REMEDIAL DESIGN / REMEDIAL ACTION (RD/RA) WORK PLAN
FOR THE
YOUNGSTOWN COLD STORAGE SITE

(NYSDEC SITE NO. E932122)

701 THIRD STREET EXTENSION (NANCY PRICE DRIVE)
VILLAGE OF YOUNGSTOWN, NEW YORK

Prepared for:

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ENGINEERING • LAND SURVEY • MAPPING • ENVIRONMENTAL

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1.0 INTRODUCTION

1.1 Overview

The Youngstown Cold Storage site (project site) is located at 701 Third Street Extension (Nancy Price Drive), Niagara County, Village of Youngstown, New York. It occupies approximately 2.4 acres and was first developed as early as 1910 and was operated until 1996 primarily for the storage, washing and packing of locally grown apples. The project site has remained vacant and unutilized since operations ceased. A Remedial Investigation/Alternatives Analysis (RI/AA) Report was completed for the project site that identified contamination requiring remediation. Based on the results of the RI/AA, the New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) that prescribed the remedial activities that will address these impacted media groups. This Remedial Design/Remedial Action (RD/RA) Work Plan describes the specific remedial activities that will be implemented at the project site to complete the remediation in accordance with the ROD.

Copies of the RI/AA Report and the ROD are available for review at the Youngstown Free Library within the Village and the NYSDEC Region 9 office in Buffalo.

1.2 Purpose

To prepare the project site for redevelopment, the Village of Youngstown (the Village) has retained TVGA Consultants (TVGA) to plan and implement the remediation program at the project site in accordance with the ROD. The remedial activities are being completed under an Order On Consent and Administrative Record (Index No. B9-0797-09-01) entered into by the Village and will be administered by the NYSDEC. The Village of Youngstown applied for and received a brownfield cleanup grant from the United States Environmental Protection Agency (USEPA), which will be used to partially fund the remedial activities at the project site.

TVGA has prepared this RD/RA Work Plan on behalf of the Village to describe the remedial activities that will be implemented at the project site to render the site suitable for redevelopment, and to protect human health and the environment during redevelopment activities and future use. This document also establishes the procedures necessary to protect workers during remediation activities.

1.3 Site Description

The project site consists of approximately 2.4 acres located within the Village of Youngstown limits, as shown on Figure 1. Figure 2 shows the layout of the

project site, including the on-site structures. The project site is occupied by two structures that include: a deteriorating three-story stone building (warehouse) occupying approximately 23,000 square feet and a single-story brick building (ice house) approximately 4,500 square feet in size. Additionally, an approximately 875-square-foot residential home, which was located in the southwest corner of the project site, was recently demolished in late 2008. The largest building contains a compressor room from which anhydrous ammonia was pumped through a pipe network throughout the cold storage portions of the facility. In addition, a spray wash area was present in the southeast corner of the project site where apples were reportedly washed prior to storage within facility buildings.

Immediately beyond Nancy Price Drive, Veteran's Park is located to the east of the project site. Elliot Street and 2nd Street bound the site to the north and west, respectively. Residential properties are located beyond these two streets. A Niagara Mohawk substation, undeveloped land, and a residential property lie to the south of the project site.

1.4 Remedial Investigation / Alternatives Analysis Report

The Village entered into a State Assistance Contract with the NYSDEC to complete a Remedial Investigation/Alternatives Analysis (RI/AA) Report for the project site. The RI performed in the spring of 2006 identified contaminated surface and subsurface soil/fill and building components.

Following the completion of the RI, an RI/AA Report was prepared to describe the approach and results of the investigation, and included an assessment of the risks posed by the contaminants encountered. The report also described the process used to develop and evaluate alternatives for addressing the contaminated media at the project site. Based on the RI/AA, TVGA prepared a Proposed Remedial Action Plan (PRAP) that was finalized in the February 2007 Record of Decision (ROD) following the receipt of the public's input on the PRAP. The ROD presents the remedies that were selected by the NYSDEC and the New York State Department of Health (NYSDOH) to address the identified contamination.

1.5 Remedial Action Objectives

Remedial Action Objectives (RAOs) and contaminants of concern were identified in the RI/AA. The RAOs take into consideration the contaminant and media of interest, the exposure pathways, and the remediation goals that will allow the project site to be redeveloped. The RAOs for the project site necessitate the implementation of remedial measures not only to protect human health and the environment, but also to mitigate potential short-term impacts to construction

workers and the surrounding community during remedial construction. The RAOs are discussed in detail in Sections 2.2, 2.3 and 2.4 of this RD/RA Work Plan.

1.6 General Scope of Work

The ROD prescribed the remedial actions required to meet the RAOs for the project site. This RD/RA Work Plan identifies each remedial action and discusses the remedial tasks to be completed in accordance with the ROD. The remedial actions, as well as the anticipated scope of work required to accomplish the remediation, include the following:

- Excavation and off-site disposal of contaminated surface soil/fill
- Demolition of the spray wash structure
- Excavation and disposal of subsurface soil/fill
- Partial demolition of the warehouse building (viz., the compressor room and the metal-sided section) to facilitate remediation
- Removal of sediments in valve pit
- Removal of compressors and other polychlorinated biphenyl (PCB)-contaminated equipment
- Removal and off-site disposal of PCB-contaminated concrete
- Removal and off-site disposal of contaminated subslab material from under the compressor room.
- Removal and off-site disposal of the aboveground storage tank (AST) and contents within the basement of the warehouse, if any
- Removal and off-site disposal of impacted soil under the AST, if any
- Backfill of excavations and valve pit with clean material

2.0 PLANNED REMEDIAL ACTIONS

A planned remedial action program has been prepared for the Youngstown Cold Storage site to meet the RAOs described in this RD/RA Work Plan. This remedial action program includes:

- Excavation and off-site disposal of contaminated surface and subsurface soil/fill and sediments;
- Removal and off-site disposal of PCB-contaminated equipment and concrete; and
- Removal and off-site disposal of the AST and its contents.

The following subsections provide a general description, summarize the contaminants of concern, list the RAOs, and summarize the planned remedial action for each remedial

task. The approximate location of each remedial activity and the approximate areal extents of the planned excavations are shown in Figures 3 and 4.

Preliminary quantities and estimated costs associated with implementing the RD/RA Work Plan have been developed and are summarized in Table 1. The estimated costs should only be used as a budgetary guideline. These costs are based upon related project experience and anticipated field conditions without the formal solicitation of contractor bids. Project-specific unit rates, which may differ from those provided herein, will be obtained through a formal bid process after regulatory review and approval.

2.1 General Procedures for Remedial Activities

The following activities are associated with the planned remedial program and are relevant to more than one specific remedial action. The general procedures pertaining to the management of soil/fill during the remedial activities are described in the following subsections.

2.1.1 Soil/Fill Management

2.1.1.1 Excavation and Handling of On-Site Soil/Fill

Excavation of contaminated soil/fill will begin after demolition of the spray wash structure and the partial demolition of the warehouse building (i.e., the compressor room and metal-sided addition). The excavated soil/fill will either be loaded directly into dump trucks for off-site disposal or staged on-site. If staging is necessary (i.e., awaiting laboratory analytical results), the soil will either be placed within covered roll-off containers or staged on and covered with 6-mil polyethylene sheeting to limit fugitive dust emissions and limit precipitation from contacting the impacted soil/fill. The staging areas will be located away from primary work activities. The maximum length of time that impacted soil is estimated to be stockpiled is two weeks.

It is likely that uncontaminated soil overlies contaminated soil in some areas of the project site. Excavated non-impacted soil/fill that exhibits no staining, discoloration or elevated PID readings may be reused on-site as backfill.

2.1.1.2 Backfill Materials

Imported soil material will be required to backfill subsurface excavations. Depending on the volume of imported soil materials that are required, a soil stockpile area may be needed. Backfill material will be transported from the stockpile area to the excavation though use of a dump truck or

front-end loader. Soil material used to backfill excavations shall meet the following criteria:

- Excavated on-site soil/fill must meet the Residential Use Soil Cleanup Objectives (SCOs) listed in 6 NYCRR Part 375-6.8(b). Existing data may be used to document the suitability of the re-use of on-site soil; however, additional soil data may be required depending on the volume of soil to be reused.
- Off-site soil/fill originating from known sources having no evidence of disposal or releases of hazardous substances; hazardous, toxic or radioactive wastes; or petroleum.
- All off-site soil/fill shall be sampled and found to contain contaminant concentrations less than those listed in the Allowable Constituent Levels of Imported Fill or Soil table for Residential Use. A copy of this table is included as Attachment 1.
- No off-site materials meeting the definition of a solid waste as defined in 6 NYCRR, Part 360-1.2(a) shall be used as backfill.
- Imported soil/fill to be used as backfill will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are borrowed from a given off-site non-virgin soil source area and both samples of the first 1,000 cubic yards meet the imported soil criteria listed above, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the imported soil criteria.
- A minimum of four grab samples will be collected for each composite sample. Approximately equal fractions of the grab samples will be composited in the field using a stainless steel trowel and bowl. The trowel and bowl shall be decontaminated with alconox or liquinox and potable water mixture, then triple rinsed with deionized water between sampling locations.
- Samples should be analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, and PCBs, plus Target Analyte List (TAL) metals. The soil will be acceptable for use as backfill provided that all on-site soil/fill meets the Residential Use SCOs and all off-site soil/fill meets the imported soil criteria.
- Documentation of the quality of the backfill including sampling and analysis data will be submitted to the TVGA for formal approval prior to transport to the project site. Additionally, the bills of lading will be provided to document the source(s) of fill.

The documentation at a minimum will include: the name of the owner and relationship to the source of the fill; the location where the fill was obtained; and a brief history of the site which is the source of the fill.

2.1.1.3 Erosion Controls

An important element of soil and fill management on the project site is the mitigation and control of surface erosion from storm water runoff. For this reason, a Master Erosion Control Plan to be used by contractors and developers has been prepared and included as Appendix A.

2.1.1.4 Dust Controls

Particulate monitoring will be performed along the downwind perimeter of the site during subgrade excavation, grading, and handling activities in accordance with the Community Air Monitoring Plan discussed below and in Section 3.0 and Appendix B as well as in accordance with NYSDEC TAGM 4031 (Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites) presented in Appendix C.

Dust suppression techniques will be employed as necessary to mitigate fugitive dust from unvegetated or disturbed soil/fill to the extent practicable during remediation activities. Such techniques shall be employed even if the community air monitoring results indicate particulate levels are below action levels. Techniques to be utilized may include one or more of the following:

- Applying water on haul roads
- Wetting equipment and excavation faces
- Spraying water on buckets during excavation and dumping
- Hauling materials in properly tarped containers or vehicles
- Restricting vehicle speeds on-site
- Expeditious re-seeding/revegetation of disturbed areas
- Covering excavated areas and materials after excavation activity ceases
- Reducing the excavation size and/or number of excavations and disturbed areas

2.1.1.5 Fencing and Access Control

Temporary fencing shall be erected and maintained as necessary during invasive activities to limit the potential for someone to enter the excavation. This fencing may be plastic snow fencing or chain-link

fencing, as appropriate. All fencing will be posted with "No Trespassing" signs.

2.1.2 Permits and Easements

Various permits and easements may be required to complete the remedial actions. The need for permits and easements will be researched and if required, obtained prior to the initiation of fieldwork. These may include but not be limited to a demolition permit from the Village of Youngstown.

2.1.3 Site Control

Site control is an important aspect of this remedial program. In order to safeguard the health and safety of site workers and the general public, access to all remedial work areas will be restricted. Temporary construction fencing will be erected around accessible excavations and staging areas to prevent unauthorized personnel from entering these areas.

2.1.4 Equipment

Major pieces of equipment anticipated to be utilized for this remedial program include a hydraulic excavator or backhoe, bulldozer, dump trucks, hoe ram, and plate tamper. The roles of these pieces of equipment in the remedial program are discussed in the following sections.

2.1.5 Excavated Soil/Fill Staging

Staging areas may be required for temporary storage of excavated material awaiting waste characterization results as required by the landfill in which the material will be interred. All staging areas will be located in areas that facilitate construction and prevent exposure to the public. Berms or silt fencing will be constructed/placed along the upgradient boundary of the stockpile to divert surface runoff away from the pile. A polyethylene liner will be placed between the existing ground and stockpile to prevent cross migration between the surface soil and excavated material. A polyethylene liner or tarp will also be used to cover the stockpile at the end of each work day to prevent precipitation from entering the stockpile and to prevent exposure of the contaminated soil/fill to the public.

2.1.6 Equipment Decontamination

An equipment decontamination area will be identified prior to the initiation of remedial excavation activities. All equipment that comes in contact with contaminated soil/fill will be decontaminated prior to being used for the

handling or transfer of clean backfill, and prior to leaving the project site. Equipment decontamination will be performed on plastic sheeting in the decontamination area using a high pressure steam-generating cleaner. Soil residue removed during decontamination activities will either be placed in 55-gallon drums or directly into trucks, along with soiled plastic sheeting, for proper off-site disposal.

Dump trucks hauling contaminated material to an off-site disposal area will be subject to limited decontamination. Each truck will be required to ensure that its tires are free from soil/fill material prior to leaving the project site. In order to prevent this, trucks will either be restricted to paved surfaces or temporary roads, which will be constructed as necessary using gravel or crusher run stone. Once the hauling of contaminated soil is complete, trucks will be required to fully decontaminate with a steam-generating pressure cleaner prior to hauling any other material. Daily trucking logs with odometer readings will be submitted to TVGA to verify that trucks are not used on other projects without proper decontamination.

A laborer will be required to monitor the loading operation and ensure that any contaminated soil that misses the truck and falls to the ground is cleaned up promptly. Additionally, public roads surrounding the project site will be swept as necessary to clean residue that may be tracked off-site.

2.1.7 Excavation and Loading

The excavation of contaminated soil/fill will be performed using a hydraulic excavator or backhoe. If practical, contaminated soil/fill will be directly loaded into dump trucks for transport to the off-site disposal facility. However, temporary staging of soil/fill may occur if waste characterization sampling is required by the landfill accepting the material. All staging will conform to the requirements listed in Section 2.1.5. For safety reasons, excavations will be backfilled as soon as practical upon reaching the required excavation limits.

Excavations in unconsolidated materials will be properly sloped or shored as appropriate to prevent accidental collapse, in accordance with 29 CFR 1926.650, Subpart P. Also, high visibility construction fencing will be erected as necessary around all unattended excavations to prevent unauthorized access and protect the safety of both the public and site workers.

Stockpiled soil/fill will be loaded using a front-end loader or hydraulic excavator into dump trucks or trailers for transport to an appropriately permitted off-site disposal facility authorized by the NYSDEC to accept this type of waste.

2.1.8 Transportation and Disposal

The transport of soil/fill and debris will be performed by an appropriately licensed waste hauler. All trucks/trailers hauling soil off-site will be required to properly decontaminate as described in Section 2.1.6. In addition, all loads in open trucks/trailers will be covered with tarps.

Transport vehicles will access the site from Third Street. Sufficient area exists on-site to enable the queuing of trucks without disrupting traffic patterns on local roads in residential areas surrounding the project site.

2.1.9 Management of Construction Water

Depending on the time of the year that the remedial activities are performed, the management of construction water may be a necessary component of the subsurface remedial actions. Water management may be required for dewatering during the contaminated soil/fill excavation activities.

Contractors performing subsurface work at the project site will be required to provide temporary dewatering to handle groundwater and storm water run-in to excavations during the remedial action activities and redevelopment periods activities. Dewatering methods may include the use of sumps, pumps, or the installation of well points. The water will be pumped or hauled from the collection points to the ground surface at on-site locations downgradient of the excavation, where it will be allowed to infiltrate back into the porous soil/fill. No water that is collected will be allowed to run off or be discharged off-site.

If the groundwater or storm water that collects in the excavations exhibits evidence of contamination (i.e., sheen, odor, etc.), it may be necessary to treat the water prior to surface discharge or discharge the water into the sanitary sewer system. This would likely involve pumping the water into clean holding tanks and analyzing the water for contamination. Based on the analytical results, the water may be discharged directly to the surface or into sanitary sewer system. Alternately, the water may require some type of treatment (i.e., activated carbon) prior to discharge.

2.2 Contaminated Surface Soil/Fill

2.2.1 Contaminants of Concern

The RI identified one area of surface soil/fill that requires remediation adjacent to a former loading located on the northwest side of the warehouse. Contaminants of concern detected in the surface soil/fill consist of SVOCs, primarily polynuclear aromatic hydrocarbons (PAHs).

The estimated area of impacted surface soil/fill is 30 feet by 100 feet, based on visual observations of the surface conditions. The estimated area is shown on Figure 3. The depth of the impacted material is assumed to be one foot based on observations made during test pit and soil probe activities. With this thickness over 3,000 square feet, the estimated volume of the impacted surface soil is 3,000 cubic feet, or 111 cubic yards. A soil sampling program will be implemented prior to the initiation of the remedial activities to pre-determine the actual extent of impacted soils. The samples will be analyzed for TCL SVOCs and the results will be compared to the Residential Use SCOs.

2.2.2 Remedial Action Objectives

The RAO for this medium is to prevent exposure of human and environmental receptors to these contaminants via dermal contact, incidental ingestion or inhalation of particulates, and to prevent the discharge of contaminated storm water runoff and eroded surface soil/fill to off-site locations or into adjacent storm sewers.

2.2.3 Planned Remedial Action

The planned remedial action to meet the RAOs will consist of the removal of contaminated surface soil/fill for proper off-site disposal. An excavator and/or backhoe will be used to excavate the impacted soil/fill. The excavated material will either be temporarily staged for later off-site disposal or loaded directly into dump trucks and hauled off-site for disposal.

The results of the soil sampling program described in Section 2.2.1 will be used as the confirmatory sample results. After the limits of the excavation have been reached, soil that meets the criteria outlined in Section 2.1.1 will be used to backfill the excavated area.

2.3 Contaminated Subsurface Soil/fill

The contaminated subsurface soil/fill is located in three separate areas that are depicted on Figure 4. Two of the areas consist of VOC-contaminated soil/fill and include the area of the former UST located adjacent to the southeast corner of the warehouse and the spray wash area located east of the icehouse. The third area consists of arsenic contaminated subsurface fill in the northwest portion of the project site.

2.3.1 Contaminants of Concern

The analytical results indicate that the contaminants of concern in the subsurface soil/fill consist of arsenic and VOCs, primarily petroleum hydrocarbons.

Nuisance characteristics including petroleum odors and staining are also a concern. Based on the analytical results and field observations, these materials would likely be disposed off-site as non-hazardous material.

The extent of contaminated material around the former UST has been delineated to the south and east, but has not been delineated to the west and north due to the presence of the compressor room and the addition to the warehouse.

For purposes of the RI/AA Report, the volume of soil contamination under the building was assumed to be approximately the same as that outside the building footprint. Therefore, the contaminated area was estimated at approximately 50 feet in diameter to a depth of 10 feet, which is approximately 730 cubic yards. Assuming that one cubic yard weighs 1.6 tons, the weight of the contaminated soil is 1,168 tons.

The extent of contaminated soil around the spray wash area was estimated to be approximately 20 feet by 15 feet to a depth of 9 feet, resulting in approximately 100 cubic yards and 160 tons.

The area of arsenic contamination in the subsurface soil/fill has not been delineated, although the elevated concentrations were present in only a black, cinder-like material encountered at a depth of three feet in a three-inch thick layer. For purposes of the RI/AA Report, the arsenic contaminated material was estimated to be present in a 50-foot by 50-foot area, resulting in approximately 23 cubic yards and 37 tons of contaminated material. Approximately three feet of clean material that must be removed to access the underlying cinder-like material can be reused on-site. The estimated volume of the clean material to be removed and placed back into the excavation is approximately 278 cubic yards, or 445 tons. A soil sampling program will be implemented prior to the initiation of the remedial activities to pre-determine the actual extent of impacted soils. The samples will be analyzed for total arsenic and the results will be compared to the Residential Use SCO.

2.3.2 Remedial Action Objectives

The RAO for this medium is to prevent the exposure of humans and environmental receptors to contaminated subsurface soil/fill via dermal contact, incidental ingestion or inhalation of particulates or vapors. Preventing the leaching of contaminants into groundwater from the subsurface soil/fill is also an RAO as the VOCs at the project site have high solubilities.

2.3.3 Planned Remedial Action

The planned remediation to meet the RAOs will consist of the excavation of the contaminated subsurface soil/fill in the three areas for proper off-site disposal.

To facilitate the remediation of the VOC-contaminated soil/fill, asbestos within the compressor room will be abated, and the compressor room and the metal-sided addition will be demolished. Additionally, the implementation of the remedial actions associated with the compressor room (removal of equipment and floor, as described in Section 2.4) will be necessary to access the underlying soil/fill. Additionally, demolition of the spray-wash structure will be required to facilitate the excavation of VOC contaminated soil/fill in this area.

With the exception of the contaminated concrete floor in the compressor room, the concrete and brick from the demolition of these structures will be staged on-site for later reuse as backfill at the bottoms of the excavations. The remaining demolition spoils will either be scrapped or disposed off-site of as construction and demolition debris.

A backhoe or excavator will be used to remove the impacted soil from the three areas. The excavated material will either be temporarily staged for later off-site disposal or loaded directly into dump trucks and hauled off-site for disposal.

TVGA will observe the excavations as each proceeds, and will direct the contractor to cease excavation activities after the limits of the impacted material are reached.

For the excavations in the two VOC-impacted areas, on-site screening will be performed during excavation to determine the limits of excavation. A photoionization detector (PID) will be used as a field-screening tool to evaluate the excavated materials and in-place soils for organic vapors. Once the apparent limits of the impacted surface soil/fill have been reached, verification sampling will be performed from the sidewalls and bottom of the excavation and the samples will be analyzed for TCL VOCs. The PID measurements, field observations, and verification sampling results will be used to determine the ultimate limits of the excavations of the VOC-contaminated soil/fill. If the verification sampling confirms that the remaining soils meet the Residential Use SCOs, soil that meets the criteria outlined in Section 2.1.1 will be used to backfill the excavated area. If the sample results exceed the Residential Use SCOs, the excavation will be enlarged in the direction of the sample to remove the remaining contamination, and will be subjected to another round of post-excavation sampling and analysis.

For the area with arsenic contamination, the overlying clean material will be excavated and stockpiled for later reuse, if the soil meets the Residential Use SCOs. The results of the soil sampling program described in Section 2.3.1 will be used as the confirmatory sample results. After the limits of the excavation have been reached, soil that meets the criteria outlined in Section 2.1.1 will be used to backfill the excavated area.

