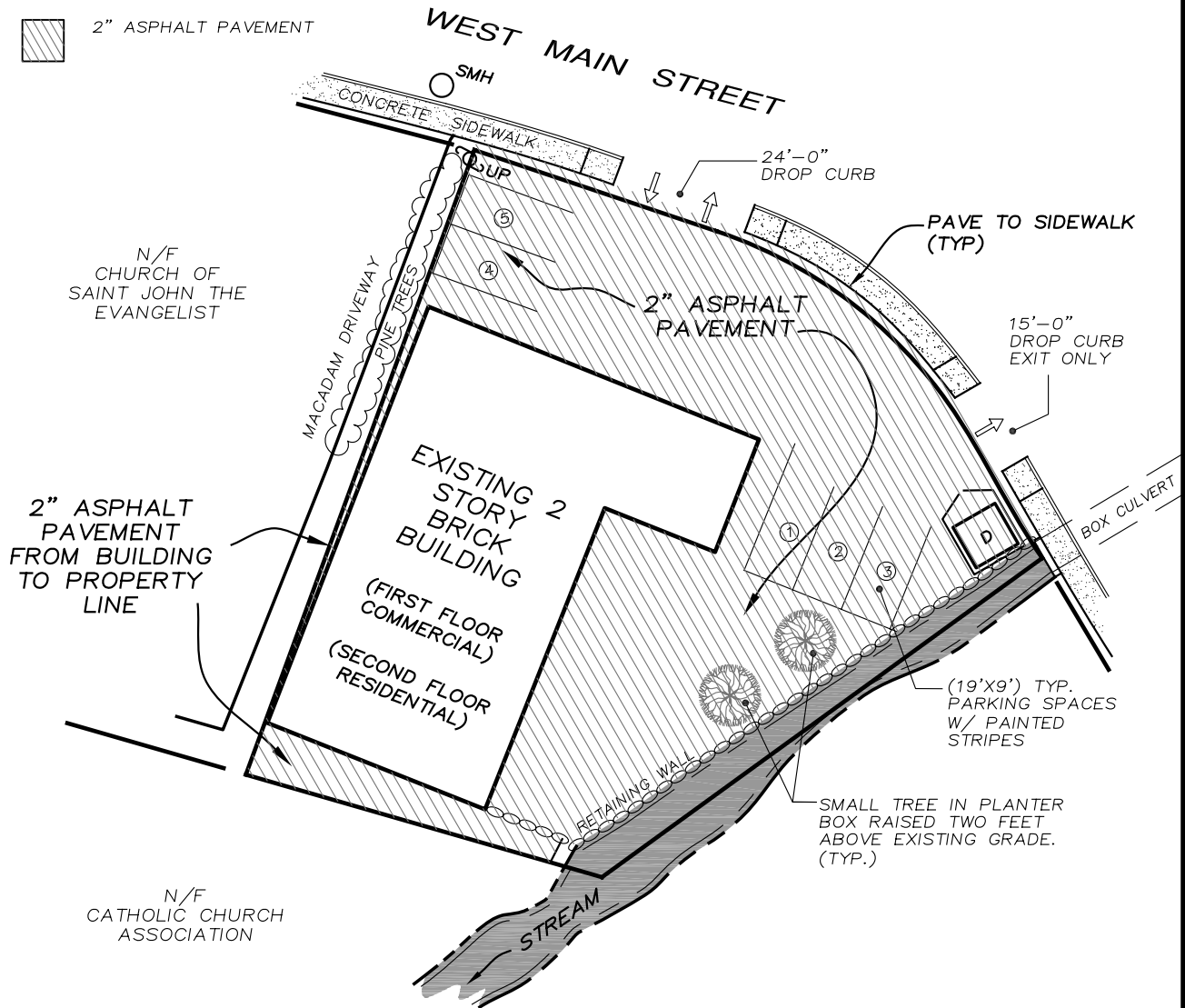
Activity	Cost Estimate (\$)
Track 1 - Unrestricted Use Alternative	
Excavate soils above unrestricted SCOs	\$ 35,000
Disposal of soils above unrestricted SCOs	\$ 50,000
Building demolition and removal	\$ 110,000
Fill transport and placement	\$ 18,000
Total Cost Estimate	\$ 213,000
Track 4 - Restricted Use Alternative	
Soil cap and asphalt cap placement	\$ 12,000
Sub-slab depressurization system installation and testing	\$ 5,000
Annual Monitoring and Reporting (10 years)	\$ 6,500
Total Cost Estimate	\$ 23,500