2.4 Building Materials and Associated Components

Contaminants were identified in the subslab soil/fill samples and stained surfaces of the compressor room within the warehouse building, as well as in the sediments collected from the on-site sump. Additionally, an AST that was not accessible was identified in the basement of the warehouse building.

2.4.1 Stained Floor/Equipment Surfaces

2.4.1.1 Contaminants of Concern

PCBs are present on stained equipment and floor surfaces in the compressor room. The compressor room is approximately 25 feet by 25 feet, and the concrete floor is approximately four inches thick, resulting in approximately eight cubic yards of concrete. Footers, if present may be removed or may remain in place, based on field observations. If footer removal is necessary, an estimated additional twelve cubic yards of concrete will be removed, for a total of 20 cubic yards. Assuming a weight of two tons per cubic yard, approximately 40 tons of concrete would be removed from the compressor room.

2.4.1.2 Remedial Action Objectives

The RAO for stained equipment and floor surfaces is to prevent the exposure of humans and environmental receptors to contaminated floor and equipment surfaces via dermal contact, incidental ingestion or inhalation of particulates.

2.4.1.3 Planned Remedial Action

Following demolition of the compressor room as described above, the planned remedial action to address the PCB-contaminated stained equipment and floor surfaces involves removal and off-site disposal. A concrete saw and/or hoe ram will be used to break the concrete. The stained equipment and concrete floor pieces will be directly loaded onto trucks or into a roll-off and will be subsequently disposed of off-site.

2.4.2 Subslab Soil/Fill

2.4.2.1 Contaminants of Concern

Contaminants of concern detected in the soil/fill samples collected from underneath the concrete floor of the warehouse building are limited to lead. Based on the analytical results and observation made during the test pit and soil probe activities, it is assumed that only the subbase material under the compressor room requires remediation. The compressor room is approximately 25 feet by 25 feet. The depth of the subbase is approximately six inches, resulting in approximately 12 cubic yards, or 19 tons, of contaminated subbase material.

2.4.2.2 Remedial Action Objectives

The RAO for this medium is to prevent the exposure of humans and environmental receptors to contaminated subslab soil/fill via dermal contact, incidental ingestion or inhalation of particulates.

2.4.2.3 Planned Remedial Action

Following the removal of the stained equipment and floor surfaces, the subbase material under the compressor room floor will be excavated with and excavator or backhoe. The excavated material will either be temporarily staged for later off-site disposal or loaded directly into dump trucks and hauled off-site for disposal.

TVGA will observe the excavation as it proceeds, and will direct the contractor to cease excavation activities after the limits of the impacted material are reached, based on visual observations. Once the apparent limits of the impacted surface soil/fill have been reached, verification sampling will be performed from the sidewalls and bottom of the excavation and the samples will be analyzed for total lead. However, if VOC-impacted soil is observed, the excavation will continue until the VOC-impacted soil is removed, at which time verification samples will be collected for analysis of TCL VOCs and total lead.

If the verification sampling confirms that the remaining soils meet the Residential Use SCOs, the remediation of this media will be considered complete and the excavation will remain open in order to facilitate the excavation of the underlying VOC-contaminated subsurface soil/fill. If the sample results exceed the Residential Use SCOs, the excavation will be enlarged in the direction of the sample to remove the remaining

contamination, and will be subjected to another round of post-excavation sampling and analysis.

2.4.3 Valve Pit Sediments

2.4.3.1 Contaminants of Concern

Contaminants of concern detected in the sediment collected from the on-site valve pit were limited to PAHs. The valve pit is approximately three feet by three feet, and the sediments in the pit are approximately two feet deep, which is approximately ⅔ of a cubic yard (approximately one ton). Although water is present above the sediments, this water does not contain elevated concentrations of contaminants and could therefore be discharged to the ground surface.

2.4.3.2 Remedial Action Objectives

The RAO for this medium is to prevent the exposure of humans and environmental receptors to contaminated sediment via dermal contact, incidental ingestion or inhalation of particulates.

2.4.3.3 Planned Remedial Action

The planned remedial action to meet the RAOs will involve removing the water and sediment within the valve pit, plugging inlet and outlet pipes and backfilling the pit with clean material.

Water in the pit will be pumped or hauled from the pit to the ground surface at an on-site location downgradient of the pit, where it will be allowed to infiltrate back into the porous soil/fill. No water that is collected will be allowed to run off or be discharged off-site. The saturated sediments contained within the pit will be solidified by adding an absorbent material. The solidified material will be removed from the pit through the use of mechanical means and/or hand labor. Proper OSHA procedures for confined space entry will be implemented for all personnel entering the sumps to perform the remedial work, if necessary. The removed materials will be loaded on trucks and disposed off-site or temporarily staged for later off-site disposal. Because all contaminated materials will be removed from the pit, verification sampling will not be required.

Following the removal of the materials from the pit, the inlet and outfall pipes will be plugged. The valve pit will then be backfilled with clean material.

2.4.4 Aboveground Storage Tank

2.4.4.1 Contaminants of Concern

Due to its inaccessibility, it is not known if the AST located in the basement of the warehouse has released contaminants to the surface and subsurface soil in its vicinity. If it did, contaminants of concern in this medium would consist of VOCs and/or SVOCs. It is also not known if the tank contains material that could be released in the future.

The RI/AA Report assumed that 100 gallons of petroleum product and sludge remain in the tank. From a distance, the tank and the area around the tank did not appear to be significantly stained. Lacking any additional data, it is assumed that five cubic yards of petroleum-contaminated soil must be addressed.

2.4.4.2 Remedial Action Objectives

The RAO for the AST may include the prevention of exposure of humans and environmental receptors to petroleum contamination via dermal contact, incidental ingestion or inhalation of vapors, as well as to prevent the future release of the tank contents, if any.

2.4.4.3 Planned Remedial Action

As there is no safe access to this portion of the warehouse, this portion of the building may require demolition prior to implementation of any remedial measures to address the AST. Upon obtaining access to the AST the tank will be inspected to determine the contents. Additionally, a composite sample of the soil underlying the AST will collected and analyzed for Spill Technology and Remediation Series (STARS) list VOCs and SVOCs to determine impacts to surrounding soils. Following these inspections the AST, its contents, and impacted surrounding soils, if any, will be removed and disposed of off-site. Verification sampling will be performed as necessary and the results will be compared to the Residential Use SCOs.

3.0 COMMUNITY AIR MONITORING

Real time air monitoring will be performed at downwind locations during remedial action activities. A Community Air Monitoring Plan (CAMP) is included as Appendix B. This plan is consistent with the requirements for community air monitoring at remediation sites as outlined in NYSDOH's generic Community Air Monitoring Plan (June 20, 2000) and

NYSDEC TAGM 4031: Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites (Appendix C).

4.0 EROSION AND DUST CONTROLS

As part of the remedial actions to be performed at the project site, measures will be needed to limit erosion and dust generation. A Master Erosion Control Plan that will be used by subcontractors working at the project site has been prepared and incorporated as Appendix A. Erosion control and dust suppression techniques will be employed as necessary to limit erosion and mitigate fugitive dust in disturbed areas during remediation and redevelopment activities. Such techniques will be employed even if the community air monitoring results indicate that particulate levels are below action levels. Techniques may include but are not limited to the following:

- Use of silt fencing, hay bails, and/or mulching;
- Applying water on haul roads;
- Wetting equipment and excavation surfaces;
- Transporting materials in covered containers or vehicles;
- Limiting vehicle speed on the project site;
- Covering excavated areas and materials following excavation; and
- Limiting the size of excavations.

Following the completion remedial activities described above, all areas disturbed by these activities will be covered by approximately six inches of topsoil that will be seeded.

5.0 HEALTH AND SAFETY

A site-specific Health and Safety Plan (HASP) complying with 29 CFR 1910.120 has been prepared for TVGA personnel for implementation prior to the commencement of remedial activities and is included as Appendix D. The HASP provides background discussion of the project site and describes personnel responsibilities, protective equipment, health and safety procedures and protocols, decontamination procedures, personnel training, and the type and extent of necessary medical surveillance. Procedures for protecting third parties, such as visitors or the surrounding community, are also specified in the HASP. TVGA's HASP is provided for informational purposes only. Prime contractors and subcontractors will be required to develop a HASP that is equal to, or exceeds, the stringency of TVGA's HASP.

6.0 POST - REMEDIATION REQUIREMENTS

The remedial activities outlined in this RD/RA Work Plan would address exposure to site contaminants in the long-term, as the contaminated material will be removed from the project site. Therefore, operation, maintenance, and monitoring (OM&M) of the remediation would not be necessary. However, asbestos abatement will be required if the warehouse or icehouse buildings will be renovated or demolished as part of site redevelopment.

7.0 RECORDKEEPING AND REPORTING

The documentation of field activities will entail the recording of project information, observations, and measurements in a field logbook; the completion of applicable field log forms; and the compilation of a photographic record of project site conditions and the remedial activities.

7.1 Record Keeping

Pertinent remedial activities and sampling information shall be recorded in a logbook during each day of the field activity. A logbook will be assigned to each field task and will have a unique document control number. No general rules can specify the extent of information that must be entered in a logbook. However, logbooks shall contain sufficient information so that someone can reconstruct the field activity without relying on the memory of the field crew.

A Daily Field Report Form shall be completed for each day of field activities. The form shall be filled out with relevant information in the appropriate space on the form. A Daily Field Report Form is included as Appendix E.

7.2 Reporting

A Final Engineering Report (FER) documenting the remedial action activities will be prepared and submitted to the NYSDEC and NYSDOH. The report will be prepared in accordance with the NYSDEC procedures in place at the time of the FER submittal and will generally include the following:

- A summary of the remedy;
- A summary by media of remedial actions completed, that includes:
  - A description of problems encountered during construction and their resolution;
  - A description of changes to the design documents and why the changes were made;

- Quantities and concentrations of contaminants removed or treated; and,
- A listing of the waste streams, quantity of materials disposed of and where they were disposed.

- A list of the remediation standards applied to the remedial actions;
- Tables and figures containing pre-remedial and post-remedial data keyed appropriately so that completion of the remedial action is documented. The figures should clearly indicate the volume of contaminated material that was remediated;
- The results of verification sampling;
- A detailed description of project site restoration activities;
- A detailed description of source and quality of backfill materials utilized at the project site;
- A detailed report of actual costs including bid tabulations and change orders;
- Record drawings which include:
  - Permanent structures which will remain in place after completion of the remedial action, as well as areas of changed conditions or removals;
  - Soil removals, indicating the surveyed limits of the excavation and location of final confirmatory samples;
  - Permanent survey markers for horizontal and vertical control for the project site's long-term maintenance as defined by Section 6 of DER-10.
- Fully executed manifests documenting off-site transport of waste material; and,

8.0 PROJECT SCHEDULE

Remedial activities will be initiated following the acceptance of the RD/RA Work Plan by NYSDEC. The remedial field activities are tentatively planned to be completed in the fall of 2009. The following provides a general sequencing of the major milestones associated with implementing the remedial action program. Additionally, a schedule of the proposed remedial activities is provided as Figure 5.

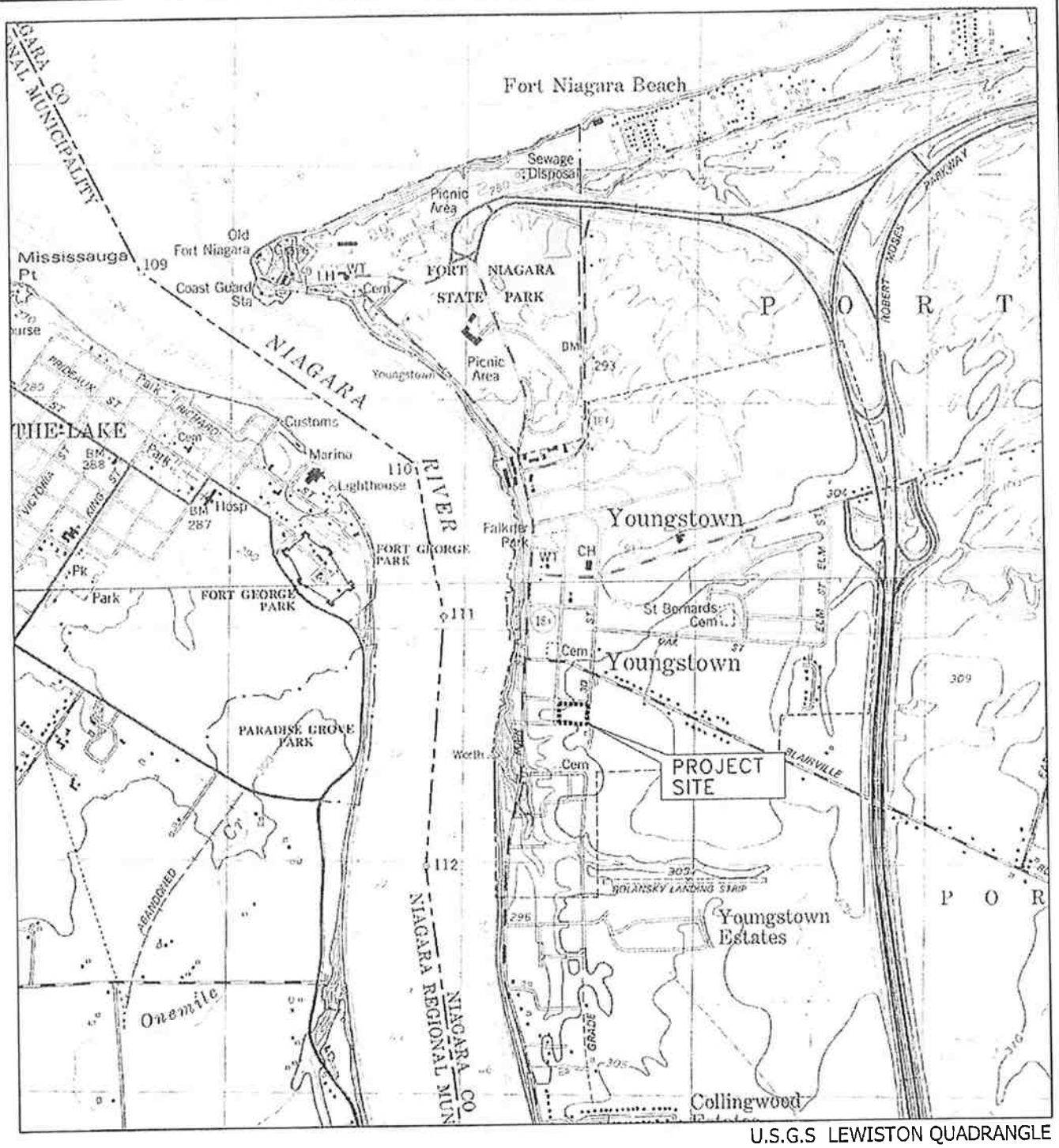
- Submit Draft RD/RA Work Plan to NYSDEC - June 2009
- Incorporate comments and issue Final RD/RA Work Plan - July 2009
- Develop remedial contract documents including design drawings and specifications - July 2009 to August 2009
- Submit contract documents to NYSDEC for approval - August 2009
- Obtain bids from remedial contractors - September 2009
- Award Contract(s) - October 2009

- Perform Remedial Construction - November 2009
- Prepare Post-Remedial Report - December 2009

9.0 PROJECT COST ESTIMATE

A detailed cost estimate has been prepared for the remediation action and is included as Table 1. As described in Section 2.0, the estimated costs should only be used as a budgetary guideline. Because they are based upon related project experience and anticipated field conditions without the formal solicitation of contractor bids. Project-specific unit rates, which may differ from those provided herein, will be obtained through a formal bid process after regulatory review and approval.

FIGURES



U.S.G.S LEWISTON QUADRANGLE

PROJECT SITE LOCATION MAP

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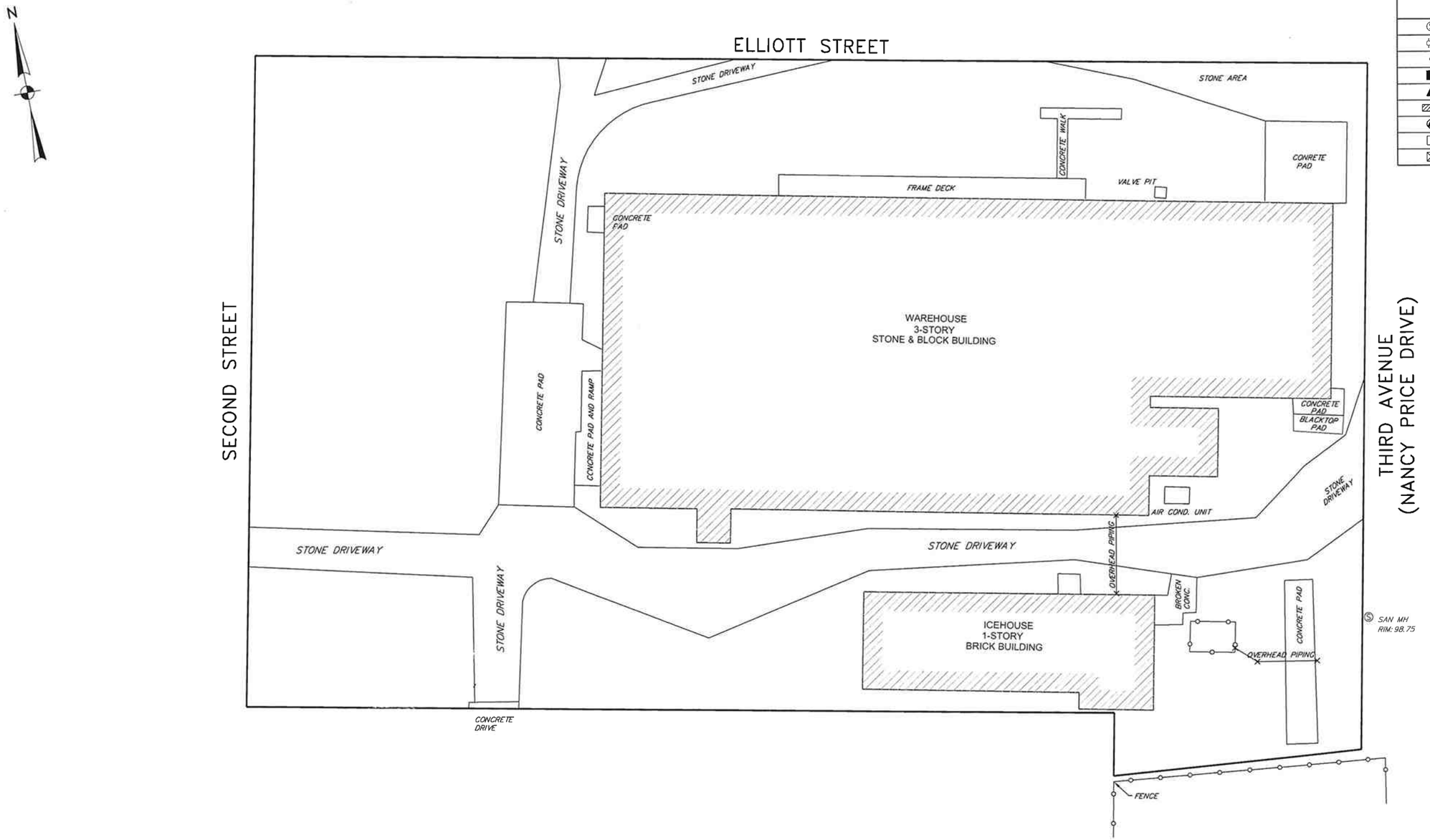
YOUNGSTOWN COLD STORAGE
VILLAGE OF YOUNGSTOWN, NEW YORK
NIAGARA COUNTY

PROJECT NO. 2004.0279.03	SCALE: 1" = 2000'	DATE: JANUARY 2007	FIGURE NO. 1



LEGEND

Ⓢ	SANITARY MANHOLE
⊶	UTILITY POLE
⊸	GAS MARKER
■	SURFACE SOIL (SS) LOCATION
▲	SOIL PROBE (SP) LOCATION
▨	TEST PIT (TP) LOCATION
◉	MICRO WELL LOCATION
□	SURFACE WATER/ SEDIMENT
⊠	BUILDING COMPONENT SAMPLE LOCATION

SITE PLAN

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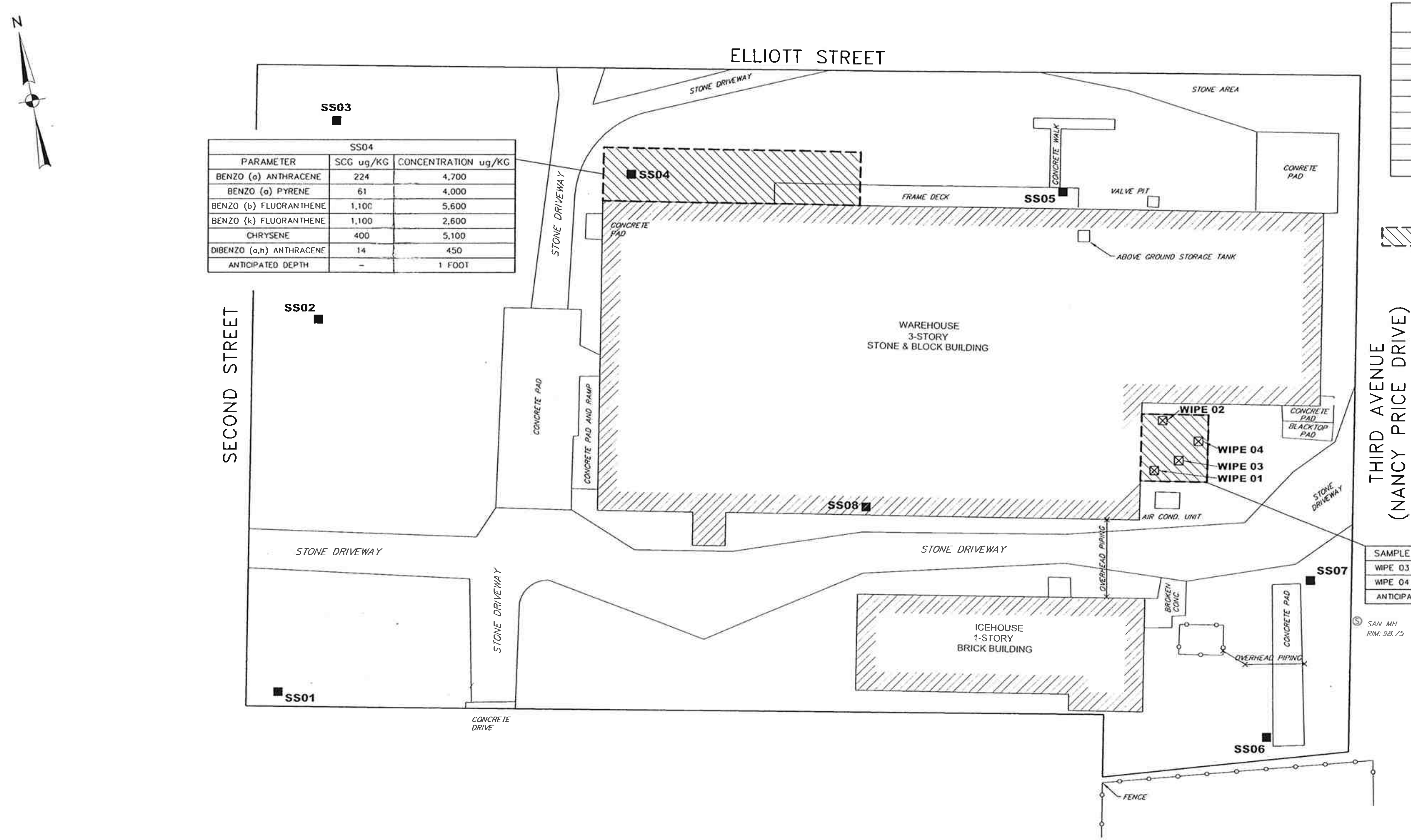
YOUNGSTOWN COLD STORAGE
VILLAGE OF YOUNGSTOWN, NEW YORK
NIAGARA COUNTY

PROJECT NO. 2004.0279.03 | SCALE: 1" = 40' | DATE: JANUARY 2007 | **FIGURE NO. 2**

N:\2004.0279.03-Youngstown Cold Storage\10Deliverables\Remedial grant application\NYSDEC Remedial Grant Application\FIGURE 2.dwg 01/10/2007 1:05:00 PM EDT



SS04		
PARAMETER	SCG ug/KG	CONCENTRATION ug/KG
BENZO (a) ANTHRACENE	224	4,700
BENZO (a) PYRENE	61	4,000
BENZO (b) FLUORANTHENE	1,100	5,600
BENZO (k) FLUORANTHENE	1,100	2,600
CHRYSENE	400	5,100
DIBENZO (a,h) ANTHRACENE	14	450
ANTICIPATED DEPTH	–	1 FOOT

SAMPLE	PARAMETER	SCG mg/100cm²	CONCENTRATION mg/100cm²
WIPE 03	TOTAL PCBs	10	15.0
WIPE 04	TOTAL PCBs	10	14.4
ANTICIPATED THICKNESS		–	4 INCHES

LEGEND

Ⓢ	SANITARY MANHOLE
	UTILITY POLE
	GAS MARKER
■	SURFACE SOIL (SS) LOCATION
▲	SOIL PROBE (SP) LOCATION
	TEST PIT (TP) LOCATION
	MICRO WELL LOCATION
□	SURFACE WATER/ SEDIMENT
⊠	BUILDING COMPONENT SAMPLE LOCATION

NOTES:
SS05 AND SS08 WERE COLLECTED FROM THE SURFACE SOIL DIRECTLY UNDERNEATH RAISED LOADING DOCKS.

FULL HATCHED AREAS REPRESENT AREAL EXTENT OF SUSPECTED CONTAMINATION

SURFACE SOIL/FILL AREAL EXTENT OF CONTAMINATION

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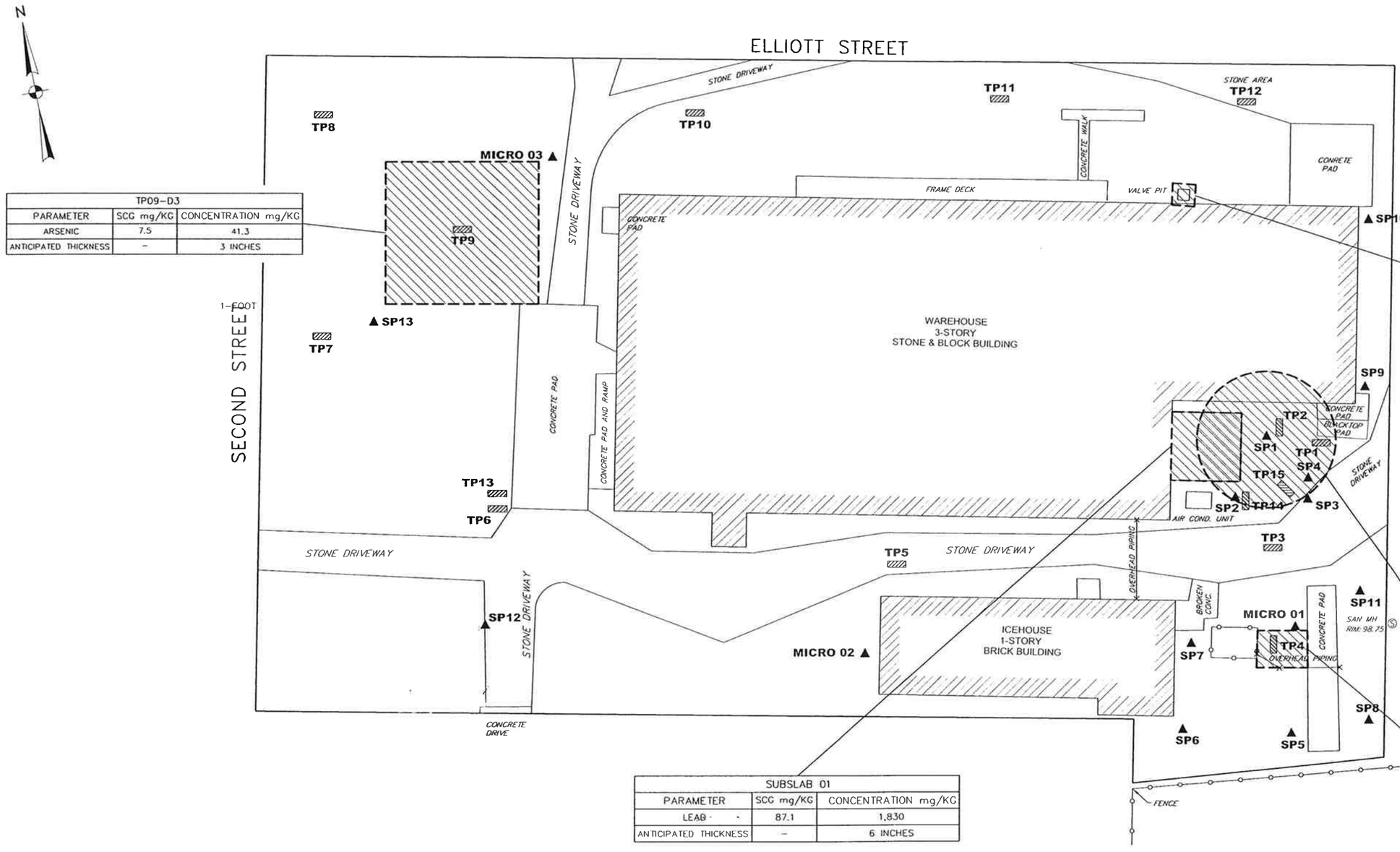
PROJECT NO. 2004.0279.03 | SCALE: 1" = 40' | DATE: JUNE 2006 | FIGURE NO. 3



LEGEND

Ⓢ	SANITARY MANHOLE
	UTILITY POLE
	GAS MARKER
■	SURFACE SOIL (SS) LOCATION
▲	SOIL PROBE (SP) LOCATION
▨	TEST PIT (TP) LOCATION
◭	MICRO WELL LOCATION
□	SURFACE WATER/ SEDIMENT
⊠	BUILDING COMPONENT SAMPLE LOCATION

NOTES:
SCG - STANDARDS, CRITERIA, AND GUIDANCE
FULL HATCHED AREAS REPRESENT AREAL EXTENT OF SUSPECTED CONTAMINATION

TP09–D3		
PARAMETER	SCG mg/KG	CONCENTRATION mg/KG
ARSENIC	7.5	41.3
ANTICIPATED THICKNESS	–	3 INCHES

SUMP01–SED		
PARAMETER	SCG ug/KG	CONCENTRATION ug/KG
BENZO (a) ANTHRACENE	224	1,200
BENZO (a) PYRENE	61	1,200
BENZO (b) FLUORANTHENE	1,100	2,200
CHRYSENE	400	1,400
DIBENZO (a,h) ANTHRACENE	14	140
ESTIMATED VOLUME	–	2/3 CUBIC YARD

TP02–D8		
PARAMETER	SCG ug/KG	CONCENTRATION ug/KG
TOTAL VOCS	10,000	12,536
MAX. PID	–	1,875 ppm @ 8' bgs
VISUAL	NO STAINING	STAINING
OLFACTORY	NO ODOR	PETROLEUM ODOR
ANTICIPATED DEPTH	–	10 FEET

TP04–D235 AND TP04–D6		
PARAMETER	SCG ug/KG	CONCENTRATION ug/KG
MAX. PID	–	45 ppm @ 6' bgs
VISUAL	NO STAINING	SLIGHT STAINING
OLFACTORY	NO ODOR	PETROLEUM ODOR
ANTICIPATED DEPTH	–	9 FEET

SUBSLAB 01		
PARAMETER	SCG mg/KG	CONCENTRATION mg/KG
LEAD	87.1	1,830
ANTICIPATED THICKNESS	–	6 INCHES

40' 20' 0 40'
SCALE: 1"=40'–0"

SUB-SURFACE SOIL/FILL AREAL EXTENT OF CONTAMINATION

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REMEDIAL INVESTIGATION/
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YOUNGSTOWN COLD STORAGE
VILLAGE OF YOUNGSTOWN, NEW YORK
NIAGARA COUNTY

PROJECT NO. 2004.0279.03 | SCALE: 1" = 40' | DATE: JUNE 2006 | **FIGURE NO. 4**

N:\2004.0279.03-Youngstown Cold Storage\CAD\FIGURE 11.dwg 8/8/2006 9:57:22 AM EDT

TABLE 1

Table 1
Youngstown Cold Storage Site
Cost Estimate

Removal with Partial Demolition

Item	Note	Unit	Quantity	Cost/Unit	Cost
Excavation of Contaminated Surface Soil/Fill					
Non-Hazardous Fill Excavation	Track mounted excavator, 1.5 cy	day	1	$ 1,843.70	$1,844
Non-Hazardous Soil/Fill	Transportation/disposal	ton	180	$ 25.00	$4,500
Post Excavation Sampling	Confirmatory Samples	sample	5	$ 165.00	$825
Disposal Profiling	TCLP VOCs/RCRA Analysis	sample	1	$ 755.00	$755
Excavation of Contaminated Subsurface Soil/Fill - Former UST Area					
Non-Hazardous Fill Excavation	Track mounted excavator, 1.5 cy	day	5	$ 1,843.70	$9,219
Non-Hazardous Soil/Fill	Transportation/disposal	ton	1,168	$ 25.00	$29,200
Post Excavation Sampling	Confirmatory Samples	sample	5	$ 80.00	$400
Disposal Profiling	TCLP VOCs/RCRA Analysis	sample	4	$ 755.00	$3,020
Excavation of Contaminated Subsurface Soil/Fill - Spray Wash Area					
Non-Hazardous Fill Excavation	Track mounted excavator, 1.5 cy	day	2	$ 1,843.70	$3,687
Non-Hazardous Soil/Fill	Transportation/disposal	ton	160	$ 25.00	$4,000
Post Excavation Sampling	Confirmatory Samples	sample	5	$ 80.00	$400
Disposal Profiling	TCLP VOCs/RCRA Analysis	sample	1	$ 755.00	$755
Excavation of Contaminated Subsurface Soil/Fill - Arsenic Contaminated Soil/Fill					
Non-Hazardous Fill Excavation	Track mounted excavator, 1.5 cy	day	2	$ 1,843.70	$3,687
Non-Hazardous Soil/Fill	Transportation/disposal	ton	23	$ 25.00	$575
Post Excavation Sampling	Confirmatory Samples	sample	5	$ 75.00	$375
Disposal Profiling	TCLP VOCs/RCRA Analysis	sample	1	$ 755.00	$755
Sediment Removal - Valve Pit					
Valve Pit Cleaning/Close-in-place	Three man crew (2 Laborers and a Forman)	day	1	$ 1,370.00	$1,370
Non-Hazardous Soil/Fill	Transportation/disposal	ton	1	$ 25.00	$25
Excavation of Contaminated Subslab Soil/Fill					
Non-Hazardous Fill Excavation	Track mounted excavator, 1.5 cy	day	1	$ 1,843.70	$1,844
Non-Hazardous Soil/Fill	Transportation/disposal	ton	180	$ 25.00	$4,500
Post Excavation Sampling	Confirmatory Samples	sample	5	$ 50.00	$250
Disposal Profiling	TCLP VOCs/RCRA Analysis	sample	1	$ 755.00	$755
Backfill of Remediated Areas					
Clean Fill	Unclassified fill, 6" lifts	cy	965	$ 13.23	$12,770

Table 1
Youngstown Cold Storage Site
Cost Estimate

Removal with Partial Demolition

Item	Note	Unit	Quantity	Cost/Unit	Cost
AST Removal and Off-site Disposal					
AST Excavation, Cleaning and Off-Site Disposal	Three man crew (2 Laborers and a Forman)	ls	1	$ 2,400.00	$2,400
AST Contents Transportation/Disposal (~ 100 gallons)	Transportation to and disposal at Hazardous Waste Facility	ls	1	$ 1,275.00	$1,275
Underlying Contaminated Non-Hazardous Soil/Fill	Transportation/disposal	ton	8	$ 25.00	$200
Removal and Off-Site Disposal of Asbestos Containing Building Materials					
Friable and Non-Friable Asbestos	Abatement	ls	1	$ 60,500.00	$60,500
Project/Air Monitoring	Air monitoring and project oversight	ls	1	$ 3,000.00	$3,000
PCB Removal and Off-Site Disposal					
Demolition and off-site disposal	PCB contaminated concrete floor and equipment in compressor room	ls	1	$ 17,000.00	$17,000
Partial Building Demolition					
Demolition and Removal	Compressor room, newer warehouse addition and spray wash structure	ls	1	$ 98,000.00	$98,000
Subtotal					$267,886
Additional Capital Costs					
Mob/Demob/Decon	5% of Subtotal				$13,394
Contingencies	15% of Subtotal				$40,183
Engineering/Oversight	10% of Subtotal				$26,789
Subtotal					$80,366
Total Project Cost					**$348,252**

Notes:
Sources include:

2005 RS Means Environmental Remediation Cost Data-Assemblies and Unit Price 11th Edition (unit prices include a 33% markup for overhead, profit and inflation).

2005 RS Means Heavy Construction Cost Data 19th Edition (unit prices include a 3% markup for inflation).

Engineer's Estimate.

Building Demolition Assumptions:

1. Includes complete removal of compressor room building and newer constructed that adjoins the eastern portion of the warehouse.

ls = lump sum
cy = cubic yard
ton = 2,000 pounds

ATTACHMENT 1

ALLOWABLE CONSTITUENT LEVELS FOR IMPORTED FILL/SOIL

Appendix 5A

Allowable Constituent Levels for Imported Fill or Soil
Subdivision 5.4(e)

Source: This table is derived from the soil cleanup objective tables in 6NYCCR375. Table 375-6.8(a) is the source for unrestricted use and Table 375-6.8(b) is the source for restricted use.

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Metals					
Arsenic	13	16	16	16	13
Barium	350	350	400	400	433
Beryllium	7.2	14	47	47	10
Cadmium	2.5	2.5	4.3	7.5	4
Chromium, Hexavalent[1]	1 [3]	19	19	19	1 [3]
Chromium, Trivalent[1]	30	36	180	1500	41
Copper	50	270	270	270	50
Cyanide	27	27	27	27	NS
Lead	63	400	400	450	63
Manganese	1600	2000	2000	2000	1600
Mercury (total)	0.18	0.73	0.73	0.73	0.18
Nickel	30	130	130	130	30
Selenium	3.9	4	4	4	3.9
Silver	2	8.3	8.3	8.3	2
Zinc	109	2200	2480	2480	109
PCBs/Pesticides					
2,4,5-TP Acid (Silvex)	3.8	3.8	3.8	3.8	NS
4,4'-DDE	0.0033 [3]	1.8	8.9	17	0.0033 [3]
4,4'-DDT	0.0033 [3]	1.7	7.9	47	0.0033 [3]
4,4'-DDD	0.0033 [3]	2.6	13	14	0.0033 [3]
Aldrin	0.005	0.019	0.097	0.19	0.14
Alpha-BHC	0.02	0.02	0.02	0.02	0.04 [4]
Beta-BHC	0.036	0.072	0.09	0.09	0.6
Chlordane (alpha)	0.094	0.91	2.9	2.9	1.3
Delta-BHC	0.04	0.25	0.25	0.25	0.04 [4]
Dibenzofuran	7	14	59	210	NS
Dieldrin	0.005	0.039	0.1	0.1	0.006
Endosulfan I	2.4[2]	4.8	24	102	NS
Endosulfan II	2.4[2]	4.8	24	102	NS
Endosulfan sulfate	2.4[2]	4.8	24	200	NS
Endrin	0.014	0.06	0.06	0.06	0.014
Heptachlor	0.042	0.38	0.38	0.38	0.14
Lindane	0.1	0.1	0.1	0.1	6
Polychlorinated biphenyls	0.1	1	1	1	1

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Semivolatile Organic Compounds					
Acenaphthene	20	98	98	98	20
Acenaphthylene	100	100	100	107	NS
Anthracene	100	100	100	500	NS
Benzo(a)anthracene	1	1	1	1	NS
Benzo(a)pyrene	1	1	1	1	2.6
Benzo(b)fluoranthene	1	1	1	1.7	NS
Benzo(g,h,i)perylene	100	100	100	500	NS
Benzo(k)fluoranthene	0.8	1	1.7	1.7	NS
Chrysene	1	1	1	1	NS
Dibenz(a,h)anthracene	0.33 [3]	0.33 [3]	0.33 [3]	0.56	NS
Fluoranthene	100	100	100	500	NS
Fluorene	30	100	100	386	30
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5	5.6	NS
m-Cresol(s)	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	NS
Naphthalene	12	12	12	12	NS
o-Cresol(s)	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	NS
p-Cresol(s)	0.33	0.33	0.33	0.33	NS
Pentachlorophenol	0.8 [3]	0.8 [3]	0.8 [3]	0.8 [3]	0.8 [3]
Phenanthrene	100	100	100	500	NS
Phenol	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	30
Pyrene	100	100	100	500	NS
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.68	0.68	0.68	0.68	NS
1,1-Dichloroethane	0.27	0.27	0.27	0.27	NS
1,1-Dichloroethene	0.33	0.33	0.33	0.33	NS
1,2-Dichlorobenzene	1.1	1.1	1.1	1.1	
1,2-Dichloroethane	0.02	0.02	0.02	0.02	10
1,2-Dichloroethene(cis)	0.25	0.25	0.25	0.25	NS
1,2-Dichloroethene(trans)	0.19	0.19	0.19	0.19	NS
1,3-Dichlorobenzene	2.4	2.4	2.4	2.4	NS
1,4-Dichlorobenzene	1.8	1.8	1.8	1.8	20
1,4-Dioxane	0.1 [3]	0.1 [3]	0.1 [3]	0.1 [3]	0.1
Acetone	0.05	0.05	0.05	0.05	2.2
Benzene	0.06	0.06	0.06	0.06	70
Butylbenzene	12	12	12	12	NS
Carbon tetrachloride	0.76	0.76	0.76	0.76	NS
Chlorobenzene	1.1	1.1	1.1	1.1	40
Chloroform	0.37	0.37	0.37	0.37	12
Ethylbenzene	1	1	1	1	NS
Hexachlorobenzene	0.33 [3]	0.33 [3]	1.2	3.2	NS
Methyl ethyl ketone	0.12	0.12	0.12	0.12	100
Methyl tert-butyl ether	0.93	0.93	0.93	0.93	NS
Methylene chloride	0.05	0.05	0.05	0.05	12

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Volatile Organic Compounds (continued)					
Propylbenzene-n	3.9	3.9	3.9	3.9	NS
Sec-Butylbenzene	11	11	11	11	NS
Tert-Butylbenzene	5.9	5.9	5.9	5.9	NS
Tetrachloroethene	1.3	1.3	1.3	1.3	2
Toluene	0.7	0.7	0.7	0.7	36
Trichloroethene	0.47	0.47	0.47	0.47	2
Trimethylbenzene-1,2,4	3.6	3.6	3.6	3.6	NS
Trimethylbenzene-1,3,5	8.4	8.4	8.4	8.4	NS
Vinyl chloride	0.02	0.02	0.02	0.02	NS
Xylene (mixed)	0.26	1.6	1.6	1.6	0.26

All concentrations are in parts per million (ppm)
NS = Not Specified

Footnotes:

[1] The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.

[2] The SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

[3] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

[4] This SCO is derived from data on mixed isomers of BHC.

APPENDIX A

MASTER EROSION CONTROL PLAN

MASTER EROSION CONTROL PLAN

YOUNGSTOWN COLD STORAGE SITE
(NYSDEC SITE NO. E932122)

701 THIRD STREET EXTENSION (NANCY PRICE DRIVE)
VILLAGE OF YOUNGSTOWN, NEW YORK

Prepared for:

Village of Youngstown
Village Center
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MASTER EROSION CONTROL PLAN

YOUNGSTOWN COLD STORAGE SITE
(NYSDEC SITE NO. E932122)

701 THIRD STREET EXTENSION (NANCY PRICE DRIVE)
VILLAGE OF YOUNGSTOWN, NEW YORK

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1.0 INTRODUCTION

1.1 Background

The project site consists of approximately 2.4 acres located within the Village of Youngstown limits. The project site is occupied by two structures that include: a deteriorating three-story stone building (warehouse) occupying approximately 23,000 square-feet and a single-story brick building (ice house) approximately 4,500 square-feet in size.

1.2 Purpose and Scope

Since erosion control will be a critical component of preventing the potential migration of contaminants off-site during intrusive activities at the project site, this Master Erosion Control Plan (MECP) was prepared to provide guidance to owners and contractors during construction activities. This MECP is a critical component of remedial activities. This document is generic in nature and provides minimum erosion control practices to be utilized by the site owner. More specific plans may be developed by the property owner for individual future projects.