Appendix C

Site Plan

LEGEND

-  SEWER MANHOLE
-  UTILITY POLE
-  STONE WALL
-  DUMPSTER
-  PARKING SPACE & NUMBER
-  2" ASPHALT PAVEMENT



SITE PLAN

CORNERSTONE ENTERPRISES
TOWN OF PAWLING, DUTCHESS COUNTY, NEW YORK

SCALE: 1"=30'

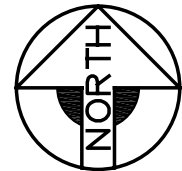
APPROVED BY: JZ

DESIGN BY:

DRAWN BY:

DATE: 9/17/12

PROJECT NO. 2005.071



ZARECKI & ASSOCIATES, L.L.C.
Consulting Engineers - Land Surveyors - Architects

11 West Main St. Pawling, NY 12564
845.855.3771
845.855.3772 (Fax)

Ridgefield, CT 06877
203.438.7094

APPENDIX

C

Appendix D

Soil and Fill Management Plan

1.0 PURPOSE AND SCOPE

The purpose of this Soil/Fill Management Plan (SFMP) is to protect both the environment and human health during remediation activities of the Cornerstone Enterprises Inc. Site (the Site). Compliance with this SFMP is required to properly manage clean soil and fill material used during the remedial activities. This SFMP only provides protocols for remedial activities. Protocols for development and post-development activities will be addressed in the Site Management Plan to be issued separately.

1.1 Soil/ Fill Management Program Responsibility

The property owner will be responsible for monitoring, implementation, and reporting requirements of this Plan. The property owner will not perform, contract, nor permit their employees, agents, or assigns to perform any excavations or disturbance of Site soils, except as delineated in this Plan. The property owner or responsible entity will be responsible for proper notification and reporting to regulatory agencies (i.e., NYS DEC Division of Environmental Remediation and NYS Department of Health) prior to and following construction activities. The NYS DEC may provide periodic construction oversight and monitoring during construction activities to verify that the requirements specified in this SFMP are properly completed.

2.0 SOIL/FILL MANAGEMENT

2.1 Backfill Use Criteria

In accordance with Section 5.4(e)5 of DER-10 material other than soil may be imported, without chemical testing, to be used as backfill beneath pavement, buildings or as part of the final site cover, provided that it contains less than 10% by weight material which would pass through a size 80 sieve. Material to be used below the composite cap will be comply with this requirement. No other fill will be imported onto the site. Documentation demonstrating that this material meets these requirements will be provided to the Department prior to site remediation activities.

2.2 Erosion Controls

An important element of soil/fill management for this Site is the mitigation and control of surface erosion from stormwater runoff. Prior to any construction activities silt fence will be property emplaced around the property boundary, or along all areas where disturbance will be completed as shown on Figure 1 of this Appendix. Silt fence will be maintained to ensure it will function as intended and prevent sediment from moving off-site, particularly into the nearby surface water body immediately east of the property. Due to the relatively small area being disturbed (i.e. less than 0.25 acre) no storm water management plan will be prepared.

2.3 Dust Controls

Particulate monitoring will be performed along the downwind-occupied perimeter of the Site during subgrade, grading, and handling activities in accordance with the NYSDOH Generic Community Monitoring Plan contained in Appendix G of the AA/SMP. Dust suppression techniques will be employed as necessary to mitigate fugitive dust from unvegetated or disturbed soil/fill during intrusive activities. Techniques to be used may include one or more of the following:

- Applying water as needed to mitigate dust.
- Wetting equipment.
- Spraying water on buckets during dumping.
- Restricting vehicle speeds on-site.
- Covering areas and materials after activity ceases.