2.0 POTENTIAL EROSION AND SEDIMENT CONTROL CONCERNS

Following remedial activities, the site will likely be redeveloped for residential use. Site-specific design measures for erosion and sediment control may need to be determined at that time after the development approach for the project site has been determined.

Potential areas and items of concern during project site intrusive activities include the following:

- Approximately 13,140 square feet of ground disturbance will occur as a result of the planned remedial activities. This work will require erosion and sediment controls to prevent the surface soil from being washed off-site;
- Remediated areas or off-site properties adjacent to unremediated areas of the project site need protection so that they do not become impacted by site operations;
- Storm water inlets will require protective measures to limit sediment transfer to storm sewers and/or drainage ditches;
- Runoff from soil stockpiles will require erosion controls; and
- Surface slopes need to be minimized as much as practical to control sediment transfer;

3.0 EROSION AND SEDIMENT CONTROL MEASURES

3.1 Background

Standard soil conservation practices must be incorporated into the construction and development plans to mitigate soil erosion damage, off-site sediment migration, and water pollution from erosion. These practices will be temporary and serve only during the remedial construction stage. Selected erosion and sediment control measures will meet the following criteria:

- Minimize erosion through project design (minimum slopes, phased construction, etc.);
- Incorporate temporary erosion control measures; and
- Remove sediment from sediment-laden storm water before it leaves the site.

3.2 Temporary Measures

Temporary erosion and sedimentation control measures and facilities will be utilized during intrusive activities. They will be installed by the contractor and will be maintained until they are either no longer needed or until such time as permanent measures are installed and become effective. At a minimum, the following temporary measures will be used:

- Silt fencing;
- Straw/hay bales; and
- Cautious placement, compaction, and grading of stockpiles.

3.2.1 Silt Fencing

Intrusive activities could potentially result in surface water flowing off-site. Silt fencing will be the primary sediment control measure used to prevent off-site migration. Prior to extensive soil excavation or grading activities, silt fences will be installed along the downgradient perimeter of all construction areas. The orientation of the fencing will be adjusted as necessary as the work proceeds to accommodate changing site conditions.

Intermediate silt fencing will be utilized as necessary, upgradient of the perimeter fencing to help lower surface water runoff velocities and reduce the volume of sediment to perimeter fencing. Soil stockpiles will also be surrounded with silt fencing.

As sediment collects, the silt fences will be cleaned as necessary to maintain their integrity. Removed sediment will be utilized elsewhere on-site as general fill or disposed off-site. All perimeter silt fences will remain in place until intrusive activities in an area are completed and vegetative cover has been established. Silt fences will be installed in accordance with the details presented in Attachment A-1.

3.2.2 Straw and/or Hay Bales

Straw and/or hay bales will be used to intercept sediment laden storm water runoff in drainage channels during construction. The use of either hay or straw will be based on the availability of materials at the time of intrusive activities.

Bales will be placed in swales and ditches where the anticipated flow velocity is not expected to be greater than 5 feet/second (fps). Intermediate bales will be placed upgradient of the final barrier to reduce flow velocities and sediment loadings where higher velocities are anticipated.

As with silt fencing, sediment will be removed as necessary from behind the bales and disposed of on-site. Bales that have become laden with sediment or that have lost their structural integrity or effectiveness will be replaced. Bales should be installed in accordance with the details presented in Attachment A-1.

3.2.3 Cautious Placement of Stockpiles

As remediation occurs, intrusive activities will produce temporary stockpiles of soil and subgrade fill materials. Careful placement and construction of stockpiles will be required to control erosion. Stockpiles will be placed no closer than fifty feet from storm water inlets, and parcel boundaries. Additionally, stockpiles will be graded and compacted as necessary for positive surface water runoff and dust control.

3.3 Permanent Control Measures During Site Redevelopment

Permanent erosion and sedimentation control measures will be dependant upon site development and will be determined after the development approach for the project site has been determined.

4.0 CONSTRUCTION MANAGEMENT PRACTICES

4.1 General

The following general construction practices should be evaluated for erosion and sedimentation control purposes during remedial activities:

- Clearing and grading only as much area as is necessary to accommodate the construction needs in order to minimize disturbance of areas subject to erosion (i.e., phasing the work);
- Covering exposed or disturbed areas of the site as quickly as practical;
- All erosion and sediment control measures should be installed prior to disturbing the site subgrade; and

- Both on-site and off-site tracking of soil by vehicles should be minimized by utilizing stabilized entry/exit routes.

5.0 EROSION CONTROL MONITORING, INSPECTION, AND MAINTENANCE

All erosion and sedimentation controls described in this Plan will be inspected by a qualified representative of the remedial contractor and/or owner within 24 hours of a heavy rainfall event and repaired or modified as necessary to effectively control erosion and turbidity problems. Inspections should include areas under construction, areas subjected to intrusive activities, stockpile areas, erosion control devices, (i.e. silt fences, hay bales, etc.) and locations where vehicles enter and leave the site. Routine inspections of the entire site should also be made as described in Section 6.2.

If inspections indicate problems, corrective measures should be implemented within 24 hours. A report summarizing the scope of the inspection, name of the inspector, date, observations made, and a description of the corrective actions take should be completed. Examples of inspection forms to be completed are included in Attachment A-2.

5.1 Implementation

The remedial contractor at this site shall at all times properly construct, operate and maintain all erosion controls and features, as part of intrusive activities, in accordance with regulatory requirements, and with good engineering and construction practices. Erosion control measures and activities will be in accordance with currently accepted Best Management Practices (BMPs). These erosion control monitoring, inspection, and maintenance activities have been developed to achieve compliance with the requirements of the master erosion control plan. The key elements of the monitoring effort include the following:

- Site Inspections and Maintenance;
- BMPs Monitoring;
- Recordkeeping;
- Review and Modifications; and
- Certification of Compliance.

5.2 Site Inspections and Maintenance Practices

The temporary erosion control features installed by the remedial contractor will be maintained until no longer needed or permanent erosion control methods are installed.

Site inspections are required every seven days or within 24 hours of a rainfall of 0.5 inches or greater. All disturbed areas, areas for material storage, locations where vehicles enter or exit the site, and all of the erosion and sediment controls that are identified as part of this site's construction storm water and erosion control plan must be

inspected. Controls must be in good operating condition until the affected area they protect has been completely stabilized and the construction activity is complete. If a repair is necessary, it must be completed within seven calendar days of receipt of a report or notice, if practical. Inspection measures for specific erosion and sediment controls will include the following:

- Silt fence will be inspected to determine the following:
  - Depth of collected sediment;
  - condition of fabric;
  - that the fabric is attached to the posts; and
  - that the fence posts are firmly in the ground;
- Diversion berms, if used, will be inspected and any breaches promptly repaired;
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and other potential erosion control problems;
- The remedial contractor shall designate individual(s) that will be responsible for erosion control, maintenance, and repair activities. The designated individual will also be responsible for inspecting the project site and filling out the inspection and maintenance report; and
- Personnel selected for inspection and maintenance responsibilities will receive appropriate training in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used on-site in good working order.

The individual inspecting the project site must record any damages or deficiencies on an inspection form. An example Inspection and Maintenance Report Form is attached (Attachment A-2) to record the inspection and assessment. These forms can be used to request maintenance and/or repair and to document inspection of maintenance activities. Damages or deficiencies must be corrected as soon as possible after the inspection. Any changes that may be required to correct deficiencies in the MECP should also be made as soon as possible, but in no case later than seven days after the inspection.

5.3 Recordkeeping

A copy of the MECP and inspection and maintenance records must be kept at the project site from the time intrusive activities begin until the project site is stabilized. The MECP and related records will be made available upon request to any regulatory agency representatives.

5.4 Modifications to the Master Erosion Control Plan

During the course of remedial and/or redevelopment activities, unanticipated changes may occur that affect the MECP such as schedule changes, phasing changes, staging area modifications, offsite drainage impacts, and repeated failures of designed controls. Any changes to the activities and controls identified in this plan must be documented and

the MECP revised accordingly. Certification of revisions to the MECP shall be included at the end of the document.

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ATTACHMENT A-1

EROSION CONTROL DETAILS

EROSION CONTROL DETAILS

1. Silt Fence
2. Straw Bale Dike
3. Perimeter Dike/Swale
4. Temporary Swale
5. Filter Fabric Drop Inlet Protection

STANDARD AND SPECIFICATIONS FOR SILT FENCE

Definition

A temporary barrier of geotextile fabric (filter cloth) used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment load. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may be used.

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope lengths contributing runoff to a silt fence are:

Slope Steepness	Maximum Slope Length (Ft)
2:1	50
3:1	75
4:1	125
5:1	175
Flatter than 5:1	200

2. Maximum drainage area for overland flow to a silt fence shall not exceed 1/2 acre per 100 feet of fence; and
3. Erosion would occur in the form of sheet erosion; and
4. There is no concentration of water flowing to the barrier.

Design Criteria

Design computations are not required. All silt fences shall be placed as close to the area as possible, and the area below the fence must be undisturbed or stabilized.

A detail of the silt fence shall be shown on the plan, and contain the following minimum requirements:

1. The type, size, and spacing of fence posts.
2. The size of woven wire support fences.
3. The type of filter cloth used.
4. The method of anchoring the filter cloth.
5. The method of fastening the filter cloth to the fencing support.

Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. See Figure 5A.9 on page 5A.20 for details.

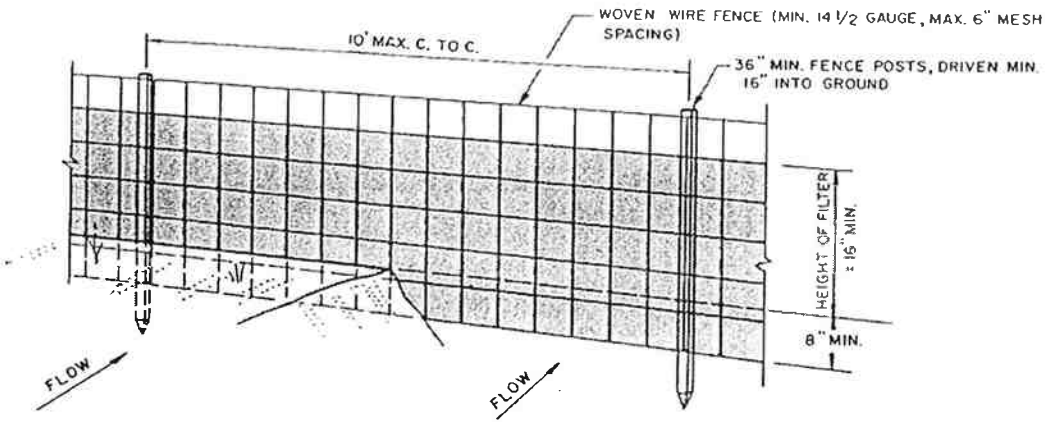
Criteria for Silt Fence Materials

1. Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance. Statewide acceptability shall depend on in field and/or laboratory observations and evaluations.

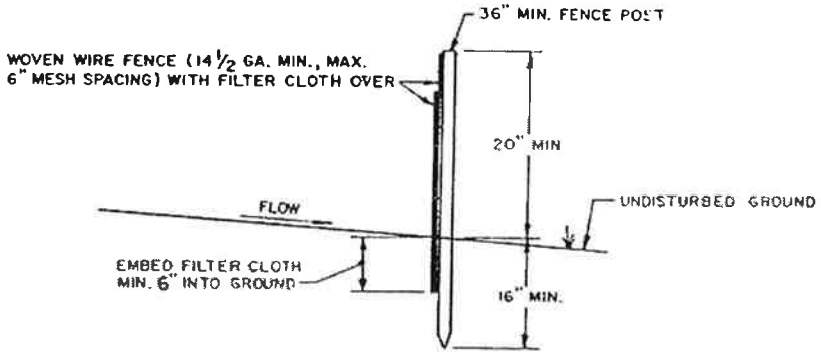
Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D751 (modified)
Slurry Flow Rate (gal/min/sf)	0.3	
Equivalent Opening Size	40-80	US Std Sieve CW-02215
Ultraviolet Radiation Stability (%)	90	ASTM G-26

2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.0 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot.
3. Wire Fence (for fabricated units): Wire fencing shall be a minimum 14-1/2 gage with a maximum 6 in. mesh opening, or as approved.
4. Prefabricated Units: Envirofence or approved equal may be used in lieu of the above method providing the unit is installed per details shown in Figure 5A.9.

Figure 5A.9
Silt Fence Details



PERSPECTIVE VIEW



SECTION

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE

POSTS: STEEL EITHER "T" OR "U" TYPE OR 2" HARDWOOD

FENCE: WOVEN WIRE, 14 1/2 GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	SILT FENCE	STANDARD SYMBOL

STANDARD AND SPECIFICATIONS FOR STRAW BALE DIKE

Definition

A temporary barrier of straw or similar material used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a bale dike is to reduce runoff velocity and effect deposition of the transported sediment load. Straw bale dikes have an estimated design life of three (3) months.

Conditions Where Practice Applies

The straw bale dike is used where:

1. No other practice is feasible.
2. There is no concentration of water in a channel or other drainage way above the barrier.
3. Erosion would occur in the form of sheet erosion.
4. Length of slope above the straw bale dike does not exceed these limits.

Constructed Slope	Percent Slope	Slope Length (ft.)
2:1	50	25
2 -1/2:1	40	50
3:1	33	75
3-1/2:1	30	100
4:1	25	125

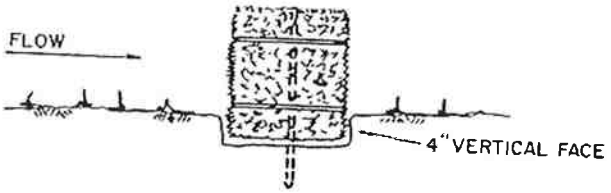
Where slope gradient changes through the drainage area, steepness refers to the steepest slope section contributing to the straw bale dike.

The practice may also be used for a single family lot if the slope is less than 15 percent. The contributing drainage area in this instance shall be less than one acre and the length of slope above the dike shall be less than 200 feet.

Design Criteria

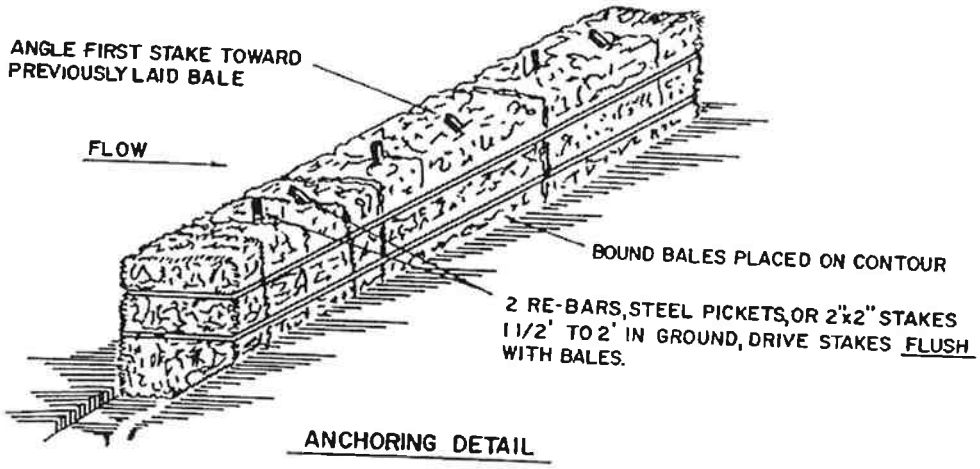
A design is not required. All bales shall be placed on the contour with cut edge of bale adhering to the ground. See Figure 5A.8 on page 5A.18 or details.

Figure 5A.8
Straw Bale Dike Details



BEDDING DETAIL

DRAINAGE AREA NO MORE THAN 1/4 ac. PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%



ANCHORING DETAIL

CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	STRAW BALE DIKE	STANDARD SYMBOL SBD

STANDARD AND SPECIFICATIONS FOR PERIMETER DIKE/SWALE

Definition

A temporary ridge of soil excavated from an adjoining swale located along the perimeter of the site or disturbed area.

Purpose

The purpose of a perimeter dike/swale is to prevent off site storm runoff from entering a disturbed area and to prevent sediment laden storm runoff from leaving the construction site or disturbed area.

Conditions Where Practice Applies

Perimeter dike/swale is constructed to divert flows from entering a disturbed area, or along tops of slopes to prevent flows from eroding the slope, or along base of slopes to direct sediment laden flows to a trapping device.

The perimeter dike/swale shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 5A.3 on page 5A.6 for details.

The perimeter dike/swale shall not be constructed outside the property lines without obtaining legal easements from effected adjacent property owners. A design is not required for perimeter dike/swale. The following criteria shall be used:

Drainage area - Less than 2 acres (for drainage areas larger than 2 acres but less than 10 acres see earth dike; for drainage areas larger than 10 acres, see standard and specifications for diversion).

Height - 18 inches minimum from bottom of swale to top of dike evenly divided between dike height and swale depth.

Bottom width of dike - 2 feet minimum.

Width of swale - 2 feet minimum.

Grade - Dependent upon topography, but shall have positive drainage (sufficient grade to drain) to an adequate outlet. Maximum allowable grade not to exceed 20 percent.

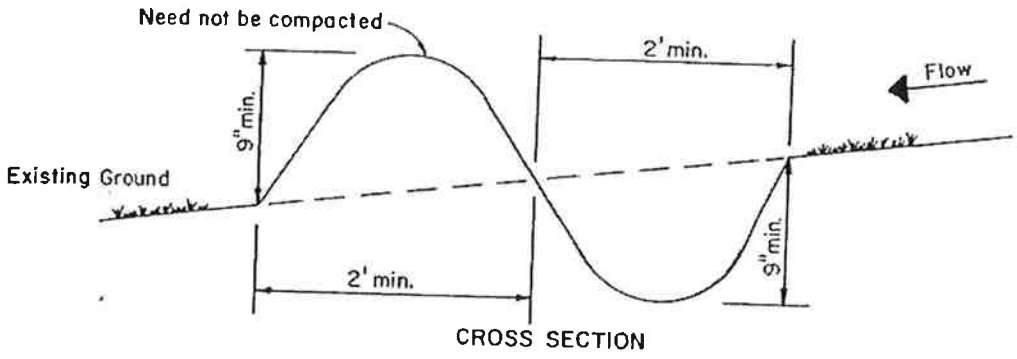
Stabilization - The disturbed area of the dike and swale shall be stabilized within 10 days of installation, in accordance with the standard and specifications for seed and straw mulch or straw mulch only if not in the seeding season.

Outlet

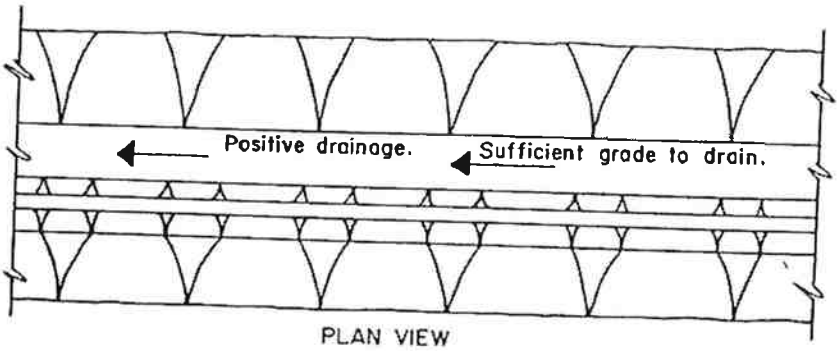
1. Perimeter dike/swale shall have an outlet that functions with a minimum of erosion.
2. Diverted runoff from a protected or stabilized upland area shall outlet directly onto an undisturbed stabilized area.
3. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as a sediment trap, sediment basin, or to an area protected by any of these practices.
4. The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.

Figure 5A.3
Perimeter Dike/Swale Details

not to scale



CROSS SECTION



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. ALL PERIMETER DIKE/SWALE SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTRUBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSION VELOCITY.
4. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED IN THE STANDARD.
5. STABILIZATION OF THE AREA DISTURBED BY THE DIKE AND SWALE SHALL BE DONE IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SEED AND STRAW MULCH, AND SHALL BE DONE WITHIN 10 DAYS.
6. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

Max. Drainage Area Limit: 2 Acres

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	PERIMETER DIKE/SWALE	STANDARD SYMBOL —PD—

STANDARD AND SPECIFICATION FOR TEMPORARY SWALE

Definition

A temporary excavated drainage way.

Purpose

The purpose of a temporary swale is to prevent runoff from entering disturbed areas by intercepting and diverting it to a stabilized outlet or to intercept sediment laden water and divert it to a sediment trapping device.

Conditions Where Practice Applies

Temporary Swales are constructed:

1. To divert flows from a disturbed area.
2. Intermittently across disturbed areas to shorten overland flow distances.
3. To direct sediment laden water along the base of slopes to a trapping device.
4. To transport offsite flows across disturbed areas such as rights-of-way.

Swales collecting runoff from disturbed areas shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 5A.2 on page 5A.4 for details.

	Swale A	Swale B
Drainage Area	< 5 Ac	5-10 Ac
Bottom Width of Flow Channel	4 ft	6 ft
Depth of Flow Channel	1 ft	1 ft
Side Slopes	2:1 or Flatter	2:1 or Flatter
Grade	0.5% Min. 20% Max.	0.5% Min. 20% Max.

For drainage areas larger than 10 acres, refer to the Standard and Specifications for Waterways on page 5B.11.

Stabilization

Stabilization of the swale shall be completed within 10 days of installation in accordance with the appropriate standard and specifications for vegetative stabilization or stabilization with mulch as determined by the time of year. The flow channel shall be stabilized as per the following criteria:

Type of Treatment	Channel Grade[1]	Flow Channel A(< 5 Ac)	Flow Channel B(5-10 Ac)
1	0.5-3.0%	Seed & Straw Mulch	Seed & Straw Mulch
2	3.1-5.0%	Seed & Straw Mulch	Seed and cover with Jute or Excelsior; Sod, or lined with 2 in. stone
3	5.1-8.0%	Seed and cover with Jute or Excelsior, Sod line with 2 in. stone	Line with 4-8 in. stone or Recycled Concrete Equivalent[2]
4	8.1-20%	Line with 4-8 in. stone or Recycled Concrete Equivalent[2]	Engineering Design

[1] In highly erodible soils, as defined by the local approving agency, refer to the next higher slope grade for type of stabilization.