All reasonable attempts will be made to keep visible and/or fugitive dust to a minimum. During intrusive activities, the New York State Department of Health (NYSDOH) Community Air Monitoring Plan will be implemented. This document is included in Appendix G.

2.4 Access Control

Temporary barriers will be erected at the perimeter of the Site and maintained as necessary during construction activities to control access to construction areas. Temporary barriers will be relocated by the property owner as necessary as construction proceeds.

2.5 Property Use Limitations

Environmental easements will be part of the final remedial measures for the Site and will include:

- Use restrictions such as restricted residential, commercial and office use.
- Requirements for annual certification as discussed in Section 2.8.

The environmental easement will be recorded with Dutchess County and NYS DEC. The environmental easement will be binding for the current property owner and all subsequent property owners and occupants.

2.6 Notifications and Reporting Requirements

The NYS DEC must be notified that subgrade activities are being initiated a minimum of two weeks in advance of construction with a submittal of a Preconstruction Notice to the Department.

Appendix E

Health and Safety Plan for Remedial Activities

1.0 PURPOSE AND SCOPE

This Health and Safety Plan (HASP) addresses the health and safety practices that will be employed by workers participating in environmental remediation activities at the Site including the installation of a soil cover/asphalt cap and installing a sub-slab depressurization system. This HASP will be followed by site workers, construction personnel, and any other personnel authorized to be on-site. The HASP takes into account the specific hazards inherent to the Site, and presents procedures to be followed by site workers, construction personnel, subcontractors, and all Site visitors in order to avoid and, if necessary, protect against health and/or safety hazards.

Activities performed under this HASP will comply with applicable parts of OSHA Regulations, primarily 29 CFR Parts 1910 and 1926. A copy this HASP will be maintained on-site for the duration of remedial work.

Site workers who may participate in activities at the Site that are under the direction of the property owner are required to comply with the provisions specified in this HASP. Site visitors who enter designated work zones must also comply with this HASP. Refusal or failure to comply with the HASP or violation of any safety procedures by field personnel and/or subcontractors performing work covered by this HASP may result in immediate removal from the Site.

A. GENERAL INFORMATION (1910.120(c)(4))

Project Name:	Cornerstone Enterprises		
Property Address:	33 East Main Street		
Property Town, County, State:	Pawling, NY		
Client:	Cornerstone Enterprises		
Plan Prepared By:	NTM	Date:	5/16/12
Plan Approved By:	PLN	Date:	5/16/12
Project Start Date:	June 2012		

B. PROPERTY DESCRIPTION (1910.120(c) (4))

Facility History:	Former automotive maintenance facility and retail gasoline station. Area of concern contains VOC, SVOC and metals.		
Amount of Hazardous Materials Present:	Limited to sub-surface soil surrounding building, former UST locations and area under former auto ramp.		
General Property Description:	Parking lot		

C. PROJECT OBJECTIVES (1910.120(b)(3))

Installation of a two foot thick soil cover over the entire Site (which could also include a combination of building footprints and paved surfaces) to eliminate direct contact with contamination remaining in the on-site soil. Installation of a sub-slab depressurization system to

mitigate against any vapor intrusion concerns for site buildings.

D. PROJECT ORGANIZATION (1910.120(b)(2))

Team Member	Responsibility	Type of Training	Date of Training
To be determined	Project Manager	OSHA 40-hour Hazwoper	To be determined

E. CHEMICAL HAZARDS

Chemical hazards include VOC, SVOC and metals. Concentrations remaining in surface soils are low and slightly above restricted residential criteria. High concentrations of contaminants or free product is not expected to be encountered during environmental work at the site. Chemical hazards that may be encountered are summarized below.