[2] Recycled Concrete Equivalent shall be concrete broken into the required size, and shall contain no steel reinforcement.

Outlet

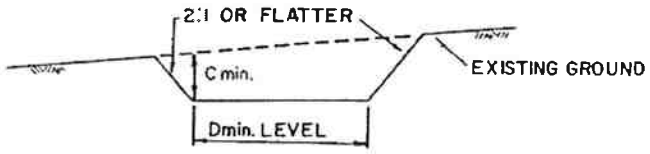
Swale shall have an outlet that functions with a minimum of erosion, and dissipates runoff velocity prior to discharge off the site.

Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin until the drainage area above the swale is adequately stabilized.

The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet condition.

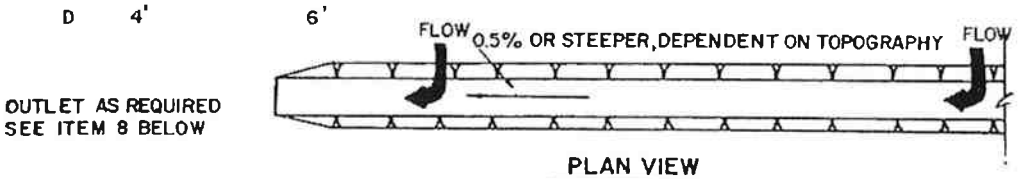
If swale is used to divert flows from entering a disturbed area, a sediment trapping device may not be needed.

Figure 5A.2
Temporary Swale Details



CROSS SECTION

	SWALE A	SWALE B
C	1'	1'
D	4'	6'



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED ON CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE CHART BELOW:

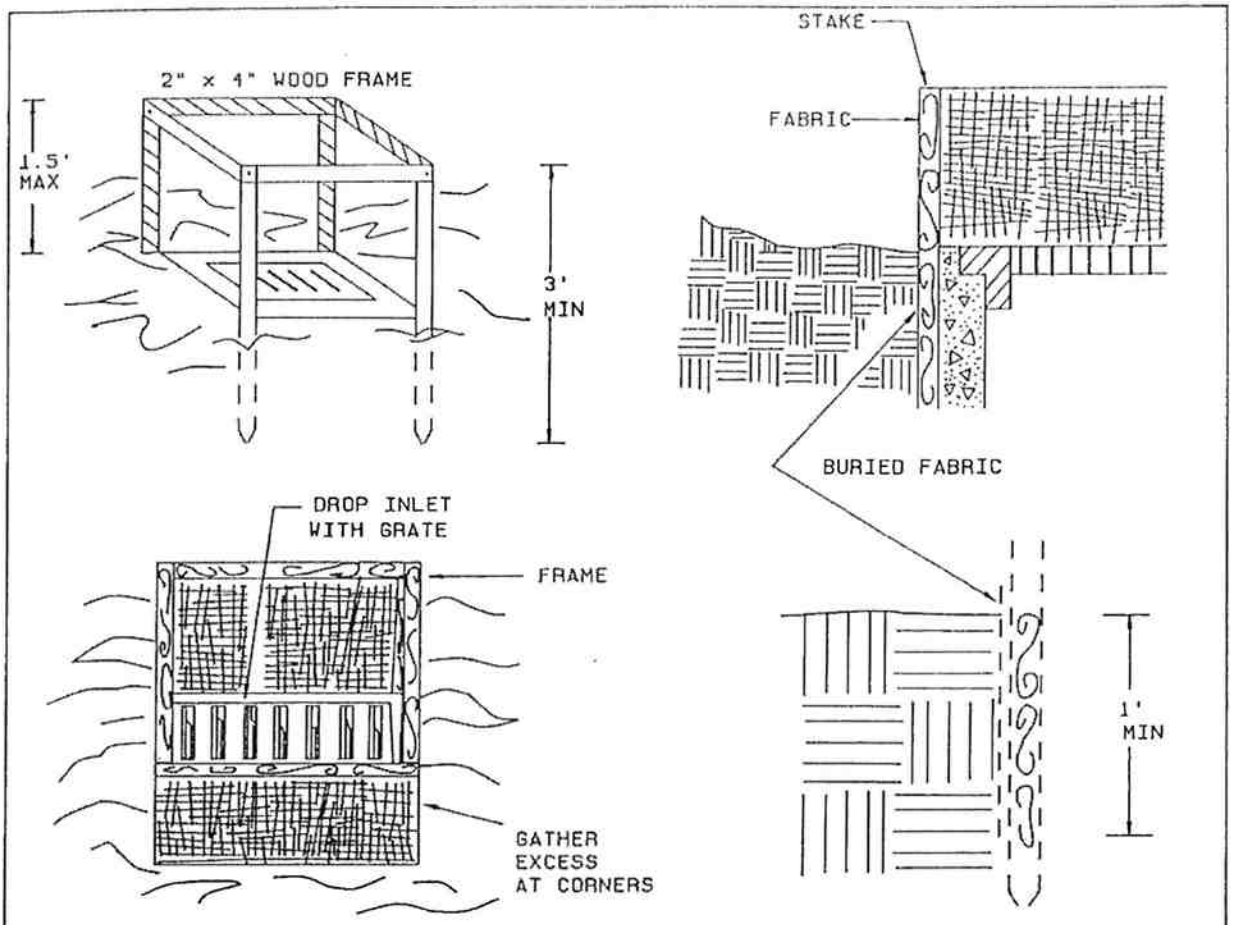
FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (5 AC OR LESS)	B (5 AC - 10 AC)
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE OR EXCELSIOR
3	5.1-8.0%	SEED WITH JUTE OR EXCELSIOR; SOD	LINED RIP-RAP 4-8" RECYCLED CONCRETE EQUIVALENT
4	8.1-20%	LINED 4-8" RIP-RAP	ENGINEERED DESIGN

9. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	TEMPORARY SWALE	STANDARD SYMBOL A-2 / B-3

Figure 5A.13
Filter Fabric Drop Inlet Protection Details



CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	FILTER FABRIC DROP INLET PROTECTION	STANDARD SYMBOL

ATTACHMENT A-2

EROSION CONTROL MONITORING, INSPECTION, AND MAINTENANCE REPORT FORM

EROSION CONTROL MONITORING, INSPECTION, AND MAINTENANCE REPORT FORM

To be completed every 7 days and within 24 hours of a rainfall event of 0.5 inches or more

Regular Inspector: _____ Rainfall Event Inspector: _____ Rainfall (inches): ____

Contractor Activities	**OK**	**NO**	**N/A**	**Notes**
Are construction onsite traffic routes, parking, and storage of equipment and supplies restricted to areas specifically designated for those uses?				
Are locations of temporary soil stock piles of construction materials in approved areas?				
Is there any evidence of spills and resulting cleanup procedures?				
General Erosion & Sediment Controls				
Are sediment and erosion BMPs installed in the proper location and according to the specifications set out in the MECP? Are all operational storm drain inlets protected from sediment inflow? Do any seeded or landscaped areas require maintenance, irrigation, fertilization, seeding or mulching? Is there any evidence that sediment is leaving the site? Is there any evidence of erosion or cut fill slopes?				

_____ _____

Inspected by (Signature) Date

EROSION CONTROL MONITORING, INSPECTION, AND MAINTENANCE REPORT FORM

To be completed every 7 days and within 24 hours of a rainfall event of 0.5 inches or more

Inspector:_____

STABILIZATION MEASURES					
Area	Date Since Last Distributed	Date of Next Disturbance	Stabilized? Yes/No	Stabilized with	Condition

Stabilization Required: _____

_____

_____

_____

_____

_____

To be performed by: _____ On or before: _____

APPENDIX B

COMMUNITY AIR MONITORING PLAN

COMMUNITY AIR MONITORING PLAN
FOR THE
YOUNGSTOWN COLD STORAGE SITE

(NYSDEC SITE NO. E932122)

701 THIRD STREET EXTENSION (NANCY PRICE DRIVE)
VILLAGE OF YOUNGSTOWN, NEW YORK

Prepared for:

Village of Youngstown
Village Center
240 Lockport Street, P.O. Box 168
Youngstown, New York 14174

Prepared by:

TVGA CONSULTANTS

One Thousand Maple Road
Elma, NY 14059-0264

(716) 655-8842
(fax) (716) 655-0937

2008.0203.00

JUNE 2009

COMMUNITY AIR MONITORING PLAN

YOUNGSTOWN COLD STORAGE SITE

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1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) presents requirements for real-time community air monitoring and responses during invasive activities at the Former Roblin Steel Site located in Dunkirk, New York. This plan is generally consistent with the requirements for community air monitoring at remediation sites as established by the New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC). It follows procedures and practices outlined under the NYSDOH's generic Community Air Monitoring Plan dated June 20, 2000 and NYSDEC Technical Assistance and Guidance Memorandum (TAGM) 4031: Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.

This CAMP requires real-time monitoring for particulates (i.e., dust) and volatile organic compounds (VOCs) at the downwind perimeter of each designated work area when certain activities are in progress at the project site. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community from potential airborne contaminant releases as a direct result of remedial, redevelopment or post-remediation monitoring and maintenance activities. The community, as referenced in this document, includes off-site residences, public buildings and grounds, and commercial or industrial establishments on or adjacent to the project site. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the implementation of this CAMP will help to document that on-site work activities have not introduced contamination into the surrounding community.

2.0 MONITORING AND MITIGATION REQUIREMENTS

Real-time air monitoring for particulate levels and organic vapors at the perimeter of the work area will be necessary. Periodic monitoring will be required for all ground intrusive activities. Ground intrusive activities include, but are not limited to, subgrade soil/fill excavation, grading and transporting soil/fill, and backfill.

"Periodic" monitoring will reasonably consist of taking at least one reading immediately following the initiation of the above-referenced activities and taking at least one reading during intrusive activities. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during invasive activities. Examples of such situations include any subgrade excavation and backfilling within 100 feet of occupied structures or publicly accessible locations.

2.1 Organic Vapors

Real-time air monitoring for VOCs at the perimeter of the work area will be performed for all ground intrusive activities with a hand-held photoionization detector (PID). If a sustained reading of 5 ppm above background or greater is registered by the PID at the perimeter of the work area or adjacent to a soil/fill stockpile area, the provisions in the

following subsections will be implemented. Additionally, while it is anticipated that known sources of organic vapors will have been removed during remedial activities, monitoring for organic vapors will continue to be required during post-remedial redevelopment activities.

2.1.1 Vapor Emission Response Plan

If the ambient air concentration of total organic vapors at the downwind perimeter of the work area exceeds 5 parts per million (ppm), 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 persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the sources and 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 at the "downwind hot zone" below 5 ppm over background.

The "downwind hot zone" is defined as 200 feet downwind of the work area or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less, (but in no case less than 20 feet).

If the organic vapor level is above 25 ppm at the perimeter of the project site, the Site Safety and Health Officer will determine when re-entry of the work area is possible and will implement downwind air monitoring to ensure vapor emissions do not impact the nearest off-site residential or commercial structure at levels exceeding those specified under the Major Vapor Emission Monitoring program described below. All readings will be recorded over 15-minute time periods and be made available for State (NYSDEC and NYSDOH) personnel to review.

2.1.2 Major Vapor Emission Monitoring

If the organic vapor level is greater than 5 ppm over background at the "downwind hot zone," all work activities must be halted. If, following the cessation of the work activities or as the result of an emergency, organic levels persist above 5 ppm above background at the "downwind hot zone", then the air quality must be monitored within 20 feet of the perimeter of the nearest off-site receptor (20-foot zone).

If efforts to abate the emission source are unsuccessful and if organic vapor levels approach or exceed 5 ppm above background within the 20-foot zone for more than 30 minutes, or are sustained at levels greater than 10 ppm above

background for longer than one minute, than the Major Vapor Emission Response Plan will automatically be placed into effect.

2.1.3 Major Vapor Emission Response Plan

Upon activation of Major Vapor Emission Response Plan, the following activities will be undertaken:

1. All Emergency Response Contacts as listed below and in the Site-Specific Health and Safety Plan will be contacted.
2. The local police authorities will be immediately contacted by the Site Safety and Health Officer and advised of the situation.
3. Frequent air monitoring will be conducted at 30-minute intervals within the 20-foot zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Site Safety and Health Officer.
4. The Site Safety and Health Officer will determine if project site workers can safely undertake source abatement measures. Abatement measures may include covering the source area with clean fill or plastic sheeting, or consolidating contaminated materials to minimize surface area. The Site Safety and Health Officer will adjust worker personal protective equipment as necessary to protect workers from over-exposure to organic vapors.

The following organizations are to be notified by the Site Safety and Health Officer in the listed sequence if the Major Vapor Emission Response Plan is activated:

Contact	**Phone**
Police/Fire Department	911
New York State Dept. of Health	(716) 847-4502
New York State Dept. of Environmental Conservation	(716) 851-7220
State Emergency Response Hotline	(800) 457-7362

In addition, the Site Safety and Health Officer will provide these authorities with a description of the apparent source of the contamination and abatement measures being taken by the contractor, if any.

2.2 Airborne Particulates

Fugitive dust suppression and airborne particulate monitoring shall be performed during any remedial, redevelopment or post-remediation activities involving the disturbance or handling of site soil/fill. Fugitive dust suppression techniques will include the following minimum measures:

- Dust suppression will be achieved though the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations, equipment and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.
- Excavated stockpiles from intrusive activities that generate unacceptable dust levels will be seeded, covered with synthetic materials (e.g., tarps, membranes, etc.), or watered to reduce dust generation to acceptable levels;
- Stockpiles of soil/fill from intrusive activities that are potentially contaminated (i.e. are visually stained, discolored or produce elevated PID readings) and awaiting analytical results should be covered with tarps or polyethylene membranes at the end of each day's work activities; and
- All fill materials leaving the site will be hauled in properly covered containers or trucks.

Additional dust suppression efforts may be required as discussed below.

2.2.1 Particulate Monitoring

Particulate concentrations should be monitored by temporary particulate monitoring stations periodically (i.e., not less than two times per day) at the upwind and downwind perimeters of the work zone during all work activities. 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 (ug/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 ug/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 ug/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided

that dust suppression measures, such as those described in Section 2.2.3, are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

2.2.2 Visual Assessment

In conjunction with the real-time monitoring program, the remedial contractor, site developer, property owner(s) or their agents will be responsible for visually assessing fugitive dust migration from the project site. If airborne dust is observed leaving undeveloped portions of the project site (i.e., migrating onto off-site properties or redeveloped areas of the project site), the work will be stopped and supplemental dust suppression techniques will be employed.

2.2.3 Supplemental Dust Suppression

Supplemental dust suppression techniques may include but are not necessarily limited to the following measures:

- Reducing the excavation size, number of excavations or volume of material handled;
- Restricting vehicle speeds;
- Applying water on buckets during excavation and dumping;
- Wetting haul roads;
- Restricting work during extreme wind conditions; and
- Using a street sweeper on paved haul roads, where feasible.

Work can resume using supplemental dust suppression techniques provided that the measures are successful in reducing the downwind particulate concentration to below 150 ug/m^3 above background, and in preventing visible dust migration off-site.

3.0 MONITORING EQUIPMENT

3.1 Organic Vapor Monitoring Equipment

Organic vapor monitoring will be performed using a photoionization detector (PID). The device will be calibrated on a daily basis or as necessary. Minimum equipment specifications are:

Minimum Operating Range:	0.5 ppm
Accuracy:	± 10%, or ± 2 ppm
Precision:	1% of calibration to 100 ppm
Response Time:	Less than 3 seconds to 90%
UV Lamp (PID):	10.6 eV

Battery Rating:	8-hour continuous operation
Operating Conditions:	
Temperature:	0-40°C
Humidity:	0-99% relative humidity

An adjustable audible alarm will be provided to indicate exceedance of the action levels prescribed in Section 2.1.

3.2 Particulate Monitoring Equipment

Particulate monitoring will be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM-10) with the following minimum performance standards:

Size Range:	<0.1 to 10 microns
Sensitivity:	1 ug/m^3
Range:	0.001 to 10 mg/m^3
Overall Accuracy:	± 10% as compared to gravimetric analysis of stearic acid or reference dust
Battery Ratings:	8-hour continuous operation
Operating Conditions:	
Temperature:	0-40°C
Humidity:	0-99% relative humidity

The device will be fitted with a microprocessor capable of calculating 15-minute moving average concentrations. An adjustable audible alarm will be provided to indicate exceedance of the action levels prescribed in Section 2.2.1.

4.0 QA/QC REQUIREMENTS

Quality Assurance/Quality Control (QA/QC) requirements for the particulate meter and organic vapor monitoring equipment include instrument calibration, training, and documentation/record keeping.

4.1 Instrument Calibration

Instrument calibration shall be performed in accordance with the manufacturer's instructions at the beginning of each workday. Following calibration and initial (upwind) measurement of background conditions, audio alarms shall be set to activate at the appropriate action levels based on a 15-minute moving average (i.e., short term exposure limit) concentration.

4.2 Training

All persons responsible for calibrating, handling and/or interpreting the meters or meter output data should be experienced with such work. As a minimum, the following training and experience will be required:

- 24-hour OSHA Hazwoper Training per 29 CFR 1910.120(e)(3) and 1910.120.(e)(8);
- Site-specific training, as required by the Site Health and Safety Plan; and
- Prior field experience in the operation of same or similar equipment.

The Site Safety and Health Officer will designate the person(s) responsible for performing air-monitoring work. Construction activities involving disruption or handling of site fill soils will not be performed unless a qualified individual is available on site to perform the community air monitoring specified in this document.

4.3 Documentation and Reporting

Documentation of community air monitoring information will be required to provide written record of the air monitoring results and response actions taken, and to allow for verification that the program was followed in accordance with this Community Air Monitoring Plan. Monitoring information will be recorded on form presented in Attachment B-1 or on similar loose-leaf forms to facilitate photocopying. The following documentation schedule will be followed during typical site conditions (i.e., organic vapor and particulate concentrations below action levels).

Item	**Documentation Schedule**
Instrument Calibration Results	Whenever calibration is performed (minimum once daily).
Background Monitoring Results	At beginning of work day and once every 4 hours thereafter.
Downwind Monitoring Results (15-minute moving average)	Hourly

All documentation records will be maintained in the project file for inspection by the NYSDEC and/or the NYSDOH upon request. The NYSDEC will be provided copies of the monitoring results recorded during intrusive activities upon substantial completion of said activities.

During intrusive activities, NYSDEC and NYSDOH will be contacted if major vapor emissions occur as stipulated under the Major Vapor Emission Response Plan. In addition, the NYSDEC Division of Air Resources will be contacted in writing within five days of exceeding the 150 ug/m^3 respirable dust action level. These notifications will include a description of the control measures implemented to prevent further exceedances.

ATTACHMENT B-1

COMMUNITY AIR MONITORING DOCUMENTATION FORM

TVGA CONSULTANTS

DIRECT READING AIR MONITORING FORM

DATE: _____

PROJECT: _____

PROJECT #: _____

WEATHER CONDITIONS: _____

WIND DIRECT/SPEED: _____

USER: _____

CALIBRATION TIME: _____

CALIBRATED BY: _____

COMMENTS: _____

ACTIVITY	INSTRUMENT	WORKING RANGE	TIME	READING	COMMENTS

APPENDIX C

NYSDEC TAGM 4031 (FUGITIVE DUST SUPPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES)

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

Fugitive Dust Suppression and Particulate Monitoring Program (TAGM - 4031)

Issuing Authority: Michael J. O'Toole, Jr.

Title: Director, Division of Environmental Remediation

Date Issued: Oct 27, 1989

1. Introduction

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

2. Background

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

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

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

3. Guidance

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

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.
2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Such activities shall also include the excavation, grading, or placement of clean fill, and control measures therefore should be considered.
3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM_{10}) with the following minimum performance standards:

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

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

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

   Automatic alarms are suggested.

   Particulate levels will be monitored immediately downwind at the working site and integrated over a period not to exceed 15 minutes. Consequently, instrumentation shall require necessary averaging hardware to accomplish this task; the P-5 Digital Dust Indicator as manufactured by MDA Scientific, Inc. or similar is appropriate.

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

record keeping plan.

5. The action level will be established at 150 ug/m^3 over the integrated period not to exceed 15 minutes. While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m^3, the upwind background level must be measured immediately using the same portable monitor. If the working site particulate measurement is greater than 100 ug/m^3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7). Should the action level of 150 ug/m^3 be exceeded, the Division of Air Resources must be notified in writing within five working days; the notification shall include a description of the control measures implemented to prevent further exceedences.
6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM_{10} at or above the action level. Since this situation has the potential to migrate contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.
7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:
    1. Applying water on haul roads.
    2. Wetting equipment and excavation faces.
    3. Spraying water on buckets during excavation and dumping.
    4. Hauling materials in properly tarped or watertight containers.
    5. Restricting vehicle speeds to 10 mph.
    6. Covering excavated areas and material after excavation activity ceases.
    7. Reducing the excavation size and/or number of excavations.

Experience has shown that utilizing the above-mentioned dust suppression techniques, within reason as not to create excess water which would result in unacceptable wet conditions, the chance of exceeding the 150 ug/m^3 action level at hazardous waste site remediations is remote. Using

atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

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

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

APPENDIX D

HEALTH AND SAFETY PLAN FOR REMEDIAL MEASURERS

REMEDIAL INVESTIGATION/ALTERNATIVES ANALYSIS (RI/AA)
OF THE YOUNGSTOWN COLD STORAGE SITE
(NYSDEC SITE NO. E932122)
701 THIRD STREET EXTENSION (NANCY PRICE DRIVE)
VILLAGE OF YOUNGSTOWN
NIAGARA COUNTY, NEW YORK

HEALTH AND SAFETY PLAN

Prepared for:

Village of Youngstown
Village Center
240 Lockport Street, P.O. Box 168
Youngstown, New York 14174

Prepared by:

TVGA CONSULTANTS

One Thousand Maple Road
Elma, NY 14059-0264

(716) 655-8842
(fax) (716) 655-0937

2004.0279.03

JANUARY 2006

DISCLAIMER

This Health and Safety Plan has been written for the exclusive use of TVGA and its employees. Properly trained and experienced TVGA subcontractors may also use it as a guideline document. However, TVGA does not guarantee the health and safety of any person entering the site.

Due to the potentially hazardous nature of the site and the activity occurring thereon, it is not possible to discover, evaluate, and provide protection for all possible hazards that may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury at the site. The health and safety guidelines in this plan were prepared specifically for this site and should not be used on any other site without prior research by trained health and safety specialists.