Chemicals	REL/PEL/STEL (ppm)	Health Hazards
Benzene	REL = 0.1 ppm PEL = 1 ppm STEL = 5 ppm	Irritation eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude, dermatitis; bone marrow depression, potential occupational carcinogen.
Ethylbenzene	REL = 100 ppm PEL = 100 ppm	Irritation eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma.
Fuel Oil	REL = 350 mg/m ³ PEL = 400 ppm	Nausea, irritation – eyes, hypertension, headache, light-headedness, loss of appetite, poor coordination; long-term exposure – kidney damage, blood clotting problems; potential carcinogen.
Toluene	REL = 100 ppm PEL = 200 ppm STEL = 300 ppm	Irritation eyes, nose; lassitude, confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, insomnia; paresthesia; dermatitis; liver, kidney damage.
Xylenes	REL = 100 ppm PEL = 100 ppm	Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, poor coordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis.
Comments: REL = National Institute for Occupational Safety and Health (“NIOSH”) Recommended Exposure Limit PEL = OSHA Permissible Exposure Limit STEL = OSHA Short Term Exposure Limit		

F. OTHER HAZARDS

Heat Stress:	√	Yes		No	Take breaks as need to avoid overheating, drink liquids, watch for signs of heat stress.
Cold Stress:	√	Yes		No	Wear sufficient clothes to avoid cold stress, take sufficient breaks in warm environment, watch for signs of cold stress.
Excessive Noise:	√	Yes		No	Use earplugs while working around machinery.
Confined Space Entry:		Yes	√	No	
Open Excavations:	√	Yes		No	If yes, is entry into excavation required?
	Be aware of open excavations. Maintain safe distance from excavations and do not				

	enter excavations greater than 2 feet in depth.					
Welding or Cutting:		Yes	√	No	If yes, specify precautions to be taken:	
Heavy Equipment Operations:	√	Yes		No	Take precautions while working around machinery in operation. Wear necessary PPE including hard hat, high visibility vest, noise protection, steel toed boots and gloves. Keep heavy equipment in sight and keep operator aware of location of site workers. Ensure backup alarm on equipment is operating and audible.	
Slip, Trip, Fall Hazards:	√	Yes		No	Slip, trip and fall hazards may include open excavations, equipment or materials on ground. Use precaution while working to avoid slip, trip, and fall accidents.	
Presence of Underground Utilities:			√	Yes	No	Utilities on site likely to include electric, sewer and water. Call for mark out before any intrusive activities.
Presence of Overhead Utilities:			√	Yes	No	Overhead electric lines are present along Main Street.

G. PROPERTY CONTROL (1910.120(d))

Work Zones have been established as shown on the attached Property Diagram.

Property Security – Security on property will be maintained by:

√	Temporary barricades and/or warning tape
√	Security Fence
	24-hour security guard
	Other (specify)
	Not applicable

During work at the site the areas surrounding the Site will be cordoned off with cones and caution tape. If necessary, vehicular traffic around the Site will be re-routed by placing cones within the street to limit traffic flow as needed.

PERSONAL PROTECTIVE EQUIPMENT (1910.120(b)(4))

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work zones:

Work Zone	Level of Protection	Required Protective Equipment (specify)
Exclusion Zone	Not required	Respirator: NA Filter/Cartridges: NA Boots: ✓ Inner Gloves: ✓ Outer Gloves: ✓ Protective Coverall: If needed Hard Hat: ✓ Eye Protection: ✓ Other: Safety vest around equipment
Contamination Reduction Zone	Level D	Respirator: NA Filter/Cartridges: NA Boots: ✓ Inner Gloves: ✓ Outer Gloves: ✓ Protective Coverall: If needed Hard Hat: ✓ Eye Protection: ✓ Other: Safety vest around equipment

Exceptions and Modifications: None expected.

H. DECONTAMINATION (1910.120(k))**Personnel Decontamination Procedures**

- Wear gloves and appropriate work clothes during site work.
- Wash exposed areas of the body after the job is complete.
- Ensure equipment is decontaminated prior to removing from job site.

I. AMBIENT AIR MONITORING

Activity	Instruments	Action Level	Frequency
Excavation of contaminated soil	PID	50 ppm in breathing zone	5 minutes
Excavation or emplacement of soil or fill	Dust meter	Above background	5 minutes

J. PERSONNEL AIR MONITORING (1910.120(h))

<u>Activity/Location</u>	<u>Contaminants</u>	<u>NIOSH/OSHA Protocol</u>
Not required		

K. CONTINGENCY PLAN (1910.120(I))

Emergency Communication Signals (specify): If problems occur while operating machinery, the hand signal of hand cutting the neck will be used to cease work until safe working conditions can be restored.

Emergency Escape Route(s) (specify and indicate on site diagram): Out front gate.

See map to hospital in attached figure.

Emergency Equipment On Site: (specify location):

First Aid Kit: In vehicle

Fire Extinguishers: In vehicle

Telephone: Cellular phone with field personnel

Eyewash/Safety Shower: In vehicle

Others (specify): _____

Re-entry to the Exclusion Zone following an on-site emergency shall not be permitted until the following conditions are satisfied:

- 1) The conditions resulting in an emergency have been corrected.
- 2) The hazards have be re-evaluated
- 3) The Property Safety Plan has been reviewed and determined adequate for the hazards encountered.
- 4) All property personnel have been instructed in any new hazards and changes to the Health and Safety Plan.

L. OTHER REQUIRED INFORMATION

In order to comply with OSHA standards, the following documents MUST be maintained on property.

- 1) Material Safety Data Sheets for all chemicals brought onto the property, or expected to be encountered. (1910.1200)
- 2) Respirator fit test records for all employees who will be required to wear respirators (1910.134)
- 3) Latest medical summary for all personnel (1910.120)

EMERGENCY PHONE NUMBERS

Medical Emergency	911
Greenstar Project Manager, Pete Nimmer	(917) 655-5123
DOT Hotline, Material Transportation Bureau	(202) 366-4488
Centers For Disease Control And Prevention Emergencies Only	(404) 633-5313
Solid Waste And Emergency Response Office Of Emergency And Remedial Response	(202) 260-2180
Hospital	Vassar Brothers Medical Center 45 Reade Place, Poughkeepsie, NY 12601 845-454-8500 Travel Time: 35 Min Directions: See Attached Map.
Fire Department	Pawling Fire Department South Street Pawling, Ny 12564 (845) 855-3612
Local Police	Dutchess County Sheriff's Office 347 Beekman Poughquag Rd. Poughquag, Ny 12570 (845) 724-4200

The following employees and their subcontractors have read and understand this Health and Safety Plan:

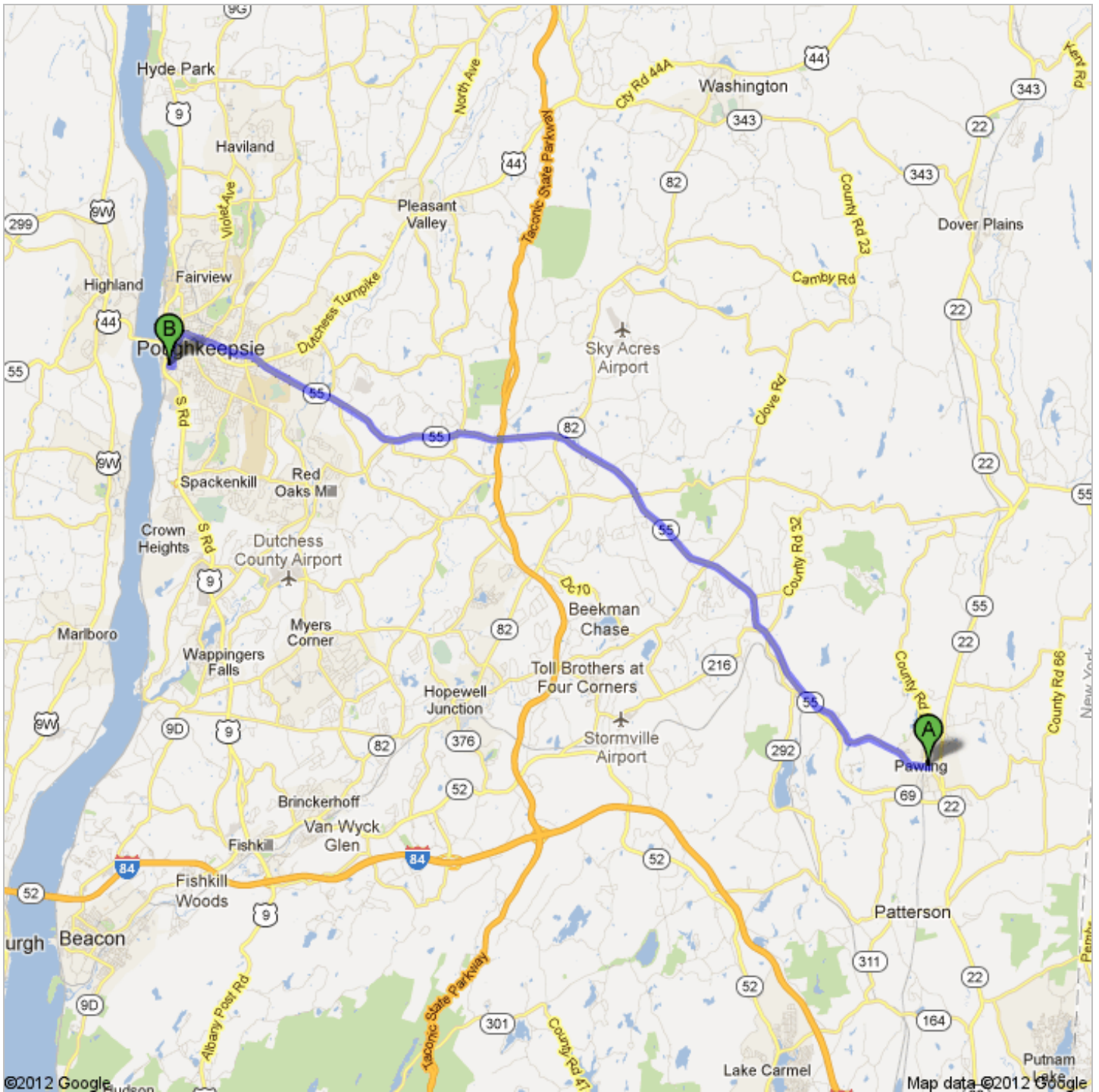
DATE	COMPANY NAME	NAME	SIGNATURE



Directions to Vassar Brothers Medical Center

Poughkeepsie, NY - (845) 454-8500

22.7 mi – about 35 mins




A 33 E Main St, Pawling, NY 12564


1. Head **west** on **E Main St/Old Route 55** toward **Coulter Ave/Maple Blvd** go 3.7 mi
Continue to follow Old Route 55 total 3.7 mi
About 7 mins

55 2. Turn right onto **NY-55 W** go 18.2 mi
About 25 mins total 21.9 mi

 3. Slight right onto **Church St/Columbus Dr/East-West Arterial** go 0.2 mi
total 22.1 mi

 4. Take the 1st left onto **Jefferson St** go 0.2 mi
About 2 mins total 22.3 mi

5. Continue onto **Lincoln Ave** go 0.3 mi
About 1 min total 22.6 mi

 6. Turn right onto **Reade Pl** go 400 ft
Destination will be on the right total 22.7 mi

B **Vassar Brothers Medical Center**
Poughkeepsie, NY - (845) 454-8500

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2012 Google

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.

Appendix F

Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN

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

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

VOC Monitoring, Response Levels, and Actions

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

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

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

Particulate Monitoring, Response Levels, and Actions

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

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed $150 \text{ mcg}/\text{m}^3$ above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than $150 \text{ mcg}/\text{m}^3$ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within $150 \text{ mcg}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

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