TVGA claims no responsibility for the use of this Plan by others. The Plan is written for the specific site conditions, purpose, dates, and personnel specified and must be amended if these conditions change.

RI/AA OF THE YOUNGSTOWN COLD STORAGE SITE
(NYSDEC SITE NO. E932122)
701 THIRD STREET EXTENSION (NANCY PRICE DRIVE)
VILLAGE OF YOUNGSTOWN
NIAGARA COUNTY, NEW YORK

HEALTH AND SAFETY PLAN

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1.0 INTRODUCTION

TVGA Consultants, on behalf of the Village of Youngstown, will provide engineering and environmental services associated with the Remedial Investigation/Alternatives Analysis (RI/AA) program to be implemented at the Youngstown Cold Storage Site located at 701 Third Street Extension (Nancy Price Drive), Niagara County, Village of Youngstown, New York. The sources of environmental concern at this site include the potential presence surface and subsurface soil and/or groundwater contamination in connection with the former use of the project site for the storage, washing and packing of locally grown apples for over 80 years. Additionally, the dilapidated condition of the on-site buildings present a physical hazard.

This Health and Safety Plan (HASP) has been developed to govern all field investigation work at the former Flintkote Plant Site. This plan is intended to ensure that the procedures used during planned field investigation activities meet reasonable professional standards to protect human health and safety of workers and the surrounding community. This Plan incorporates, by reference, the applicable requirements of the Occupational Safety and Health Administration in 29 CFR Parts 1910 and 1926.

The requirements and guidelines in the HASP are based on a review of available site specific information and an evaluation of potential hazards. These requirements can and will be modified by Senior Level Management (SLM), the Project Team Leader (PTL), the Site Safety Officer (SSO) or the Work Party Personnel (WPP), if necessary.

All field personnel working on this project must familiarize themselves with this HASP and abide by its requirements. Since every potential health and safety hazard encountered at a site cannot be anticipated, it is imperative that personnel are equipped and trained to respond promptly to a variety of possible hazards. Adherence to this HASP will minimize the possibility that personnel at the site and the public will be injured or exposed to significant health hazards. Information on potential health, safety and environmental hazards is discussed in conjunction with appropriate protective measures including assignment of responsibility, personal protective equipment (PPE) requirements, work practices, and emergency response procedures.

In general, contractors and subcontractors are responsible for complying with the HASP, as well as all Federal, State and local regulations pertaining to their work. With TVGA's permission, a contractor should modify this HASP to address activities of their employees within the scope-of-work this Plan addresses. These changes to the HASP by the contractor must be approved by TVGA. TVGA personnel can and must stop work by a TVGA contractor who is not following the health and safety procedures required by this HASP. However, the contractor/subcontractor expressly retains all responsibility for the safety of their personnel while working on this site.

This HASP is specifically intended for those personnel who will be conducting activities within the defined scope of work in specified areas of the site. Specific tasks covered by this HASP may include, but are not limited to:

- Performing inspections to characterize environmental hazards;

- Conducting non-intrusive inspections and instrument surveys;
- Collecting samples from drains, sewers, and sumps;
- Excavating earthen materials, fill, debris, etc.;
- Collecting soil/fill samples from soil probes and test borings;
- Surface water/ sediment sampling;
- Installation and sampling of groundwater monitoring wells;
- Sampling of potentially contaminated building surfaces; and
- Decontaminating personnel and equipment.

2.0 KEY PERSONNEL

2.1 Off-Site Personnel

Title: Principal
Description: Responsible for defining project objectives, allocating resources, determining the chain of command, and evaluating program outcome.
Contact: Robert R. Napieralski, C.P.G., TVGA, (716) 655-8842

Title: Project Manager
Description: Reports to upper level management, has authority to direct response operations, assumes total control over site activities.
Contact: Daniel E. Riker, P.G.,TVGA, (716) 655-8842

2.2 On-Site Personnel

Title: Site Safety Officer
Description: Advises the field team on all aspects of health and safety issues, recommends stopping work if any operation threatens worker or public health and safety.
Contact: James C. Manzella, TVGA (716) 655-8842

Title: Project Team Leader
Description: Responsible for field team operations.
Contact: James C. Manzella, TVGA (716) 655-8842

Title: Work Party Personnel
Description: Performs field operations
Contact: TVGA personnel, Village of Youngstown personnel, and subcontractor personnel.

2.3 Personnel Responsibilities

The primary safety personnel include the Project Team Leader (PTL), the Site Safety Officer (SSO) and the Work Party Personnel (WPP). Additionally, Senior Level Management (SLM) has the responsibility to ensure all project personnel are aware of

the requirements of the HASP. The SLM may also recommend policy changes on safety matters including work practices, training and response actions and will provide the necessary resources to conduct the project safely. The PTL is responsible for the implementation of the HASP. The PTL is also responsible for conducting the initial on-site training.

The SSO is responsible for the day-to-day implementation of the HASP. The SSO will assist the PTL in providing initial training for all project personnel and for providing additional training in the form of safety meeting to discuss changed site conditions or upgrade training on an as needed basis. The SSO is also responsible for daily calibration of real-time air monitoring equipment and will ensure that all personnel assigned to operate the instrumentation are properly trained in its use and maintenance.

The SSO has the following specific responsibilities:

- Assuring that a complete copy of this HASP is at the site prior the start of field activities and that all workers are familiar with the document;
- Conducting training and briefing sessions if appropriate, prior to the start of field activities at the site and repeat sessions as necessary;
- Ensuring the availability, use, and proper maintenance of specified personal protective, decontamination, and other health and safety equipment;
- Maintaining a high level of safety awareness among team members and communicating pertinent matters to them promptly;
- Assuring that all field activities are performed in a manner consistent with Company policy and the HASP;
- Monitoring for dangerous conditions during field activities;
- Assuring proper decontamination of personnel and equipment;
- Preparing all health and safety documentation;
- Coordinating with emergency response personnel and medical support facilities, and representatives of the NYSDEC;
- Initiating immediate corrective actions in the event of an emergency or unsafe condition;
- Notifying the SLM and PTL promptly of an emergency, unsafe condition, problem encountered, or significant exceptions to the requirements in this HASP;
- Recommending improved health and safety measures to the SLM, or the PTL.

The SSO has the authority to:

- Suspend field activities or otherwise limit exposures if the health and safety of any persons appears to be endangered;
- Direct Company or contractor personnel to alter work practices that are deemed not properly protective of human health of the environment; and
- Suspend an individual from field activities for significant infraction of the requirements in this HASP.

The WPP is responsible for providing air monitoring during intrusive activities at the site. The WPP is directly responsible to the SSO and will assist the SSO in the day-to-day implementation of the HASP.

Site personnel are responsible for following the requirements of the HASP. They should become thoroughly familiar with the requirements of exposures that may adversely affect the health and safety of on-site personnel, off-site population, or the environment.

3.0 SITE ENTRY

3.1 Objectives

The objectives of the site entry will initially focus on determining the nature and extent of contamination associated with environmental media and building surfaces and components. The investigation of subsurface conditions will be completed through the completion of test pits, soil probe advancement; hollow-stem auger drilling and spilt-spoon sampling; and groundwater monitoring well installation, development, and sampling. The investigation of surface conditions will be completed by collecting surface soil samples from suspect areas, and field screening of soils and fill with a photoionization detector (PID). Standing water samples will be collected from the two elevator shafts within the warehouse building. The investigation of building surfaces and components will include the collection of wipe samples from the compressor room of the warehouse building. Additionally, an asbestos-containing material (ACM) survey will be completed to evaluate the potential presence of ACMs on and within the project site structures.

A boundary survey of the project site will also be completed to enable the preparation of an accurate base map that will include locations of test pits, soil probes, test borings, monitoring wells, and other sample locations.

3.2 Safety Meetings

To ensure that the HASP is being followed, the Project Team Leader (PTL) shall conduct a safety meeting prior to initiating any site activity.

3.3 Safety Training

The SSO will confirm that every person assigned to a task has had adequate training for that task and that the training is up-to-date by checking with the TVGA Human Resources Office. TVGA and subcontractor personnel working on the site shall have a minimum of at least 24 hours of classroom-style health and safety training and 3 days of on-site training, as required by OSHA 29 CFR 1910.120. All training will have been conducted and certified in accordance with OSHA regulations outlined in 29 CFR 1910.120.

Personnel will be conducting an asbestos pre-demolition survey will be Environmental Protection Agency (EPA) and New York State Department of Labor (NYSDOL) certified asbestos inspectors. Asbestos technicians in New York State will be trained to comply with applicable provisions of 40 CFR Part 61 (NESHAPS) and Occupational Safety and Health Administration (OSHA) 29 CFR 1910.

3.4 Medical Surveillance

All TVGA and subcontractor personnel working on this investigatory project will have had a medical surveillance physical consistent with OSHA regulations in 29 CFR 1910.120, and performed by a qualified occupational health physician. The SSO shall confirm prior to initiation of work on this site that every person assigned to a task has had an annual physical, has passed the medical examination, and has been determined medically fit by the occupational health physician for this type of work.

3.5 Site Mapping

A map of the site showing all areas to be accessed during the environmental investigation is depicted on Figure 3 of the Work Plan. A map showing the route from the site to the nearest hospital has been included as Figure 1.

3.6 Meteorological Data

Fieldwork is expected to be completed between December 2005 and February 2006. Average temperatures for these months are expected to reach highs of approximately 35°F and lows of 15°F. Precipitation for these months is likely to be in the form of snow. Prior to each day's activities, the daily forecast should be monitored for indications of adverse work conditions.

4.0 HAZARD EVALUATION

4.1 Physical Hazards

Physical hazards such as the following may be encountered on site:

- Slippery surfaces - trip/fall
- Electrical - shock, fire
- Mechanical/Large Equipment - cuts, amputation, trauma
- Uneven Terrain/Excavations/Soil piles/Sink Holes - trip/fall
- Low/unstable overhead structures – cuts, trauma
- Floor holes – falls
- Little natural light – inability to see

Due to the potentially hazardous conditions resulting from an overall deterioration of the on-site structures, site personnel will abide by the buddy system. The buddy system is a method of maintaining safety by having a person in close proximity (i.e. ear shot) at all times while on-site. The buddy system provides an extra set of eyes and ears to foresee a hazard and to assist in the event of an emergency. Personnel activities in the site buildings will be limited to the sampling activities described in the Work Plan. There will be no loitering or lingering in the site buildings for any other reason.

The planned test pitting, soil probing and drilling investigations also presents hazards specific to working with heavy equipment. Personnel working on or around the drill rig or backhoe should be aware of the precautions listed below. The practices are meant to be guidelines, and are not all-inclusive of the safety measures necessary while performing intrusive activities.

Utility Clearance

Personnel involved in intrusive work shall determine the minimum distance from marked utilities which work can be conducted with the assistance of the locator line service.

- Elevated superstructures (e.g., drill rig, backhoe, scaffolding, ladders, cranes) shall remain a distance of 10 feet away from utility lines and 20 feet away from power lines.

- During all intrusive activities (e.g., drilling, excavating, probing), the locator line service should be contacted to mark underground lines before any work is started.

Drilling Safety

TVGA personnel working in the vicinity of drilling or direct-push soil probing rigs shall adhere to the following practices:

- The drilling site should be inspected before the start of work to identify unsafe conditions or operations that the subcontractor may not be aware of.

- TVGA personnel monitoring the drilling activity and inspecting the environmental samples will attend the contractor's daily safety briefing.

- Before the mast is raised, check for overhead obstructions.

- During freezing weather, do not touch any metal parts of the drill rig with exposed flesh. Freezing of moist skin to metal can occur almost instantaneously.

- Remind drill rig personnel of their responsibility to safely fill or cover any open borehole or excavation left unattended for any period of time.

- Personnel shall wear steel-toed shoes, safety glasses, hearing protection and hard hats during drilling operations.

- The area shall be roped off, marked or posted, to keep the area clear of pedestrian traffic or spectators.

- All personnel should be instructed in the use of the emergency kill switch on the drill rig.

Heavy Equipment Operations

Working around heavy equipment can be dangerous because of the size and power of the equipment, the limited field of vision of the operator and the noise levels that can be produced by the equipment. Heavy equipment to be utilized at the site may include drill rigs, trucks and backhoes.

To ensure the safety of TVGA personnel in the work area, the following safety procedures regarding heavy equipment must be reviewed prior to and followed during work activities:

- Personnel should never approach a piece of heavy equipment without the operators' acknowledgment and stoppage of work or yielding to the employee.

- Never walk under the load of a bucket or stand beside an opening truck bed.

- Maintain visual contact with the operator when in close proximity to the heavy equipment.

- Wear hearing protection while on or around heavy equipment, when normal conversation cannot be heard above work operations.

Steel-toed shoes, safety glasses, and a hard hat shall be worn for all work conducted near heavy equipment.

4.2 Chemical Hazards

Known and suspected sources of contamination include past spills and releases of chemicals and wastes used, generated and/or stored on-site; past discharges and spills of untreated process wastewater; leaking underground piping; past discharges and spills of fuel oil; PCB containing electrical equipment; and asbestos-containing building materials. Potential chemical hazards, which could be encountered during the site investigation, include, but are not limited to:

- Waste Petroleum
- Fuel Oil
- PCBs

- Pesticides
- Herbicides
- Metals
- Friable and Non-friable Asbestos
- Lead-Based Paint

4.3 Exposure Limits

Recommended Exposure Limits (RELs), and OSHA Permissible Exposure Limits (PELs) for several of the above chemical hazards are listed below. A complete list of the compounds detected on-site will be available upon completion of sampling and laboratory analysis. The RELs and PELs for the compounds listed below can be found in the NIOSH Guide to Chemical Hazards.

CHEMICAL	REL [1]	PEL [2]
Naphthalene	10 ppm	10 ppm
Benzene (CA)	0.1 ppm	1 ppm
Ethylbenzene	100 ppm	100 ppm
Toluene	100 ppm	200 ppm
Xylenes	100 ppm	100 ppm
Ammonia	25 ppm	50 ppm
Dieldrin	0.25 mg/m^3	0.25 mg/m^3
Polyaromatic Hydrocarbons (used oil and fuel oil)	0.2 mg/m^3	0.2 mg/m^3
Lead	0.1 mg/m^3	0.05 mg/m^3
Arsenic (CA)	0.002 mg/m^3 (15 minutes)	0.01 mg/m^3
Mercury	0.05 mg/m^3	0.1 mg/m^3
PCB (Aroclor 1254) [3]	0.001 mg/m^3	0.5 mg/m^3
Asbestos	0.1 fiber/cm^2	0.1 fiber/cm^2

1 REL = NIOSH recommended exposure limits, up to 10 hour work day exposure limit, 40 hours/week. REL in mg/m^3 = (REL in ppm x molecular weight) / 24.45.

2 PEL = OSHA permissible exposure limit, 8 hour exposure limit, 40 hours/week, OSHA 29 CFR 1910.1000. REL in mg/m^3 = (REL in ppm x molecular weight) / 24.45.

3 The NIOSH REL for Aroclor 1254 also applies to other PCBs, including Aroclor 1260, which was identified on-site.

OSHA = Occupational Safety and Health Agency

NIOSH = National Institute for Occupational Safety and Health

N.A. = no applicable value available

CA = NIOSH recommends the substance be treated as a potential human carcinogen

4.4 Dispersion Pathways

Potential exposure mechanisms that can transport particulate and organic compounds from the areas of investigation to other areas of the site as well as beyond the boundaries of the site are:

- Dust and asbestos fibers projected by wind
- Volatilization and wind transport of organic compounds
- Surface water runoff from contaminated areas
- Storm water flowing within the storm sewer system
- Groundwater flowing beneath the site
- Surface water flowing in Eighteenmile Creek

4.5 Potential IDLH and Other Dangerous Conditions

The Immediately Dangerous to Life and Health (IDLH) levels for chemicals potentially on-site and their IDLH level are listed below.

CHEMICAL	IDLH Level
Naphthalene	250 ppm
Benzene (CA)	500 ppm
Ethylbenzene	800 ppm
Toluene	500 ppm
Xylenes	900 ppm
Ammonia	300 ppm
Dieldrin	50 mg/m^3 (Ca)
Polyaromatic Hydrocarbons (used oil and fuel oil)	N.A.
Lead	100 mg/m^3
Arsenic (Ca)	5 mg/m^3
Mercury	10 mg/m^3
PCB (Aroclor 1254)[3]	5 mg/m^3
Asbestos	CA

N.A. = No IDLH assigned
CA = NIOSH recommends the substance be treated as a potential human carcinogen
N.D. = indicated IDLH has not yet been determined

The IDLH level is defined only for the purpose of respirator selection. The IDLH level represents a maximum concentration from which, in the event of respirator failure, one

could escape within 30 minutes without experiencing any escape-impairing or irreversible health effects.

Visible indicators of potential IDLH conditions as well as other dangerous conditions are listed below.

- Confined spaces
- Unstable overhead structures
- Unusually colored solid or liquid wastes
- Containers or accumulation structures (e.g., drums, pits, sumps, etc.), the contents of which are unknown
- Potentially explosive or flammable situations indicated by bulging drums, gas generation, effervescence, or instrument readings
- Extremely hazardous materials such as cyanide, phosgene
- Visible vapor clouds
- Biological indicators such as dead animals, stressed vegetation

5.0 MONITORING AND ACTION LEVELS

5.1 Air Monitoring

The following environmental monitoring instruments and methods shall be used on site at the specified intervals.

Photoionization Detector (PID)

A PID shall be used continuously at the downwind perimeter of the work area, during sampling of soils and sediments and the installation of the test borings, and advancement of soil probes to monitor for volatile organic compounds. The PID shall be calibrated daily following manufacturers' recommendations (see Section 12.0 of the Field Sampling Plan). Readings and calibration data shall be recorded in daily logs by the SSO.

Temperature

Ambient temperature should be monitored throughout the work day for potential heat or cold stress conditions.

Dust

A personal dust monitor (MIE pDR-1000 or equal) will be used to monitor the upwind and downwind perimeters of the exclusion zone (work zone) for airborne particulate levels during excavation and subsurface drilling activities. The particulate meter shall be calibrated daily following the manufacturers' recommendations. Readings and calibration data shall be recorded in daily logs by the SSO.

5.2 Action Levels

Should action levels be encountered, work operations shall cease until further evaluation is performed and safe levels are prevalent. If through engineering controls and monitoring, safe levels (below action levels) cannot be achieved, an upgrade in personal protection equipment shall be mandated by the SSO, or operations shall cease in that portion of the site. The action levels for this project are as follows:

- Volatile organic compounds (PID monitor): consistent readings of greater than 5 ppm above background levels in the breathing zone.
- Temperature: ambient air temperature below 36°F for cold stress, and above 90°F for heat stress
- Dust: refer to the "New York State Department of Health Generic Community Air Monitoring Plan" (Attachment D).

Vapor Emission Response Plan

If the organic vapor level decreases below 5 ppm above background, work activities can resume. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume (while using the appropriate PPE) provided the organic vapor level 200 feet downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the SSO will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20-Foot Zone).

If efforts to abate the emission source are unsuccessful and if levels greater than 5 ppm above background persist for more than 30 minutes in the 20-Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect. The Major

Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels in the 20-Foot Zone are greater than 10 ppm above background.

Major Vapor Emission Response Plan
Upon activation, the following activities will be undertaken:

- All Emergency Response Contacts as listed in the HASP be contacted.
- The local police authorities will be immediately contacted by the SSO and advised of the situation.
- Frequent air monitoring will be conducted at 30 minute intervals within the 20-Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Site Safety Officer.

6.0 SITE CONTROL MEASURES

Maintaining specific work zones both on-site and off-site, along with other precautionary measures outlined throughout this HASP will help control site access.

6.1 On-Site Control Measures

Temporary fencing or caution tape around the perimeter of the work areas will provide a suitable measure to control access to the work areas and to prevent unauthorized access to on-site work zones. During asbestos sampling by personal from asbestos survey subcontractor, no other persons are to be present in the vicinity of the sampling.

The SSO will establish and clearly mark the following areas with consultation of the PTL:

Exclusion Zone (EZ)
This will be the actual work area where potential contamination may exist. An outer boundary will be established and clearly marked. The area of the EZ will be established based on site work conditions, exposure monitoring, etc. In general, the EZ will incorporate the area being probed or drilled and a 50-foot radius around the area.

- Access to the EZ will be limited to employees and visitors who have a minimum 24-Hour Hazardous Site Worker training, protective equipment and responsibilities for work in the EZ. The entry of unauthorized personnel into the EZ will be prohibited.

- The Exclusion Zone will be in areas of intrusive activities such as drilling, installation of monitoring wells, excavating and sampling. The limits of the zone will change, as necessary, depending on the SSO's judgment regarding work conditions, air sampling, etc.

- Drilling or excavation activities inside the EZ will commence at Level D. Air

monitoring will be performed while drilling or excavating proceeds using a photoionization detector (PID).

Contamination Reduction Zone (CRZ)

An area between the actual work site (EZ) and Support Zone (SZ) will be established to facilitate employee and equipment decontamination, protective equipment storage and supply, and employee rest areas.

- The location of the CRZ will be established in an area offering minimal contamination and will be subject to change based on the SSO's judgments considering work conditions, air monitoring, etc.

- The CRZ will contain a boot wash with brushes and soap, a source of wash water for washing equipment and hands, and plastic garbage bags to contain disposable protective equipment.

Support Zone (SZ)

An area free from contamination will be identified and clearly marked where administrative or other support functions (not requiring entrance to the EZ or CRZ) can be performed. The actual siting of the SZ will be established by the PTL and SSO by considering distance from the EZ, visibility, accessibility, air monitoring data, etc.

All personnel working in the study area will enter their names in a site log, which will be maintained in the SZ. Personnel will only enter an EZ after proceeding through a designated entry / checkpoint at the CRZ. Before engaging in any site work, all personnel involved in such work will be briefed on the following:

- Identity of PTL/SSO;
- Boundaries, exit and entry point locations of the Exclusion Zone;
- Decontamination procedures when required;
- Chemical, radiological and physical hazards suspected of being in the EZ and their signs and symptoms of exposure;
- Location of first aid equipment and qualified personnel;
- Procedures to be used in contacting emergency personnel, including potential site evacuation procedures in case of emergencies;
- Location of emergency equipment;
- Location of emergency meeting point;
- Contractor staff person in charge;
- Activities taking place that day;
- Location of emergency eyewash station;
- Heat or cold stress symptoms. All personnel will be advised to watch for signs of stress in staff working in EZ. Symptoms are defined in Attachment E;
- Personnel protective equipment requirements and limitations.

6.2 Restricted Access Areas

In addition to the on-site control measures described above, areas in the warehouse building in which the floor is sagging and/or the overlying floor has collapsed will be restricted. The majority of these areas were observed on the eastern halves of the second and third floors of the warehouse building.

6.3 Off-Site Control Measures

Although the majority of the site investigation activities will be conducted within the interior area of the project site, background surface soil samples will be collected from separate off-site locations. Residential properties and public roads may be adjacent to a few of the proposed sample locations. Accordingly, the following control measures will be instituted to protect the public from physical and chemical hazards associated with this off-site sampling:

- A localized contaminant reduction zone (CRZ) shall be established at the periphery of the EZ toward the site interior, if possible, to regulate flow of personnel and equipment into and out of the zone;
- Only properly trained and certified project personnel will be permitted to enter the CRZ and EZ; and
- The SSO or other member of the WPP will be present throughout the duration of sampling activities to monitor the work zone and prevent unauthorized parties from entry.

7.0 HAZARD COMMUNICATION

In compliance with 29 CFR 1910.1200, any hazardous materials brought on site by any personnel (TVGA or contractors) shall be accompanied with the material's MSDS. The SSO shall be responsible for maintaining the MSDS' on site, reviewing them for hazards that working personnel may be exposed to, and evaluating their use on site with respect to compatibility with other materials including personal protective equipment, and their hazards. Should the SSO deem the material too hazardous for use on site, the party responsible for bringing the material on site shall remove it from the site. No other hazardous materials are expected to be used during the environmental investigation at the site.

8.0 CONFINED SPACE ENTRY

No confined space entry by TVGA personnel is anticipated during the completion of this project. Should a potential confined space hazard exist, all proper confined space entry procedures, techniques, and equipment shall be consistent with OSHA regulations in 29 CFR 1910.146.

9.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Based on evaluation of the potential hazards for the site, the initial levels of PPE have been designated as modified Level D for all site activities with the exception of asbestos sampling, which is addressed below. This consists of regular tyvek coveralls, hard hat, safety glasses, hearing protection, and chemical resistant gloves. No changes to the specified levels of PPE shall be made without the approval of the SSO and the PTL. If action levels are reached, work shall cease and further evaluations shall be performed by the SSO and advisors.

Modified Level D Protection

- Safety glasses with side shields;
- Chemical resistant gloves;
- Steel-toe and shank boots; and
- Hard hat;
- Tyvek coverall
- Neoprene or butyl rubber outer boots;

For the protection of site personnel, organic gas/vapor emissions will be continuously monitored during drilling operations, and the required level of protection upgraded if action levels warrant. If an upgrade in PPE is warranted, Level C Protection including full face air-purifying respirators with appropriate cartridges will be implemented. All asbestos sampling activities conducted by EPA and NYSDOL Certified Persons will be conducted under Level C Protection.

Level C Protection

Level C Protection, the maximum level likely to be needed at this site, includes the following;

- Full-face air purifying respirators with NIOSH/MSHA - approved high efficiency (HEPA) canisters for acid mists/organic vapors (half-face respirators may be substituted for certain tasks, by approval of the SSO);
- Chemical-resistant (Poly-Tyvek) clothing, one piece, long sleeved;
- Outer and inner gloves. Inner gloves to be tight-fitting latex or vinyl. Outer gloves of neoprene or nitrile;
- Steel-toe and shank boots (chemical resistant);
- Disposable Tyvek "booties";
- Neoprene or butyl rubber outer boots;
- Gloves and boots taped; and
- Hard hat

For all personnel that may be required to wear full-face respirators (all persons working near a borehole, for example, or collecting asbestos samples), only NIOSH/MSHA - approved

respirators will be used. These will contain cartridges approved for removal of organic vapors/acid mists and particulate. All team members will be fit-tested for respirators. Due to possible difficulties in achieving a proper seal between face and mask, persons with facial hair will not be fitted for respirators, nor will they be allowed to work in areas requiring respiratory protection. Unless the SSO directs otherwise, when respirators are used, the cartridges should be replaced after eight hours of use, or at the end of each shift, or when any indication of breakthrough or excess resistance to breathing is detected.

Donning PPE

The following procedures should be followed when donning protective equipment.

- Inspect all equipment to ensure it is in good condition;
- Don protective suit and gather suit around waste;
- Put on outer boots over feet of the suit and tape at boot/suit junction;
- Don inner gloves;
- Don top half of protective suit and seal (as necessary);
- Don respirator protection (if necessary);
- Don outer gloves and tape at glove/suit junction (as necessary); and
- Have assistant check all closures and observe wearer to ensure fit and durability of protective gear.

10.0 DECONTAMINATION

Level C or higher PPE utilized during site operations warrants the institution of decontamination procedures. All asbestos sampling activities will be conducted in Level C protection.

Contaminated material must be either decontaminated or isolated immediately. All materials brought into the Exclusion Zone are presumed contaminated. Alconox and water shall be used as the decontamination solution. Decontamination equipment consisting of large wash tubs, scrub brushes, plastic sheeting, distilled water, plastic garbage bags, trash barrel, and respirator wipes will be used.

Protective clothing, especially reusable boots and gloves, will be decontaminated before leaving the Exclusion Zone by a thorough soap-and-water wash on the decontamination pad. Washing and rinsing solutions will be disposed on site in areas where test probes were excavated unless elevated levels are detected with a PID. If elevated levels are detected, it may be necessary to dispose of decon solutions in a drum or an approved containment tank. Solid waste materials (disposable gloves and garments, tape, plastic drop cloths, etc.) will be containerized for proper disposal. Personnel will be advised that all clothing worn under protective clothing (underwear, shirts, socks, trousers) on-site should be laundered separately from street clothing before redressing. If protective clothing is breached and personal clothing becomes contaminated, the personal clothing will be disposed.

Use of disposable sampling equipment will limit decontamination requirements. The need for widespread vehicle decontamination will be limited by keeping to a minimum the number of vehicles entering the Exclusion Zone. Vehicles leaving the Exclusion Zone must be decontaminated by high pressure and temperature water

Personal Decontamination

The following steps must be taken to decontaminate personnel leaving a Level B or C work area.

- Place equipment and sample containers that must be decontaminated on a plastic drop cloth;
- Place disposable supplies and equipment in a labeled drum;
- Scrub non-disposable gloves and outer boots (if used) with a brush in a detergent water, then rinse in clean water;
- Remove outer gloves and boot covers;
- Remove protective garments, safety boots and hard hat;
- Wash inner gloves;
- Remove and wash respiratory protection (if worn);
- Remove inner clothing (as necessary for Draft decontamination at end of shift);
- Thoroughly wash face, hands and body; and
- Redress.

Equipment Decontamination

Personnel must take the following steps to decontaminate equipment and sample containers leaving Level A, B, or C work areas:

- Don protective equipment at Modified Level D;
- Wash reusable equipment in detergent solution and/or an appropriate solvent, or steam clean;
- Dry sample containers, etc., with paper towels (if necessary) and place on a clean drop cloth;
- Remove and discard used respirator cartridges. Wash respirators in fresh detergent water, rinse in clean water, and disinfectant. Store in a closed plastic bag, away from sources of contamination; and
- Launder clothing before reuse (or place in appropriate labeled impervious containers for transport to laundry).

Organic vapor/HEPA cartridges are the appropriate canisters for use with the involved substances. All respirators used shall be NIOSH and/or MSHA approved and their use shall be consistent with OSHA regulations in 29 CFR 1910.134. All on-site personnel wearing a respirator shall have respirator clearance from a qualified occupational health physician. In addition, the respirator wearers on site shall perform qualitative fit tests to ensure proper fit of the face seal of

the respirator. Filter cartridges used shall be of the same manufacturer as the respirator and shall be changed on a daily basis at a minimum and/or if breathing becomes difficult.

11.0 EMERGENCY PROCEDURES

Prior to entering the site, all personal will complete the attached emergency data sheet. On-site personnel will abide by the following emergency procedures.

- The SSO shall be notified of any on-site emergencies and be responsible for ensuring that the appropriate measures are followed.
- Non-emergencies will be treated on site, documented and the injured party will be directed to seek further medical attention.
- All occupational injuries and illnesses will be reported, recorded, and investigated.

11.1 Communication

The SSO will have a cellular-type telephone on-site at all times for direct outside communications with emergency response organizations. The SSO will also maintain communication with each WPP performing work inside the building through the use of two-way radios. All personnel involved in inspection or sampling activities within the building will be equipped with two-way radios and shall comply with buddy system requirements.

11.2 Personnel Injury

Upon notification of personnel injury the SSO will assess the nature of the injury. The appropriate first aid shall be initiated and, if necessary, contact shall be made for an ambulance and with the designated medical facility. If the injury increases the risk to others, activities on site will stop until the added risk is removed or minimized.

11.3 Fire/Explosion

Upon notification of fire or explosion, the designated emergency signal shall be sounded and all site personnel shall assemble at a safe distance upwind of the involved area. The SSO shall alert the appropriate fire department through the 911 emergency reporting system.

11.4 PPE Failure

If any site worker experiences a failure or alteration of PPE that affects the protection factor, that person and his or her buddy shall immediately exit the work area. Reentry and resuming work activities shall not be permitted until the equipment has been repaired or replaced.

11.5 Other Equipment Failure

If any equipment on site fails to operate properly, the Field Team Leader and the SSO shall be notified and will determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the remediation tasks, all personnel shall leave the work zone until the situation is evaluated and appropriate actions taken.

11.6 Spill Containment

Should a release of a chemical material occur on site, the SSO shall contain the spill to the extent immediately possible by the use of absorbent booms, pigs, pads, etc. The SSO shall contact appropriate spill response public departments (local or state) and a hazardous materials response contractor for further containment (refer to Section 12.0).

12.0 EMERGENCY MEDICAL CARE

12.1 Hospital

Name: Mount St Mary's Hospital
Address: 5300 Military Rd, Lewiston
Emergency Room #: (716) 297-4800
Directions from site: Head North on 3rd Street and proceed miles and turn right on to Lockport Street. Continue east on Lockport Street until the Robert Moses State Parkway interchange and enter the Parkway heading southbound. Continue heading southbound on the Parkway for approximately 5.5 miles and take the RT-104 W exit toward I-190 W / Buffalo. Turn slight right onto Lewiston Road / NY-104 and turn left onto NY-265 / Military Road, the hospital will be on the right. Estimated drive time is 12 minutes.

12.2 Emergency Notification Numbers

Fire Department: 911
Police Department: 911
Department of Emergency Services: 911

Niagara County Health Department, Environmental Division:
5467 Upper Mountain Rd., Suite 100, Lockport, NY14094
Environmental Health
439-7453

Niagara County Emergency Services:
5526 Niagara St. Ext., Box 496, Lockport, NY 14095-0496
438-3471
911 (24-Hour Emergency Number)

NYSDEC Spill Response Unit: (716) 851-7220
NYSDEC Spill Hotline: 800-457-7362
NYSDOH Division of Environmental Health Assessment: (716) 847-4502

13.0 STANDARD OPERATING PROCEDURES

- Restricted areas are not to be accessed
- Avoid unrestricted areas that seem questionable or unsafe
- Minimize contact with hazardous substances.
- Use remote sampling, handling, and/or container-opening techniques whenever possible.
- Protect monitoring and sampling instruments by bagging, if necessary.
- Wear disposable outer garments and use disposable equipment where appropriate.
- All PPE and skin surfaces should be checked for cuts and/or punctures.
- Do not eat, smoke, or drink within the exclusion or contamination reduction zones.
- Due to the potential for the absorption, inhalation, or ingestion of toxic substances, those personnel required to take prescription drugs should not enter this site until their medication program is reviewed and approved for site access by a qualified physician.
- All personnel must be familiar with Client's operating safety procedures.
- The buddy system must always be used and enforced.
- No workers with beards or heavy sideburns are allowed to wear respirators.
- Use of contact lenses is prohibited on site.
- All heavy equipment involved should be equipped with available back-up signals.
- Eating, drinking, chewing gum or tobacco, smoking, or any similar practice is prohibited
- Hands and face must be thoroughly washed upon leaving the Exclusion Zone
- Whenever decontamination procedures for outer garments are in effect, it is recommended that the entire body should be thoroughly washed, as soon as possible, after the protective garment is removed. Thorough showers are required of all personnel at the completion of the workday.
- No excessive facial hair, which interferes with a satisfactory fit of the mask-to-face seal, is allowed for personnel required to wear respiratory protective equipment.
- Medicine and alcohol can exaggerate the effects from exposure to toxic chemicals.
- Fluids will be provided to staff to replace perspiration and will be sealed in containers. All fluids for ingestion will be kept in the Support Zone.
- Due to the effects of protective outer wear decreasing body ventilation, there exists an increase in the potential for heat casualties.
- All field personnel should check for any personal habit, which may allow contaminated soil or water onto or into the body. Jewelry, including watches, shall not be worn within the Exclusion Zone.
- All first aid treatments will be reported to the SSO, who will record each incident.

14.0 COMMUNITY HEALTH AND SAFETY PLAN

14.1 Potential Impacts

Potential hazards to the general public and surrounding community posed by this site investigation plan relate primarily to fugitive dust (particulate) emissions, asbestos fiber release, organic contaminants and physical hazards associated with the operation of heavy equipment, open excavations and deteriorating buildings. Potential exposure mechanisms that can transport particulates, both contaminated and non-contaminated, asbestos fibers and volatile organic compounds beyond the site boundary include:

- Dust projected by wind erosion;
- Asbestos projected by wind;
- Contaminated dust projected by wind erosion; and
- Volatile organic compounds transmitted by wind currents.

The site is located in an area that consists mainly of residential and public space properties. Residential properties are primarily located east and north of the site, and are of a sufficient separation distance that it is unlikely that they will be adversely impacted by the site investigation activities.

Limiting potential exposure mechanisms that can transport contaminants beyond the site boundary will be completed by implementation of an air monitoring plan, maintaining site control, the use of engineering controls and following emergency procedures.

14.2 Monitoring Plan

The drilling, probing and excavation activities are not expected to produce measurable fugitive dust. The hollow stem auger drilling will produce limited auger spoils, which will likely be damp, therefore limiting the amount of dust produced. The limited surface area being disturbed during excavation is not likely to produce measurable dust. The air monitoring program will measure VOC and particulate levels at the sampling locations on a continuous basis.

Should action levels be encountered, work operations shall cease until further evaluation is performed and safe levels are prevalent. If through engineering controls and monitoring, safe levels (below action levels) cannot be achieved, an upgrade in personal protection equipment shall be mandated by the SSO, or operations shall cease in that portion of the site. The action levels for this project and the response measures to be implemented to protect the community in the event that these action levels are exceeded are presented in Section 5.2.

14.3 Site Control

During the implementation of the investigation, TVGA will block the access into the site to the extent practicable using posts, cones rope and/or caution tape. Access to the working area will be restricted via the site control measures detailed in Section 6.0.

14.4 Engineering Controls

In the event measurable dust levels are detected during the excavation of test pits, drilling of test borings or soil probes, then standard dust suppression techniques may be utilized, including the following:

- Wetting excavation faces, auger cuttings and equipment during excavation or drilling.
- Restricting vehicle speeds to 10 mph.
- Postponing excavation activities during severe winds.
- Covering excavated areas and material after excavation activity ceases.
- Decreasing the number and size of excavations.

If the dust suppression techniques being utilized do not reduce airborne particulate then investigation activities will be suspended, until a review of the engineering controls can be completed.

In the event visible dust levels are identified during the sampling of building materials for asbestos, then sampling protocol will be amended to limit dust levels. Sampling techniques that minimize the potential for fiber releases will be employed, including the following:

- Collect samples in a manner to cause the least amount of dust.
- Do not make unnecessary cuts while sampling.
- Use sufficient water to wet sampling areas.
- Take only a small amount of material for samples (1 to 2 grams).
- Make sure sample containers are tightly sealed.
- Use sufficient material to encapsulate areas where samples were collected.

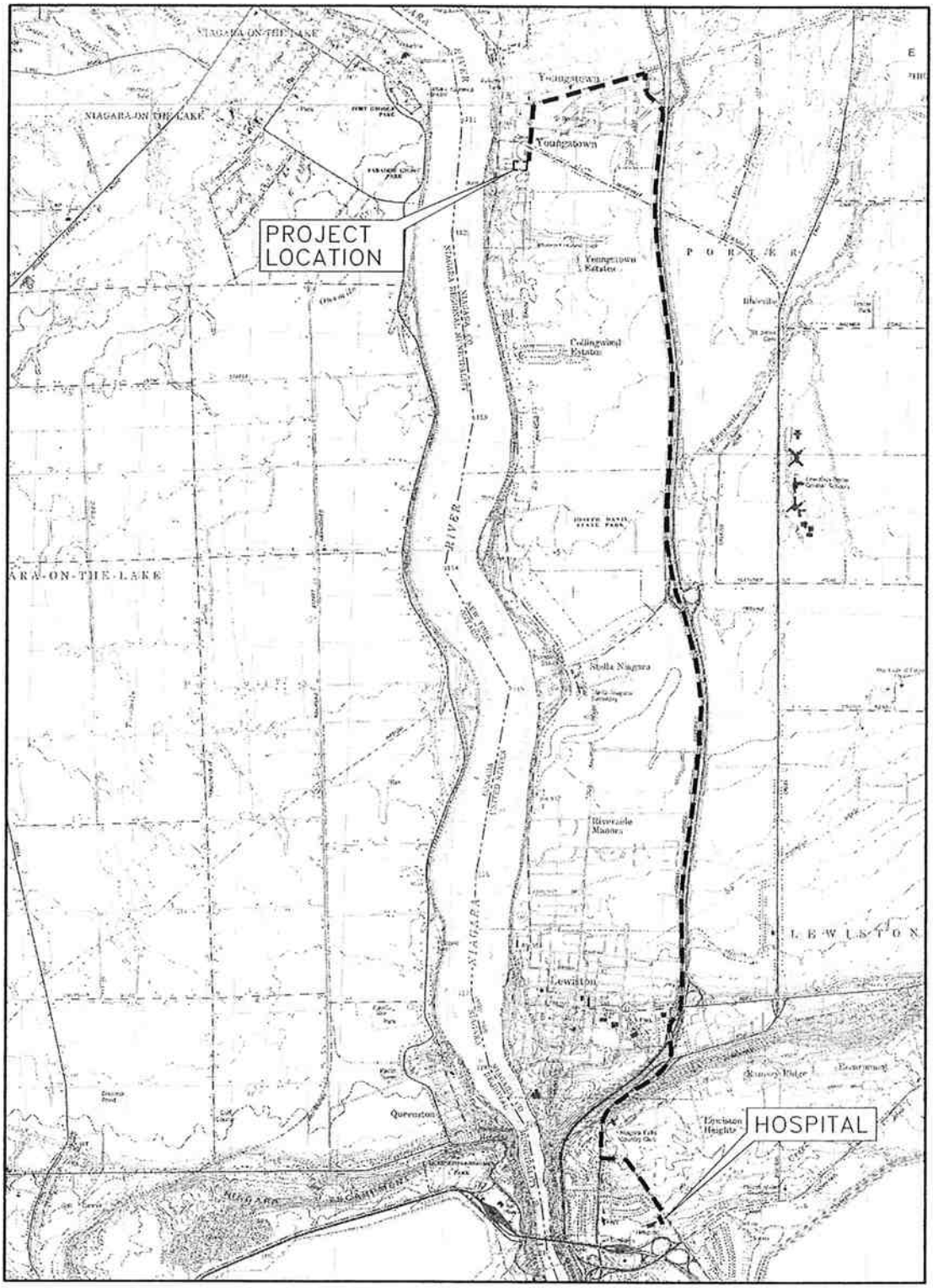
If the sampling techniques do not minimize particulate emissions, then asbestos sampling activities will be suspended until a review of the engineering controls can be completed.

14.5 Emergency Notification

This HASP has been developed to include details on emergency coordination and notification procedures to be implemented during an incident. The procedures for specific emergencies are outlined in Section 11.0 and the contact information for local emergency personnel is included in Section 12.0. In the event community health and safety is in

question, dialing 911 will summon Fire and Police personnel which can take appropriate actions as necessary.

FIGURES



U.S.G.S LEWISTON QUADRANGLE

MAP TO HOSPITAL

TVGA CONSULTANTS
1000 MAPLE ROAD
ELMA, NEW YORK 14059-9530
P. 716.655.8842
F. 716.655.0937
www.tvga.com

REMEDIAL INVESTIGATION/
ALTERNATIVES ANALYSIS PROGRAM
YOUNGSTOWN COLD STORAGE
VILLAGE OF YOUNGSTOWN, NEW YORK
NIAGARA COUNTY

PROJECT NO. 2004.0279.03	SCALE: 1" = 5000'	DATE: 10/26/05	FIGURE NO. 1

N:\2004.0279.03-Youngstown Cold Storage\CAD\105.dwg 10/26/2005 9:57:29 AM EDT

ATTACHMENT A

CERTIFICATION

TVGA
CONSULTANTS

RI/AA OF YOUNGSTOWN COLD STORAGE SITE

CERTIFICATION

PROJECT LOCATION: 701 3rd STREET, YOUNGSTOWN, NY
PROJECT NO. 2004.0297.03

Senior Level Management shall sign this form after she/he has conducted a pre-entry briefing.

Each employee conducting field work shall sign this form after the pre-entry briefing is completed and prior to commencing work on site. A copy of this signed form shall be kept at the site, and the original sent to the PTL, for inclusion into the project file.

Site Personnel Sign-off

☐ I have received a copy of the Site-Specific Health and Safety Plan.

☐ I have read the Plan and will comply with the provisions contained therein.

☐ I have attended a pre-entry briefing outlining the specific health and safety provisions on this site.

Name: _____ Date: _____
_____ Date: _____
_____ Date: _____
_____ Date: _____
_____ Date: _____
_____ Date: _____

TVGA Project Team Leader

☐ A pre-entry briefing has been conducted by myself on _____.

☐ I deferred the pre-entry briefing responsibility to the Site Health and Site Safety Officer (SSO).

Name: _____ Date: _____.

ATTACHMENT B

MEDICAL DATA SHEET

TVGA
CONSULTANTS

MEDICAL DATA SHEET

This brief Medical Data Sheet will be completed by all personnel potentially working on-site and will be kept in the Support Zone during the performance of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to the hospital facilities is required:

Site: _____

Name: _____ Home Telephone _____

Address: _____

_____

Age: _____ Height: _____ Weight: _____

Person to Contact in Case of Emergency:

_____ Phone No. _____

Drug or other Allergies: _____

_____

Particular Sensitivities: _____

Do You Wear Contacts? YES NO

Provide a Checklist of Previous Illnesses or Exposures to Hazardous Chemicals:

_____

_____

_____

What Medications are you presently using? _____

_____

Do you have any Medical Restriction? _____

_____

_____

Name, Address, and Phone Number of Personal Physician: _____

_____

_____

ATTACHMENT C

DIRECT READING AIR MONITORING FORM

TVGA
CONSULTANTS

DIRECT READING AIR MONITORING FORM

DATE: _____
PROJECT: _____
PROJECT #: _____
WEATHER CONDITIONS: _____
WIND DIRECT/SPEED: _____

USER: _____
CALIBRATION: _____
CALIBRATED BY: _____
COMMENTS: _____

ACTIVITY	INSTRUMENT	WORKING RANGE	TIME	READING	COMMENTS

ATTACHMENT D

NYSDOH GENERIC COMMUNITY AIR MONITORING PLAN

New York State Department of Health
Generic Community Air Monitoring Plan

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

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

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

Community Air Monitoring Plan

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

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

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

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically

thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

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

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

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

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

Particulate Monitoring, Response Levels, and Actions

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

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m3 of the upwind level and in preventing visible dust migration.

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

ATTACHMENT E

HEAT AND COLD STRESS SYMPTOMS

Hazard Alert

Heat Stress in Construction

Heat is a serious hazard in construction. Your body builds up heat when you work and sweats to get rid of extra heat. But sometimes your body may not cool off fast enough. This can happen, say, if you are up on a roof pouring hot asphalt or you are lifting heavy loads.

Too much heat can make you tired, hurt your job performance, and increase your chance of injury. You can get skin rash. You can also get:

- **Dehydration.** When your body loses water, you can't cool off fast enough. You feel thirsty and weak.
- **Cramps.** You can get muscle cramps from the heat even after you leave work.
- **Heat exhaustion.** You feel tired, nauseous, headachy, and giddy (dizzy and silly). Your skin is damp and looks muddy or flushed. You may faint.
- **Heat stroke.** You may have hot dry skin and a high temperature, Or you may feel confused. You may have convulsions or become unconscious. **Heat stroke can kill you** unless you get emergency medical help.

The Risk of Heat Stress

Your risk of heat stress depends on many things. These include:

- Your physical condition
- The weather (temperature, humidity)
- How much clothing you have on
- How fast you must move or how much weight you must lift
- If you are near a fan or there is a breeze
- If you are in the sun.

If there is an industrial hygienist on your work site, ask the hygienist about the Wet-Bulb Globe Temperature Index. It is a more precise way to estimate the risk of heat stress.

Protect Yourself

Try to do these things:

- **Drink a lot of cool water all day — before you feel thirsty.** Every 15 minutes, you may need a cup of water (5 to 7 ounces).

(Please turn the page.)

• **Keep taking rest breaks**. Rest in a cool, shady spot. Use fans.
• **Wear light-colored clothing,** made of cotton.
• **Do the heaviest work in the coolest time of the day.**
• **Work in the shade**.
• **For heavy work in hot areas,** take turns with other workers, so some can rest.
• **If you travel to a warm area for a new job,** you need time for your body to get used to the heat. Be extra careful the first 2 weeks on the job.
• **If you work in protective clothing,** you need more rest breaks. You may also need to check your temperature and heart rate. On a Superfund site where the temperature is 70 degrees or more, the U.S. Environmental Protection Agency (EPA) says a health professional should monitor your body weight, temperature, and heart rate.
• **If you think someone has heat stroke, call emergency services (or 911).** Immediately move the victim to the shade. Loosen his/her clothes. Wipe or spray his/her skin with cool water and fan him/her. You can use a piece of cardboard or other material as a fan.

OSHA does not have a special rule for heat. But because heat stress is known as a serious hazard, workers are protected under the **General Duty Clause** of the Occupational Safety and Health Act. The clause says employers must provide "employment free from recognized hazards causing or likely to cause physical harm."

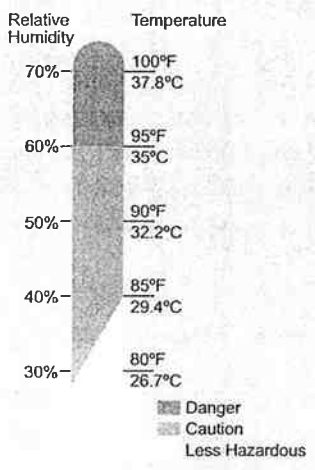
For more information, call your local union, the Center to Protect Workers' Rights (CPWR) (301-578-8500 or www.cpwr.com), the National Institute for Occupational Safety and Health (1-800-35-NIOSH or www.cdc.gov/niosh), or OSHA (1-800-321-OSHA or www.osha.gov). Or check the website www.elcosh.org

The Center to Protect Workers' Rights is the research and development institute of the Building and Construction Trades Dept., AFL-CIO: CPWR, Suite 1000, 8484 Georgia Ave., Silver Spring, MD 20910. (Edward C. Sullivan is president of the Building and Construction Trades Department and CPWR.) Production of this flyer was supported by grants UO2/310982 and UO2/312014 from the National Institute for Occupational Safety and Health (NIOSH). The contents are solely the responsibility of the authors and do not necessarily represent the official views of NIOSH.

The Heat Equation

HIGH TEMPERATURE + HIGH HUMIDITY + PHYSICAL WORK = HEAT ILLNESS

When the body is unable to cool itself through sweating, **serious** heat illnesses may occur. The most severe heat-induced illnesses are heat exhaustion and heat stroke. If left untreated, **heat exhaustion** could progress to **heat stroke** and possible **death**.



U.S. Department of Labor
Occupational Safety and Health Administration
OSHA 3154
2002

Heat Exhaustion

What are the symptoms?

HEADACHES; DIZZINESS OR LIGHTHEADEDNESS; WEAKNESS; MOOD CHANGES SUCH AS IRRITABILITY, CONFUSION, OR THE INABILITY TO THINK STRAIGHT; UPSET STOMACH; VOMITING; DECREASED OR DARK-COLORED URINE; FAINTING OR PASSING OUT; AND PALE, CLAMMY SKIN

What should you do?

- Act immediately. If not treated, heat exhaustion may advance to heat stroke or death.
- Move the victim to a cool, shaded area to rest. Don't leave the person alone. If symptoms include dizziness or lightheadedness, lay the victim on his or her back and raise the legs 6 to 8 inches. If symptoms include nausea or upset stomach, lay the victim on his or her side.
- Loosen and remove any heavy clothing.
- Have the person drink cool water (about a cup every 15 minutes) unless sick to the stomach.
- Cool the person's body by fanning and spraying with a cool mist of water or applying a wet cloth to the person's skin.
- Call 911 for emergency help if the person does not feel better in a few minutes.

Heat Stroke–A Medical Emergency

What are the symptoms?

DRY, PALE SKIN WITH NO SWEATING; HOT, RED SKIN THAT LOOKS SUNBURNED; MOOD CHANGES SUCH AS IRRITABILITY, CONFUSION, OR THE INABILITY TO THINK STRAIGHT; SEIZURES OR FITS; AND UNCONCIOUSNESS WITH NO RESPONSE

What should you do?

- Call 911 for emergency help immediately.
- Move the victim to a cool, shaded area. Don't leave the person alone. Lay the victim on his or her back. Move any nearby objects away from the person if symptoms include seizures or fits. If symptoms include nausea or upset stomach, lay the victim on his or her side.
- Loosen and remove any heavy clothing.
- Have the person drink cool water (about a cup every 15 minutes) if alert enough to drink something, unless sick to the stomach.
- Cool the person's body by fanning and spraying with a cool mist of water or wiping the victim with a wet cloth or covering him or her with a wet sheet.
- Place ice packs under the armpits and groin area.

How can you protect yourself and your coworkers?

- Learn the signs and symptoms of heat-induced illnesses and how to respond.
- Train your workforce about heat-induced illnesses.
- Perform the heaviest work during the coolest part of the day.
- Build up tolerance to the heat and the work activity slowly. This usually takes about 2 weeks.
- Use the buddy system, with people working in pairs.
- Drink plenty of cool water, about a cup every 15 to 20 minutes.
- Wear light, loose-fitting, breathable clothing, such as cotton.
- Take frequent, short breaks in cool, shaded areas to allow the body to cool down.
- Avoid eating large meals before working in hot environments.
- Avoid alcohol or beverages with caffeine. These make the body lose water and increase the risk for heat illnesses.

What factors put you at increased risk?

- Taking certain medications. Check with your health-care provider or pharmacist to see if any medicines you are taking affect you when working in hot environments.
- Having a previous heat-induced illness.
- Wearing personal protective equipment such as a respirator or protective suit.

Surviving the Cold Weather

Prolonged exposure to low temperatures, wind and/or moisture can result in cold-related injury from frostbite and hypothermia. Here are some suggestions on how to keep warm and avoid frostbite and hypothermia.

Dress properly

Wear several layers of loose-fitting clothing to insulate your body by trapping warm, dry air inside. Loosely woven cotton and wool clothes best trap air and resist dampness.

The head and neck lose heat faster than any other part of the body. Your cheeks, ears and nose are the most prone to frostbite. Wear a hat, scarf and turtleneck sweater to protect these areas.

Frostbite: What to look for

The extent of frostbite is difficult to judge until hours after thawing. There are two classifications of frostbite:

- Superficial frostbite is characterized by white, waxy or grayish-yellow patches on the affected areas. The skin feels cold and numb. The skin surface feels stiff and underlying tissue feels soft when depressed.
- Deep frostbite is characterized by waxy and pale skin. The affected parts feel cold, hard, and solid and cannot be depressed. Large blisters may appear after rewarming.

What to do

1. Get the victim out of the cold and to a warm place immediately.
2. Remove any constrictive clothing items that could impair circulation.
3. If you notice signs of frostbite, seek medical attention immediately.
4. Place dry, sterile gauze between toes and fingers to absorb moisture and to keep them from sticking together.
5. Slightly elevate the affected part to reduce pain and swelling.
6. If you are more than one hour from a medical facility and you have warm water, place the frostbitten part in the water (102 to 106 degrees Fahrenheit). If you do not have a thermometer, test the water first to see if it is warm, not hot. Rewarming usually takes 20 to 40 minutes or until tissues soften.

What not to do

1. Do not use water hotter than 106 degrees Fahrenheit.
2. Do not use water colder than 100 degrees Fahrenheit since it will not thaw frostbite quickly enough.
3. Do not rub or massage the frostbite area.
4. Do not rub with ice or snow.

Hypothermia

Hypothermia occurs when the body loses more heat than it produces. Symptoms include change in mental status, uncontrollable shivering, cool abdomen and a low core body temperature.

Severe hypothermia may cause rigid muscles, dark and puffy skin, irregular heartbeat and respiration, and unconsciousness.
Treat hypothermia by protecting the victim from further heat loss and seeking immediate medical attention. Get the victim out of the cold. Add insulation such as blankets, pillows, towels or newspapers beneath and around the victim. Be sure to cover the victim's head. Replace wet clothing with dry clothing. Handle the victim gently because rough handling can cause cardiac arrest. Keep the victim in a horizontal (flat) position.
Finally, the best way to avoid frostbite and hypothermia is to stay out of the cold. Read a book, clean house or watch TV. Be patient and wait out the dangerous cold weather.

How to Prevent Frostbite and Hypothermia

Prolonged exposure to low temperatures, wind or moisture - whether it be on a ski slope or in a stranded car - can result in cold-related illnesses such as frostbite and hypothermia. The National Safety Council offers these tips to help you spot and put a halt to these winter hazards.

How to detect and treat cold-related illnesses

Frostbite is the most common injury resulting from exposure to severe cold. Superficial frostbite is characterized by white, waxy, or grayish-yellow patches on the affected areas. The skin feels cold and numb. The skin surface feels stiff but underlying tissue feels soft and pliable when depressed. Treat superficial frostbite by taking the victim inside immediately. Remove any constrictive clothing items that could impair circulation. If you notice signs of frostbite, immediately seek medical attention. Place dry, sterile gauze between toes and fingers to absorb moisture and to keep them from sticking together. Slightly elevate the affected part to reduce pain and swelling. If you are more than one hour from a medical facility and you have warm water, place the frostbitten part in the water (102 to 106 degrees Fahrenheit). If you do not have a thermometer, test the water first to see if it is warm, not hot. Rewarming usually takes 20 to 40 minutes or until tissues soften.

Deep frostbite usually affects the feet or hands and is characterized by waxy, pale, solid skin. Blisters may appear. Treat deep frostbite by moving the victim indoors and immediately seek medical attention.

Hypothermia occurs when the body's temperature drops below 95 degrees Fahrenheit. Symptoms of this condition include change in mental status, uncontrollable shivering, cool abdomen and a low core body temperature. Severe hypothermia may produce rigid muscles, dark and puffy skin, irregular heart and respiratory rates, and unconsciousness.

Treat hypothermia by protecting the victim from further heat loss and calling for immediate medical attention. Get the victim out of the cold. Add insulation such as blankets, pillows, towels or newspapers beneath and around the victim. Be sure to cover the victim's head. Replace wet clothing with dry clothing. Handle the victim gently because rough handling can cause cardiac arrest. Keep the victim in a horizontal (flat) position. Give artificial respiration or CPR (if you are trained) as necessary.

How to prevent cold-related illnesses

Avoid frostbite and hypothermia when you are exposed to cold temperatures by wearing layered clothing, eating a well-balanced diet, and drinking warm, non-alcoholic, caffeine-free liquids to maintain fluid levels.
Avoid becoming wet, as wet clothing loses 90 percent of its insulating value.

U.S. Department of Labor
Occupational Safety and Health Administration

Fact Sheet No. OSHA 98-55

Protecting Workers in Cold Environments

December 1998

As the weather becomes "frightful" during winter months, workers who must brave the outdoor conditions face the occupational hazard of exposure to the cold. Prolonged exposure to freezing temperatures can result in health problems as serious as trench foot, frostbite, and hypothermia. Workers in such industries as construction, commercial fishing and agriculture need to be especially mindful of the weather, its effects on the body, proper prevention techniques, and treatment of cold-related disorders.

The Cold Environment

An individual gains body heat from food and muscular activity and loses it through convection, conduction, radiation and sweating to maintain a constant body temperature. When body temperature drops even a few degrees below its normal temperature of 98.6°F (37°C), the blood vessels constrict, decreasing peripheral blood flow to reduce heat loss from the surface of the skin. Shivering generates heat by increasing the body's metabolic rate.

The four environmental conditions that cause cold-related stress are low temperatures, high/cool winds, dampness and cold water. Wind chill, a combination of temperature and velocity, is a crucial factor to evaluate when working outside. For example, when the actual air temperature of the wind is 40°F (4°C) and its velocity is 35 mph, the exposed skin receives conditions equivalent to the still-air temperature being 11°F (-11°C)! A dangerous situation of rapid heat loss may arise for any individual exposed to high winds and cold temperatures.

Major Risk Factors for Cold-Related Stresses

- Wearing inadequate or wet clothing increases the effects of cold on the body.
- Taking certain drugs or medications such as alcohol, nicotine, caffeine, and medication that inhibits the body's response to the cold or impairs judgment.
- Having a cold or certain diseases, such as diabetes, heart, vascular, and thyroid problems, may make a person more susceptible to the winter elements.

- Being a male increases a person's risk to cold-related stresses. Sad, but true, men experience far greater death rates due to cold exposure than women, perhaps due to inherent risk-taking activities, body-fat composition or other physiological differences.
- Becoming exhausted or immobilized, especially due to injury or entrapment, may speed up the effects of cold weather.
- Aging -- the elderly are more vulnerable to the effects of harsh winter weather.

Harmful Effects of Cold

Trench Foot is caused by long, continuous exposure to a wet, cold environment, or actual immersion in water. Commercial fisherman, who experience these types of cold, wet environments daily, need to be especially cautious.

Symptoms:

Symptoms include a tingling and/or itching sensation, burning, pain, and swelling, sometimes forming blisters in more extreme cases.

Treatment:

Move individuals with trench foot to a warm, dry area, where the affected tissue can be treated with careful washing and drying, rewarming and slight elevation. Seek medical assistance as soon as possible.

Frostbite occurs when the skin tissue actually freezes, causing ice crystals to form between cells and draw water from them, which leads to cellular dehydration. Although this typically occurs at temperatures below 30°F (-1°C), wind chill effects can cause frostbite at above-freezing temperatures.

Symptoms:

Initial effects of frostbite include uncomfortable sensations of coldness; tingling, stinging or aching feeling of the exposed area followed by numbness. Ears, fingers, toes, cheeks, and noses are primarily affected. Frostbitten areas appear white and cold to the touch. The appearance of frostbite varies depending on whether rewarming has occurred.

Deeper frostbite involves freezing of deeper tissues (muscles, tendons, etc.) causing exposed areas to become numb, painless, hard to the touch.

Treatment:

If you suspect frostbite, you should seek medical assistance immediately. Any existing hypothermia should be treated first (See **Hypothermia** below). Frostbitten parts should be covered with dry, sterile gauze or soft, clean cloth bandages. Do not massage frostbitten tissue because this sometimes causes greater injury. Severe cases may require hospitalization and even amputation of affected tissue. Take measures to prevent further cold injury. If formal medical treatment will be delayed, consult with a licensed health care professional for training on rewarming techniques.

General Hypothermia occurs when body temperature falls to a level where normal muscular and cerebral functions are impaired. While hypothermia is generally associated with freezing temperatures, it may occur in any climate where a person's body temperature falls below normal. For instance, hypothermia is common among the elderly who live in cold houses.

Symptoms:

The first symptoms of hypothermia, shivering, an inability to do complex motor functions, lethargy, and mild confusion, occur as the core body temperature

decreases to around 95°F (35°C).
As body temperature continue to fall, hypothermia becomes more severe. The individual falls into a state of dazed consciousness, failing to complete even simple motor functions. The victim's speech becomes slurred and his or her behavior may become irrational.
The most severe state of hypothermia occurs when body temperature falls below 90°F (32°C). As a result, the body moves into a state of hibernation, slowing the heart rate, blood flow, and breathing. Unconsciousness and full heart failure can occur in the severely hypothermic state.

Treatment:

Treatment of hypothermia involves conserving the victim's remaining body heat and providing additional heat sources. Specific measures will vary depending upon the severity and setting (field or hospital). Handle hypothermic people very carefully because of the increased irritability of the cold heart. Seek medical assistance for persons suspected of being moderately or severely hypothermic.
If the person is unresponsive and not shivering, assume he or she is suffering from severe hypothermia. Reduction of heat loss can be accomplished by various means: obtaining shelter, removal of wet clothing, adding layers of dry clothing, blankets, or using a pre-warmed sleeping bag.
For mildly hypothermic cases or those more severe cases where medical treatment will be significantly delayed, external rewarming techniques may be applied. This includes body-to-body contact (e.g., placing the person in a prewarmed sleeping bag with a person of normal body temperature), chemical heat packs, or insulated hot water bottles. Good areas to place these packs are the armpits, neck, chest, and groin. It is best to have the person lying down when applying external rewarming. You also may give mildly hypothermic people warm fluids orally, but avoid beverages containing alcohol or caffeine.

Preventing Cold-Related Disorders

Personal Protective Clothing is perhaps the most important step in fighting the elements is providing adequate layers of insulation from them. Wear at least three layers of clothing:
-- An outer layer to break the wind and allow some ventilation (like Gore-Tex® or nylon);
-- A middle layer of wool or synthetic fabric (Qualofil or Pile) to absorb sweat and retain insulation in a damp environment. Down is a useful lightweight insulator; however, it is ineffective once it becomes wet.
-- An inner layer of cotton or synthetic weave to allow ventilation.
Pay special attention to protecting feet, hands, face and head. Up to 40 percent of body heat can be lost when the head is exposed. Footgear should be insulated to protect against cold and dampness. Keep a change of clothing available in case work garments become wet.
Engineering Controls in the workplace through a variety of practices help reduce the risk of cold-related injuries.

- Use an on-site source of heat, such as air jets, radiant heaters, or contact warm plates.
- Shield work areas from drafty or windy conditions.

- Provide a heated shelter for employees who experience prolonged exposure to equivalent wind-chill temperatures of 20°F (-6°C) or less.
- Use thermal insulating material on equipment handles when temperatures drop below 30°F (-1°C).

Safe Work Practices, such as changes in work schedules and practices, are necessary to combat the effects of exceedingly cold weather.

- Allow a period of adjustment to the cold before embarking on a full work schedule.
- Always permit employees to set their own pace and take extra work breaks when needed.
- Reduce, as much as possible, the number of activities performed outdoors. When employees must brave the cold, select the warmest hours of the day and minimize activities that reduce circulation.
- Ensure that employees remain hydrated.
- Establish a buddy system for working outdoors.
- Educate employees to the symptoms of cold-related stresses -- heavy shivering, uncomfortable coldness, severe fatigue, drowsiness, or euphoria.

The quiet symptoms of potentially deadly cold-related ailments often go undetected until the victim's health is endangered. Knowing the facts on cold exposure and following a few simple guidelines can ensure that this season is a safe and healthy one.

APPENDIX E

INSPECTOR'S DAILY REPORT FORM

TVGA Consultants

INSPECTOR'S DAILY REPORT

JOB TITLE: 1 _____
TVGA JOB NO.: _____
CLIENT: _____
CONTRACTOR: _____

Date: _____
Day of Week: S M T W T F
I.R. No.: _____
Sheet No. _____ **of** _____
Contractor Hours Worked:
_____**AM** _____**PM**
Inspector Hours Worked:
_____**AM** _____**PM**
Weather: AM _____
PM _____
Temperature: AM _____
PM _____

VISITORS: _____

PHOTOS TAKEN: _____

DESCRIPTION OF WORK PERFORMED AND INSPECTED
Specify for each operation: Item No., Sub-Contractor (if any), Location and Nature of Work

ITEM NO.	INTERIM QUANT.	UNITS	EST. NO.	DESCRIPTION OF WORK

The above described work was incorporated into this project and was inspected by:

_____ Reviewed by: _____
Inspector's Signature

❺ REVERSE SIDE USED FOR ADDITIONAL REMARKS AND SKETCHES.

MANPOWER						EQUIPMENT				
TYPE	PRIME					TYPE	PRIME			
Foreman										
Operators										
Laborers										